Ordering Specifics

Standard Pack	6 pcs
Dimension	144"/ 168"/ 204"
Weight	0.68 lbs/ft

Rail Span Chart (ft [1])

EXP	Wind Speed	Zone 1					
		Snow Load (psf)					
	(Mph)	0.0	10.0	20.0	30.0	40.0	50.0
B	110	6.5	6.0	5.5	5.0	4.5	4.0
	120	6.5	6.0	5.5	5.0	4.5	4.0
	130	6.5	6.0	5.5	5.0	4.5	4.0
	140	6.0	6.0	5.0	5.0	4.5	4.0
	150	6.0	6.0	5.0	5.0	4.5	4.0
	160	5.5	5.5	5.0	5.0	4.5	4.0
	170	5.5	5.5	5.0	4.5	4.5	4.0
	180	5.0	5.0	5.0	4.5	4.5	4.0
C	110	6.5	6.0	5.5	5.0	4.5	4.0
	120	6.0	6.0	5.5	5.0	4.5	4.0
	130	5.5	5.5	5.5	5.0	4.5	4.0
	140	5.5	5.5	5.5	5.0	4.5	4.0
	150	5.0	5.0	5.0	4.5	4.5	4.0
	160	5.0	5.0	5.0	4.5	4.0	4.0
	170	4.5	4.5	4.5	4.5	4.0	4.0
	180	4.5	4.5	4.5	4.5	4.0	4.0

A. The table above only includes DualRack rail capacity. It does not include roof attachment or roof load carrying capacity.
B. Wind risk category II per ASCE7-10.
C. Topographic factor kzt is 1.0.
D. Maximum mean roof height is 30 ft.
E. Average parapet height is 0 ft.
F. Roof pitch is between 7 degrees and 27 degrees.
G. Maximum solar panel weight is 50 lbs.
H. Height of solar panel is between 2" and 10" from roof.
*See Zone 2 & 3 span table calculation in Installation Manual/P.E. certification.

LITE RAIL

Dual Rack Lite Rails are custom designed for solar PV arrays on all residential and commercial projects. They are engineered for strength and durability and tested for spans of up to eight feet. Installers prefer DualRack rails because they are strong, reliable, time-saving, and available at the best price in the marketplace.

ADVANTAGES

Advanced Dual Rack design - PE Certified in 16 states - No special training required - Save time and money on installations - Less Parts means less labor time - Two installation methods - 3 sizes available: 12', 14' & 17' in silver & black - 10 year limited warranty - Conforms to UL STD 2703 and Class A Fire Rated.

Product Line

Item #	Product Name		
LT-144-C	Lite Rail 144" - Clear	LT-144-C_Lite Rail 144 inch - Clear	
LT-168-C	Lite Rail 168" - Clear	LT-168-C_Lite Rail 168 inch - Clear	
LT-204-C	Lite Rail 204" - Clear	LT-204-C_Lite Rail 204 inch - Clear	
LT-144-B	Lite Rail 144" - Black	LT-144-B_Lite Rail 144 inch - Black	
LT-168-B	Lite Rail 168" - Black	LT-168-B_Lite Rail 168 inch- Black	
LT-204-B	Lite Rail 204" - Black	LT-204-B_Lite Rail 204 inch - Black	

REGISTERED PROFESSIONAL ENGINEER
KENNETH ZACHER
No. S3878
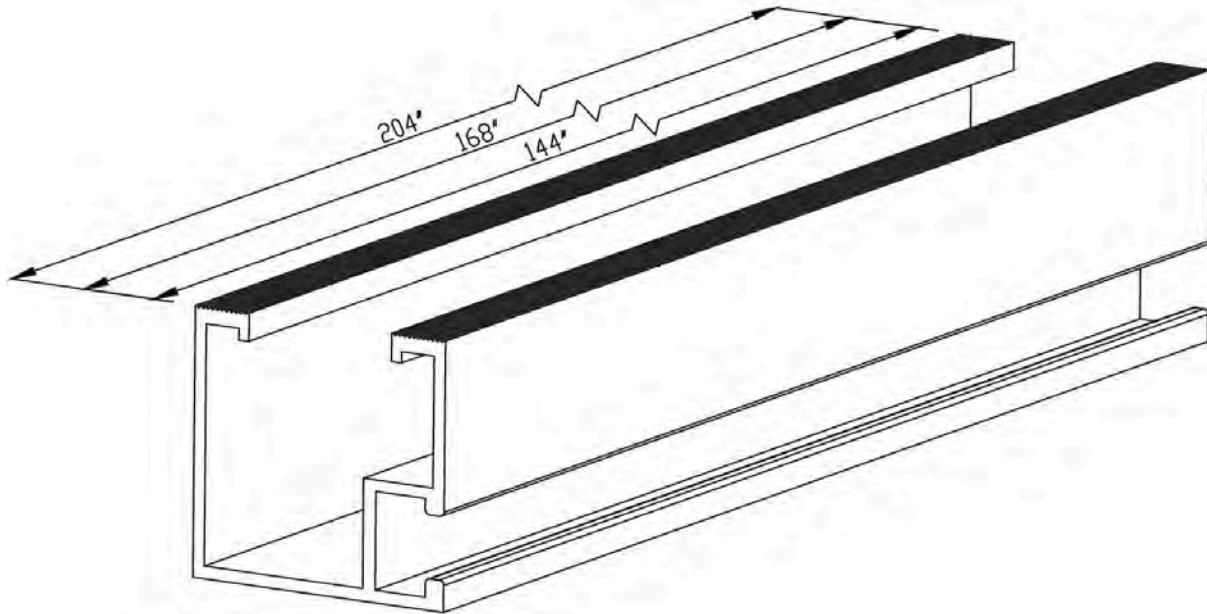Exp 3-31-17
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Conforms to UL SUB 2703
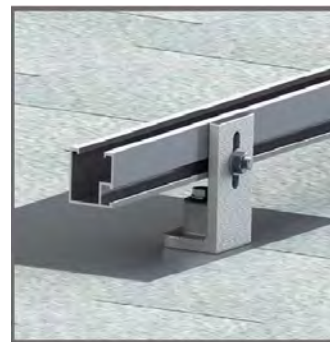
Lite Rail

Installation Guide

Dual Rack is a robust, long-life photovoltaic (PV) module mounting system for both flat and pitched roofs. It consists of aluminum rails, roof attachments and all the necessary components to ensure a safe, easy, and sturdy installation. Dual Rack allows modules to be mounted in both landscape and portrait orientations.

INSTALL WITH DUAL JACK & L-FOOT

- After locating and securely installing standoff to rafter, attach L-foot with 3/8" bolt and nut to Lite Rail at desired height.
- L-foot enables height adjustment up to 1.1 inches.

INSTALL WITH Lite FLASH L-KIT

- After locating and securely installing Flash L-Kit to rafter attach 3/8" bolt and nut to Lite Rail at desired height.

Contact Info

Dual Rack Inc.
2290 Agate ct. Unit A-B, Simi Valley, CA, 93065
www.DualRack.net
Email: info@DualRack.net
Phone:+1 (805) 254 - 2250

Ordering Specifics

Standard Packaging	6 pcs
Dimension	144"/ 168"/ 204"
Weight	0.68 lbs/ft

Rail Span (ft [1])

EXP	Wind Speed	Zone 1					
		Snow Load (psf)					
	(Mph)	0.0	10.0	20.0	30.0	40.0	50.0
B	110	8.0	7.0	6.0	5.0	4.5	4.0
	120	8.0	7.0	6.0	5.0	4.5	4.0
	130	8.0	7.0	6.0	5.0	4.5	4.0
	140	8.0	7.0	6.0	5.0	4.5	4.0
	150	7.5	7.0	6.0	5.0	4.5	4.0
	160	7.0	7.0	6.0	5.0	4.5	4.0
	170	7.0	7.0	6.0	5.0	4.5	4.0
	180	6.5	6.5	5.5	5.0	4.5	4.0
C	110	8.0	7.0	6.0	5.0	4.5	4.0
	120	8.0	7.0	6.0	5.0	4.5	4.0
	130	7.5	7.0	6.0	5.0	4.5	4.0
	140	7.0	7.0	6.0	5.0	4.5	4.0
	150	6.5	6.5	5.5	5.0	4.5	4.0
	160	6.0	6.0	5.5	5.0	4.5	4.0
	170	5.5	5.5	5.5	5.0	4.5	4.0
	180	5.5	5.5	5.5	5.0	4.5	4.0

A. The table above ONLY includes Dual Rack rail capacity data. It does not include roof attachment data or roof load capacity.
B. Wind risk category II per ASCE7-10.   C. Topographic factor, kzt is 1.0.   D. Maximum mean roof height is 30 ft.
E. Average parapet height is 0 ft.   F. Roof pitch is between 7 degrees and 27 degrees.
G. Maximum solar panel weight is 50 lbs.   H. Height of solar panel is between 2" and 10" from roof.
 *See Zone 2 & 3 span table calculation in Installation Manual/P.E. certification.

STANDARD RAIL

Dual Rack rails were designed to be customized for solar PV arrays on residential and commercial projects. They are engineered for strength and durability and tested for spans of up to eight feet. Installers prefer Dual Rack rails because they are strong, reliable, time saving, and available at the best price in the marketplace.

ADVANTAGES

Advanced Dual Rack design - PE Certified in 16 states - No special training required - Save time and money on installations - Less parts, two ways to install - 3 sizes available: 12′, 14′ & 17′ in silver & black - 10 year limited warranty - Conforms to UL STD 2703 and Class A Fire Rated.

Product Line

Item #	Product Name		
ST-144-C	Standard Rail 144" - Clear	ST-144-C_Standard Rail 144 inch - Clear	
ST-168-C	Standard Rail 168" - Clear	ST-168-C_Standard Rail 168 inch - Clear	
ST-204-C	Standard Rail 204" - Clear	ST-204-C_Standard Rail 204 inch - Clear	
ST-144-B	Standard Rail 144" - Black	ST-144-B_Standard Rail 144 inch - Black	
ST-168-B	Standard Rail 168" - Black	ST-168-B_Standard Rail 168 inch - Black	
ST-204-B	Standard Rail 204" - Black	ST-204-B_Standard Rail 204 inch - Black	

REGISTERED PROFESSIONAL ENGINEER
KENNETH ZACHER
No. S3878
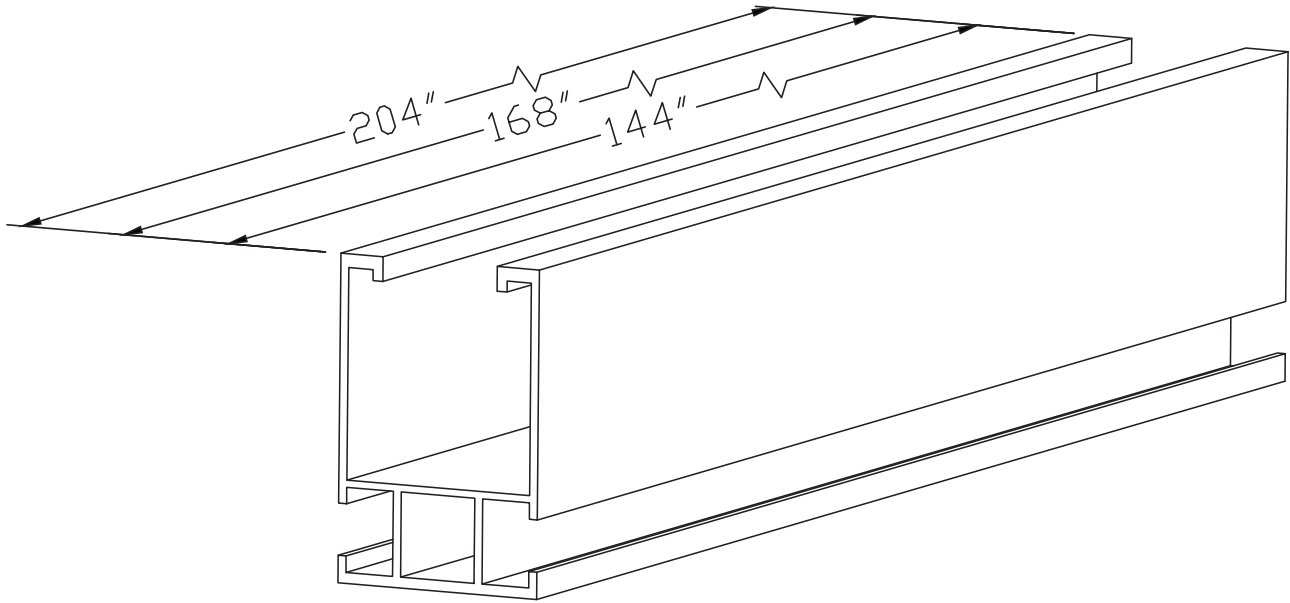Exp. 3-31-17
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Standard Rail

Installation Guide

Dual Rack is a robust, long-life photovoltaic (PV) module mounting system for both flat and pitched roofs. It consists of aluminum rails, roof attachments and all the necessary components to ensure a safe and sturdy installation. Dual Rack allows modules to be mounted in both landscape and portrait orientations.

- Dual Rack technology can be installed in two different ways: Top down attachment style and L-Foot style.

TOP DOWN

- Measure and mark the location of each standoff to roof connection.
- Drill 3/8" hole through Dual Rack standard rail for each standoff location.
- Attach standoff to roof with 5/16" lag screw. Attach Dual Rack standard rail to standoff with 3/8" bolt and washer.

L-FOOT STYLE

- After securely installing standoff to rafter, attach L-foot with 3/8″ bolt and nut to Dual Rack standard rail at desired height
- Dual Rack L-foot enables height adjustment up to 1.1 inches.

Contact Info

Dual Rack Inc.
2290 Agate ct. Unit A-B, Simi Valley, CA, 93065
www.DualRack.net
Email: info@DualRack.net
Phone:+1 (805) 254 - 2250

Ordering Specifics

Standard Package	6 pcs/bundle
Dimension	144"/ 168"/ 204"
Weight	1.03 lbs/ft

Rail Span (ft[1])

EXP	Wind Speed	Zone 1					
		Snow Load (psf)					
	(Mph)	0.0	10.0	20.0	30.0	40.0	50.0
B	110	13.5	12.5	11.0	10.0	9.0	8.0
	120	13.5	12.5	11.0	10.0	9.0	8.0
	130	13.5	12.5	11.0	10.0	9.0	8.0
	140	13.0	12.5	11.0	10.0	9.0	8.0
	150	12.0	12.0	10.5	9.5	9.0	8.0
	160	11.5	11.5	10.5	9.5	9.0	8.0
	170	10.5	10.5	10.5	9.5	8.5	8.0
	180	10.0	10.0	10.0	9.0	8.5	8.0
C	110	13.5	12.5	11.0	10.0	9.0	8.0
	120	12.5	12.5	11.0	10.0	9.0	8.0
	130	12.0	12.0	10.5	9.5	9.0	8.0
	140	11.0	11.0	10.5	9.5	8.5	8.0
	150	10.5	10.5	10.0	9.5	8.5	8.0
	160	9.5	9.5	9.5	9.0	8.5	8.0
	170	9.0	9.0	9.0	9.0	8.5	8.0
	180	8.5	8.5	8.5	8.5	8.0	7.5

A. The table above ONLY includes Dual Rack rail capacity data. It does not include roof attachment data or roof load capacity.
B. Wind risk category II per ASCE7-10.　C. Topographic factor, kzt is 1.0.　D. Maximum mean roof height is 30 ft.
E. Average parapet height is 0 ft.　F. Roof pitch is between 7 degrees and 27 degrees.
G. Maximum solar panel weight is 50 lbs.　H. Height of solar panel is between 2" and 10" from roof.
*See Zone 2 & 3 span table calculation in Installation Manual/P.E. certification.
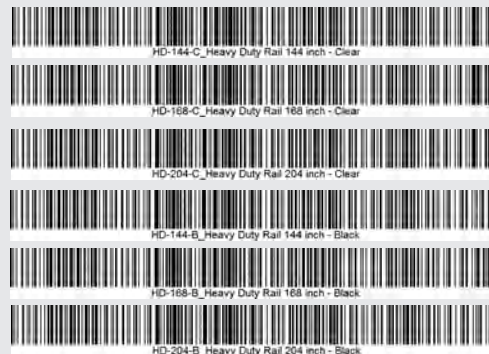
HEAVY DUTY RAIL

Dual Rack Heavy Duty Rails are custom designed for solar PV arrays on residential, commercial and utility projects. Anodized DR Heavy Duty Rails are engineered for strength and durability and tested for spans of up to twelve feet. Pre-stamped engineering letters for PV- friendly states are also available for permit purposes. Installers prefer Dual Rack rails because they are strong, reliable, time-saving, and available at the best price in the marketplace.

