

# **PORTA-FAB**

## **Cleanroom Ceiling Systems**

### **FABLINE 2" GASKET SEAL GRID INSTALLATION INSTRUCTIONS**

#### **IMPORTANT**

**Porta-Fab Advises A Thorough Reading of These Instructions Before Beginning Installation.**

## INTRODUCTION

Porta-Fab has fabricated this FabLine 2” Gasket Seal Grid Cleanroom Ceiling System with superior materials and provides a structural grid system with aluminum extrusions and connecting zinc alloy die-castings. Even though these materials were packaged with care, damage may have occurred during transit. Please inspect this shipment for damage and quantity before beginning installation. Please notify us promptly if you experience any problems at (800) 325-3781.

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## TOOLS

We suggest the following tools to erect this system:

- Laser or Suitable Leveling Instrument
- 5/32” Hex Bit or Allen Wrench
- 7/16” Socket Head Drive
- Circular Saw with Fine Toothed Carbide Tip Blade (triple toothed, negative rake, aluminum blade)
- Miter Saw with Fine Toothed Carbide Tip Blade (triple toothed, negative rake, aluminum blade)

The following information is provided by Porta-Fab Corporation as a general guideline for the installation of the FabLine 2” Gasket-Seal cleanroom ceiling grid system. This information should be reviewed prior to commencing installation. The intent is to be as specific as possible in detail for a typical project, yet general enough to be utilized by most installation teams. It is Porta-Fab's hope that the descriptions are helpful and as easy to understand as the wall system itself. Of course, if there are any questions, comments, or special considerations, please contact Porta-Fab.

This narrative assumes that the job-site is clear and ready for the construction of cleanroom ceiling.

## **Uncrating, Inspection, and Inventory**

The Porta-Fab ceiling system is packaged in the factory in a manner to protect each part during normal shipping and handling. It is recommended by Porta-Fab that the original packaging remain intact as much as possible until the individual parts are needed. All extrusion components are typically packaged in boxes and between styrofoam packaging.

As the skids are received at the job-site, they should be placed in a location near the installation area, where they will not become an obstacle, or require to be moved at a later time. The skids should then be opened, however leaving the internal packaging unchanged. Pieces can be removed on an as needed basis and the packaging discarded then. At this time, however, the components should be visually inspected for obvious damage and an inventory taken to confirm that all parts are received as expected. Notify Porta-Fab immediately of any discrepancies.

## **Fasteners Not Provided By Porta-Fab**

Porta-Fab does not provide the attachment hardware for the existing structure or framework, due to installer preferences and local codes; the type of hardware shall not be discussed here. All hardware required from the turnbuckle to the existing support structure is not provided.

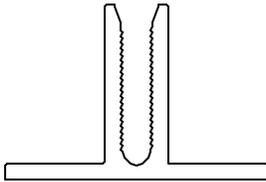
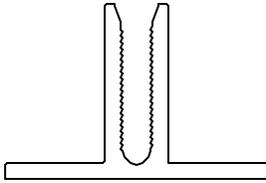
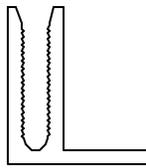
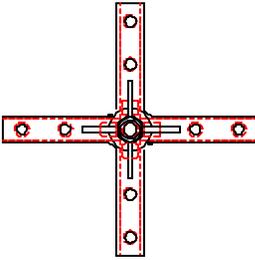
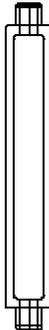
## **Special Notes**

Due to expansion and contraction properties of aluminum, it is recommended that this system be installed in a temperature that is as close as possible to that which the finished room will operate. Stock T-bar or wall angle with a length of over 4 feet is cut with a tolerance of  $\pm .032$ ". Stock cross-tees less than 4 feet is cut to  $\pm .016$ ". The above stated tolerances are measured at a material temperature of from  $60^{\circ}$  to  $90^{\circ}$  F. All field cuts including perimeter miter cuts are to be performed by the installing contractor.

## **Preliminary**

Identify various parts from reference drawings.

