

Attaching to Metal Roofs Worldwide...The Right Way™

With nearly 200 patents and a track record as the industry's leading provider of metal roof attachments, S-5! offers the highest-quality, made in the U.S.A., engineered products at surprisingly low costs. Our clamps and brackets make it easy to attach virtually anything to standing seam, exposed-fastened and corrugated metal roof profiles. Established in 1992, S-5! is the most trusted name in the metal construction, solar, snow and utility mounting industries.

Quality Assurance: Zero Defects

- Proven performance since 1992
- Family-owned
- · Certified material and manufacturing processes
- Load-tested for holding strength on more than
 500 different roof profiles, materials and gauges
- Limited Lifetime Materials & Workmanship Warranty*
- · State-of-the-art manufacturing facility
- Available at hundreds of locations worldwide

Extensive Quality Control Protocols

- ISO 9001:2015
- Underwriters Laboratories
- Factory Mutual
- TüV
- ICC-ES

"The Solar Revolution has been utilizing the S-5! PVKIT solution since it first hit the market. Hands down, it is the best solar mounting solution regardless of roof type. Our projects using the PVKIT yield the fastest installation times, lowest material cost and best aesthetics. We've taken a close look at competitor's knock-offs, and they do not compare. This is because S-5! has been creating innovative solutions for metal roofs longer than anyone else, and their expertise is unmatched."

Doug Claxton - Principal & Founder - The Solar Revolution

*Visit our website for warranty details.



S-5! PVKIT® Solar Solution

For "Rail-Less" Mounting (Use with any S-5! Clamp or Bracket)



The **PVKIT** provides a cost-effective *DirectAttach*™ solution. Going railless saves time and money, provides better load distribution and is 80% lighter weight than rail mounting at fewer than 3.5 lbs. / kW (1.59 kg).

S-5! DirectAttach solutions won't compromise roof warranties! The **PVKIT** is the best solution for attaching PV modules directly to any standing seam or exposed-fastener metal roof.





Rail-Mounted Solution:

The **SolarFoot** is compatible with almost any exposed-fastened roof profile – with the strength, testing, quality and time-proven integrity you come to expect from S-5!

Attach any rail producer's L-Foot to the roof with ease and dependability. This solution is *The Right Way*™ to secure any rail-mounted solar system to exposed-fastener metal roofs such as AG-Panel or R-Panel.

Product	Profile	Features & Benefits	Minor Box *MSRP US Dollars
	Sits in the valley; attaches to the deck or structure Rail Mounting Only	 100% aluminum & stainless components Compatible with all L-Foot products Secure rail-mounted systems to trapezoidal roof profiles Water-tight, factory-applied, butyl sealant Integral reservoir prevents over-compressing seal Easy-to-find load test results on website Utilizes either two or four fasteners Integral M8 stud and hex flange nut provided 	4.43



VersaGard™ Attach side-mount rail (no L-Foot required); must attach to deck or structure. (Screws sold separately)

VersaGard is compatible with almost any trapezoidal, exposed-fastened profile. No messy sealants to apply! No chance for leaks! VersaGard comes with factory-applied, 40-year, butyl polymer sealant already in the base, and the S-5! reservoir conceals the sealant from UV exposure, preventing drying and cracking.

The circular holes in the vertical part of the bracket support up to 1" (25 mm) conduit. The diagonal slot provides height-adjustable support for PV side-mount rail via the use of 3/8" (9.5 mm), M8 or M10 bolts.

Product	Profile	Features & Benefits	Minor Box *MSRP US Dollars
	Sits in the valley; attaches to the decking or structure	 100% aluminum & stainless components Use in lieu of an L-Foot Use with any side-mount rail system Install either parallel or perpendicular to slope Diagonal "slot" provides height adjustability Water-tight, factory-applied, butyl seal Integral reservoir prevents over-compressing seal Load tested normal & parallel to surface Up to six points of attachment; tested holding strength for engineered applications 	4.03

^{*}Pricing above is in USD. Prices vary based on region and other factors. Pricing improves with order quantity. Call your Authorized S-5! Distributor.





Attach bottom-bolted rail or side-bolted rail with L-Foot or S-5! (rail-less) PVKIT. Also, attach wire chases, conduit, combiner boxes, service walkways, lightning protection, etc.



