500 Series
Installation Guide

Part 108 388A

NORDSON CORPORATION • AMHERST, OHIO • USA

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Powder coating systems are designed for each customer's application and plant using a mixture of standard and custom components. Because of the number of variables, it is impossible to provide specific instructions in all sections of this manual. Use both this manual and your system drawings, along with the manuals provided with your powder application equipment and other devices, to install your system. Contact your Nordson Application Engineer for help in resolving any problems.

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Section 1
Safety • Unloading • Preparation

SAFETY SUMMARY

Read and observe all warnings, cautions, and notes when following the installation procedures.

The following safety symbols and terms are used to alert the reader to safety hazards and conditions that may result in personal injury or damage to equipment or property.

WARNING! General warning. Failure to observe may result in personal injury or death from fire or explosion.

WARNING! Risk of electrical shock. Failure to observe may result in personal injury or death.

CAUTION! Failure to observe may result in minor personal injury or equipment and property damage.

NOTE: Important information. Failure to observe may result in improper assembly, installation, or equipment damage.

Refer to the National Fire Protection Association publication NFPA 33 for standards on installation and operation of powder spray systems; and to federal, state, local, and regulatory agency codes for laws governing installation and operation of these systems.

For more detailed information regarding safety refer to the 500 Series Powder Coating System manual, powder delivery equipment manuals, and other system equipment manuals.

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UNLOADING and STORAGE

The Nordson 500 Series Powder Spray Booth is shipped partially assembled, wired, and plumbed. You will need forklift trucks or other rigging equipment to unload the system from the carrier.

CAUTION! Do not attempt to lift equipment using covers, doors, panels, or cable and hose connections. Always balance the load when lifting. Never put stress on flat sheet panels.

Move all equipment to an indoor storage area, close to the installation site.

NOTE: Equipment stored outside and not protected from the elements could become damaged, voiding any warranty.

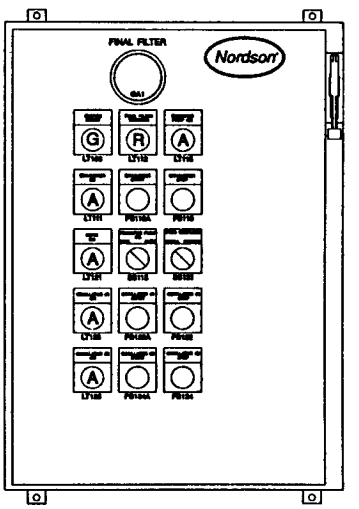
UNPACKING

Locate the system control panel (Fig. 1.1). The control panel contains the shipping documents, listing the skids and boxes and their designations. A separate enclosed Packing Checklist lists the items on each skid and in each box.

When the shipment is unloaded, inventory and inspect each skid and box. If you discover damage or an inventory discrepancy, report this to your Nordson Representative immediately. In addition, report any damages to the carrier and keep a copy of the report for your Nordson Representative.

Figure 1.1

System Control Panel



PREPARATION

TOOLS

Having the proper hand and power tools will make installation of the Nordson® 500 Series Powder System and its components easier and faster. The following is a list of required and recommended tools:

- ❑ C-clamps (and/or welder's clamps)
- ❑ Caulking Gun
- ❑ Chalk Line
- ❑ Misc. Electrician's Tools
- ❑ Multi-meter
- ❑ Material Handling Equipment
- ❑ Pipe Wrenches
- ❑ Pliers (including vise-grip)
- ❑ Plumb-bob and Line
- ❑ Misc. chains or straps
- ❑ Portable Air or Electric Drills, Wrenches
- ❑ Razor Knife
- ❑ Screw Driver Sets (straight blade and Phillips head)
- ❑ Levels (minimum 3 ft.)
- ❑ Carpenters Square
- ❑ Torque Wrench (up to 100 inch-pounds)
- ❑ Tubing Cutter
- ❑ Wrench Sets (including socket, open-end, Allen, and adjustable)
- ❑ Chain Fall or Come-a-long
- ❑ Poly Welder

You will need a forklift truck with a minimum lift of 8 feet for assembly and placement of the fan section and fan support legs, and for movement of the booth base and other system components.

FOUNDATION

The Nordson 500 Series Powder System does not normally require any special foundation. However, a smooth and level concrete floor will reduce the time and effort required to install the system.

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Section 2
Booth Base

Introduction • Fixed Booth Base

The base is the platform upon which the canopy (booth enclosure) stands. It consists of a pan mounted on structural legs, with an attached inlet frame. The base is normally shipped with pneumatic plumbing and electrical wiring in place.

CAUTION! Do not try to lift equipment using covers, doors, panels, or cable or hose connections. Always balance the load when lifting. Never put stress on flat sheet panels.

FIXED BOOTH BASE

Refer to Figure 2.1.

___ 1. Locate and mark the center line of the booth base at each end.

___ 2. Using a plumb-bob(s) and a chalk line, locate the conveyor's center line and snap a line on the floor. (If the conveyor is not installed, locate its future center line on the floor and snap a chalk line.)

NOTE: If the conveyor's center line can not be determined, contact your Nordson Representative for further instructions.

___ 3. Center the base under the conveyor, with the inlet frame on the side where the color module and fan section will go.

STOP! At this point, go on to Section 3, Canopy Assembly. Complete the steps below after the canopy has been assembled.

___ 4. Drill the appropriate size holes into the foundation for anchoring the base legs. (Use the holes provided in each leg as a template.)

NOTE: Due to space restraints it may be necessary to mark the hole locations and move the base before drilling the holes. (Once drilling is completed, move the base over the holes.)

___ 5. Level the booth base. (Use a three foot or longer level.) Shim under the legs if necessary. Recheck the base position after leveling.

___ 6. Bolt the base legs to the floor.

___ 7. Make sure the inlet frame, bolted to the base, is level and plumb. Shim if necessary.

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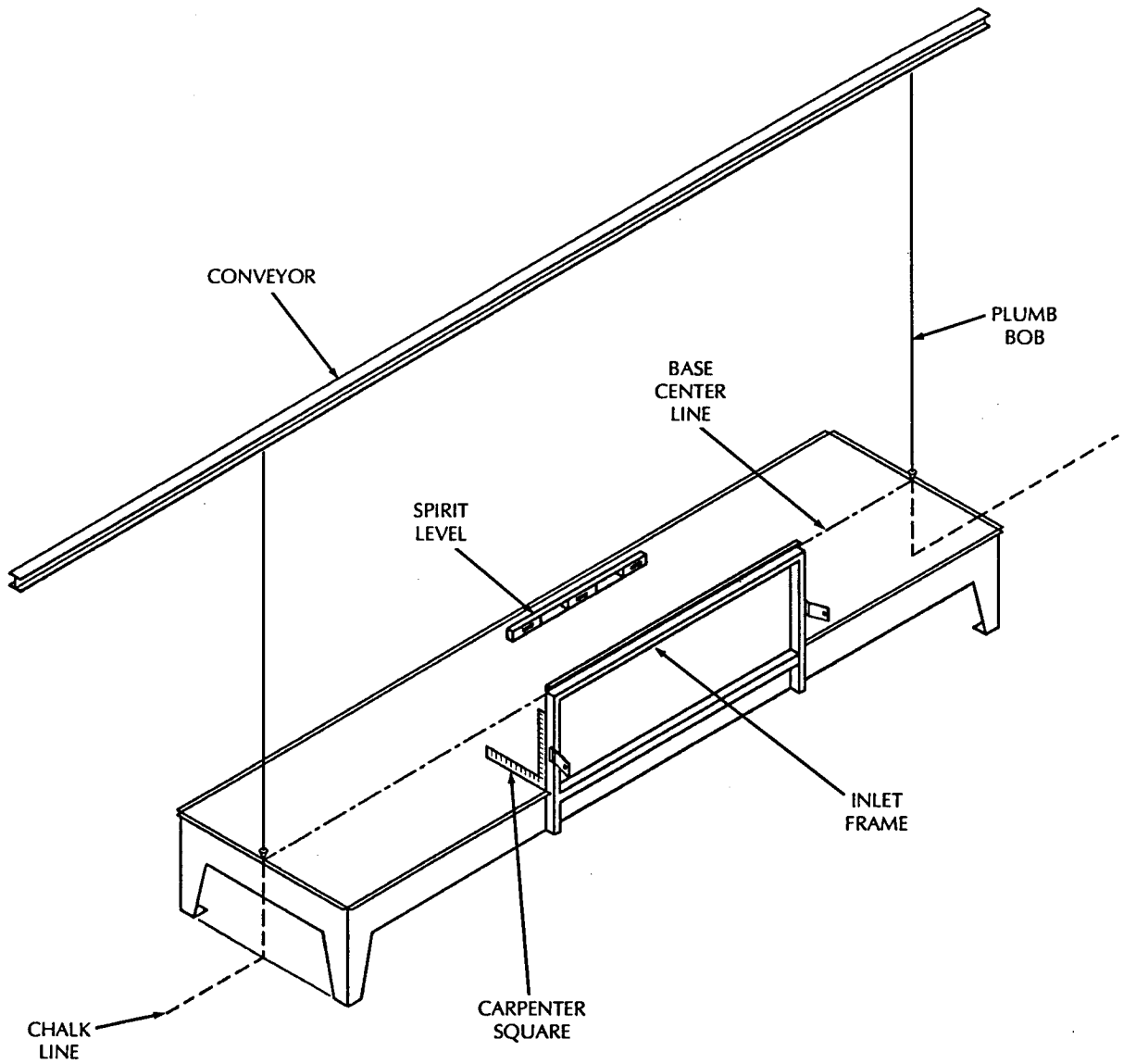
Fixed Booth Base, cont.

Figure 2.1



Roll On/Off Booth Base

ROLL ON/OFF BOOTH BASE

The roll on/off base is supported by flanged wheels and casters, which allow it to be rolled on-line when in use and off-line when not in use.

Refer to Figure 2.2.

___ 1. Locate and mark the center line of the booth base at each end.

___ 2. Using a plumb-bob(s) and a chalk line, locate the conveyor's center line and snap a line on the floor. (If the conveyor is not installed, locate its future center line on the floor and snap a chalk line.)

NOTE: If the conveyor's center line can not be determined, contact your Nordson Representative for further instructions.

___ 3. Position the base under the conveyor, with the inlet frame on the side where the color module and fan section will go.

NOTE: Precise centering of the booth base will take place later.

Refer to Figure 2.3.

___ 4. Lift the base approximately 8 inches off the floor and block it in place.

___ 5. Locate the 2 base support beams (with flanged wheels attached).

___ 6. Position the support beams under the short base legs with the wheel flanges facing inward (rails on the outside of the flanges) and the mounting holes for the fan section's support legs on the inlet frame side of the beam.

___ 7. Attach support beams to the short base legs using hex bolts (1/2"-13 x 1-1/2") and washers (1/2").

___ 8. Measure the diagonal distances between the support beams, from end to end.

___ 9. Adjust the beams until the diagonal measurements are equal (1/16 inch), then tighten the bolts.

___ 10. Under the center of each end base leg, attach a fixed 6 inch caster using hex bolts (1/2"-13 x 1-1/2").

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Roll On/Off Booth Base, cont.

Figure 2.2

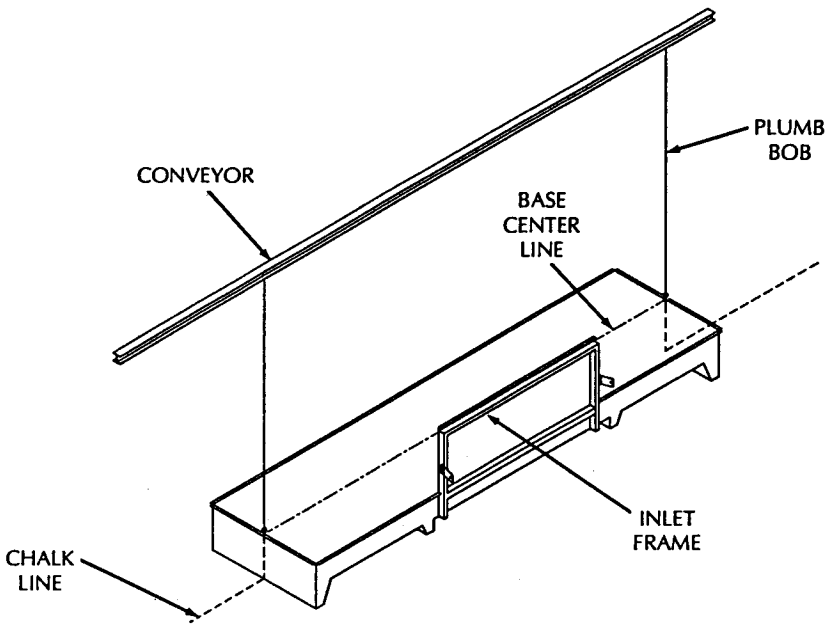
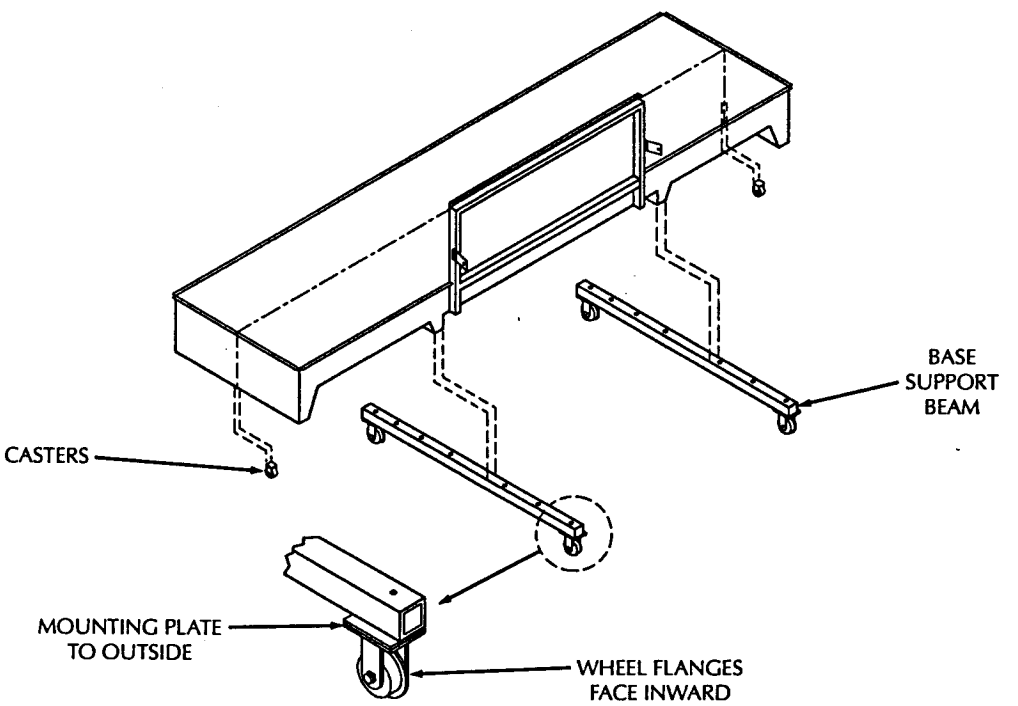