# FabLine Extrusion Guide

Part #	Description	Detail
CG2MT144	Main Runner	 A cross-sectional view of a main runner extrusion. It features a wide, flat base with two vertical, parallel ridges rising from the center. The ridges have a slightly rounded top and a textured, serrated surface.
CG2CT46.5	Cross Tee	 A cross-sectional view of a cross tee extrusion. It has a wide, flat base with two vertical, parallel ridges rising from the center. The ridges have a slightly rounded top and a textured, serrated surface.
CG2WA144	Wall Angle	 A cross-sectional view of a wall angle extrusion. It consists of a vertical leg and a horizontal leg meeting at a 90-degree angle. Both legs have a textured, serrated surface.
CGCAST4	4-Way Casting	 A top-down view of a 4-way casting extrusion. It is a cross-shaped profile with four arms extending from a central point. Each arm has a circular hole near its end. The profile is highlighted with a red outline.
CGTB6	Turnbuckle	 A side view of a turnbuckle extrusion. It is a long, narrow, rectangular profile with a slightly wider section at each end, indicating where it would connect to other components.

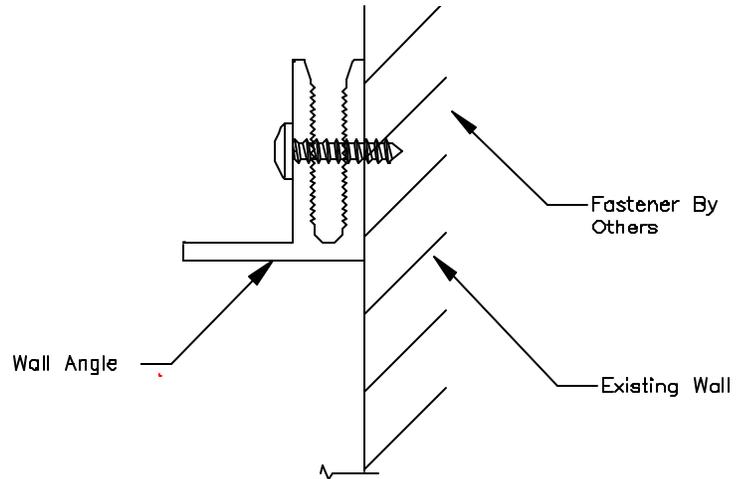
## Installation of Wall Angle

The first component to be installed is the wall angle. Attach lengths of wall angle to walls using appropriate fasteners for your type of existing wall. It is advisable to pick one wall as a starting point and begin attaching wall angle from the center of the wall towards the corners.

A laser or other suitable leveling tool should be used to assure a consistently level finished product.

Continue attaching wall angle around walls and columns, if any, until complete.

The wall angle sections are connected at the intersections with a 2-way zinc alloy die-castings in which the cross configuration is formed by downwardly open channels that embrace the top extruded screw boss of the wall angle. The castings are bolted to the extrusion with  $\frac{1}{4}$ -20 x 1" gutter head cap screws. Only one (1) bolt per casting leg is required except for corner splice castings, which require two (2) screws. This is most easily done with a power drill or other such tool.

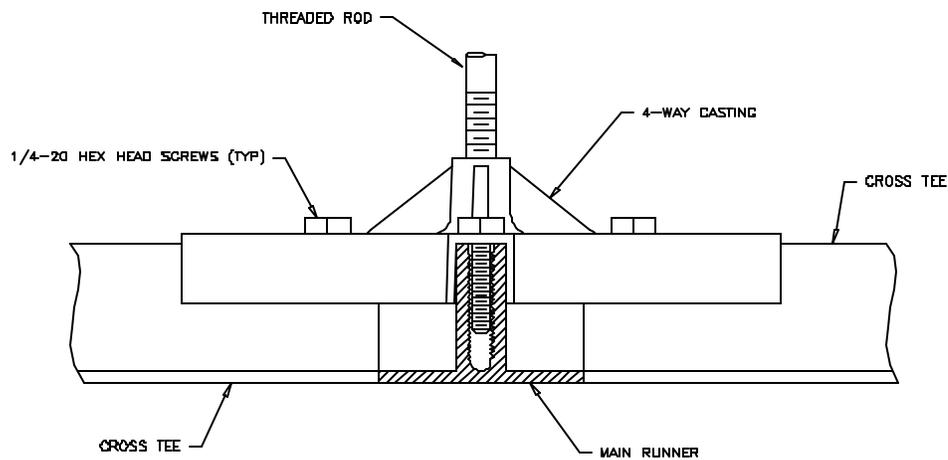


## Wall Angle at Corners

The wall angle is to be miter cut at 45° in the field by the installation team to create corners.

