WaveTherm

SOLIDWEDGE™
SW5-455-270-250-XXX-XX-30D

The SOLIDWEDGE™ is a breakthrough technology that allows conduction cooled modules to operate at higher thermal loads in higher temperature environments.

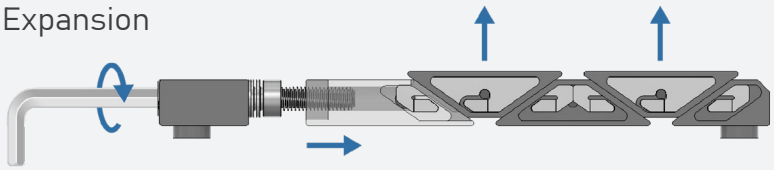
OPTIMIZED FOR VITA 48.2 AND cPCI

US PATENT
8,456,846

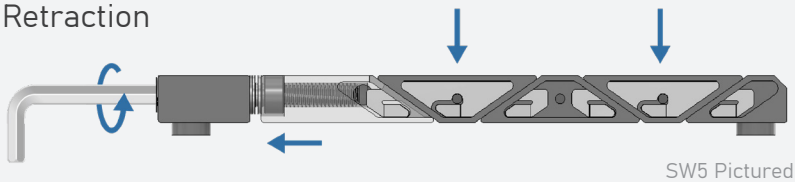
POSITIVE RETRACTION

Adjacent wedge segments are connected to prevent a stuck wedge lock. Turning the drive screw counterclockwise retracts the threaded drive wedge, pulling each of the connected segments down to their relaxed position.

Expansion



Retraction



SW5 Pictured

THERMAL RESISTANCE

0.11 °C/W Resistance per Card Edge

FEATURES

1000 lb Clamping Force
Mass: 16 g
Helicoil Insert
#6 Drive Screw
Zero Insertion Force
Low Profile Design
Self-Retracting Segments
Superior Plating Endurance
Optimized for VITA Specifications
Models Available for Download
Torque to 6-10 in-lbs

MATERIALS

Active Wedge Segments: 6061-T6511

Front Mounting Block: 7075-T7351

Screws, Nuts, Washers:
300 Series Stainless Steel
(passivated per AMS - 2700)

Helicoil Wire Insert: Nitronic 60

3D MODEL:

https://a360.co/3FRos0K

The SOLIDWEDGE™ design provides three times the thermal contact area of conventional wedge locks. The design also features a larger screw size, which creates higher contact forces between the heat frame and cold wall surfaces, significantly improving thermal performance.

The interconnected links of the SOLIDWEDGE™ feature positive retraction of all segments without the use of springs or other mechanisms.

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REV 20251027

PART NUMBER BUILDER

Required | Additional Specifications

SW5	-	455	-	270	-	250	-	XXX	-	XX	-	30D	-	YY	-	

Wedge:
- SW - Solidwedge
- 5 - Active Segments

Spacing:
- 4.55" Mounting Hole Spacing

Height: 0.270"

Width: 0.250"

Hex:
- 3/32" Hex Key - [332]
- M2.5 Hex Key - [M25]
- 7/64" Hex Key - [764]

Finish:
- Black Anodize per MIL-A-8625, Type II, Class 2 [BA]
- Hard Black Anodize per MIL-A-8625, Type III, Class 2 [BH]
- Chemical Film Clear [CC]
- Chemical Film Gold [CG]
- Electroless Nickel [EN]

See last page for more plating info

1: 30° Wedge Segments

2:
- [BV] - Belleville Washers
- [NL] - Nylok Lock Patch

3:

Recommended Part Number: SW5-455-270-250-332-BA-30D-BV

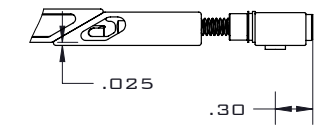
Mounting Details

UNLESS OTHERWISE SPECIFIED

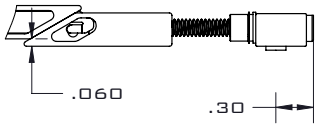
DIMENSIONS ARE IN INCHES.