Figure 2.3



Roll On/Off Booth Base, cont.

Refer to Figure 2.4.

___ 11. Locate the two pre-drilled rails and position them under the flanged wheels of the support beams.

___ 12. Lower the base onto the rails and floor.

___ 13. Roll the base under the conveyor, being careful that the flanged wheels remain on the rails. Center the base under the conveyor.

___ 14. Block the base end casters after the base is properly positioned.

___ 15. Position the rails so that the (on-line) end stops are locked up against the flanged wheels. Adjust the rails tight against the wheel flanges.

NOTE: Distance between rails:

512/518 booths	102.5 inches
524 booth	132.5 inches

___ 16. Recheck the base alignment and adjust if necessary.

STOP! At this point, go on to Section 3, Canopy Assembly. Complete the steps below after the canopy has been assembled.

___ 17. Make sure base and canopy are aligned with conveyor. Unblock the end base casters and carefully roll the base off-line approximately 8 inches.

___ 18. Using the rail holes as a guide, drill into the foundation and anchor the rails to the floor at the on-line end only. (Hardware not included.) If the floor is not level, you may have to shim under the rails.

___ 19. Carefully roll the base assembly along the rails to the off-line position, checking end casters and flanged wheels clearances. Shim as necessary.

NOTE: Make sure the rails are tight against the wheel flanges in the off-line position. The base must roll freely from off-line to on-line position with the wheel flanges tight against the rails.

___ 20. Drill through remaining rail holes and anchor the rail to the floor.

___ 21. Position the base in the on-line position.

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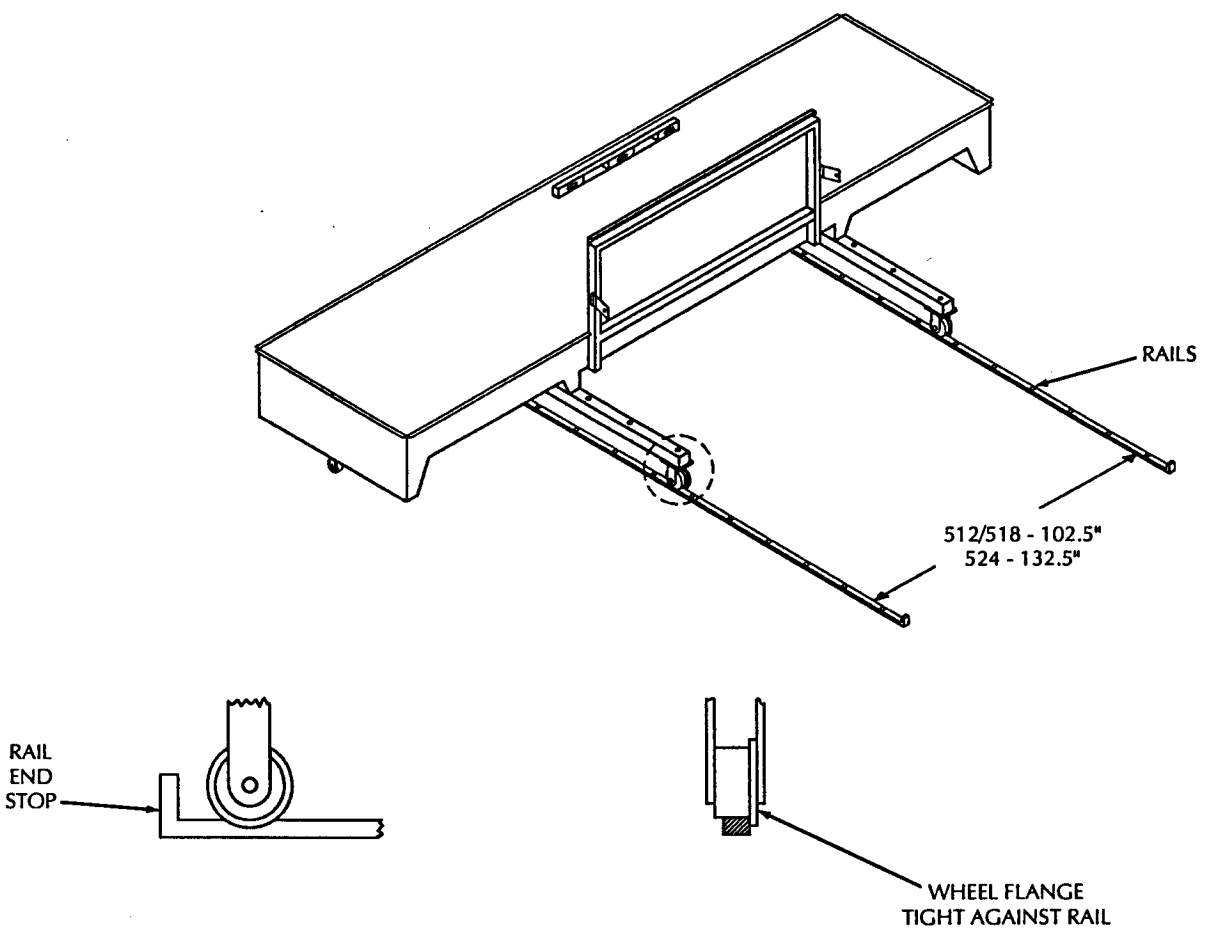
Roll On/Off Booth Base, cont.

___ 22. Level the booth base. (Use a three foot or longer level.)

___ 23. Make sure that the booth base rolls freely on the rails. Adjust if necessary.

___ 24. Make sure the inlet frame, bolted to the booth base, is square and plumb. Shim as necessary.

Figure 2.4



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Section 3
Canopy Assembly

Introduction • Canopy Assembly

The powder booth canopy (enclosure) is constructed from a series of flanged panels. The panels are made of polypropylene, and/or stainless steel.

Canopy assembly procedures may vary from system to system depending on conveyor and booth configurations. The following procedures are for a typical 500 Series Booth Canopy.

CAUTION! Do not try to lift equipment using covers, doors, panels, or cable or hose connections. Always balance the load when lifting. Never put stress on flat sheet panels.

Canopy Assembly

Refer to Figure 3.1.

___ 1. Lay out the canopy panels on a clean, clear area, taking care to avoid scratching or damaging the panels.

NOTE: Poly panels have seam designations, which are located in the upper 1/3 of the panel. These designations are to be matched (A-A, B-B, etc.) when assembling the panels.

___ 2. Locate and identify the fasteners needed to assemble the canopy.

a) Nylon hex bolts (5/16" - 18 X 1-1/4") and nuts (5/16" - 18), for assembly of polypropylene to polypropylene panels.

b) Nylon flat head bolts (5/16" - 18 X 1-1/4"), and nuts (5/16"- 18), for assembly of polypropylene baffles to polypropylene panels. (Flat head bolts fit countersunk holes.)

c) Steel hex bolts (5/16"-18 X 1/4"), nuts (5/16"-18), and washers (5/16"), for assembly of polypropylene panels to steel panels, or steel to steel panels. (The steel washers are used on the polypropylene panel side of the assembly, when applicable.)

d) C-section clamping channels, to join the canopy to the base and inlet frame. (The clamping channel bolts engage the bottom of the steel base angle.)

WARNING! An isolated metallic bolt can accumulate an electrostatic charge which, when discharged, may cause an electrical shock or a fire. Always use the proper fasteners when assembling the canopy.

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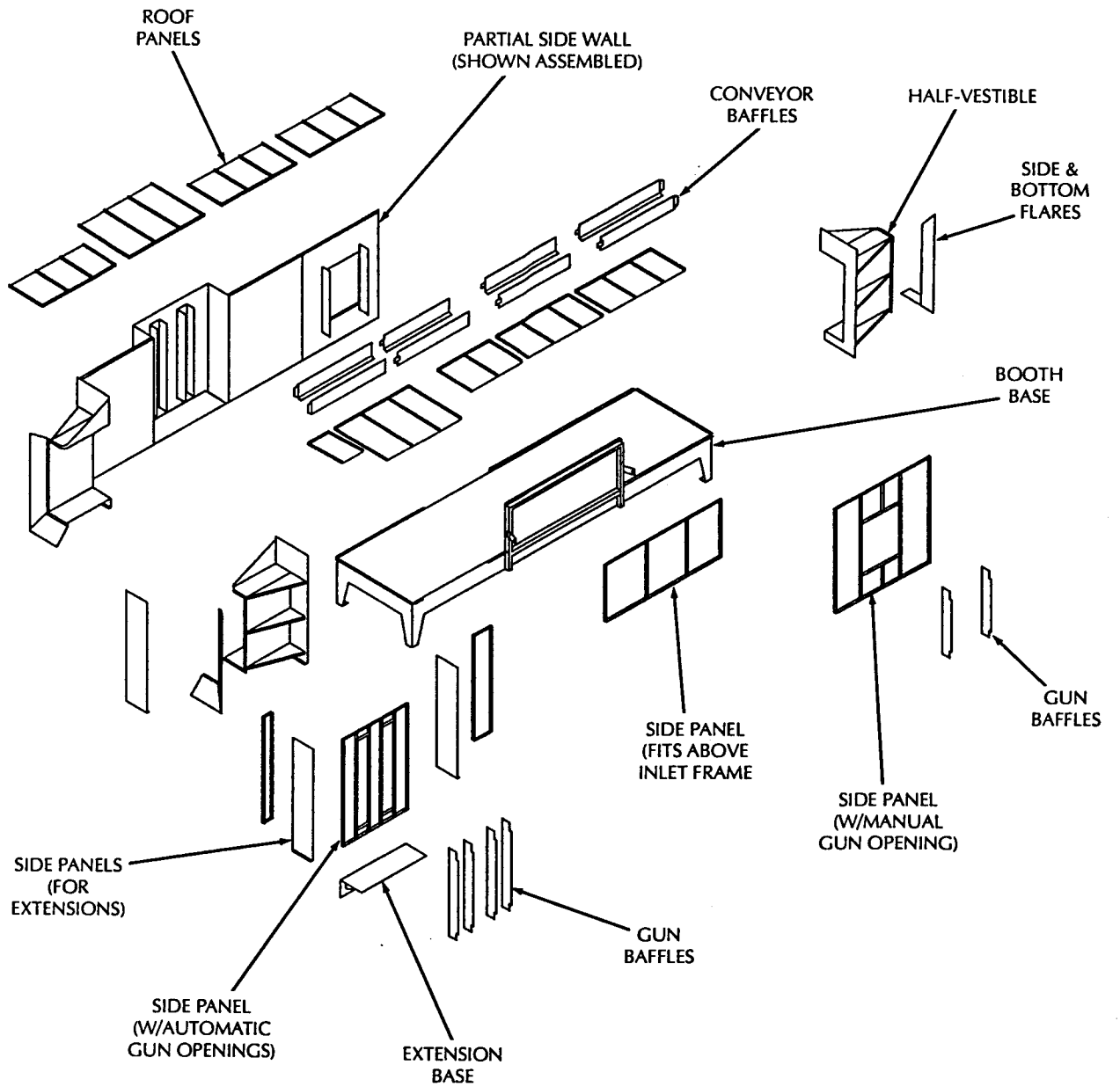
Canopy Assembly, cont.

Figure 3.1



Canopy Assembly, cont.

Refer to Figure 3.2.

___ 3. Starting with seam designation (A), locate all side wall panels, including both half-vestibule ends, for the inlet frame side of the booth. Position the panels along the booth base following the seam designations.