## Installation of T-Bar

Once the wall angle is completely installed, the rest of the grid installation can begin. The extruded aluminum sections are connected at the intersections with the cross shaped zinc alloy die castings in which the cross configuration is formed by downwardly open channels that embrace the top extruded screw boss of the main runners and cross bar sections. The castings are bolted to the extrusion with  $\frac{1}{4}$ -20 x 1  $\frac{1}{4}$ " full threaded hex head cap screws (button head screws are used at perimeter intersections). Only one (1) bolt per casting leg is required except for corner splice castings, which require two (2) screws. This is most easily done with a power drill or other such tool. The grid is suspended with  $\frac{3}{8}$ "-16 threaded rod for which the castings are already tapped.



TYPICAL GRID SECTION

The castings will accept a special right hand/left hand (RH-LH) threaded rod to allow for use with turnbuckles. The RH-LH threaded rod should be turned into the casting and bottom out on the main runner. Turnbuckles are not a requirement for secure suspension. However, in that case, some other means of leveling the grid system should be used.

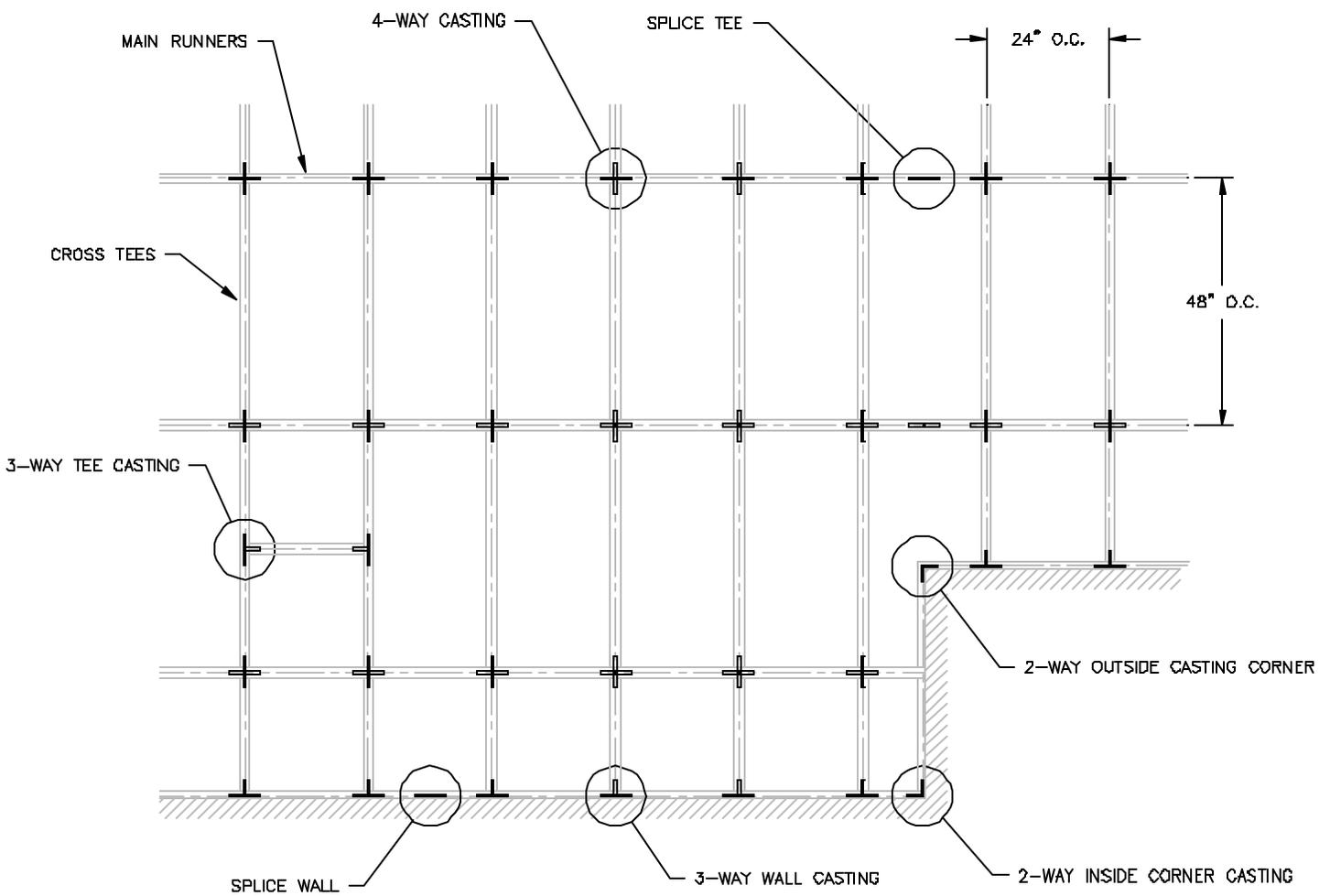
There are two different ways of assembling the grid system:

*Method 1*

Hang all of the threaded rods, turnbuckles and castings at the appropriate 2' x 4' or 4' x 4' centers (nominal) and then bolt main runners (12') lengths into place. The cross tees may then be bolted in using a 24" or 24 1/2" on center configuration, depending on grid layout.

