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A Guide to

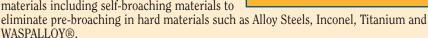
SPS Inserts and Studs





Solid Wall Staked Inserts

Features Provides excellent resistance to torque-out and pullout. Integral stakes are driven into the parent material to mechanically lock the insert in place and prevent rotation under high torsion loading and extreme vibration. Prevailing torque self-locking threads are integral to the insert or through the use of a Vespel washer incorporated into the insert. Locking stakes are available in a number of materials including self-broaching materials to



Applications Staked inserts can be used to enhance thread life and performance in soft materials such as Aluminum and Magnesium. They also provide increased torsion load capabilities. Ideal for electronics, aircraft engines, military defense systems and vehicles as well as overall thread repair, maintenance and salvage of expensive castings and forgings.

SPS high performing inserts and studs are manufactured to meet the demanding quality, performance and reliability requirements of today's applications. Every insert and stud is a reflection of SPS's advanced engineering, sophisticated manufacturing and strict quality control.

Central to SPS insert's success is the solid wall design. Both the inserts and studs provide excellent torque-out and pullout capabilities through integral locking stakes which are driven into the parent material.

Configuration	Materials	Sizes	Standards
Miniature	303 Stainless Steel	#2 through 1¼ inch	MS51830
Lightweight	304 Stainless Steel	4mm-24mm	MS51831
Heavy Duty	17-4 PH	internal thread	MS51832
Extra Heavy Duty	A286	ID Threads	NAS1394
Blind End	4140 Alloy Steel	UNJF	NAS1395
Solid Plug	Alloy 718	UNIC	

UNJC

Metric

Finishes Cadmium per QQ-P-416; Type II, Class 2; Type II Class 3 Passivate per AMS QQ-P-35 or ASTM A380 Silver per AMS 2410, AMS 2411, or QQ-S-365, Type I, Grade A Molybdenum Disulfide solid film lubricant coated per MIL-L-46010 on thread locking products Nickel per QQ-N-290

(INCONEL® 718)

Titanium

Locking Feature Metal, VESPEL® Performance MIL 145914

Staked Studs

Featu resist stake posit temp

Appli of tu appli asser nut c

tures Weight-saving and provides excellent stance to torque-out and pullout. Integral es are driven into parent material for a tive mechanical lock. Can withstand high peratures and loading. lications Staked studs are used in a number urbine engine and transmission/gear box ications. Widely used for component mbly that cannot accept a through bolt and combination.		
('	Ction donals	

Configuration Materials Shear 303 Stainless Lightweight A286 Heavy Duty 4140 Allov Steel Allov 718 (INCONEL® 718) 6A1-4V Titanium

Standards Sizes #10 through 1 inch NASM51833 5mm-12mm NASM51834

Nut End Threads UNJF UNJC Metric

Finishes Cadmium per QQP-416, Type II, Passivated per AMS-QQ-P-35 or ASTM A380 **Performance MIL-S-45915**

Swaged Inserts

Features Lightweight, high strength and space-saving by design are key features of the Swaged Insert. Minimum boss required for installation. Locking knurl design provides for ease of installation and high torque-out performance in soft and hard parent materials.

Applications Swaged inserts are utilized where boss area is minimal

to enhance thread life and performance. Used in electronics, aircraft engines and other applications requiring a lightweight, high performance solid wall insert.



Materials 4130 Alloy Steel A286 17-4 PH Alloy 718 (INCONEL® 718)

Sizes #4 through ½ inch 5mm-10mm

 5mm-10mm
 AS52760/63

 ID Threads
 AS52790/93

 UNJF
 NSA5054

 UNJC
 EN3236

 Metric
 AS3504

Standards

MIL-I-45932/1

Finishes Cadmium per QQ-P-416 Type II, Class 2; Type III, Class 3; Molybdenum Disulfide solid film lubricant per MIL-L-46010, Type I; Silver per AMS 2411 or QQ-S-365, Type II, Grade B

Locking Features Metal

Performance MIL-I-45932, T313B, EN3297

Ringlock Studs

Features Weight-saving and provides high resistance to torque-out and pullout when used in conjunction with serrated lock ring driven into parent material. Interference fit stud end threads provide excellent performance in high fatigue/high vibration applications.

Applications Utilized in soft and hard materials found in gear boxes, engines, pumps and vehicles in general.

ConfigurationShear
Lightweight
Heavy Duty

Materials
4130 Alloy Steel
303 Stainless
17-4 PH
Alloy 718
(INCONEL® 718)
6A1-4V Titanium



Sizes #10 through 1 inch 5mm-12mm Nut End Threads

UNJC UNJF Metric **Standards**MS51551
MS51992
MS52989

Finishes Cadmium, Per QQ-P-416 Type II, Class 3, Passivated per ASTM A380 **Performance** MIL-S-45909

Studs and inserts are available in many materials and configurations and can be easily installed with simple hand tools. SPS inserts and studs are manufactured to MS, MIL I, NAS, NASM, EN, NA, NSA Standards or specific customer requirements.

This brochure will familiarize you with the applications and features, as well as the various types and styles of threaded inserts and studs available from SPS. For additional information, questions or problems, please call our highly experienced insert engineering department at 714-850-3637.