NOTE: Hand-tighten fasteners until otherwise instructed.

___ 4. Bolt the canopy extension bases to the booth base. Holes are provided in the base. Use steel hex bolts. washers and nuts.

___ 5. Assemble the half-vestibules and their corresponding sidewall panels into corner sections that can be easily lifted onto the base.

NOTE: If the assemblies are too cumbersome to be lifted, position the panels and half-vestibules on the base and then assemble.

___ 6. Lift and position half-vestibules and their mating sidewall panels on the base. Brace or support as necessary.

___ 7. Temporarily clamp the assemblies to the base with C-section clamping channels. Use the channels as shown in Figure 3.2. The vestibule/sidewall assemblies form structural corners which add strength and support during the assembly of the remaining sidewalls.

___ 8. Working towards the inlet frame, or center, from both corner assemblies continue to assemble the sidewall and canopy extensions.

___ 9. Fit the flanges of the sidewall panels next the inlet frame into the frame's steel channels and secure them with 5/16" - 20 X 1-1/2" bolts.

___ 10. Install sidewall panels above the inlet frame and clamp them to the top of frame, using C-section clamping channels.

___ 11. Following seam designations repeat steps 3 through 7 to assemble and install the opposite side of the canopy.

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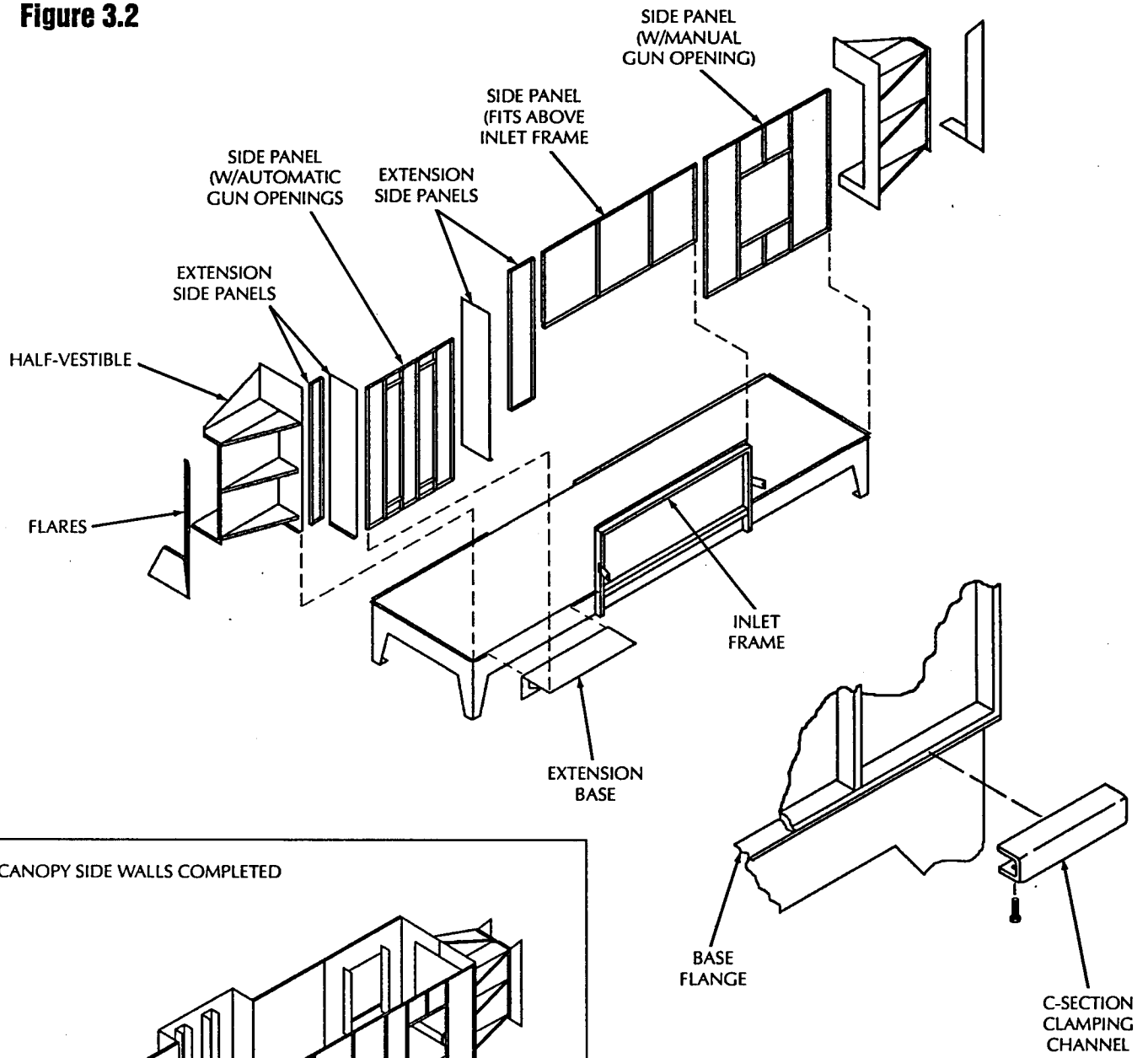
Canopy Assembly, cont.

Figure 3.2



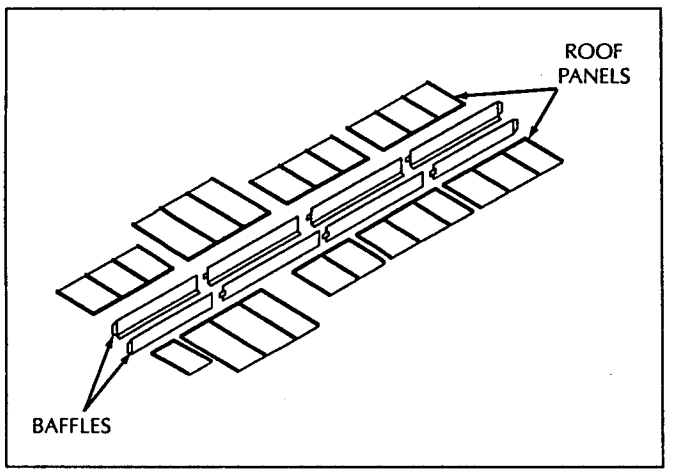
Canopy Assembly, cont.

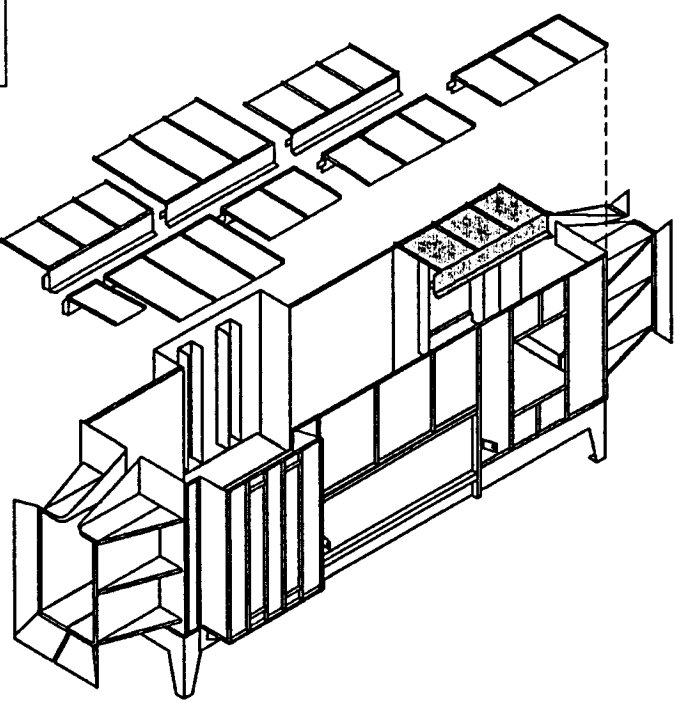
Refer to Figure 3.3.

___ 12. Locate and bolt the conveyor baffles to the roof panels, using flat head bolts and nuts. Form assemblies that can be easily lifted into place.

___ 13. Lift and fit roof assemblies to previously assembled sidewalls. Bolt them to the top horizontal flange of the sidewall panels, and to each other. Brace or support as necessary.

Figure 3.3





Canopy Assembly, cont.

___ 14. Loosen or temporarily remove the C-section clamping channels that are holding the bottom flange of the canopy to the booth base.

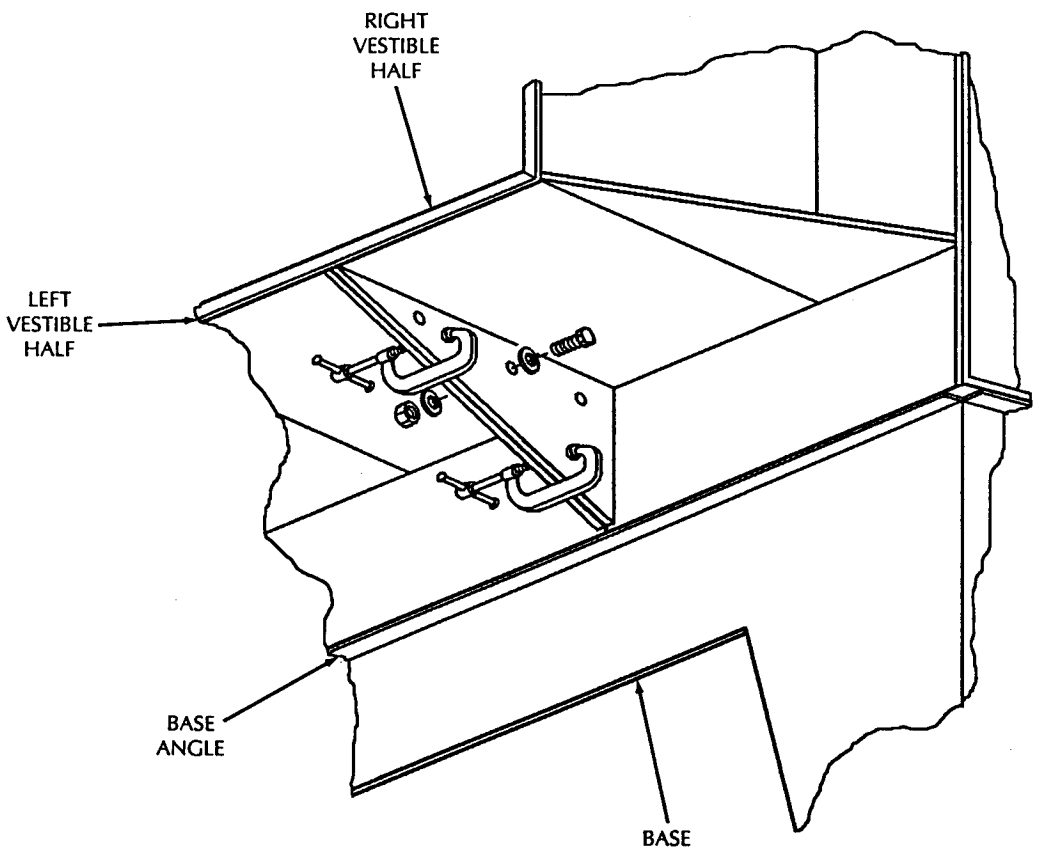
NOTE: Leave the fasteners attaching the canopy to the inlet frame in place.

Refer to Figure 3.4.

___ 15. Position the paired half-vestibules so that their bottom flanges lie flush upon the base angle. The paired vestibules should also be evenly matched, with their inner walls flush to each other.

___ 16. Tightly draw bottom gussets of the vestibules together using C-clamps and drill 3 to 4 holes, 3/8" of an inch in diameter, through both pairs of gussets. Secure with bolts, washers, and nuts, and remove C-clamps.

Figure 3.4



Canopy Assembly • Roof Supports

___ 17. Install the flares to the vestibles with poly bolts and nuts. Flares are shown installed in Figure 3.3.

___ 18. Carefully align the canopy so the interior walls are evenly spaced around the edge of the base.

___ 19. Make sure the bottom flange of each sidewall panel is lying flush upon the base angle.

___ 20. Install the C-section clamping channels over the canopy bottom flanges and base angle. Make sure the clamping channels are evenly distributed around the base.

___ 21. Securely tighten each C-channel's bolts while maintaining the alignment of the canopy.

Roof Support Installation

Locate and identify the type of roof supports included with your booth.

NOTE: If the roof supports are base- and support leg-mounted style, proceed to the color module and fan section assembly procedures. When the fan section and color module are installed, return here for roof support installation procedures.

Conveyor-Mounted Roof Supports

Refer to Fig. 3.5.

___ 1. Distribute the conveyor-mounted roof supports evenly along the length of the booth canopy.

___ 2. Install the roof supports over the top of the conveyor. Space the threaded rods evenly on each side of the conveyor.

___ 3. Bolt the roof brackets, attached to the threaded rods, to the vertical flange of the roof panels and conveyor baffles. (When possible use existing holes.)

