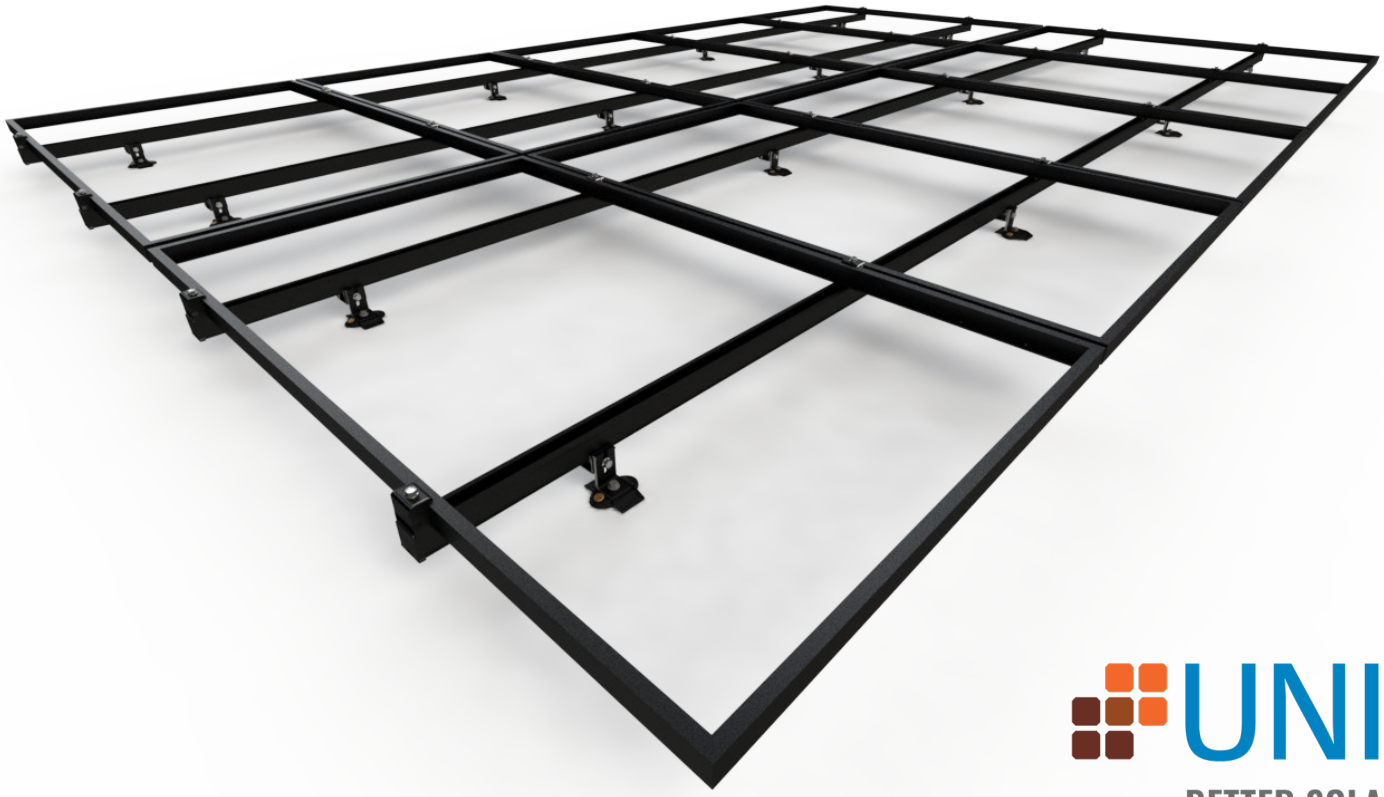
NXT RAIL RACEWAY

INSTALLATION GUIDE



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UNIRAC Code-Compliant Installation Manual

