Vertiv™ SmartIT OCP

Installer/User Manual

Supporting NVIDIA GB300 OCP ORV3

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Technical Support Site

If you encounter any installation or operational issues with your product, check the pertinent section of this manual to see if the issue can be resolved by following outlined procedures.

Visit https://www.vertiv.com/en-us/support/ for additional assistance.

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1 Important Safety Instructions

This chapter contains safety information that must be read and understood before beginning any installation activities on the Vertiv™ SmartIT Open Compute Project (OCP) Rack. Failure to follow these instructions may result in personal injury, property damage, or equipment malfunction.

1.1 General Safety Warnings

WARNING! Read all safety instructions before operating or servicing this equipment. Failure to follow these instructions may result in serious injury or death.

- Always work with at least one other person when lifting or maneuvering heavy rack components.
- Do not attempt to lift any component that exceeds your safe lifting capacity. Use appropriate lifting equipment.
- Ensure the work area is clear of debris and trip hazards before beginning installation.
- Wear appropriate Personal Protective Equipment (PPE) at all times during installation activities.
- Disconnect all power sources before performing any electrical installation or maintenance work.
- Do not work on live circuits. Verify that power is de-energized using an appropriate meter before touching electrical components.
- Ensure the rack is properly stabilized with leveling feet before beginning component installation.
- Be aware of sharp edges on rack enclosures. Use appropriate cut-resistant gloves when handling sheet metal components.

1.2 PPE Requirements

The following PPE is required during integration activities:

- Safety glasses or goggles
- Cut-resistant gloves for handling sheet metal
- Steel-toed boots
- Hard hat in areas with overhead hazards
- Electrostatic Discharge (ESD) wrist strap when handling sensitive electronic components

1.3 Team Lift Requirements

CAUTION: Risk of improper moving, lifting and handling. Can cause injury. Building and equipment damage may also result. A minimum of two (2) qualified and properly trained personnel wearing appropriate, OSHA-approved PPE should attempt to lift. Use a lift cart, scissor lift, or facility-approved lifting device when bringing heavy components to height. The following components require team lift due to their weight.

- Manifolds: It is recommended that two people complete the manifold installation activities.
- OCP Rack enclosure: Use lift equipment or team lifts when moving the rack from the pallet to the installation location.

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1.4 Electrical Hazard Warnings

WARNING! Arc flash and electric shock hazard. Can cause serious injury or death. Building and equipment damage may also result. Electrical installations must be performed only by qualified electricians wearing appropriate, OSHA-approved personal protective equipment (PPE) per NFPA 70E. Always verify that circuits are de-energized before making electrical connections.

The power shelves operate at voltages that can cause serious injury or death. The DC busbar carries voltage when energized.

1.5 Pressurized Part Warnings

WARNING! Pressurized system hazard. The manifolds and hoses are shipped from the factory under a nitrogen charge. Releasing fittings, disconnecting hoses, or removing caps before safely relieving the pressure can cause a sudden release of gas or movement of components, resulting in injury or equipment damage.

Before beginning installation of the IT equipment, verify that the nitrogen charge has been safely relieved. The nitrogen can be released from the system using the pressure relief valves located at the top of the manifolds when mounted in the rack. Keep personnel clear of all connection points during depressurization. Do not loosen fittings, disconnect hoses, or remove caps until the manifolds and hoses have been confirmed fully depressurized.

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2 Product Overview

This chapter provides an overview of the Vertiv™ SmartIT OCP Rack system, including key components and model number.

2.1 System Overview

The Vertiv SmartIT OCP Rack is a high-density, liquid-cooled server rack platform designed for open compute project (OCP) form-factor compute nodes. The system integrates power distribution, liquid cooling, and monitoring into a single rack enclosure, supporting high-performance AI/ML and cloud computing workloads.

The installation manual applies to the following platform variant:

- OCP Rack: Designed for OCP form factor nodes with liquid manifolds for direct liquid cooling.

2.2 Key Components

The following components are integrated during assembly.

Component	Description
OCP Rack Enclosure	44O U rack chassis with busbars, casters, leveling feet, and integrated grounding
OCP Power Shelves	DC power distribution shelves with power supply units (PSUs) and power monitoring modules (PMMs)
OCP Manifolds	Supply and Return liquid manifolds for direct liquid cooling of OCP nodes
OCP Equipment Drip Tray	Drip tray with drain hose for liquid leak capture below equipment rails
OCP Equipment Rails	Slide-in equipment mounting rails for OCP nodes

2.3 Model Number

Refer to the table below for the model number:

Platform	Model Number	Description
OCP Rack	VORV3B44OU60120B1SP	Open compute project rack compatible with manifolds, OCP specific power shelves and equipment rails

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3 Pre-Installation Preparation

This chapter covers all pre-installation activities, including tools required, staging of components, and general workspace preparation.

3.1 Tools Required

The following tools are required for integration. Ensure all tools are available and in good working condition before beginning installation.

Tool Required
Phillips Head Screwdriver
Torx Screwdriver (T-20, T-25, and T-30)
2 Inch Crescent Wrench
9/16 Inch Socket
1/2 Inch Socket
3/4 Inch Socket
19 mm Socket
5/16 Inch Socket
3 mm Hex Key
4 mm Hex Key
13 mm Socket (Long Barrel)
Level
Pliers
Knife/Sharp Blade
Tin Snips
Ladder
Torque Wrench (up to 8.5 N-m)

NOTE: Ensure the installation area is accessible by a lift cart or scissor lift rack unloading/moving. Coordinate with facility management as required.

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3.2 Installation Site Readiness

The following section details the dimensions, weights, and site requirements to ensure that the end user facility is adequately provisioned to support the Vertiv™ SmartIT OCP Rack system.

