NUANCE ENERGY
Revolutionary Solar Racking Structures

INSTALLATION MANUAL FOR OSPREY POWERRACK

ETL CLASSIFIED

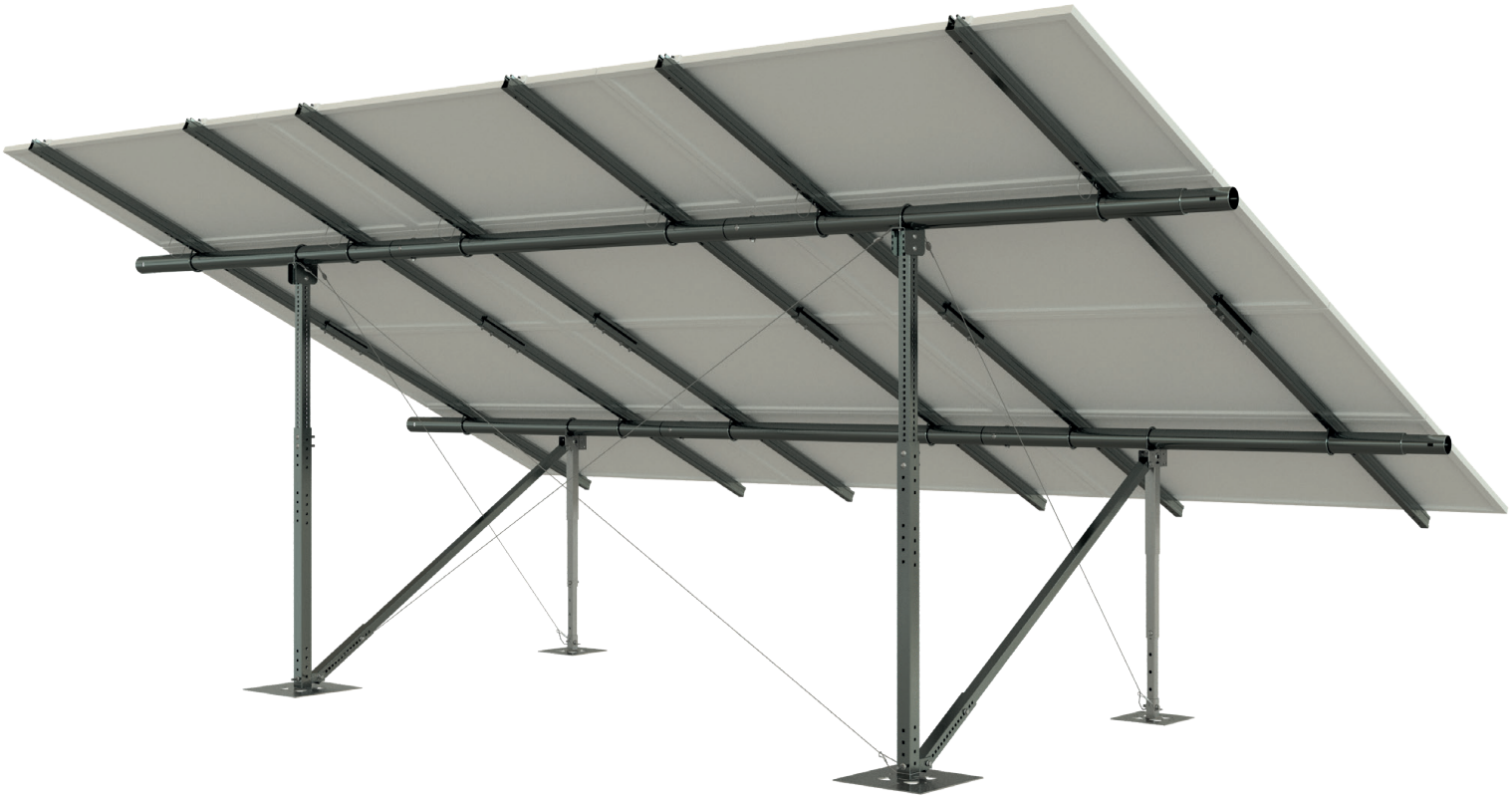
CONFORMS TO UL2703*

CERTIFIED TO CSA TIL A-40*

Intertek 5020709

PATENTED

PAT # US 10,622,938 and
PAT # US11,271,520



- UL2703 & CSA TIL-A40
- Custom Engineered to Exceed Applicable ASCE, IBC, and UL Standards
- Electrically Bonded System
- 30 Amp Maximum Fuse Rating
- Full Module Compatibility
- Landscape Orientation
- Maximum Capacity of PV Modules:
  - 4x3 - 12 modules
  - 4x4 - 16 modules
  - 4x5 - 20 modules
  - 4x6 - 24 modules
- Linear Option for Larger Projects

INSTALLATION MANUAL FOR OSPREY POWERRACK

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Revolutionary Solar Racking Structures

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Introduction

This manual serves as an installation guide for the Osprey Power Rack™, rather than a comprehensive technical engineering manual. It focuses on the assembly and installation of the Osprey Power Rack™ system.

The Osprey Power Rack™ offers an alternative approach to ground-mounted solar system engineering, design, and construction, revolutionizing the way these systems are engineered and installed. The Osprey Power Rack™ employs patented earth anchor foundations to secure the system to the ground beneath each table. Earth anchors have a proven track record of over 100 years in various applications such as slope stabilization, retention walls, marine tethering, and municipal drainage systems, among others.

By utilizing earth anchor foundation technology, the construction team can securely fasten Osprey tables to the soil, enabling real-time testing, which often eliminates the need for geotechnical reports or impact studies. For special cases, please contact a Nuance representative.

Product Summary and Intellectual Property

The Osprey PowerRack™ is engineered to these standards and certifications.

- Meets or Exceeds 2019 California Building Code.
- Meets or Exceeds 2018 International Building Code (IBC).
- Certified for grounding and bonding per UL2703* & CSA TIL A40*.
- Osprey tables can be engineered to sustain wind loads up to 110MPH and Snow Loads up to 30 psf.
- Structural Packets are provided and engineered and signed by 3rd party structural engineer.
- Site Specific Memos are available for every project.
- Our product names and product designs have been protected in the United States Patent and Trademark office and utility and methodology patents have been granted under (PAT # US 10,622,938 and PAT # US11,271,520), as well as multiple international patents.

Certification Notes

- UL2703* to be used only in combination with the modules that include this specific rack system in the module manufacturers installation manual.
- UL2703* classified for ground and bonding only.
- CSA TIL A-40* mechanical load need further evaluation before installation.

Safety

The safety of individuals and property must always be prioritized. All installation personnel should be required to wear personal protective eyewear, clothing, footwear, and any other protective gear that complies with the Contractor's Injury and Illness Protection Plan (IIPP) and meets OSHA requirements for the given site.

The majority of the components that make up the Osprey PowerRack™ are made of steel. These components are heavy and may have sharp edges, posing a risk of injury if not handled properly. Personnel should exercise caution during the assembly of the unit, as components can create pinching hazards. It is the responsibility of each individual to work with care and attentiveness

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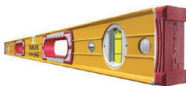
Tools and Equipment

The Osprey PowerRack™ is designed to be easy to assemble, therefore no special equipment is required to assemble the rack. The following list demostrates the recommended tools that are used for the assembly of the Osprey PowerRack™. The list below is merely a guide; individual installers may find alternative tools and methods that fit their needs.

Training Videos

Coming soon. Contact a Nuance Energy representative for latest installation videos.

Hand Tools

Impact Driver/Drill		2" Corded SDS Max Style Rotary Hammer		SAE and Metric Socket Set	
SAE and Metric Wrench Set		Torque Wrench		Tape Measure	
Digital Angle Level		Shovel/Pick		String Line	
Socket Set Adapter		4ft Bubble Level		SDS Max Drill Bit*	

Equipment

Portable Generator 3,000 Watts Min		Nuance Energy PowerJack Anchor Testing Device**		Anchor Installation Drive Rod*	
Portable Bandsaw for Metal					

*For testing Anchors please check manual supplied with the Nuance Energy Anchor Testing Device.
*Load test device, drive rod and drill bit can be purchased through Nuance Energy.

Approved Module List

The following solar modules have been evaluated and tested to Standard UL2703* and CSA TIL A-40*.