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NXT RAIL RACEWAY

INSTALLATION GUIDE

TABLE OF CONTENTS

INTRODUCTION

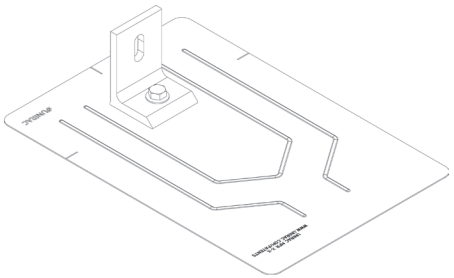
The NXT Rail Raceway System is a cutting-edge solution designed to meet the rigorous standards set forth by NEMA VE 1-2002/CSA C22.2 No. 126.1-02. This manual serves as a comprehensive guide for installers to install NXT Rail as a wire raceway.

The NXT Rail is an aluminum, non-ventilated channel. It is a component of the NXT UMOUNT racking system, with UL2703 design load ratings of 37 psf down, 20 psf up, and 7.5 psf downslope

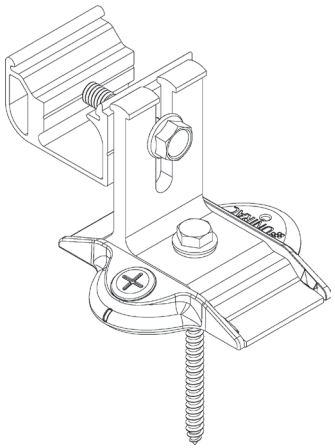
Before proceeding with the installation, it is imperative to thoroughly review and have a clear understanding of the installation procedures outlined in this manual. This will ensure that the NXT Rail Raceway System is installed correctly and meets all regulatory requirements.

INSTALLER'S RESPONSIBILITY

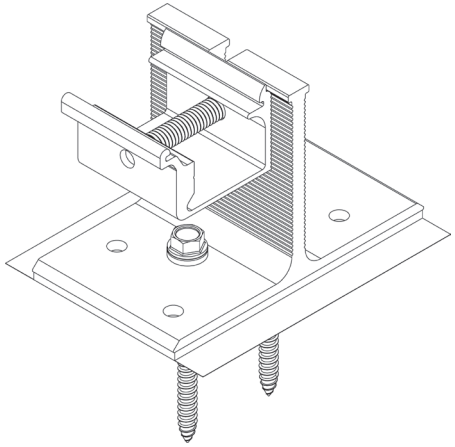
- Ensure that NXT Rail Raceway System and other products are appropriate for the specific installation and are designed for the installation environment.
- Comply with all applicable local or national building and fire codes, including any that may supersede this manual.
- Ensure provided information is accurate and appropriate. Issues resulting from inaccurate and inappropriate information are the installer's responsibility.
- Ensure the system is grounded and bonded to meet the requirements of the National Electric Code.
- Ensure routine maintenance of a module or panel shall not involve breaking or disturbing the bonding path of the system and all work must comply with national, state and local installation procedures, product, and safety standards.
- If loose components or loose fasteners are found during periodic inspection, re-tighten immediately. Any components showing signs of corrosion or damage that compromise safety shall be replaced immediately.
- Ensure bare copper grounding wire does not contact aluminum and zinc-plated steel components, to prevent risk of galvanic corrosion.
- Review module manufacturer's documentation for compatibility and compliance with warranty terms and conditions.
- Use only Unirac parts or parts recommended by Unirac; substituting parts may void any applicable warranty.
- Installers shall refer to the NXT UMOUNT installation manual and this manual for complete installation instructions.



