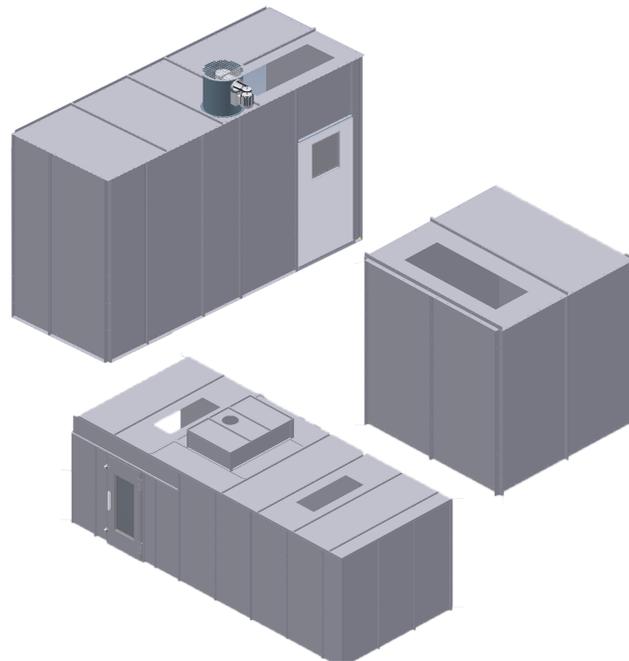




GLOBAL
FINISHING
SOLUTIONS



General Industrial Booth

Installation Manual

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Read and keep this manual for future reference. All personnel operating the equipment described in this manual should review and understand all instructions before use.

Table of Contents

Introduction	3
About Global Finishing Solutions LLC	3
Contacting Global Finishing Solutions	3
Target audience	3
Conventions used in this manual	4
Safety notices	4
Information notices	4
General safety	5
Booth safety	7
Preparing for installation	10
Accepting delivery of your booth	10
Gathering required documentation	11
Confirming site requirements	12
About the Design Drawings document	13
Page elements	13
Required materials	15
Required tools	15
Recommended equipment	16
Installation best practices	17
Unpack in stages	17
Sort and label	18
Using the part number	18
Using the item number	19
Follow assembly guidelines	20
Complete booth installation	21

Introduction

About Global Finishing Solutions LLC

Leading the Industry in Paint Booth and Finishing System Technology

With decades of experience, Global Finishing Solutions is the leading manufacturer of paint booths and finishing systems for many industries, including automotive refinish, aerospace and defense, industrial manufacturing, woodworking, and large equipment. By combining high-quality components, strong relationships with paint manufacturers, and our experienced distribution network, GFS provides the best equipment and support to set your business up for success.

Contacting Global Finishing Solutions

General information

- Toll-free: 800-848-8738
- Fax: 715-597-2193
- Email: info@globalfinishing.com
- Online: www.globalfinishing.com

Technical support

- Toll-free: 800-848-8738
- Fax: 715-597-8818
- Email: techservices@globalfinishing.com

Parts and filters

- Toll-free: 800-848-8738
- Fax: 888-338-4584
- Email: parts@globalfinishing.com

Target audience

This document is intended for use by trained, experienced paint booth installers and maintenance technicians. If you have questions about the installation procedure described in this manual, contact GFS as described above.

Conventions used in this manual

This section describes how information is presented, organized, and referenced within this manual.

Safety notices

This manual uses the following standards to identify conditions related to safety hazards and equipment damage.

Table 1. Safety notices

Symbol	Description
DANGER	Indicates an imminent hazard that will result in death.
WARNING	Indicates a hazard that can result in serious personal injury or death.
CAUTION	Indicates a hazard that can result in personal injury.
NOTICE	Indicates a situation that can result in equipment or property damage, but poses no risk of personal injury.

Information notices

In addition to the safety notices described above, this manual uses a boldface keyword to identify certain other types of information.

Table 2. Information notices

Keyword	Description
NOTE	Denotes general information that provides additional context or guidance.
Important	Denotes information to which you should pay special attention.
Reference	Directs you to related content in a separate document.
Prerequisites	Specifies other tasks that must be completed or conditions that must exist before you perform the current task.
Scope	Describes limitations to the current task or conditions under which the task applies or does not apply to the procedure.

General safety

Follow all safety guidelines when assembling, operating, or servicing this product.

WARNING

There are inherent hazards associated with the operation and service of this equipment. For your personal safety, observe all safety information. Failure to observe these safety practices can result in personal injury or death.