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Product /	' Seam	Features & Benefits	Minor Box *MSRP US Dollars
S-5-B™ & Mini Mini		 Brass clamps designed for double-folded, copper standing seam roofing Metallurgical compatibility with copper Preserves aesthetics of the copper roof 	20.57 Mini 14.59
S-5-E™ & Mini Mini		 Designed for double-folded, standing seam roofs popular in Europe and the world over Comparable strength to S-5-U, but at a lower cost Fits Butler's MR-24® and other double-folded, standing seam roofs 	5.13 Mini 3.58
S-5-EF [™]		 Unique flange design increases ease and versatility of attachment to bottom-mount PV rails and other nut and bolt connections Specifically designed for doublefold, standing seams popular in Europe and the world over, including Butler MR-24® 	4.51



Attach bottom-bolted rail, side-bolted rail with L-Foot or S-5! (rail-less) PVKIT. Also, attach wire chases, raceways, combiner boxes, service walkways, lightning protection, etc.



Product	/ Seam	Features & Benefits *M	or Box ISRP Dollars
S-5-H™ & Mini Mini		Unique two-piece design allows attachment anywhere along the length of the seam	.37 lini .26
S-5-H90™ & Mini Mini		• Secure and cost-effective solution for horizontal seam dimensions ≥ 0.65"(16.5 mm)	.62 lini .16
S-5-K Grip [™] & Mini Mini	Inserts for the S-5-K Grip S-5-GX 10 S-5-GX 50 Inserts for the S-5-K Grip Mini S-5-GXM 10 S-5-GXM 50	Design utilizes multiple inserts (sold separately) to accommodate various rib dimensions	.48 lini .97
S-5-N™ & Mini Mini		installation • Fits seam profiles having base of rib dimension < .82" (20 mm)	.16 lini .31

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Product /	Seam	Features & Benefits	Minor Box *MSRP US Dollars
S-5-N [™] 1.5 & Mini Mini		 Designed for use on popular 1.5" (38 mm) nail strip metal roof profiles Angled wall with nose permits the clamp to engage the triangle-type profiles during the installation process Wider throat accommodates most nail strip profiles; no need to crimp 	6.16 Mini 5.31
S-5-NH™ 1.5 & Mini Mini		 Nail strip profiles horizontal base rib dimension ≤ 0.800" Hinge forms to shape of seam preventing damage at the point of attachment Reversible hinge for wide & medium-width profiles 	7.18 Mini 6.32
S-5-Q™ & Mini Mini		 Accommodates metal roof panels with a wide variety of profiles, including large, round "bulb" seam configurations up to 1.14" (29 mm) in diameter Also fits smaller bulb-shaped profiles when seamed incorrectly, allowing seam to be utilized without correction 	12.90 Mini 7.57
S-5-R465™ & Mini Mini		 Designed specifically to fit the Zambelli RIB-ROOF 465, McElroy Metal Mirage II, Rib Roof Metal Systems Rib Roof and similar roof profiles Unique design with opposing setscrews that engage the ribs beneath the top bulb, maximizing published holding strength 	10.04 Mini 7.42

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Attach bottom-bolted rail, side-bolted rail with L-Foot or S-5! (rail-less) PVKIT. Also, attach wire chases, raceways, combiner boxes, service walkways, lightning protection, etc.



Product /	Seam	Features & Benefits	Minor Box *MSRP US Dollars
S-5-S™ & Mini Mini		 Versatile clamp created for popula snap-together profiles, including the Firestone UC4, Peterson SnapClamBCI LokSeam and all similar seam types Also used on single-folded (horizontal seams) under ≤ 0.54" (13 mm) to avoid necessity of field crimping the seam 	6.35 Mini
S-5-T™ & Mini Mini		 Developed for profiles having a T-shaped seam configuration with a horizontal dimension ≤ 1.3' (33 mm) Two-piece design allows clamp to be placed over the top of the T-seam at any desired location Fits architectural single-fold (or "angle-seam") and horizontal single-fold seam with horizontal dimension ≤ 5/8" (15 mm) 	8.24 Mini 6.85
S-5-TXL™		 Designed for McElroy Metal Trap-To and Morin SymmeTry roof profiles Unique insert simplifies installation anywhere along the seam, saving money on labor Ideal for high-wind applications; provides a strong, non-penetrating attachment without voiding roof manufacturer's warranty Comprehensive pull-up and drag load testing ensures reliable, truste performance 	11.40
S-5-U™ & Mini Mini		 Our most versatile clamp Fits 85% of standing seam profile manufactured in North and South America, including structural and architectural profiles Use on vertically-oriented seams Rotate clamp 90° and use on most horizontal seam profiles w/horizontal dimensions ≥ 0.65" (16.5 mm) 	7.16 Mini 4.59