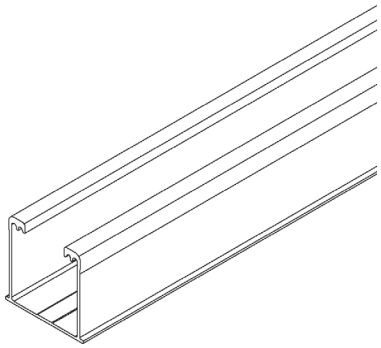
FLASHKIT PRO



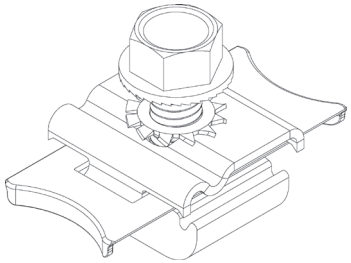
STRONGHOLD ATTACHMENT KIT



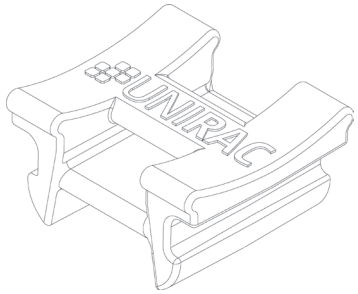
STRONGHOLD BUTYL ATTACHMENT KIT



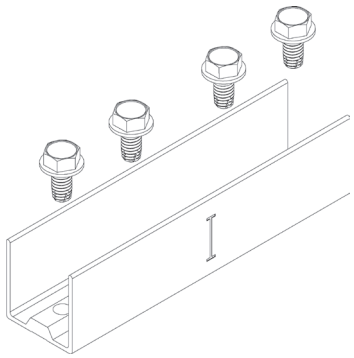
RAIL



MLPE AND LUG CLAMP



WIRE MANAGEMENT CLIP

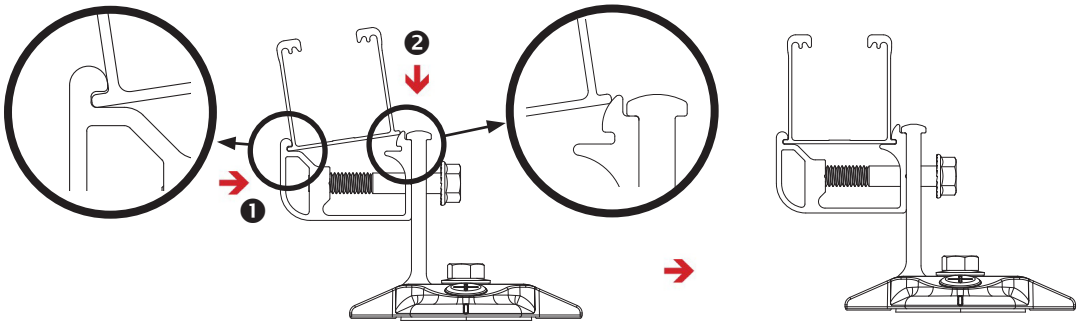


RAIL SPLICE

PART DESCRIPTION	PART NUMBER
FLASHKIT PRO	004055M (Mill)
	004055D (Dark)
STRONGHOLD ATT KIT	SHCPKTM1 (Mill)
	SHCPKTD1 (Dark)
STRONGHOLD BUTYL ATT KIT	SBUTYLM1 (Mill)
	SBUTYLD1 (Dark)
RAIL	168RLM1 (Mill)
	168RLD1 (Dark)
MLPE AND LUG CLAMP	LUGMLPE1
WIRE MANAGEMENT CLIP	WRMCLPD1
RAIL SPLICE	RLSPLCM2

NOTE:

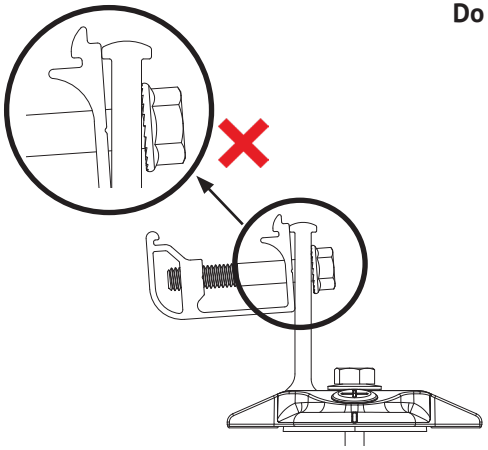
- **Follow instructions provided in NXT UMOUNT installation manual to install roof attachments like FlashKit Pro, Stonghold Attachment Kit, and Stonghold Butyl Attachment Kit.**
- **FlashKit Pro, Stonghold Attachment Kit, and Stonghold Butyl Attachment Kit are not a part of the ground bond path**



POSITION RAIL ONTO RAIL CLAMP:
With the bolt in the pre-assembled (loose) position, Insert the rail flange on one side of the clamp groove. Then click-in the other side of the rail into the clamp groove.

