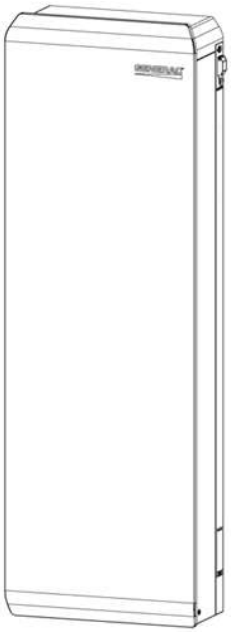
Installation Manual

Generac PWRcell 2 Battery

APKE00076



⚠WARNING

Loss of life. This product is not intended to be used in a critical life support application. Failure to adhere to this warning could result in death or serious injury.

(W000209)

Register your Generac product at:
https://pwrfleet.generac.com
1-888-GENERAC
(888-436-3722)

SAVE THIS MANUAL FOR FUTURE REFERENCE

Use this page to record important information about your Generac Product

Record the information found on your unit data label on this page. See Specifications.

When contacting an Independent Authorized Service Dealer (IASD) or Generac Customer Service, always supply the complete model number and serial number of the unit.

Operation and Maintenance: Correct maintenance and care of the unit minimizes operating expenses and errors. It is the operator's responsibility to perform all safety inspections, to verify all maintenance for safe operation is performed promptly, and to have the equipment inspected periodically by an IASD. Normal maintenance, service, and replacement of parts are the responsibility of the owner/operator and are not considered defects in materials or workmanship within the terms of the warranty. Individual operating habits and usage may contribute to the need for additional maintenance or service.

Table 1. Important Information

Description	Model Number	Serial Number	Date Purchased	Date Commissioned
Generac PWRcell 2 Battery				
Battery Module 1				
Battery Module 2				
Battery Module 3				
Battery Module 4				
Battery Module 5				
Battery Module 6				

⚠ CALIFORNIA WARNING

This product can expose you to chemicals including urethane (ethyl carbamate), which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information, go to: www.p65warnings.ca.gov

(W000832)

Table of Contents

Section 9: Wiring Diagrams

Section 10: Seismic Anchorage

Section 1: Safety Rules & General Information

Introduction

This installation and owner's manual provides instructions and recommendations for installing, commissioning, and operating the Generac PWRcell® 2 Battery. The PWRcell 2 Battery includes a factory-installed battery management unit (BMU) and is designed to house Generac compatible lithium-ion battery modules to form a complete unit. PWRcell 2 Battery connects to the PWRcell 2 Inverter to become a UL 9540-listed, AC-coupled Energy Storage System (ESS).

This manual also includes full details on product specifications, safety, and other key aspects of the battery. This manual also includes complete information on user-configurable features.

The information in this manual is accurate based on products produced at the time of publication. The manufacturer reserves the right to make technical updates, corrections, and product revisions at any time without notice.

Read This Manual Thoroughly

⚠WARNING

Consult Manual. Read and understand manual completely before using product. Failure to completely understand manual and product could result in death or serious injury.

(W000100)

If any portion of this manual is not understood, contact the nearest Independent Authorized Service Dealer (IASD) for starting, operating, and servicing procedures. The owner is responsible for correct maintenance and safe use of the unit.

This manual must be used in conjunction with all other supporting product documentation supplied with the product.

IMPORTANT SAFETY INSTRUCTIONS. SAVE THESE INSTRUCTIONS for future reference. This manual contains important instructions which must be followed during placement, operation, and maintenance of the unit and its components. Always supply this manual to any individual who will use this unit, and instruct them on how to correctly start, operate, and stop the unit in case of emergency.

Safety Rules

The manufacturer cannot anticipate every possible circumstance that might involve a hazard. The alerts in this manual, and on tags and decals affixed to the unit, are not all inclusive. If using a procedure, work method, or operating technique that the manufacturer does not specifically recommend, verify that it is safe for others and does not render the equipment unsafe.

Throughout this publication, and on tags and decals affixed to the unit, DANGER, WARNING, CAUTION, and NOTE blocks are used to alert personnel to special instructions about a particular operation that may be hazardous if performed incorrectly or carelessly. Observe them carefully. Alert definitions are as follows:

⚠DANGER

Indicates a hazardous situation which, if not avoided, will result in death or serious injury.

(D000001)

⚠WARNING

Indicates a hazardous situation which, if not avoided, could result in death or serious injury.

(W000002)

⚠CAUTION

Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

(C000003)

NOTE: Notes contain additional information important to a procedure and will be found within the regular text of this manual.

These safety alerts cannot eliminate the hazards that they indicate. Common sense and strict compliance with the special instructions while performing the action or service are essential to preventing accidents.

General Rules

⚠DANGER

Loss of life. Property damage. Installation must always comply with applicable codes, standards, laws and regulations. Failure to do so will result in death or serious injury.

(D000190)

⚠WARNING

Loss of life. Only qualified personnel may install this battery. Installation of a PWRcell Battery by a homeowner is prohibited. Installation by unqualified personnel may result in death, serious injury, equipment or property damage.

(W000638)

- Follow all safety precautions in this installation manual and other documents included with the equipment.
- Always see local code for additional requirements for where unit is being installed.
- Incorrect installation can result in personal injury and damage to the unit. It may also result in the warranty being suspended or voided. All instructions listed below must be followed including location clearances and conduit sizes.
- Changes or modifications not expressly approved by Generac Power Systems could void the user's authority to operate the equipment.

  NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

  - Reorient or relocate the receiving antenna.
  - Increase the separation between the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Contact the dealer or an experienced radio/TV technician for help.

How to Obtain Service

When the unit requires servicing or repairs, contact Generac Customer Service at 1-888-GENERAC (1-888-436-3722) or visit ***www.generac.com*** for assistance.

When contacting Generac Customer Service about parts and service, always supply the complete model and serial number of the unit as given on its data decal located on the unit. Record the model and serial numbers in the spaces provided on the front cover of this manual.

Installation Standards

⚠WARNING

Loss of life. This product is not intended to be used in a critical life support application. Failure to adhere to this warning could result in death or serious injury.

(W000209)

Strictly comply with all applicable national, state, and local laws, as well as codes or regulations pertaining to the installation of the system. Use the most current version of applicable codes or standards relevant to local jurisdiction, equipment used, and installation site.

NOTE: Not all codes apply to all products and this list is not all-inclusive. In the absence of pertinent local laws and standards, the following publications may be used as a guide (these apply to localities which recognize NFPA and ICC).

1. National Fire Protection Association (NFPA) 1 Fire Code*
2. NFPA 10: Standard for Portable Fire Extinguishers *
3. NFPA 70: The NATIONAL ELECTRIC CODE (NEC) *
4. NFPA 70E: Standard for Electrical Safety In The Workplace *
5. NFPA 855: Standard for the Installation of Stationary Energy Storage Systems
6. NFPA 220: Standard on Types of Building Construction *
7. NFPA 5000: Building Code *
8. International Building Code **
9. International Fire Code **
10. International Residential Code **
11. Agricultural Wiring Handbook ***
12. ASAE EP-364.2 Installation and Maintenance of Farm Standby Electric Power ****

This list is not all-inclusive. Check with the Authority Having Local Jurisdiction (AHJ) for any local codes or standards which may be applicable to your jurisdiction. The above listed standards are available from the following Internet sources:

* ***www.nfpa.org***

** ***www.iccsafe.org***

****www.rerc.org*** Rural Electricity Resource Council P.O. Box 309 Wilmington, OH 45177-0309

**** www.asabe.org American Society of Agricultural & Biological Engineers 2950 Niles Road, St. Joseph, MI 49085

General Hazards

⚠DANGER

Loss of life. Property damage. Installation must always comply with applicable codes, standards, laws and regulations. Failure to do so will result in death or serious injury.

(D000190)

⚠WARNING

Electrocution. Potentially lethal voltages are generated by this equipment. Render the equipment safe before attempting repairs or maintenance. Failure to do so could result in death or serious injury.

(W000187)

⚠WARNING

Equipment damage. Only qualified service personnel may install, operate, and maintain this equipment. Failure to follow proper installation requirements could result in death, serious injury, and equipment or property damage.

(W000182)

⚠WARNING

Electric Shock. Only a trained and licensed electrician should perform wiring and connections to unit. Failure to follow proper installation requirements could result in death, serious injury, and equipment or property damage.

(W000155)

⚠WARNING

Risk of injury. Do not operate or service this machine if not fully alert. Fatigue can impair the ability to service this equipment and could result in death or serious injury.

(W000215)

⚠WARNING

Loss of life. This product is not intended to be used in a critical life support application. Failure to adhere to this warning could result in death or serious injury.

(W000209)

⚠CAUTION

Equipment Damage. Connect only to REbus-compatible devices to the DC bus. Never connect to any other DC power source.Connecting to other DC power sources could result in equipment damage.

(C000598)

- Connecting the PWRcell 2 system to the electric utility grid must only be done after receiving prior approval from the utility company.
- Only competent, qualified personnel should install, operate, and service this equipment. Strictly comply with local, state, and national electrical and building codes. When using this equipment, comply with regulations established by the National Electrical Code (NEC), CSA Standard; the Occupational Safety and Health Administration (OSHA), or the local agency for workplace health and safety.
- Protection against lightning surges in accordance with local electric codes is the responsibility of the installer.

NOTE: Lightning damage is not covered by warranty.

- If working on energized equipment while standing on metal or concrete, place insulative mats over a dry wood platform. Work on this equipment only while standing on such insulative mats.
- Never work on this equipment while physically or mentally fatigued.
- Any voltage measurements should be performed with a meter that meets UL 3111 safety standards and meets or exceeds overvoltage class CAT III.

Electrical Hazards

⚠DANGER

Electrocution. Never connect this unit to the electrical system of any building unless a licensed electrician has installed an approved transfer switch. Failure to do so will result in death or serious injury.

(D000150)

⚠DANGER

Electrocution. Front cover should be removed by a qualified technician only. Removing the front cover could result in death, serious injury, equipment or property damage.

(D000604)

⚠DANGER

Electrocution. Do not wear jewelry while working on this equipment. Doing so will result in death or serious injury.

(D000188)

⚠DANGER

Electrocution. Water contact with a power source, if not avoided, will result in death or serious injury.

(D000104)

⚠DANGER

Electrocution. In the event of electrical accident, immediately shut power OFF. Use non-conductive implements to free victim from live conductor. Apply first aid and get medical help. Failure to do so will result in death or serious injury.

(D000145)

⚠DANGER

Electrocution. Turn battery disconnect OFF and de-energize REbus before touching terminals. Failure to do so will result in death, serious injury, equipment and property damage.

(D000599)

⚠DANGER

Electrocution. Turn utility supply OFF before working on utility connections of the transfer switch. Failure to do so will result in death or serious injury.

(D000123)

⚠DANGER

Electrocution. Verify electrical system is properly grounded before applying power. Failure to do so will result in death or serious injury.

(D000152)

⚠WARNING

Electrocution. Refer to local codes and standards for safety equipment required when working with a live electrical system. Failure to use required safety equipment could result in death or serious injury.

(W000257)

⚠CAUTION

Equipment damage. Verify that voltage and current are within specification before energizing this equipment. Exceeding rated voltage and current will damage the auxiliary contacts.

(C000134)

⚠CAUTION

Equipment damage. Verify all conductors are tightened to the factory specified torque value.Failure to do so could result in damage to the switch base.

(C000120)

Battery Hazards

⚠WARNING

Explosion. Do not dispose of batteries in a fire. Batteries are explosive. Electrolyte solution can cause burns and blindness. If electrolyte contacts skin or eyes, flush with water and seek immediate medical attention.

(W000162)

⚠CAUTION

Equipment damage. Use ONLY manufacturer approved battery modules.Using any other module could damage Generac PWRcell Battery and may void the warranty.

(C000601)

⚠CAUTION

Equipment/property damage. Verify all battery modules installed in any single PWRcell Battery are the same type (EX or DCB). Connecting different battery types can result in equipment damage.

(C000731)

Always recycle batteries in accordance with local laws and regulations. Contact your local solid waste collection site or recycling facility to obtain information on local recycling processes. For more information on battery recycling, visit Call2Recycle website at: ***http://Call2Recycle.org/locator***.

Fire Hazards

⚠WARNING

Fire hazard. Never attempt to fight a fire yourself. Evacuate the building and contact emergency services. Inform dispatcher that lithium-ion batteries are in the building. Failure to do so could result in death, serious injury, or property or equipment damage.

(W000603)

⚠WARNING

Fire and explosion. Installation must comply with all local, state, and national electrical building codes. Noncompliance could result in unsafe operation, equipment damage, death or serious injury.

(W000218)

⚠WARNING

Risk of Fire. Unit must be positioned in a manner that prevents combustible material accumulation underneath. Failure to do so could result in death or serious injury.

(W000147)

⚠WARNING

Risk of fire. Do not crush, puncture, or subject battery units or modules to strong impacts. Failure to do so could result in death, serious injury, property damage, or equipment damage.

(W000730)

Safety Precautions

Symbols

Warning symbols are used to warn of conditions which may cause severe injury or damage to equipment. The following table describes the warning symbols used in the equipment's markings and within this document.

	This equipment contains high voltage which can cause electric shock resulting in severe injury.
	Ensure polarity of connections during assembly.
	Keep equipment away from open flame or ignition sources.
	Read the manual before installing and operating the equipment.
	The equipment is heavy enough to cause severe injury.
	The battery pack may leak corrosive electrolyte if damaged.
	The battery pack may explode if damaged.
	The equipment should not be disposed of in household waste.
	Physical injury or damage to equipment may occur if related requirements are not followed.
	Do not disassemble the equipment.

Section 2: About PWRcell 2 Battery

General Information

The PWRcell 2 Battery is the energy storage portion of the PWRcell 2 system. The battery is designed and compatibility-tested to work with the PWRcell 2 Inverter to form the PWRcell 2 Energy Storage System (ESS). The system can be used for grid connected applications such as Self Supply, Rate Arbitrage, and Clean Backup Power.

As an ESS, the PWRcell 2 system utilizes a 400 VDC (nominal) bus referred to as “DC-link” to connect to the battery to the inverter. DC-link automates the flow of power to enable plug-and-play setup and operation between the PWRcell 2 equipment.

In ***Figure 2-1***, a PWRcell 2 Inverter is directly connected to PWRcell 2 Battery on DC-link.

To the right of the inverter are AC lines, 120/240 VAC, connected to the Generac Smart Disconnect Switch (SDS) for grid interconnection and to support home loads. Load support varies by model and number of battery modules attached. See ***Specifications*** for more information.

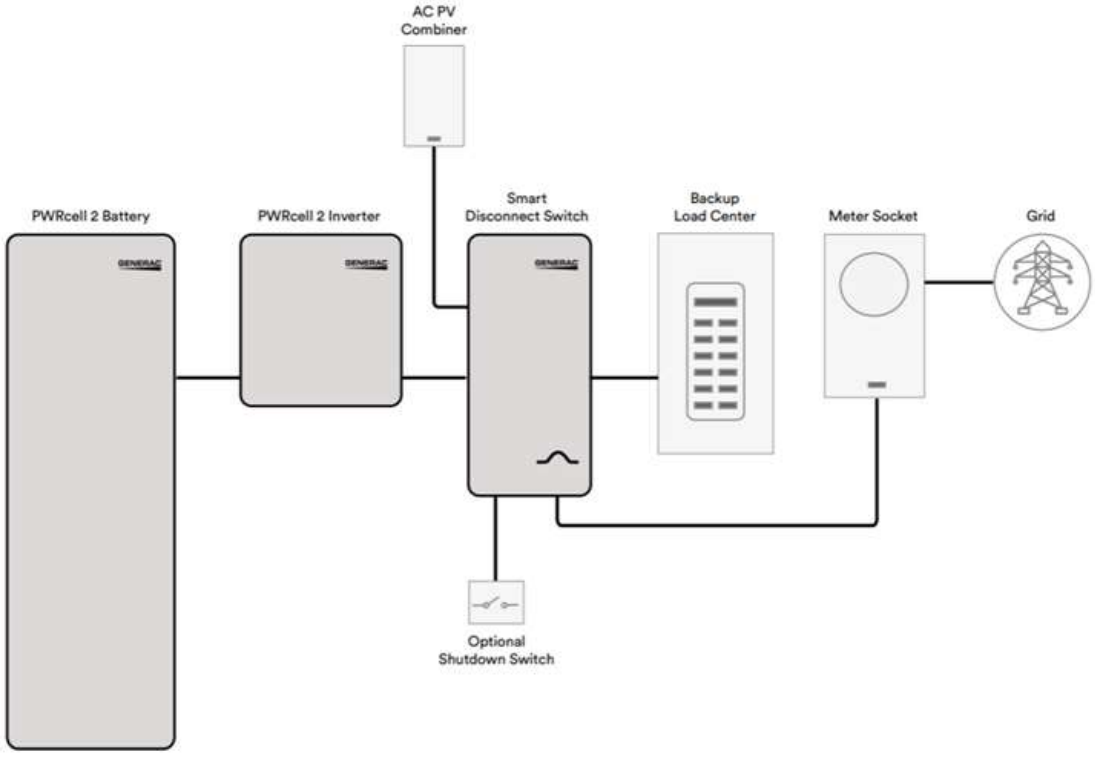
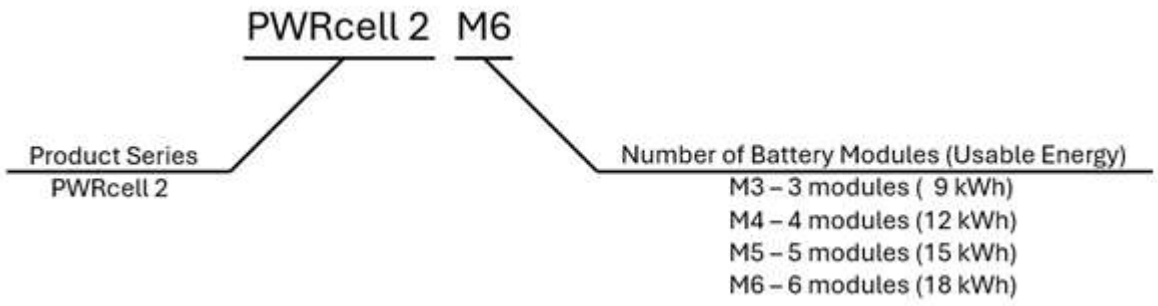


Figure 2-1. Generac PWRcell 2 System Example

Model Naming Convention



Specifications

Table 2-1. PWRcell 2 Battery (Unit)

Description	Units	Model			
		PWRcell 2 M3	PWRcell 2 M4	PWRcell 2 M5	PWRcell 2 M6
ELECTRICAL					
Voltage Range (Input/Output)[1]	VDC	360 to 420			
Stored Energy	kWh	9.5	12.6	15.8	19.0
Usable Energy[2]	kWh	9	12	15	18
Maximum Continuous Power[3]	kW	5.2	7.0	8.7	10.5
Maximum Continuous Current[3] (Charge/ Discharge)	ADC	14.58	19.44	24.3	29.16
Communication Protocol(s)	—	CAN, RS-485			
ENVIRONMENTAL					
Operating Temperature Range (Charging)	°F (°C)	23 to 122 (-5 to 50)			
Operating Temperature Range (Discharging)	°F (°C)	-4 to 122 (-20 to 50)			
Maximum Elevation[4]	ft (m)	6,560 (2,000)			
Enclosure Rating	—	Type 3R			
MECHANICAL					
Dimensions (DxWxH)	in (cm)	10-3/4 x 23 x 70 (27.1 x 58.2 x 177.3)			
Total Weight of Installed Unit	lb (kg)	278 (126)	333 (151)	388 (176)	443 (200.9)
Weight of Enclosure	lb (kg)	113 (51.3)			
Weight of Mounting Bracket	lb (kg)	4.9 (2.2)			
COMPLIANCE					
Safety		UL 9540, UL 1973, UL 9540A, UL 1998			
Environmental		FCC Part 15 Class B			
Evaluated Functions/Protection		Battery overcharge, Battery over discharge, battery short-circuit, System overcurrent, battery temperature, cabinet switch (disconnect)			

[1] 400 VDC Nominal Voltage.
[2] At beginning of life. Values provided for 77 °F (25 °C).
[3] Values provided at 100% state of charge. Values do not reflect performance at lower states of charge.
[4] Module warranty is void if installed above specified elevation.