	MANUFACTURER	MODEL NUMBERS
1	Canadian Solar	CS6X-310|315|320P, CS6X-P-FG, CS6K-P-FG, CS6K-M, CS6K-M AB, CS6P-P, CS6P-P-SD, CS6V-M
2	Certainteed Corp.	CTxxxM00-03, CTxxxM10-03, CTxxxM11-03
3	CSUN	CSUNxxx-72MH (xxx can be 355 – 375 with 5 watt interval) QSAR 255-60M, QSAR 260-60M, QSAR 265-60M, QSAR 270-60M, CSUN310-60MH-BB
4	GCL	P6/72-330, M6/72H 365-400
5	Hansol	HSxxx-UD-AN1, HSxxx-UB-AN1
6	Hanwha Q Cells	Q.PRO BFR G4|G4.1|G4.3, Q.PLUS BFR G4.1, Q.PRO G4, Q.PLUS G4, Q.PRO L G4.1, Q.PLUS L G4.1|G4.2, Q.PEAK-G4.1|G4.1/MAX, Q.PEAK BLK G4.1, Q.PEAK L G4.2, HSL72P6-PC-3-xxxT (xxx = power class), Q.Peak Duo L-G5.2 380-395
7	JA Solar	JAM6(K)-72-xxx/PR
8	Jinko	JKM xxx P-60, JKM xxx PP-60, JKM xxx M-60, JKM xxx M-60B, JKMS xxx PP-60, JKMS xxx P-60, JKMSxxx-72, JKMxxxP-72, JKMSxxxP-72, JKMxxxM-72, JK07A (JKMSxxxPP-60 & JKMSxxxPP-72), JK07B (JKMSxxxPP-60), JKMxxx PP-60(Plus), JKM xxx PP-60B, JKM xxx M-60B, JKMSxxxM-60, JKMSxxxM-60-EP, JKM xxx P-72B, JKMxxxPP-72, JKMxxxPP-72B, JKMxxxPP-72(Plus), JKMSxxxPP-72, JKMxxxM-72-V, JKMxxxPP-72-V, JKMxxx-72L-V, JKMxxx-72HL-V, JKMxxxM-60L, JKMxxxM-60BL, JKMxxxM-60HL
9	LG	LGxxxN1C-G4, LGxxxN1W-G4, LGxxxS1C-G4, LGxxxS1W-G4, LGxxxN1K-G4, LGxxxN2C-B3, LGxxxN2W-B3, LGxxxN1C-A5, LGxxxS1C-A5, LGxxxN2W-A5, LGxxxS2W-A5, NeON 2 Bifacial LGxxxN2T-A5
10	Mission	MSExxxSQ5T
11	Seraphim	SEG-6MA-xxx WW
12	Sunpower	SPR-X21-xxx, SPR-E20-xxx, SPR-P17
13	Talesun	TP572, TP596, TP654, TP660 (35mm/40mm), TP672, Hipor M350+ (40mm), Talesun Smart (35mm) M = Mono P = Poly B = Black T = Transparent (H) = 1500V without (H) is 1000V, TP6H72M / TP6H72(H)
14	Trina	TSM-PD14, TSM-PD05, TSM-PD05.08, TSM-PD05.05, TSM-PEG5, TSM-PEG5.07, TSM-PEG14, TSM-PEG40.07, TSM-DD14A(II), TSM-330-DD14A(II), TSM-335-DD14A(II), TSM-340-DD14A(II), TSM-345-DD14A(II), TSM-350-DD14A(II), TSM-355-DD14A(II), TSM-DD06M.05, TSM-DE15H(II)
15	URE Sola	D6MxxxH4A
16	Yingli	YL xxxP-29b, YL xxxP-35b
17	Phono Solar	PS-xxxMH-24/TH, PS-xxx-60, PS-xxx-72
18	HT Solar	HT72-156M-V, HT60-156(M) (NDV) (-F), HT72-156(M/P)
19	Renesola	JCxxxM-24/Abw, Virus II 250-260W with 5 watt Interval, 156 Series 270-275W
20	Longi	LR6-72BP 355-375M 72 CELL, LR6-60 (40mm), LR6-72 (40mm), LR6-60 HV (40mm), LR6-72 HV (40mm), LR6-60 PH (40mm), LR6-72 PH (40mm), LR6-60 PE (40mm), LR6-72 PE (45mm), LR6-60 BK (40mm Black frame), LR6-72 BK (40mm Black frame), LR6-60 PB (40mm Black frame), LR6-72 PB (45mm Black frame) Number in paranthesis signifies frame profile height, LR6-72-xxxM, LR6-72HVxxxM, LR6-72BK-xxxM, LR6-72PE-xxxM, LR6-72PHxxxM, LR6-72PB-xxxM, LR6-60-xxxM, LR6-60BK-xxxM, LR6-60PE-xxxM, LR4-60HPB/HIBxxxM, LR4- 60HPH/HIH-xxxM, LR4-72HPH/HIH-xxxM, LR6-72BP-xxxM, LR672HBD/HIBDxxxM, LR6-60BP-xxxM, LR6-60HBD/HIBD-xxxM
21	REC	REC-320TP2M, PEAK Energy Series, PEAK Energy BLK2 Series, PEAK Energy 72 Series, TWINPEAK 2 SERIES, TWINPEAK 2 BLK2 SERIES, TWINPEAK SERIES
22	Risen	RSM72-6-xxxM/5BB, RSM72-6 (MDG) (M), RSM60-6
23	Heliene	72M, 36M, 60M, 60P, 72P
24	Axitec	AC-xxxMH/120S (AXIblackpremium HCSeries), AXIblackpremium 60 (35mm), AXIpower 60 (35mm), AXIpower 72 (40mm), AXIpremium 60 (35mm), AXIpremium 72 (40mm)

*Classified to UL2703 and CSA TIL A-40 for bonding and grounding only.

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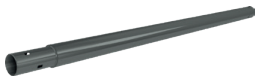
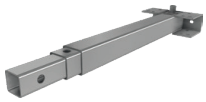
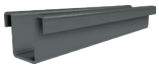
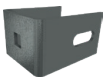
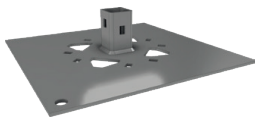
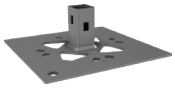
General Component List

ITEM	DESCRIPTION	SPECIFICATION (IN)	PART NUMBER	PREVIEW
STRUCTURAL COMPONENTS				
1	EAST WEST BEAM	Ø101.6mm	OPR-821-11-235-098	
2	UNIVERSAL EXTERNAL LEG	▢70x70mm	OPR-821-14-215-054	
3	UNIVERSAL INTERNAL LEG	▢60x60mm	OPR-821-14-215-060	
4	LATERAL BRACE INTERNAL	▢50x50mm	OPR-821-14-215-078	
5	LATERAL BRACE EXTERNAL	▢60x60mm	OPR-821-14-215-018	
6	FRONT LEG	TRAILER JACK	OPR-810-11-530-051	
7	NS SLOPE PURLIN LTE	UNI2.56X1.65	OPR-821-11-215-168	
	NS PURLIN MAX	UNI2.56X1.65	OPR-821-11-215-093	
BRACKETS				
8	RAIL BRACKET	PL14X5.40	OPR-821-10-115-014	
9	NORTH BRACKET	PL11.5X5.8	OPR-821-10-115-012	
10	LATERAL BRACKET	PL9.31X2.0	OPR-821-09-115-008	
FOUNDATION				
11	18" FOUNDATION MAX	PL18X18X25	UNV-011-03-345-018	
12	12" FOUNDATION MAX	PL12X12X25	UNV-011-03-345-012	

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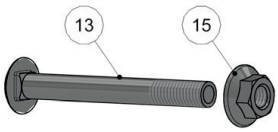
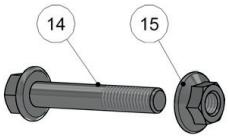
Hardware

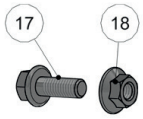
ITEM	DESCRIPTION	SPECIFICATION (IN)	PART NUMBER
13	CARRIAGE BOLTS GENERAL	1/2-13-4.5" CARRIAGE BOLT	OPR-831-050-X45
14	BRACING BOLTS	1/2-13-3" HEX HEAD BOLT	OPR-831-050-B03
15	1/2" NUTS	1/2-13 SERRATED NUT	OPR-831-050-N12
16	EW U-BOLT TUBE	3/8-16-4OD U-BOLT	OPR-831-050-U04
17	SPLICE BOLTS	3/8-16-1" HEX HEAD BOLT	OPR-831-050-B01
18	3/8" NUTS	3/8-16 SERRATED NUT	UNV-031-050-N38
19	END CLAMPS	SOLAR MASTERS	UNV-051-050-E05
20	MID CLAMPS	SOLAR MASTERS	UNV-051-050-M05
21	CABLE BRACE	18FT 4MM CABLE BRACE	OPR-811-500-C18



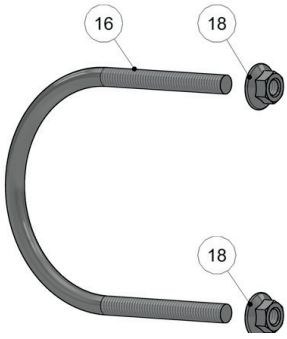
Torque:
64ft-lbs



Torque:
64ft-lbs

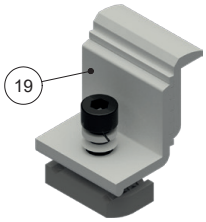


Torque:
32ft-lbs

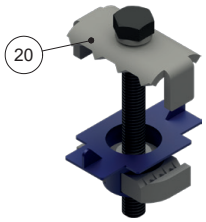


Torque:
32ft-lbs

Tension:
100lbs



Torque:
13ft-lbs



Torque:
13ft-lbs

INSTALLATION MANUAL FOR OSPREY POWERRACK

Fastener Installation Instructions

This overview provides a guide for installing fasteners recommended by Nuance Energy to ensure structural integrity and an adequate bonding path:

- Install the fastener through the components, making sure that the bolt is flush against the rack.
- Thread the nut by hand to prevent cross-threading.
- Tighten the nut using an impact drill. Carriage bolts will not require back wrenching, as they locate using the square holes in the components. Standard hardware will need back wrenching to prevent slipping.
- Make sure that the hardware is not over-torqued by the impact drill, as this could deform structural components and/or strip the hardware.
- Set the torque wrench to the matching torque based on the fastener size.
- Apply torque using the torque wrench until an adequate load is applied.
- Mark the fastener using a paint marker to facilitate a faster quality control (QC) process.