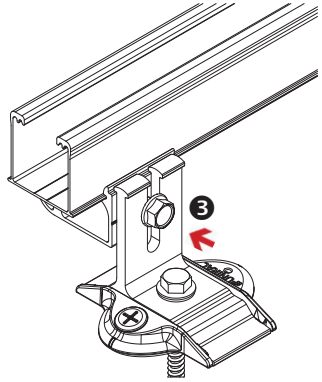
⚠ CAUTION

Do not tighten the rail clamp before putting in the rail.



⚠ CAUTION

Rail clamp must be flush to the L-foot and positioned below the flange at the top of the L-foot.



TIGHTEN RAIL ONTO RAIL CLAMP :
Adjust the rail height as needed until rail alignment is complete and tighten bolt.

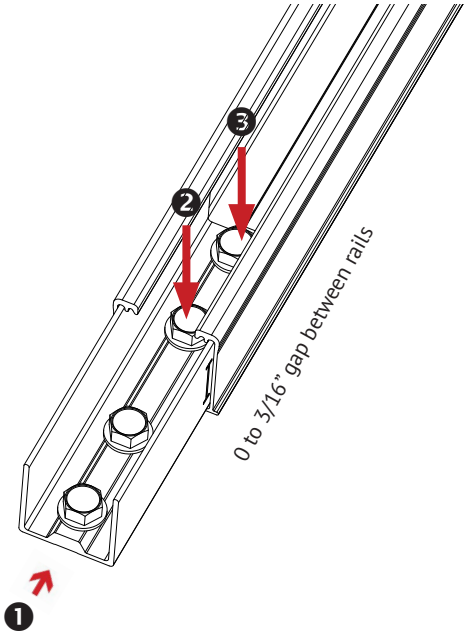
TORQUE VALUE: 20 ft-lbs.

SPLICE INSTALLATION (IF REQUIRED PER SYSTEM DESIGN)

If your installation uses NXT UMOUNT Rail Splice, attach the rails together either before installing the rail or after. Use marking on the splice for centering the connection.

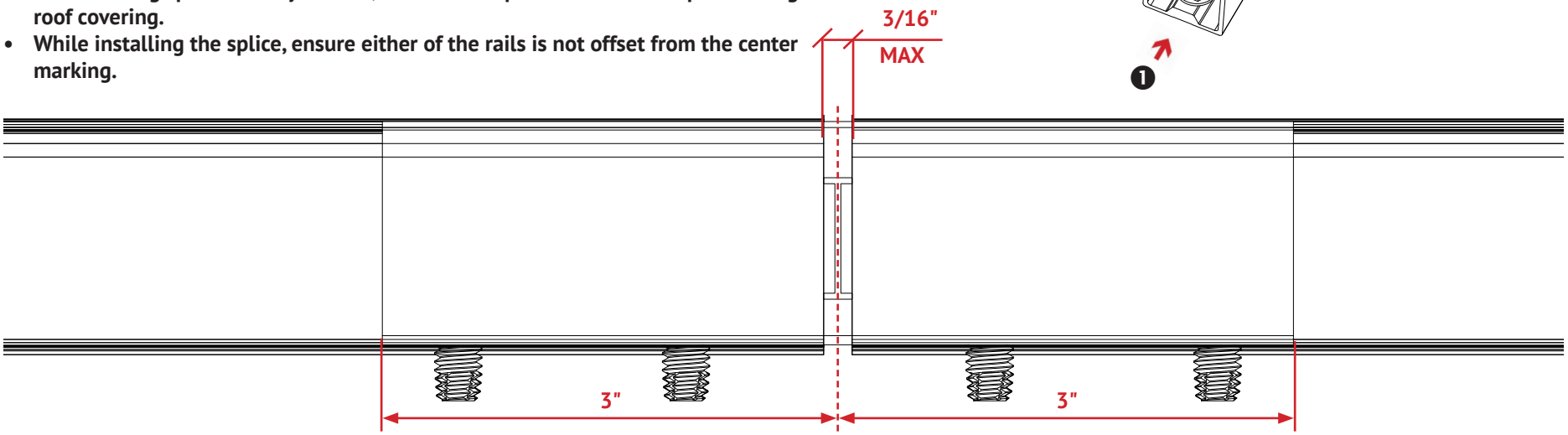
1. To install, slide the splice into the rail on each rail and drag it to the center of the marking.
2. Tighten both bolts on each rail with an impact drill, pressing firmly until the bolt-head is flush against the splice and torqued to 15 ft-lbs.
3. Installation is complete when the bonding hardware penetrates the opposite side of the rail, and the assembly torque is achieved.