___ 4. Level the roof panels and plumb the sidewalls by adjusting the threaded rods and changing their spacing.

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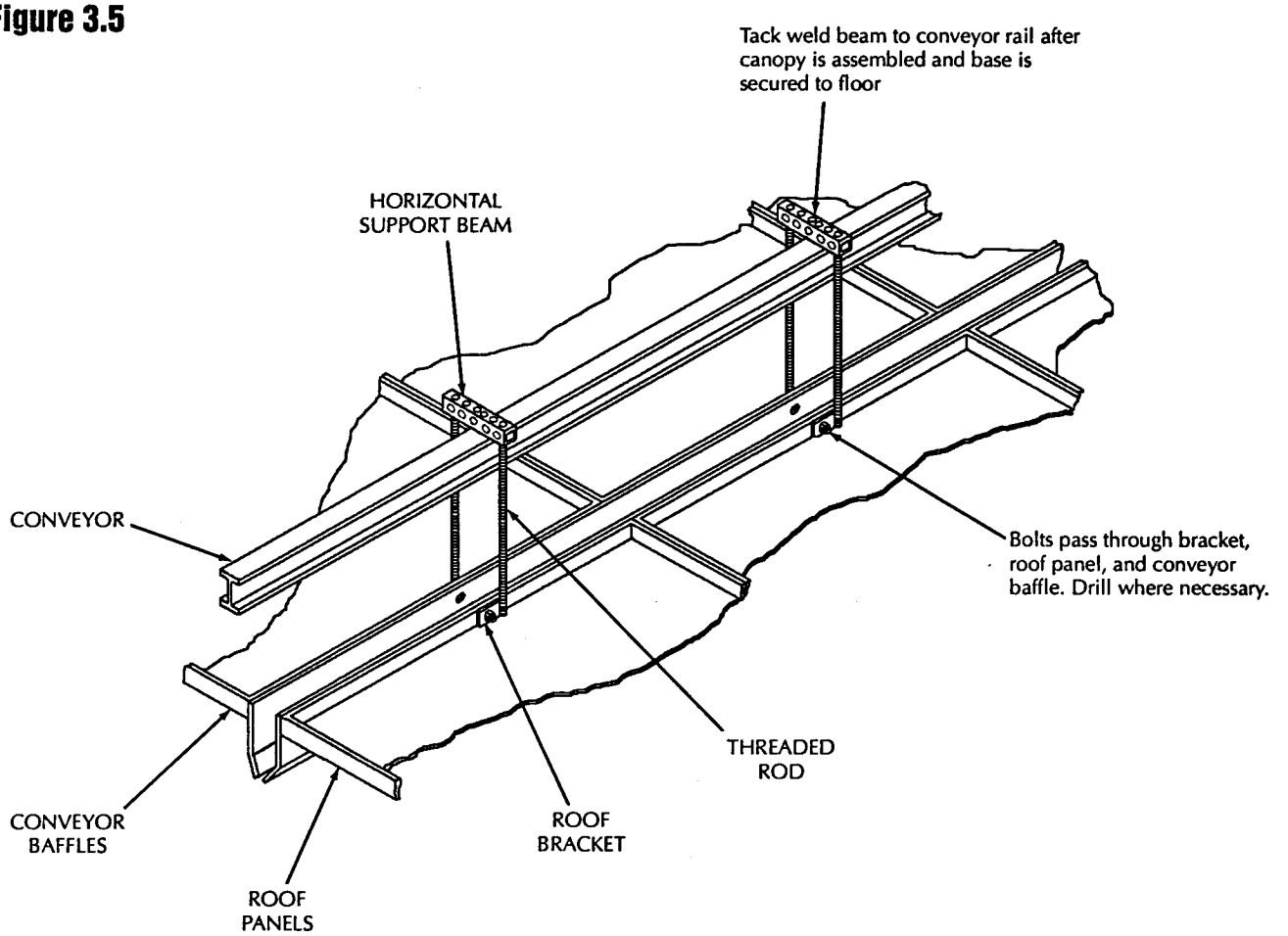
Roof Supports, cont.

Figure 3.5



NOTE: Maintain proper conveyor slot spacing and alignment. The conveyor slot should be approximately 5-1/2" at the top of the conveyor baffle and 3 inches at the bottom. The slot must be centered under the conveyor.

___ 5. Tack weld the roof support horizontal beams to the conveyor (or use other means to secure them in place).

Roof Supports, cont.

Base- and Support Leg-Mounted Roof Supports

Refer to Figure 3.6.

Base-Mounted

___ 1. Attach the roof support mounting brackets to the designated areas of the base, using 1/2" - 13 X 1-1/2" bolts.

___ 2. Assemble the vertical supports to the horizontal supports using 1/2" - 12 X 3-1/2" bolts, washers, and nuts.

___ 3. Attach two alignment bolts to each support assembly.

___ 4. Install each support assembly to the base mounting brackets using two 1/2" - 12 X 3-1/2" bolts, washers, and nuts. (Do not tighten.)

___ 5. Attach each horizontal support to the vertical flanges of the roof panels and conveyor baffles. (When possible use existing holes.)

NOTE: Proceed to installation of support leg-mounted roof supports.

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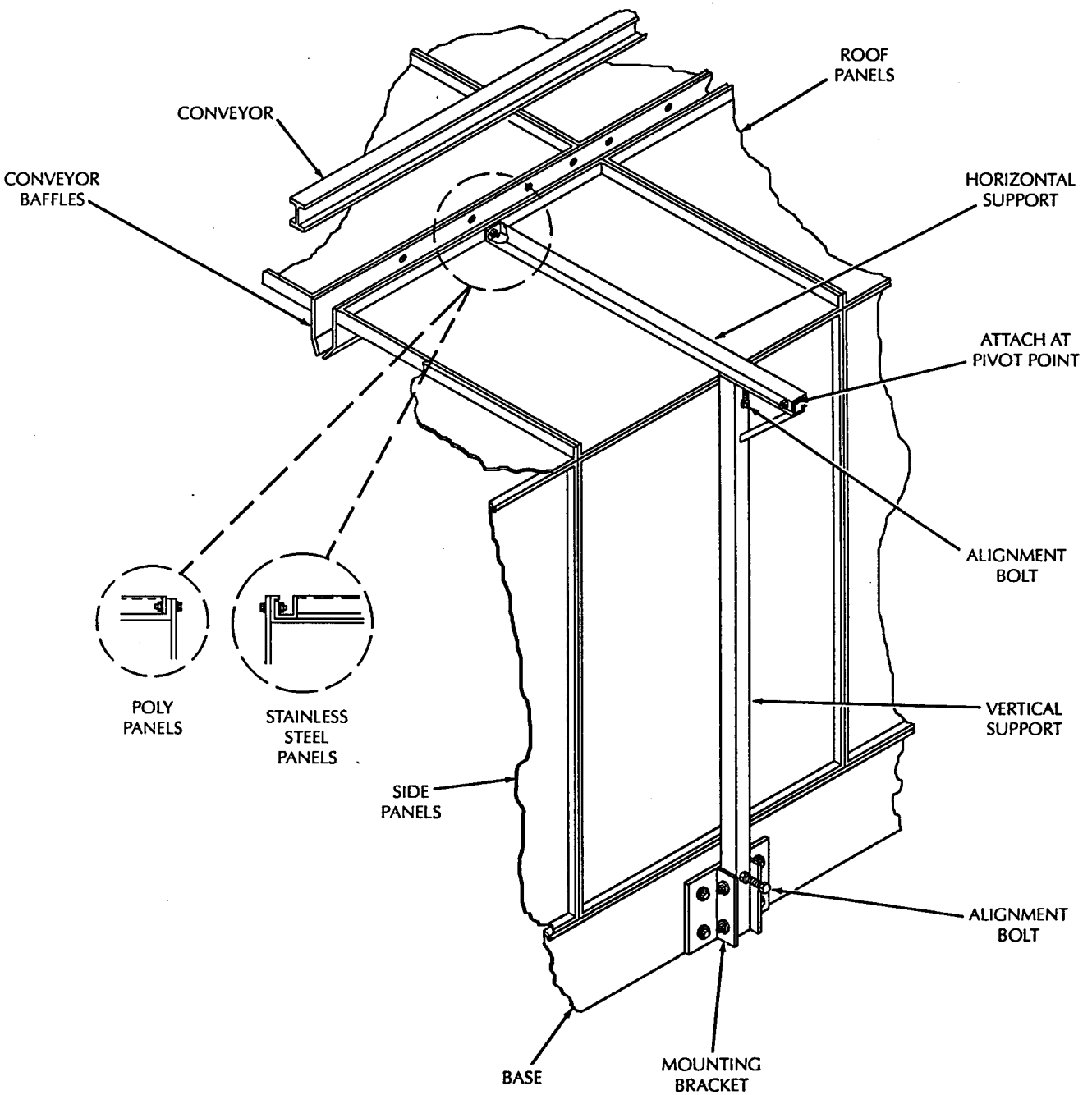
Roof Supports, cont.

Figure 3.6



Roof Supports, cont.

Support Leg-Mounted

Refer to Figure 3.7.

___ 6. Assemble the vertical support brackets to the horizontal supports using 1/2" - 13 X 3-1/2" bolts, washers, and nuts.

___ 7. Attach the alignment bolt to each roof support.

___ 8. Install roof support assemblies to the top of each fan support leg, using 1/2" - 13 X 1-1/2" bolts, washers, lock washers, and nuts. (Do not tighten.)

___ 9. Attach each horizontal support to the vertical flanges of the roof panels, and conveyor baffles. (When possible use existing holes.)

___ 10. Adjust the alignment bolts of each base- and support leg-mounted roof support to level the roof panels and plumb the sidewalls.

NOTE: Maintain proper conveyor slot spacing and alignment. Conveyor slot should be approximately 5-1/2" at the top of the conveyor baffle and 3 inches at the bottom. The slot must be centered under the conveyor.

___ 11. Tighten all bolts securing supports.

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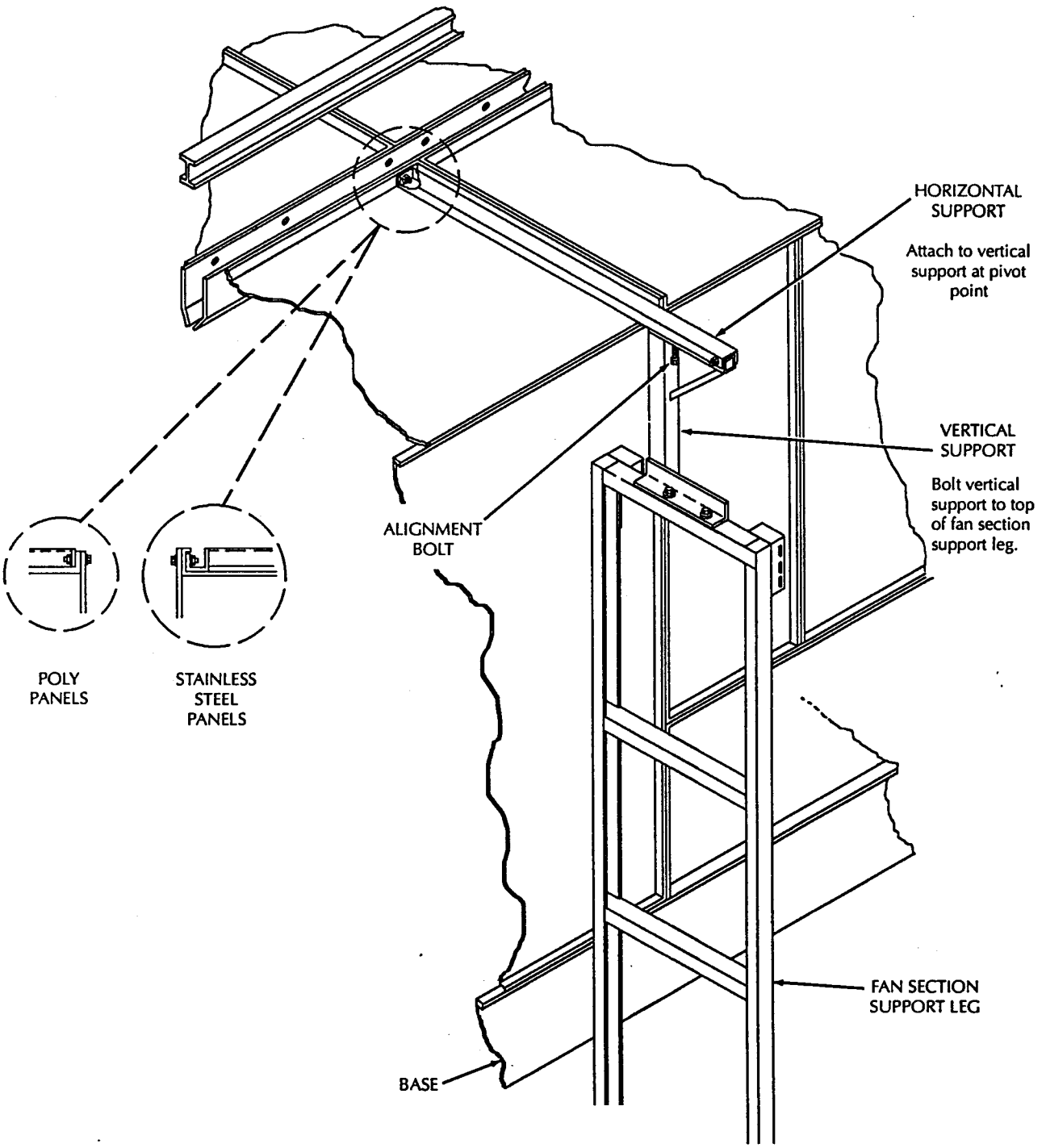
Roof Supports, cont.