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Attach bottom-bolted rail, side-bolted rail with L-Foot or S-5! (rail-less) PVKIT. Also, attach wire chases, raceways, combiner boxes, service walkways, lightning protection, etc.

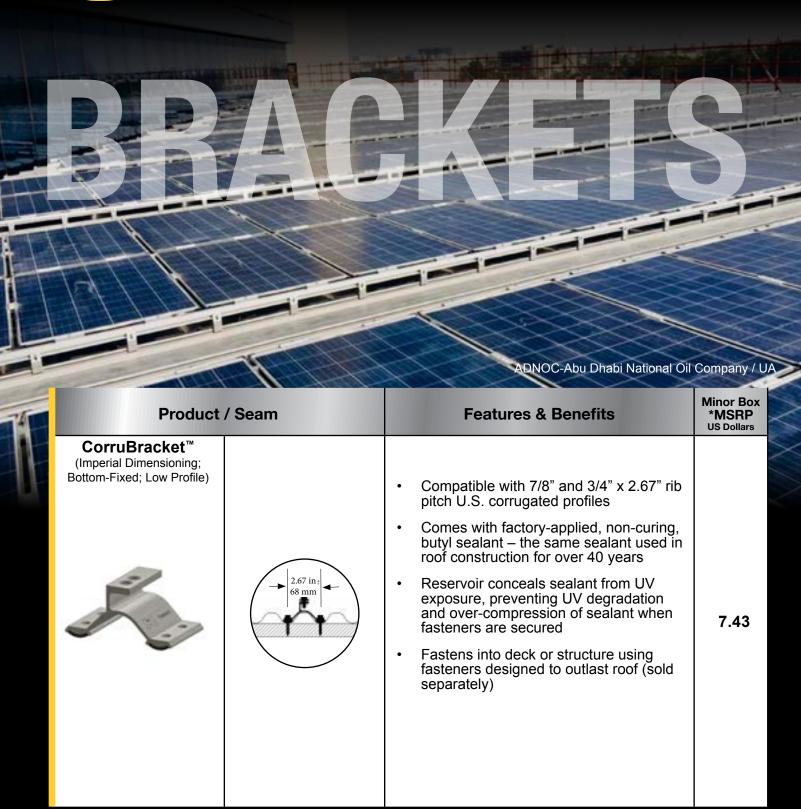
Product /	Seam	Features & Benefits	Minor Box *MSRP US Dollars
S-5-V™ & Mini Mini		 Fits the same vertically-oriented seams as the S-5-U Less versatile but more costeffective than the S-5-U Specifically designed for vertical machine-folded seams 	6.35 Mini 3.94
S-5-Z™ & Mini Mini		 Specially designed to fit Zip-Rib®, BEMO, Kalzip® and similar profiles with a round "bulb" seam configuration and seam diameters of ≤ ¾" (19 mm) Two-piece clamp design allows for ease of installation anywhere along length of the rib 	8.53 Mini 7.10
S-5-ZF™		 Flange clamp specifically designed to fit bulb-shaped profiles Unique flange design increases ease and versatility of attachment to bottom-mount PV rails and other nut and bolt connections 	6.04
S-5-ZH™		 Fits round "bulb" seam configuration ≤ 7/8" (22 mm) in diameter Can be used at halter locations Design prevents clamp from pinning roof to the clip (halter) 	6.05

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Attach Rail, PVKIT® & Other Ancillaries