NOTE: Specifications are subject to change without notice.

⚠CAUTION

Equipment/property damage. Verify all battery modules installed in any single PWRcell Battery are the same type (EX or DCB). Connecting different battery types can result in equipment damage.

(C000731)

Table 2-2. Battery Module (Module)

PHYSICAL CHARACTERISTICS	DCB SERIES MODULE
Width	17.32 ± 0.08 in (440 ± 2 mm)
Length	17.32 ± 0.08 in (440 ± 2 mm)
Height	3.30 ± 0.08 in (84 ± 2 mm)
Weight	55.12 ± 0.1 lb (25 ± 0.5 kg)
ELECTRICAL CHARACTERISTICS	
Cell type	LiNMnCo
Usable Energy Capacity1 (Nominal)	3.0 kWh, 64.1 Ah
Voltage (Nominal)	46.8 VDC
Voltage Range	39 - 53.4 VDC
DC Disconnect	Fuse
Scalability (number of series modules)	3 to 6
Shelf Life or maximum self-discharge rate	6 months
BMS	
Monitoring parameters	System Voltage System Current Cell Voltage Cell Temperature
Communication	RS-485
OPERATING CONDITIONS	
Full Performance Temperature Range (Charging)	68 to 86 °F (20 to 30 °C)
Full Performance Temperature Range (Discharging)	32 to 91 °F (0 to 33 °C)
Operating Temperature Range (Charging)	23 to 122 °F (5 to 50 °C)
Operating Temperature Range (Discharging)	-4 to 122 °F (-20 to 50 °C)
Storage Temperature Range	-4 to 77 °F (-20 to 25 °C)
Elevation	Max: 6,560 ft (2,000 m)
Cooling Strategy	Natural Convection
RELIABILITY & CERTIFICATION	
Certificates	Cell: UL 1642
	Module: UL 1973
Transportation	UN38.3
Ingress Rating	IP20
Emissions	FCC Part 15 Class B
Environmental	Battery Directive 2013 / 56

[1] At beginning of product life. Values provided for 77 °F (25 °C).

Component Locations

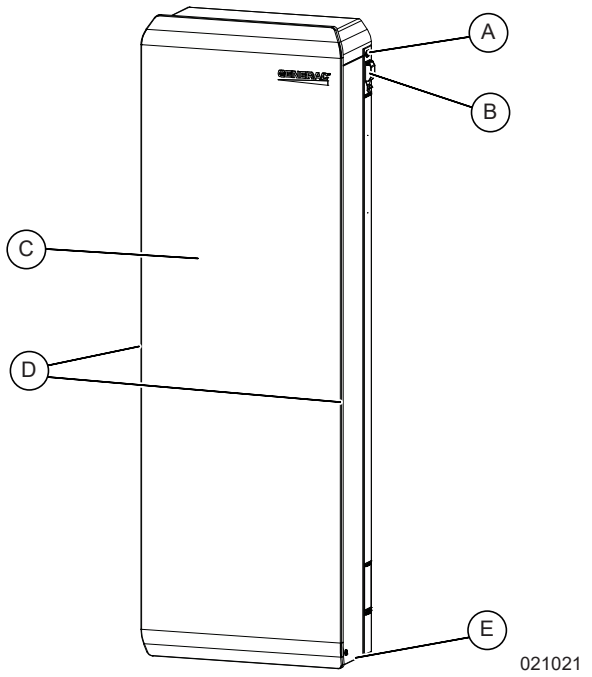


Figure 2-2. Component Locations

A	Battery Status LED
B	Battery Disconnect Switch
C	Front Cover
D	Cover Vents
E	Intake Filter

Serial Number Location

See ***Figure 2-3*** to locate serial number for the battery cabinet (B) and the individual battery modules (A). The serial numbers are located on the product nameplate labels.

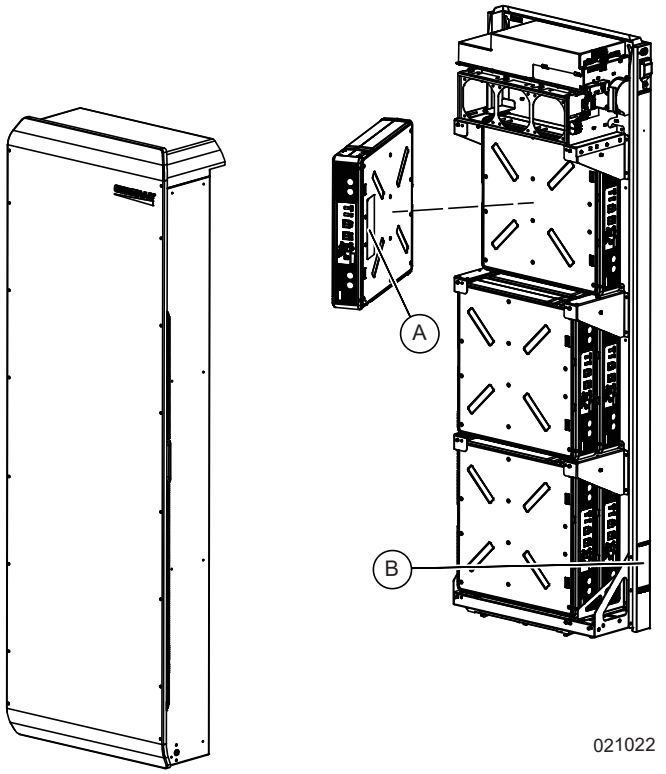


Figure 2-3. Serial Number Location

Record this information in ***Table 1*** on the inside front cover of this manual so it is available if the tags are lost or damaged. This information may be needed when ordering parts or requesting information.

NOTE: Battery module nameplate label will be upside down when correctly installed.

Section 3: Location Requirements and Dimensions

Pre-Installation Site Assessment

Before unboxing and mounting equipment, assess the site for potential ESS installation locations based on local code requirements and environmental conditions.

Verify compliance with the following:

- Secure all required permits before installation.
- Be aware of all federal, state, and local codes which could impact installation.
- Install PWRcell 2 Battery in accordance with all utility interconnection requirements.

The PWRcell 2 Battery is not a stand-alone product. It is part of a DC-interconnected optional standby system which must only be installed to premises with a 120/240 Vac single-phase (split-phase) electrical service.

NOTE: Most utilities require an application to interconnect. Contact the local utility provider for more information. Apply with the utility before installing the PWRcell 2 system. After commissioning, verify utility approval before interconnecting the PWRcell 2 system.

The PWRcell 2 system is not a stand-alone system. The PWRcell 2 system is an optional standby system and should be used to backup loads based on its classification. System load must be calculated and sized in accordance with local NEC adoption for optional standby systems.

Location Requirements

The Generac PWRcell 2 Battery may be installed in suitable indoor or outdoor locations in accordance with manufacturer instructions and the locally adopted fire, residential, building, and other codes as applicable.

When deciding the installation location, consider the following topics based on local code adoption in addition to any local code amendments:

- Approved ESS installation locations
- Location and site maximum energy thresholds
- Minimum separation distances to windows and doors and between ESS units
- Working space clearances
- Location building materials and fire protection
- Fire detection
- Fire suppression
- ESS disconnect means and emergency shutdown
- Vehicle impact protection
- Flood levels and nearby water sources
- Nearby vegetation and debris (see ***Environmental Requirements***).
- Equipment clearances (see ***Dimensions and Clearances***).
- Control circuit maximum distance 262.5 ft (80 m) (see ***Control Circuit Wiring***).

NOTE: The PWRcell 2 Battery does not require the installation of or use of an external ventilation system. The PWRcell 2 Battery uses the surrounding ambient air for cooling purposes.

NOTE: Do not expose the PWRcell 2 Battery to extreme temperatures. See ***Specifications*** for performance and operating temperatures. Operating the Generac PWRcell 2 Battery outside of these temperature range may degrade performance and affect end of life capacity.

Indoor Installation

Consider the following locations for an indoor installation:

- Attached garages separated from dwelling unit habitable spaces as per locally adopted building code.
- Detached garages and accessory structures.
- Utility closets and utility/storage spaces (may require AHJ approval).
- Utility closets and utility/storage spaces (may require AHJ approval).

NOTE: PWRcell 2 Battery is suitable for use in residential non-habitable spaces.

Consider the following common code requirements in accordance with local fire code and building codes:

- Identify or install an interconnected smoke detector (s) or heat detector(s) in the residence.
- Working space requirements in NEC Article 110.26.
- Install only in clean, dry locations. Verify distance to windows and doors entering the dwelling unit.
- Where UL 9540A test reports are not approved, PWRcell 2 Battery units must be separated by 36 in (91.44 cm) minimum.
- If the room/space where the battery is to be installed is not finished or non-combustible, the walls and ceiling of the room/space are to be protected.
- If installed in a location where the battery could be damaged by a vehicle, the battery must be

protected by approved barriers installed as per local building code.

- Do not allow bottom or front vents to become blocked (see ***Environmental Requirements***).
- Verify equipment minimum clearances are met (see ***Dimensions and Clearances***).
- Control circuit maximum distance 262.5 ft (80 m) (see ***Control Circuit Wiring***).

Outdoor Installation

Consider exterior walls for an outdoor installation.

Consider the following common code requirements in accordance with local fire code and building codes:

- Working space requirements in NEC Article 110.26.
- Where UL 9540A test reports are not approved, battery cabinets must be separated by at least 3 ft (91.44 cm).
- Install in well-managed, protected locations.
- Battery cabinets must be at least 3 ft (91.44 cm) to windows and doors entering the dwelling unit.
- When installed in a location where damage from vehicles, the battery must be protected by approved barriers.
- This equipment is not suitable for installations in a marine environment (docks, marinas, boats, and shipyards).
- Do not install where irrigation systems or other equipment will spray water onto the unit.
- Do not attempt to support the unit on soft, deformable surfaces or surfaces prone to move due to frost activity or subsidence.
- Do not allow bottom or front air vents to become blocked by vegetation, leaves, snow, dirt, sand, or other debris (see ***Environmental Requirements***).
- Verify equipment minimum clearances are met (see ***Dimensions and Clearances***).
- Control circuit maximum distance: 262.5 ft (80 m) (see ***Control Circuit Wiring***).

Environmental Requirements

Should local ambient outdoor temperature drop below the Full Performance temperatures of PWRcell 2 Battery (see ***Specifications***), the battery will perform cold-weather thermal management to regulate the ambient cabinet temperature.

A heating unit inside the cabinet is used for cold-weather thermal management when ambient cabinet temperature reaches one of the minimum unit-level Full Performance temperatures. Usable energy stored in the battery is consumed to power this operation.

NOTE: Where local temperatures are consistently below the full performance minimum temperatures, consumption of stored energy may be significant.

In locations where local temperatures exceed the Full Performance temperature range, it is recommended PWRcell 2 Battery be installed in an indoor conditioned space to avoid derating or ceasing charge/discharge during operation and to avoid significant consumption of usable stored energy.

The PWRcell 2 Battery and its battery modules are not designed to operate outside of the battery operating temperature range. The battery modules are not designed for storage outside of the storage temperature range. Operation or storage of the equipment in temperatures outside of their applicable temperature ranges may result in damage or degradation to the product which is not covered under warranty.

See ***Figure 3-1***. Keep the cover vents (A) and air intake vent (B) on PWRcell 2 Battery clear of any vegetation, debris, or other environmental factors (ex. snow).

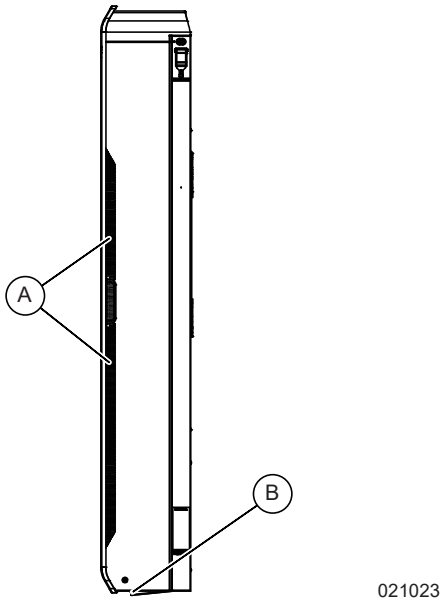


Figure 3-1. Ventilation (side view)

Inadequate airflow can cause the PWRcell 2 Battery to derate its power import and export for thermal management. If power derating is insufficient, due to an abnormally high ambient operating temperature, the battery will disconnect and enter a protective error state, requiring manual intervention to reconnect once temperatures cool.

Dimensions and Clearances

Unit Dimensions

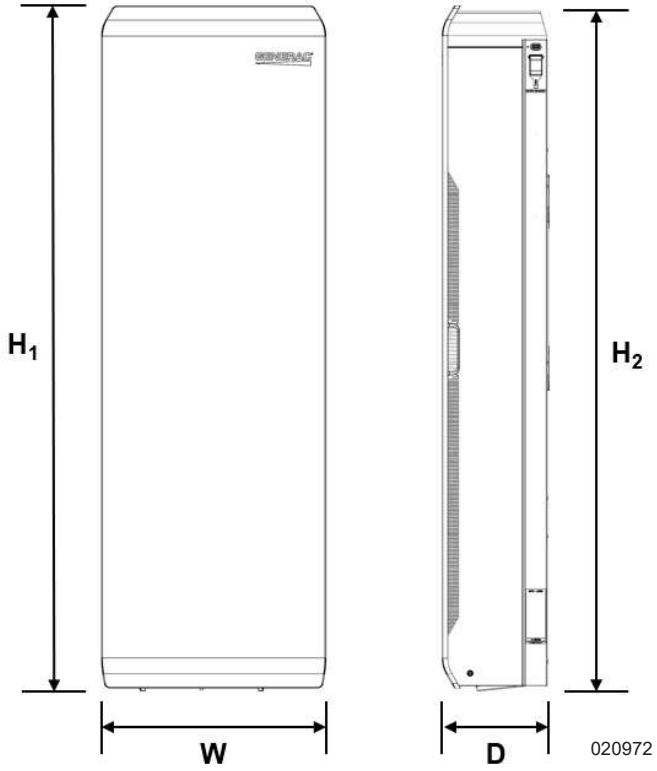


Figure 3-2. Unit Dimensions

Total Height (H1)	70 in (177.8 cm)
Mount Height (H2)	69-3/8 in (176.1 cm)
Width (W)	23 in (58.4 cm)
Depth (D)	10-3/4 in (27.3 cm)

Unit Clearances (with inverter and SDS)

IMPORTANT NOTE: Verify minimum working space clearances are maintained as specified in NEC 110.26.

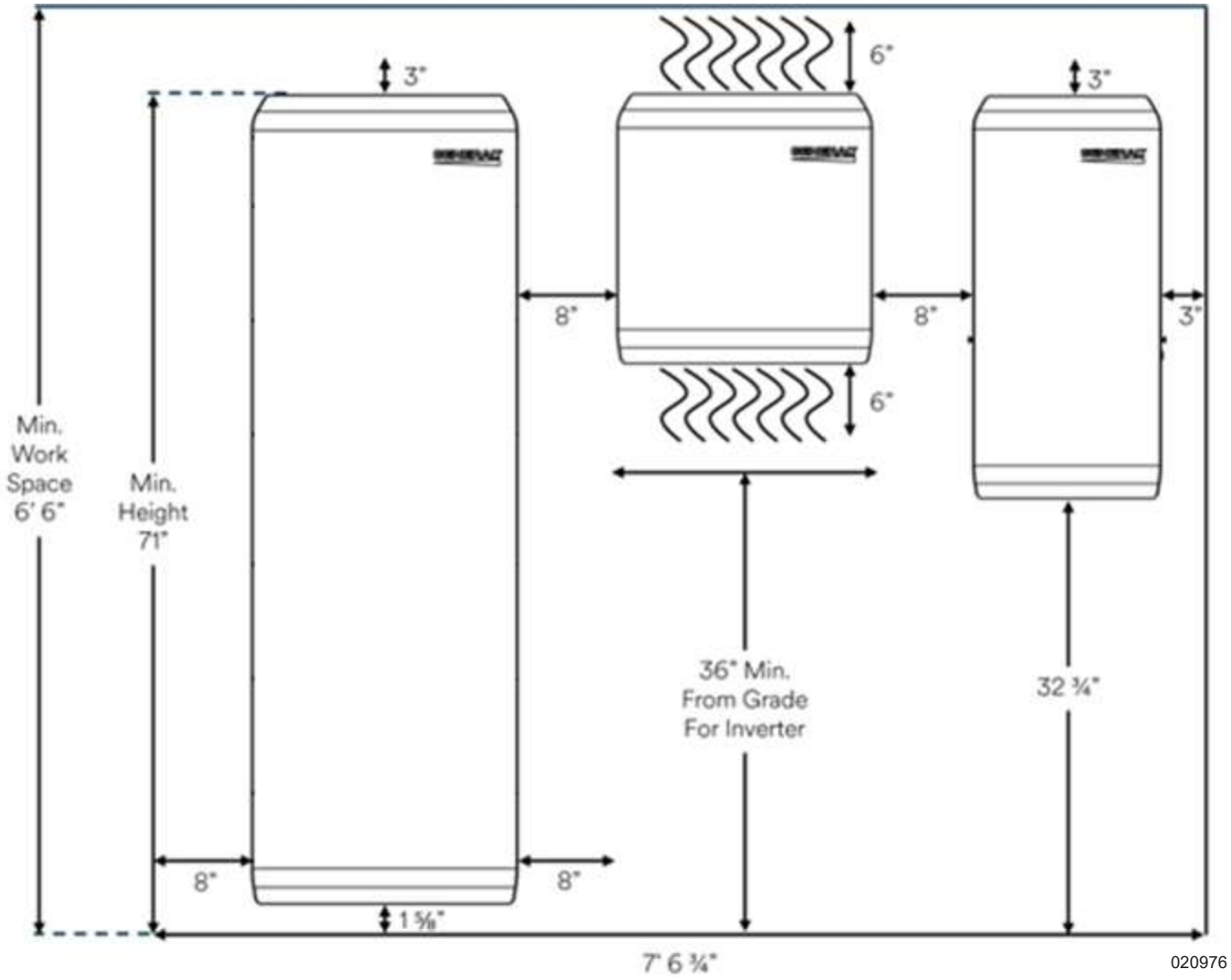


Figure 3-3. Minimum unit clearances (1 of 2)

Minimum clearance from left side and right side of enclosure	8 in (20.3 cm)
Minimum clearance above cover	3 in (74 mm)
Minimum clearance below enclosure	1-5/8 in (41 mm)
Minimum height of enclosure	71 in (180.3 cm)
Minimum working space (height)	6 ft 6 in (2.0 m)
Minimum working space (width)	7 ft 6 ¾ in (2.3 m)

Unit Clearances (multiple units)

IMPORTANT NOTE: Verify minimum working space clearances are maintained as specified in NEC 110.26.