ADVANTAGES

Advanced Dual Rack design - Less parts & Two installation methods - PE Certified in multiple states - Save time and money on installations - No special training required - 2 sizes available: 14' & 17' – Available in silver & black - 10 year limited warranty - Conforms to UL STD 2703 and Class A Fire Rated.

Product Line

Item #	Product Name		
HD-144-C	Heavy Duty Rail 144" - Clear	HD-144-C_Heavy Duty Rail 144 inch - Clear	
HD-168-C	Heavy Duty Rail 168" - Clear	HD-168-C_Heavy Duty Rail 168 inch - Clear	
HD-204-C	Heavy Duty Rail 204" - Clear	HD-204-C_Heavy Duty Rail 204 inch - Clear	
HD-144-B	Heavy Duty Rail 144" - Black	HD-144-B_Heavy Duty Rail 144 inch - Black	
HD-168-B	Heavy Duty Rail 168" - Black	HD-168-B_Heavy Duty Rail 168 inch - Black	
HD-204-B	Heavy Duty Rail 204" - Black	HD-204-B_Heavy Duty Rail 204 inch - Black	

REGISTERED PROFESSIONAL ENGINEER
KENNETH ZACHER
No S3878
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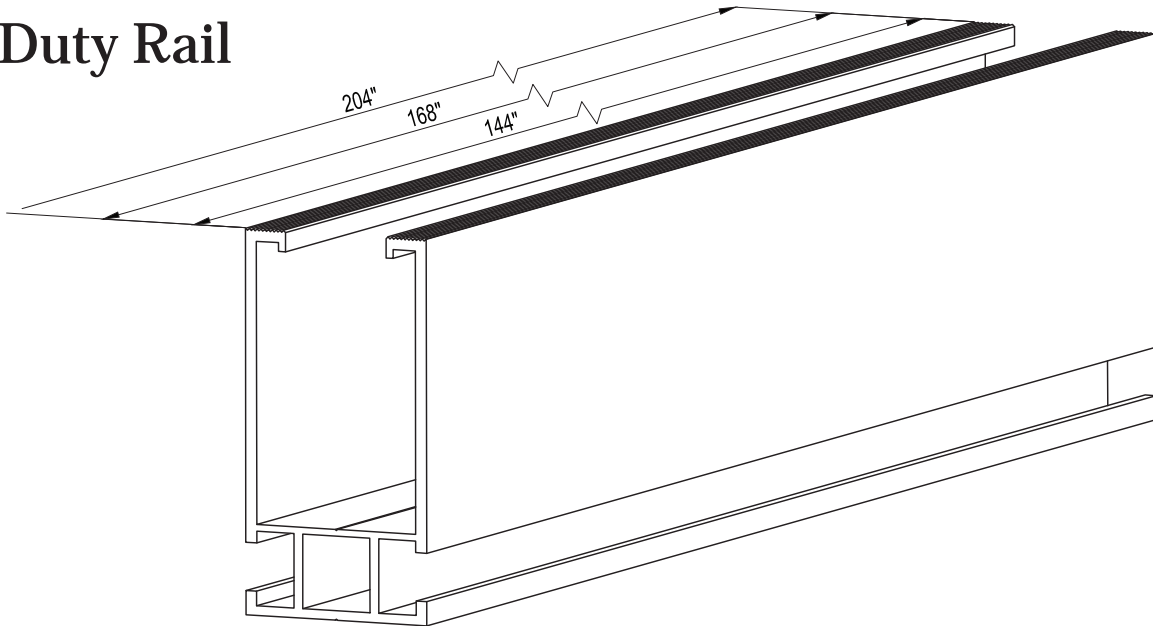
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Heavy Duty Rail

204"
168"
144"

Note

Dual Rack provides robust, long-life photovoltaic (PV) module mounting system solutions for both roof mount and ground mount PV projects. The DR Heavy Duty rail is one of the strongest mounting rails in the market and the most competitively priced. Pre-stamped structural certification is available in most states. Installation is simple and fast, which ensures lower installation cost. Dual Rack allows modules to be mounted in both landscape and portrait orientations.
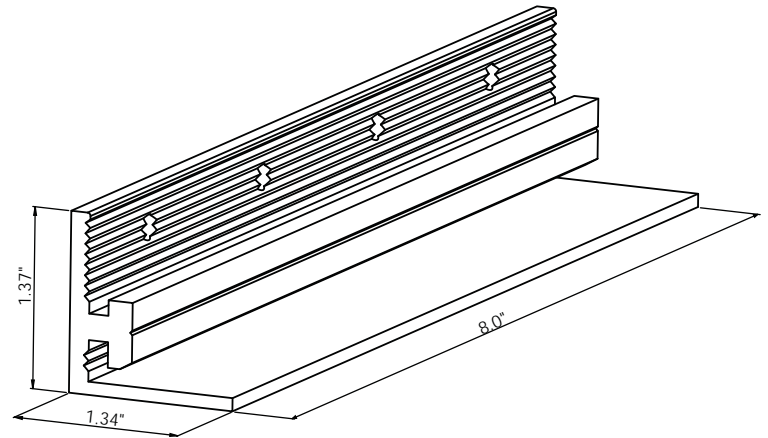
ROOF MOUNT

GROUND MOUNT
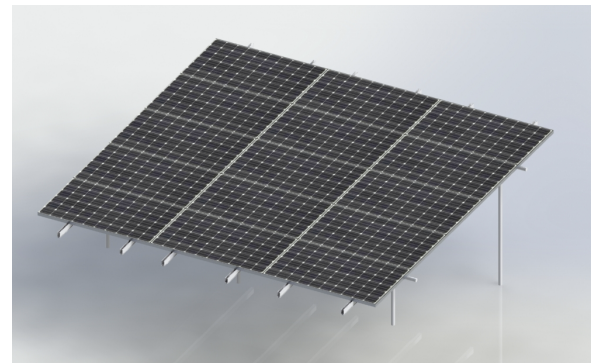
Contact Info

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2290 Agate ct. Unit A-B, Simi Valley, CA, 93065
www.DualRack.net
Email: info@DualRack.net
Phone:+1 (805) 254 - 2250

1.37" 8.0" 1.34"

SPLICE BAR

The Dual Rack Splice bar is designed to be used with Dual Rack rails for dependable connections that last. Made from the same quality materials as our Dual Rack standard rails, aluminum and stainless steel are combined for added corrosion resistance. Our Splice Bar component quickly fuses mounting rails together for an easy and sturdy installation. Each Splice Bar comes complete with self-taping screws.

ADVANTAGES

- Cost effective and easy to install.
- Aluminum and stainless steel components for corrosion resistance and strength.
- Sleek low-profile design for great looking installs.
- Designed for use with all Dual Rack products.
- Engineered for most roof mount applications.
- Clear and black product available.
- 10 Year limited warranty.
- Conforms to UL STD 2703 and Class A Fire Rated.

Component List

Material	QTY
Splice Bar	01
Self Tapping Screws	04

Ordering Specifics

	Package	Dimensions	Weight
Standard Package	10 pcs	8" x 1.34" x 1.37"	0.430 lbs

Installation Guide

For detailed instructions please refer to the Dual Rack installation guide
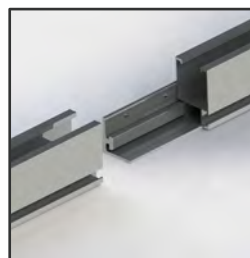
1. Slide the splice halfway onto the rear side of the base rails. Next, slide the next rail section into the splice. Allow 1/8" between the rail ends.
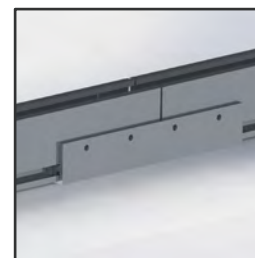
2. Combining two rails allows the splice to act as an expansion joint. The choice between thermal expansion or rigid joints depends on the installation area.

3. Tighten the second self-tapping screw to the rail, leaving it loose enough for the rail to expand/ contract within the splice. For a rigid joint, screw all the self-tapping screws all the way into the rail.

Product Line

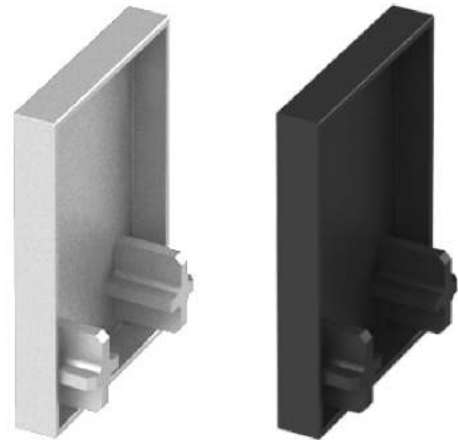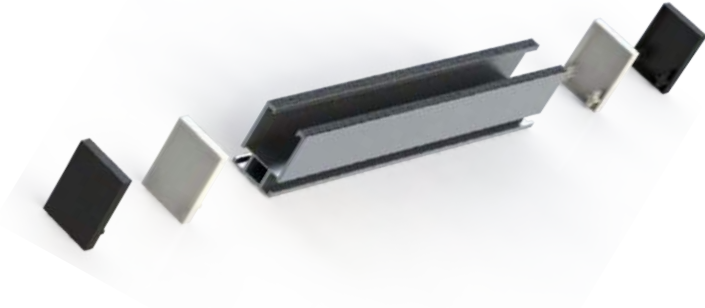| Item #	Product Name
DR-CSB-01	DR Splice Bar - Clear
DR-BSB-01	DR Splice Bar - Black

DR-CSB-01_DR Splice Bar - Clear

DR-BSB-01_DR Splice Bar - Black

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RAIL END CAPS
(Heavy Duty, Standard, Lite)

Dual Rack Rail End Caps are designed for Light, Standard, & Heavy Dual Rack Rails. End Caps button up DR mounting systems for a finished appearance while protecting against the collection of water and debris inside and protecting rail edges. the rail. Available in black or white PVC and come with 1 year warranty.

ADVANTAGES

- Simple Install. Just Slide into rail end
- No tool needed for installation
- End caps install in seconds.
- Available for the complete line of DR rails, end caps provide a streamlined look and are made out of black or white PVC.

Product Line

Item #	Product Name
DR-CSEC-01	Standard Rail End-Cap - Clear
DR-CSEC-02	Lite Rail End-Cap - Clear
DR-CSEC-03	Heavy Duty Rail End-Cap - Clear
DR-BSEC-01	Standard Rail End Cap - Black
DR-BSEC-02	Lite Rail End-Cap - Black
DR-BSEC-03	Heavy Duty Rail End-Cap - Black

Installation Guide

For detailed instructions please refer to the Dual Rack installation guide

1. Align the bottom teeth of the End Cap with the opening rail grooves.

2. Apply pressure to create a snug fit between the End Cap and the mounting rail.

*DualRack Rail in pictures, sold separately

Product Line

Item #	Product Name	
DR-CSEC-01	Standard Rail End-Cap - Clear	DR-CSEC-01_Standard Rail End-Cap - Clear
DR-CSEC-02	Lite Rail End-Cap - Clear	DR-CSEC-02_Lite Rail End-Cap - Clear
DR-CSEC-03	Heavy Duty Rail End-Cap - Clear	DR-CSEC-03_Heavy Duty Rail End-Cap - Clear
DR-BSEC-01	Standard Rail End Cap - Black	DR-BSEC-01_Standard Rail End-Cap - Black
DR-BSEC-02	Lite Rail End-Cap - Black	DR-BSEC-02_Lite Rail End-Cap - Black
DR-BSEC-03	Heavy Duty Rail End-Cap - Black	DR-BSEC-03_Heavy Duty Rail End-Cap - Black

Product Line

Item #	Product Name
DR-CLFLK-01	Lite Flash L Kit – 12.0" x 9.0" - clear
DR-CLFLK-02	Lite Flash L Kit – 12.0" x 12.0" - clear
DR-BLFLK-01	Lite Flash L Kit – 12.0" x 9.0" - black
DR-BLFLK-02	Lite Flash L Kit – 12.0" x 12.0" - black

Component List

Material	QTY
Aluminum Flashing	01
L Base	01
5/16" x 4" S.S Lag Bolt	01
3/8" Sealing Washer	01
3/8" x 1.5" S.S T Bolt	01
3/8" Flange Nut	01
EPDM Washer	01

LITE FLASH L-Kit

Dual Rack Lite Flash L-Kit is designed in both 12.0" x 12.0" and 9.0" x 12.0" sizes and comes complete with all necessary components for a quick and weatherproof installation. Standard packs include a kitted set of 10 in clear or black finish options. Our best-in-class design delivers an efficient and cost-effective solar attachment solution for composition/asphalt shingle roofs. It is compatible with all Dual Rack rails and there's no need to cut shingles on your install.

Ordering Specifics

Product	DR-CLFLK-01 / DR-BLFLK-01	DR-CLFLK-02 / DR-BLFLK-02
Net Weight	0.85 lbs/ set	1.02 lbs/ set
Standard Pack	10 set/ box	10 set/ box
Standard Pack Dimension	14.0" (L) x 13.0" (W) x 3.5" (H)	14.0" (L) x 13.0" (W) x 3.5" (H)
Standard Pack Weight	8.5 lbs/ box	10.2 lbs/ box
Big Pack	4 Packs of 10 = Set of 40/Box	4 Packs of 10 = Set of 40/Box
Big Pack Weight	34.0 lbs/ box	40.8 lbs/ box

ADVANTAGES

- Creates a weatherproofing seal every time.
- Install easily, quickly, and with confidence.
- All Aluminum 9.0" x 12.0" or 12.0" x 12.0" flashing.
- 10 Year Limited Warranty.

- Stainless steel hardware included.
- Meets or exceeds roofing industry best practices
- 100% IBC Compliant.
- No shingle cutting necessary.