Figure 3.7



Completing Assembly

Conveyor Baffles

___ 1. Align conveyor baffles and drill through the overlapping tabs, then bolt in place.

Completing Canopy Assembly

___ 1. Tighten all panel fasteners to 15 inch-pounds while maintaining interior joints as flush as possible.

___ 2. Install gun slot baffles in their designated automatic and manual openings. Attach a pair of rubber flaps to each of the automatic gun baffles, if used.

___ 3. Install manual opening doors, if not already installed.

___ 4. Heat-weld all internal polypropylene seams.

___ 5. Using supplied silicone sealant, run a smooth bead around the interior perimeter of the booth canopy/base joint and inlet frame. If your canopy uses stainless steel panels, run a smooth bead of sealant between each panel. (Allow sealant to cure for approximately 24 hours before disturbing joint.)

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Section 4
Color Module

Color Module Installation

The color module is shipped pre-assembled, with cartridge filters installed.

CAUTION! Do not try to lift equipment using covers, doors, panels, or cable or hose connections. Always balance the load when lifting. Never put stress on flat sheet panels.

Refer to Figure 4.1.

___ 1. Remove the two shipping screws securing the velocity plate to the color module. Remove the velocity plate.

___ 2. Inspect the installed cartridge filters for shipping damage.

___ 3. Tighten the cartridge mounting nuts to 60 inch/lbs.

___ 4. Make sure each cartridge gasket is properly sealed against the mounting plate by trying to insert the Nordson supplied ruler or a .015 inch feeler gauge between the gasket and the mounting plate, all around the joint.

NOTE: If the ruler or feeler gauge can be inserted between the gasket and the mounting plate, continue to torque the mounting nuts and bolts equally until the proper seal is obtained. (DO NOT torque past 96 inch/lbs.)

___ 5. Check the C-section clamps which secure the fluidizing pans and plates to the hoppers in the bottom of the module. Tighten the clamp bolts in a criss-cross pattern to 25 inch/lbs. Four C-section clamps are used on each hopper.

___ 6. If used, install the powder load chute and vent assist plates. If used, install the feed hopper direct vent plate in place of the blank cover plate. (Refer to your equipment location drawing.)The direct vent plate is sometimes shipped attached to the feed hopper.

NOTE: For shipping, the vent assist plate is usually attached to the color module in the reverse position. Remove the plate and reattach it, with the long end of the tube on the outside, pointing upwards. Use the provided silicone caulk to seal the plate to the color module.

___ 7. If using a vent assist plate(s), connect 3/8" diameter tubing from the vent assist to the quick disconnect plate mounted on the color module. (Refer to your system pneumatic drawing.)

___ 8. Make sure all existing tube connections on the color module are secure. (Refer to your system pneumatic drawing.)

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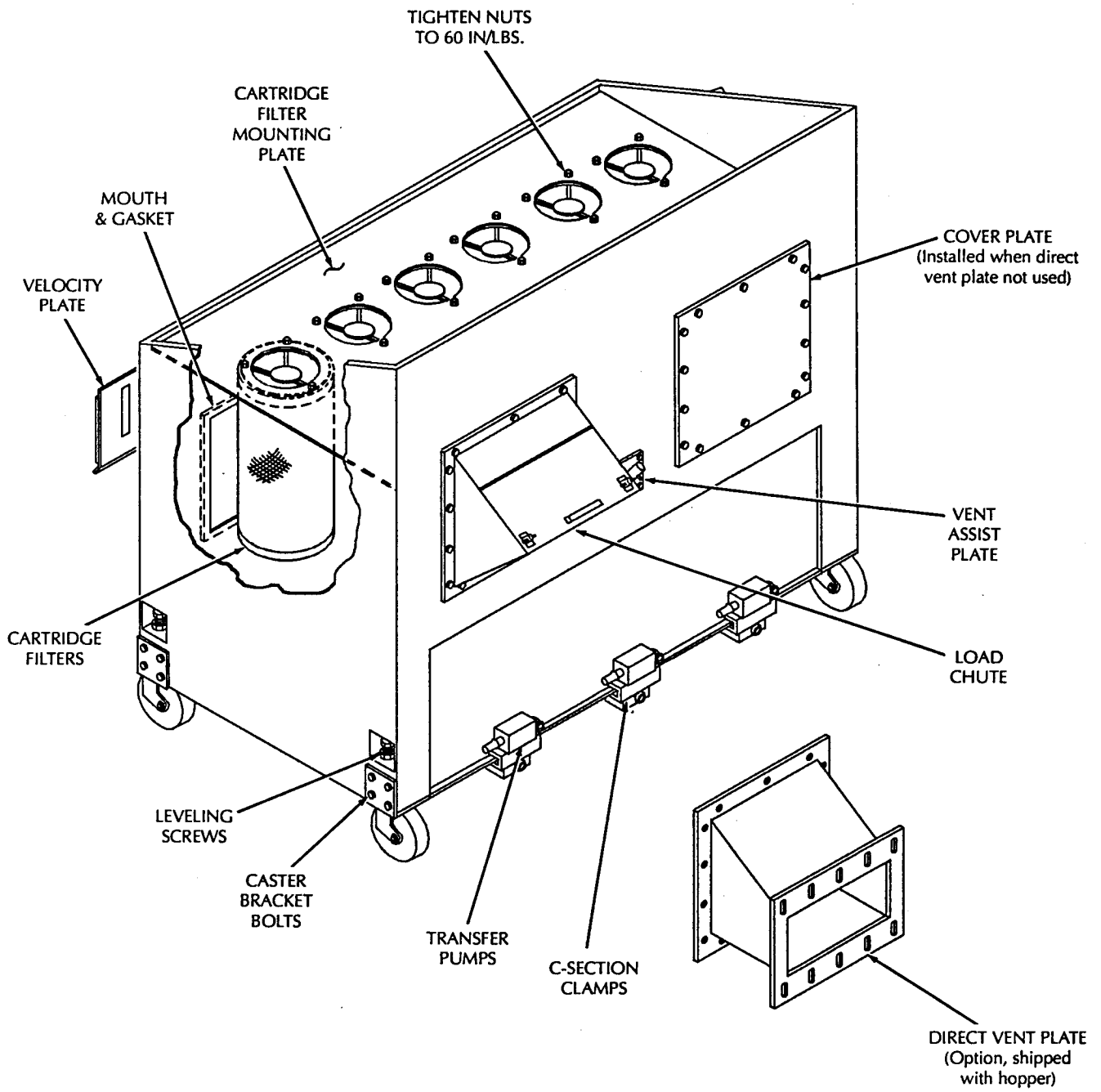
Color Module Installation, cont.

Figure 4.1

(Drawing not to scale.)



Color Module Installation, cont.

___ 9. Inspect the neoprene foam gasket on the color module mouth (opening in the side where module mates to inlet frame). Replace the gasket if damaged.

___ 10. Level and set the height of the color module by loosening the caster bracket bolts and adjusting the leveling screws, so the mouth side of the color module is 64 inches tall and the opposite side is 87-1/4 inches tall.

___ 11. Re-install the velocity plate. DO NOT re-install the shipping screws.

___ 12. Roll the color module up to the booth, and position the mouth against the inlet frame.

___ 13. Make sure the color module is level and that the gasket around the mouth seals against the inlet frame. Adjust the color module leveling screws to obtain a good seal, if necessary.

___ 14. Tighten the caster bracket bolts and the leveling screw jam nuts.

___ 15. Move the color module to a storage area. (The color module will be repositioned during fan section installation.)

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Section 5
Fan Section

Fan Section and Support Leg Installation

The fan section and support legs will be shipped pre-wired and plumbed. When possible, assemble the fan section to the support legs off-line, using a forklift truck for all lifting and handling.

CAUTION! Do not try to lift equipment using covers, doors, panels, or cable or hose connections. Always balance the load when lifting. Never put stress on flat sheet panels.

Refer to Figure 5.1.

___ 1. Carefully position the lift truck forks in the center of the open fan section blowdown compartment. Use wood blocking on top of the forks as necessary.

___ 2. Raise the fan section off the skid and position it approximately 66" from the floor at its lowest point.

___ 3. Position the support legs beside the fan section. (Refer to the Equipment Location drawing.)

NOTE: Typically, one support leg is pre-wired and plumbed. This leg must be positioned and mounted to the fan section as shown in the Equipment Location drawing for your booth.

___ 4. Raise or lower the fan section so the slotted holes at the top of the support legs match the slotted holes in the tabs of the fan section. Attach the support legs to the fan section using 1/2" - 13 X 1-1/2" hex bolts, flat washers, lock washers, and nuts. (Hand tighten only.)

___ 5. Thread the pre-installed leveling bolts into the brackets on the sides of the fan section until the support leg mounting bolts are moved to the upper limits of the slots.

___ 6. Tighten the mounting bolts. Final leveling and positioning of the fan section will require readjustment.

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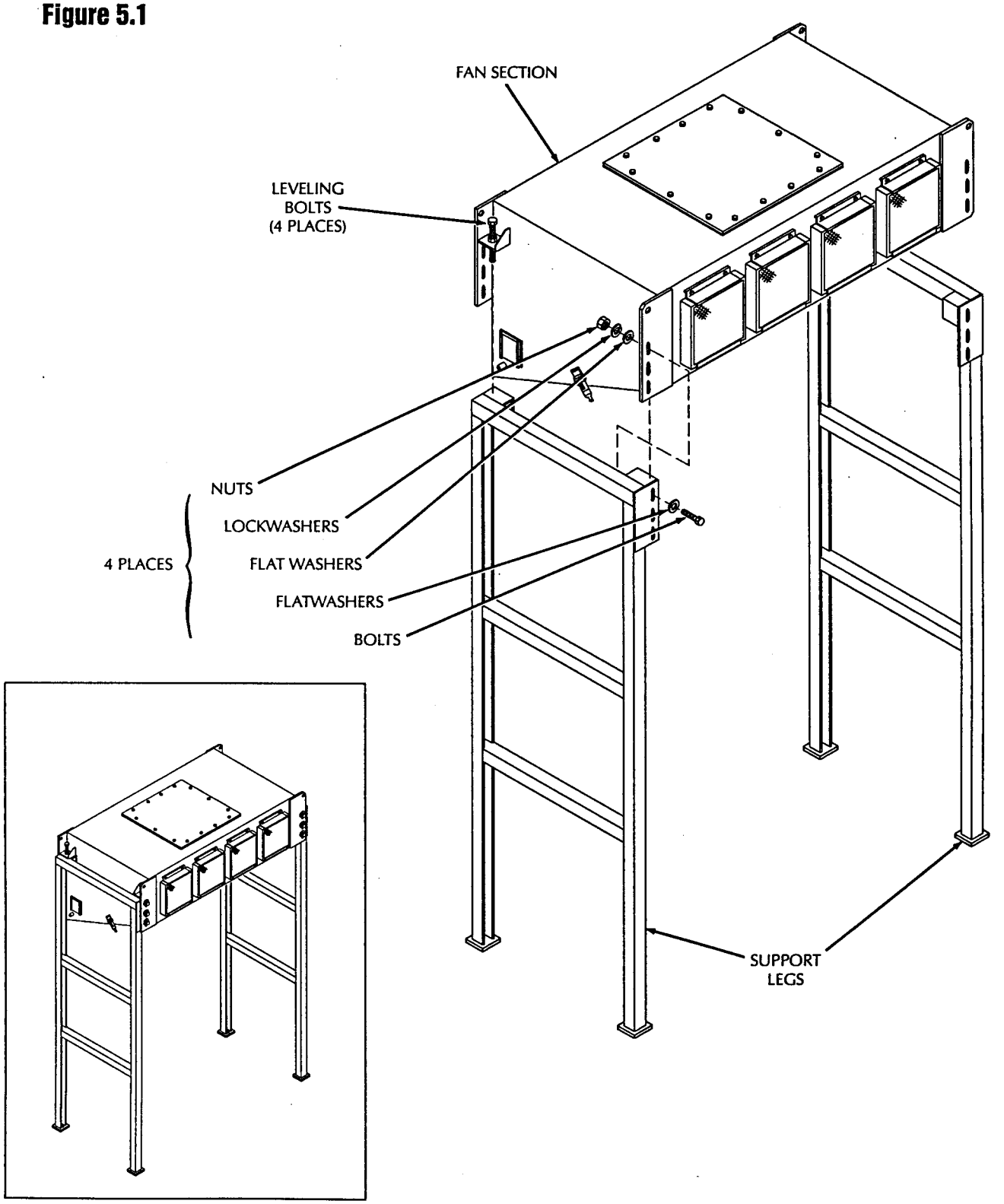
Fan Section and Support Leg Installation, cont.

Figure 5.1



Fan Section and Support Leg Installation, cont.

___ 7. Move the fan section/leg assembly to the front of the inlet frame of the booth. Position the assembly approximately 4-1/4 inches from the base.

___ 8. Lower the assembly to the floor. (If it is a roll on/off system, lower the assembly to the top of the support beams and insert 1/2" - 13 X 1-1/2" bolts with washers, through the slotted holes, and thread into the beams.) (Hand tighten only.)