WARNING

Operation and maintenance of this product must be performed properly by qualified personnel who observe the warnings in all documentation and notes provided with and on the product.

WARNING

Follow all general standards for installation and safety for work on installations. Follow all good practices for the proper use of lifting tackle and equipment. The use of protective equipment such as safety goggles and protective footwear must be considered.

WARNING

All persons who will operate, service, inspect, or otherwise handle this product must read and understand the safe operating practices, safety precautions, and warning messages in this documentation.

WARNING

The roofs of GFS equipment are not designed or intended to be walked upon or to support weight of any kind. As designed and manufactured, equipment roofs do not meet the minimum requirements of a safe walking and/or working surface under OSHA 1910.22. Under no circumstances should the roof be used by maintenance personnel or others for walking, standing, or storage of any kind. When necessary, roof access should be secured through the use of a properly supported platform that satisfies the minimum load requirements specified by ASCE 7 (Minimum Design Loads and Associated Criteria for Buildings and Other Structures) and ASCE 37 (Design Loads on Structures during Construction). Additionally, personnel should always utilize appropriate fall safety protocols when using an elevated platform. Use of the roof in a contrary manner may result in injury and/or death.

WARNING

Comply with OSHA guidelines and with all applicable local electrical, safety, and fire codes and standards.

WARNING

All field wiring provided must comply with local codes or, in the absence of local codes, the National Electrical Code (NFPA 70). Article 516 covers applicable of flammable and combustible materials.

WARNING

Electrical installation should be completed by a qualified electrician. Installation must meet all applicable national, state, and local electrical codes.

WARNING

Ensure that all electrical components are grounded to a central ground.

WARNING

Disconnect and lock out the main electrical service before installing, adjusting, or servicing the product.

WARNING

Guards and covers that prevent contact with electrically energized or moving parts are required and must not be removed or left open during operation.

WARNING

Welding, cutting, and other spark-producing operations shall not be permitted in or adjacent to a booth until a written permit authorizing such work has been issued. The permit shall be issued by a person in authority following his or her inspection of the area to ensure that precautions have been taken and will be followed until the job is completed.

WARNING

Local fire and building codes require fire protection. Check with local inspector authorities for requirements.

CAUTION

Read and save these instructions before attempting to assemble, install, operate, or maintain the product described. Protect yourself and others by observing all safety information. Failure to comply with instructions could result in personal injury and/or property damage. Retain these instructions for future reference.

CAUTION

This manual contains statements that relate to worker safety. Read this manual thoroughly and comply as directed. Operate this equipment in accordance with the guidelines set forth in this manual. It is impossible to list all potential hazards of this equipment. Instruct all personnel involved with this equipment in the safe conduct and operation of the system. GFS recommends that only qualified personnel operate and maintain this equipment.

CAUTION

Safety signs, panels, and labels that are normally affixed to the product must be replaced immediately if illegible or missing.

CAUTION

New or replacement parts that are installed during repair or maintenance must include all safety signs, panels, and labels as specified by the manufacturer. These must be affixed to the new or replacement parts as specified by the manufacturer.

CAUTION

Where applicable, use earplugs or take other safety measures for hearing protection.

NOTICE

The product must be installed and serviced only by a trained, qualified service technician. Incorrect installation may void the warranty.

NOTICE

If you have questions about the warranty, please contact your distributor prior to contacting GFS.

Booth safety

DANGER

Ceiling panel load capacity for installation and maintenance: You must use temporary platforms that span at least two structural frames for maintenance. **Do not walk on or apply any pressure to lights or explosion (deflagration) relief panels.**

WARNING

All equipment must be operated and maintained in accordance with local, state, and federal (OSHA) requirements governing occupational safety, fire protection, and booth operations. Operators must read and understand GFS and included independent equipment and/or component manufacturer's instructions prior to use. **Disclaimer:** GFS is not responsible for any injury, illness, or property damage that results from not abiding by local, state, or federal (OSHA) requirements that govern occupational safety, fire protection, and booth operations. GFS is also not responsible for any injury, illness, or property damage that is the result of not adhering to GFS and/or independent equipment/component operating, service, maintenance, and/or installation requirement's or directives.

WARNING

Install the booth in compliance with locally enforced codes and standards.

WARNING

A fire suppression system is required by the International Fire Code and NFPA 33. A fire suppression system is not supplied with this booth.

WARNING

Do not allow overspray to accumulate on the inside of the paint booth walls. When overspray accumulates, remove it as soon as possible to prevent a possible fire hazard. Use a non-ferrous, non-sparking scraper to eliminate any possibilities of igniting combustible material.