TORQUE VALUE: 15 ft-lbs. Do not use Anti-Seize.



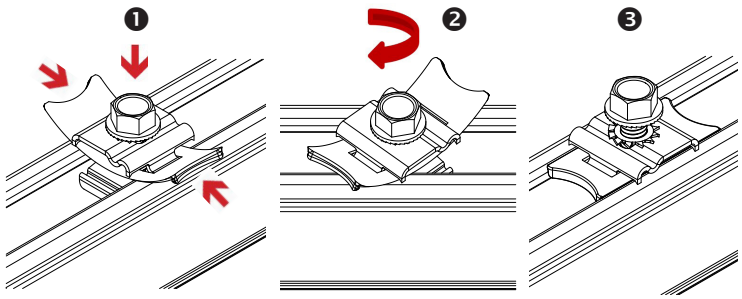
⚠ CAUTION

- **If assembling splice directly on roof, take care to prevent bolts from penetrating roof covering.**
- **While installing the splice, ensure either of the rails is not offset from the center marking.**

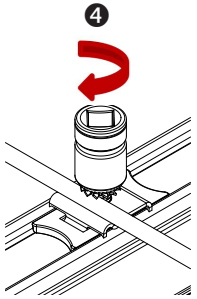


Note:

1. **Maximum gap between rails should not exceed 3/16" at splice connection**
2. **Splice certified for single-use only**

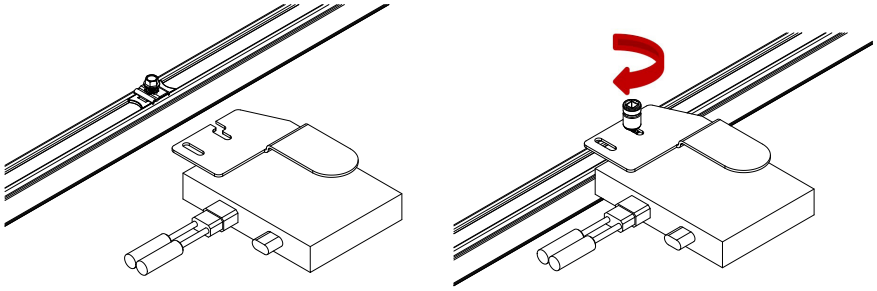


INSTALL MLPE & LUG CLAMP: Insert the rail nut in the rail by pinching the flaps of the plastic clip with thumb and middle finger, while pressing bolt head down with pointer finger. Rotate the clamp 90 deg in clockwise or anticlockwise in the rail and release the flaps when aligned with rail. Ensure that the rail nut is engaged in the rail profile.



SYSTEM GROUNDING WITH MLPE & LUG CLAMP: Once the rail nut is engaged in the rail profile. Align the ground wire in the depression of the washer. Tighten bolt.

TORQUE VALUE: 6-8 AWG SOLID COPPER: 12 ft lbs.