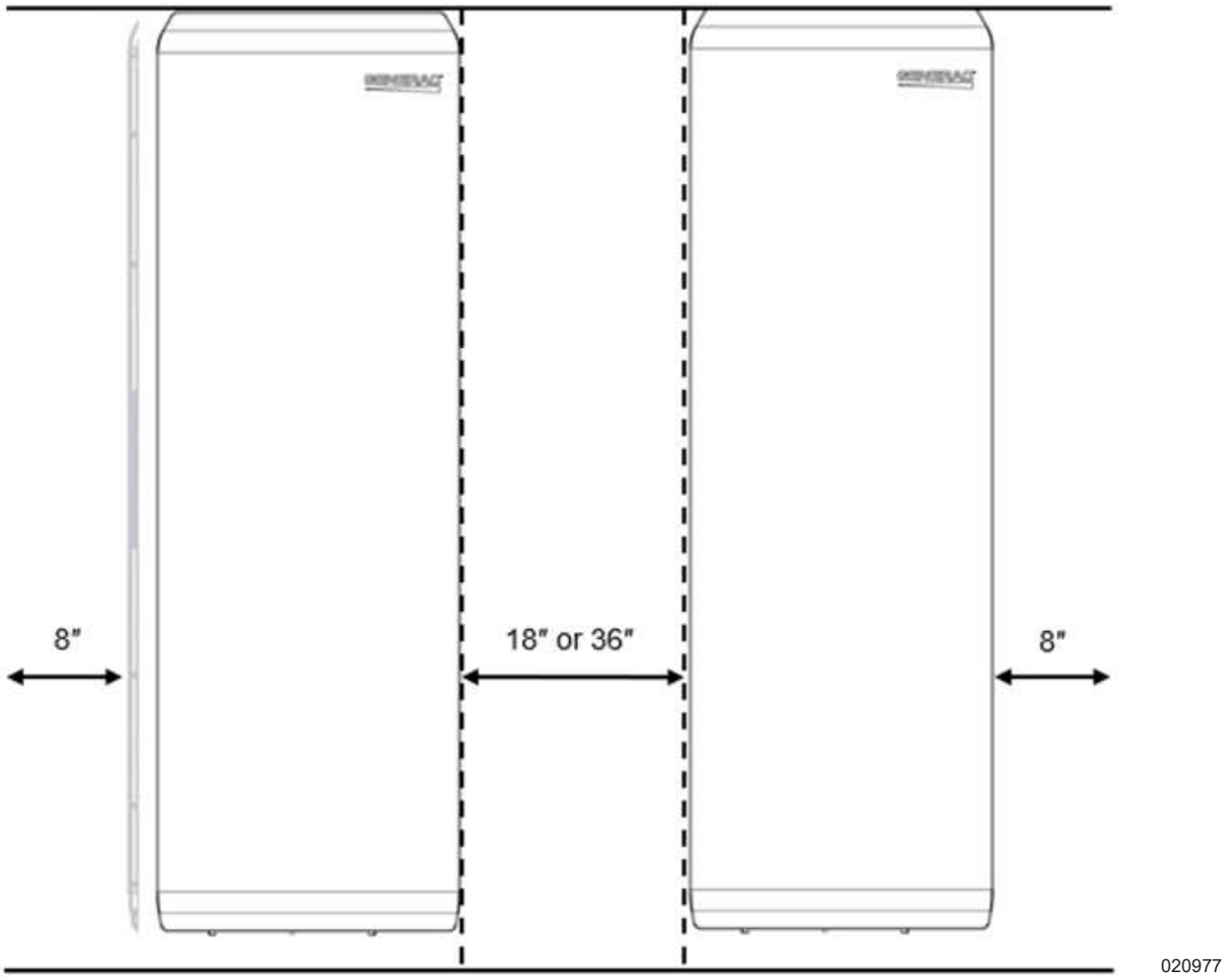


Figure 3-4. Minimum unit clearances (2 of 2)

Minimum clearance between PWRcell 2 Batteries[1]	18 in (45.7 cm)
Minimum clearance from left side and right side	8 in (20.3 cm)

[1] 18 in (45.72 cm) where UL 9540A test reports are accepted for reduced separation distances. Otherwise, at least 36 in (91.4 cm) is required based on local code adoption and local conditions.

Module Dimensions

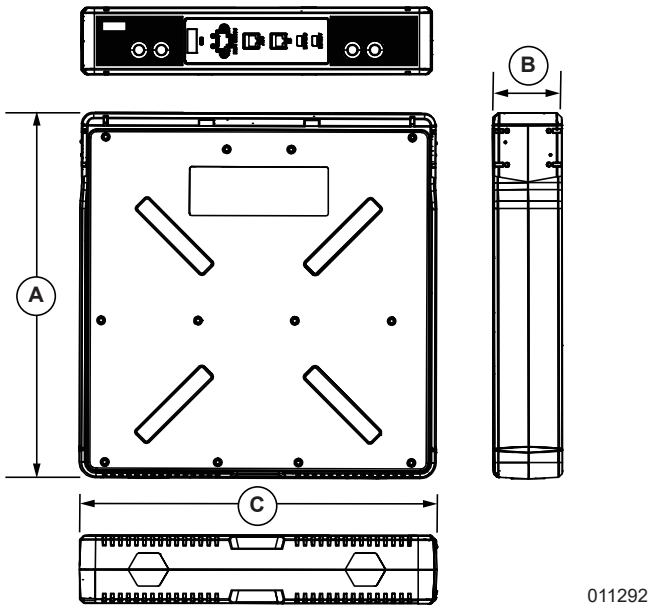


Figure 3-5. Battery module dimensions

A	17.72 ± 0.08 in (450 ± 2 mm)
B	3.31± 0.08 in (84 ± 2 mm)
C	17.32 ± 0.08 in (440 ± 2 mm)

Section 4: Mounting

Unboxing Battery Cabinet

Proceed as follows to unbox battery cabinet.

1. See ***Figure 4-1***. Lay battery box on one of the long sides.

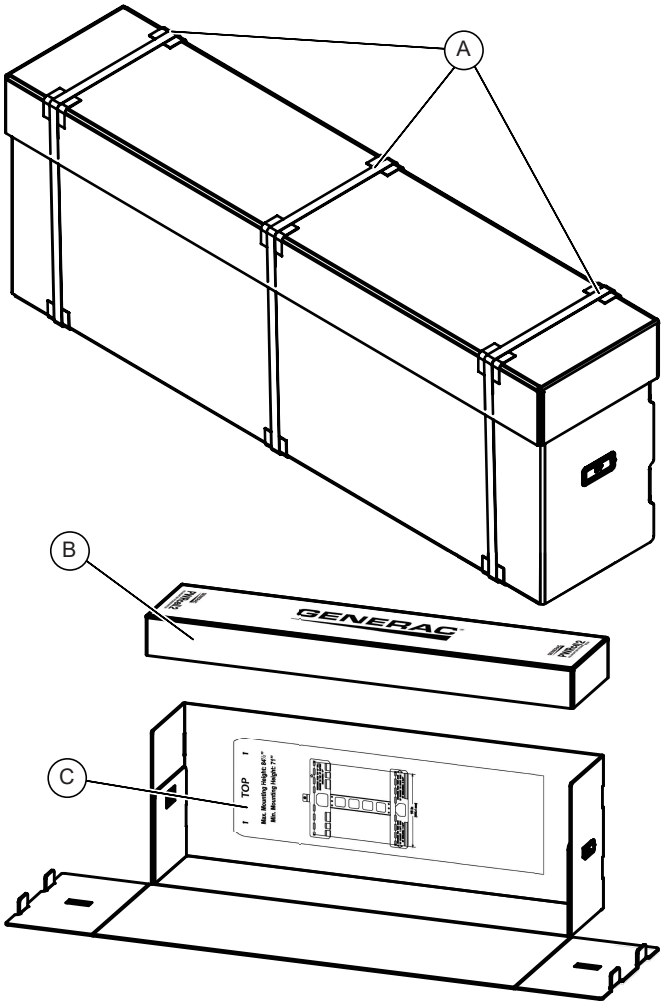


Figure 4-1. Unboxing the PWRcell 2 Battery

2. Unbox the PWRcell 2 Battery by removing straps (A) and top cover (B).
3. Lay unit onto its back side (C).
4. Remove the plastic handles from short edges.
5. Unfold cardboard tabs on short sides.
6. Cut out and retain the battery cabinet mounting template (C) on inside.
7. Remove Documentation & Hardware box and mounting bracket along with packing material. Set aside in a safe place.
8. Remove the battery front cover by sliding it toward the top of the unit, swinging the cover bottom out, and pulling the cover out.
9. Set cover aside in a safe place
10. Remove the battery cabinet and set aside in a safe place.

Determining a Top Line

See ***Figure 4-2***. If mounting the PWRcell 2 Battery on the same wall with the inverter and SDS, top-align the enclosures for best aesthetics, starting with the battery cabinet. Otherwise, if mounting the battery on a separate wall space, review the battery's unit dimensions and minimum clearances to establish a top line.

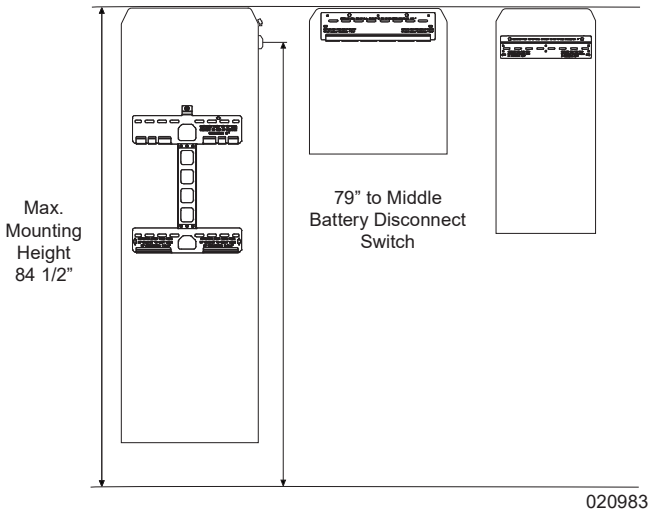


Figure 4-2. Determining a Top Line Using Mounting Brackets (left to right: battery, inverter, SDS)

Proceed as follows to mount battery, inverter, and SDS (L-R) on the same wall:

1. Start with the battery cabinet, as the largest enclosure, to establish a top line. The top line will be the height of the top of the battery front cover.
2. Cut out and use the battery cabinet template for planning and placement.
3. Measure a maximum height for the battery at 84 ½ in (214.63 cm) to keep the battery disconnect switch at 79 in (200.66 cm) to the center of the switch.

Fastening the Mounting Bracket

⚠WARNING

Falling Object. Mount equipment in a safe secure manner in alignment with all state and local codes. Failure to mount equipment securely could result in death or serious injury.

(W000825)

⚠CAUTION

Property Damage. Mount equipment to a strong, stable surface. Never mount to drywall, plaster, or other non-structural wall treatments.Failure to mount equipment to a strong, stable surface could result in equipment or property damage.

(C000641)

Proceed as follows to fasten the mounting bracket:

See ***Figure 4-3***, ***Figure 4-4***, and ***Figure 4-5***. Once the top line has been established, fasten the battery mounting bracket to the wall.

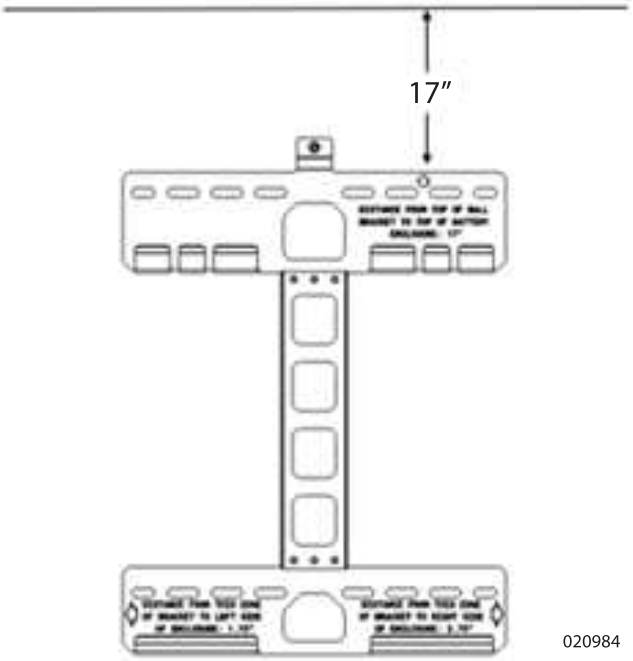


Figure 4-3. Measure From Top Line

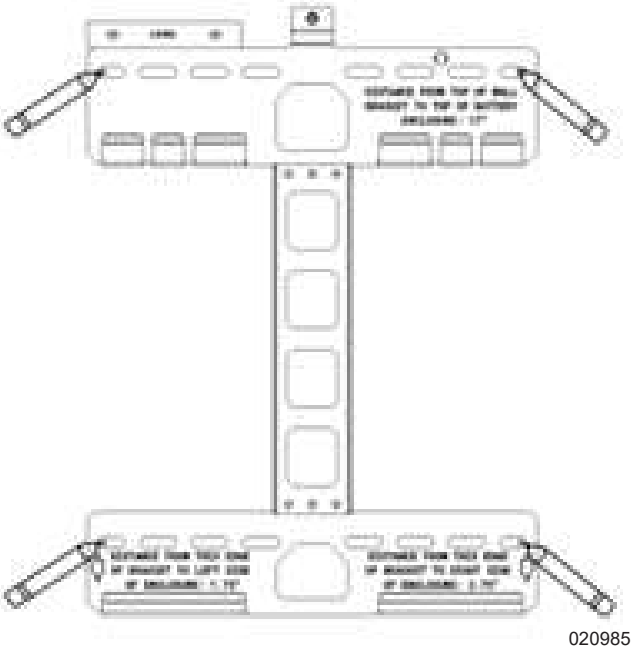


Figure 4-4. Mark Bracket Holes

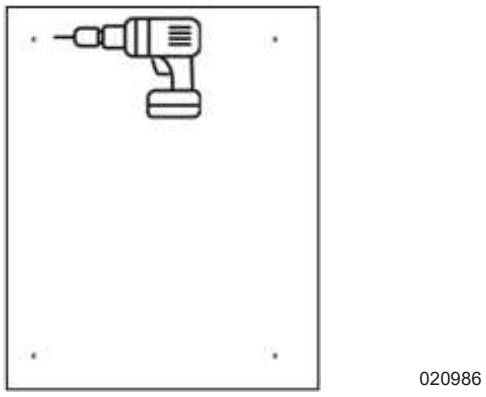


Figure 4-5. Predrill Holes

1. Measure from the top line 17 in (43.18 cm) down to the top of the battery mounting bracket and place a reference mark.
2. Use a level on the bracket to mark fastener holes.
3. Pre-drill holes.
4. See ***Figure 4-6***. Fasten the bracket to a sturdy wall with suitable fasteners. See ***General Fastener and Fastening Requirements*** for more information. See ***Seismic Anchorage*** for instructions on mounting to specific structural members in seismic areas.

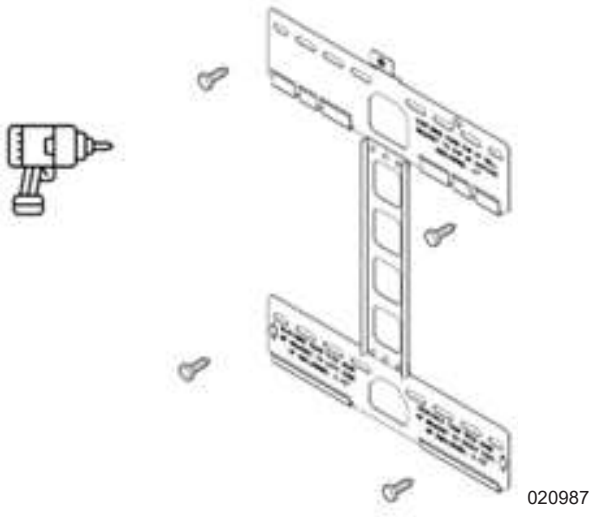


Figure 4-6. Fastening the Mounting Bracket

General Fastener and Fastening Requirements

NOTE: The information below is minimum guidance. See ***Seismic Anchorage*** for instructions on mounting in seismic areas.

IMPORTANT NOTE: It is the responsibility of the installer, building owner, and/or engineer of record to verify the supporting structure is sound and capable of supporting the system. Instructions in this document do not assume any responsibility to Generac for the design or soundness of the structure/structural members which the product is fastened to.

Fasteners:

- A minimum of 4 structural fasteners are required for the wall mounting bracket. Use corrosion protected steel fasteners of at least 1/4 in (0.63 mm) diameter. Fastener head clearance at least 5/8 in (15.88 mm) tall, 7/8 in (22.23 mm) diameter.
- Use flat washers between the fastener heads and the mounting bracket if the fastener is not a flanged head.
- All fasteners must be field supplied, none are provided with this product. Verify the fasteners selected are appropriately rated for the application.

Fastening:

- Fasteners must engage 1 1/2 in (38.1 mm) with a structural member.
- If mounting to stud framing, the bracket must be fastened to a minimum of two separate structural members.
- If mounting to a foundation or masonry, verify the fasteners are clear of any mortar joints.
- If studs are spaced greater than 16 in (40.64 cm) on center, see channel struct instructions found in ***Seismic Anchorage***.
- The battery mounting bracket must be installed as shown in these instructions. The product must not be installed in other orientations.
- Brackets must be installed level.

Knockout Locations

PWRcell 2 Battery has knockout locations on the left side, right side, and back of the enclosure in the areas shaded in ***Figure 4-7***.