3.2.1 Dimensions and Weights

Component	Dimensions (H x W x D)	Weight
Packaged OCP Rack	TBD	TBD
Unpackaged OCP Rack	TBD	TBD
Max Configured OCP Weight	TBD	TBD

3.2.2 End-User and Site Requirements

Before delivery, the end user must verify that:

- The loading dock, delivery route, doorways, corridors, elevators, ramps, and turning areas can accommodate the packaged dimensions and shipping weight.
- All floors along the delivery route can support the applicable rolling loads, and the final installation location can support the rack's static, concentrated, and point loads.
- The floor is level, structurally sound, and suitable for the rack leveling feet, anchoring hardware, and baying arrangement.
- Adequate working clearance is available around the rack for uncrating, installation, cable routing, piping connections, airflow, operation, and service.
- Approved material-handling equipment is available and rated for the packaged rack weight.
- Required electrical service, overcurrent protection, disconnecting means, grounding, bonding, and cable pathways are installed and ready for connection.
- Facility cooling capacity is available for the maximum planned IT and power-system heat load.
- Liquid-cooling supply, return, drain, vent, isolation, leak-detection, and containment provisions are complete and compatible with the installed system.
- Liquid-cooling supply is capable of providing adequate flow rates and liquid temperatures to the rack.
- The approved coolant and required water-quality parameters have been identified.
- Network, monitoring, emergency-power-off, fire-protection, and facility alarm interfaces are available where required.
- The area is clean, dry, adequately illuminated, and protected from construction debris, water intrusion, condensation, corrosive contaminants, and unauthorized access.
- All installation permits, inspections, engineered approvals, and site-specific safety requirements have been completed.

The delivery route should be established from the loading dock to the final equipment location, including verification of doorway, elevator, floor-loading, and turning-space limitations. Environmental conditioning should also be maintained to prevent condensation when equipment is moved into the installation area.

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3.2.3 System Inputs

The Vertiv™ SmartIT OCP Rack is not provided with power whips due to varying site requirements. Below is a list of system inputs that the end user must be prepared to provide:

Component	Specifications
OCP Electrical Inputs	2 x 30 A Connectors per shelf
OCP Liquid Cooling Inputs	4 x 1 Inch FD83 Connectors (2 per manifold)

The option for the input connector is listed below:

Component	Model Number
OCP Input Cord	Refer to PowerDirect OCP ORV3 Application Guide (Appendix B.1)

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4 OCP Rack Installation

This chapter covers all installation procedures specific to the OCP Rack platform, including uncrating, inspection, and installation of all OCP-specific components.

4.1 OCP Rack Uncrating

WARNING! Risk of top-heavy unit falling over when improperly lifted or moved. Can cause serious injury or death. Building and equipment damage may also result. Read all of the following instructions and verify that all lifting and moving equipment is rated for the weight of the unit before attempting to move, lift, remove packaging from or prepare the unit for installation. The rack is heavy. Ensure the ramp is stable and controlled at all times during the uncrating process. A minimum of two (2) personnel are recommended.

1. While ensuring that the ramp does not fall, strip the plastic wrapping from the rack using a sharp blade or similar instrument. Dispose of the plastic wrapping.
2. Lay the ramp down on the floor, being careful not to let it fall uncontrolled.
3. Cut the banding straps fastening the rack to the shock pallet using tin snips or a similar tool. Dispose of the banding straps.
4. Remove the ESD bag by lifting it off of the rack. A ladder may be of use to remove the bag.
5. Using a 5/16 Inch socket, raise all four leveling feet of the rack to their highest position. It may be necessary to remove the accessory bag secured at the bottom of the rack.
6. At the front of the rack, use a 1/2 Inch socket to remove the mounting screws from the bracket going into the front of the rack.
7. At the front of the rack, use a 9/16 Inch socket to remove the mounting screws from the bracket going into the pallet.
8. At the back of the rack, being careful not to apply pressure to the rack such that it starts to roll, use a 3/4 Inch socket to remove the mounting screws from the bracket going into the back of the rack.
9. Carefully, roll the rack down the ramp and onto the floor. Roll the rack to the location intended for integration. Once it is in place, use a 5/16 Inch socket to lower all four leveling feet to the ground so that the rack no longer freely rolls.

4.2 OCP Rack Inspection

The following parts are provided with the OCP rack.

Item	Quantity	P/F
Rack	1	
Baying Bracket	4	
Floor Seal	1	
Screw Kit (3 × M12, 30 × M8, 2 × M5 Screws)	1	

Inspect the OCP rack in accordance with the checklist provided in Table 4.1 on the next page.

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Figure 4.1 OCP Rack Inspection