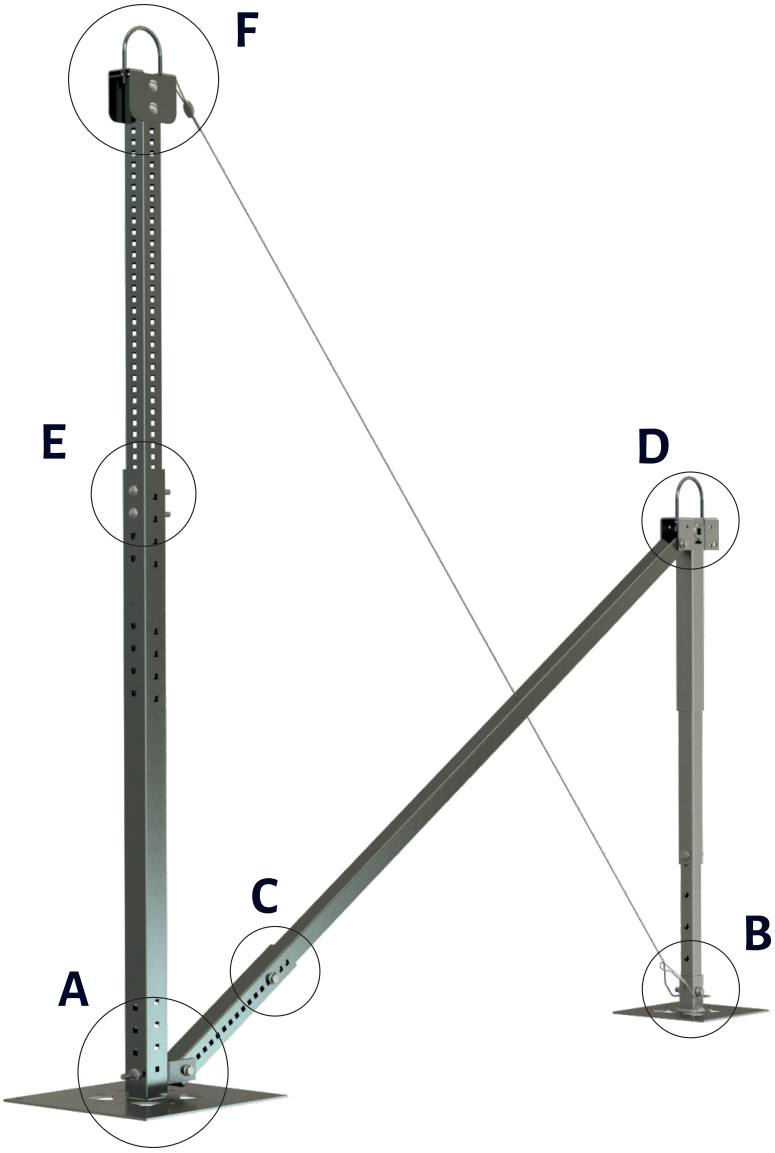
Cable Bracing Installation Instructions

This overview covers the recommended methods for installing cable bracing. Note: Cable bracing should be installed last, as it will ease the installation process and prevent the movement of structural components that are not yet tight or square.

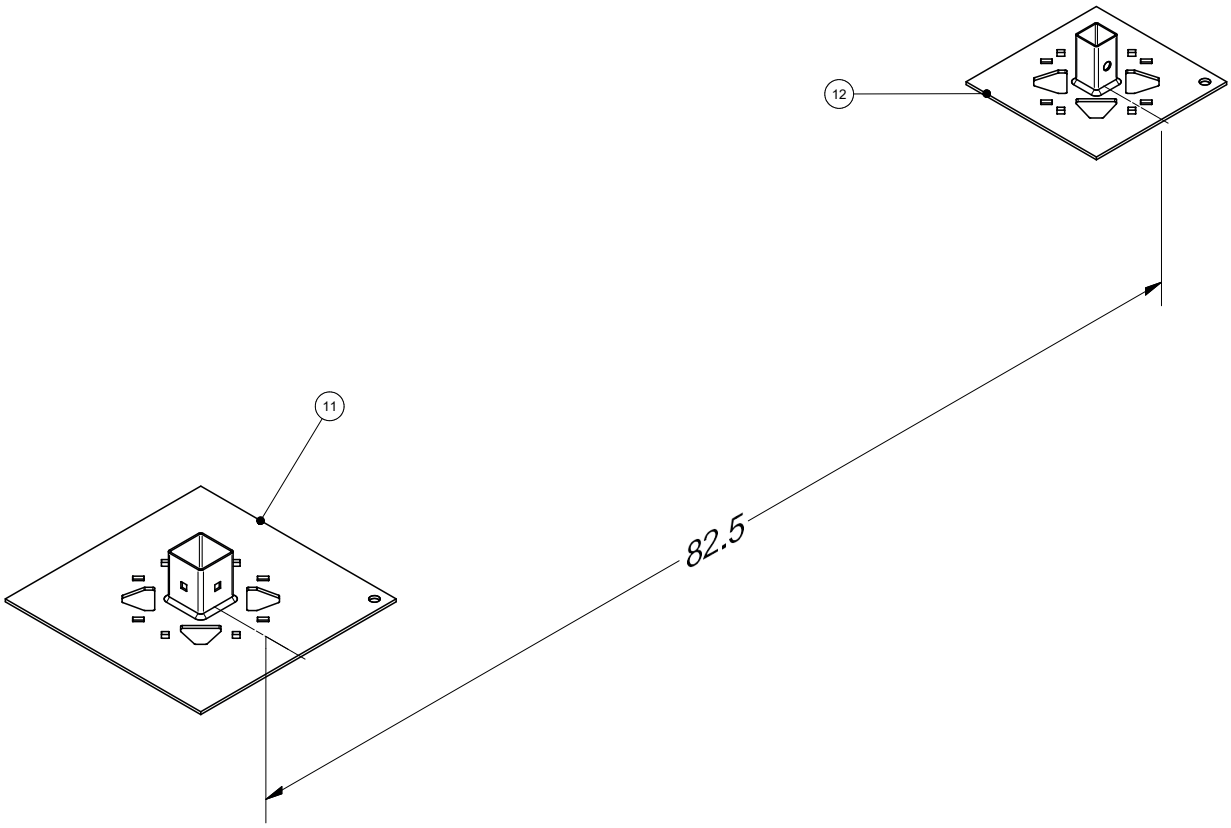
- Install the loop end of the bracing at the highest location possible.
- Insert the tag end of the brace through the tensioner, ensuring that the tensioner is more than 18" away from the loop location.
- Loop the brace around the component, making sure that the cable cannot slide or slip from its position.
- Insert the looped end of the cable into the opposing side of the tensioner, leaving at least 6" of cable through the tensioner.
- Pull the cable by hand until it is taut.
- Set the tension tool to the predetermined tension for the brace and attach the tool to the tensioner, clamping the loose end of the cable to the jaws of the tool.
- Apply tension to the cable, ensuring that the assembly does not move during this step.
- Once the tension is reached, the tool will notify the user with an audible click.
- Using paint markers, mark the cable at four locations closest to the tensioner on the wire for quality control (QC).

INSTALLATION MANUAL FOR OSPREY POWERRACK

PowerRack Assembly Instructions



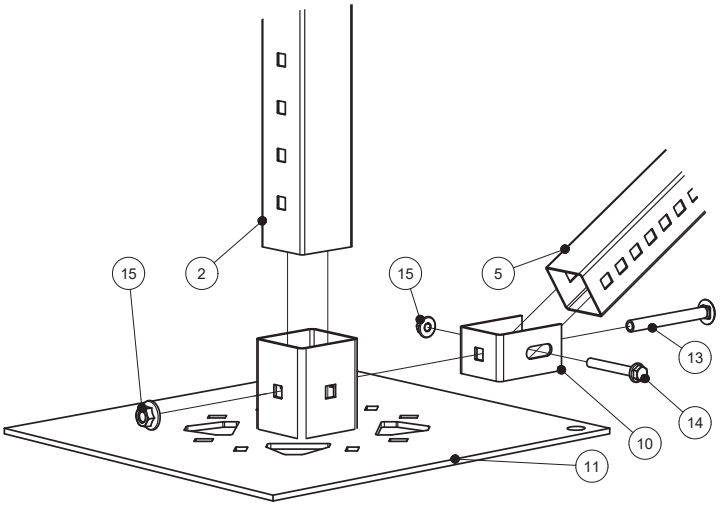
INSTALLATION MANUAL FOR OSPREY POWERRACK



ITEM	DESCRIPTION
11	18" FOUNDATION MAX
12	12" FOUNDATION MAX

INSTALLATION MANUAL FOR OSPREY POWERRACK

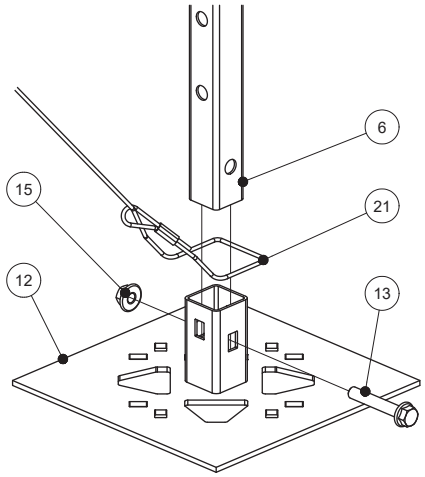
A Rear Base Plate Assembly



ITEM	DESCRIPTION
2	UNIVERSAL EXTERNAL LEG
5	LATERAL BRACE EXTERNAL
10	LATERAL BRACKET
11	18" FOUNDATION MAX
13	CARRIAGE BOLTS GENERAL
14	BRACING BOLTS
15	1/2" NUTS

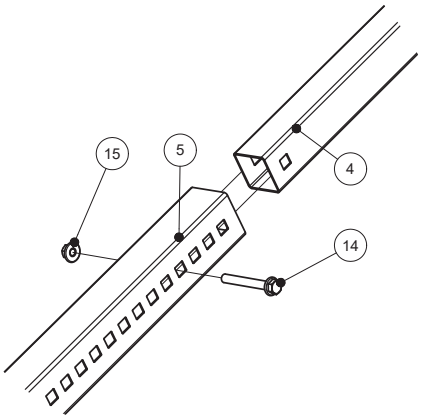
* Leg components will vary in size based on tilt angle, loading conditions. Assembly instructions are identical.