Attach Rail, PVKIT® & Other Ancillaries



Product /	Seam	Features & Benefits	Minor Box *MSRP US Dollars
CorruBracket [™] 100T (Imperial Dimensioning; Top-Fixed; Low Profile)	2.67 in ± 68 mm	 Compatible with 7/8" and 3/4" x 2.67" rib pitch U.S. corrugated profiles Mounts directly to crest of corrugation, straddling valley Fastens directly into sheeting OR through sheeting into structure Slotted, top hole simplifies alignment, maximizing flexibility in attaching ancillaries 	5.86
CorruBracket™ 100T PV (Imperial Dimensioning; Top-Fixed; High Profile) *	2.67 in [±] 68 mm	 Open channel for wire management Bracket places glass 4" above valley of corrugation for optimal air-flow Bracket can be fixed into sheeting-only, allowing flexible module placement Slotted hole offers 1" of adjustability PVKIT compatible; fasteners included Allows for attachment of microinverters and/or optimizers * Item shown with PVKIT® attachment. Brackets and PVKIT® are sold separately. 	6.22
Protea [™] Bracket	3 in ± 76 mm	 L-Foot allows for side-mount rails, bottom-mount rails or PVKIT Load-tested for engineered applications Adjustable – fits trapezoidal rib profiles up to 3" (76 mm) wide Peel-and-stick EPDM surface prevents accidental shifting during installation Stainless-capped, self-piercing screws specifically designed to prevent swarf; EPDM sealing washer 	9.86



Product /	Seam	Features & Benefits
RibBracket	M I-V	
_	RibBracket [™] I	Flex-to-fit legs endure proper fit
DIMS 'A'		Large channel above rib can be used for wire management
	T.	Sheeting-only attachment can be placed anywhere along roof ribs
	.E. A	Stainless-capped, self piercing screws specifically designed to maximize holding strength & prevent swarf
RibBracket [™] II	RibBracket [™] III	EPDM sealing washer
*	*	Bracket allows for 4" (100 mm) of air space above rib
		4 self-penetrating screws and 1 M8 Nut Included
		RibBracket I: Designed for popular Hawaiian profiles, such as HPM Custom 4-Rib, HPMCustom 6-Rib, and similarly-dimensioned narrow ribs.
RibBracket [™] IV	RibBracket [™] V	RibBracket II: Designed for popular African and Australian profiles, such as Lysaght Trimdek® 1015, Safintra Trimflute 1015, and similarly-dimensioned profiles.
		RibBracket III: Designed for popular North American and Indian profiles, such as PBR Panel, R-Panel, Kirby Roof (KR), and similarly-dimensioned profiles.
.2,	elle	RibBracket IV: Designed for popular African and North American profiles, such as Safintra IBR,
<u>RibBracket</u>	DIMS 'A'	KingSpan® KS1000, and similarly-dimensioned profiles.
RibBracket I	0.63 - 1 in 16 - 25 mm	RibBracket V: Designed for Ternium TR and similarly-dimensioned profiles.
RibBracket II	1 - 1 1/4 in 25 - 32 mm	Rib angles and dimensions vary on
RibBracket III	1 - 1 3/8 in 25 - 35 mm	trapezoidal profile. It is suggested to test fit the RibBracket on actual roof profile.
RibBracket IV	1 1/4 -1 3/8 in 32 - 35 mm	·
		* Items show with PVKIT® attachment. RibBracket™ and PVKIT® are sold separately.

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Attach PVKIT® & Other Ancillaries

Product /	/ Seam	Features & Benefits	Minor Box *MSRP US Dollars
VersaBracket™ 47	Sits in the valley; attaches into the decking or structure	 Compatible with almost any trapezoidal, bottom-fixed, exposed-fastened profile Height: 1.86" (47 mm) Mounting face comes with 1" (25 mm) slot on top for adjustability Factory-applied, non-curing, butyl sealant Patented reservoir conceals sealant from UV exposure, preventing UV degradation and over-compression of sealant Fastens into the deck or structure using fasteners specifically designed to outlive the roof (fasteners sold separately) NOT recommended for side-bolted rail with L-Foot (see VersaGard or SolarFoot) 	2.82
VersaBracket™ 67	Sits in the valley; attaches into the decking or structure	All the same features as the VersaBracket 47 with noted exceptions: Increased height: 2.65" (67 mm) to clear higher ribs	3.85