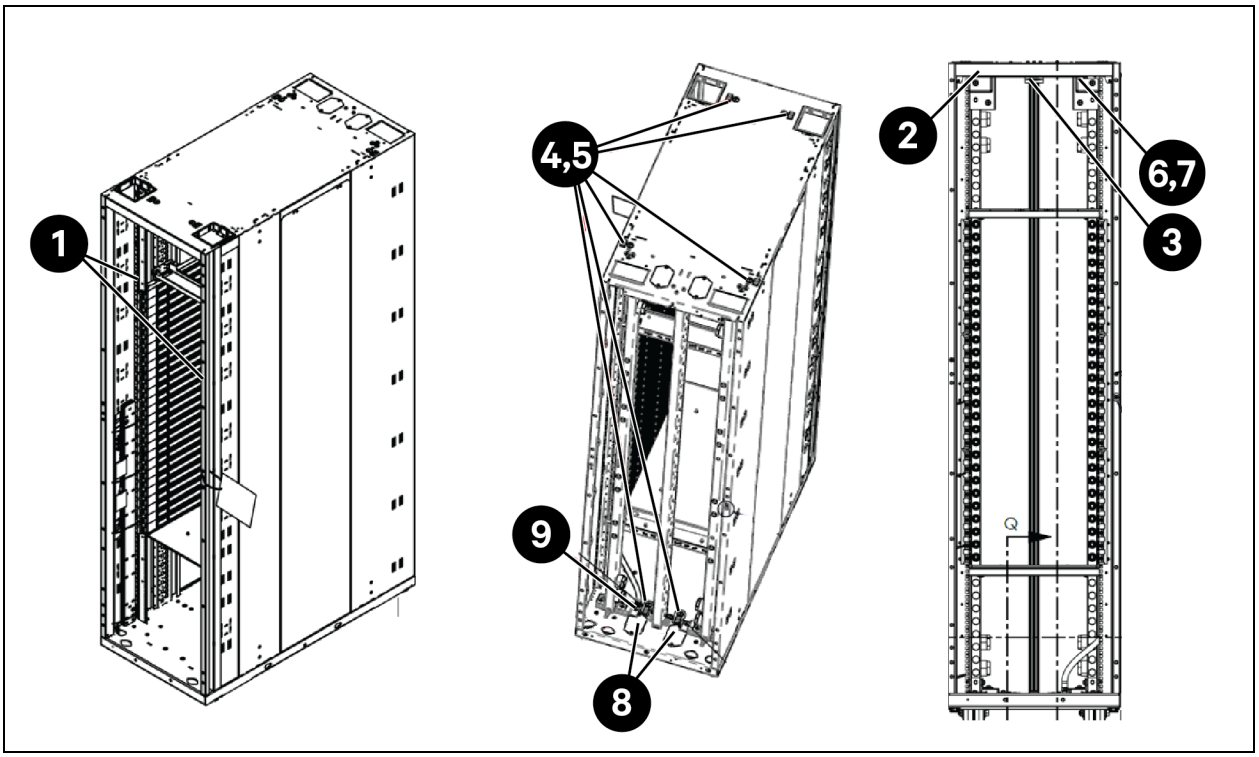


Table 4.1 OCP Rack Inspection Checklist

Reference	Inspection Item	P/F
NA	There are no obvious dents/deformations in the rack enclosure.	
NA	There are no scratches on the surface of the rack.	
NA	The busbar is installed and secure.	
NA	The casters and leveling feet are installed, undamaged, and can thread without catching.	
1	The U space numbers are marked on the left and right at both the front and back of the rack.	
NA	No ingress of water or debris is observed.	
2	The Vertiv branding logo is present – front top left of rack.	
3	The Vertiv nameplate label – front of the rack affixed to the roof.	
4	Grounding labels at each grounding location.	
5	Ground screws are present in all grounding locations.	
6	The user manual QR code label is present.	
7	The tipping warning label is present.	
8	Bottom pass-through plates are in place at the bottom back of the rack and are notched.	
9	Drip tray drain hose connector is present at the bottom of the rack.	
NA	No fasteners are loose or missing.	

The following critical dimensions are provided for reference in Table 4.2 on the facing page.

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Figure 4.2 OCP Rack Dimensions

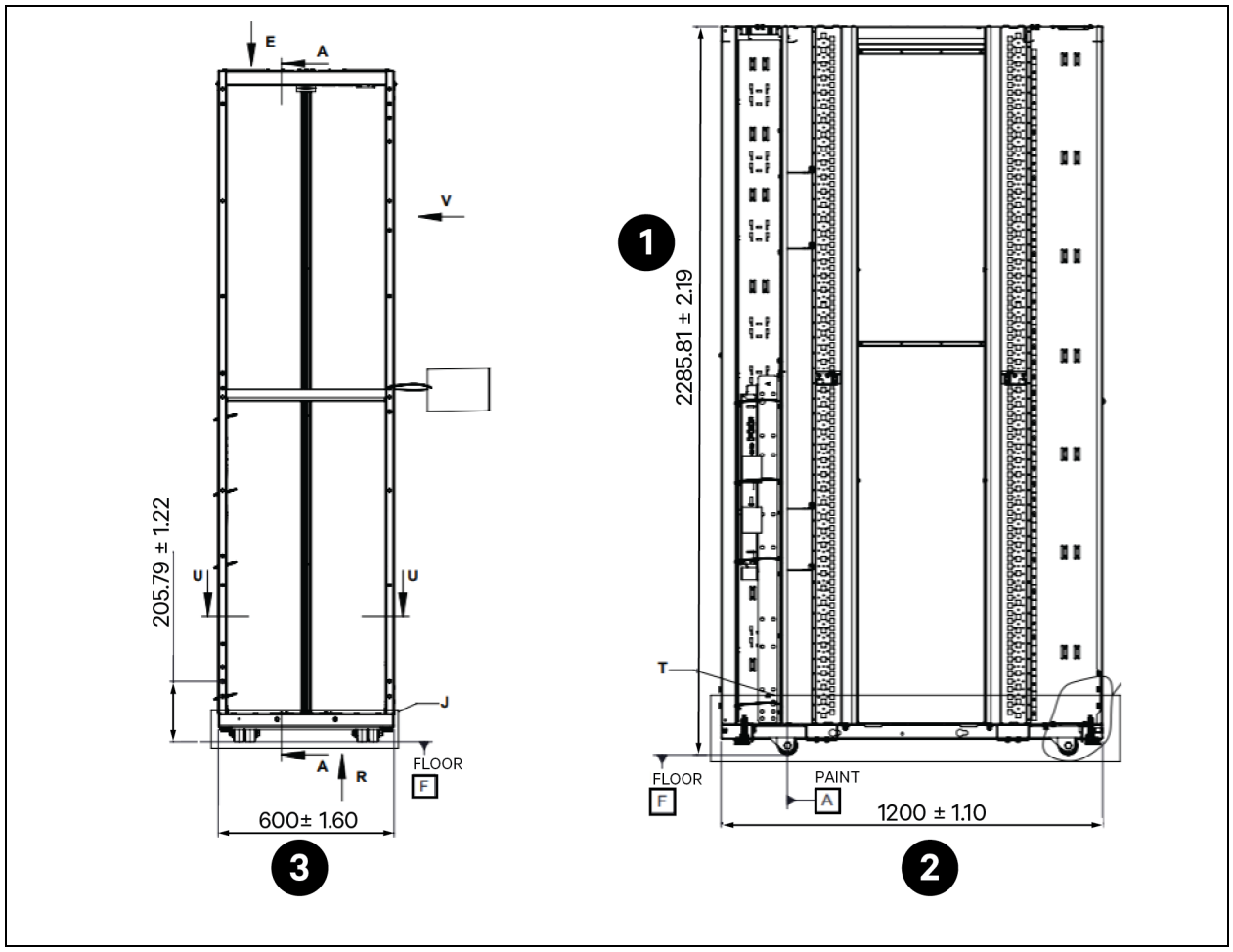


Table 4.2 OCP Rack Dimensions

Reference	Measurement	Maximum (mm)	Minimum (mm)
1	Height (Front Left)	2288	2283.62
	Height (Front Right)		
	Height (Back Left)		
	Height (Back Right)		
2	Depth (Top Left)	1201.1	1198.9
	Depth (Bottom Left)		
	Depth (Top Right)		
	Depth (Bottom Right)		

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Table 4.2 OCP Rack Dimensions (continued)

Reference	Measurement	Maximum (mm)	Minimum (mm)
3	Width (Top Front)	601.6	598.4
	Width (Bottom Front)		
	Width (Top Back)		
	Width (Bottom Back)		

4.3 Power Shelves



CAUTION: Power shelves are very heavy. Team lift is required when handling.