TOLERANCES:
TWO PLACE DECIMAL: ±.01
THREE PLACE DECIMAL: ±.005

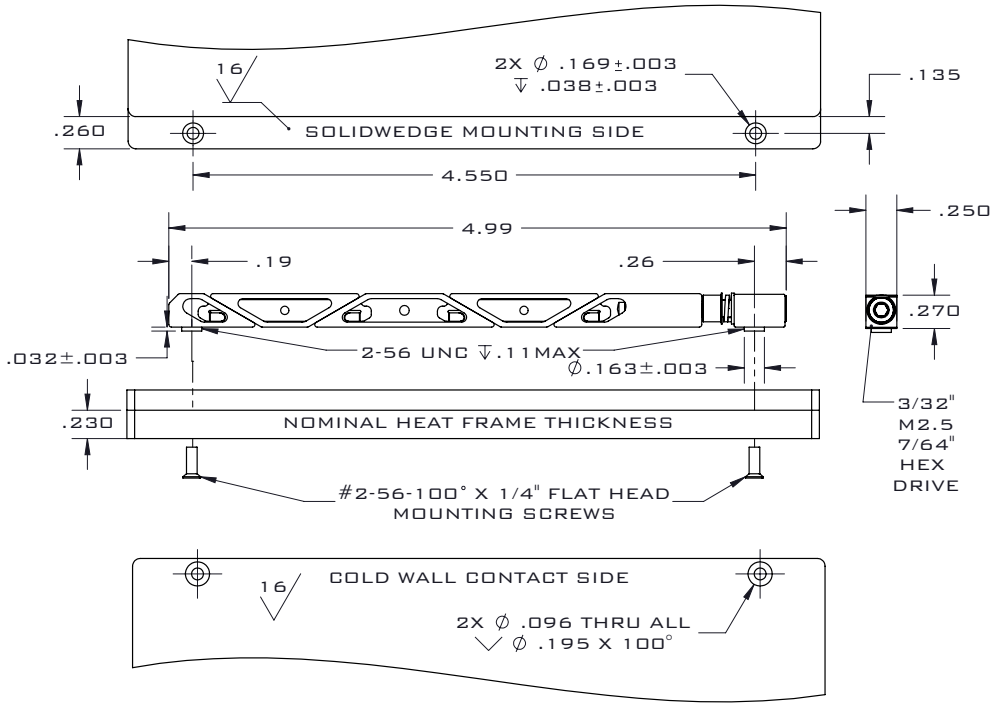
EXPANSION DETAILS



NOMINAL EXPANSION: .025"



MAXIMUM EXPANSION: .060"



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Plating and Material Specifications

Standard material specs for WaveTherm's SOLIDWEDGE™, injector/ejectors, and OpenCOTS products.

ASSEMBLY HARDWARE

300 Series Stainless Steel

Compliance	Specification	Use Case
✔ DFARS ✔ RoHS ✔ REACH	Passivated per AMS-2700	Standard material for screws, nuts, washers, and SOLIDWEDGE™ straps in WaveTherm product assemblies.

ALUMINUM PLATING

BLACK ANODIZED - BA

Compliance	Specification	Properties and Use Case
✔ RoHS ✔ REACH	MIL-A-8625 Type II Class 2	Provides reliable corrosion resistance and durability. Ideal for use in demanding applications requiring high insertion/extraction counts.

BLACK ANODIZED HARDENED - BH

Compliance	Specification	Properties and Use Case
✔ RoHS ✔ REACH	MIL-A-8625 Type III Class 2	Provides superior corrosion resistance and high durability. Ideal for use in harsh and rugged environments with high insertion/extraction counts.

CHEMICAL FILM CLEAR - CC

Compliance	Specification	Properties and Use Case
✔ RoHS ✔ REACH	MIL-DTL-5541 Type II Class 1A Clear	Provides good corrosion resistance and electrical conductivity with lower durability. Not ideal for high insertion/extraction counts.

CHEMICAL FILM GOLD - CG

Compliance	Specification			Properties and Use Case
✘ RoHS ✘ REACH	MIL-DTL-5541 Type I Class 1A Gold	or*	MIL-C-5541 Class 1A Gold	Provides good electrical conductivity with lower durability. Not suited for high insertion/extraction counts.

Images for demonstration only

ELECTROLESS NICKEL - EN

Compliance	Specification			Properties and Use Case
✔ RoHS ✔ REACH	MIL-C-26074 Class 4 Grade B	or*	AMS-C-26074 Class 4 Grade B	Provides excellent thermal performance and excellent electrical conductivity. Ideal for high-performance thermal management.

*varies based on plating vendor's certificates of conformance

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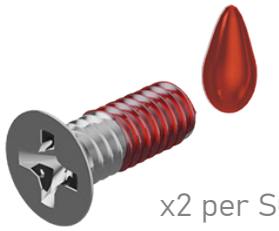
REV 20240823

SOLIDWEDGE™ INSTALLATION

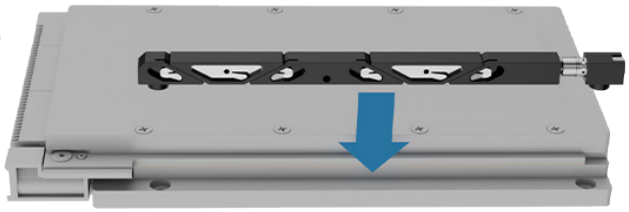
1



x2 per SOLIDWEDGE

Apply Loctite 2760 to #2-56-100° flat head mounting screws (not included)

2

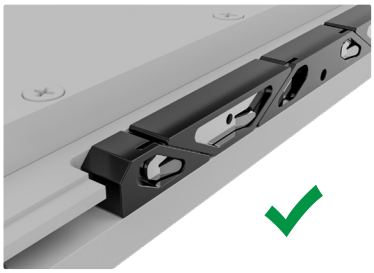


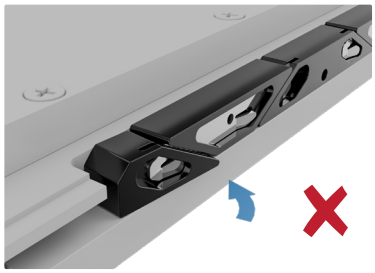
Align SOLIDWEDGE to mounting hole locations

3

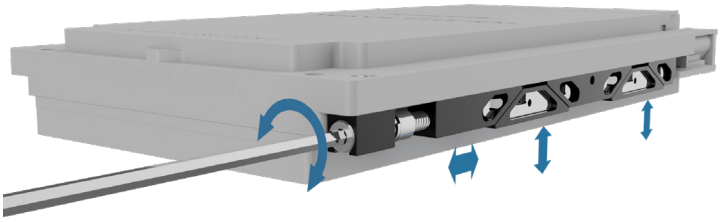
Install screws and torque to 2 in-lbs. Ensure mounting screw doesn't hit drive screw.
(reference mounting drawing for max thread engagement)

Check Install





Check alignment on both mounting blocks after torquing and press to straighten if necessary.



Ensure SOLIDWEDGE is functioning correctly by expanding and contracting with a hex key.

Warning:

SOLIDWEDGEs are not intended to be mounted directly to PCBs. The opposing force of the mounting blocks may result in board damage.

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