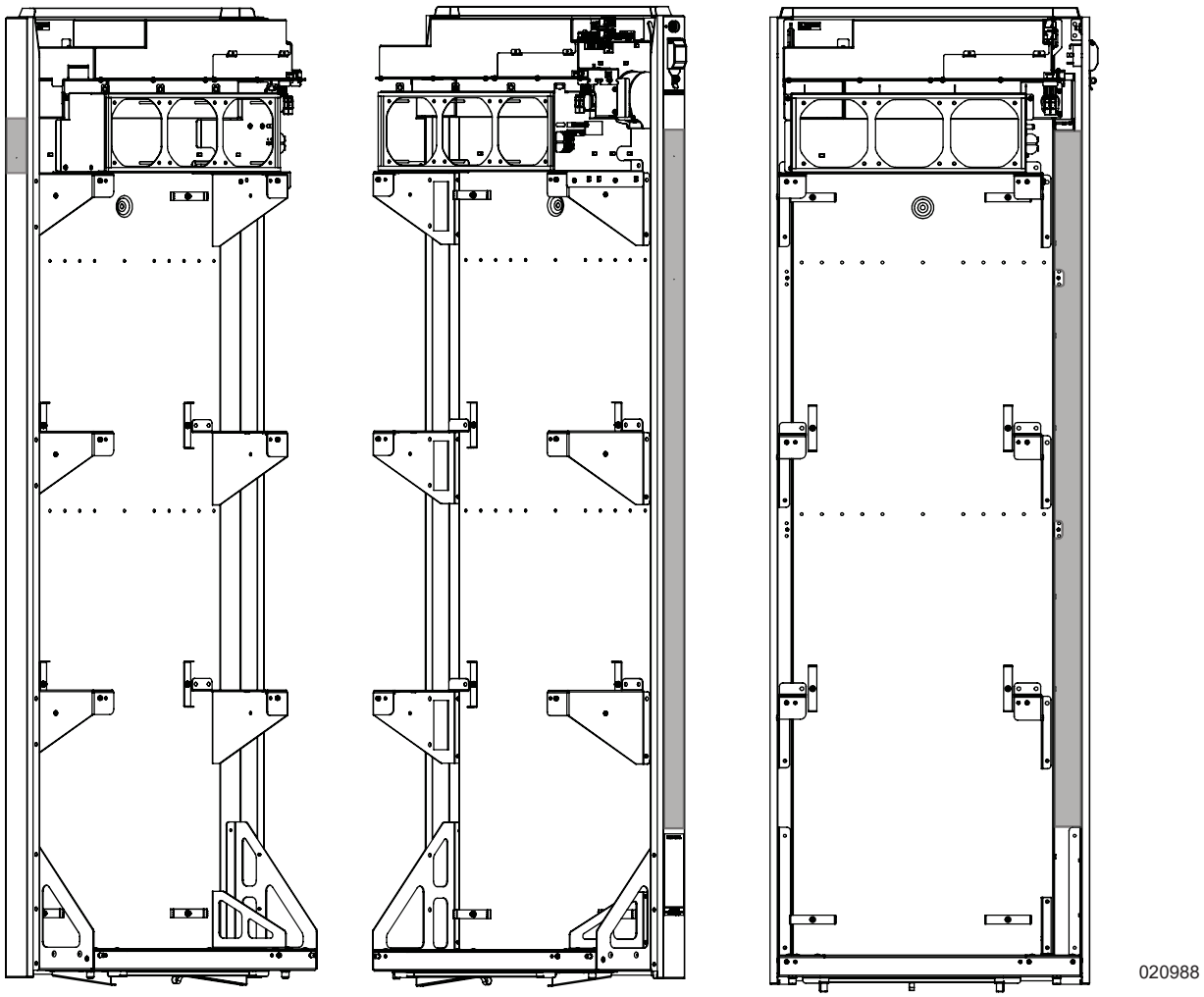


Figure 4-7. Battery Knockout Locations (L-R-B)

Punching Conduit Holes

It may be advantageous to punch conduit holes in the battery enclosure before handing it on the wall. Depending on how close the inverter and SDS are mounted to the battery cabinet, tool access may be limited. For best results, and to limit metal shavings, use a punch tool for the diameter conduit to be installed.

Proceed as follows to mount the battery, inverter, and SDS (L-R) on the same wall:

1. See ***Figure 4-8***. Locate the dimple marks on the battery enclosure. There are two marks on the right side (as shown) and one mark on the left side, at the same height as mark (A).

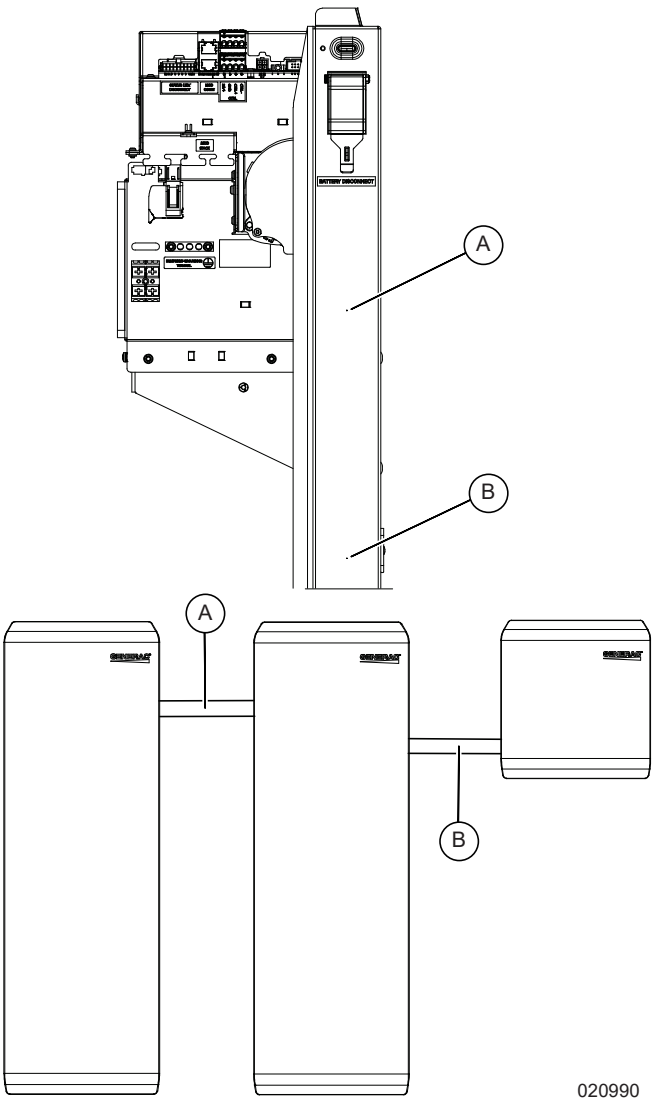


Figure 4-8. Use Dimple Marks to Punch Conduit Holes

2. When the enclosures are top aligned, the marks will allow for the conduit holes to be punched at the same height.
   a. Mark (A) will align conduit holes between battery enclosures.
   b. Mark (B) will align conduit holes between the battery, inverter, and SDS.
3. Select the correct punch tool die for the diameter conduit to be installed.
4. Drill a pilot hole for the punch tool.
5. Use the punch tool to punch holes as needed in the battery enclosure.

NOTE: All system components (inverter, SDS, and battery) have dimple marks (B) on their enclosures to install conduit at the same heights.

Mounting and Fastening the Battery Cabinet

NOTE: Always remove front cover before carrying or attempting to mount the battery cabinet.

See ***Figure 4-9***. If using the optional thread-on leveling feet for floor support, install the two leveling feet before mounting the battery cabinet.

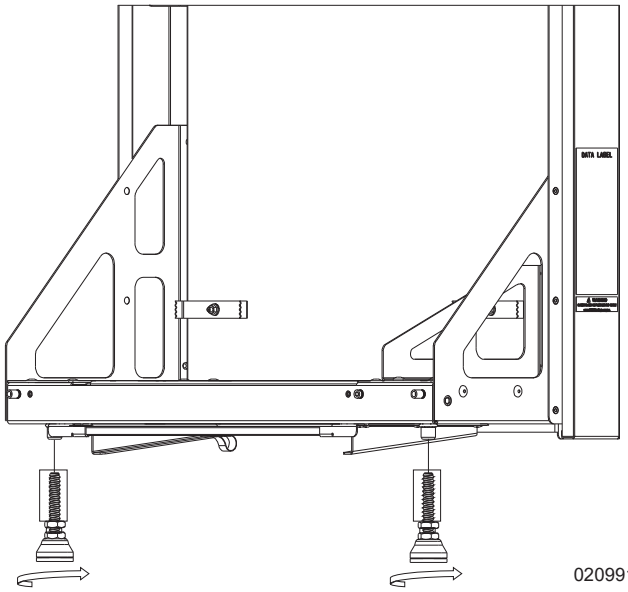


Figure 4-9. (Optional) Install Self-leveling Feet

See ***Figure 4-10***. Hang the battery enclosure on the mounting bracket and fasten the enclosure to the wall. If installed, adjust the leveling feet by following the instructions provided with them.

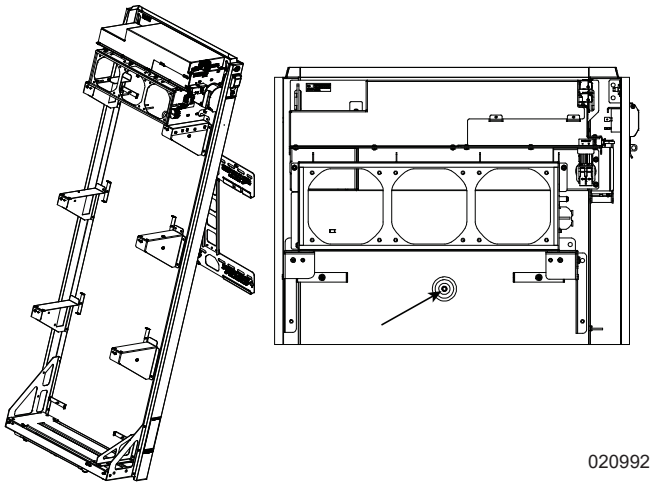


Figure 4-10. Hanging the Battery Cabinet and Fastening to the Wall

Installing Battery Modules

NOTE: Record battery module serial numbers prior to install ***Table 1***: Important Information located on the inside front cover of this manual.

When installing battery modules.

- Install rear modules first, regardless of the configuration, then front modules.
- See ***Figure 4-11***A module spacer (A) is required on odd number battery module configurations (M3 and M5).
- See ***Figure 4-11*** for the installation order of battery module for the number of PWRcell modules.

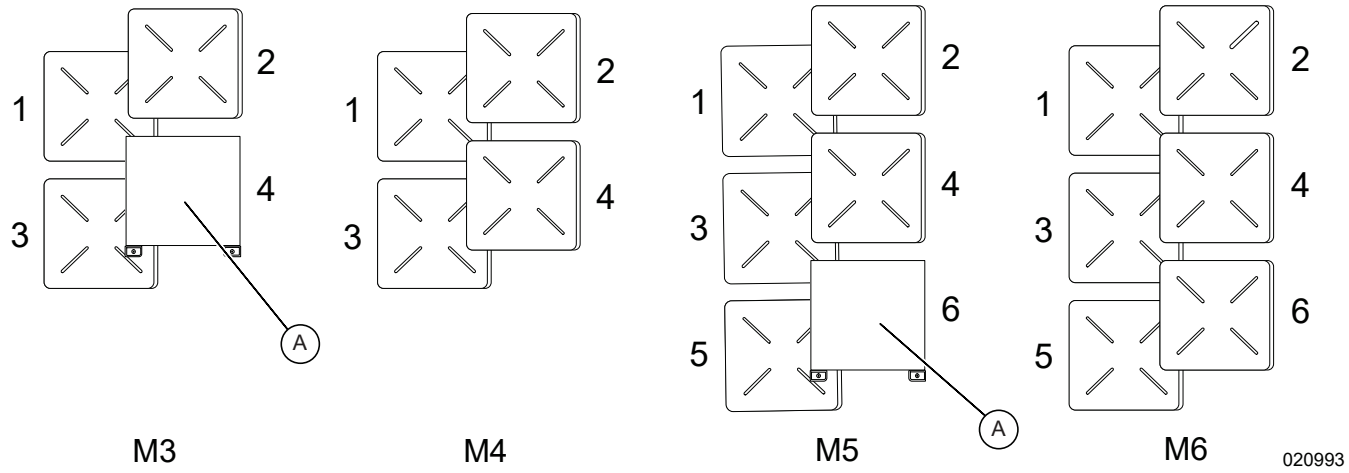


Figure 4-11. Battery Modules & Spacer Order of Installation

Installing Rear Modules

Proceed as follows to install the battery modules:

NOTE: Battery module ports (D) must face the right side of the PWRcell Battery body with the COM ports above the power port.

1. See ***Figure 4-12***. Angle the top of the battery module (B) under and behind the bracket lip (C).

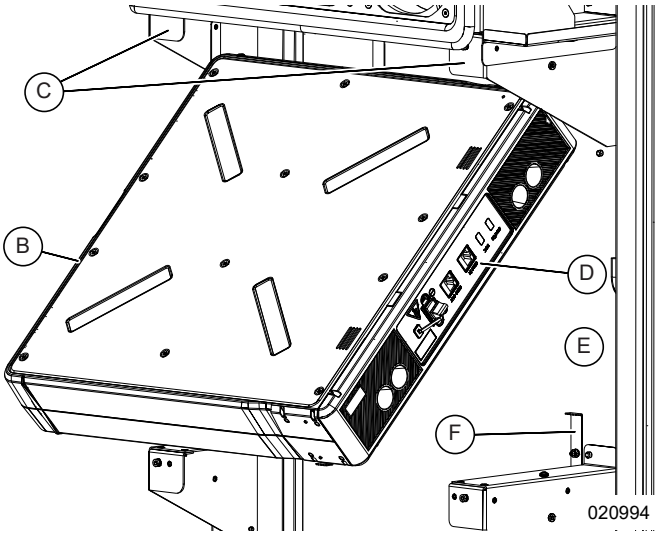


Figure 4-12. Installing Rear Battery Modules (1 of 2)

2. Slide the bottom of the battery module to the back of PWRcell Battery enclosure (E).
3. Verify the battery module rests against the grounding clips (F) factory-installed to the enclosure.
4. See ***Figure 4-13***. Install all rear modules before installing grounding tabs and front modules.

NOTE: Grounding clips are designed to contact and bite into the battery module to provide an equipment grounding connection.

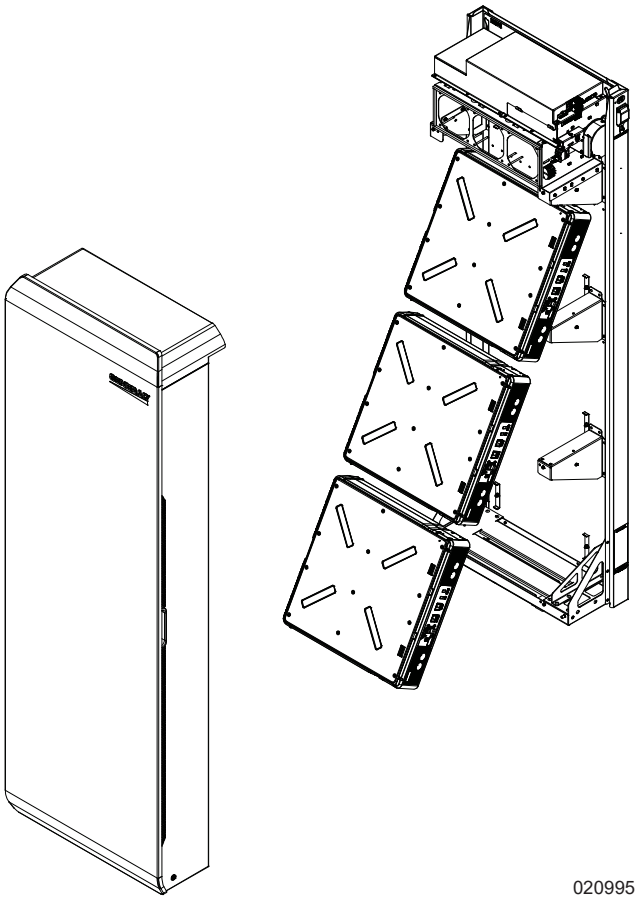


Figure 4-13. Installing Rear Battery Modules (2 of 2)

Installing Grounding Tabs

Proceed as follows to install grounding tabs.

1. See ***Figure 4-14***. Install two L-shaped grounding tabs (A) at the bottom of the module on both sides.

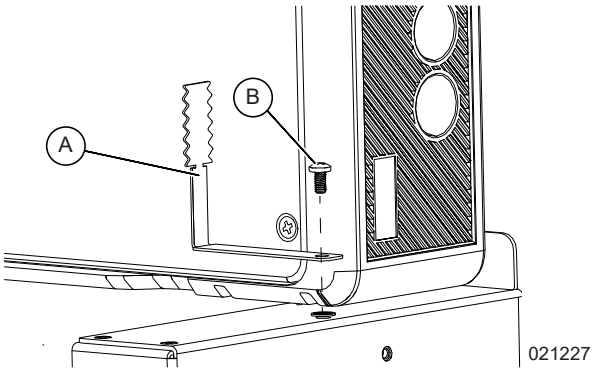


Figure 4-14. Installing Bottom Grounding Tabs (1 of 2)

2. Fasten each grounding tab with a M4x8 mm star bit T20 screw (B) and tighten to 13 **in-lbs** (1.47 Nm).
3. See ***Figure 4-15***. Install two L-shaped grounding tabs (C) at the top of the module on both sides.

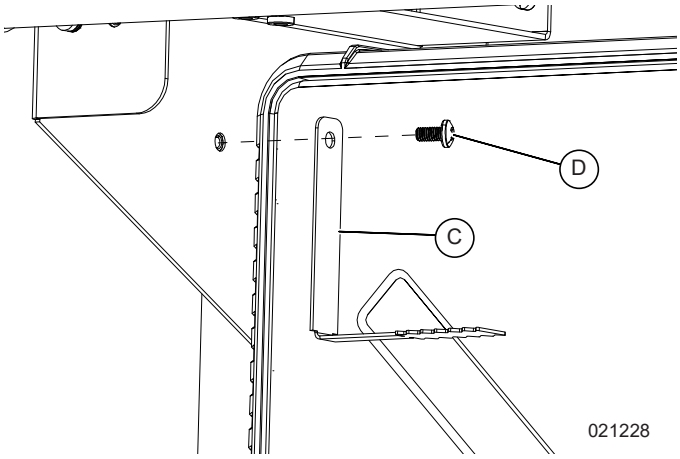


Figure 4-15. Installing Bottom Grounding Tabs (2 of 2)

4. Fasten each grounding tab with a M4x8 mm star bit T20 screw (D) and tighten to 13 **in-lbs** (1.47 Nm).

Installing Front Modules

See ***Figure 4-16***. Install front battery modules (J) using the same procedure used for the rear modules.

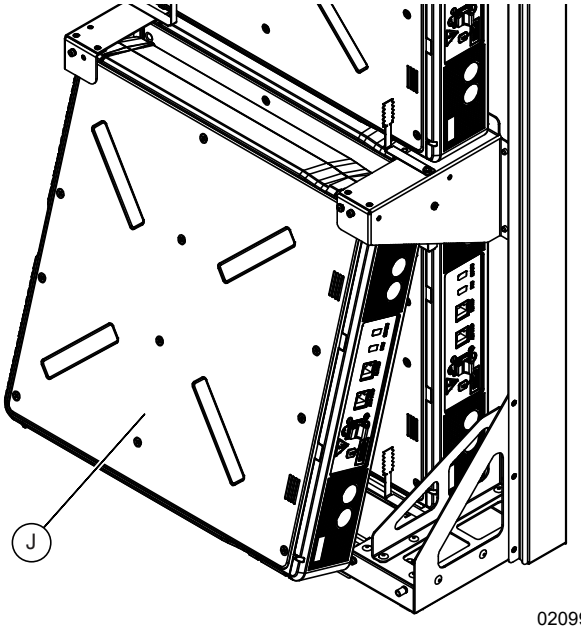


Figure 4-16. Installing Front Battery Modules

Installing Module Spacer (Odd number module installs only)

See ***Figure 4-17***. A module spacer (K) must be installed in the front position on a module shelf where battery module is only installed in the rear position.