Product Line

Item #	Product Name	
DR-CLFLK-01	Lite Flash L Kit - 12.0" x 9.0" - Clear	DR-CLFLK-01_Lite Flash L Kit - 12.0 inch x 9.0 inch - Clear
DR-CLFLK-02	Lite Flash L Kit - 12.0" x 12.0" - Clear	DR-CLFLK-02_Lite Flash L Kit - 12.0 inch x 12.0 inch - Clear
DR-BLFLK-01	Lite Flash L Kit - 12.0" x 9.0" - Black	DR-BLFLK-01_Lite Flash L Kit - 12.0 inch x 9.0 inch - Black
DR-BLFLK-02	Lite Flash L Kit - 12.0" x 12.0" - Black	DR-BLFLK-02_Lite Flash L Kit - 12.0 inch x 12.0 inch - Black

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LITE FLASH L-KIT

12"   12"   3.3"   2.14"

DR-CLFLK-02
DR-BLFLK-02

9"   12"   3.3"   2.14"

DR-CLFLK-01
DR-BLFLK-01

Installation Guide

For detailed instructions please refer to the Dual Rack installation guide

1. Locate, choose and mark center of the rafter for racking installation. Select the courses of shingles where mounts will be placed.

2. Gently break seal between shingles and remove any nails. Slide mount up under shingles, with flashing lined up with rafter center for drilling.
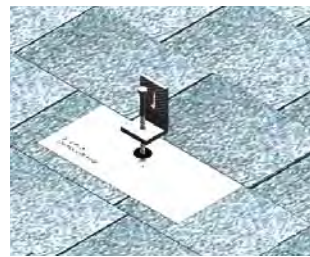
3. Put 5/16" x 4" lag bolt through L-foot. Next, slide the EPDM washer up onto the lag bolt.
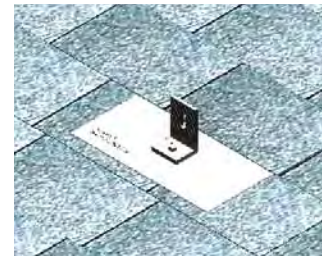
4. Secure L-foot onto Flash L Base and rooftop. (Tightening torque of 14 lbs-ft).

5. Screw the 5/16" lag bolt into the rafter embedded a min.of 2.5". *(Tightening torque is dependent on the roofing material.)
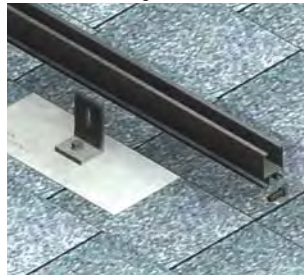
6. You are now ready to attach the rail. Slide the 3/8" T bolt through the rail groove.

7. Attach the rail to the L-base using 3/8" T bolt and nut.
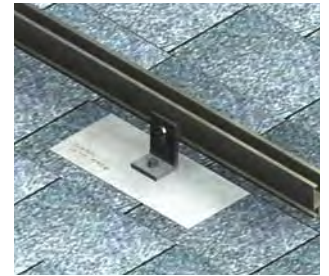
8. Secure the ⅜" T bolt with the nut. (Tightening torque 14.lbs-ft).

Contact Info

Component List

Material	QTY
End Clamp Set	
End Clamp	01
Channel Strut	01
M8 Allen Bolt-25mm	01
Channel Strut Set	
Channel Strut	01
M8 Allen Bolt-25mm	01

Ordering Specifics

Standard Package	Package 10pcs	Small Box 80pcs Weight	Big Box 320pcs
End Clamp 31mm	1.21 lbs	9.68 lbs	38.72 lbs
End Clamp 38mm	1.32 lbs	10.18 lbs	40.12 lbs
End Clamp 40mm	1.39 lbs	11.12 lbs	44.48 lbs
End Clamp 45mm	1.43 lbs	11.44 lbs	45.76 lbs
End Clapm 50mm	1.5 lbs	12.0 lbs	48.0 lbs
Channel Strut	0.64 lbs	5.12 lbs	20.48 lbs
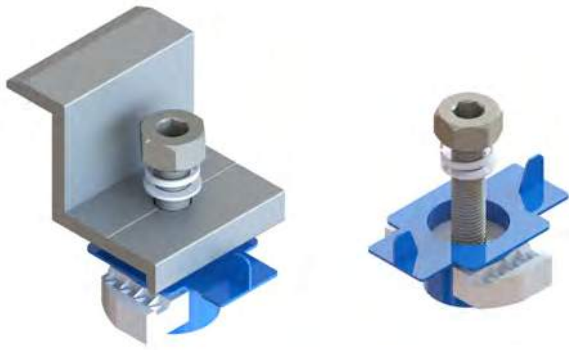
END CLAMP & CHANNEL STRUT

The Dual Rack End Clamp is made with precision design and accuracy, using telescoping end pieces, which eliminates the need for custom cuts. With the Dual Rack high quality Channel Strut there's no need for welding and punching. You can use them repeatedly, with a wide range of flexible installation options. Our Channel Strut can also be used to secure micro inverters. Made from stainless steel, its strength and durability have been field-tested in installations across the country.

ADVANTAGES

Compatible with Dual Rack PV mounting system   - Mechanically clamps solar panel in place   - 10-year warranty - 25-year expected -   Lock-Tight bolts for secure attachments -   Conforms to UL STD 2703 and Class A Fire Rated.

Product Line - End Clamp

Item #	Product Name	
DR-CEC-31	DR End Clamp - Clear - 31mm	
DR-CEC-38	DR End Clamp - Clear - 38mm	
DR-CEC-40	DR End Clamp - Clear - 40mm	
DR-CEC-45	DR End Clamp - Clear - 45mm	
DR-CEC-50	DR End Clamp - Clear - 50mm	
DR-BEC-31	DR End Clamp - Black - 31mm	
DR-BEC-38	DR End Clamp - Black - 38mm	
DR-BEC-40	DR End Clamp - Black - 40mm	
DR-BEC-45	DR End Clamp - Black - 45mm	
DR-BEC-50	DR End Clamp - Black - 50mm	

Product Line - Channel Strut

Item #	Product Name	
DR-CCS-01	DR Channel Strut - Clear	
DR-BCS-01	DR Channel Strut - Black	

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Conforms to UL SUB 2703

END CLAMP & CHANNEL STRUT
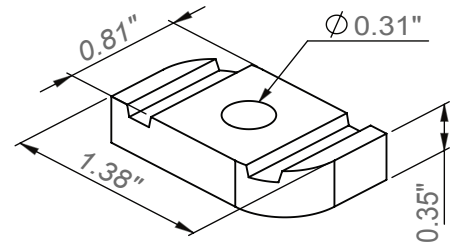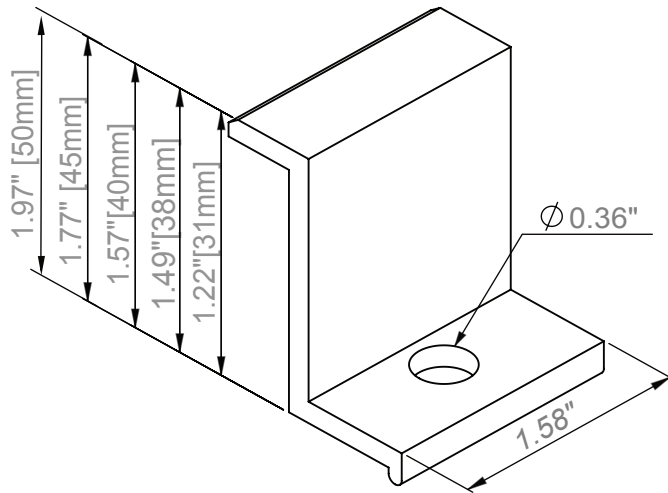
1.97" [50mm]
1.77" [45mm]
1.57"[40mm]
1.49"[38mm]
1.22"[31mm]

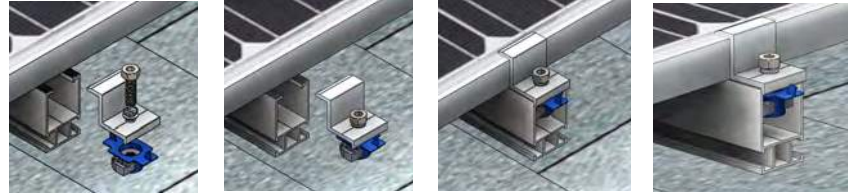∅ 0.36"

1.58"

0.81"   ∅ 0.31"

1.38"   0.35"

Installation Guide

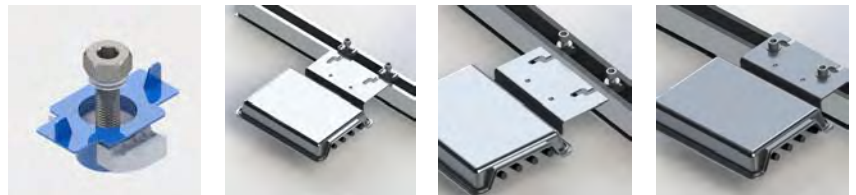For detailed instructions please refer to the Dual Rack installation guide

End Clamp

1. Insert the 3/8″ allen bolt through the end clamp and screw the bottom to the channel strut.
2. Lower or slide the channel strut through the rail gap.
3. Screw in the 3/8″ bolt and the channel strut will align itself with the rail grooves.

Channel Strut w/ Micro Inverter

1. Insert the 3/8″ allen bolt through the washer and screw the bottom to the channel strut.
2. Lower or slide the channel strut through the rail gap.
3. Place the micro inverter between the rail and washer.
4. Screw in the 3/8″ bolt and the channel strut will align itself with the rail grooves.

Contact Info

DETAIL A

1.81"   1.25"   0.46"

Component List

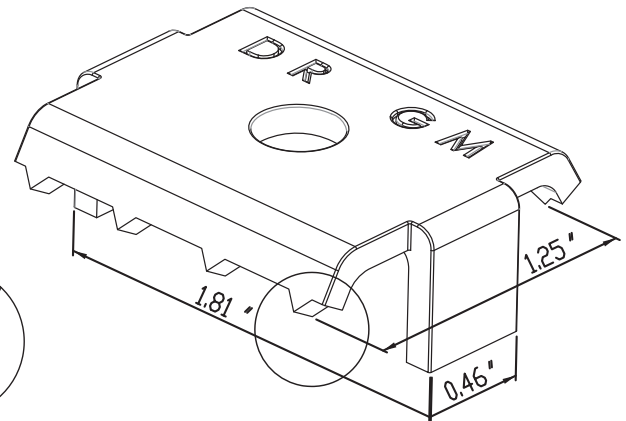| Material	QTY
Mid Clamp	01
Channel Strut	01
Lock-Tight M8 Allen Bolt-65mm	01
Lock Washer	01

GROUNDING MID CLAMP

The Dual Rack stainless steel Grounding Mid Clamp pierces through the anodized coatings of the solar module frame to form a secure electrical bond, which conducts throughout the entire array. With an advanced design, each Dual Rack Grounding Clamp has proven reliability in grounding 60-cell and 72-cell Type 1/2/3 solar module frames and has been tested and certified to UL 2703.

Compared with the traditional solar module grounding method, Dual Rack's integrated grounding system creates multiple parallel grounding paths throughout the array. The Grounding Mid Clamp and the grounding, bonding and splicing three-in-one stainless steel Grounding Lug (GBS-P6, UL467) eliminate the need for separate module grounding hardware. This provides greater safety for system owners, also saves installation time and hardware cost.

Ordering Specifics

	Package	Small Box	Big Box
Standard Package	10pcs	80pcs	320pcs
Weight	1.67 lbs	13.36 lbs	53.44 lbs

Installation Guide

For detailed instructions please refer to the Dual Rack installation guide

ADVANTAGES

- Compatible with Dual Rack PV mounting systems.
- Electrically bonds the solar modules together.
- Conforms to UL STD 2703 and Class A Fire Rated.
- Clear and black product available.

Product Line

Item #	Product Name
DR-GMC-01	DR Grounding Mid Clamp-Clear
DR-GMC-02	DR Grounding Mid Clamp-Black

DR-GMC-01_DR Grounding Mid Clamp-Clear

DR-GMC-02_DR Grounding Mid Clamp-Black

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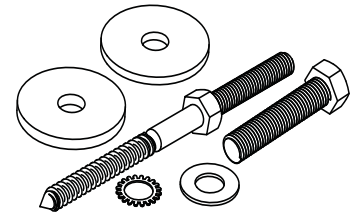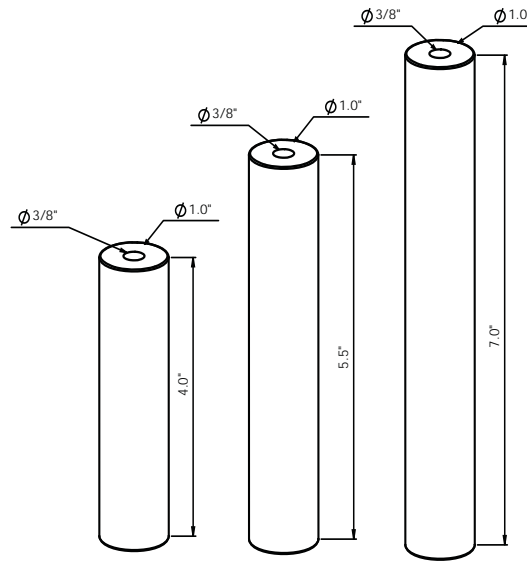
DUAL JACK

The Dual Jack (standoff) comes in 4", 5.5" and 7" sizes and is designed to be the most efficient cost effective tool for mounting solar arrays. Dual Jack is designed to last for the life of your solar PV install. Dual Jack offers the versatility of three convenient sizes, superior durability, and a low price point. Dual Jack can be installed with or without Dual Jack base.

ADVANTAGES

Fast & Easy install saves time and labor cost - Dual Jack design allows virtually any roof flashing to install flat on roof deck - Precision machined for superior strength - Lightweight for reduced shipping cost - Two ways to install - Available in three sizes - Available in black and clear - 10 Year limited warranty - Conforms to UL STD 2703 and Class A Fire Rated.

Component List

Material	QTY
Dual Jack	01
3/8" x 1.5" Hex Bolt	01
3/8" Flat Washer	01
3/8" Star Washer	01
5/16" x 3.5" Lag Bolt	01
1.5" x 5/16" x 1/8" Flat Washer	01
1.5" x 5/16" EPDM	01

Ordering Specifics

	Packed	Small box	Big box
Standard Package	10 pcs	30	120
Dimensions	4.0"	5.5"	7.0" x 1.0" OD
Size	4.0"	5.5"	7.0"
Weight	0.54 lbs	0.61 lbs	0.74 lbs

Product Line

Item #	Product Name	
DR-CDJ-01	DR Dual Jack 4.0" - Clear	DR-CDJ-01_DR Dual Jack 4.0- Clear
DR-CDJ-02	DR Dual Jack 5.5" - Clear	DR-CDJ-02_DR Dual Jack 5.5 - Clear
DR-CDJ-03	DR Dual Jack 7.0" - Clear	DR-CDJ-03_DR Dual Jack 7.0 - Clear
DR-BDJ-01	DR Dual Jack 4.0" - Black	DR-BDJ-01 DR Dual Jack 4.0 - Black
DR-BDJ-02	DR Dual Jack 5.5" - Black	DR-BDJ-02 DR Dual Jack 5.5 - Black
DR-BDJ-03	DR Dual Jack 7.0" - Black	DR-BDJ-03 DR Dual Jack 7.0 - Black
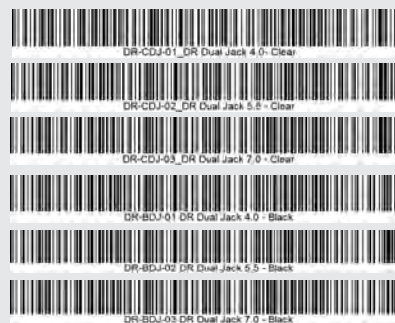
ETL CLASSIFIED

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LISTED
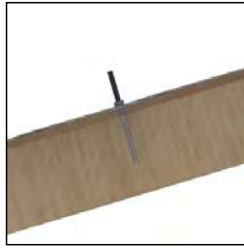US

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5000799
Conforms to UL SUB 2703

Installation Guide

For detailed instructions please refer to the Dual Rack installation guide

Top Down Style

1. Drill a pilot hole using 5/16″ drill bit through the roof materials and into the center of the rafter at the planned location.