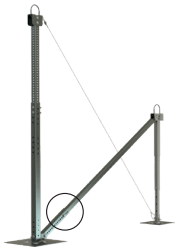
B Front Base Plate Assembly



ITEM	DESCRIPTION
6	FRONT LEG
12	12" FOUNDATION MAX
13	CARRIAGE BOLTS GENERAL
15	1/2" NUTS
21	CABLE BRACE

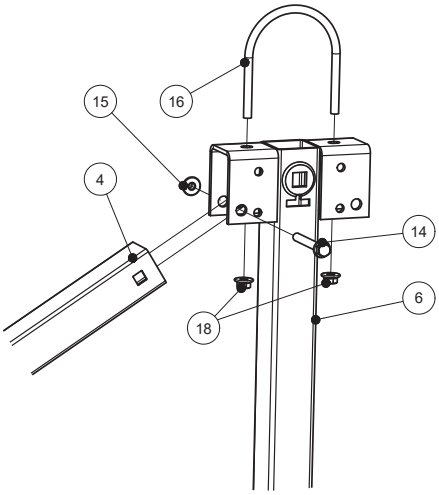
C Diagonal Lateral Brace

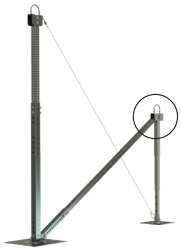




ITEM	DESCRIPTION
4	LATERAL BRACE INTERNAL
5	LATERAL BRACE EXTERNAL
14	BRACING BOLTS
15	1/2" NUTS

D Front Top Bracket Assembly





ITEM	DESCRIPTION
4	LATERAL BRACE INTERNAL
6	FRONT LEG
16	EW U-BOLT TUBE
14	BRACING BOLTS
15	1/2" NUTS

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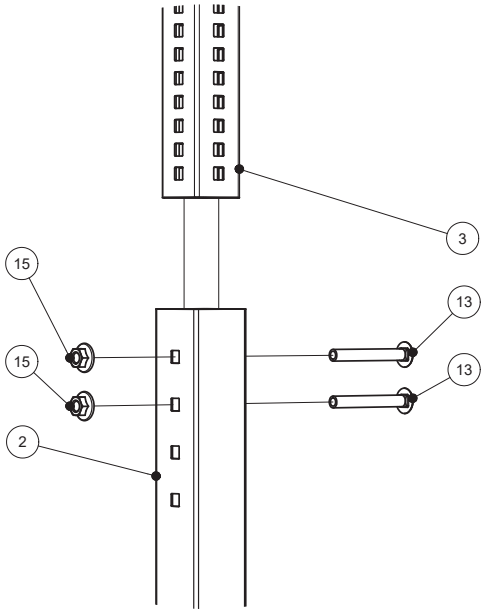
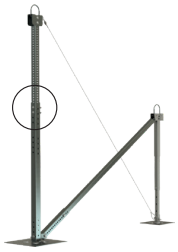
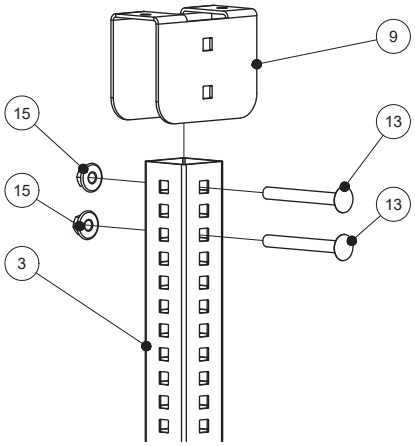
E Rear Leg Assembly

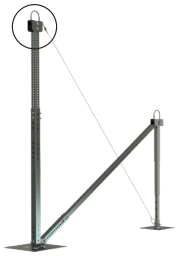




ITEM	DESCRIPTION
2	UNIVERSAL EXTERNAL LEG
3	UNIVERSAL INTERNAL LEG
13	CARRIAGE BOLTS GENERAL
15	1/2" NUTS

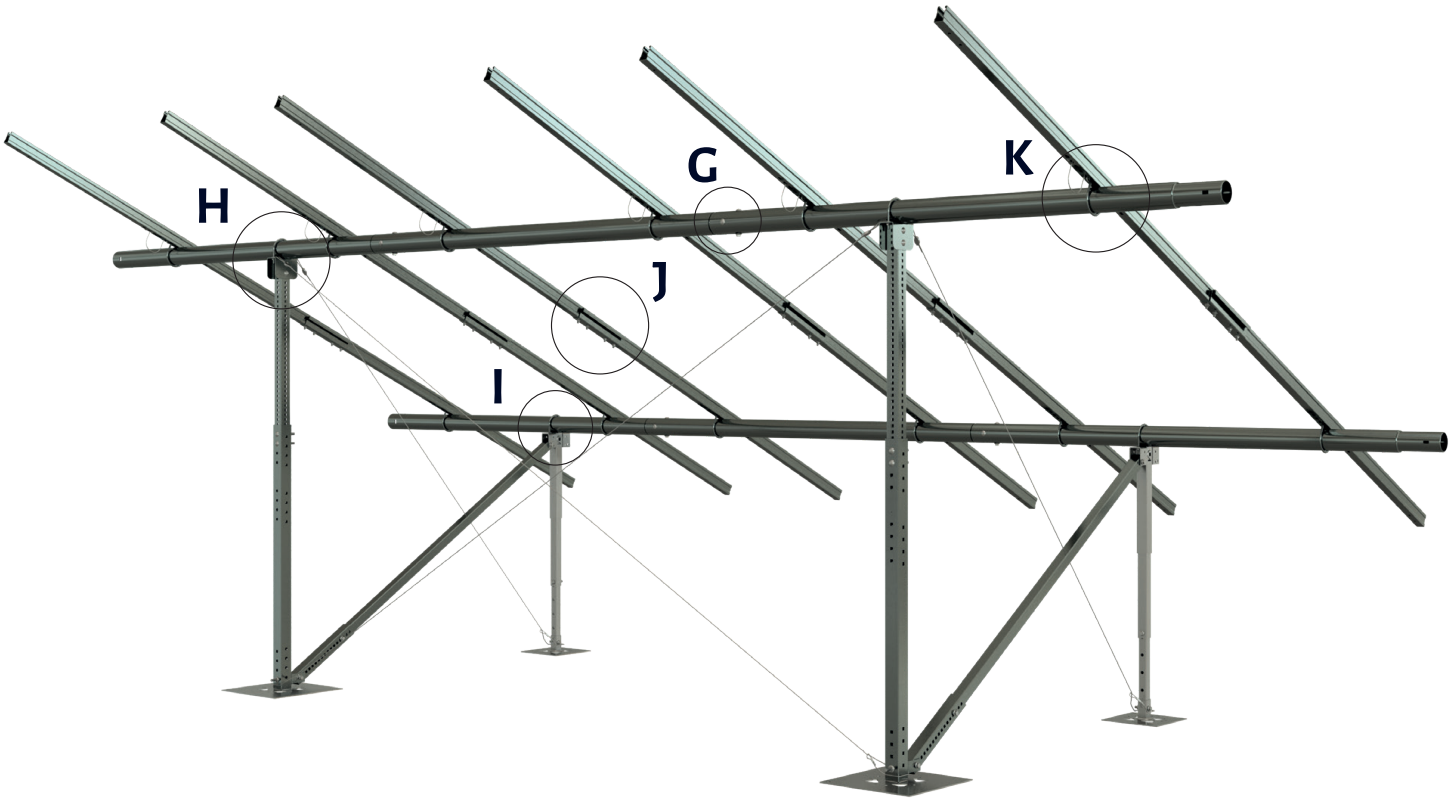
F Rear Top Bracket Assembly



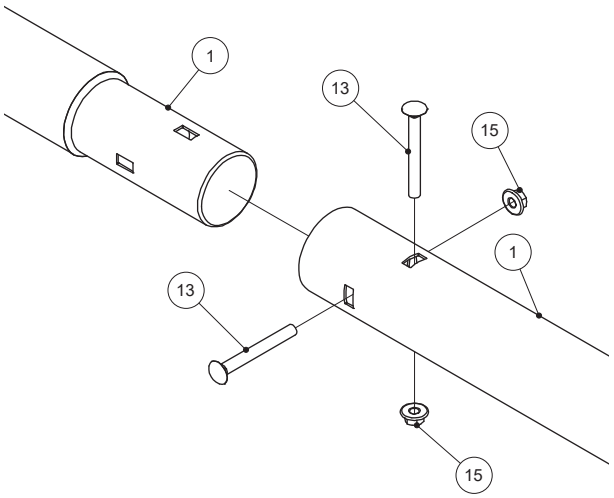


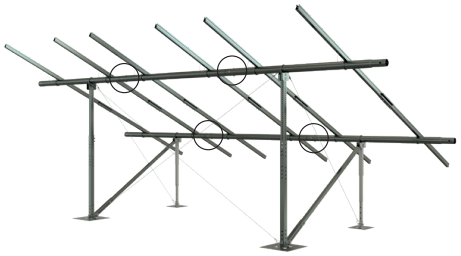
ITEM	DESCRIPTION
3	UNIVERSAL INTERNAL LEG
9	NORTH BRACKET
13	CARRIAGE BOLTS GENERAL
15	1/2" NUTS