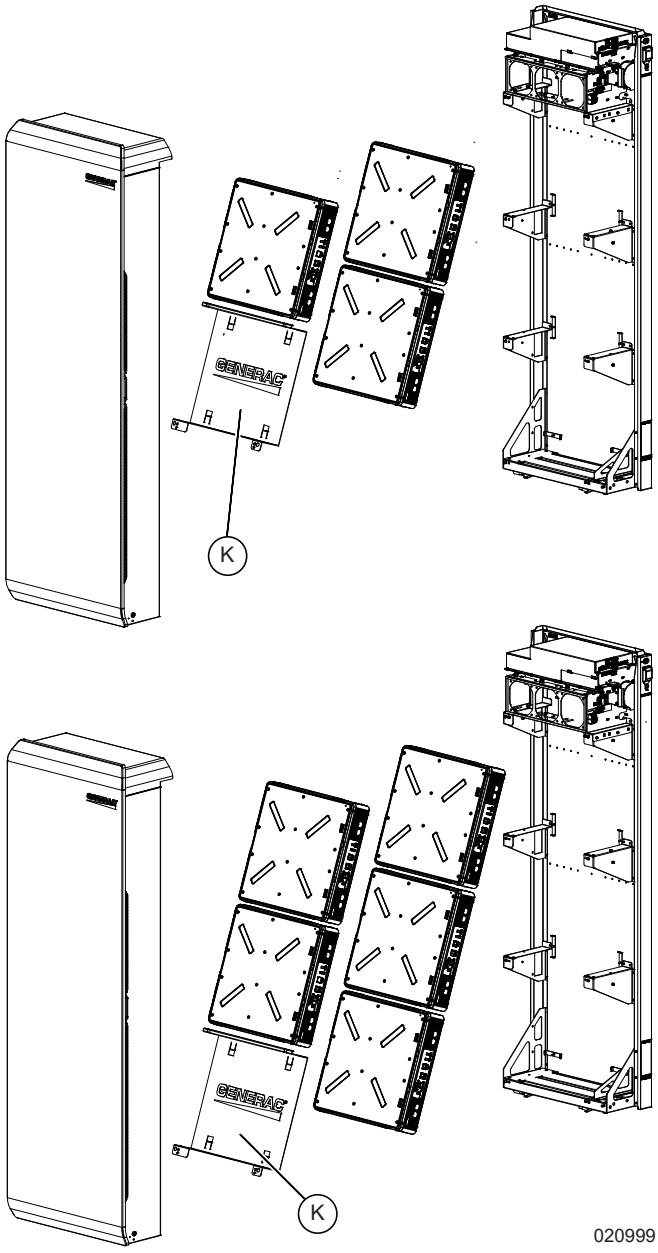


Figure 4-17. Installing Module Spacer

Proceed as follows to install a module spacer:

1. See ***Figure 4-18***. Angle the top of spacer (L) under and behind bracket lip (M).

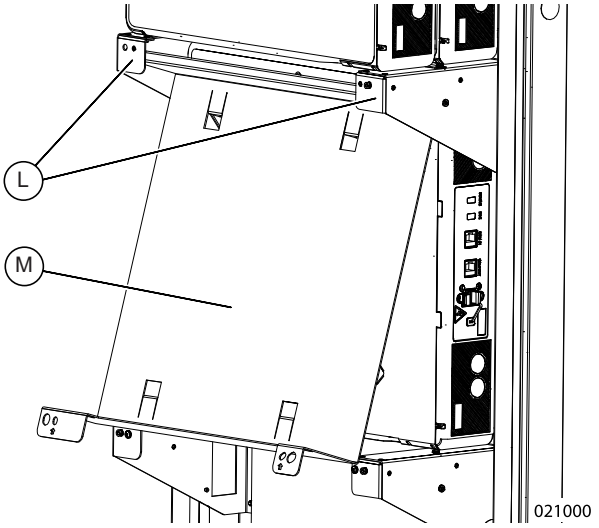


Figure 4-18. Installing Module Spacer (1 of 3)

2. See ***Figure 4-19***. Slide the spacer up between the brackets and push the bottom of the spacer in towards the enclosure.

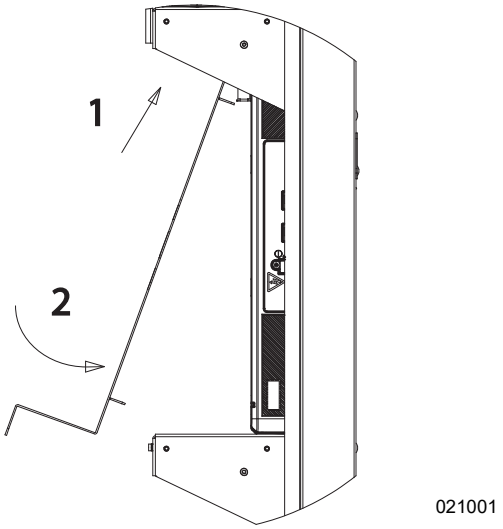


Figure 4-19. Installing Module Spacer (2 of 3)

3. See ***Figure 4-20***. Secure spacer with two M4x8 mm star bit T20 screws and tighten to 13 **in-lbs** (1.47 Nm).

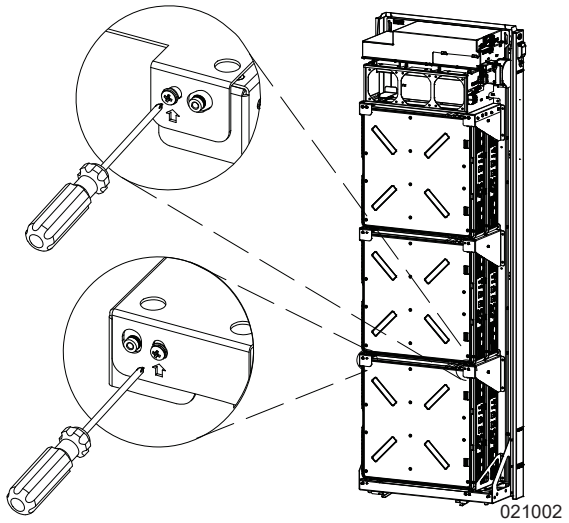


Figure 4-20. Installing Module Spacer (3 of 3)

Installing Retention Clips

See ***Figure 4-21***. All front battery modules must be secured with retention clips (N).

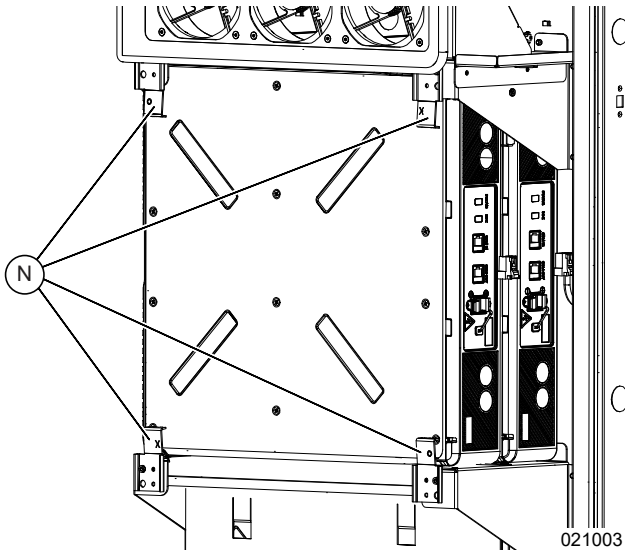


Figure 4-21. Installing Retention Clips (1 of 3)

See ***Figure 4-22***. There are three types of retention clips: double retention clips (P), single retention clips marked O (Q), and single retention clips marked X (R).

- Install single retention clips (Q) (R) at the top and bottom of the stack.
- Install double retention clips (P) between rows of modules.

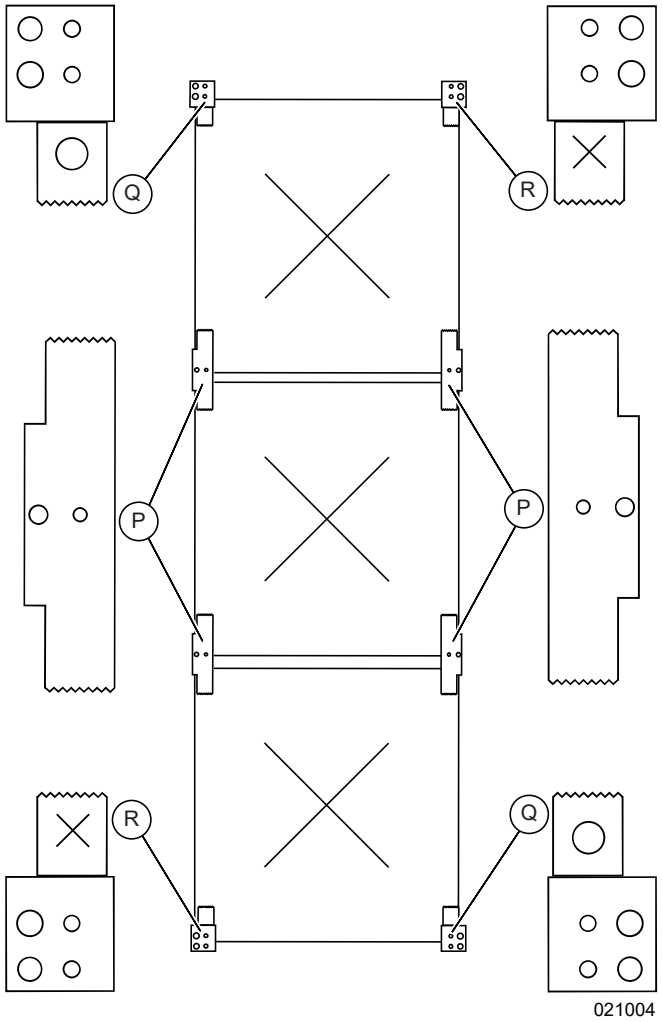


Figure 4-22. Installing Retention Clips (2 of 3)

Proceed as follows to install the retention clips:

1. See ***Figure 4-23***. Align holes in retention clip (S) with stud (T) and mounting hole (U).

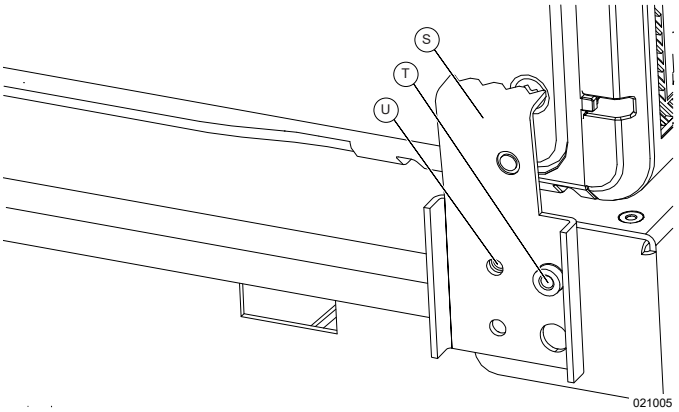


Figure 4-23. Installing Retention Clips (3 of 3)

2. Apply gentle pressure to verify all grounding tabs and clips make firm contact with the battery modules.
3. Secure retention clip to bracket with a M4x8 mm star bit T20 screw and tighten to 13 **in-lbs** (1.47 Nm).

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Section 5: Wiring

Wiring Guidelines

DANGER

Electrocution. Verify all system voltages are safe before wiring. Disconnect all AC and DC sources of power before touching conductors or terminals. Failure to do so will result in death or serious injury.

(D000642)

When wiring the PWRcell 2 Battery:

- Always use wiring methods in accordance with National Electrical Code (NFPA 70) and other applicable codes.
- Equipment terminals are for copper conductors only.
- Field-installed conductors shall be rated for 600 Volts.
- Field-installed conductors within the unit are to be sized in compliance with NEC Article 310.
- Tighten ground terminals as specified in this section.
- DC conductors must be identified in accordance with NEC 210.5(C)(2).
- DC wiring color must be consistent with NEC 215.12(C)(2).
- Watertight conduit fittings are required for outdoor installation.
- The PWRcell 2 Battery shall be installed in accordance with NEC Article 706.
- See ***PWRcell 2 Battery Management Unit (BMU) Wiring Diagram***. If using non-metallic conduit, two clamp-on ferrites must be installed on the PWRcell 2 Battery - one ferrite around the control circuit cable (C) and one ferrite around the DC power cable (D). Required Part - Ferrite Core Kit - 6QTY; Part Number APKE00118.

NOTE: Mark or flag all conductors as appropriate.

PWRcell 2 Battery Management Unit (BMU) Wiring Diagram

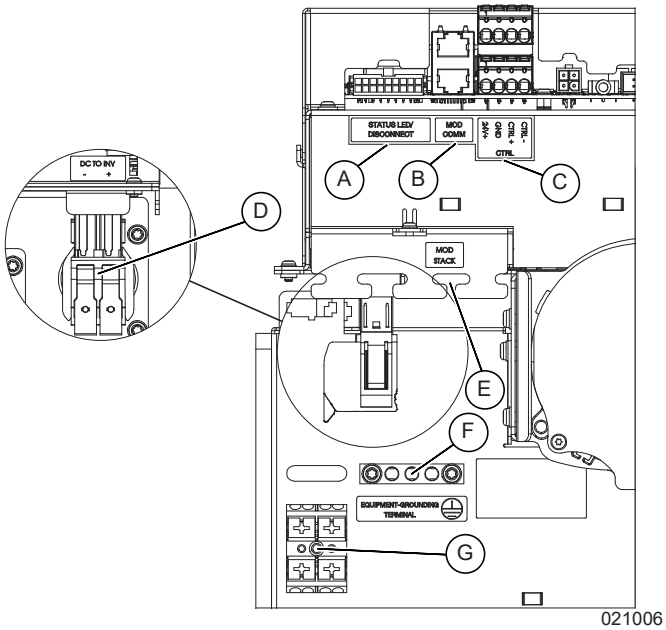

Figure 5-1. PWRcell 2 Battery BMU Wiring (Side View)

A	Status LED / Battery Disconnect Switch[1]
B	Module Comms[1] (RJ45)
C	Control Circuit Terminals (24V+, GND, CTRL+, CTRL-)
D	DC Power Terminals (DC+, DC-)
E	Module Stack Power Cable[1]
F	Ground Bar
G	Not Used (reserved for legacy product)

[1] Factory-installed

DC Wiring

Proceed as follows to wire the PWRcell 2 Battery to the PWRcell 2 Inverter:

1. See ***PWRcell 2 Battery Management Unit (BMU) Wiring Diagram*** and ***Table 5-1***. Route #6 AWG THHN or THWN-2 conductors from the battery DC power terminals (D) to the inverter wiring compartment to the positive and negative terminals BAT -/+.
2. Route and connect an equipment grounding conductor from the ground terminal (F) on the BMU to the inverter ground bar.

3. See *Table 5-1*. Tighten grounding conductor at the battery ground bar according to gauge used.

NOTE: Convention for DC wiring uses red for positive, black for negative, and green for ground.

Table 5-1. PWRcell 2 Wire Terminal Specifications

Terminal(s)	Wire Size (AWG)	Torque	Strip Length	Temperature Rating
DC Power	4 – 6	N/A	3/8 in (10 mm)	194 °F (90 °C)
Ground Bar	4 – 6 8 10	45 **in-lb** (5 Nm)	3/8 in (10 mm)	194 °F (90 °C)
Control Circuit	18	N/A	3/8 in (10 mm)	194 °F (90 °C)

Control Circuit Wiring

Reference the following details to ensure proper installation:

- The SDS controls the flow of power in the system using a +24 VDC CANbus between devices.
- The control circuit can be no longer than 262.5 ft (80 m) total, across all devices — from SDS to inverter to battery.
- The control circuit for PWRcell 2 is a Class 1 circuit between associated equipment.

Proceed as follows to wire the PWRcell 2 control circuit:

1. Use appropriately rated #18 AWG 4-conductor cable to run in the same raceway with power conductors.
2. See to NEC tables for conduit fill.
3. Terminate red 24+, black GND, orange (or similar light color) CTRL +, blue (or similar dark color) CRTL- at SDS.
4. See *Figure 5-2*. Route cable to inverter and terminate the other end of the cable in one of two control circuit terminal sets (A).

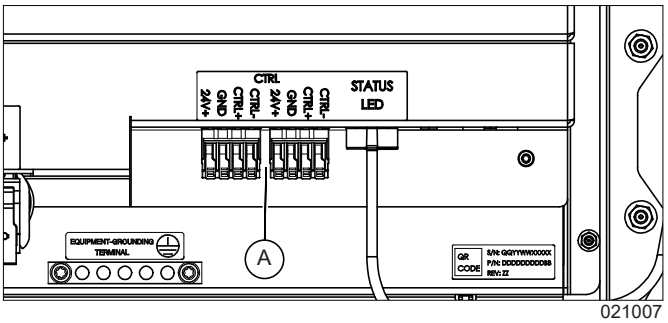

Figure 5-2. Inverter control circuit terminal sets

5. See *Figure 5-3*. Route another length of the same cable from the second set of control circuit terminals at the inverter and terminate at one of the two control circuit terminal sets (B) at the BMU. Maintain the same color pattern.

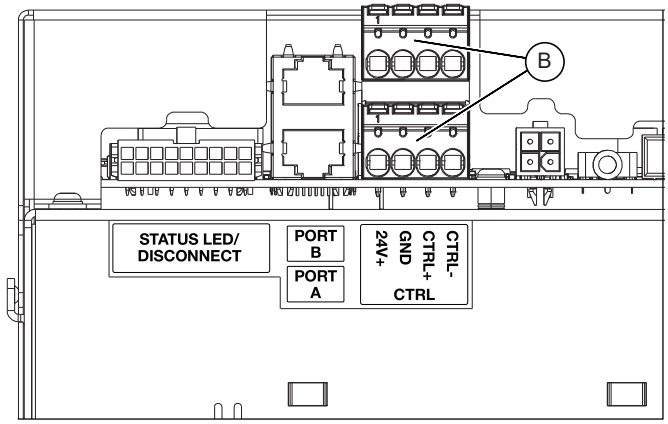

Figure 5-3. Battery control circuit terminal sets

NOTE: A terminating resistor must be present at both the beginning and the end of the CANbus. A CAN connector with a terminating resistor will come standard with this device. This terminating resistor cannot be moved to a different connector. If terminating the CANbus in a different device, fully remove the connector with the installed resistor.

Module Connections

See *Figure 5-4* for a description of the module connections and indictor lights (LEDs).

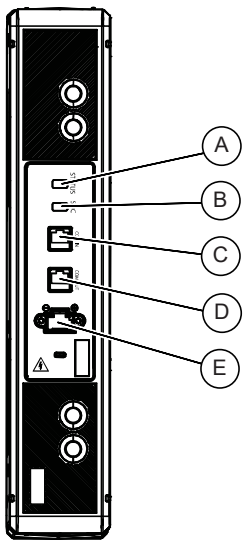

Figure 5-4. Battery Module Connections and LEDs

A	Status LED
B	SOC LED
C	COMM In Port
D	COMM Out Port
E	Battery Power Port

Connecting Module Communication (COMM) Cables

See ***Figure 5-5*** for a summary of battery module Cat 5 COMM cables connections.