*Method 2*

Partially install a small section of ceiling grid using main runners, cross tees and castings on the floor and raise it into place. The threaded rods are then attached to the castings and the next section is assembled and then raised into place.



TYPICAL 2" GRID LAYOUT

## Installation of Gasket

The Porta-Fab provided 1/8" x 3/8" gasket tape is usually applied to the extruded grid members prior to installation. After unpacking the part, the surface of the extrusion is cleaned using a solution of isopropyl alcohol and water. The gasket tape is then applied with the adhesive side down, leaving approximately 1" to 1 1/2" extra gasket material on each end of the cross tees to allow for a proper seal of the gaskets at the grid intersection.

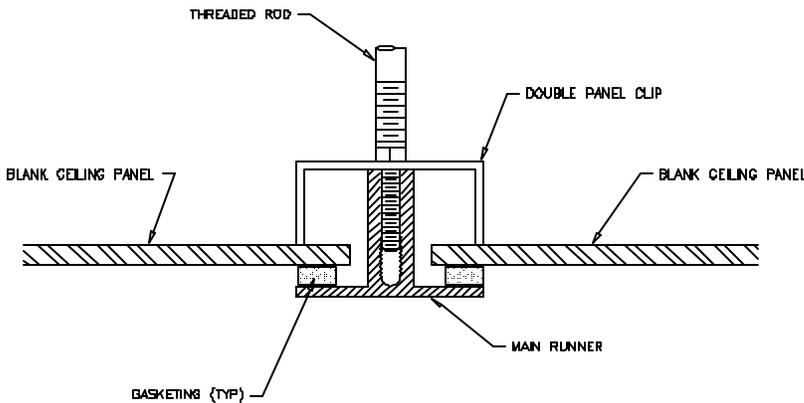
## Installation of Light Fixtures and Filters

Once the ceiling grid is installed, the module installation can begin. If lay in light fixtures are to be used, they should be installed first in order to make the wiring easier. Once the light fixtures are in place and wired, the filter modules can be installed. This done by pushing the filter module through the grid at an angle and then lowering them until they nest in place and so on. After all the filter modules are in place, the blank panels are installed. Porta-Fab UltraGuard fan filter modules are sealed at the factory.

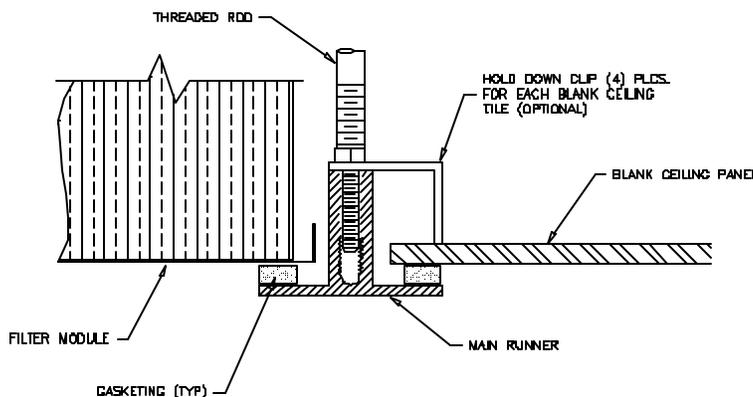
## Installation of Ceiling Blanks

Blank panels are placed in the grid opening after the gasket is in place. Special cuts can be made by measuring the centerline of the grid and deducting 7/8" from the dimension (see chart below). For example, a 24" x 48" grid centerline would take a blank 23 1/8" x 47 1/8" in size. If blank panel hold down clips are utilized, a minimum of six (6) clips per 2' x 4' blank panel are required. The clips are secured to the T-Grid extrusions utilizing a 1/4"-20 bolt.