WARNING

Do not leave piles of paint sweepings in the booth as it creates a possible fire hazard.

WARNING

Treat used filters and any other paint-contaminated items as flammable products and dispose of them safely.

WARNING

If coatings containing nitrocellulose are sprayed in the booth, all residue must be removed from exhaust diffuser components and all exhaust filters must be changed at least once a day.

WARNING

Improper disposal of used filters may cause spontaneous combustion. You must consult local authorities for proper storage and disposal requirements. Guidelines include:

- Immediately remove all contaminated filters from the paint booth.
- Discard filters to a safe, detached location, place them in a non-combustible container with tight-fitting lid, or place them in a water-filled metal container to prevent a possible fire hazard.
- Disposal varies depending on the type of paint that is being captured. Consult local authorities for storage and disposal requirements.

WARNING

Duct the exhaust air from the fan away from the working environment to the outdoors. Do not operate the booth unless exhaust has been ducted properly.

WARNING

Isolate the outdoor vent from air-conditioning intakes, windows, and any other equipment that may recirculate the exhaust indoors.

WARNING

Turn on the exhaust fan before using the spray booth. Ensure that the exhaust fan is operating correctly before entering the booth.

WARNING

Check local codes to see if a booth interlock is required. A booth interlock prevents the spray devices from operating unless the exhaust fan is operating.

WARNING

Some spray activities may require the use of respiratory protection.

WARNING

Use an OSHA-approved paint spray respirator when spraying in the booth.

WARNING

Do not operate the booth when the manometer indicates the filters need to be replaced.

WARNING

Do not overfill the manometer. Overfilling allows fluid to collect in the flexible plastic connecting loop in the back of the manometer, which could cause a serious reading error. If the manometer is subject to overflow, make sure that the fluid has not passed into the plastic connecting loop.

WARNING

This equipment is designed for the removal of particulate matter only. Reduction of volatile organic compounds (VOCs) requires either coating reformulation or optional, additional equipment.

CAUTION

Become familiar with all controls before operating or servicing this booth.

CAUTION

Proper door alignment is critical to the operation of the booth. Ensure that there is equal space around the doors. Move the bottom of the door jamb to the left or right or in and out until the doors are sealed and plumb.

CAUTION

If this installation includes pumps or compressors, install and connect those devices in accordance with the manufacturer's documentation.

NOTICE

GFS recommends storing crates indoors pending installation. If you must store crates outside, protect crates and their contents from moisture to prevent damage to equipment.

NOTICE

Install the control panel per NFPA 70 and local codes and standards.

NOTICE

Failure to anchor the booth structure to the floor properly may result in structural damage.

Preparing for installation

Accepting delivery of your booth

The booth is delivered unassembled, in multiple crates.

Upon delivery, count the number of crates you received and compare that number to the expected number per the Bill of Lading. Also inspect each crate for any signs of damage during shipment.

NOTE

If you see shipping damage, note it on the freight carrier's paperwork; failure to do so may result in claim denial.

If any parts are missing or damaged, contact Global Finishing Solutions at 800-848-8738 to speak to a Technical Service Representative.

NOTICE

GFS recommends storing crates indoors pending installation. If you must store crates outside, protect crates and their contents from moisture to prevent damage to equipment.

Gathering required documentation

Ensure that you can locate these documents and that they are available during the installation procedure.

NOTE

Certain manuals, project drawings, and the Job-Specific Guide are also provided electronically to distributors via box.com. Many manuals are available for download on globalfinishing.com.

Table 3. Additional documentation

Document	Description	How provided
Design Drawings	Provides instructions for assembling this particular booth and includes information about the booth order, configuration, and components.	Ships in the "Miscellaneous" box
General Booth Details	Provides drawings and assembly instructions for common components; may include drawings that do not apply to this particular booth.	Ships in the "Miscellaneous" box
<i>If applicable:</i> Electrical Drawings	Provides wiring diagrams for electrical components. NOTE Electrical Drawings are provided only if the booth includes a control panel from GFS.	Ships inside the control panel

Confirming site requirements

Before beginning the installation procedure, confirm that the site where the equipment will be assembled meets the following requirements:

- The floor where you will assemble the paint booth is level.

NOTE

If the floor is more than 1/4 inch out of level, you must shim or grout the floor to avoid any misalignment.