Refer to Figure 5.2.

___ 9. Align the blowdown valves (Goyen valves) so the nozzles point straight down. Center-to-center distance of nozzles should be 15 inches.

___ 10. Cut 4 strips of foam gasket material to fit the bottom opening of the fan section. Apply rubber contact cement to one side of the strips and around the fan section opening and allow to dry according to instructions on the container. Install the gaskets on to the fan section. There must be no gaps at the four corner joints.

___ 11. Adjust the support legs so that they are plumb in all directions. Shim as necessary.

___ 12. Remove the shipping restraint from the limit switch on the base and position the roller arm so the color module will activate the switch just before the module's gasket meets the inlet frame.

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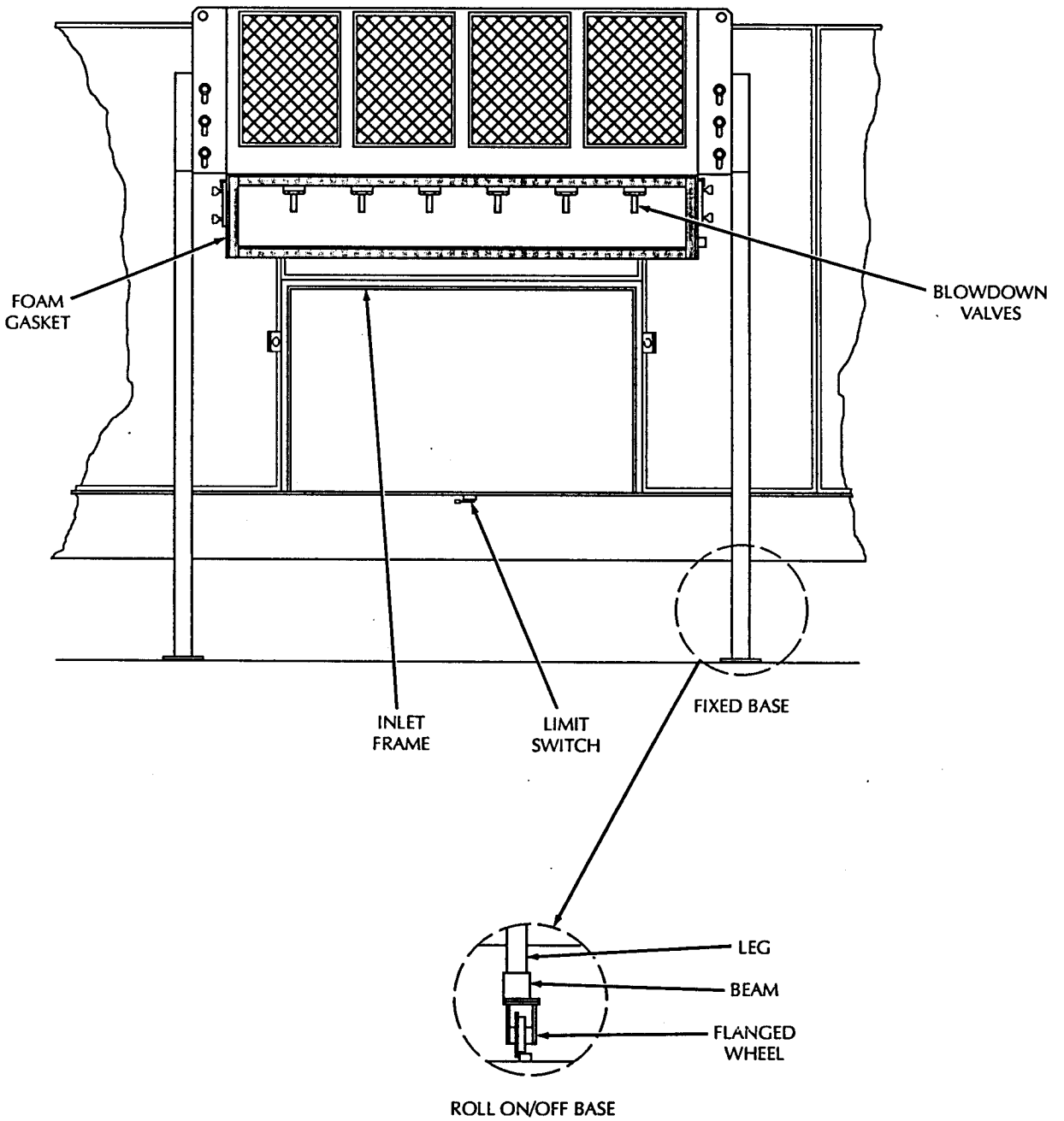
Fan Section and Support Leg Installation, cont.

Figure 5.2



Fan Section and Support Leg Installation, cont.

Refer to Figure 5.3.

___ 13. Roll the color module into place under the fan section.

___ 14. Clamp and securely tighten the color module to the inlet frame using the two draw rods included. The color module must mate equally with the inlet frame gasket on all four sides.

___ 15. Use the four leveling screws to lower the fan section until the gasket touches the color module. The fan section must mate equally with the color module on all four sides. Any difference can be corrected by adjusting the fan section leveling screws or by shimming under the fan section legs.

NOTE: Make sure the color module can freely roll in and out of position.

___ 16. Hook the retaining straps located on each side of the fan section to the color module and tighten the rachets to seal the joint between the color module and the fan section.

___ 17. Inspect all four sides of the fan section-to-color module joint for equal sealing. A thin rigid gauge (about .015" thick) should not slip between the gasket and the top of the color module. Make sure the outside walls of the fan section and the color module are in line. Readjust the leveling screws, or add or delete shims, to correct any sealing or alignment problems.

___ 18. Anchor the fan section legs to the floor using 1/2" lag bolts. If your booth is a roll on/off booth, tighten the bolts securing the legs to the beams.

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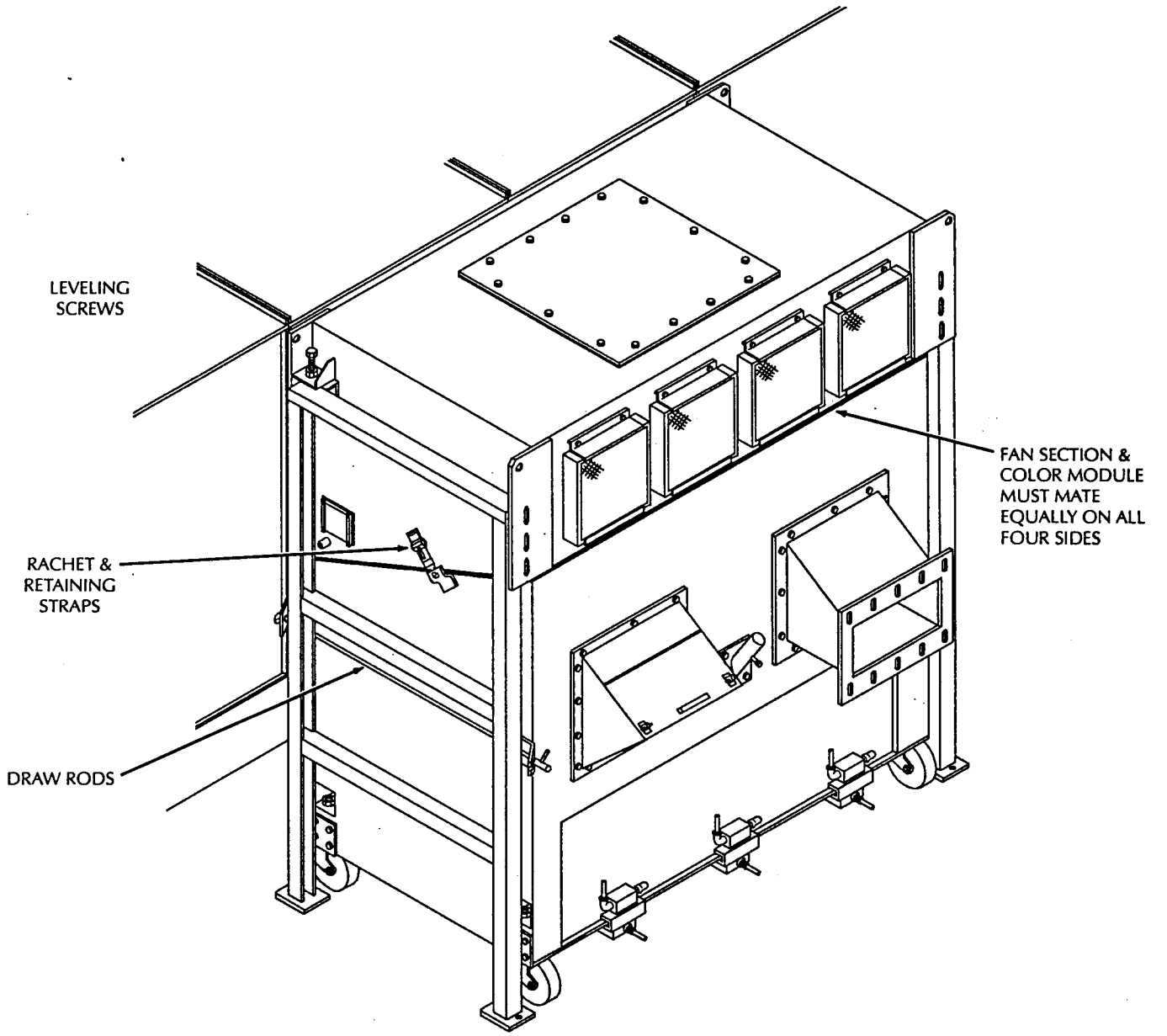
Fan Section and Support Leg Installation, cont.

Figure 5.3



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Section 6
Feed Hopper

Feed Hopper Installation

The feed hopper is shipped with the powder pumps and the sieve (if used) installed.

CAUTION! Do not try to lift equipment using covers, doors, panels, or cable or hose connections. Always balance the load when lifting. Never put stress on flat sheet panels.

Refer to Figure 6.1.

___ 1. Check, and if needed, tighten the feed hopper fluidizing plate C-section clamps in a criss-cross pattern to 25 inch/lbs.

___ 2. Make sure the installed powder pumps and their mounts are securely attached to the hopper.

___ 3. Locate and install the accumulator on top of the sieve, if removed for shipping. Install the vent tube fitting to the top of the accumulator.

___ 5. Roll the feed hopper into position at the direct vent plate on the front of the color module.

___ 6. Loosen the caster bracket bolts and adjust the caster brackets to match the hopper's vent opening to the direct vent plate and level the hopper.

___ 7. Attach the feed hopper to the direct vent plate with 5/16" - 18 X 1" bolts .

___ 8. Locate and plug the powder level sensor into the fitting on the side of the feed hopper. The sensor is typically pre-wired and secured to the leg assembly.

___ 8. Make the following connections:

- Sieve air to quick disconnect plate
- Hopper fluidizing air to quick disconnect plate
- 3-1/2" diameter vent hose from accumulator to color module
- 2" diameter hose from sieve scrap outlet to scrap bucket lid (if used)
- Hose (3/4" I.D.) from transfer pump to accumulator (recycle systems)

___ 9. Complete all sieve electrical connections.

___ 10. Check transfer pump, color module fluidizing, and vent assist air tubing. Make connections as shown on your system pneumatic drawing.

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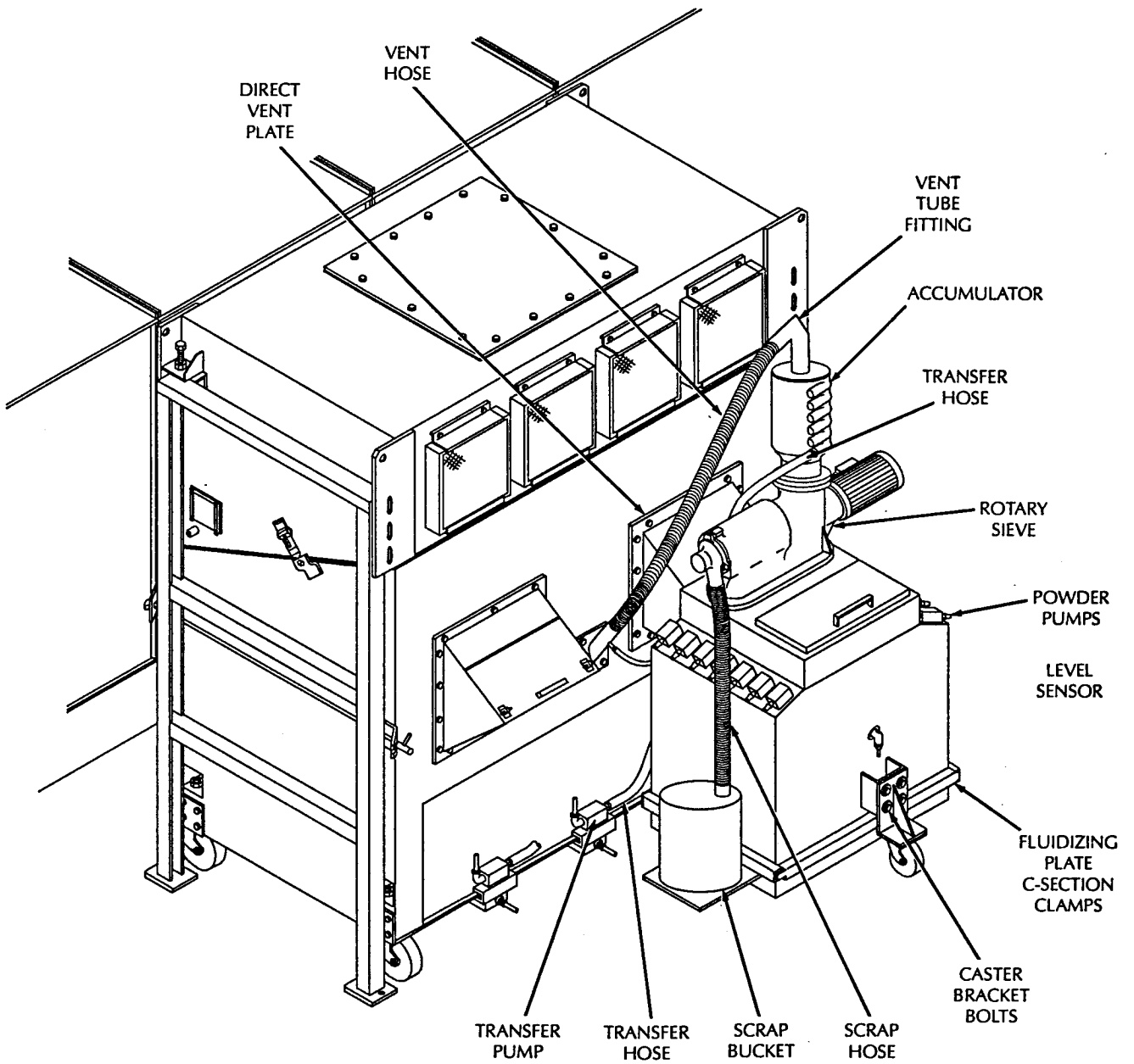
Feed Hopper Installation, cont.