NOTE: Refer to the UM1R505500E4 Vertiv™ Power Supply Unit User Manual and the UM1PMM1S0 Vertiv™ PowerDirect Power Monitoring Module (PMM) User Manual for more information.

Unpack the power shelves, PSUs, PMMs, and accessories from their packaging and stage them for inspection and installation.

The following parts are provided with the OCP power shelves:

Item	Quantity	P/F
Vertiv PSS5033-21-N2 Power Shelf Chassis	8	
Vertiv R50-5500E4 Power Supply Unit	48	
Vertiv 1PMM1S0 Power Management Module	8	
10174051 Communication Cable	1	
0411B749 Cable Kit (1 x PE Jumper, 1 x CAT-5 Termination Cable)	8	
ORV3-CV-PSRAIL Rail Kit	8	

4.3.1 Power Shelf Inspection

Inspect the OCP power shelves and associated components in accordance with the checklist below:

Inspection Item	P/F
There are no obvious dents or damage to the power shelves, PSUs, or PMMs.	
All parts are provided.	
No parts are loose.	

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4.3.2 Power Shelf Installation

1. Slide the power shelf rails into 0U spaces 6 to 9 and 38 to 41 by sliding the tabs into the square slots. It may be helpful to have a second person at the back of the rack to ensure the power shelf slides into place easily at the correct U-Space.

Figure 4.3 Sliding the Power Shelf Rail



2. Slide the power shelf shell into the slots created by the installation of the power shelf rails from the bottom up, ensuring that the latches on the side snap into place.
3. Ensure that the DC busbar connector has made solid connection with the DC busbar and that the power shelf is not removable without actuating the side latches.
4. Integrate the Power Supply Units and the Power Monitoring Module and slide them into the power shelf slots as shown in Figure 4.4 on the next page.

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Figure 4.4 Integration of Power Supply Units and Power Monitoring Module



5. Install one of the termination cables from the cable kits in port 2 of the bottom power shelf in 0U position 6.

Figure 4.5 Installation Termination Cables



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4.4 Manifolds

4.4.1 Manifold Uncrating

Figure 4.6 Manifold Uncrating



Unpack the manifolds from their packaging and stage them for inspection and installation.

The Manifold kit includes the following parts:

Item	Quantity	P/F
Supply Manifold	1	
Return Manifold	1	
Supply Top Bracket	1	
Return Top Bracket	1	
Supply Bottom Bracket	1	
Return Bottom Bracket	1	
EXQ531 Screw Kit (3 x M8 Screws, 3 x Split-Lock Washers, 2 x M5 Screws)	1	
EXQ532 Screw Kit (3 x M8 Screws, 3 x Split-Lock Washers, 2 x M5 Screws)	1	
EXQ533 Screw Kit (3 x M8 Screws, 3 x Split-Lock Washers, 2 x M5 Screws)	1	
EXQ536 Screw Kit (3 x M8 Screws, 3 x Split-Lock Washers, 2 x M5 Screws)	1	
EXQ534 Nut Kit (1 x M8 Nut, 1 x Split-Lock Washer, 1 x Flat Washer)	1	
EXQ535 Nut Kit (1 x M8 Nut, 1 x Lock Washer, 1 x Flat Washer)	1	
Vertiv Hanger Button Kit (2 x Hanger Buttons)	1	

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4.4.2 Manifold Inspection

Inspect the manifolds in accordance with the checklist below:

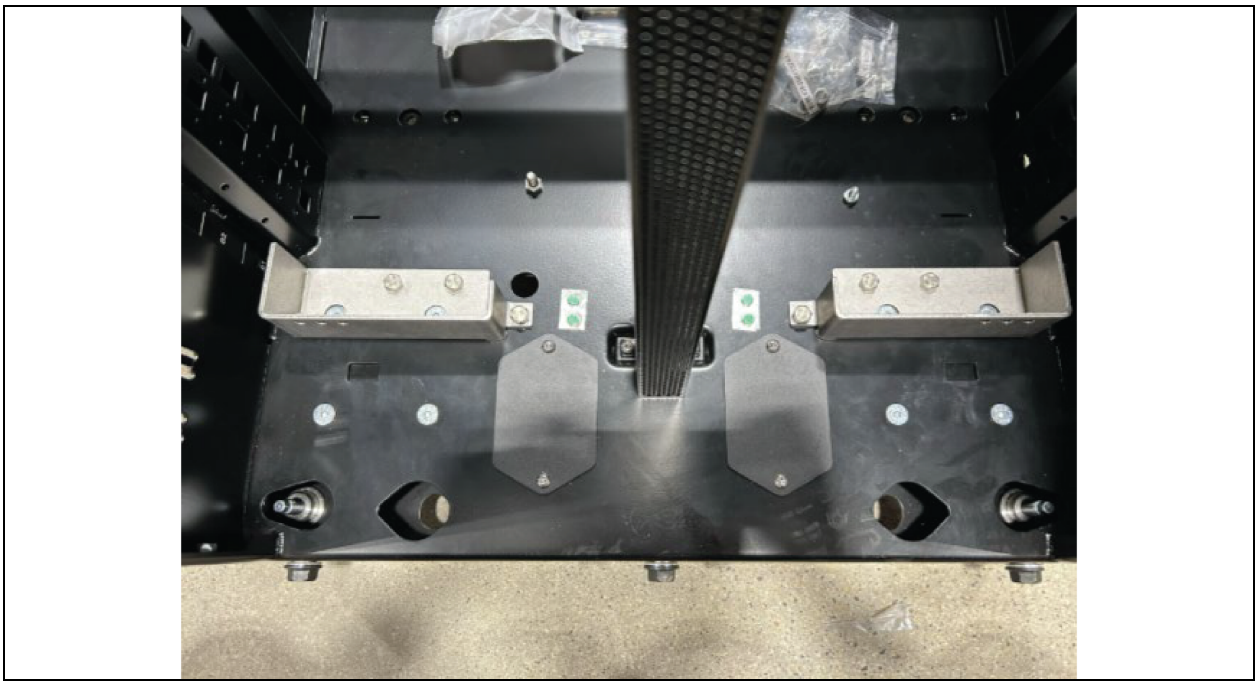
Inspection Item	P/F
If the manifold is discharged when received there might be cracks associated with this. May need to be flushed and filled.	
No obvious cracks or damage.	
Top six and bottom eight ports are installed with blanks.	
21st position from the bottom is fitted with a mounting post rather than a port.	
All other positions are fitted with Universal Quick Disconnect Blind-Mate (UQDB) coupling.	