2. Screw the 5/16" lag bolt into the rafter, embedding a min. of 2.5". *Tightening torque is dependent on the roofing material.

3. Install the EPDM sealing washer and stainless steel washer and screw the standoff into the lag bolt.

4. Install the flashing over the standoff and add the EPDM collar.

5. Drill a 3/8″ hole through the rail. Place the star washer on the rail followed by the flat washer.
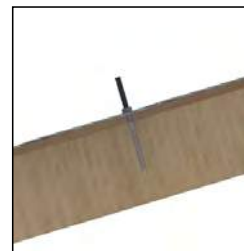

6. Screw the 3/8" bolt to the standoff taking care not to warp or damage the roof material when tightening the nut. * Recommended Torque is 14 (ft. lbs).

L-Foot Style

1. Drill a pilot hole using 5/16″ drill bit through the roof materials and into the center of the rafter at the planned location.

2.Screw the 5/16" lag bolt into the rafter, embedding a min. of 2.5". *Tightening torque is dependent on the roofing material.

3. Install the EPDM sealing washer and stainless steel washer and screw the standoff into the lag bolt.

*Take care not to warp or damage any of the roofing material when tightening the nut.

4. Install the flashing over the standoff and add the EPDM collar.

5. Attach the L-foot to the standoff using a 3/8" bolt, followed by the star washer and flat washer.
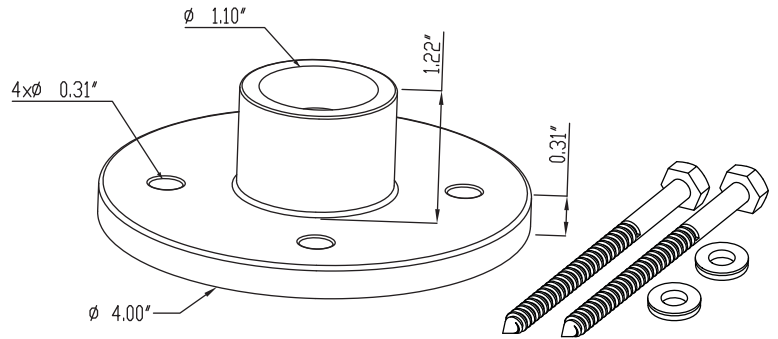

6. Attach the rail to the L-foot using a 3/8" bolt, Followed by the star washer, nut and flat washer. *Recommended Torque is 14 (ft. lbs.).

Contact Info

Dual Rack Inc.
2290 Agate ct. Unit A-B, Simi Valley, CA, 93065
www.DualRack.net
Email: info@DualRack.net
Phone:+1 (805) 254 - 2250

ø 1.10"

1.22"

4 xø 0.31"

0.31"

ø 4.00"

DUAL JACK BASE

The Dual Jack Base is designed specifically to use with DualRack Rails and Dual Jack Flashing. It is one of the strongest methods for installing solar panels. Each Dual Jack Base comes with two 5/16" x 4" hex head stainless steel lag bolts and two EPDM-bonded sealing washers. It allows for up to 4 structural attachments when required. The Dual Jack Base is available in clear or black finishes.

ADVANTAGES

- Compatible with all Dual Jack (standoff) sizes.
- Compatible with Dual Jack Flashing to prevent wind-driven rain water exposure.
- Allows up to 4 structural attachments when required, for an even stronger installation.
- Easy install method saves time and labor cost.
- Cost effective.
- Clear and black anodized product available.
- 10 Year limited warranty.
- Conforms to UL STD 2703 and Class A Fire Rated.

Component List

Material	QTY
Dual Jack Base	01
5/16" x 4" SS Hex Lag Bolt	02
5/16" Sealing Washer	02

Ordering Specifics

	Qty / Box	Weight / Box	Box Size
Unit Package	1 pc / Box	0.6 lbs / Box	4.5" (L) x 4.5" (W) x 1.5" (H)
Small Box	10 pcs / Box	6.0 lbs / Box	25.0" (L) x 10.0" (W) x 1.8" (H)
Big Box	40 pcs / Box	24.0 lbs / Box	25.0" (L) x 10.0" (W) x 8.5" (H)

Installation Guide

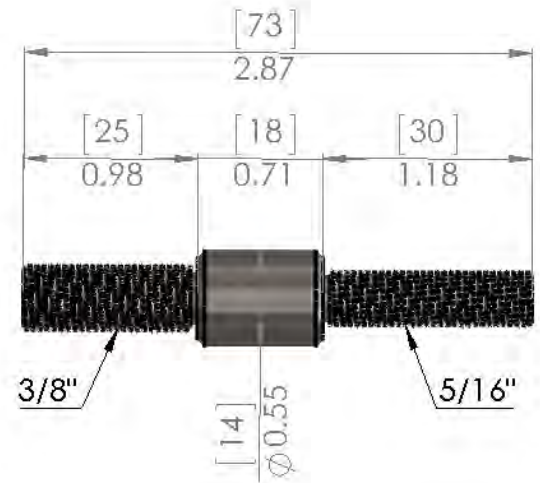For detailed installation please refer to the Dual Rack installation guide

Hand tighten ONLY, with a required torque of 15 lbs., when securing the Dual Rack Base to Dual Rack attachments.

Product Line

Item #	Product Name		
DR-CDJB-01	Dual Jack Base - Clear	||||||| DR-CDJB-01_Dual Jack Base - Clear |||||||
DR-BDJB-01	Dual Jack Base - Black	||||||| DR-BDJB-01_Dual Jack Base - Black |||||||

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[73]
2.87

[25]   [18]   [30]
0.98   0.71   1.18

3/8"   5/16"

[14] Ø0.55

DUAL-JACK CONNECTOR

The new generation Stainless Steel Dual-Jack Connector is the first of its kind to give a fast and flexible installation method to multiple degree tilt configurations. It offers industry-leading strength and versatility with quick install times. With the Dual-Jack Connector, you are able to combine two Dual-Jacks of any size to create a variety of angles with no cutting needed.

For detailed instructions please refer to the Dual Rack installation guide
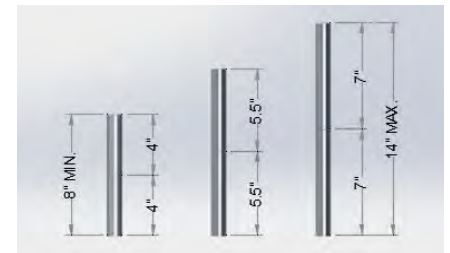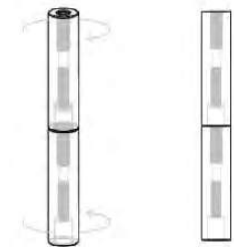
1. Tighten Dual-Jack 3/8" threaded side to the bolt.
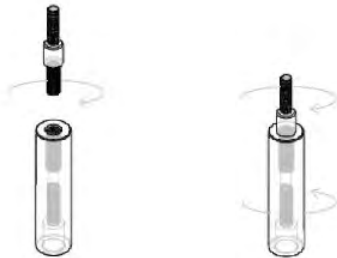
2. Tighten another Dual-Jack 5/16" threaded side to the bolt.
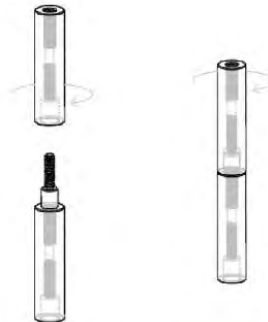
3. Check tightness of both sides.

8" MIN.   4"   4"   5.5"   5.5"   7"   7"   14" MAX.

Product Line

Item #	Product Name
DR-DJC-01	Dual-Jack Connector

DR-DJC-01_Dual-Jack Connector

Dual Rack
PV MOUNTING SYSTEMS

■ RESIDENTIAL   ■ COMMERCIAL   ■ UTILITY

Component List

Material	QTY
Aluminum Flashing	01
EPDM	01

Ordering Specifics

Product	DR-CDJF-01 / DR-BDJF-01	DR-CDJF-01 / DR-BDJF-01
Net Weight	0.41 lbs	0.54 lbs
Standard Pack	Set of 10/ box	Set of 10 / box
Standard Pack Dimension	13.0″ (L) x 9.5″ (W) x 3.0″ (H)	13.0″ (L) x 13.0″ (W) x 3.0″ (H)
Standard Pack Weight	4.5 lbs / box	5.7 lbs / box
Big Pack	Set of 40/ box	Set of 40 / box
Big Pack Pack Dimension	13.0″ (L) x 9.5″ (W) x 12.0″ (H)	13.0″ (L) x 13.0″ (W) x 12.0″ (H)
Big Pack Weight	18.5 lbs / box	23.3 lbs / box

DUAL JACK FLASHING

Our Dual Jack Flashing comes in 12.0" x 12.0" and 9.0" x 12.5" sizes (Clear or Black color) and is designed to be used on composition/asphalt shingle roofs. Get a simple, watertight seal every time.

ADVANTAGES

- Clear and black product available.
- 10 Year limited warranty.
- Conforms to UL STD 2703 and Class A Fire Rated.

Installation Guide

For detailed installation please refer to the Dual Rack installation guide

1. After securing the Dual Jack roof attachment to the roof, cut a piece of the shingle if required.

2. Gently break seal between shingles and remove any nails.

3. Slide flashing up under shingles and recover the roof with the shingle.

4. Apply fresh compatible sealant around the Dual Jack roof attachment.* Recommended.
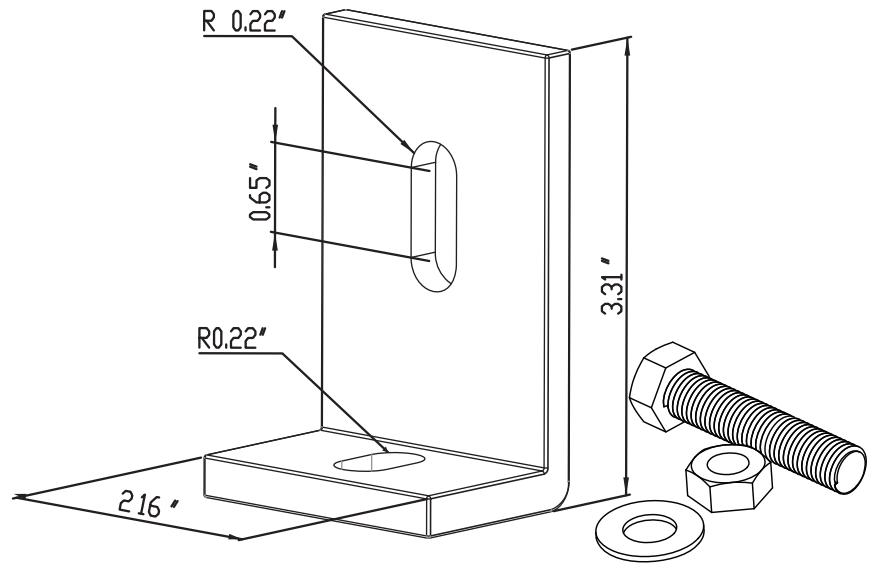

5. Press the EPDM down and hold to secure in place.

Product Line

Item #	Product Name	
DR-CDJF-01	Dual-Jack Flashing - Clear (9.0" x 12.5")	DR-CDJF-01_Dual-Jack Flashing - Clear (9.0 x 12.5) inch
DR-CDJF-02	Dual-Jack Flashing - Clear (12.0" x 12.0")	DR-CDJF-02_Dual-Jack Flashing - Clear (12.0 x 12.0) inch
DR-BDJF-01	Dual-Jack Flashing - Black (9.0" x 12.5")	DR-BDJF-01_Dual-Jack Flashing - Black (9.0 x 12.5) inch
DR-BDJF-02	Dual-Jack Flashing - Black (12.0" x 12.0")	DR-BDJF-02_Dual-Jack Flashing - Black (12.0 x 12.0)inch

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Conforms to UL SUB 2703

R 0.22"

0.65"

3.31"

R0.22"

2.16"

L-FOOT

The Dual Rack L-Foot is a dependable, standard mounting option in the solar PV installation industry. Composed of heavy-duty aluminum and stainless Steel, the Dual Rack L-Foot is built to offer sturdy support and to withstand years of weather for any type of roof. It's a convenient and reliable way to mount your PV array.

ADVANTAGES

- Versatile mounting solution for most installations.
- Vertical slots provide adjustability to adjust for roof irregularities.
- Manufactured using aluminum and steel.
- Easily integrates with most roofing products.
- Engineered for most roof mount applications.
- Clear and black product available.
- 10 Year limited warranty.
- Conforms to UL STD 2703 and Class A Fire Rated.

Component List

Material	QTY
L-Foot	01
3/8" x 1" Hex Bolt	01
3/8" Nut	01
3/8" Washer	01
Star Washer	01

Ordering Specifics

	Package	Dimensions	Weight
Standard Package	10 pcs	3.3" x 2.1" x 1.5"	0.317 lbs

Installation Guide

For detailed instructions please refer to the Dual Rack installation guide

1. Attach the L-foot to the roof attachment using the 3/8" bolt, star washer, flat washer & nut.

2. Slide the 3/8" bolt through the rail groove & push the bolt into the L-foot. Secure the 3/8" bolt with the nut. (tightening torque 6 ft-lbs [8 Nm]).

3. Make sure the rail is level when installing the rest of the L-foot.

Product Line

Item #	Product Name		
DR-CL-01	DR L Foot-Clear		DR-CL-01_DR L Foot-Clear
DR-BL-01	DR L Foot-Black		DR-BL-01_DR L Foot-Black

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Component List

Material	QTY
Flat Tile Roof Hook	01
3/8″ x 1″ DR T-Bolt	01
3/8″ Flange Nut	01
3/16″ x 3.5″ Lag Bolt	02
3/8″ Flat Washer	01
3/8″ Sealing Washer	02

Ordering Specifics

	Big Box
Standard Package	40 pcs
Dimensions	11.2″ x 7.11″ x 1.33″
Weight	0.881 lbs

FLAT-TILE ROOF HOOK

The Dual Rack Flat-Tile Roof Hook provides an easy solar mounting solution for flat tile roofs. Made from stainless steel, it can be used on all of your residential flat tile roof solar installations. Flat-Tile Roof Hooks are popular with installers because they offer the fastest and least expensive way to mount rooftop PV arrays on tile roofs.

Rail Span (ft[1])

EXP	Wind Speed	Zone 1					
		Snow Load (psf)					
	(Mph)	0.0	10.0	20.0	30.0	40.0	50.0
B	110	8.0	7.0	6.0	5.0	4.5	4.0
	120	8.0	7.0	6.0	5.0	4.5	4.0
	130	8.0	7.0	6.0	5.0	4.5	4.0
	140	8.0	7.0	6.0	5.0	4.5	4.0
	150	7.5	7.0	6.0	5.0	4.5	4.0
	160	7.0	7.0	6.0	5.0	4.5	4.0
	170	7.0	7.0	6.0	5.0	4.5	4.0
	180	6.5	6.5	5.5	5.0	4.5	4.0
C	110	8.0	7.0	6.0	5.0	4.5	4.0
	120	8.0	7.0	6.0	5.0	4.5	4.0
	130	7.5	7.0	6.0	5.0	4.5	4.0
	140	7.0	7.0	6.0	5.0	4.5	4.0
	150	6.5	6.5	5.5	5.0	4.5	4.0
	160	6.0	6.0	5.5	5.0	4.5	4.0
	170	5.5	5.5	5.5	5.0	4.5	4.0
	180	5.5	5.5	5.5	5.0	4.5	4.0

[1]Rail spans assume 24" rafter spacing and are shown to the farthest acceptable rafter; parameters; gable roof 15' high, slop ≤ 25°, 850' AMSL, Occupancy Category II (importance factor = 1.0), Terrain category B & C, partially exposed, center zone installation. "NS = Not suitable"
[2]Tile roof hook secured with two supplied 5/16 lag screws.
*See Zone 2 & 3 span table calculation in Installation Manual/P.E. certification.