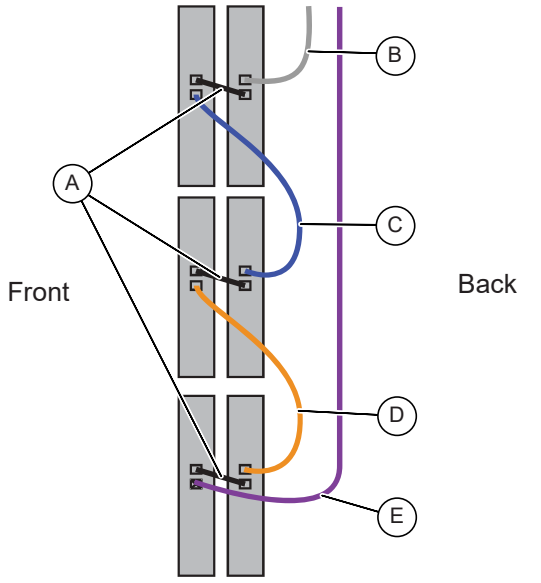

Figure 5-5. Module COMM Cable Connections

A	Black Cat 5 jumper cables
B	Gray Cat 5 cable (MOD COMM)
C	Blue Cat 5 cable
D	Orange Cat 5 cable
E	Purple Cat 5 cable (MOD COMM)

Proceed as follows to connect module cable COMM connections:

1. See ***Figure 5-5***. There are four multicolored Cat 5 cables factory-installed in the battery cabinet and three black Cat 5 jumper cables shipped loose in the hardware kit.
2. Locate the multicolored Cat 5 cables attached to the battery power cable harness found in the wiring channel on the right-hand side of the enclosure.
3. Connect the gray Cat 5 cable (G) to the top-most back module COMM IN port as shown in ***Figure 5-5***.
4. Connect the purple Cat 5 cable (K) to bottom-most front battery module COMM Out port as shown in ***Figure 5-5***.

   NOTE: For installations of less than six battery modules, the gray Cat 5 cable (K) must connect to the COMM out port of the bottom-most battery module. When two modules are in the bottom-most shelf, install cable (K) in the front module.
5. Connect the blue Cat 5 (H) cable as shown in ***Figure 5-5***.
6. Connect the orange Cat 5 (J) cable as shown in ***Figure 5-5***.
7. Connect the black jumper cables (F) between battery modules on the same shelf as shown in ***Figure 5-5***.
8. Review the COMM cable connections. Verify connections are well seated and create a continuous circuit starting from the gray Cat 5 cable (G), between the modules using cables (F), (H), and (J), and ending with cable (K).

Connecting Module Power Cables

DANGER

Electrocution. Never reach into port or touch battery terminals with hands or tools. Doing so will result in death, serious injury, equipment or property damage.

(D000639)

Proceed as follows to install module power cable connections:

1. See ***Figure 5-6***. Remove gray rubber cap (M) for each module power port (L).

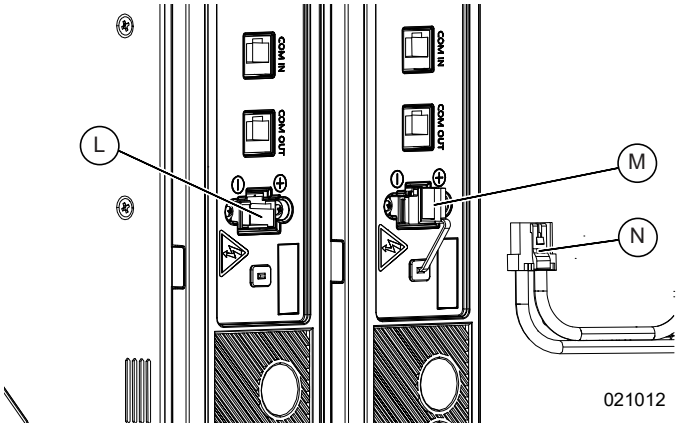

Figure 5-6. Remove Rubber Caps and Connect Power Cable Connectors

2. Plug in the black power cable connectors (N) into the uncapped battery module port ports (L).
3. See ***Figure 5-7***. Install a loop jumper (P) on each unused power cable connector (Q).

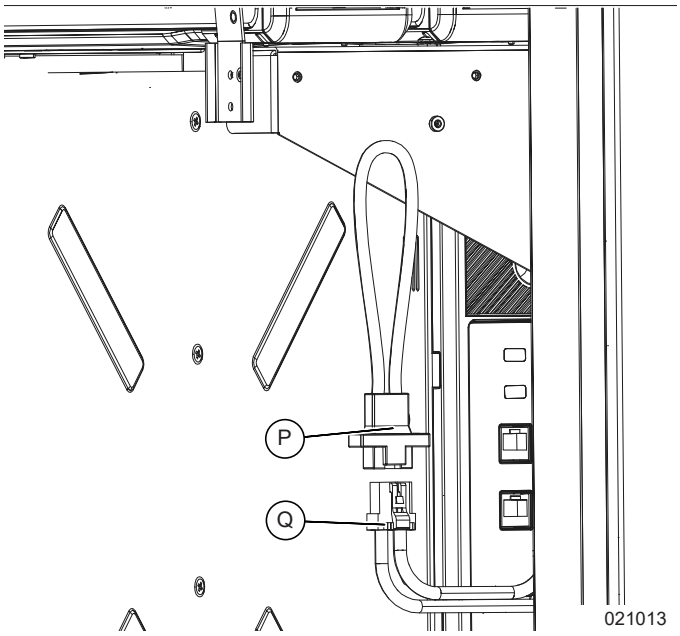

Figure 5-7. Install Loop Jumper on Unused Power Cable Connectors

Installing Cover

Proceed as follows to install the cover:

1. See ***Figure 5-8***. Using the built-in orange handles (A), lift the cover and tilt it slightly forward in front of the battery cabinet.

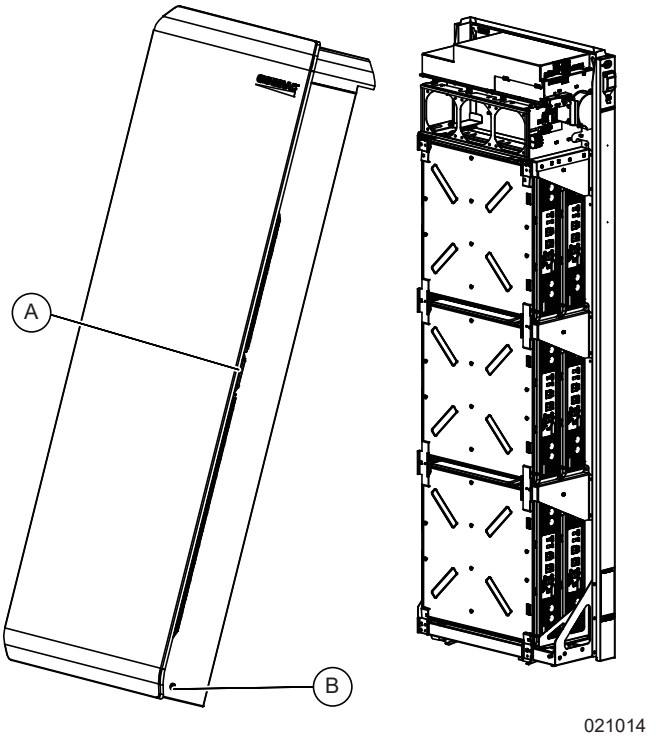

Figure 5-8. Install Cover (1 of 2)

2. Verify all cables are tucked in and clear of the cabinet frame.
3. See ***Figure 5-9***. Rest the top interior of the cover on the back flange (highlighted gray) and align the sides.

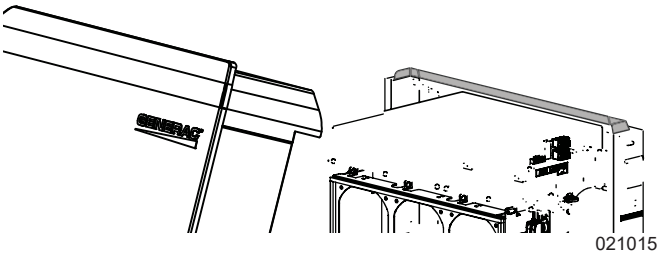

Figure 5-9. Install Cover (2 of 2)

4. In a slow and controlled manner, let the cover swing towards the cabinet.
5. See ***Figure 5-8***. Fasten the two cover side screws (B) to secure cover to the cabinet.

Removing Front Cover

Proceed as follows to remove the front cover:

1. See ***Figure 5-8***. Loosen the two cover side screws (B).
2. Using the built-in orange handles (A), lift the cover and swing out the cover.

Section 6: Commissioning

Commissioning the PWRcell 2 System is completed by accessing the local network emitted by SDS. See *Smart Disconnect Switch Installation Manual* for complete commissioning instructions.

Wiring Checks

Proceed as follows to perform wiring checks prior to commissioning:

1. Complete a visual inspection of the wiring at the battery.
2. Perform tug tests of the wiring at the battery.
3. Use a multi-meter to check resistance on each circuit before energizing.
4. Verify polarity of DC wiring.

Accessing Field Pro Mobile App

Commissioning the PWRcell 2 system occurs in the Field Pro Mobile App. Download Field Pro using a mobile device to scan the QR code found on SDS. For detailed information on how to use Field Pro, see the *Smart Disconnect Switch Installation Manual*.

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Section 7: Battery Operation

Battery Status LED

See *Table 7-1*. The Battery Status LED color and interval indicates battery status.

Table 7-1. Battery Status LED Color

LED Color	Interval	Battery Status
Green/Orange/ Red	Alternating (1 s)	Initializing or firmware update
Green	Solid	Battery operating normally
Orange	Solid	ESS in Sleep Mode
Orange	Flashing (1 s)	PV Search Mode activated
Orange/Green	Alternating (1 s)	System performance limited
Red	Solid	System fault
Red	Slow Flashing (2 s)	System shutdown active
Red	Fast Flashing (0.5 s)	ESS overload

Battery Disconnect Switch

The battery disconnect switch disconnects the battery stack from the battery monitoring system (BMS) electronics built into the BMU, preventing the export of stored energy to the DC power terminals.

To access the disconnect switch, the metal cover needs to be lifted. A hasp is integrated into the enclosure and can be used to secure the disconnect in the OFF position. The hasp accepts a standard lock for lockout / tagout.

Shutting Down

See *Figure 7-1*. Proceed as follows to shut down the PWRcell 2 Battery:

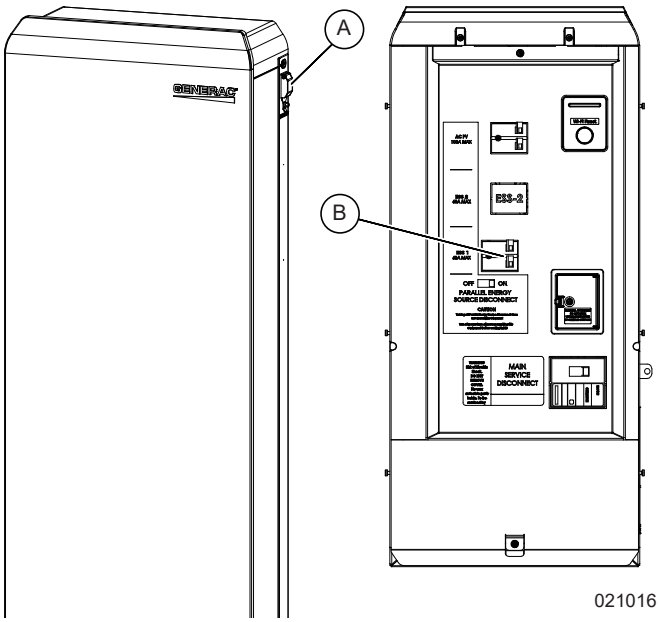

Figure 7-1. Shutting Down

1. Lift the metal cover over Battery Disconnect Switch (A).
2. Turn OFF the battery disconnect switch (A).
3. Turn OFF the ESS breaker (B) at SDS.

Monitoring in PWRview Mobile App

The PWRcell 2 system owner can monitor their PWRcell 2 system and make basic settings changes using a registered account through the PWRview Mobile App.

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Section 8: Maintenance

Accessories

Module Spacer Kit

The Generac PWRcell Spacer Kit can be obtained by contacting Generac Customer Service at 1-888-436-3722 (1-888-GENERAC), or ***www.generac.com***. Kits must be installed by a qualified person.

Generac PWRcell Upgrade Kit

The Generac PWRcell Upgrade Kit offers more grounding clips, power plugs, and fasteners. The kit can be obtained by contacting Generac Customer Service at 1-888-436-3722 (1-888-GENERAC), or ***www. generac. com.*** Kits must be installed by a qualified person.

Thread-on Leveling Feet

Optional accessory leveling feet for floor support when mounting the battery to the wall. The kit can be obtained by contacting Generac Customer Service at 1-888-436-3722 (1-888-GENERAC), or ***www. generac. com***. Kits must be installed by a qualified person.

Maintenance

⚠DANGER

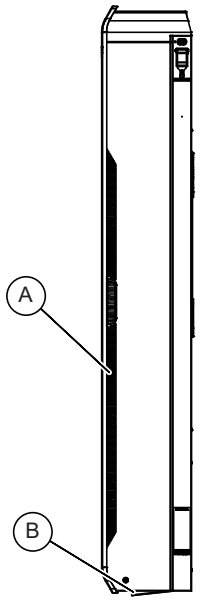
Electrocution. Front cover should be removed by a qualified technician only. Removing the front cover could result in death, serious injury, equipment or property damage.

(D000604)

- Clean the exterior of the enclosure with a soft cloth.
- Verify the surrounding area is free of snow, sand, leaves, branches, pet hair, or other debris which could obstruct airflow in or out of the unit.
- Inspect the unit. Look for conditions which could hinder performance or safety, such as (but not limited to):
  - Blocked vents.
  - Dirty intake filter.
  - Loose / missing hardware.
  - Loose or broken electrical connections.

Inspecting Vents

See ***Figure 8-1***. Inspect the intake vent (B) and cover vents (A). Verify they are clear of any debris which could obstruct airflow.



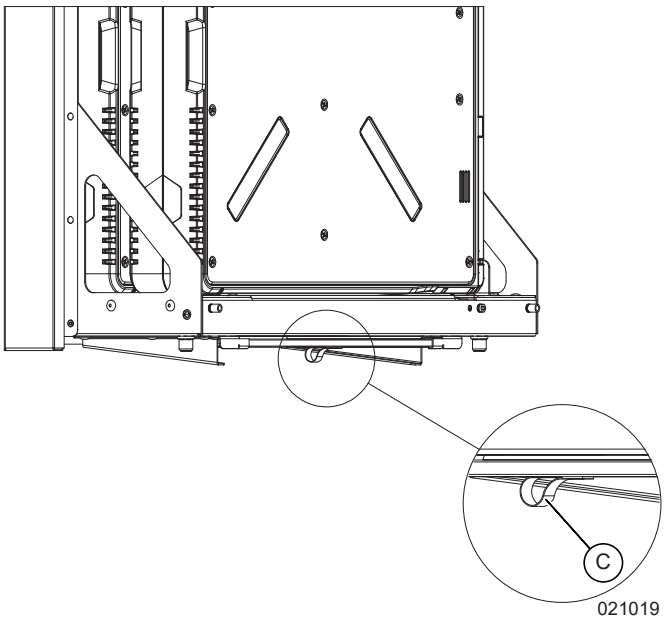
021018

Figure 8-1. Inspect Vents

Cleaning Intake Filter

Proceed as follows:

1. See ***Figure 8-2***. Grasp pull tab (C) and push frame back to compress retention springs.



021019

Figure 8-2. Cleaning Intake Filter

2. Pull tab down and out.
3. Slide filter out.
4. Clean filter with a vacuum cleaner, compressed air, or water.

NOTE: Allow filter to dry before reinstalling.

5. Reinstall filter.

If intake filter is damaged or becomes difficult to clean, contact the nearest IASD or Generac Customer Service at 1-888-GENERAC (1-888-436-3722) or visit ***www.generac.com*** for a replacement filter.

Cleaning Cover Vents

See ***Figure 8-3***. Clean cover vents (D) with dry cloth or shop vacuum.

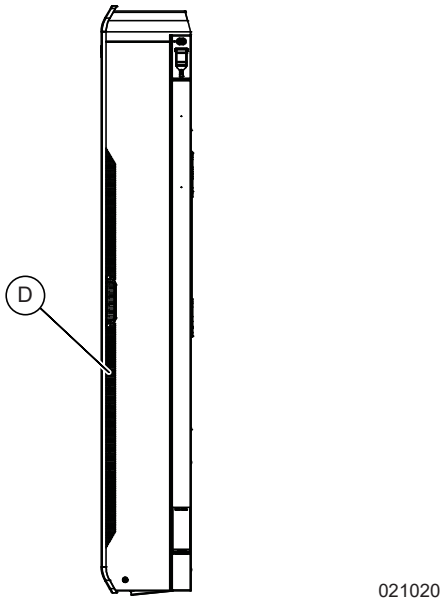


Figure 8-3. Cleaning Cover Vents

Decommissioning

⚠WARNING

Environmental Hazard. Decommissioning must be performed by qualified personnel. Decommissioning performed by unqualified personnel could result in environmental damage, death, or serious injury.

(W000654)

PWRcell 2 Battery modules will be required to be decommissioned at the battery module end of life stage or if the PWRcell 2 Battery will be removed from the premises. Decommissioning must be in accordance with these instructions, the requirements in NFPA 855, and all applicable code requirements. The authority having jurisdiction (AHJ) shall be notified prior to the decommissioning of the battery.

Decommissioning Plan

The owner of the PWRcell 2 Battery and the qualified Generac Service Dealer shall prepare a written decommissioning plan which provides an overview of the decommissioning process developed specifically for the battery which is to be decommissioned.

The decommissioning plan shall provide the requirements and methods necessary to safely discharge the stranded energy in battery modules and the correct removal from the installation site, including the transportation and recycling process for the battery modules.

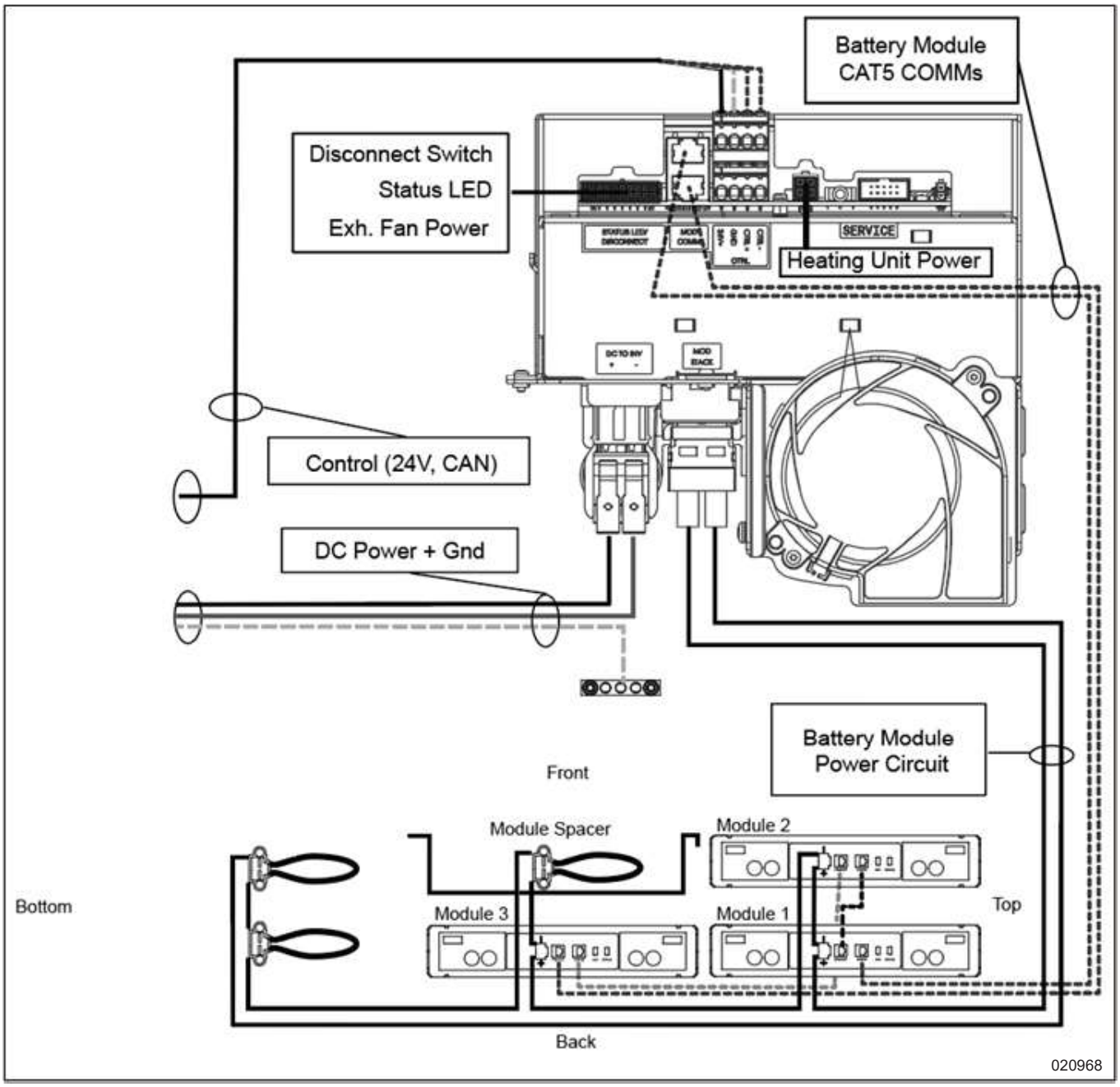
After the battery has been decommissioned, a decommissioning report shall be prepared by the owner of the system and the qualified Generac Service Dealer indicating the date the battery was decommissioned, the results of the decommissioning process, any issues which were identified during the decommissioning process, and the required measures taken to resolve those issues.