4.4.3 Manifold Installation

CAUTION: DO NOT TORQUE FASTENERS TIGHTLY until the manifold is fully integrated and leveled. Final tightening occurs in the last step.

1. For both the hot and cold side top manifolds, install a hanger button using a T-25 Torx screwdriver. DO NOT TORQUE TIGHTLY UNTIL FULLY INTEGRATED.
2. Install the bottom brackets using the three M8 × 20 mm screws and split lock washers provided with the EXQ533/EXQ536 screw kits. Ensure the M8 bolts are tightened down fully to compress the washers. Reserve the M5 screws for installation of the manifold in the rack.

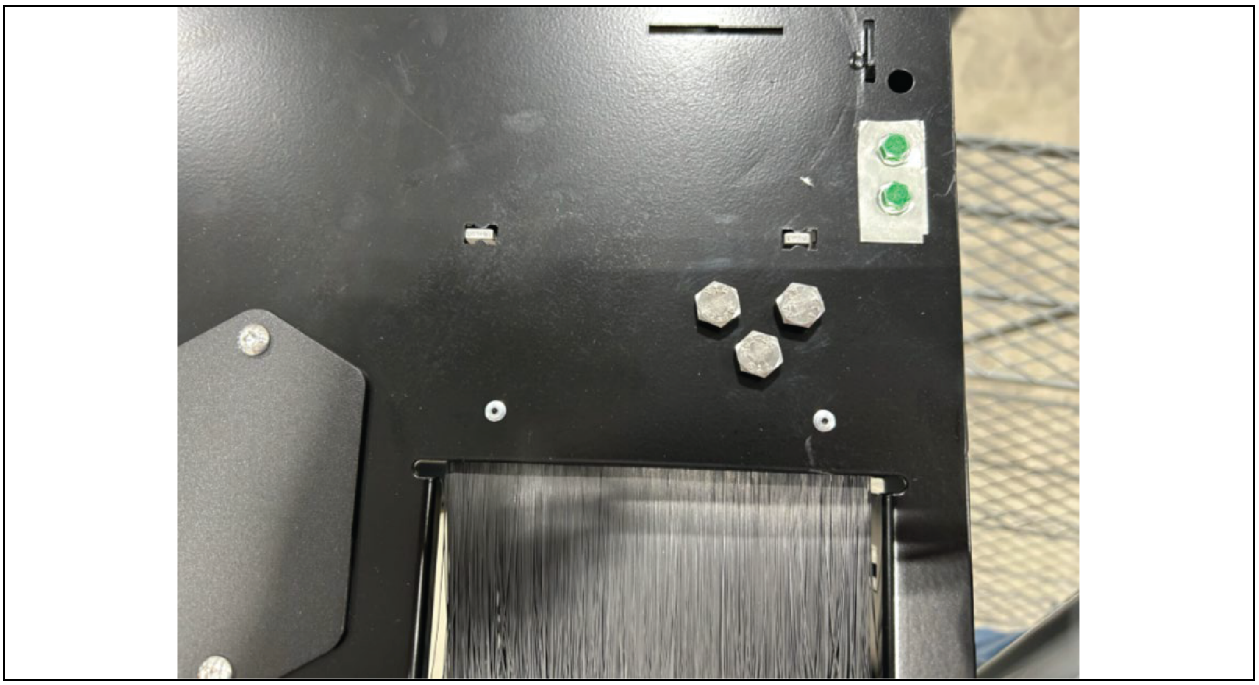
Figure 4.7 Installing Bottom Bracket



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3. Install the top manifold brackets using the three M8 × 20 mm screws and split lock washers provided with the EXQ531/EXQ532 screw kits. Ensure the M8 bolts are tightened down fully to compress the washers. Reserve the M5 screws for installation of the manifold in the rack.

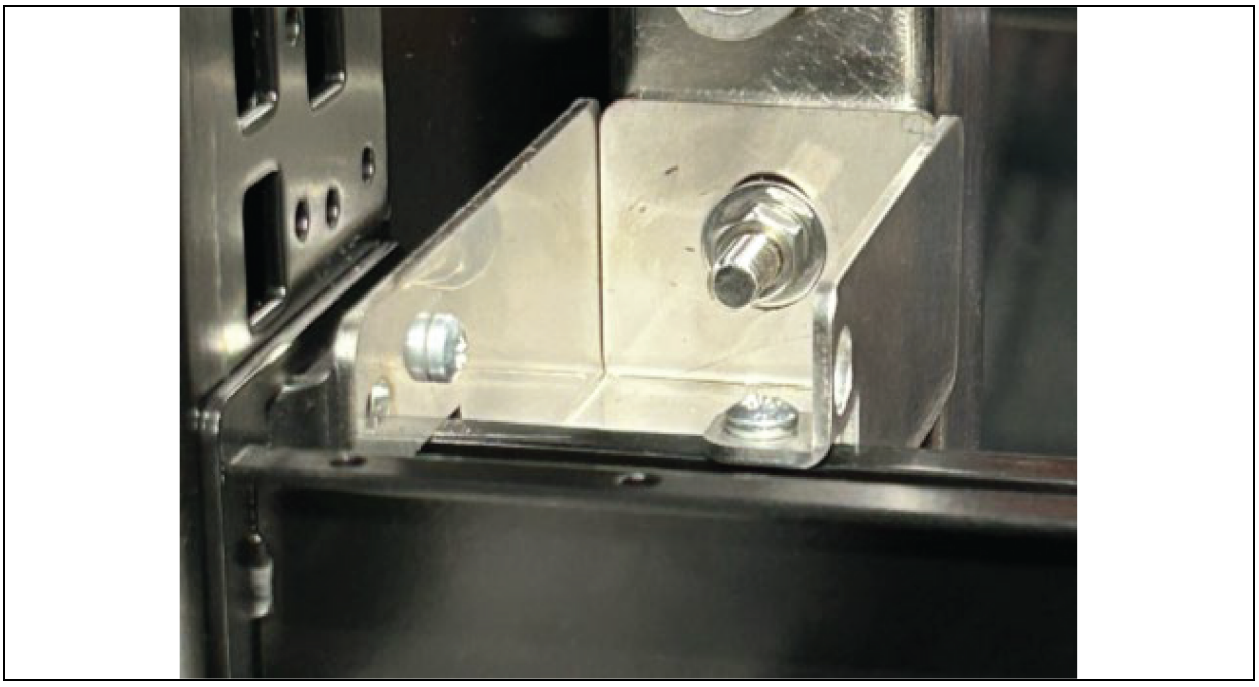
Figure 4.8 Installing Manifolds into Top of the Rack