ADVANTAGES

Clean looking installs and fewer broken tiles   -   Cost-effective and faster installation time   -   No need to drill holes in tiles and no visible flashing   -   Makes it easy to hit rafters and line up the valley of the tile   -   100% IBC compliant   -   Made from stainless steel   -   Conforms to UL STD 2703 and Class A & B Fire Rated.
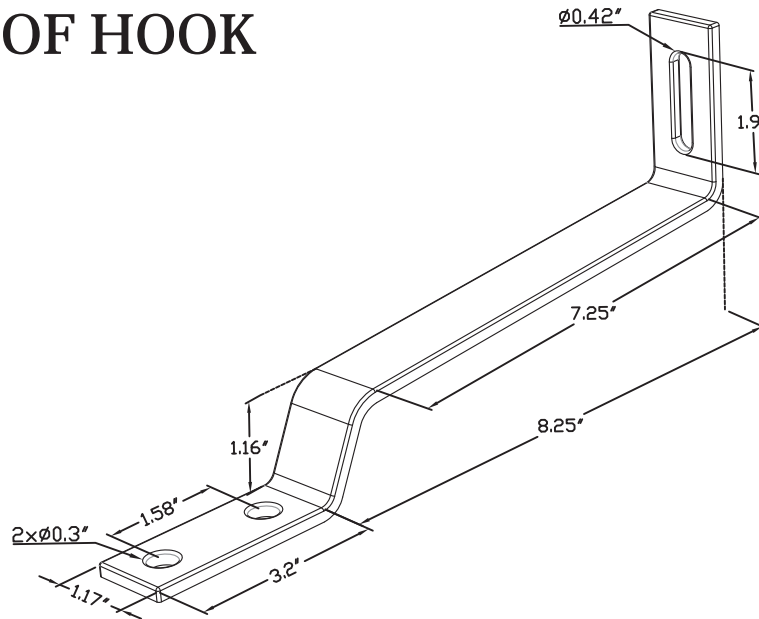
Product Line

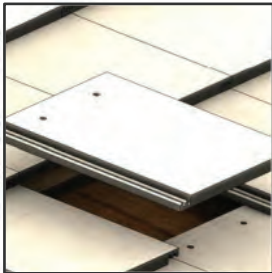| Item #	Product Name
DR-FTRH-01	Flat Tile Roof Hook

DR-FTRH-01_Flat Tile Roof Hook

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Intertek
5000799
Conforms to UL SUB 2703

FLAT-TILE ROOF HOOK

Ø0.42"

1.9"

7.25"

8.25"

1.16"

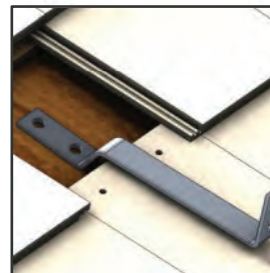1.58"

2×Ø0.3"

3.2"

1.17"

Installation Guide

For detailed instructions please refer to the Dual Rack installation guide

1. Remove the roof tile at the marked position or, if possible simply push it up.
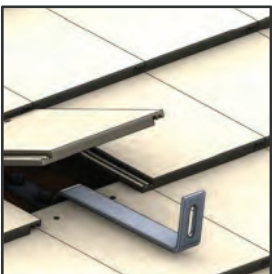
2. Insert the two (3/16" or 5/16") bolts through EPDM washers and the flat tile hook and apply fresh compatible sealant to the base.
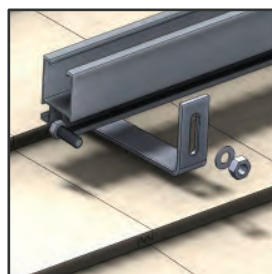
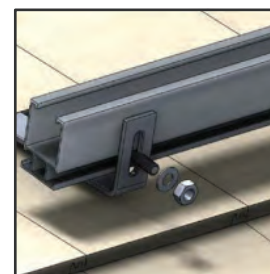3. Position the tile hook above the tile.

4. Attach the tile hook to the rafter using the two 3/16" or 5/16" lag bolts, embedded min. 2.5". Tighten carefully.
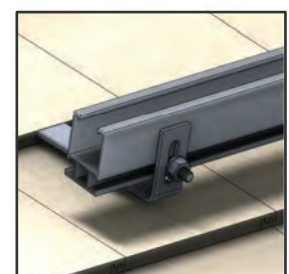
5. Slide the flat tile back into position.

6. Slide the 3/8" bolt through the rail groove.

7. Attach the rail to the tile using 3/8" bolts, washer & nut. (Recommended: place star washer between the rail & flat tile hook).

8. Secure the 3/8" bolt with the nut. (Tightening torque 14 ft-lbs).

Contact Info

Dual Rack Inc.
2290 Agate ct. Unit A-B, Simi Valley, CA, 93065
www.DualRack.net
Email: info@DualRack.net
Phone:+1 (805) 254 - 2250

Component List

Material	QTY
S-Tile Roof Hook	01
3/8" x 1" Hex Bolt	01
3/8" Flange Nut	01
3/16" x 3.5" Lag Bolt	03
3/8" Star Washer	01
EPDM Washer	03

Ordering Specifics

	Package	Small Box	Big Box
Standard Package	10pcs	40pcs	160pcs
Dimensions	6" x 6.732" x 2.2"		
Weight	1 lbs 1.3 oz		

S-TILE ROOF HOOK

The Dual Rack S-Tile Roof Hook offers solar mounting flexibility for Spanish style roofs. Made from stainless steel, it provides a streamlined option on all of your residential solar installations with Spanish tile while maintaining weatherproofing protection of the tile configuration. S-Tile Roof Hooks are popular with installers because they offer the fastest and least expensive way to mount rooftop PV arrays on tile roofs.

Rail Span (ft[1])

EXP	Wind Speed	Zone 1					
		Snow Load (psf)					
	(Mph)	0.0	10.0	20.0	30.0	40.0	50.0
B	110	8.0	7.0	6.0	5.0	4.5	4.0
	120	8.0	7.0	6.0	5.0	4.5	4.0
	130	8.0	7.0	6.0	5.0	4.5	4.0
	140	8.0	7.0	6.0	5.0	4.5	4.0
	150	7.5	7.0	6.0	5.0	4.5	4.0
	160	7.0	7.0	6.0	5.0	4.5	4.0
	170	7.0	7.0	6.0	5.0	4.5	4.0
	180	6.5	6.5	5.5	5.0	4.5	4.0
C	110	8.0	7.0	6.0	5.0	4.5	4.0
	120	8.0	7.0	6.0	5.0	4.5	4.0
	130	7.5	7.0	6.0	5.0	4.5	4.0
	140	7.0	7.0	6.0	5.0	4.5	4.0
	150	6.5	6.5	5.5	5.0	4.5	4.0
	160	6.0	6.0	5.5	5.0	4.5	4.0
	170	5.5	5.5	5.5	5.0	4.5	4.0
	180	5.5	5.5	5.5	5.0	4.5	4.0

1. Rail spans assume 24" rafter spacing and reflect the farthest acceptable rafter distance; Parameters: Gable roof 15' high, slope ≤ 25°, 850' AMSL, Occupancy Category II (importance factor = 1.0), Terrain category B & C, partially exposed, center zone installation. "NS = Not suitable".
2. Tile roof hook to be secured with two supplied 5/16" or three 3/16" x 3.5" lag screws.
   *See Zone 2 & 3 span table calculation in Installation Manual/P.E. certification.

ADVANTAGES

- Aesthetically pleasing installs, with fewer broken tiles.
- Cost-effective and faster installations.
- No need to drill holes in tile and no visible flashing.
- Makes it easy to hit rafters and line up the valley of the tile.
- Works with most racking systems.
- 100% IBC compliant.
- Made from stainless steel.
- Conforms to UL STD 2703 and Class A Fire Rated.

Product Line

Item #	Product Name
DR-STRH-01	S-Tile Roof Hook

ETL CLASSIFIED

DR-STRH-01_S-Tile Roof Hook

Intertek
5000799
Conforms to UL SUB 2703

S-TILE ROOF HOOK
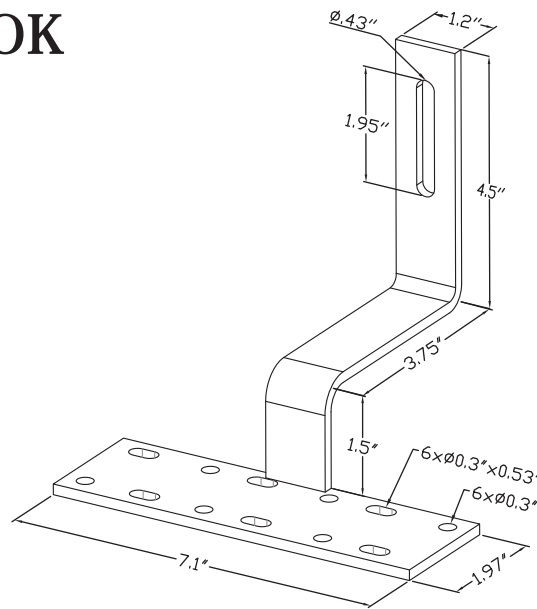
Ø.43"   1.2"

1.95"

4.5"

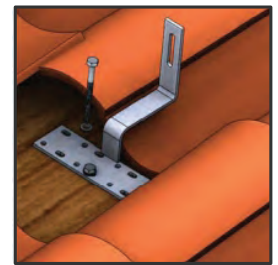3.75"

1.5"   6×Ø0.3"×0.53"

6×Ø0.3"

7.1"   1.97"

Installation Guide

For detailed instructions please refer to the Dual Rack installation guide

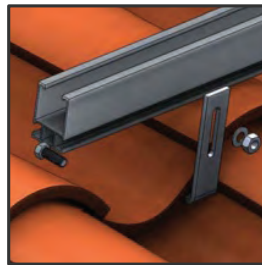**1.** Remove the roof tiles at the marked position or, if possible, simply push them up. When using 5/16" lag bolt drill a pilot hole first. Take care not to warp or damage the roof panel when tightening the nut.

2. Insert the three (3/16") or two (5/16") bolts through the washer and S-tile hook and apply fresh compatible sealant to the base. Tightening torque is dependent on the roof material.

3. Position the tile hook to the side of the underlying interlocking tile's valley.

4. Attach the tile hook to the rafter using three (3/16") or two (5/16") lag bolts, embedded a minimum of 2.5".

5. Slide the 3/8" bolt through the rail groove.

6. Attach the rail to the tile using 3/8" bolts, washer & nut.(Recommended: place star washer between the rail & S- tile hook).

Contact Info

Dual Rack Inc.
2290 Agate ct. Unit A-B, Simi Valley, CA, 93065
www.DualRack.net
Email: info@DualRack.net
Phone:+1 (805) 254 - 2250

Component List

Material	QTY
Stainless steel base plate (7x2 inches)	01
Stainless steel upper arm (5 inches)	01
SS M10 Square Head Bolt and Flange Nut (Set)	01
SS 5/16 x 4 lag bolts with EPDM washer	03
SS 3/8 x 1 T-bolt, washer and Flange Nut (Set)	01

Ordering Specifics

	Package	Small Box	Big Box
Standard Package	10 pcs	40 pcs	160 pcs
Dimensions	7.09" x 7.78" x 1.97"		
Weight	1 lbs 1.3 oz		

Rail Span (ft[1])

EXP	Wind Speed	Zone 1					
		Snow Load (psf)					
	(Mph)	0.0	10.0	20.0	30.0	40.0	50.0
B	110	8.0	7.0	6.0	5.0	4.5	4.0
	120	8.0	7.0	6.0	5.0	4.5	4.0
	130	8.0	7.0	6.0	5.0	4.5	4.0
	140	8.0	7.0	6.0	5.0	4.5	4.0
	150	7.5	7.0	6.0	5.0	4.5	4.0
	160	7.0	7.0	6.0	5.0	4.5	4.0
	170	7.0	7.0	6.0	5.0	4.5	4.0
	180	6.5	6.5	5.5	5.0	4.5	4.0
C	110	8.0	7.0	6.0	5.0	4.5	4.0
	120	8.0	7.0	6.0	5.0	4.5	4.0
	130	7.5	7.0	6.0	5.0	4.5	4.0
	140	7.0	7.0	6.0	5.0	4.5	4.0
	150	6.5	6.5	5.5	5.0	4.5	4.0
	160	6.0	6.0	5.5	5.0	4.5	4.0
	170	5.5	5.5	5.5	5.0	4.5	4.0
	180	5.5	5.5	5.5	5.0	4.5	4.0

[1]Rail spans assume 24" rafter spacing and reflect the farthest acceptable rafter distance; Parameters: Gable roof 15' high, slope ≤ 25°, 850' AMSL, Occupancy Category II (importance factor = 1.0), Terrain category B & C, partially exposed, center zone installation. "NS = Not suitable"
[2]Tile roof hook to be secured with two supplied 5/16" or three 3/16" x 3.5" lag screws.
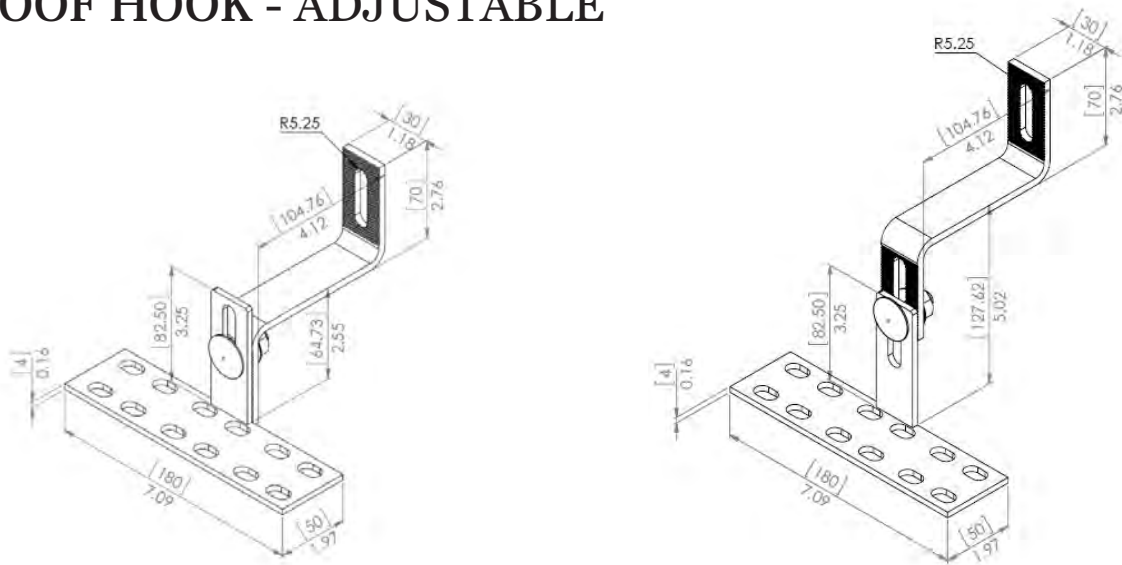*See Zone 2 & 3 span table calculation in Installation Manual/P.E. certification.