INSTALLATION MANUAL FOR OSPREY POWERRACK



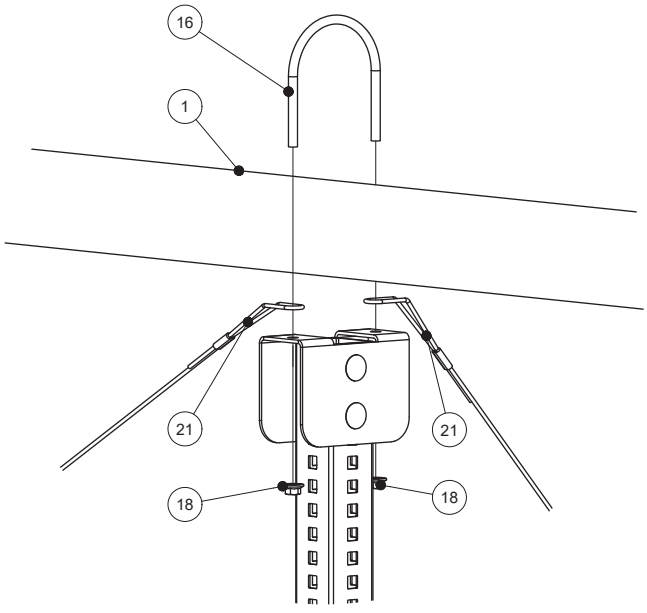
G Easy West Tube Assembly

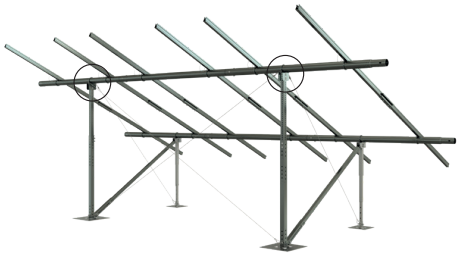




ITEM	DESCRIPTION
1	EAST WEST BEAM
13	CARRIAGE BOLTS GENERAL
15	1/2" NUTS

H East West Tube Installation

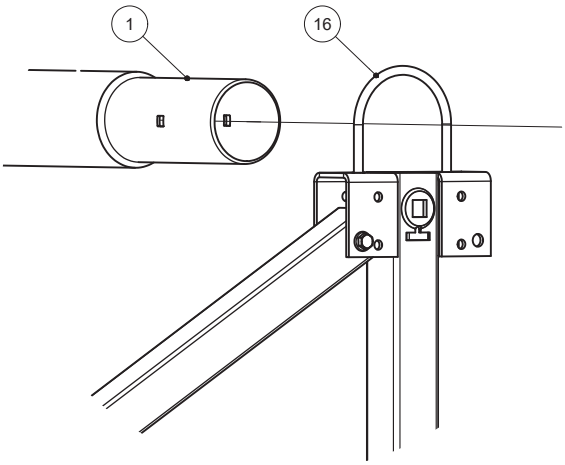


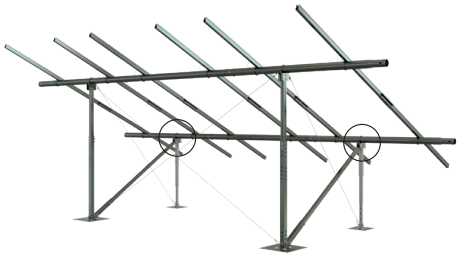


ITEM	DESCRIPTION
1	EAST WEST BEAM
16	EW U-BOLT TUBE
18	3/8" NUTS
21	CABLE BRACE

INSTALLATION MANUAL FOR OSPREY POWERRACK

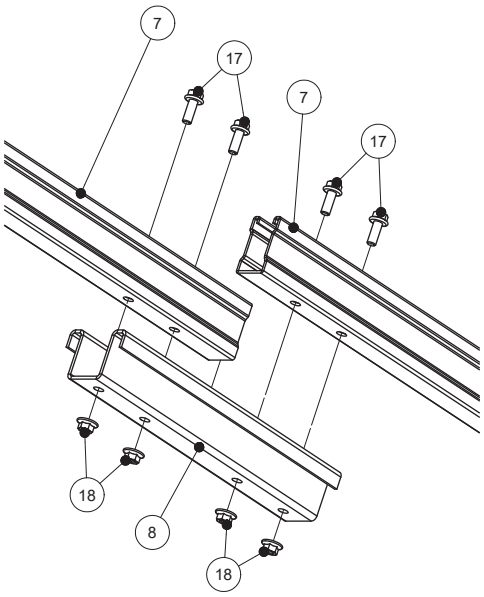
I Front Leg Assembly

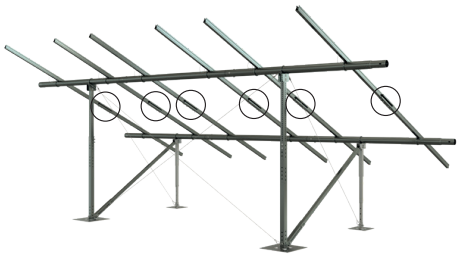




ITEM	DESCRIPTION
1	EAST WEST TUBE
16	EW U-BOLT TUBE

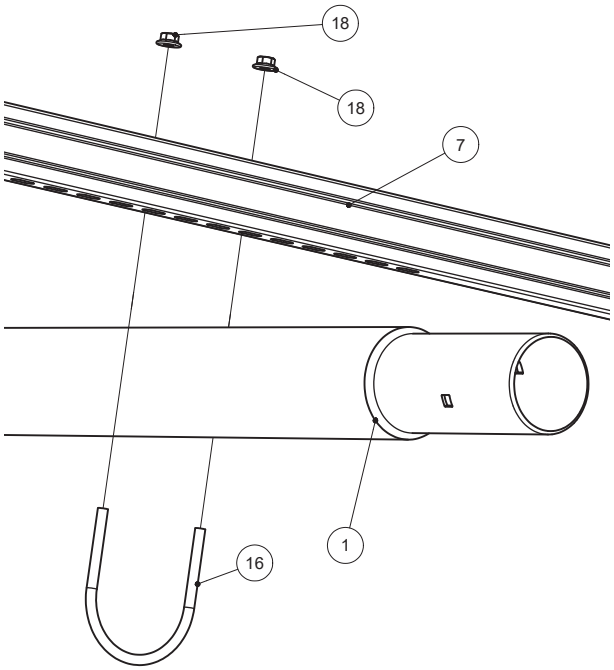
J North South Purlin Assembly

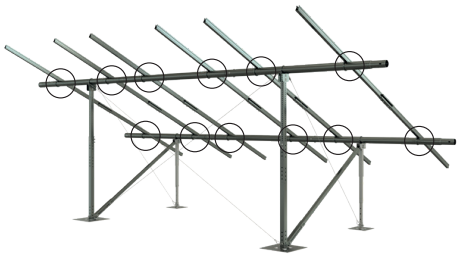




ITEM	DESCRIPTION
7	NS PURLIN MAX
8	RAIL BRACKET
17	SPLICE BOLTS
18	3/8" NUTS

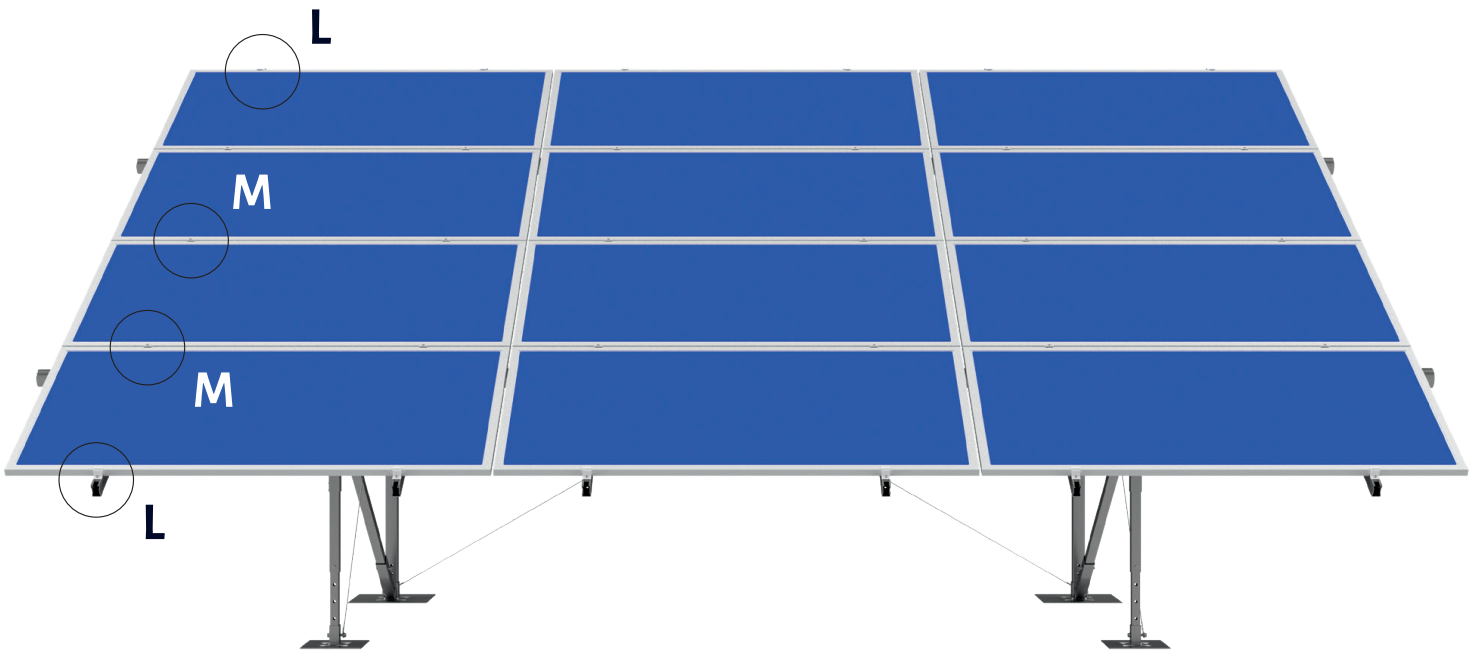
K Purlin Installation





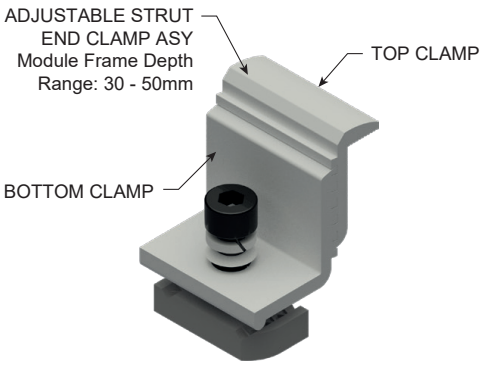
ITEM	DESCRIPTION
1	EAST WEST BEAM
7	NS PURLIN MAX
16	EW U-BOLT TUBE
18	3/8" NUTS