4. Install the manifold utilizing the hanger button installed in the top bracket and the threaded post that feeds through the lateral bracket.
5. Install the Flat Washer, Lock Washer, and M8 Nut from the EXQ534/EXQ535 kits to fasten the manifold to the lateral bracket using a long barrel 13 mm socket. DO NOT TORQUE TIGHTLY UNTIL FULLY INTEGRATED.

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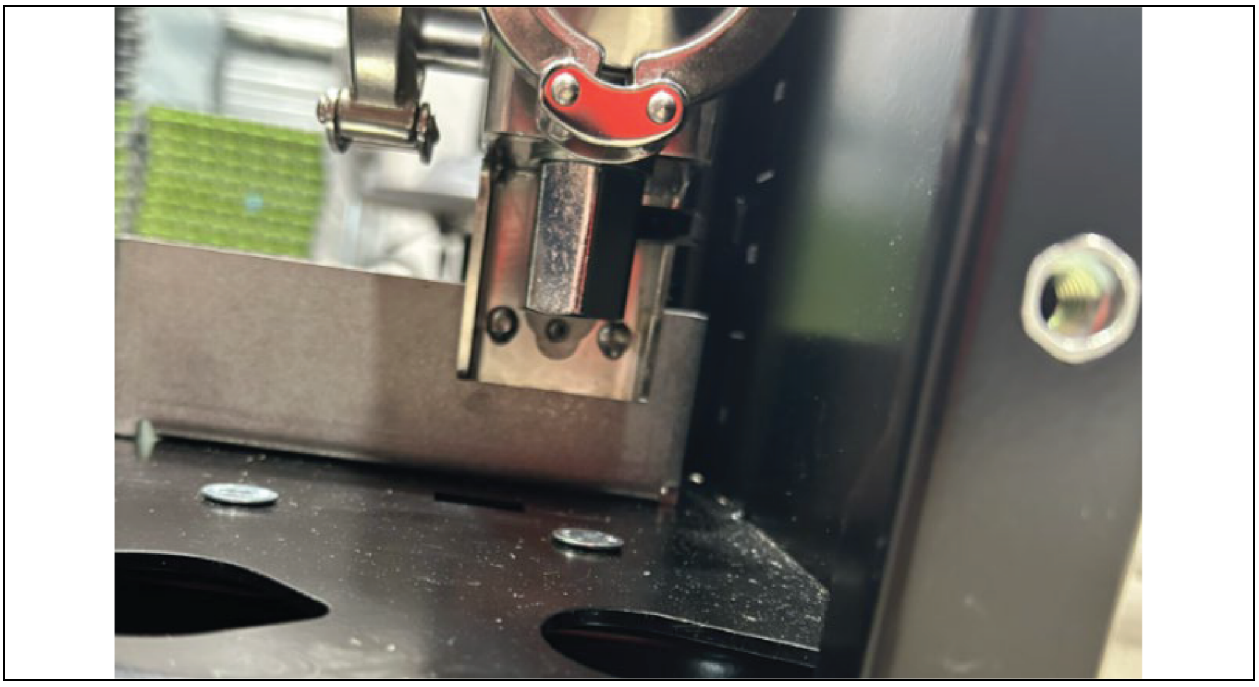
Figure 4.9 Securing Manifold to the Lateral Bracket



6. Install the reserved M5 Screws from the EXQ533/EXQ536 screw kits to install the manifold at the bottom of the rack using a 4 mm hex key. It may be necessary for a second person to lift the manifold in order to thread in the screws. DO NOT TORQUE TIGHTLY UNTIL FULLY INTEGRATED.
7. Install the reserved M5 Screws from the EXQ531/EXQ532 screw kits to install the manifold at the top of the rack using a 4 mm hex key. It may be necessary for a second person to lift the manifold in order to thread in the screws. DO NOT TORQUE TIGHTLY UNTIL FULLY INTEGRATED.

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Figure 4.10 Installing Manifolds into Bottom of the Rack



8. Once all fasteners have been started, you may fully tighten all screws and nuts in the system. Use a level to ensure that the manifolds are level. If the manifolds are not level, it may be necessary to loosen all fasteners and then re-tighten all fasteners while ensuring that the manifolds remain level.

4.5 Equipment Drip Tray

Unpack the Equipment Drip Tray Kits from their packaging and stage them for inspection and installation. The following parts are provided with the Equipment Drip Tray kit:

Item	Quantity	P/F
Drip Tray with 24 Inch Pre-installed Drain Hose and Clamp	1	
Face Plate	1	
Left Rail	1	
Right Rail	1	
Screw Kit (4× M5 Self-Threading Screws)	1	

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4.5.1 Drip Tray Inspection

Inspection Item	P/F
There are no obvious dents/bends in the brackets or face plate.	
Drip tray is not cracked or broken.	
Drip tray corners and edges are in good condition.	
Drain hose is securely attached to the drip tray.	
No obvious cracks or breakages in the drain hose.	