- The area is large enough to allow a minimum of 3 feet (914 mm) of clear space on all four sides of the booth, taking into account if additional space is needed for an air heater or Air Make-Up Unit. Check local codes and refer to NFPA guidelines to determine particular space allowances.
- The front of the booth is sufficiently clear to allow for proper circulation of air through the booth.
- There is sufficient overhead clearance for an exhaust unit and the exhaust ductwork in the area where the equipment is to be located.
- A licensed electrician has verified that the incoming power meets the requirements specified for the equipment. (The power specification is included with the submittal or provided at delivery.)
- The appropriate devices for lifting/rigging are available onsite. (Either purchased from GFS with the booth, or obtained elsewhere by the customer.)
- The appropriate miscellaneous hardware kits are available on-site. (Either purchased from GFS with the equipment, or obtained elsewhere by the customer.)

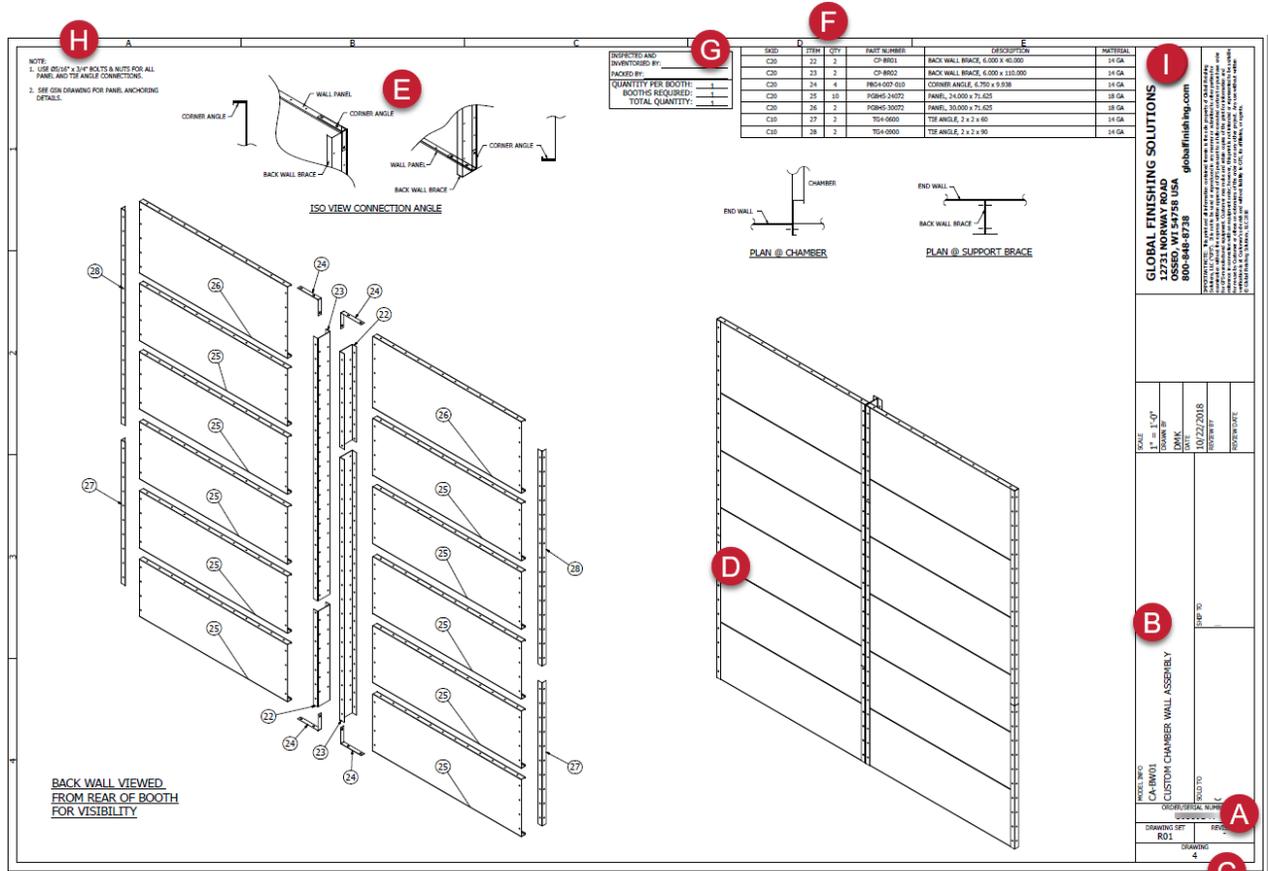
About the Design Drawings document

Use this manual in conjunction with the provided Design Drawings document. This Design Drawings document defines the overall layout and detailed structure of your particular booth. If applicable, it also includes exploded-view diagrams and parts lists for each section (or subassembly) of the booth.