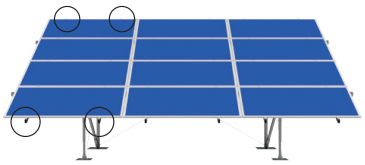
INSTALLATION MANUAL FOR OSPREY POWERRACK



INSTALLATION MANUAL FOR OSPREY POWERRACK

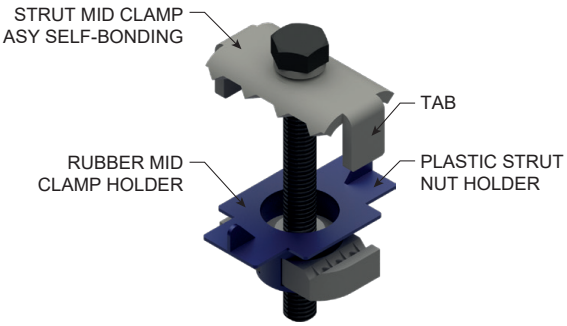
L

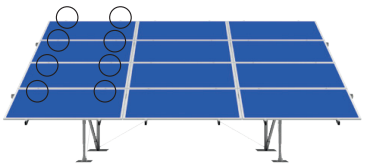




ITEM	DESCRIPTION
21	END CLAMPS 12

M





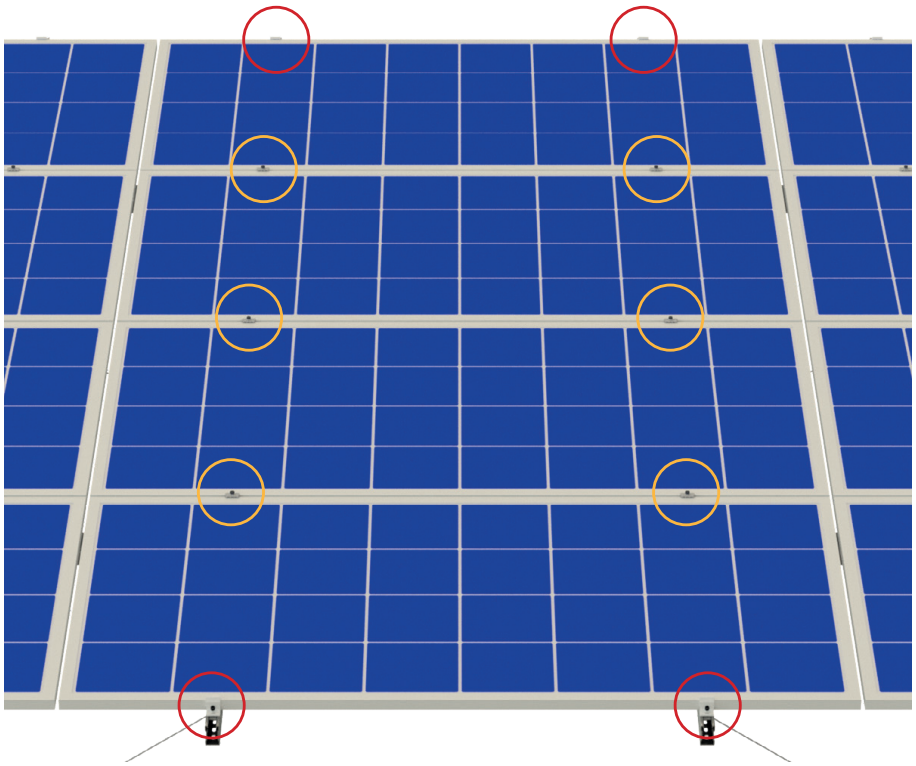
ITEM	DESCRIPTION
22	MID CLAMPS 18

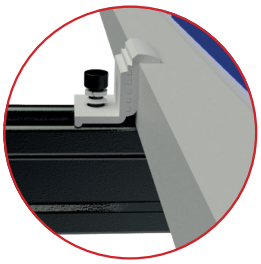
INSTALLATION MANUAL FOR OSPREY POWERRACK

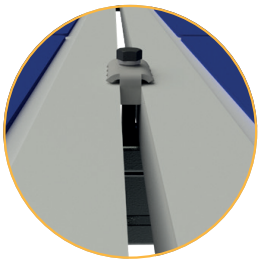
This overview covers the recommended methods for installing cable bracing.

Note: Cable bracing should be installed last, as it will ease the installation process and prevent the movement of structural components that are not yet tight or square.

1. Install the loop end of the bracing at the highest location possible.
2. Insert the tag end of the brace through the tensioner, ensuring that the tensioner is more than 18" away from the loop location.
3. Loop the brace around the component, making sure that the cable cannot slide or slip from its position.
4. Insert the looped end of the cable into the opposing side of the tensioner, leaving at least 6" of cable through the tensioner.
5. Pull the cable by hand until it is taut.
6. Set the tension tool to the predetermined tension for the brace and attach the tool to the tensioner, clamping the loose end of the cable to the jaws of the tool.
7. Apply tension to the cable, ensuring that the assembly does not move during this step.
8. Once the tension is reached, the tool will notify the user with an audible click.
9. Using paint markers, mark the cable at four locations closest to the tensioner on the wire for quality control (QC).



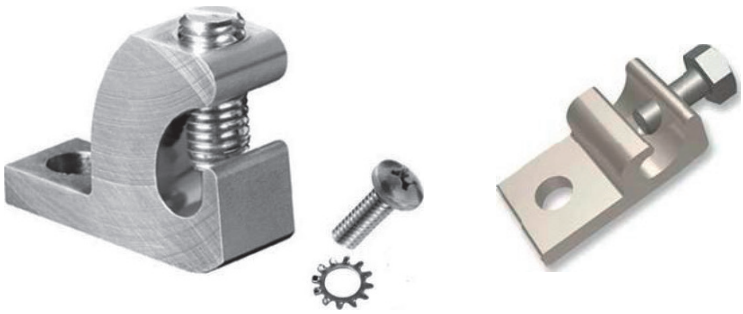




INSTALLATION MANUAL FOR OSPREY POWERRACK

Grounding and Bonding

Once the solar panels have been installed connect each solar panel using a UL Listed bonding lug and attach this lug to a copper wire. This assembly is then connected to the ground rod. Please note that Nuance does not provide any of these electrical components.



Bonding Path

1. Place the lug over the hole, positioning the star washer between the bottom of the grounding lug and the rear chassis. Insert the bolt and torque the grounding assembly.
2. Insert a #4 to #10 AWG copper wire into the lug and tighten the lug set screw onto the copper wire. Torque to 35 in-lbs for #4-6 AWG wire and to 30 in-lbs for #8-10 AWG. The minimum grounding conductor to be used is #10 AWG copper.
3. Connect the grounding electrode conductor to a ground rod or equivalent ground according to the National Electric Code.

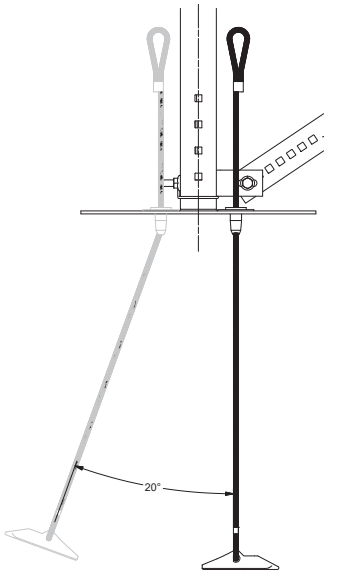
4. For multiple rows of Osprey Power Rack™ units, connect each row's strut rail with an appropriately sized grounding conductor and run it in conduit with string wires to the next row according to the maximum fuse rating of the module string. For example, a bare #6 copper wire is rated for 200A. If this string is rated for 15A DC, then 13 strings can be connected to a single ground rod. If the string has a 20A DC rating, then 10 strings of Power
5. Rack units can connect to the single ground rod.
6. For large solar arrays, multiple ground rods will be required.
7. Nuance Energy does not supply any electrical components. Solar components can be added to the strut channel of each rail using Spring Channel Nuts and flanged bolts. Another option is to drill through the back of the rails and/or chassis members and tap or use flanged bolts to connect components to the frames. Please note that Nuance Energy does not supply these materials at this time.

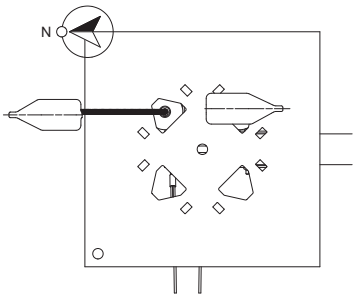
Anchor Install Guide

This is a guide covering the requirements of installing anchors with the Osprey PowerRack. The installation of 1,2 and, 3 anchors vary depending on the application. Please use this as a reference in the field when installing anchors. Contact a Nuance Representative with any questions.