4.5.2 Drip Tray Installation

1. Install the Equipment Drip Tray Rails at the 10th 0U space by inserting the mounting ears into the mounting holes provided in the rack.

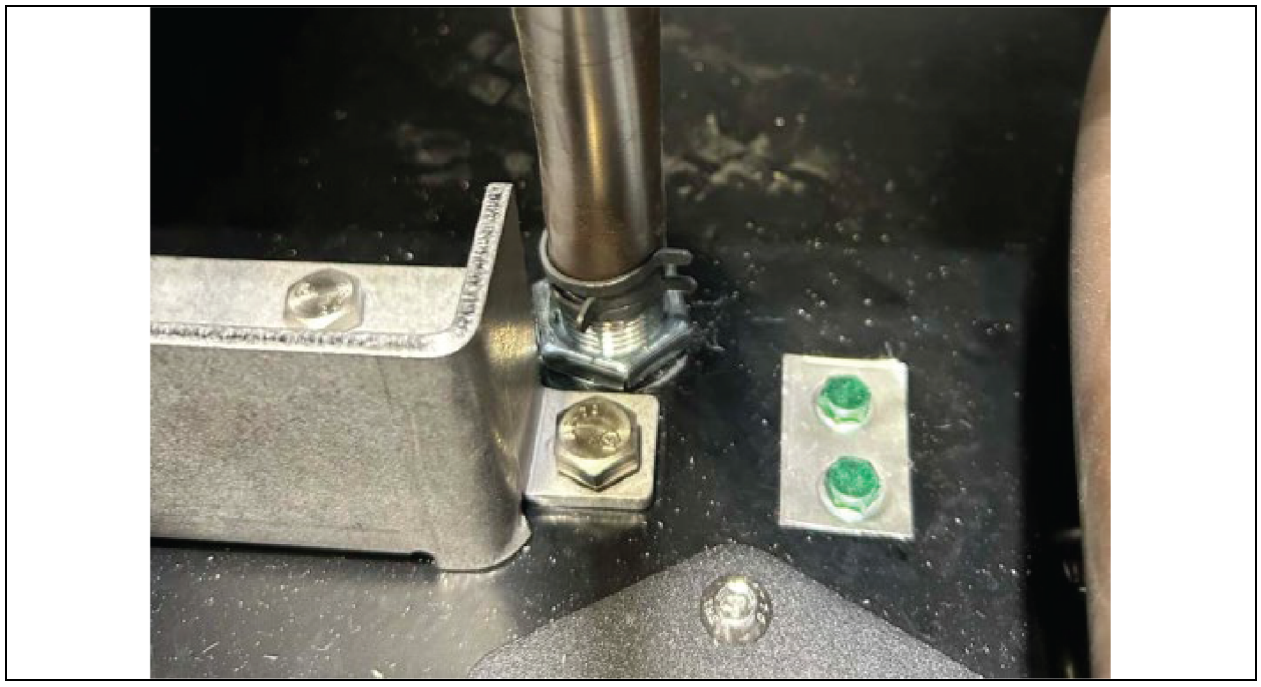
Figure 4.11 Installing the Equipment Drip Tray Rails



2. Use a Phillips head screwdriver to secure the rail to the side frame of the rack using the M5 screws provided in the screw kit.
3. Place the Drip Tray on the Drip Tray Rails and slide it as far back in the rack as it will go. Be careful not to pinch or damage the drain hose.
4. Use a pair of pliers or similar instrument to pinch the mating clamp to secure the drain hose with the drain port at the bottom of the rack.

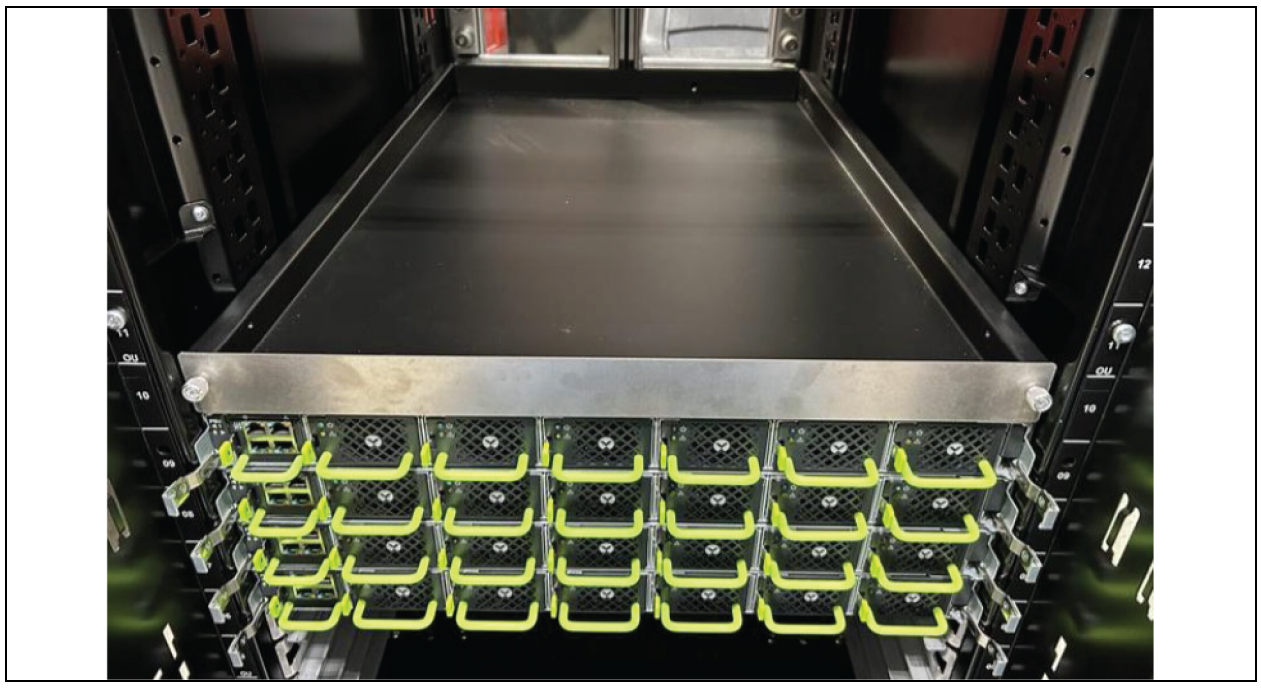
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Figure 4.12 Securing the Drain Hose with the Drain Port



5. Install the Face Plate in front of the Drip Tray to prevent it from sliding out using the thumb screws provided.

Figure 4.13 Installing the Face Plate



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4.6 Equipment Rails

Unpack the Equipment Rails from their packaging and stage them for inspection and installation.