Center Line of Grid	Module Size
24" x 48"	23 1/8" x 47 1/8"
24 1/2" x 48 1/2"	23 5/8" x 47 5/8"



DOUBLE BLANK PANEL CLIP



SINGLE BLANK PANEL CLIP

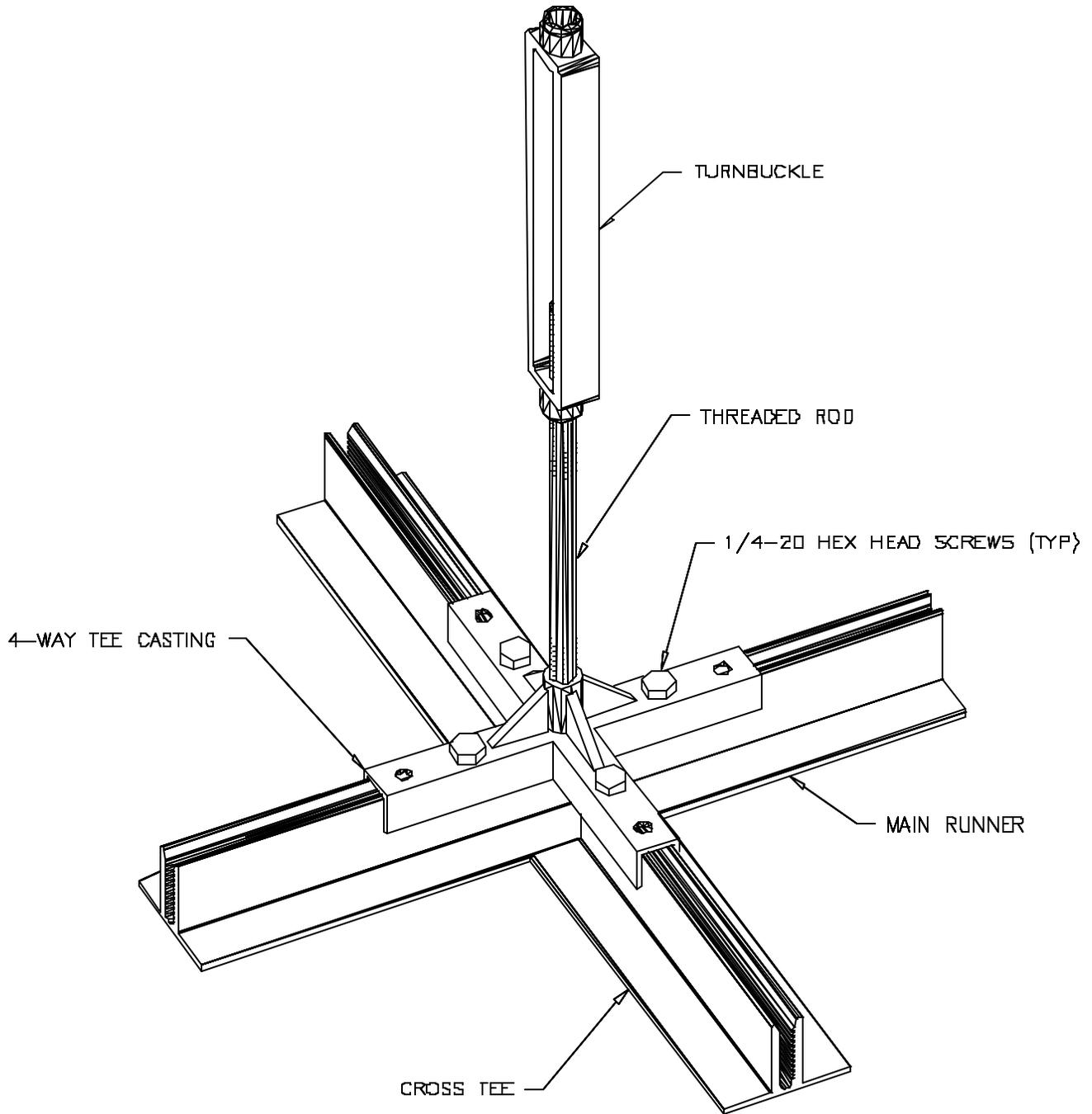
## Sealing Wall Angle

This is a simple process utilizing an approved construction sealant. A bead of sealant is placed at the corner of the wall angle and existing wall on the room side. The sealant should be smoothed to assure an airtight seal.

## Maintenance

Prior to completing the installation, a final inspection and wipe-down should take place. Wipe the panels and extrusions with an approved cleanroom alcohol wipe. If any chemicals are to be utilized, spot check with extra materials prior to use to insure that the finish of the wall system is not damaged.

Cleaning of the Porta-Fab 2" gasket grid requires the use of non-shedding, cleanroom approved wipers and a solvent of isopropyl alcohol diluted with distilled water. Surfaced should be wiped in one direction, maximum of three (3) strokes.



4-WAY TEE CASTING