S-TILE ROOF HOOK - ADJUSTABLE

The Dual Rack Adjustable S-Tile Roof Hook offers solar mounting flexibility for all types of Spanish Tile roofing. Made from stainless steel, it is compatible with the S-tile roof hook flashing to prevent water intrusion. The adjustable upper arm enables varied heights to fit different sizes of Spanish tile, thus offering adaptability for each install.

ADVANTAGES

- Adjustable height to fit most sizes of Spanish tile.
- Cost-effective and faster installation saves on labor.
- Made with stainless steel for extra strength.
- No need to drill holes in tile and no visible flashing.

- Compatible with DR S-Tile Flashing.
- Works with most racking systems.
- 100% IBC compliant.
- Class A Fire Rated and conforms to UL STD 2703.

Product Line

Item #	Product Name
DR-STRH-AD-01	S-Tile Roof Hook - Adjustable

ETL CLASSIFIED

Intertek
5000799
Conforms to UL SUB 2703

DR-STRH-AD-01_S-Tile Roof Hook - Adjustable

2290 Agate ct. Unit A-B, Simi Valley, CA, 93065   www.DualRack.net

2019 - V1.1

S-TILE ROOF HOOK - ADJUSTABLE

Installation Guide

For detailed instructions, please refer to the Dual Rack installation guide

1. Remove the roof tiles at the marked position or, if possible simply push them up. When using 5/16″ lag bolt drill a pilot hole 1st. Take care not to warp or damage the roof panel when tightening the nut.
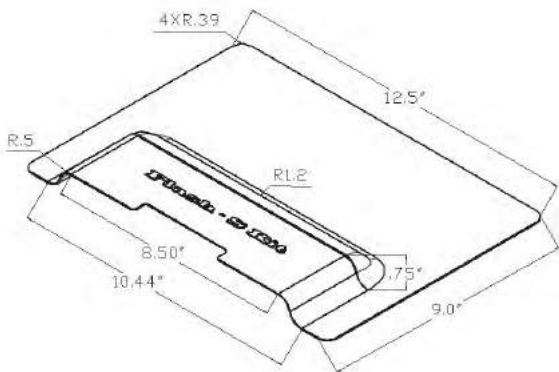
2. Position the tile hook to the side of the underlying interlocking tile's valley.

3. Insert the three (3/16") or two (5/16") bolts through the washer and S-tile hook, and apply fresh compatible sealant to the base. Tightening torque is dependent on the roof material. Adjust S-Tile hook height accordingly. Tighten the M8 flange nut.
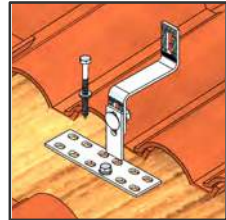
4. Attach the tile hook to the rafter using the three (3/16") or two (5/16") lag bolts, embedded a min. of 2.5"
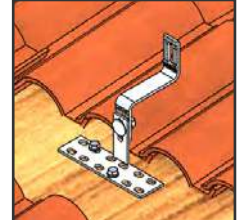
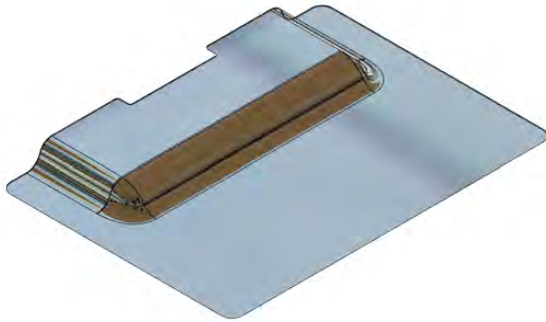5. Slide the 3/8″ T-bolt through the rail groove.

6. Attach the rail to the tile using 3/8″ bolts, washer & nut. (Recommended: place star washer between the rail & S- tile adjustable hook).

Contact Info

Dual Rack Inc.
2290 Agate ct. Unit A-B, Simi Valley, CA, 93065
www.DualRack.net
Email: info@DualRack.net
Phone:+1 (805) 254 - 2250

Ordering Specifics

	Package	Small Box	Big Box
Standard Package	10 pcs	40 pcs	160pcs
Dimensions	6" x 6.732" x 2.2"		
Weight	1 lbs 1.3 oz		

Installation Guide

1. Drill two pilot holes in the center of the rafter. If the rafter is not found then seal the pilot hole immediately with sealant. After applying fresh compatible sealant to the bottom of the S-Tile Hook, position the tile hook to the side of the underlying interlocking tile's valley.

2. Attach the base with two 5/16" lag screws with washers at a minimum 2 ½" lag shank embedment into the rafter. Tighten the lag screw to seat using a hand wrench.
Next, apply fresh compatible sealing to the bottom of the flashing.

3. Apply fresh compatible sealant to the bottom of the flashing base and directly onto each lag screw. Ensure the hook is aligned with the valley of the tile before preparing to lay the flashing.

4 . Align the Flashing on top of the S-Tile hook, ensuring the open grove the flashing channel is close to flush with the S-tile hook protrusion. Ensure that the flashing is secure and that the sealant is flush on the roofing material.

5. Press the Flashing down until the sealant is bonded, and then you are ready to replace the roof tiles and install the rest of the system. (Note: * Dual Rack engineered systems should only be installed with Dual Rack products and hardware if possible. Any alternate application may void the warranty, the UL 2703 Listing, and the structural calculations may no longer be valid.)

* S-tile Roof hook sold separately.

S-TILE ROOF FLASHING

The Dual Rack S-Tile Roof Flashing provides the weatherproofing protection and installation versatility for Spanish tile roof projects and is used in conjunction with the DR S-Tile Hook for an aesthetically pleasing and functionally efficient install every time.

ADVANTAGES

- Compatible with Dual Rack S-Tile Hook.
- Premium protection against water intrusion.
- Quick and easy installation.
- Cost-effective.
- 10 Year Limited Warranty.
- Conforms to UL STD 2703 and Class A Fire Rated.

Product Line

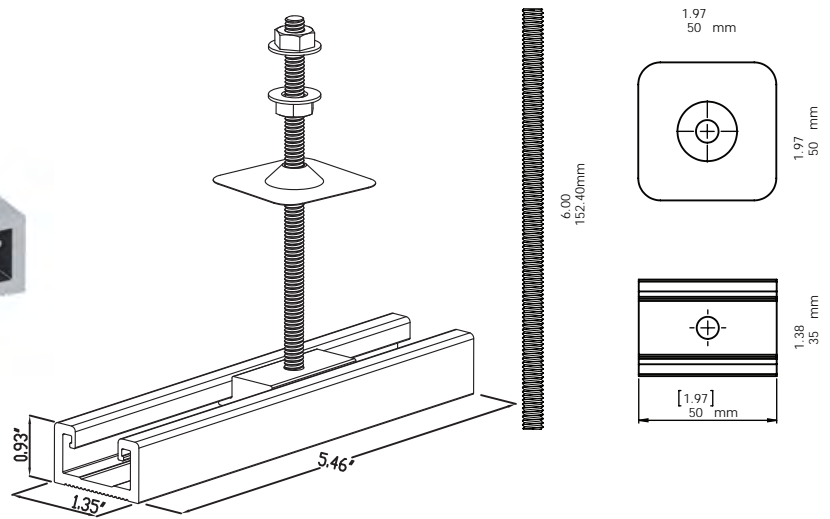| Item #	Product Name
DR-STRF-01	S-Tile Roof Flashing

DR-STRF-01_S-Tile Roof Flashing

ETL CLASSIFIED
ETL
LISTED
US
Intertek
5000799
Conforms to UL SUB 2703

TILE STRUT

The Dual Rack Tile Strut attachment allows for a structural roof rafter connection with optimal attachment stud location adjustability. The Tile Strut is compatible with most popular roof mounting systems and can be used for both flat and Spanish concrete tile. Our streamlined design results in the best looking system in the industry. Both black and clear product is available.
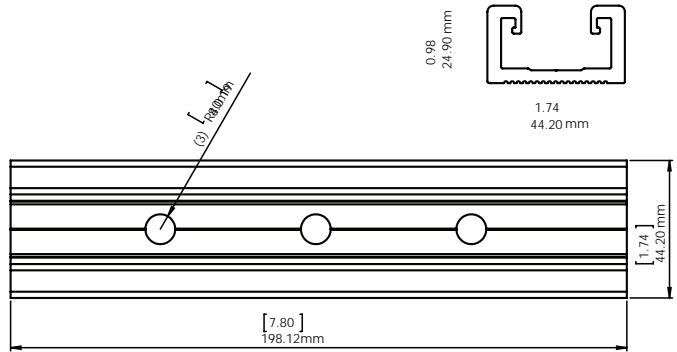
ADVANTAGES

- Compatible with Dual Rack Rails.
- No tile replacement needed.
- Three pre-drilled holes on Tile Strut base.
- Easy installation saves time on labor.
- Cost-effective.
- Clear and Black product available.
- 10 Year Limited Warranty.
- Conforms to UL STD 2703 and Class A Fire Rated.

Component List

Material	QTY
Tile Strut Base	01
Channel Nut	01
Mini Flashing	01
3/8" x 6" Screw	01
3/8" x 4" SS Lag Bolt	01
3/8" SS Flange Nut	02
Sealing Washer	01

Ordering Specifics

	Qty / Box	Weight / Box	Box Size
Small Box	20 pcs / Box	11.5 lbs / Box	9.65" (L) x 7.68" (W) x 6.10" (H)
Big Box	80 pcs / Box	44.5 lbs / Box	14.5" (L) x 9.0" (W) x 12.0" (H)

Product Line

Item #	Product Name		
DR-CTS-01	Tile Strut - Clear	DR-CTS-01_Tile Strut - Clear	
DR-BTS-01	Tile Strut - Black	DR-BTS-01_Tile Strut - Black	

ETL CLASSIFIED

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LISTED US
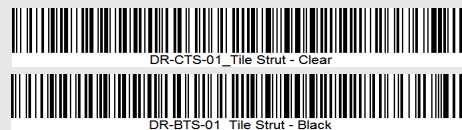
Intertek
5000799
Conforms to UL SUB 2703
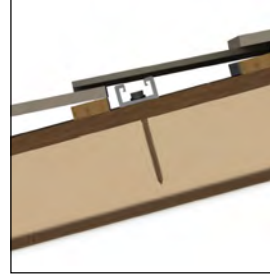
Installation Guide

Flat-Tile

For detailed instructions please refer to the Dual Rack installation guide
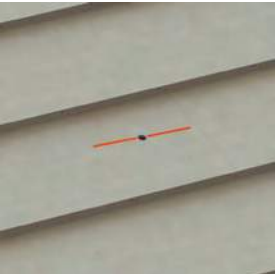

1. Remove the tile and locate the rafter.

2. Insert the lag bolt through the Tile Strut and apply compatible sealant.

4. Screw the 5/16" lag bolt into rafter, embedded a min. of 2.5" (*Tightening torque depends on the planned location.)
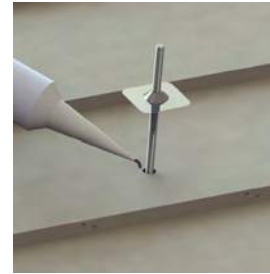

5. Slide the supplied channel strut through the Tile Strut.

6. Carefully drill a hole through the tile using 1/2" drill bit.

7. Use two wrenches to attach the 3/8" nut to the threaded headless bolt. Attach to the channel nut below the tile and remove the nut when done.

8. Apply fresh compatible sealant to seal the tile **opening** and lower the mini flashing.

9. Attach rail to the headless threaded bolt using two 3/8" nuts.

Spanish Tile

1. Remove the tile and locate the rafter.

2. Insert the lag bolt through the Tile Strut and apply compatible sealant.

4. Screw the 5/16" lag bolt into rafter, embedded a min. of 2.5" (*Tightening torque depends on the planned location.)

5. Slide the supplied channel strut through the Tile Strut.

6. Carefully drill a hole through the tile using 1/2" drill bit.

7. Use two wrenches to attach the 3/8" nut to the threaded headless bolt. Attach to the channel nut below the tile and remove the nut when done.

8. Apply fresh compatible sealant to seal the tile **opening** and lower the mini flashing.
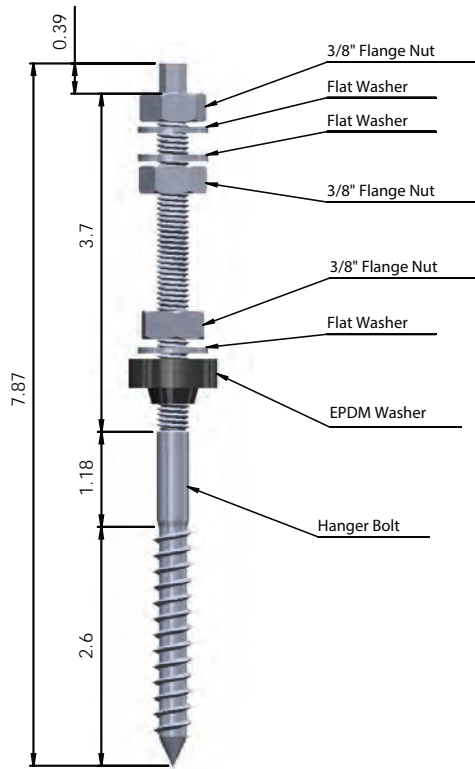

9. Attach rail to the headless threaded bolt using two 3/8" nuts.

Contact Info

HANGER BOLT

Dual Rack Hanger Bolts provide convenience by requiring less parts and fewer parts means less labor time than standard installations, which reduces project costs. Designed for corrugated, composition shingle, S-tile and flat tile roofs, DR Hanger Bolts come complete with an EPDM rubber sealing washer for maximum weatherproofing and pest protection.

ADVANTAGES

- Advanced Dual Rack design.
- Made from stainless steel.
- No special training required.
- Saves time on installations.
- Less parts.
- 10 Year limited warranty.
- Conforms to UL STD 2703 and Class A Fire Rated.