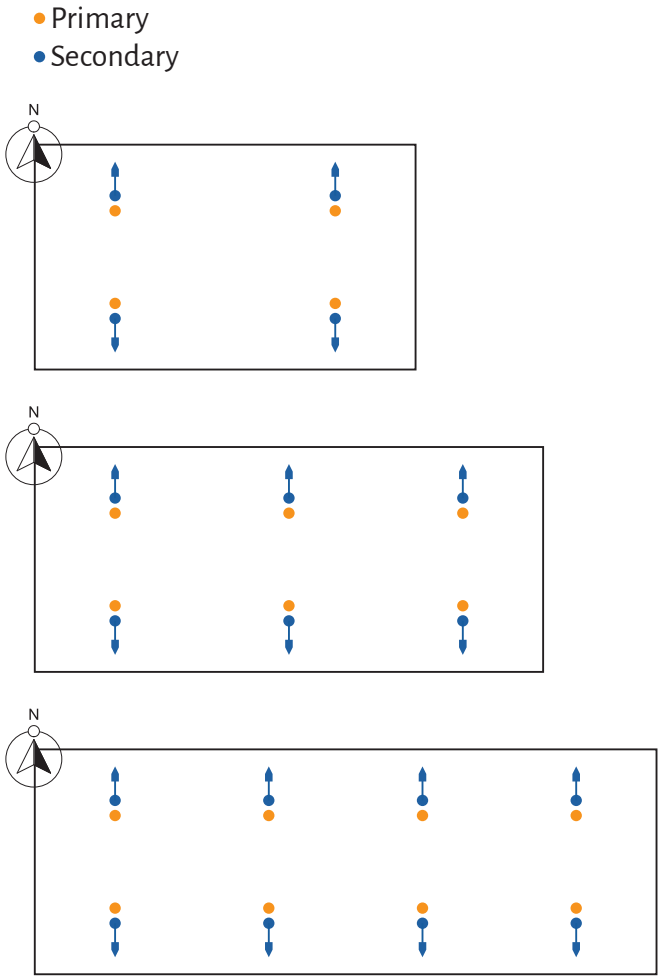
1 Anchor + Anchor

When one anchor is required it is necessary to install the anchor vertically at a 90 degree angle. There is a tolerance of ±5 degrees during installation. If the required load is not reached install a second anchor 20 degrees from vertical. When working with the North Shoe plate the anchor must be installed north, when working with the south anchor the anchor must be installed South.



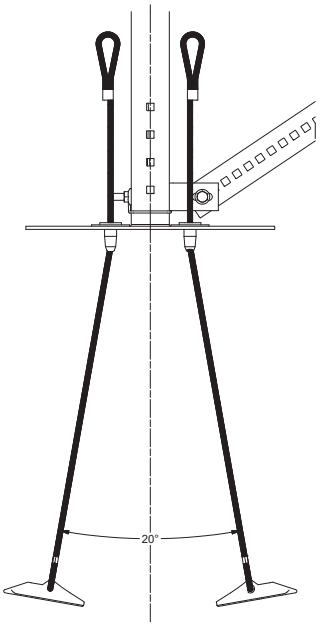


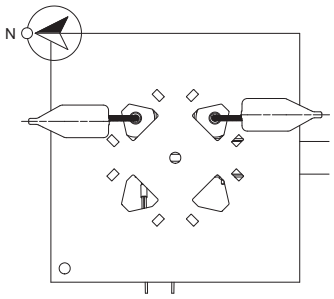
1 ANCHOR + ADD ANCHOR
ESCALA 1 / 5



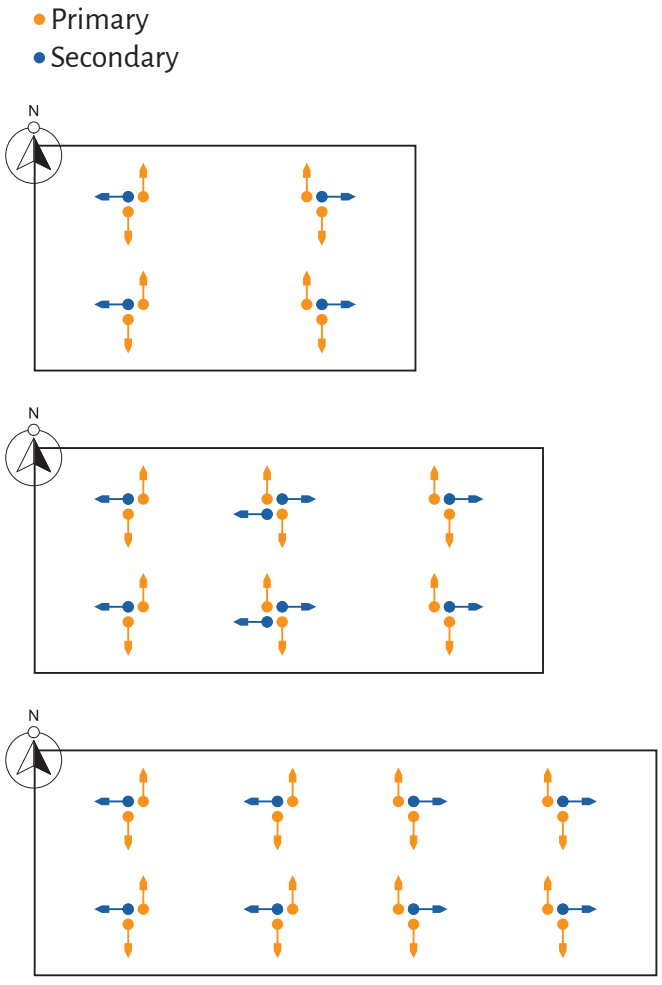
2 Anchors

When installing 2 anchors the anchors must be arranged facing north and south, each anchor must be installed 10 degrees outward from vertical. One anchor is to be pointing North and the second South. If the desired load is not reached an additional anchor must be used. For exterior anchors the third anchor must be installed towards the exterior in the East or West direction. Interior foundations either way is acceptable.



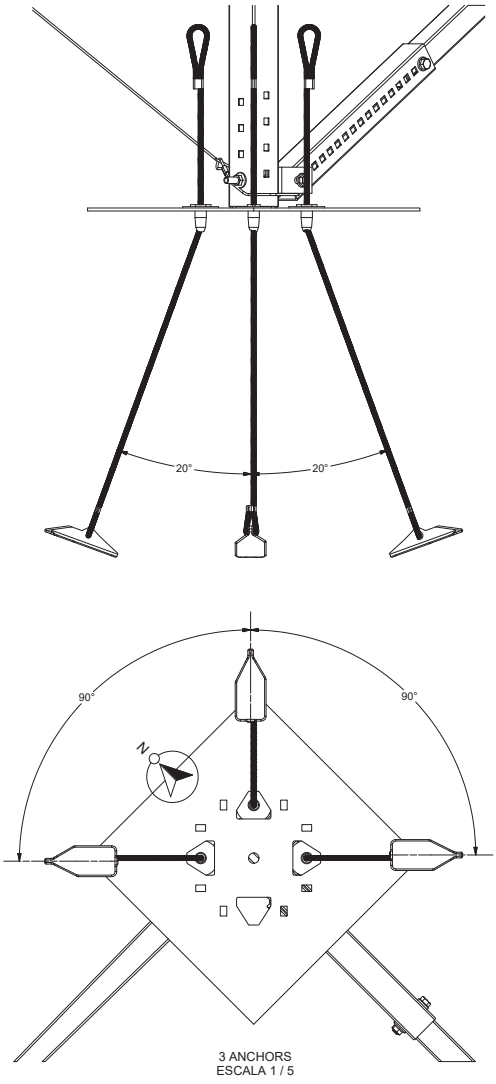


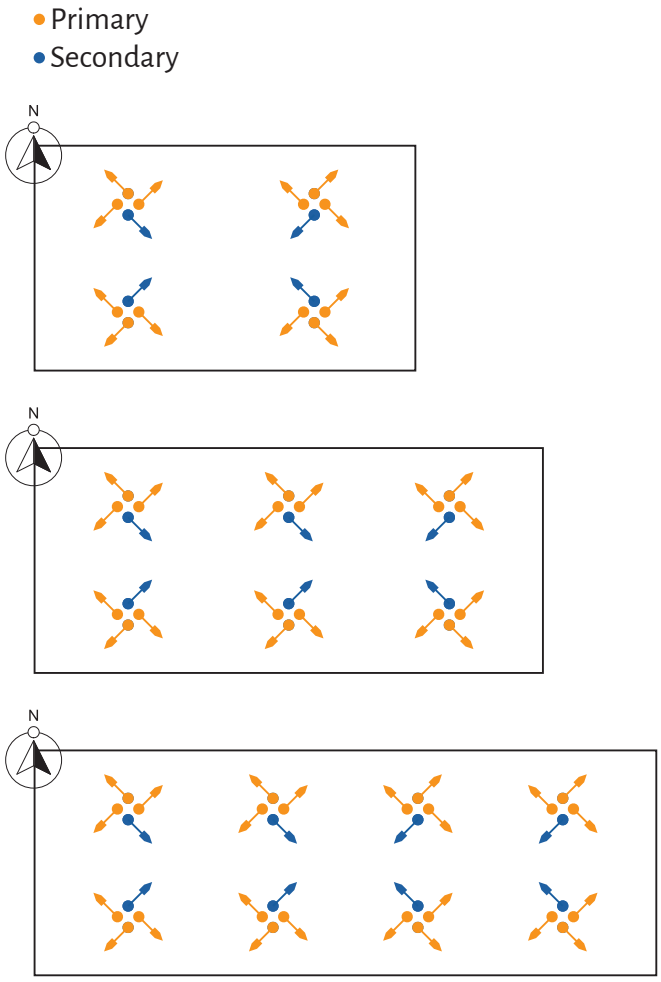
2 ANCHORS
ESCALA 1 / 5



3 Anchors

When installing 3 anchors they must be installed at a 20 degree angle from vertical. Additionally the 3 anchors must be installed away from each other to ensure their capacities don't interfere. Use the holes in the shoe plates as arrows towards where the anchors should point. Preferably the anchors shall be at 90 degrees from each other, however due to the structure some variation is acceptable.





INSTALLATION MANUAL FOR OSPREY POWERRACK

Installer Warning and Notice

It is crucial to carefully read and comprehend the installation manual provided before installing, wiring or operating our product in your PV system. Failure to comply with all instructions and procedures could result in product damage, and most importantly, cause severe injury or even death. It is essential to ensure that all PV systems and OspreyPowerRack™ installations meet the National Electric Code standards. Installers hold the sole responsibility of complying with code and safety regulations, and the consequences thereof

WARNING!	
	PV modules generate electricity when exposed to light and are electrically live when mounted. This DC electricity can pose danger to the installer, user, and/or property. Any contact with electrically active module terminals can result in arcing; leading to shocks, fires, burns, and/or death. Use caution around utility power lines that may be near the work area. Never work when lighting is present. Insure good earth-bonding as part of a lighting protection system.