Page elements

Pages within the Design Drawings document contain the following elements:

- **Title block:** The title block is located along the right edge of each page. It contains the model information, drawing identification label or number, the order/serial number, and other information.
- **Model Info:** Contains text that identifies each page within the Design Drawings document, e.g., "Overall Assembly". When the installation instructions refer you to a specific page within the Design Drawings, look for that text in the Model Info field. (For a description of the various page types that might be included in your document, see Page types.)
- **Scale:** If the drawing is to scale, the scale is defined here (e.g., 3/16" = 1' 0"). Otherwise, this field contains "NTS," or "Not to Scale."
- **Drawings:** The main area of each page can contain any or all of these types of drawings:
 - An exploded and/or assembled view of the product or subassembly
 - Additional views or "Detail" drawings
- **Bill of Materials:** Any page that includes a drawing with labeled parts also includes a table that lists each item number with its corresponding part number and quantity.
- **Quantity per Booth:** Pages that show a subassembly of the product and list the quantity provided of that particular subassembly.
- **Notes:** Pages within the Design Drawings often contain notes that provide information about how to install that particular section or subassembly.



- A:** Serial number
- B:** Model info
- C:** Drawing number
- D:** Drawings: Main view (exploded and/or assembled)
- E:** Drawings: Detail view
- F:** Bill of materials
- G:** Quantity per booth
- H:** Notes
- I:** Title block

Required materials

This section lists the tools, equipment, and documentation required for installing your booth.

NOTE

Depending on the type of equipment you are installing, additional tools or equipment may be required.

Required tools

- Screwdrivers
- Wrenches and socket set
- Hammer and mallet
- Drift pins (two per person; 1/8-inch to 5/8-inch taper)
- Caulk gun
- Impact driver and drill
- Chalk and/or felt-tip marker (for marking initial measurements on floor)
- Chalk-line tool
- Laser level (*Suggested*: Quad laser or rotary laser level)
- Tape measures (35-foot and 100-foot)
- Drill with 1/8-inch, 3/8-inch, and 1/2-inch bits
- Torque nut runner
- Reciprocating saw
- *Optional*: Torch and welder in case modifications need to be made on site
- Tools required for decal placement:
 - Stiff squeegee
 - Spray bottle with soapy-water mixture
 - Paper towels
 - Scissors

Recommended equipment

- Ladders
- Material handler
- Two 26-foot T scissor-lift platforms
- Warehouse forklift with 5000-pound lift weight and a maximum lift height higher than 16 feet

NOTE

Lifts and cranes are not required, but they may improve both the safety and speed of installation.

NOTE

The end user is responsible for providing any lifts, cranes, and material handlers. Alternatively, the end user can coordinate with the installer so the installer can rent those items before starting the work.

Installation best practices

Unpack in stages

As you begin each section of the installation procedure, unpack the crate(s) that contain the parts for that section. In general, the skids are organized so the parts that go together during assembly are packed on the same skid.

NOTE

For faster unpacking, use a reciprocating saw to cut the crates.



Figure 1. Skids awaiting unpacking

A packing list is attached to each crate. As you unpack a crate, compare all the parts with that crate's packing list to check for shortages or losses in transit. Also check parts for any damage that might have been caused in shipping.

NOTE

Slightly bent panels and angle braces can be straightened and will cause no performance or assembly problems.

If any parts are missing or damaged, contact Global Finishing Solutions at 800-848-8738 to speak to a Technical Service Representative.

Sort and label

To help installation proceed more efficiently, sort booth panels and tie angles by size as you unpack them (Figure 2).

For best results:

- Use the *part number* to help identify components as you sort them.
- Label each part with its corresponding *item number* so you can select the correct parts quickly during assembly.



Figure 2. Panels sorted by size in preparation for assembly

Using the part number

If in doubt whether two parts are equivalent, check the *part number*. The part number is either etched into the part or printed on a label affixed to the part (Figure 3).

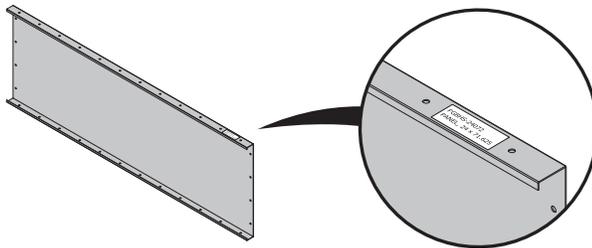


Figure 3. Example of a part number label

Using the item number

To make it easier to identify a part in relation to the Design Drawings document, identify each part by its *item number*.