Battery Recycling

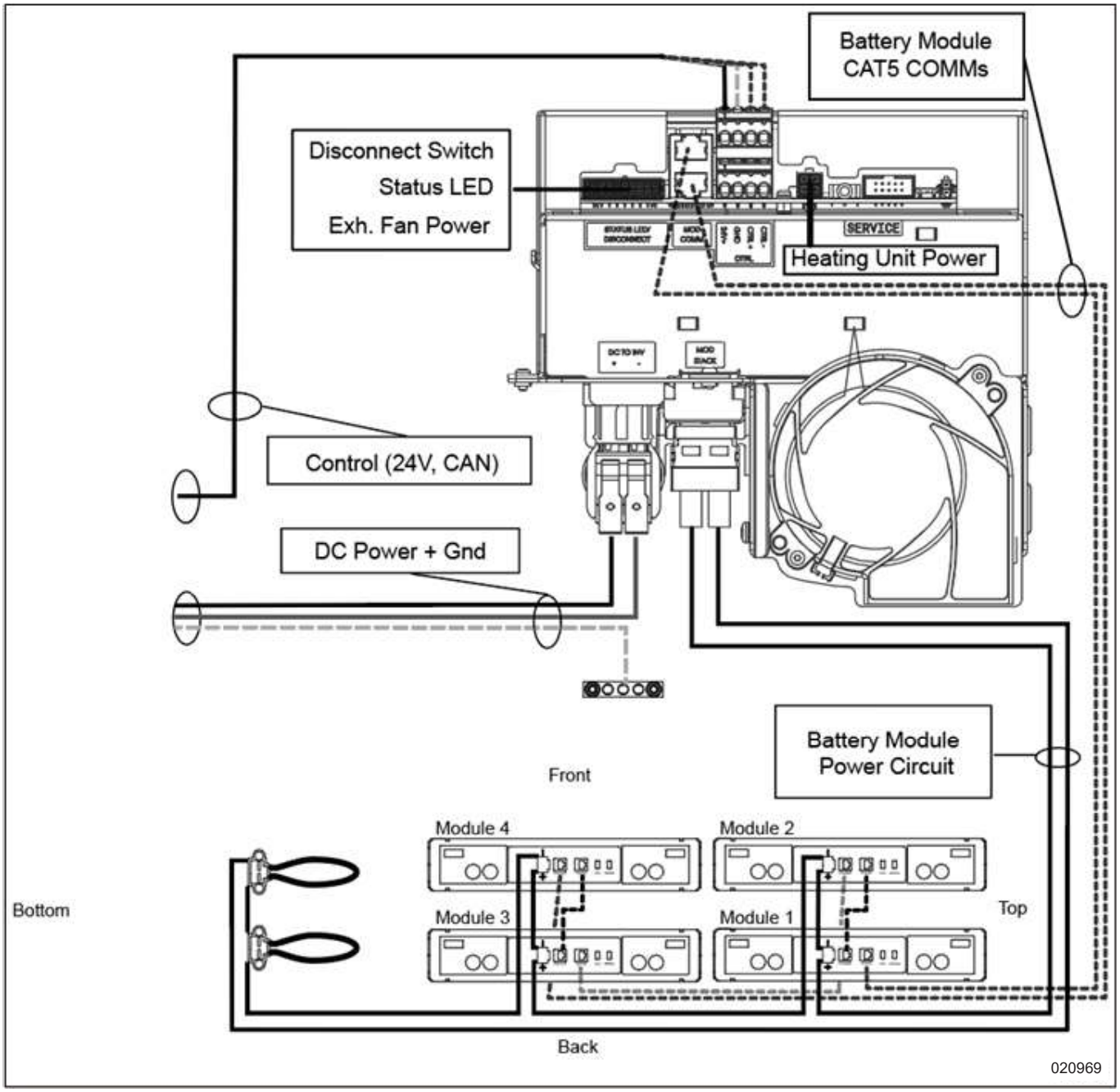
Always recycle batteries in accordance with local laws and regulations. Contact your local solid waste collection site or recycling facility to obtain information on local recycling processes. For more information on battery recycling, visit Call2Recycle website at: ***http://Call2Recycle.org/locator***.

Section 9: Wiring Diagrams

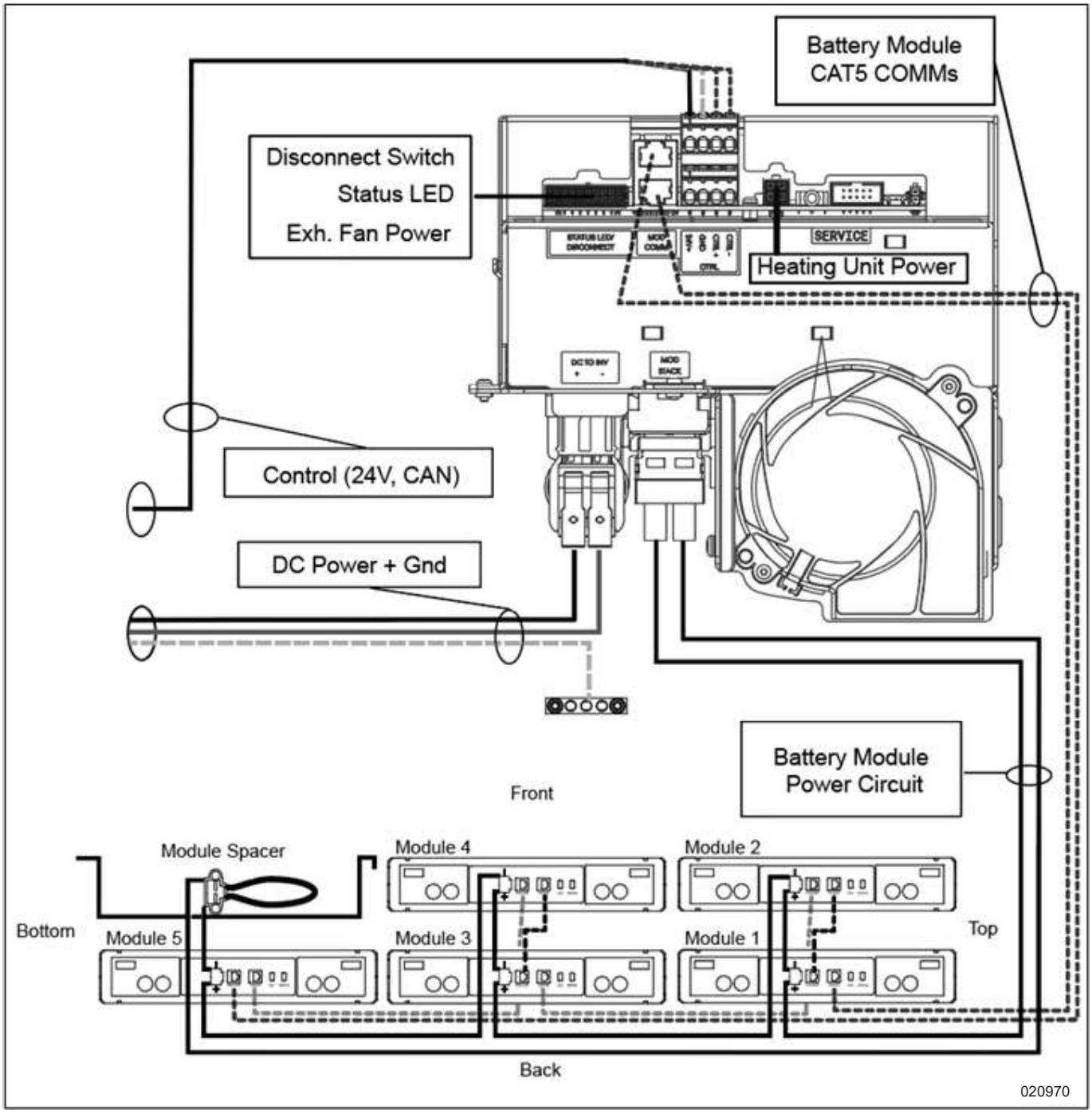
PWRcell 2 M3



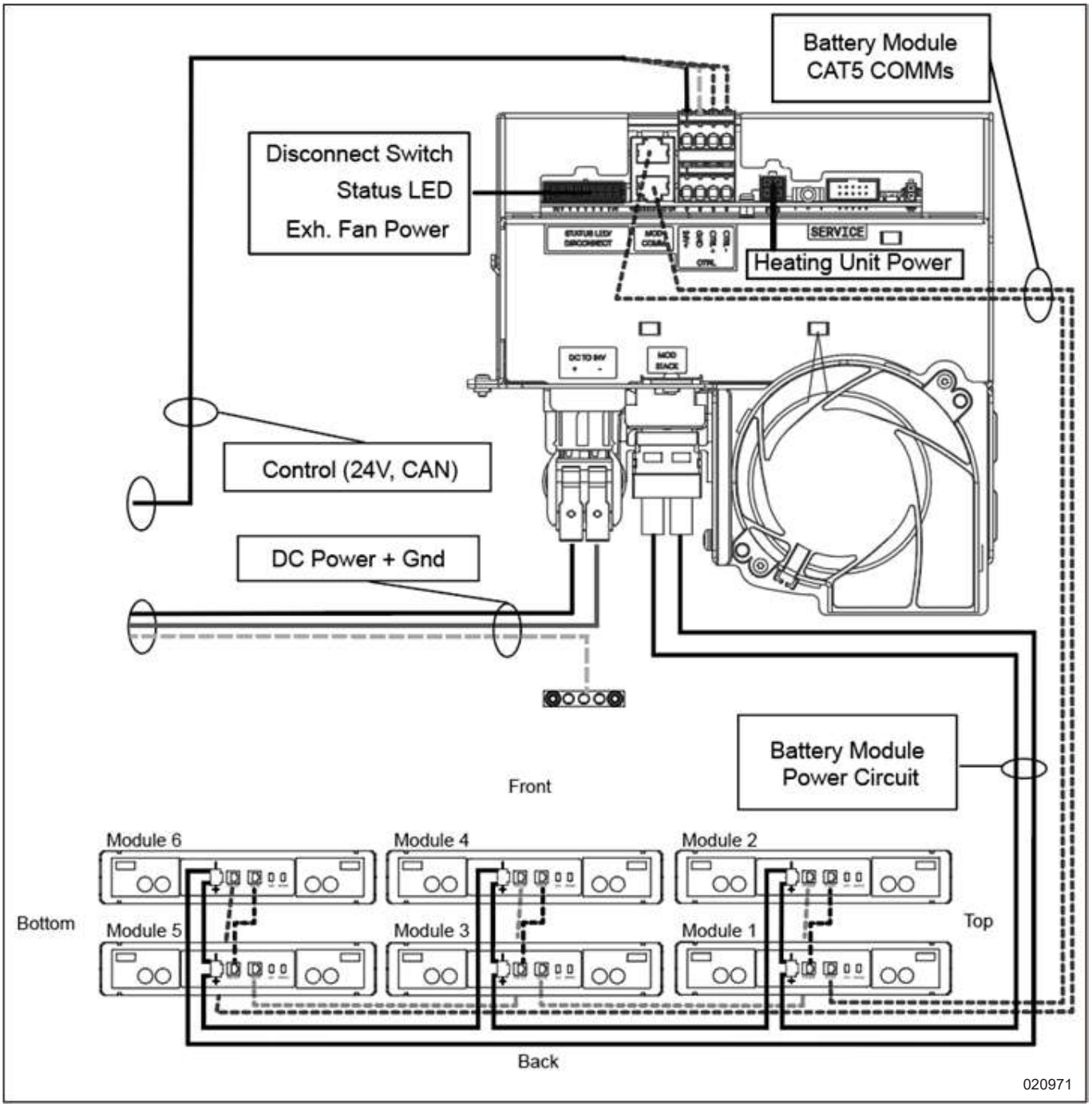
PWRcell 2 M4


Battery Module
CAT5 COMMs
Disconnect Switch
Status LED
Exh. Fan Power
SERVICE
Heating Unit Power
Control (24V, CAN)
DC Power + Gnd
Battery Module
Power Circuit
Front
Module 4
Module 2
Module 3
Module 1
Bottom
Top
Back
020969

PWRcell 2 M5


Battery Module
CAT5 COMMs
Disconnect Switch
Status LED
Exh. Fan Power
SERVICE
Heating Unit Power
Control (24V, CAN)
DC Power + Gnd
Battery Module
Power Circuit
Front
Module Spacer
Module 4
Module 2
Bottom
Module 5
Module 3
Module 1
Top
Back
020970

PWRcell 2 M6


Battery Module
CAT5 COMMs
Disconnect Switch
Status LED
Exh. Fan Power
SERVICE
Heating Unit Power
Control (24V, CAN)
DC Power + Gnd
Battery Module
Power Circuit
Front
Module 6
Module 4
Module 2
Bottom
Module 5
Module 3
Module 1
Top
Back
020971

Section 10: Seismic Anchorage

IMPORTANT NOTE: It is the responsibility of the installer, building owner, and/or engineer of record to perform a structural analysis of existing/new walls to verify that the structure is sound and capable of supporting the PWRcell 2 Battery. Instructions in this document do not assume any responsibility to Generac for the design or soundness of the structure and structural members which the product is fastened to.

General Information

Seismic anchorage details are available for the following configurations:

- Wood Studs (16 in on center)
- Wood Studs (>16 in on center)
- Concrete
- CMU
- Metal Studs (16 in on center)
- Metal Studs (>16 in on center)

A seismic anchorage report, including load calculations and additional information, is available upon request.

For any configurations not specified or where local conditions exceed the design parameters specified below, consult a state-licensed professional structural or civil engineer for assistance determining suitable seismic anchorage.

Basic Design Parameters

Wind Load

- Wind Speed: 150 mph (3 second gust)
- Exposure Category: C

Seismic Load

- Risk Category: II
- Design Category: E

Wood Studs (16 in on center)

See ***Figure 10-1***. When anchoring directly into wood studs, use four #14 hex head lag screws with four #14 fender washers. Lag screws must be of sufficient length for 2-7/16 in (60.96 mm) of penetration into the studs. Install each lag screw with a fender washer at the designated bracket mounting points in ***Figure 10-1***.

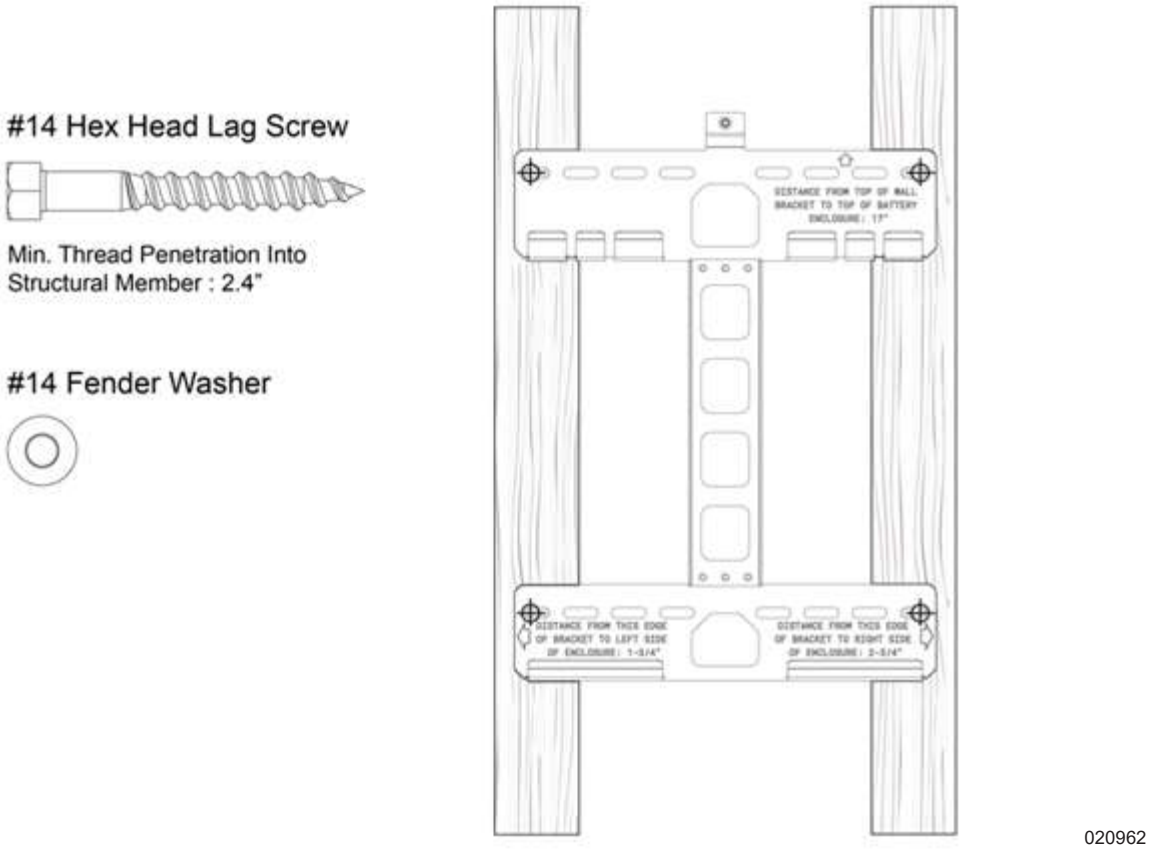


Figure 10-1. Anchorage on Wood Studs 16 in on center

Wood Studs (> 16 in on center)

When anchoring directly into wood studs is not possible, fasten the mounting bracket using two pieces of strut channel to the wood studs.