The following parts are provided with the Equipment Rail kit:

Item	Quantity	P/F
Left Rail	29	
Right Rail	29	

4.6.1 Equipment Rail Inspection

Inspection Item	P/F
There are no obvious dents/bends in the brackets.	
Rail slides smoothly without catching or obstruction.	

4.6.2 Equipment Rail Installation

1. Slide the equipment rails into each appropriate OU space by sliding the tabs into the appropriate square slots in OU spaces 11 to 22, 24 to 37, and 42 to 44.

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Appendices

Appendix A: Technical Support and Contacts

A.1 Technical Support/Service in the United States

Vertiv Group Corporation

24x7 dispatch of technicians for all products.

1-800-543-2378

Liebert® Thermal Management Products

1-800-543-2778

Liebert® Channel Products

1-800-222-5877

Liebert® AC and DC Power Products

1-800-543-2378

A.2 Locations

United States

Vertiv Headquarters

505 N Cleveland Ave

Westerville, OH, 43082, USA

Europe

Victor-von-Bruns Strasse 21,

8212 Neuhausen am Rheinfall, Switzerland

Asia

Singapore

151 Lorong Chuan, Lobby D #05-04

New Tech Park, Singapore 556741

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India

Vertiv Energy Private Limited

Plot No. C 20, Road No. 19

Wagle Industrial Estate, MIDC

Thane (West), Maharashtra 400604, India

China

Vertiv Technology Co., Limited

Floors 1–4 and 6–10,

Building B2, Nanshan I Park

No. 1001 Xueyuan Road, Nanshan District

Shenzhen, Guangdong 518055, China

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Appendix B: Component Specifications

This appendix provides reference for all major components included in Vertiv™ SmartIT OCP Rack.

B.1 Components to be Integrated

NOTE: Consult manuals for components mounted in rack for detailed instructions.

Component	Document Description
OCP DC Power System	Vertiv™ PowerDirect In-Rack 33kW 50V DC Power System – Application Guide
	Vertiv™ PowerDirect 3000 33kW, OCP ORV3 HPR Power System Manual
	Vertiv™ PowerDirect 3000 33kW, OCP ORV3 HPR (PSU) User Manual
	Vertiv™ PowerDirect 3000 33kW, OCP ORV3 HPR (PMM) User Manual
NOTE: Click the document description to access the corresponding document.	

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Appendix C: Flush/Fill Instruction

C.1 Flush/Fill Instruction

The end user is responsible for engaging qualified service provider(s) to perform all flushing, filling, venting, pressure testing, water-quality verification, and commissioning activities. All of these tasks are required before the system can be put into service.

Vertiv can provide these services. Contact your representative for details.

Vertiv recommends the use of PG25 in the Vertiv™ SmartIT OCP Rack.

The OCP manifolds are shipped with a 25-micron cleanliness specification. OCP hose kits are not shipped with a cleanliness specification and must be flushed before mating with the manifolds. If the manifolds are required to meet a tighter cleanliness requirement, a qualified service provider must flush the manifolds before IT equipment is mated to prevent component damage.

The service provider must be trained and experienced with liquid-cooling systems and must use procedures, equipment, coolant, treatment chemicals, and personal protective equipment appropriate for the installed system. All work must comply with applicable codes, site requirements, and the requirements of the cooling-system and IT-equipment manufacturers.

Before work begins, the service provider must verify that:

- The rack, manifolds, hoses, and connected equipment are completely installed and properly supported.
- The factory nitrogen charge has not been relieved prior to the start of the qualified service provider's work.
- The selected coolant and water quality meet the requirements of all connected equipment.
- Appropriate containment and spill-response materials are available.
- Electrical equipment is protected from exposure to liquid.

The service provider must establish the flushing and filling sequence based on the site piping arrangement and installed equipment. After flushing, the system must be filled with the approved coolant, fully vented, and inspected for trapped air, leakage, abnormal pressure loss, and proper flow.

Following completion, the service provider must verify system pressure, flow, coolant concentration, water quality, and leak-free operation. The end user must retain the service report, including the coolant used, test results, final operating conditions, deficiencies identified, corrective actions completed, and the date of commissioning.

Do not place the liquid-cooling system into operation until the qualified service provider has completed the flush/fill process and confirmed that the system is ready for service.

C.2 Vertiv Flush/Fill Services

Vertiv Flush/Fill Services Email: TBD

Vertiv Flush/Fill Services Phone: TBD

Vertiv Flush/Fill Services Link: TBD

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Appendix D: Preventative Maintenance Schedule

D.1 Preventative Maintenance

The following periodic inspections are recommended to maintain system performance and safety:

Component	Inspection Item	Frequency	Responsibility
Drip trays and liquid connectors	Evidence of coolant leakage	Weekly and after servicing	Customer/Service PM
Manifold brackets	Evidence of cracking or sagging	Annually	Customer/Service PM
Busbar and electrical connectors	Evidence of corrosion, charring, or pitting	Annually	Customer/Service PM
Ground path	Ground continuity must remain <0.1 Ohm	Annually	Service PM
Drain pan	Obstruction or pinching of drain hose	Monthly	Customer/Service PM

D.2 Troubleshooting Guidelines

The following guidelines address common issues identified during validation testing:

Issue	Possible Cause	Corrective Action
Ground continuity > 0.1 ohm	Loose or missing ground screw; corroded contact surface.	Clean contact surface, re-tighten or replace ground fasteners, retest.
Power shelf not detected	Busbar connection not fully seated.	Remove and reseat power shelf, verify latch engagement.
Caster brake failure	Damaged or worn brake mechanism.	Replace caster assembly per Vertiv service instructions.

D.3 Referenced Component Manuals

For maintenance procedures specific to individual components, refer to manuals listed in Appendix B.1 .

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