Component List

Material	QTY
Hanger Bolt	01
3/8" Flange Nut	03
Flat Washer	03
EPDM Washer	01

Ordering Specifics

	Package	Dimensions	Weight
Standard PackagY	10 pcg	7.87" x 3/8"	0.430 lbs

Installation Guide

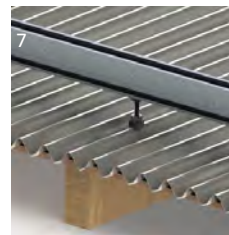For detailed instructions please refer to the Dual Rack installation guide
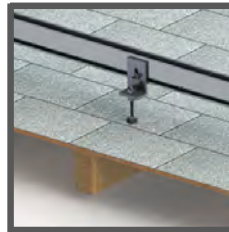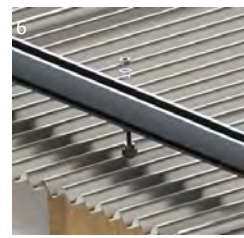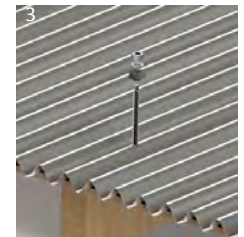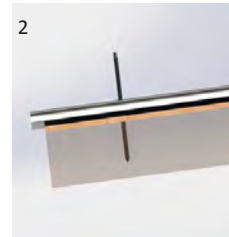
Comp. shingle roof

S-tile roof

Flat tile roof

Corrugated metal roof

L-foot style

Product Line

Item #	Product Name
DR-CHB-01	DR Hanger Bolt-Clear

DR-CHB-01_DR Hanger Bolt-Clear

ETL CLASSIFIED
ETL LISTED US
Intertek
5000799
Conforms to UL SUB 2703

Component List

Material	QTY
Pipe to Rail Adapter	01
3/8" U Bolt	01
3/8" Hex Bolt	03
3/8" Flange Nut	05

Ordering Specifics

	Package	Small Box	Big Box
Standard Pack	10 pc	30 pc	120 pc
Weight	0.167 lbs		

PIPE TO RAIL ADAPTER

The DR Pipe To Rail Adapter mounts DR Standard Rails or DR Lite Rails to pipe foundation structures, and comes with a galvanized 2" U-bolt and 3/8" SS flange nut. An SS U-bolt and 3" U-bolt are also available. Requiring only 7 parts and 1 wrench to install, our adapter offers flexibility and dependability to accommodate the majority of solar panels. The competitive price-per-watt and overall estimated labor savings could cut up to 10k of cost on a 250kW project. Available in clear and black finishes.

ADVANTAGES

- Compatible with Dual Rack Standard and Lite mounting systems
- Simple to install
- Compatible with the majority of solar panel brands
- Easy installation saves time and labor costs
- Great price point value
- Available in clear and black finishes
- 10 Year limited warranty
- Conforms to UL STD 2703 and Class A Fire Rated

Installation Guide

For detailed instructions please refer to the Dual Rack installation guide

1. With the ⅜" U Bolt harnessing the piping, place the Pipe to Rail Adapter over the U Bolt threads.

2. Secure the U Bolt with two ⅜" flange nuts. Next, mark three holes in the rail with proper spacing and insert the three ⅜" hex bolts through the rail.

3. Secure the three ⅜" hex bolts with the 3 remaining ⅜" flange nuts and tighten accordingly.

Product Line

Item #	Product Name
DR-CPRA-01	DR Pipe to Rail Adapter - Clear
DR-CUB-01	DR U Bolt - Clear

DR-CPRA-01_DR Pipe to Rail Adapter - Clear

DR-CUB-01_DR U Bolt - Clear

ETL CLASSIFIED
ETL LISTED US
Intertek
5000799
Conforms to UL SUB 2703

24" EXTENSION

Component List

Material	QTY	Material	QTY
24" Extension Kit		Adjustable	
24" Extension Leg	01	18" Outter Extension Leg	01
U-Bracket	02	18" Inner Extension Leg	01
SS M8-80mm Allen Bolt	02	Outter Leg U-Bracket	01
SS M8 Flange Nut	02	Inner Leg U-Bracket	01
SS Lock Washer	02	Double Hole Fix Clamp	01
SS Spring Washer	02	SS M8-25mm Allen Bolt	02
SS 3/8" - 1" Hex Bolt	01	SS Lock Washer	02
SS 3/8" Flange Nut	01	SS M8 Flat Washer	01
SS 3/8" Flat Washer	01	SS M8-80mm Allen Bolt	02
SS 3/8" Star Washer	01	SS M8 Flange Nut	02
SS 5/16" Star Washer	02	SS 3/8" - 1" Hex Bolt	01
		SS 3/8" Flange Nut	01
		SS 3/8" Flat Washer	01
		SS 3/8" Star Washer	01
		SS 5/16" Star Washer	07

18" - 36" ADJUSTABLE

Ordering Specifics

Product	24" Extension Leg Kit	Adjustable Extension Leg Kit
Net Weight	1.65 lbs/Set	2.09 lbs/Set
Standard Pack	10 Kits/Box	10 Kits/Box
Standard Pack Weight	16. lbs/Box	20.9 lbs/Box
Standard Pack Dimension	26.0"(L) x 13.0"(W) x 4.0"(H)	26.0"(L) x 13.0"(W) x 4.0"(H)

EXTENSION LEG KIT

The Dual Rack extension leg kit comes in two sizes: A fixed 24" extension leg kit and the 18"-36" adjustable extension leg kit. Extension leg kits are compatible with the Dual Rack line as well as the majority of popular mounting systems and roof attachments. Available in both silver and black, DR Extension Leg Kits include all necessary stainless steel hardware and carry our 10-year limited product warranty.

Product Line - Mid Clamp

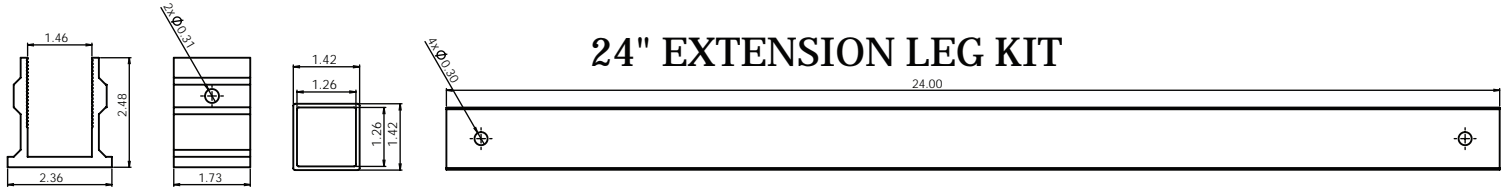| Item #	Product Name		
DR-CEL-24	24" Extension Leg Kit - Clear	DR-CEL-2_24 inch Extension Leg Kit - Clear	
DR-BEL-24	24" Extension leg Kit - Black	DR-BEL-24_24 inch Extension leg Kit - Black	
DR-CEL-AD-18-36	Adjustable Extension Leg Kit - Clear	DR-CEL-AD-18-36_Adjustable Extension Leg Kit - Clear	
DR-BEL-AD-18-36	Adjustable Extension Leg Kit - Black	DR-BEL-AD-18-36_Adjustable Extension Leg Kit - Black	

ETL CLASSIFIED

ETL LISTED US
Intertek
5000799
Conforms to UL SUB 2703

2290 Agate ct. Unit A-B, Simi Valley, CA, 93065 www.DualRack.net
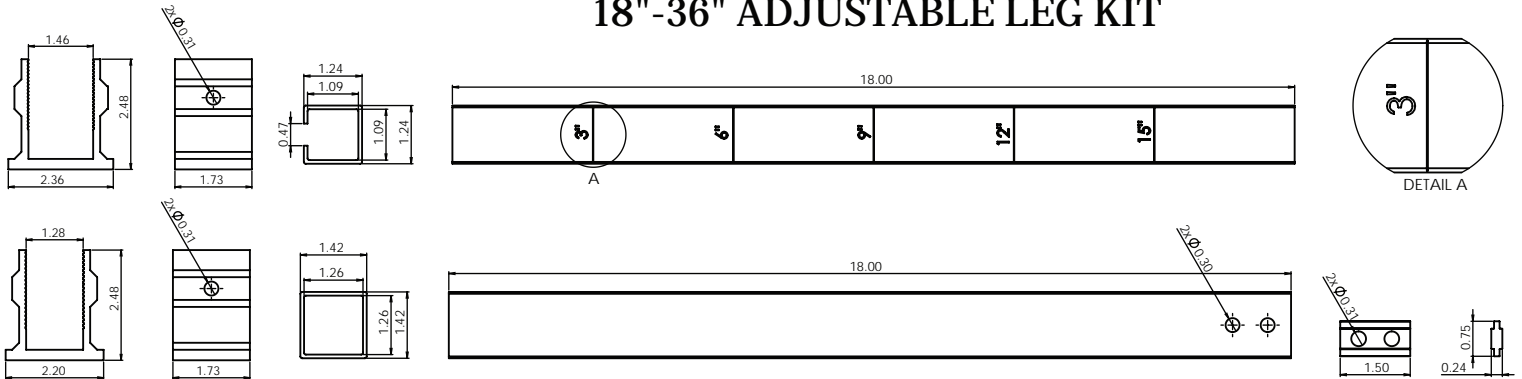
2019 - V1.1

EXTENSION LEG KIT

24" EXTENSION LEG KIT

18"-36" ADJUSTABLE LEG KIT

DETAIL A

Installation Guide

For detailed instructions please refer to the Dual Rack installation guide

1. Attach leg base U bracket to Dual Jack Standoff with 3/8" hex bolt, washers, and flange nut. Attach extension leg to leg base U bracket with 5/16" allen bolt through pre-drilled holes and with washers, and tighten flange nut.

2. Attach leg base bracket directly to Flash L-kit with 5/16" allen bolt, washers and flange nut.

3. For adjustable bar choose the needed length and use the double hole fix clamp to adjust the length of the bar.

4. Attach leg base U bracket directly to rail using 3/8" hex bolt to connect to rail or attach using L-foot/ leg base U bracket combination.

Contact Info

Dual Rack Inc.
2290 Agate ct. Unit A-B, Simi Valley, CA, 93065
www.DualRack.net
Email: info@DualRack.net
Phone:+1 (805) 254 - 2250

SWIVEL ANGLE BRACKET

Component List

Material	QTY
Angle Bracket	01
3/8″ Hex Bolt	01
3/8″ Flange Nut	03
3/8″ Star Washer	05

Ordering Specifics

	Package	Small Box	Big Box
Standard Package	1 Pc Set	20 Pc Set	80 Pc Set
Weight	0.31 lbs	6.2 lbs	24.8 lbs

For detailed instructions please refer to the Dual Rack installation guide

The DR Swivel Angle Bracket is used with our Dual Rack extension leg kit to adjust the tilt-up angle. Both black and silver product is available.

Product Line

Item #	Product Name	
DR-CSAB-01	DR Swivel Angle Bracket - Clear	DR-CSAB-01_DR Swivel Angle Bracket - Clear
DR-BSAB-01	DR Swivel Angle Bracket - Black	DR-BSAB-01_DR Swivel Angle Bracket - Black

EXTENSION LEG U-BRACKET

Component List

Material	QTY
Extension Leg U-Bracket	01
M8-60 SS Bolt	01
M8 Lock Washer	01
M8 Flange Nut	01
Star Washer	01

Ordering Specifics

	Package	Small Box	Big Box
Standard Package	1 Pc Set	20 Pc Set	80 Pc Set
Weight	0.13 lbs	2.6 lbs	10.4 lbs

For detailed instructions please refer to the Dual Rack installation guide

The DR Extension Leg U-Bracket is used with both adjustable and fixed length Dual Rack Extension Leg Kits. Both black and silver product is available.
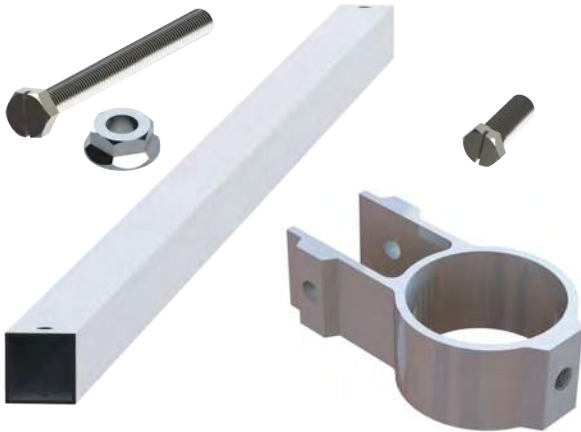
Product Line

Item #	Product Name	
DR-CELUB-01	DR Extension Leg U Bracket- Clear	DR-CELUB-01_DR Extension Leg U Bracket- Clear
DR-BELUB-01	DR Extension Leg U Bracket - Black	DR-BELUB-01_DR Extension Leg U Bracket - Black

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Dual Rack
PV MOUNTING SYSTEMS

Product Line

Item #	Product Name
DR-GMSD	DR Slider Bracket
DR-GMBB	DR Brace Bar

Component List

Material	QTY
Slider Bracket	01
Brace Bar	01
3/8" X 3.0" Hex Bolt	01
3/8" X 1.5" Hex Bolt	01
3/8" Flange Nut	01

Ordering Specifics

	Small Box	Big Box
Standard Pack	10 pcs	40 pcs
Weight	0.4 lbs	

SLIDER BRACKET & BRACE BAR

Our Dual Rack Slider Bracket & Brace Bar reinforces ground mount system pipe and foundation structures. Each DR Slider Bracket & Brace Bar comes with a galvanized 3" hex bolt and ⅜" SS flange nut. This combination offers the durability and flexibility to accommodate the majority of solar panel configurations. Competitive price-per-watt cost and reduced labor time from efficient installation design could provide savings of up to 10k on a 250Kw project. Available in clear and black finishes, the DR Slider Bracket works as a Cross Member Support while locking the front and back of the array support posts. This helps in all weather conditions to reduce the size and number of concrete posts.

ADVANTAGES

- Compatible with Dual Rack PV Mounting systems.
- Simple to install on ground mount installations.
- Integrates with the majority of solar panel brands.
- Easy Installation saves time and labor cost.
- Available in clear or black finishes.
- Increases footing span and reduces footing size.
- 10 Year Limited Warranty.

Installation Guide

For detailed instructions please refer to the Dual Rack installation guide

Place Slider Bracket over ground mount pipe, and align Brace Bar holes in order to insert ⅜" x 3.0" Hex Bolt, securing it with ⅜" Flange nut. Secure the other end of the Brace Bar with another Slider Bracket in a stabilized diagonal configuration. Insert the ⅜" x 1.5" Hex Bolt thru the back of the Slider Bracket, tightening accordingly to secure the Brace Bar.

Product Line

Item #	Product Name
DR-GMSB	DR Slider Bracket
DR-GMBB	DR Brace Bar
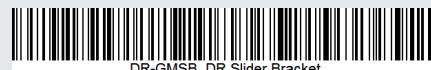
DR-GMSB_DR Slider Bracket

DR-GMBB_DR Brace Bar

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0.59 "

1.59 "
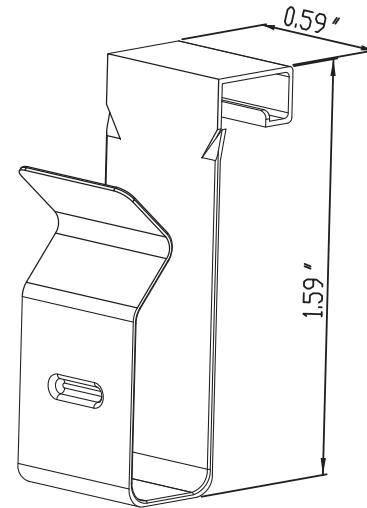
CABLE CLIP

Dual Rack Cable Clips simplify wire management with a cleaner aesthetic solar PV array. Made from 65Mn-0.5mm, the cable clip is designed to prevent damage to cable insulation and to last for the life of the array, maintenance free. The Dual Rack Cable Clip is compatible with Dual Rack rails. Cable Clips are designed 11 mm in diameter. One clip every 3 to 4 feet of solar panel rail length.

ADVANTAGES

- Stainless steel.
- Easy to connect.
- Keeps module cables secure.
- Eliminates wire chafing.
- No maintenance required.
- Available in Sliver and Black.
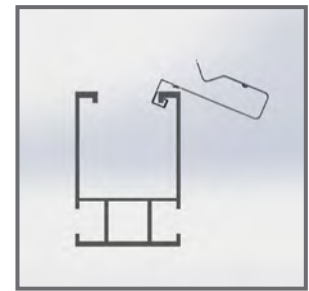- Conforms to UL STD 2703 and Class A Fire Rated.