Figure 6.1



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Section 7
Platforms

Platform Installation

Operator platforms can now be installed. Typically, the system electrical panel, pneumatic control panel, and fire detection system control panels are mounted to one of the platforms. Check your Equipment Location drawing before installing platforms.

Fixed Booth

Move the platforms into position below the manual gun openings in the side of the canopy. Drill appropriate size holes into the floor for anchoring the platform legs. (Use the holes provided in each leg as a template.) Bolt the platform legs to the floor.

Roll On/Roll Off Booth

Use a forklift truck to move the platforms into position and bolt them to the base, as shown in your system drawings.

Mount control panels and gun control consoles to the platforms, as shown on your system drawings.

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Section 8
Electrical and Pneumatic Connections

Electrical and Pneumatic Connections

Overall control of the booth is performed by the system electrical and pneumatic panels. The main electrical panel controls power distribution to system components through pushbuttons, relays, motor starters, timers, and interlocks.

An auxiliary blowdown valve timer panel is typically installed on one of the fan section legs. This panel contains a timer board which controls blowdown valve pulsing by energizing the valve solenoids. The solenoids are located in enclosures mounted on the side walls of the pulse valve compartment on the underside of the fan section.

The pneumatic panel contains gauges and regulators for controlling fluidizing air pressure (color module and feed hopper), transfer pump air pressure, vent assist air pressure, rotary sieve seals, fire detector heads, and other auxiliary equipment.

___ 1. Referring to the system pneumatic drawings, make tubing and hose connections to the system pneumatic panel, fan section leg assemblies, color module, and feed hopper/sieve assembly. Hoses and tubing are typically coiled up and secured to the underside of the booth base.

NOTE: Do not install powder feed hose at this time. The proper lengths of hose needed to connect the pumps to the guns cannot be determined until the guns are installed.

___ 2. Referring to the system electrical schematics, make wiring connections to the system electrical panel, blowdown valve enclosure, solenoid valve enclosures, junction boxes, and other devices. Wiring harnesses and conduit are typically coiled up and secured to the underside of the booth base. Junction boxes are provided on the base and fan section support legs.

___ 3. Install fire detection sensors and light sources (Nordson NFS-1000 system) as shown in your system drawings and according to the instructions in the fire detection system manual.

___ 4. Make electrical and pneumatic connections to the sensors and light sources from the fire detection system controller and system pneumatic panel, including connecting the fire detection system controller to the interlock on the system electrical panel.

Electrical and pneumatic schematics for a typical system are included on the following pages. **These drawings are provided only as an example.** Refer to the drawings provided with your system documentation when making electrical and pneumatic connections to your booth.

WARNING! All electrical and pneumatic connections must made according to local, state, and federal codes. All electrical work should be done by a qualified electrician.

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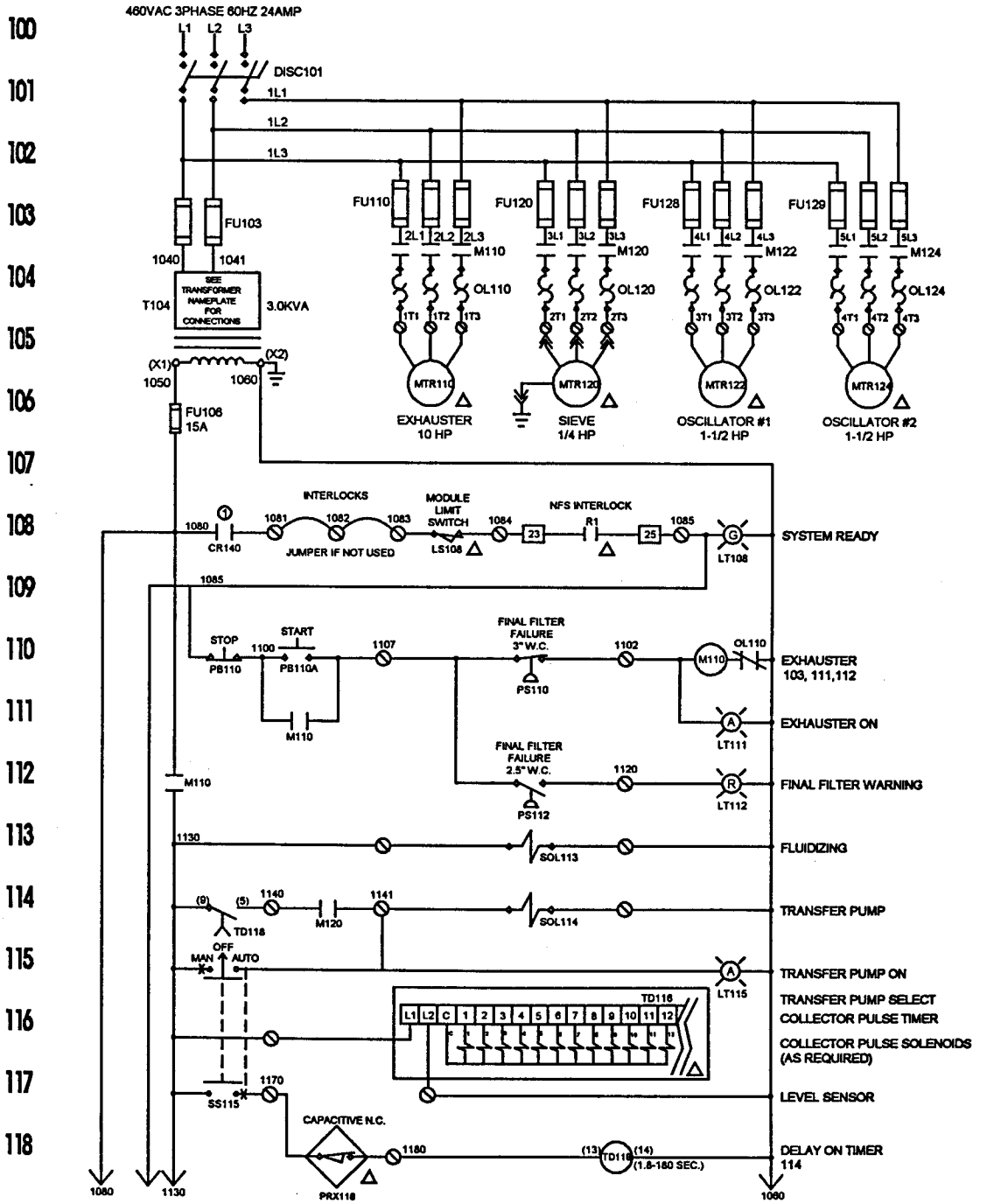
Electrical and Pneumatic Connections, cont.

Figure 8-1A

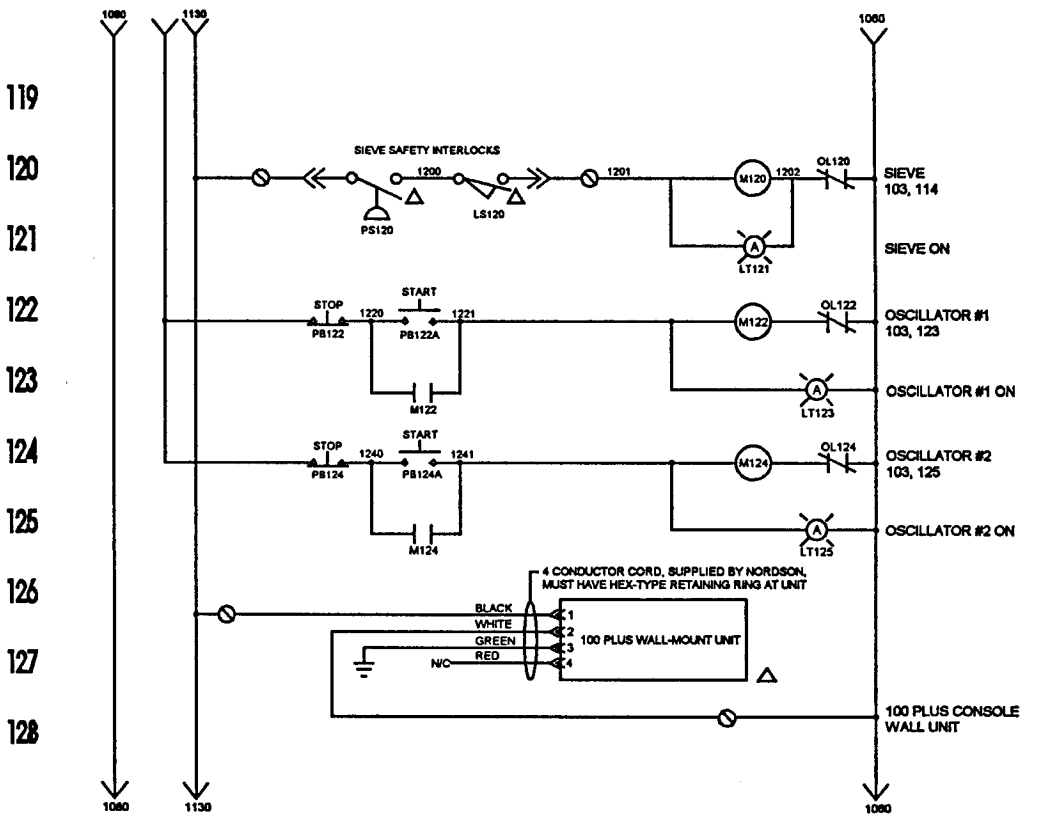
Typical System
Electrical Schematic



Electrical and Pneumatic Connections, cont.

Figure 8-1B

Typical System
Electrical Schematic
(continued from Figure 8-1A)



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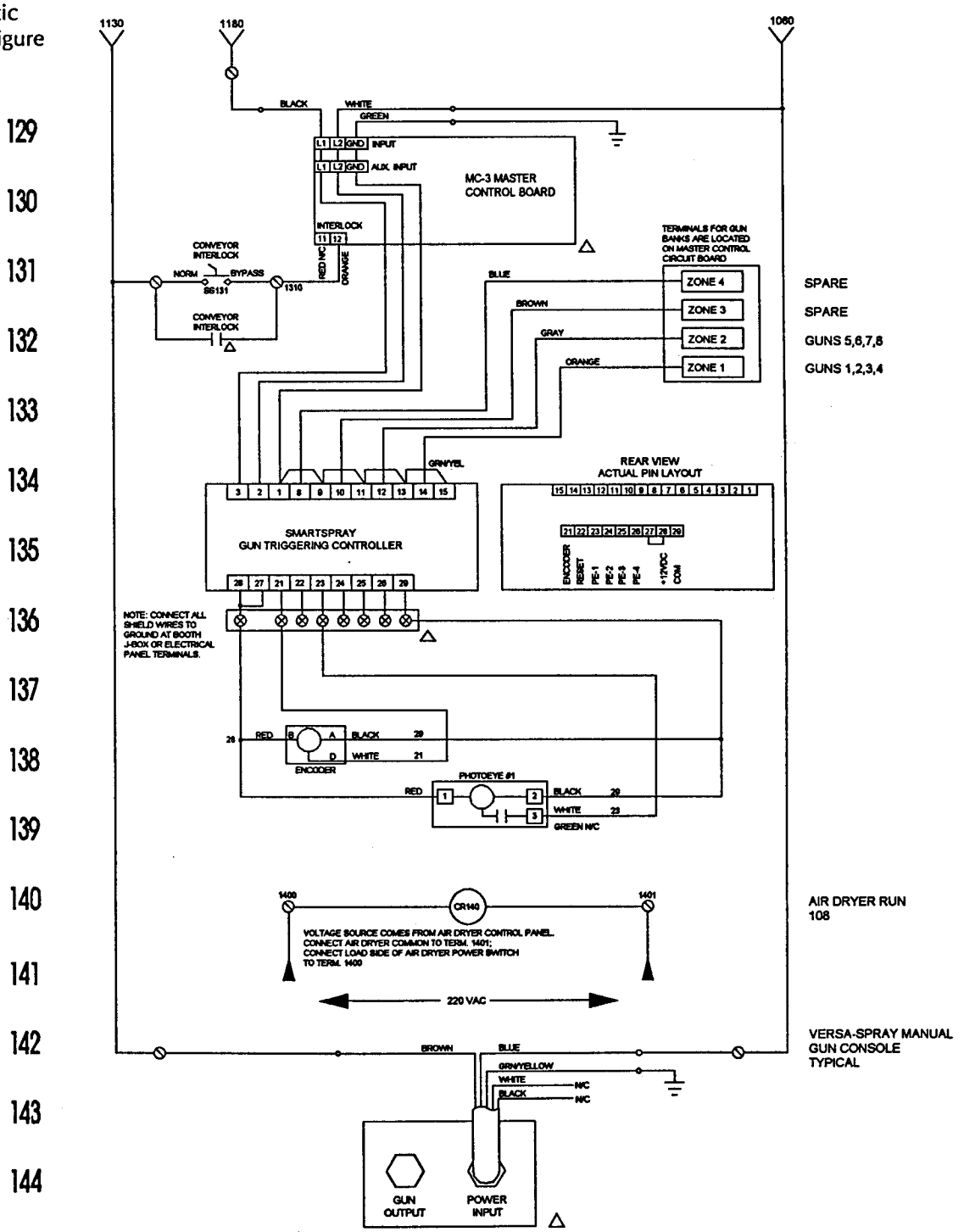
Electrical and Pneumatic Connections, cont.