For strut, use a minimum of 14 GA which is 1-5/8 in (41.28 mm) by 13/16 in (20.57 mm) (ex. Unistrut model P4100, Superstrut model B1400, or equivalent). Cut two sections of strut of sufficient length to be fastened on center to the wood studs [24 in maximum (60.96 cm)].

Fasten the strut to studs using four #14 hex head lag screws and four #14 fender washers. Lag screws must be of sufficient length for at least 2-3/4 in (69.85 mm) of penetration into studs. Install each lag screw with a fender washer at the designated bracket mounting points in ***Figure 10-2***. Fasten the mounting bracket to the strut using four 3/4 in -10 hex head bolts and four 3/4 in -10 channel nuts. Install each bolt with a channel nut at the designated mounting points in ***Figure 10-2***.

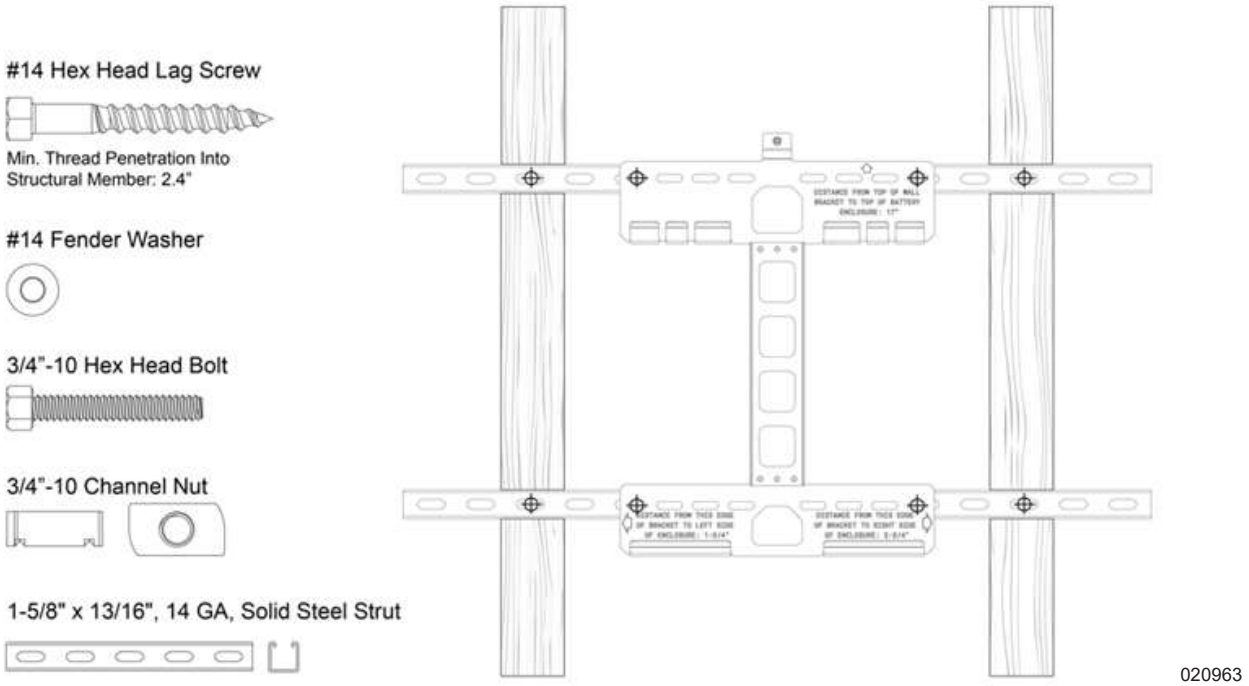


Figure 10-2. Anchorage on Wood Studs >16 in on center

Concrete

See ***Figure 10-3***. When anchoring into concrete, use four 3/8 in hex head anchor screws with four 3/8 in fender washers. Anchor screws must be one of the approved models specified in ***Figure 10-3***. Screws must be of sufficient length for the minimum penetration specified in ***Figure 10-3***. Install each anchor screw with a fender washer at the designated bracket mounting points in ***Figure 10-3***.

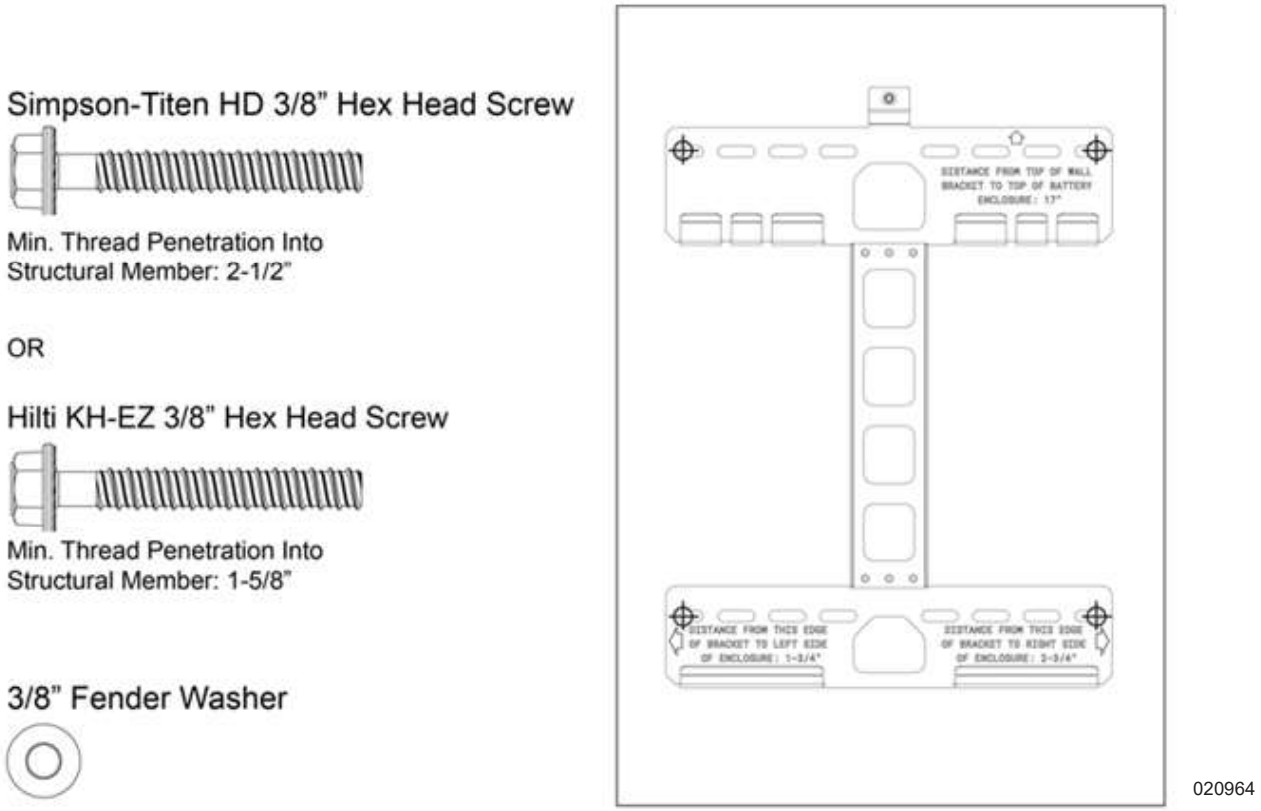


Figure 10-3. Anchorage on Concrete

Concrete Wall Connection Notes

- Each anchor screw must be positioned a minimum of 5 in (12.7 cm) from top, bottom, and sides of concrete wall.
- Each anchor screw must be positioned a minimum of 5 in (12.7 cm) from any vertical or horizontal expansion joint on the wall.

CMU

See ***Figure 10-4***. When anchoring into CMU, use four 3/8 in hex head anchor screws with four 3/8 in fender washers. Anchor screws must be one of the approved models specified in ***Figure 10-4***. Screws must be of sufficient length for the minimum penetration specified in ***Figure 10-4***. Install each anchor screw with a fender washer at the designated bracket mounting points in ***Figure 10-4***.

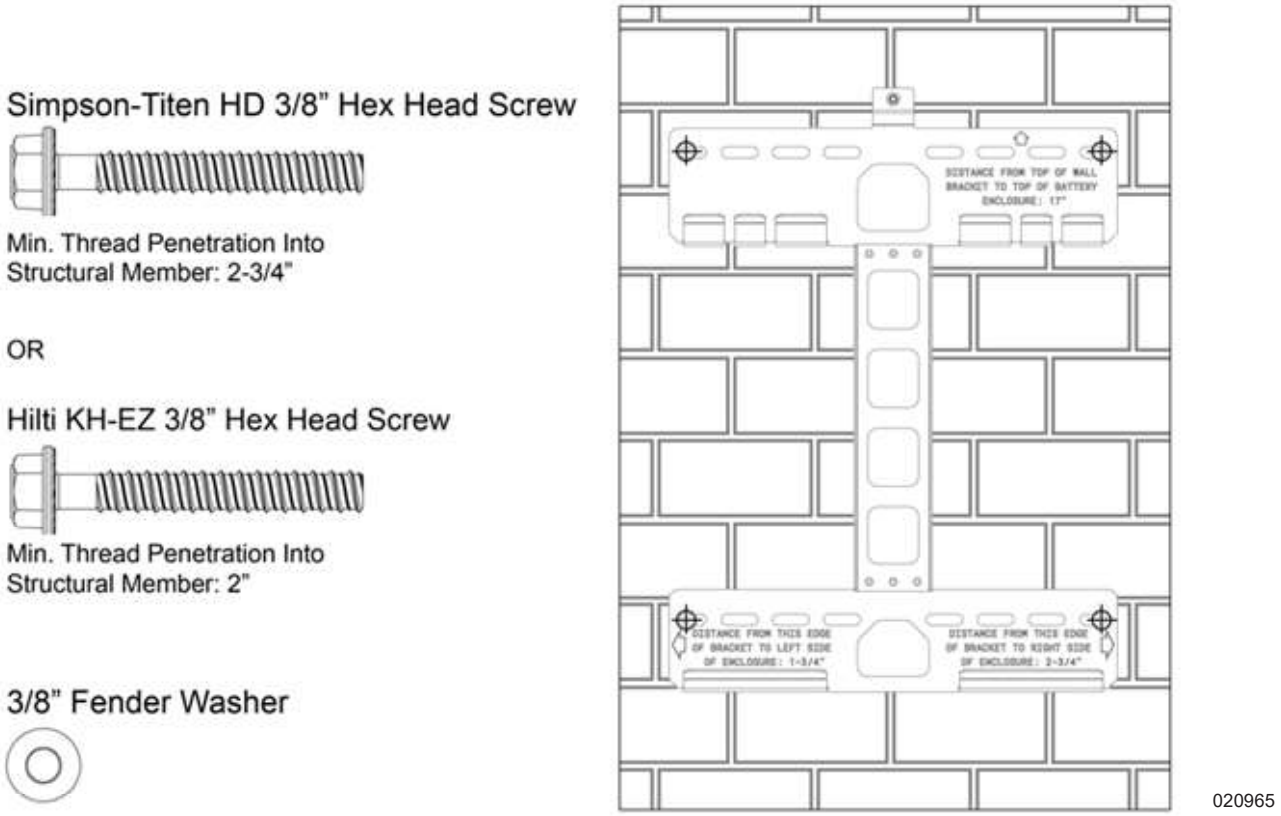


Figure 10-4. Anchorage on CMU

CMU Wall Connection Notes

- Each anchor screw must be positioned a minimum of 12 in (30.48 cm) from top, bottom, and sides of CMU wall.
- Each anchor screw must be positioned a minimum of 12 in (30.48 cm) from any vertical or horizontal expansion joint on the wall.
- Anchor screws must be positioned a minimum of 1.5 in (38.1 mm) from vertical joints between CMU units (head joints).
- Do not install anchor screws to ungrouted CMU walls.

Metal Studs (16 in on center)

See ***Figure 10-5***. When anchoring directly into metal studs, the studs must be 19 GA (36 mil) or greater. Fasten mounting bracket using four 1/4 in sheet metal screws and four 1/4 in fender washers. Screw threads must fully penetrate studs. Install each screw with a fender washer at the designated bracket mounting points in the ***Figure 10-5***.

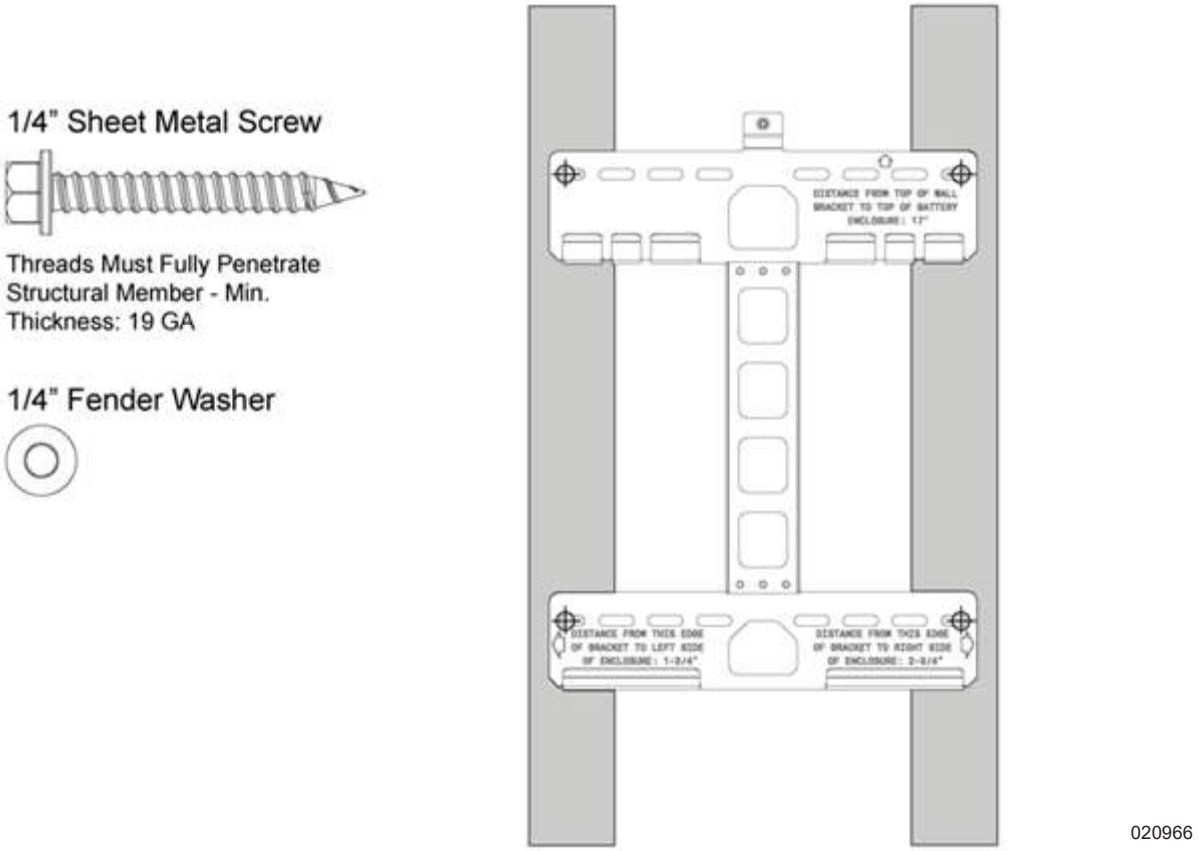


Figure 10-5. Anchorage on Metal Studs 16 in on center

Metal Studs (>16 in on center)

When anchoring directly into metal studs is not possible, fasten the mounting bracket using two pieces of strut channel to the metal studs. The studs must be at least 19 GA (36 mil).

For strut, use a minimum of 14 GA which is 1-5/8 in (33.66 mm) by 13/16 in (20.57 mm) (ex. Unistrut model P4100, Superstrut model B1400, or equivalent). Cut two sections of strut of sufficient length to be fastened on center to the metal studs (24 in [60.96 cm] maximum).

Fasten the strut using four 1/4 in sheet metal screws and four 1/4 in fender washers. Screw threads must fully penetrate studs. Install each sheet metal screw with a fender washer at the designated bracket mounting points in ***Figure 10-6***. Fasten the mounting bracket to the strut using four 3/4 in -10 hex head bolts and four 3/4 in -10 channel nuts. Install each bolt with a channel nut at the designated mounting points in ***Figure 10-6***.

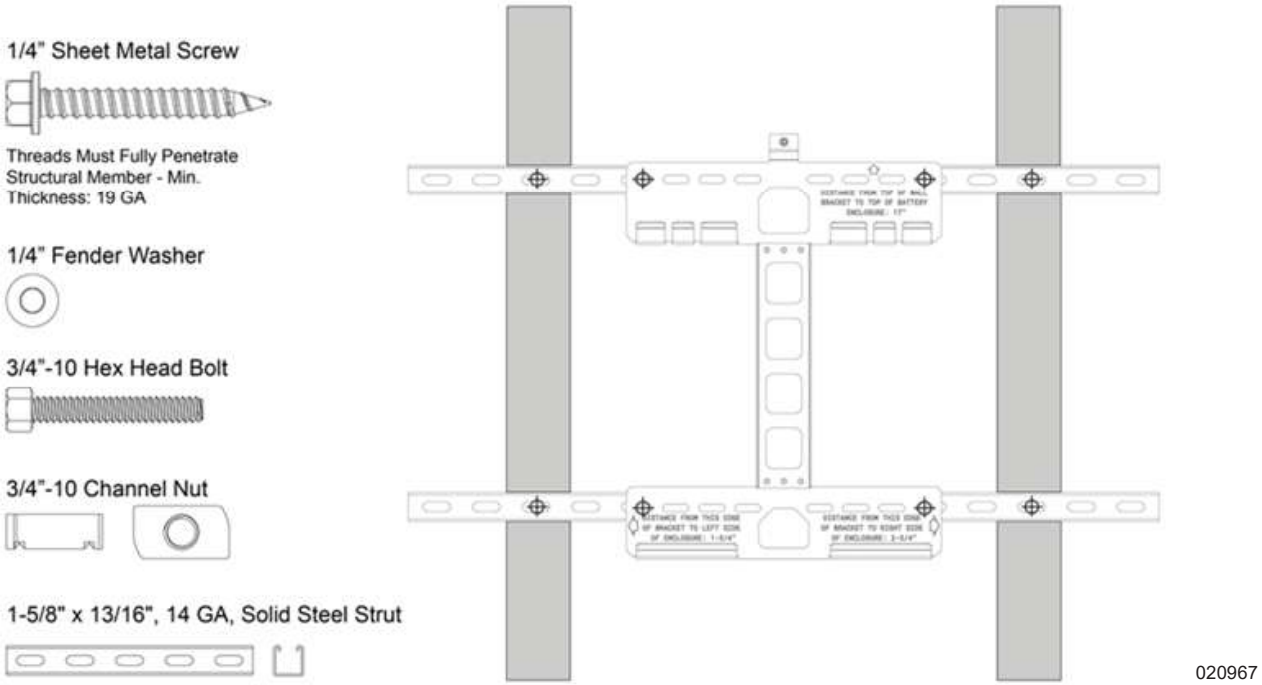


Figure 10-6. Anchorage on Metal Studs >16 in on center

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Part No. A0008210367 Rev. A 07/22/2025

Generac Power Systems, Inc.
S45 W29290 Hwy. 59
Waukesha, WI 53189
1–888–GENERAC (1–888–436–3722)