Ordering Specifics

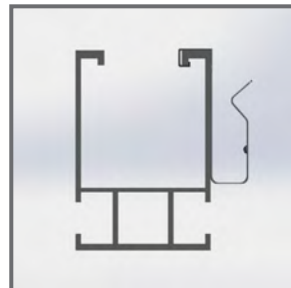|	Package
Standard Pack	100 pcs
Weight per unit	0.05 lbs
Weight per pack	5.0 lbs

Installation Guide

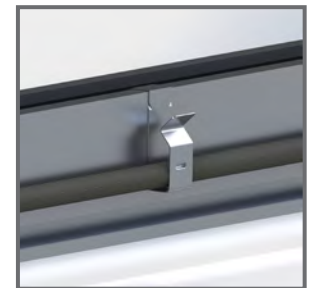For detailed instruction please refer to the Dual Rack installation guide
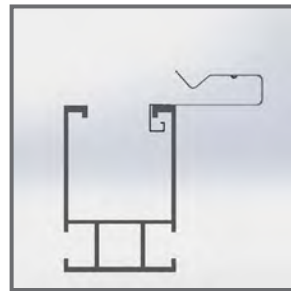
1. Place the cable clip on one of the Dual Rack rail sides making a 90° angle.

2. Lower the cable clip towards the side of the Dual Rack rail.

3. Make sure the cable clip is secured in place.

4. Push the cable into the cable clip.

Product Line

Item #	Product Name		
DR-CC-01	DR Cable Clip - Clear	DR-CC-01_DR Cable Clip - Clear	
DR-CC-02	DR Cable Clip - Black	DR-CC-02_DR Cable Clip - Black	

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Application:

Solar panels and related photovoltaic products require grounding per the National Electric Code (NEC Article 690.43). These applications include, but are not limited to electrical grounding of solar modules and roof tiles

Installation Guide

Consult DualRack Installation Guide for more detail.

GROUNDING LUG

(DR-GBS-P7)

The Dual Rack GBS-P7 is a grounding and bonding splice lug that is compatible with all solar racking systems and framed solar modules. The Dual Rack GBS-P7 is not only a grounding, but also a bonding jumper which can be installed at the spliced section of the railing. This multipurpose lug will keep onsite inventory to a minimum since it works to both ground and bond solar PV modules and racking systems. With the Dual Rack GBS-P7 you'll get both lower cost and faster installations with the only grounding and bonding splice lug on the market to be UL467 certified.
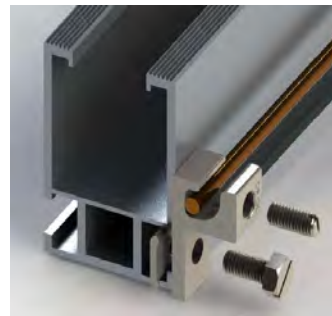
ADVANTAGES

- Compatible with Dual Rack PV mounting systems.
- Easy installation process will save time.
- Made from stainless steel 1.4301 (High corrosion resistance).
- Compatible with 12-6 AWG Cu.
- UL 467 Certified

OPTION-A:

GROUNDING RAIL

- Slide the grounding lug through the rail groove.
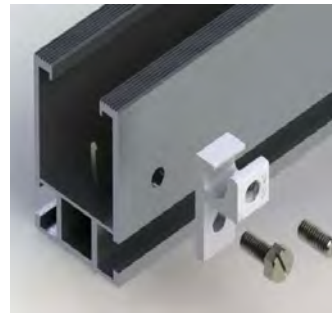
OPTION- B:

GROUNDING RAIL

- Drill a hole through the rail.
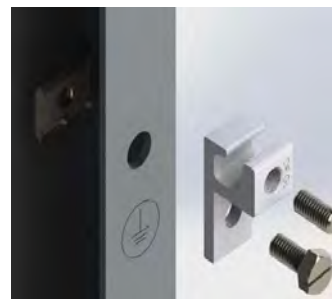
MODULE GROUNDING:

- Slide the grounding lug through the module's grounding hole and attach to the back plate.

Product Line

Item #	Product Name
DR-GBS-P7	DR Grounding Bonding Splice Lug P7

DR-GBS-P7_DR Grounding Bonding Splice Lug P7

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Mounting System Product Limited Warranty

§ 1 Limited Warranty

(1) Dual Rack Inc., hereinafter referred to as "Dual Rack", warrants only to its original retail purchaser ("Customer") of DualRack's rooftop solar mounting product line, defined as products manufactured by DualRack ("Products") and that the products listed below (each a "Product" and, collectively, the "Products"), when installed properly in the United States of America, will be free from substantial defects in material and workmanship and that Product finish will be free from visible peeling, cracking or chalking under normal atmospheric conditions ("Finish Warranty") while the Products are installed at their original installation site and provided that the Products were installed in accordance with DualRack's written installation instructions during the applicable warranty period identified in § 2, below, subject to the exclusions and limitations contained in this Limited Warranty statement.

The Dual Rack ("Dual Rack") PV Mounting Systems covers only the Product, and not PV modules, electrical components and or wiring used in conjunction with the Product or any other materials not provided by Dual Rack. Goods which may be sold by Dual Rack, but which are not designed or manufactured by Dual Rack are not warranted by Dual Rack, are sold only with the warranties, if any, of the original manufacturers thereof.

(2) This Limited Warranty sets forth Dual Racks' total and exclusive warranty obligation. Dual Rack does not assume, nor authorize any person to assume for it, any other liability in connection with the sales of its Products.

(3) This Limited Warranty does not cover any adverse effects on any Product or any Product defects which arise because:

The Product was not assembled and installed in accordance with the assembly and in-stallation instructions and the applicable technical norms and regulations;

The Product was not assembled and installed by qualified personnel with the skill set defined in the installation manual;The Product was not transported, installed, assembled, tested or operated in accordance with best prudent industry methods and practices; The Product was not used in accordance with the published technical specifications or the Product was used contrary to the intended purpose of use as specified in the installa-tion manual;

The Product was not properly stored before or during the assembly / installation phase; Interferences with or changes to the Product or its accessories were made without the express written consent of Dual Rack; Accessories which are not original Dual Rack accessories were used in connection with the Product;

The Product was not serviced by a specialist firm at least once each year; The Product was subject to extraordinary environmental conditions (e.g., excess volt-age, magnetic fields or similar circumstances); The Product was subject to a force majeure (as defined in § 4 (1), below); A heightened salt content in the ambient air or oxidation-provoking metal combinations (e.g., copper) have caused corrosion at the installation site of the Product; or The load capacity of the roof construction and/or the foundations, footers or ground has not been assured according to the accepted state-of-the-art technology and applicable technical norms and regulations.

This Limited Warranty does not cover damages or problems caused by the connection to or use of alternative materials not purchased from the Dual Rack Product List. This Limited Warranty shall also be void if A) installation of the Product is not performed in accordance with the Dual Rack Product Information, B) if the Product has been modified, repaired, or reworked in a manner not previously authorized by Dual Rack in writing, or C) the Product is installed in an environment for which it was not designed, each as determined by Dual Rack at its sole discretion.

(4) If any Product fails to operate during the applicable warranty period due to a warranted defect in workmanship or material, Dual Rack shall either, at its option and expense and as its sole and exclusive obligation, carry out a professional repair of the defective Product component in question or replace the defective component with a new or updated component. If the Product in question is no longer manufactured, then Dual Rack shall be entitled to provide a different comparable Product (different size, different color, different form and/or different performance, etc.). Any such repair or replacement does not cause the beginning of new warranty terms, nor shall the Warranty Period of this Limited Warranty be extended. Dual Rack's total liability for all warranty claims shall not exceed the original Purchase Price of the nonconforming Product. Buyer shall bear all shipping costs related to the repair or replacement of the nonconforming product. Such repair or replacement shall be Buyer's sole remedy and shall complete all of Dual Rack's obligations with respect to the Product and all said warranty claims. EXCEPT FOR THE LIMITED WARRANTY EXPRESSED ABOVE, Dual Rack MAKES NO REPRESENTATION OR WARRANTY OF ANY KIND WHATSOEVER AND HEREBY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, COURSE OF DEALING AND USAGE OF TRADE. Dual Rack SHALL NOT BE LIABLE FOR LOSS OF USE, REVENUE OR PROFIT, OR FOR DIRECT, INDIRECT, SPECIAL, PUNITIVE, LIQUIDATED, INCIDENTAL OR CONSEQUENTIAL DAMAGES, OR FOR ANY OTHER LOSS OR COST OF A SIMILAR TYPE, OR FOR CLAIMS BY BUYER FOR DAMAGES OF BUYER'S CUSTOMERS, CLAIMS OF THIRD PARTIES OR INJURY TO PERSONS OR PROPERTY ARISING OUT OF ANY DEFECT OR NONCONFORMITY IN THE PRODUCT COVERED BY THIS WARRANTY, EVEN IF CAUSED BY THE NEGLIGENCE OF Dual Rack. ALL SUCH RELATED DAMAGES AND EXPENSES ARE HEREBY EXCLUDED. DualRack does not warrant that the Products will meet any specifications, needs, or requirements that are not expressly set forth and Dual Rack SHALL NOT IN ANY CASE BE LIABLE FOR ANY OTHER SIMILARLY INCURRED DAMAGES EVEN IF Dual Rack OR ITS REPRESENTATIVE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

(5) Performance under this Limited Warranty will not trigger the commencement of a new warranty period, nor will it extend the applicable warranty period.

§ 2 Territorial Scope/Warranty Period

This Limited Warranty applies geographically to Products sold and properly installed in the United States of America. The warranty period for all metallic Product components is ten (10) years. The warranty period for all metallic Product finish is three (3) years. The warranty period for all non-metallic Product components is one (1) year. Each warranty period commences on the the earlier of 1) the date the installation of the Products is completed, or 2) thirty (30) days after the purchase of the Products by the original Customer.

§ 3 Procedures in the Event of a Warranty Claim

If a Customer has a claim for repair or replacement under this Limited Warranty, said Customer must contact Dual Rack promptly and under no circumstances later than 30 days after the end of the applicable Limited Warranty Period to initiate the Limited Warranty claim process. If the Product exhibits defects that are covered under this Limited Warranty, contact Dual Rack Customer Service at (818) 678 -9699 or at the address or facsimile number noted below.

Please have the following information available when contacting us by phone:

-Your name, address, zip code, and a telephone number where you can be contacted;
-The Product model description;
-Purchase receipt containing the date and Customer address;
-Warranty certificate of the defective Product (if available);
-The date of installation;
-The location and address of the actual installation;
-A complete listing of the observed defects and additional information which could help in ana-lyzing the defect.

The staff of Dual Rack Customer Service will inform you about any additional steps and will supply you with your own individual claim number. Please provide this number during any subsequent discussion or communications related to the processing of your claim. The following documents and information must be made available to Dual Rack upon request:

Photographs of the damaged Product(s);

System circuit diagram(s);

Any pertinent system monitoring or data capture records.

If the staff members at Dual Rack Customer Service request that you send Dual Rack purchase documentation which is more specifically defined during the discussions, then please send this information either by mail, fax or email to the following:

Dual Rack Customer Service:

2290 Agate Ct. Unit A&B, Simi valley CA 93065

Fax: 818-812-9566

Email: info@DualRack.net

Please note that Dual Rack cannot accept the delivery of any Product or Product component that it receives without prior notice by telephone.

§ 4 Warranty Limitations, Transferability, Assignability and Final Provisions

(1) This Limited Warranty does not apply if the defects or discrepancies in the condition of the Product are not material and such defects or discrepancies are insignificant with respect to the value or conforming use of the Product.

(2) The Finish Warranty does not apply to any issues caused by foreign residue deposited on the finish, or an installation in atmospheric conditions more corrosive than normal conditions. The Finish Warranty is VOID if the practices specified by AAMA 609 & 610-02 – "Cleaning and Maintenance for Architecturally Finished Aluminum" (www.aamanet.org) are not followed.

(3) The Warranty coverage and term is assignable by Purchaser and any subsequent owner of the Products, provided that the Products remain installed at the original installation address, and provided that any subsequent owner agrees in writing to be bound by the terms of this DualRack Limited Product Warranty document. Change in ownership of the Products or assignment of this Limited Warranty will not reset the original warranty period. Any subsequent owners to whom the Limited Warranty is assigned shall be considered a subsequent "Purchaser" for purposes of this Warranty during the period of ownership under Warranty of the Product(s). Proof of purchase is required for any warranty claim.

(4) Dual Rack is not liable for any delays or failure to provide the warranty performance listed in § 1, if that delay or failure is caused by force majeure (i.e., war, war-like conditions, terrorism, vandalism, earthquake, civil unrest, strikes, epidemics, fire, flooding, lightning strike, hail or other similar circumstances which are beyond Dual Rack's control).

(5) THE WARRANTIES STATED HEREIN ARE IN LIEU OF ALL OTHER EXPRESS WARRANTIES. IF THE CUSTOMER IS A BUSINESS OR ENTITY, ALL IMPLIED WARRANTIES, INCLUDING THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, ARE DISCLAIMED. IF THE CUSTOMER IS A CONSUMER WHO PURCHASES THE PRODUCT FOR PERSONAL, FAMILY OR HOUSEHOLD PURPOSES, IN NO EVENT SHALL ANY IMPLIED WARRANTIES, INCLUDING BUT NOT LIMITED TO ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EXTEND BEYOND THE APPLICABLE WARRANTY PERIOD IDENTIFIED IN § 2, ABOVE.

Some jurisdictions do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from jurisdiction to jurisdiction.

(6) The foregoing provisions state Dual Racks' entire liability, and the Customer's exclusive remedy, for any breach of warranty, express or implied. IN NO EVENT WILL DUAL RACK BE LIABLE FOR ANY CONSEQUENTIAL OR INCIDENTAL DAMAGES ARISING FROM OR OUT OF THE INSTALLATION OR USE OF ANY PRODUCT, OR ANY BREACH OF WARRANTY; WITHOUT LIMITING THE FOREGOING, DUAL RACK SHALL NOT BE LIABLE FOR PERSONAL INJURY, PROPERTY DAMAGE, LOST PROFIT, LOST REVENUE, HARM TO REPUTATION, LOSS OF DATA, ADVERTISING OR MANUFACTURING COSTS, OVERHEAD COSTS, LOST CUSTOMERS, OPERATIONAL DISRUPTIONS OR DOWN-TIME RESULTING FROM THE INSTALLATION OR USE OF ANY PRODUCT OR ANY BREACH OF WARRANTY. The total scope of liability under this Limited Warranty is limited to the purchase price paid by the Customer for the individual Product.

(7) This Limited Warranty allocates risks of Product failure between Customer and Dual Rack. The Limited Warranty set forth above is in lieu of all other express warranties, both oral or written. The agents, employees, distributors and dealers of Dual Rack are not authorized to modify any aspect of this Limited Warranty nor to make additional warranties binding on Dual Rack whatsoever. Accordingly, additional statements such as dealer advertising or promotions, whether oral or written, do not constitute warranties by DualRack and cannot be relied upon as a warranty of DualRack. DualRack's product pricing incorporates this allocation of risk and the limitations of liability in this Limited Warranty.

(8) This Limited Warranty shall be governed by the internal laws of the state of California, without reference to conflict of laws principles. The United Nations Convention on Contracts for the International Sale of Goods shall not apply to this Limited Warranty. Any and all disputes arising out of or relating to this Limited Warranty, any breach of warranty, the Product, or the installation or use of the Product shall be resolved through binding arbitration conducted in Simi Valley, California, U.S.A.