Figure 8-1C

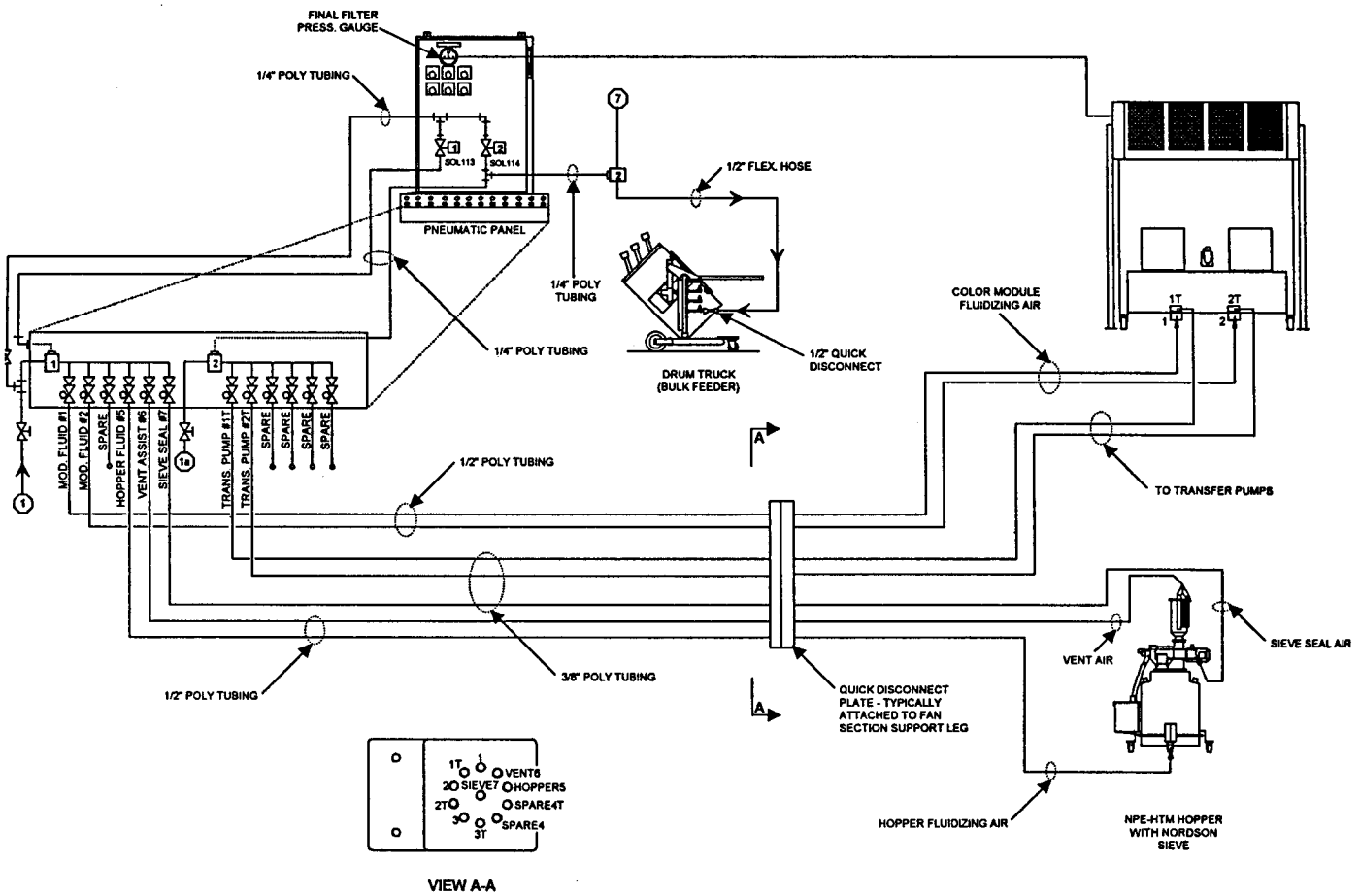
Typical System Electrical Schematic (continued from Figure 8-1B)

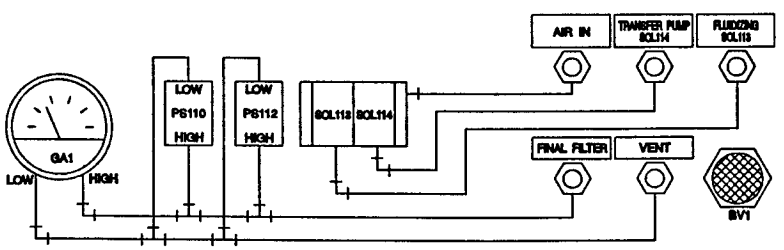


Electrical and Pneumatic Connections, cont.

Figure 8-2A

Typical System
Pneumatic Schematic

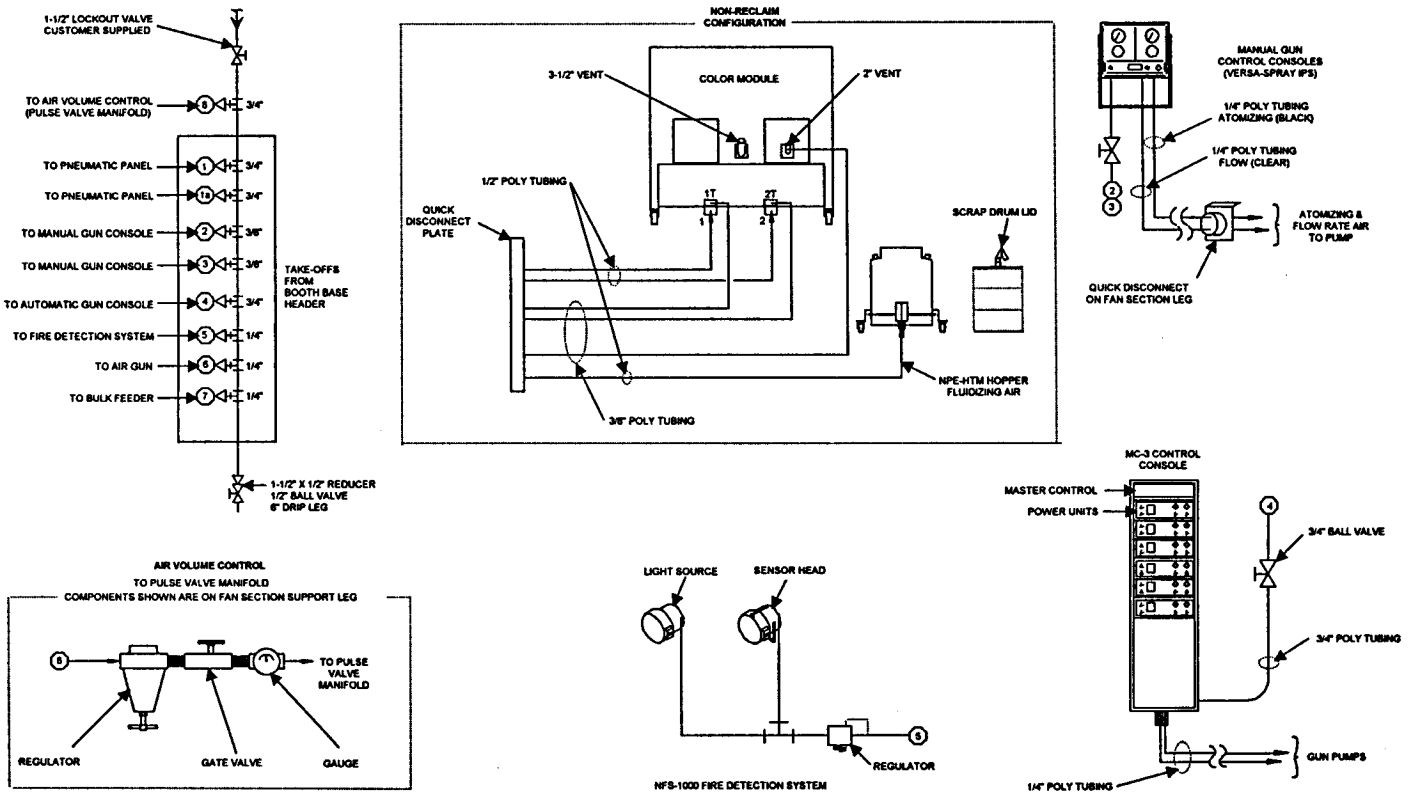




Electrical and Pneumatic Connections, cont.

Figure 8-2B

Typical System
Pneumatic Schematic
(continued from Figure
8-2A)



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Section 9
Gun Movers, Guns, and Gun Controllers

Gun Movers, Guns, and Gun Controllers

Automatic guns are mounted on fixed or moveable gun stands, or electrically driven reciprocators or oscillators (gun movers). Gun mounting bars are usually used to secure the guns to the stands or movers. Manual gun controllers are usually mounted to a bracket on the operator platform railing.

Refer to your Equipment Location Drawing for planned gun stand or mover locations.

___ 1. Locate and align the stands or movers at the automatic gun openings in the canopy.

___ 2. Install the gun controllers as shown on your system drawings. A master control unit is typically used with multiple automatic gun systems; the master control and the gun controllers are usually mounted in an equipment cabinet which is then positioned next to the booth. If you are installing a roll on/roll off booth, a platform, attached to the base, is usually provided to mount the cabinet.

___ 3. Make electrical and pneumatic connections from the system electrical and pneumatic panels to the gun controllers or master control as shown in your system drawings.

___ 4. Install gun mounting bars to the gun stands or movers, using the clamps at the end of the bars.

___ 5. Attach the automatic guns to the mounting bars, according to the instructions in your gun manuals.

___ 6. Reposition the gun stands or movers so the guns are centered in the canopy openings.

___ 7. Anchor the gun mover tracks or base, or fixed gun stands, if your system drawings require you to do so.

___ 8. Make electrical or pneumatic connections to the gun movers as shown on your system drawings.

___ 9. Connect electrostatic cables or power/trigger cables (IPS guns) between the automatic and manual guns and gun controllers as described in your gun manuals. Establish a protected path for the cables to prevent them from being cut, abraded, or run over by heavy equipment.

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Gun Mover, Gun, and Gun Controller Installation, cont.

10. Attach powder feed hoses to the guns and route the hoses to the powder pumps. For best results, hoses should not be longer than 26 feet (8 meters).

___ 11. Bundle together the cables and powder feed hoses with cable ties. Use the powder feed hoses as strain reliefs for the cables. Secure the cables and hoses to the gun mounting bars, and make sure, if the guns are mounted on reciprocators or oscillators, that the cables and feed hoses will not be subject to damage by abrasion. Provide adequate slack in cables and hoses to allow gun movement without damage.

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Section 10
System Wiring and Plumbing

System Wiring and Plumbing

Make all remaining electrical and pneumatic connections, including power and air supply lines, according to your system electrical and pneumatic schematics. Power requirements are stated on your system drawings.

A breaker or disconnect should be installed in the service line ahead of the system electrical panel, and a lockout-type shutoff valve in the air supply line. Input power wiring must must be of the proper gauge and insulation. All wiring must conform to local, state, and federal codes.

The air supply to the system must be clean and dry. A filter/separator system and an air drier should be used. The air drier should be capable of producing a 38° F (3.4° C) or lower dewpoint at 100 PSI (7 kg/cm²). Air supply lines must be at least 1-1/2" to be capable of delivering the required volume of air. Compressed air must be supplied at 80-100 PSI.

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