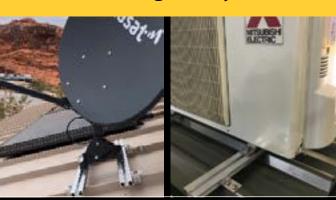
GRIPPERFIX® Attach Cable Trays, Conduits, Walkways & Other Ancillaries



The Wrong Way



The Right Way[™]



Standing Seam or Exposed-Fastened Roof Components

Universal strut to attach roof-mounted equipment

Compo		Features & Benefits	Minor Box *MSRP US Dollars
GripperStrut ™ 300, 600, 1200 mm lengths 27" and 52" lengths	Bolt Channel Tab Channel	No field applied sealants needed	27" 11.42 52" 22.01
Leveling Pad/Leveler 1/4" (6 mm)	Leveler Kit (4) Levelers, (6) Damper Pads, (2) 60 mm Bolts, (2) 20 mm Bolts and (4) M8 Nuts	Factory-applied "double-seal" gasket100% aluminium and stainless	Pad 1.04 Kit 13.10
M8 Bolt (listed price is average of all bolt sizes: 1.25 x 17, 20, 40, 60 mm - bolts sold separately) & M8 Hex Flange Nut	0.0	 Eliminates corrosion and rust Ease of installation No damage to roof system 	Bolt: 0.49 Nut:
Concealed-Fix CF Tab Concealed Fix		 Free flow of rainwater under rails Load distribution over multiple bearing points 	0.35 CF Tab 1.02
Exposed-Fix EF Tab (Includes Self-Piercing Screws)	x2	 Custom lengths available on quantity orders. Call for specifics. 	EF Tab 1.94



PVKONCEAL™

You've made the investment in a metal roof and selected PVKIT® as your rail-less solar module mounting solution. Now you want your solar panel attachment to complement the beauty of your roof.

PVKONCEAL is a module skirt that conceals the upper or lower edge of the solar array and mechanical and electrical components underneath to give you an attractive, finished look. Clean aesthetic prefinished black with high-quality polyvinylidene fluoride (PVDF - the same substance used to coat metal roofs), use **PVKONCEAL** to match black module frames.

The module skirt is made of corrosion-resistant aluminum to last the life of your solar panels and your metal roof. The versatile solution can be oriented in two directions to cover module frames from 30-46 mm thick.

PVKONCEAL also helps to minimize the intrusion of small animals, debris and unwanted objects under the solar array. Give a clean aesthetic to your array to create a more appealing visual profile.

- Conceals the upper or lower edge of solar modules, and other components
- Accommodates modules 30-46 mm thick
- Corrosion-free aluminum and stainless steel screws with black prefinished cap
- Lightweight and easy to install
- Works with new or existing PVKIT[®] installations
- Prefinished in black PVDF to last the life of the roof



Balance of System Components

Complete your solar PV project



PV Module Cables/Cable Clips

Cable management clips to secure PV cables to module frame



ACC-F90-1
Cable clip for module double graduation



ACC-F2-90
Cable management clip;
for 1 or 2 USE-2 or PV cables



ACC-F1-270 Module cable clip double graduation



Ground Tray Clamps

The lug accepts size #14 AWG to 4 AWG ground cables

• Tin-plated aluminum for long-lasting corrosion resistance



Bonding Jumper

- Electrical connection of the columns (chains of modules) of the photovoltaic array
- Clip to the bottom of the module frame
- · Improve installation time

- · Get an easy path to land
- Compatible with PVKIT® railless mounting solution
- Recognized by UL 2703 and UL 46



MLPE Mount[™]

- Mount MLPE devices anywhere along aluminum module frames
- Designed for microinverters and optimizers under 3 lbs.
- 304 stainless steel body and fastener
- Tab design aligns w/ MLPE slot, easing installation
- Bonds MLPE to module frame
 UL 2703 approval pending





CanDuit securement clamps eliminate corrosive wood and rubber blocking. Contain piping and conduit in an easy, organized manner with no scratching, corrosion or other damage to your roof. CanDuit is compatible with S-5!'s non-penetrating clamps for standing seam roofs, S-5!'s waterproofed brackets for exposed-fastened roofs, and the GRIPPERFIX® utility system.