⚠ DANGER!	
	Electrical shock potential of PV modules increases with higher parallel currents and series voltage connections. The PV installer must assume all inherent risk of property damage and/or personal injury related to the mishandling of PV modules during installation and safety standards. These standards include but are not limited to applicable National Electrical Code (NEC®) sections, UL Standards, OSHA Regulations, State or Local Fire Marshall Codes, NFPA 70E. Installation must comply with NEC 250 (Grounding and Bonding), NEC 690 (Solar Photovoltaic Systems), CSA 22.1 (Safety Standard for Electrical Installations), Canadian Electrical Code Part 1, and all other applicable state, provincial, and local electrical code requirements. Dual Rack Solar Racking Systems must be used with UL1703 listed equipment including but not limited to; PV modules, combiners and disconnects.

⚠ DANGER!	
	Avoid electrical injures by preventing the accidental or unintentional release of hazardous energy. Modules produce electricity when exposed to light. To avoid electric shock and injury, completely cover the front of the module with an opaque material before making any electrical connections. Lock out/tag out and disconnect the PV system from all electrical energy before any maintenance or cleaning. NEVER disconnect or connect modules under load. NEVER disconnect the earth bond to the array.

~ END OF INSTALLATION MANUAL ~

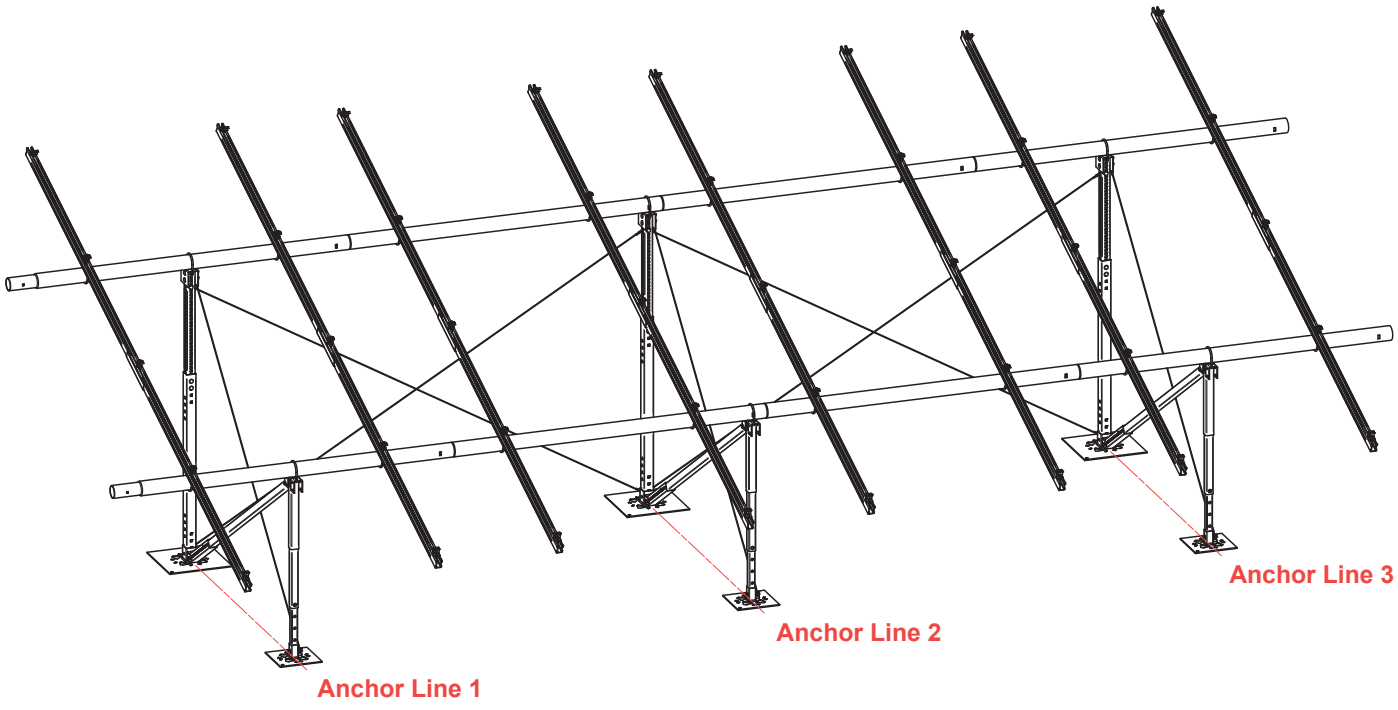
INSTALLATION MANUAL FOR OSPREY POWERRACK

Installation and Testing of Earth Anchors

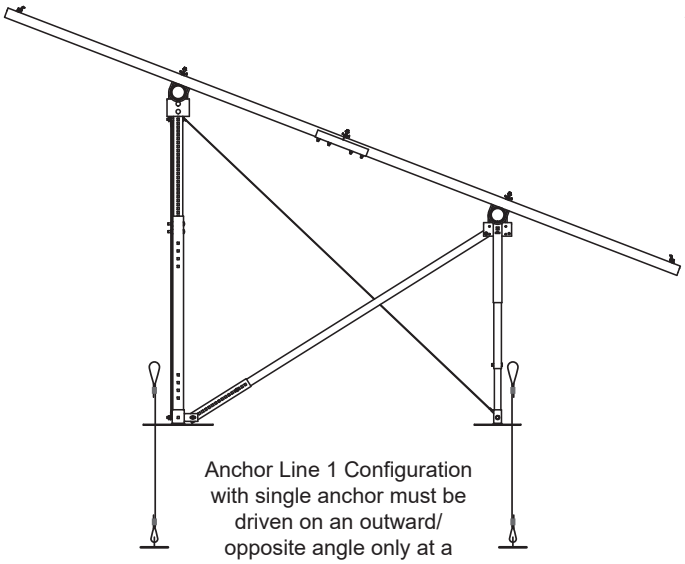
After completing the Osprey unit assembly, ensuring proper alignment, squaring, leveling, and splicing to the next unit, the two installers must commence the installation of Earth Anchors. Each Base Plate must contain a minimum of one Earth Anchor, and all anchors must undergo rigorous testing. In certain cases of severe frost or extremely hard soil, our Drillbit as specified on page 5 may be required to create pilot holes for the anchors. It's important to note that these pilot holes are not wide enough to accommodate the anchor's passage through solid rock. In such cases, we use epoxy spin-in Chemical capsule methods, HOG AllThread with a 3/4" Drillbit purchased from a source other than Nuance Energy, or our NEW Galvanized Expansion Rock Anchors that utilize our current 13/8" dia. drill bits. For more details, see the Supplementary Earth Anchor Instructions.

To comply with safety regulations, installers must request Structural Calculations packets directly from Nuance. Installers are responsible for selecting the appropriate design values and anchor quantity based on live pull testing results or via SSM request. It is recommended to purchase additional anchors to account for unforeseen circumstances.

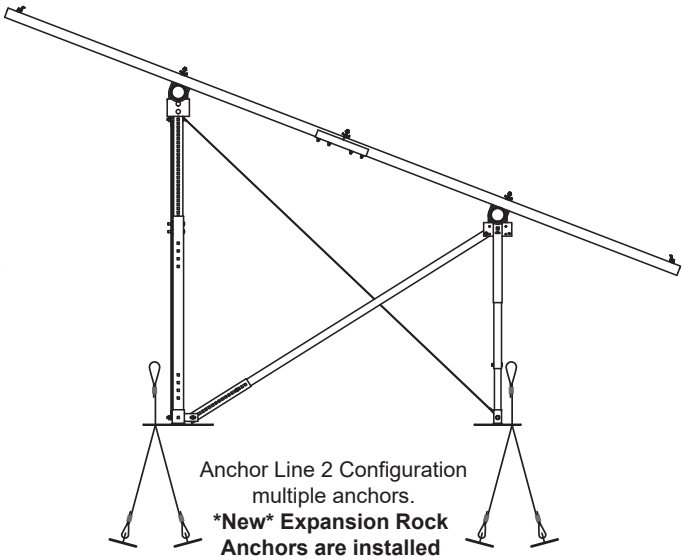
Nuance Energy's website offers Site-Specific Memo's (SSM) upon RFQ request, which provides project site-specific parameters and stamps.



INSTALLATION MANUAL FOR OSPREY POWERRACK



Anchor Line 1 Configuration with single anchor must be driven on an outward/ opposite angle only at a 10-15 degree angle.



Anchor Line 2 Configuration multiple anchors. ***New* Expansion Rock Anchors are installed vertically.**

Disclosure Statement

The Installer, responsible for the installation and assembly of Nuance Energy's OSPREY Power Rack™ Product, acknowledges and agrees to the following terms:

- The Installer has read the Manufacturer's Installation Manual version 6 or newer and is aware of the section on Anchor Installation and requirements.
- The Installer shall assemble and install the Product and Anchors to Nuance Energy's specifications as required in this Manual.
- The Installer must install Anchors at no less than a 10-degree angle (unless using rock anchors) into the soil facing outward from the racking system and in the opposite direction of Product leg support assemblies.
- Nuance Energy reserves the right to void its Manufacturer's warranty of the Product if the Installer or the Buyer's representative fails to sign this Disclosure Statement before installing the Product.
- Due to potential ground settling, it is recommended that the contractor revisit the site 6 months to a year after installation to re-cinch the wedge grips on the anchors to the shoe plates and realign the system if necessary. After the first year, ground settling should not occur again but should be monitored annually.

Note: If the Buyer or Installer has purchased the Spring Wedge Clip and installed it on the baseplate, this component will eliminate the need to revisit the site in 6 months or more to re-cinch wedge grips.

Buyer: _____ Date: _____
NAME OF CONTRACTOR

Buyer's Rep: _____ Date: _____
NAME OF CONTRACTOR

OSPREY PowerRack