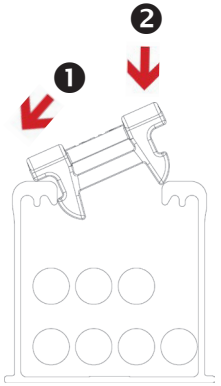
INSTALL MICROINVERTER WITH MLPE & LUG CLAMP:
Once the rail nut is engaged in the rail profile. Install microinverter onto rail. Engage with bolt and tighten to secure.

TORQUE VALUE: 12 ft-lbs.

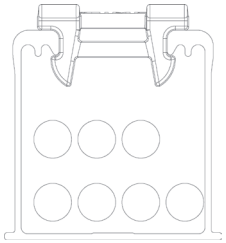
Quick Tip:
To remove the MPLE clamp from the rail, use a tool to pry-open the rail to release the clamp.

Note:
MLPE & Lug Clamp cannot be used to simultaneously mount a MLPE and ground wire.

INSTALL WIRE MANAGEMENT CLIP:
Wire clip retains the wires in the rail channel as necessary.



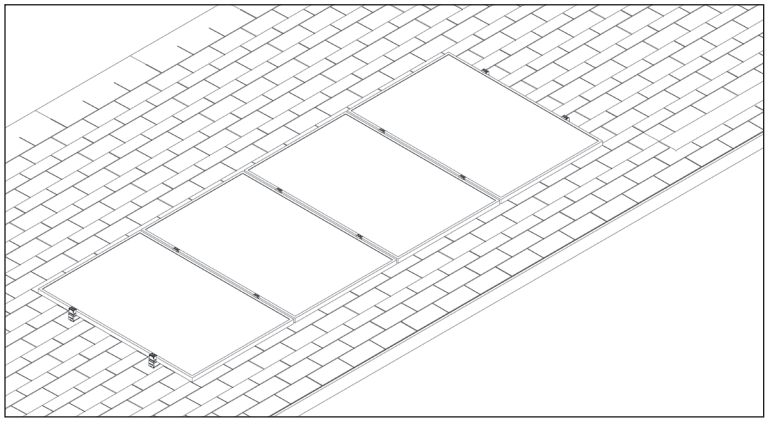
STEP 1: Press fit the clip onto the rail flanges as shown in above figure to install.



STEP 2: Ensure that the clip base is seated on the rail flange.

Wire management clip installed on the roof

NOTE: See page 7 for NXT Rail Raceway Fill options



Follow instructions provided in NXT UMOUNT installation manual to complete the system installation.

NXT Rail Raceway Fill

As per ***NEC Article 392***, minimum cable fill cross sectional area is ***2.1 in²***. Total sum of all cable cross sections installed in Cable Tray/Rail should not exceed ***30%*** of minimum cable fill. The NXT Rail Raceway always maintains a gap above the roof surface and does not require additional temperature derating.

Review and calculate conductor ampacity per ***NEC Section 310.15*** as required by local codes.

NXT Rail Raceway Fill options that meet 30% fill:

SIMILAR CABLES		
CABLE TYPE	**SIZE**	**QUANTITY**
PV Wire	12 AWG	12
	10 AWG	9
Enphase Q Cable	#N/A	6

COMBINATIONS OF CABLES			
OPTION	**Enphase Q Cable (Qty)**	**PV Wire 12AWG (Qty)**	**PV Wire 10AWG (Qty)**
1	2	0	6
2	2	10	0
3	4	6	0
4	4	0	4

⚠ WARNING

DO NOT USE RAIL AS A WALKWAY, LADDER OR SUPPORT FOR PERSONNEL. USE ONLY AS A MECHANICAL SUPPORT FOR PV MODULES, WIRES AND CABLES.

AVERTISSEMENT! NE PAS UTILISER LE RAIL COMME PASSERELLE, ÉCHELLE OU SUPPORT POUR LE PERSONNEL. UTILISER UNIQUEMENT COMME SUPPORT MÉCANIQUE POUR LES MODULES PHOTOVOLTAÏQUE, FILS ET CÂBLES ÉLECTRIQUES.