To find the item number, look on the Design Drawings document page where that part is used and find the part number in that page's Bill of Materials. Then find the corresponding item number.

For example, in Figure 4, part number PG8HS-24072 corresponds to item number 18. (The numbers on your Design Drawings may be different than shown here.)

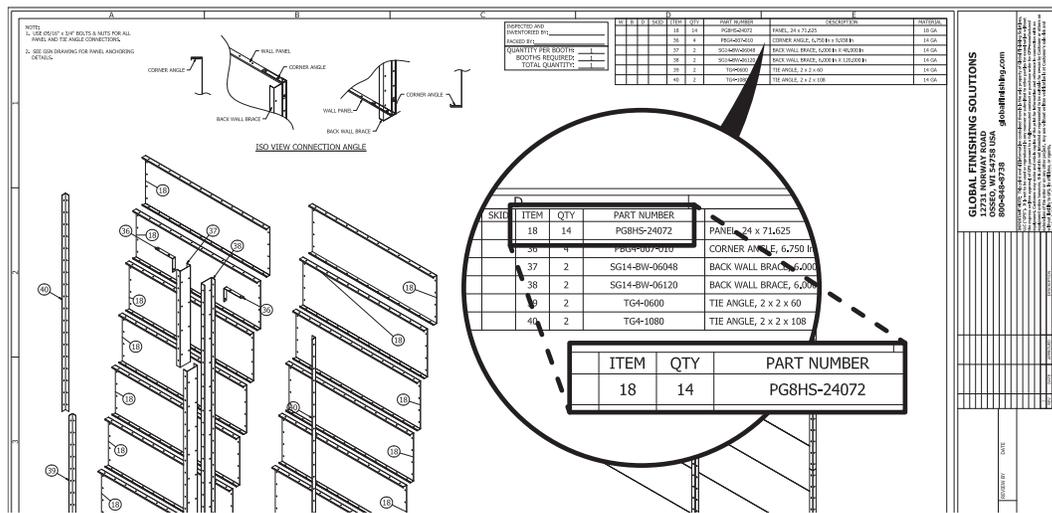


Figure 4. Example of finding the item number that corresponds to a part number

Once you've found a part's item number, write the item number on that part with a marker (Figure 5).

NOTE

Be sure to write the item number in a location that will not be visible after the booth is assembled (for example, on a flange).

Labeling parts with their corresponding item numbers does require more set-up time, but you'll be able to find parts more quickly, with less chance of selecting the wrong part during assembly.

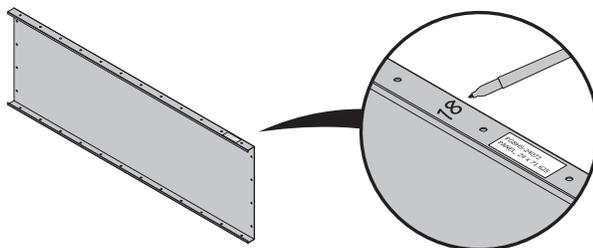


Figure 5. Example of an item number written on a panel flange

Follow assembly guidelines

Follow these guidelines when assembling the booth:

- Assemble the booth in sections, working from back to front.
- As you build each section, tighten the bolts only to finger-tight.
- When directed to do so, tighten the bolts within a section to *snug-tight*. Snug-tight is defined as “the tightness that is attained with a few impacts of an impact wrench or the full effort of an ironworker using an ordinary spud wrench to bring the plies into firm contact.” (RCSC 2014)
- Orient panels so that each panel’s flanged side faces outward, and the non-flanged side faces the interior.
- Orient bolts so that the bolt heads are on the interior and the threads are on the exterior. At corners where an assembly angle is used, place the nuts on the inside of the panel flanges.
- Use 5/16-inch by 3/4-inch bolts and nuts for all tie angle and panel connections. Use other hardware as specified within the installation instructions or on the Design Drawings.
- Plumb the panels so that they are perpendicular to the floor. The sides of the booth must be parallel to each other.

Complete booth installation

The Design Drawings contain the instructions and images necessary to assemble the booth. Refer to these drawings and the other documentation listed in “Gathering required documentation” (page 11) to successfully install your particular booth.