Nominal Trade Size		Adjustability Range*	Minor Box *MSRP US Dollars
#1	1/2" (13 mm)	.7994 (20 mm-24 mm)	2.44
#2	3/4" (19 mm)	.98 - 1.18 (25 mm-30 mm)	2.44
#3	1" (25 mm)	1.26 - 1.46 (32 mm-37 mm)	2.44
#4	1 1/4" (32 mm)	1.54 - 1.81 (40 mm-46 mm)	2.94
#5	1 1/2" (38 mm)	1.89 - 2.10 (48 mm-53 mm)	2.94
#6	53-59	2.10 - 2.32 (54 mm-59 mm)	2.94
#7	2" (50 mm)	2.3 - 2.6 (58 mm-66 mm)	2.94

Nominal Trade Size		Adjustability Range*	Minor Box *MSRP US Dollars
#8	67-77	2.64 - 3.00 (67 mm-76 mm)	4.41
#9	2 1/2" (64 mm)	2.9 - 3.15 (74 mm-80 mm)	4.41
#10	83-93	3.27 - 3.67 (83 mm-93 mm)	4.41
#11	3" (76 mm)	3.4 - 3.7 (86 mm-94 mm)	4.41
#12	94-104	3.7 - 4.10 (94 mm-104 mm)	4.41
#13	102-111	4.00 - 4.37 (102 mm-111 mm)	4.87
#14	4" (102 mm)	4.25 - 4.6 (108 mm-117 mm)	4.87











Cable Management and Grounding

The best practice is to mount wires to the underside of the module frames using wire clips, which prevents wires from touching the roof. Module preparation on the ground minimizes your time on the roof, resulting in a smooth installation and less net time on the job.

Once all components are bonded together, a ground-path chain is established and only one of the components in the chain needs a wire to connect the system to the ground (as each bonded metal component is then also grounded).

Building codes require any metallic item in your solar PV system not carrying power/electricity (like the metal module frames) to be grounded. The grounding path has to go to the system ground of your building for protection in case a wire carrying electricity breaks over time and electrifies some other metallic component.

These other metallic items must be electrically bonded to one another using an approved method to maintain a continuous grounding path. Some rail-less mounting solutions function as UL-listed bonding devices and make the bonded connection automatic.

PVKIT

- Rail-less solar mounting solution
- UL-listed for bonding

MLPE Mount

 Secure and bond microinverters and power optimizers

– to solar PV panel frames

PV Cable Clips

Secure PV cables to the module frame

Aluminum Ground Tray Clamp

- Accommodates ground wire size #14 AWG to 4 AWG
- Tin-plated aluminum for durable, long-lasting corrosion resistance
- Accommodates most popular styles of cable tray with inside or outside flange
- · Quick and easy installation
- · No drilling or special tools required
- Setscrew bonds clamp to the cable tray while another setscrew securely fastens the grounding conductor to the clamp providing vibration resistance and outstanding pull-out values
- Grounding green hardware as required in Section 8.4 of UL2703



Learn More About S-5!® Products!

To learn more about our products and to view installation instructions, visit www.S-5.com. You'll also find helpful videos, customer testimonials, distributor information and more.



Connect With Us!

Stay up-to-date with our newest product launches, blog content, latest project photos, trade show schedule and more!

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Where to Buy S-5!® Products!

Where can you buy S-5!? We sell our metal roof attachment solutions through a trusted network of independent distributors strategically located both domestically and internationally to serve your many project needs. Our dedicated distributors might specialize in one of our solutions or offer a wide assortment of our products. Visit us at www.s-5.com to find your nearest distributor.

Are you interested in becoming a distributor? Learn more by emailing distributorships@s-5.com.

"S-5! is the greatest thing to happen to metal roofing since Galvalume."

Angelo Borzillo - Co-Inventor of Galvalume® Coating Technology

S-5!® Warning!

Please use this product responsibly!

S-5! products are protected by multiple U.S. and foreign patents.

For more information

on S-5!'s patents and

trademarks, in addition to published

data regarding holding strength, visit www.s-5.com

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