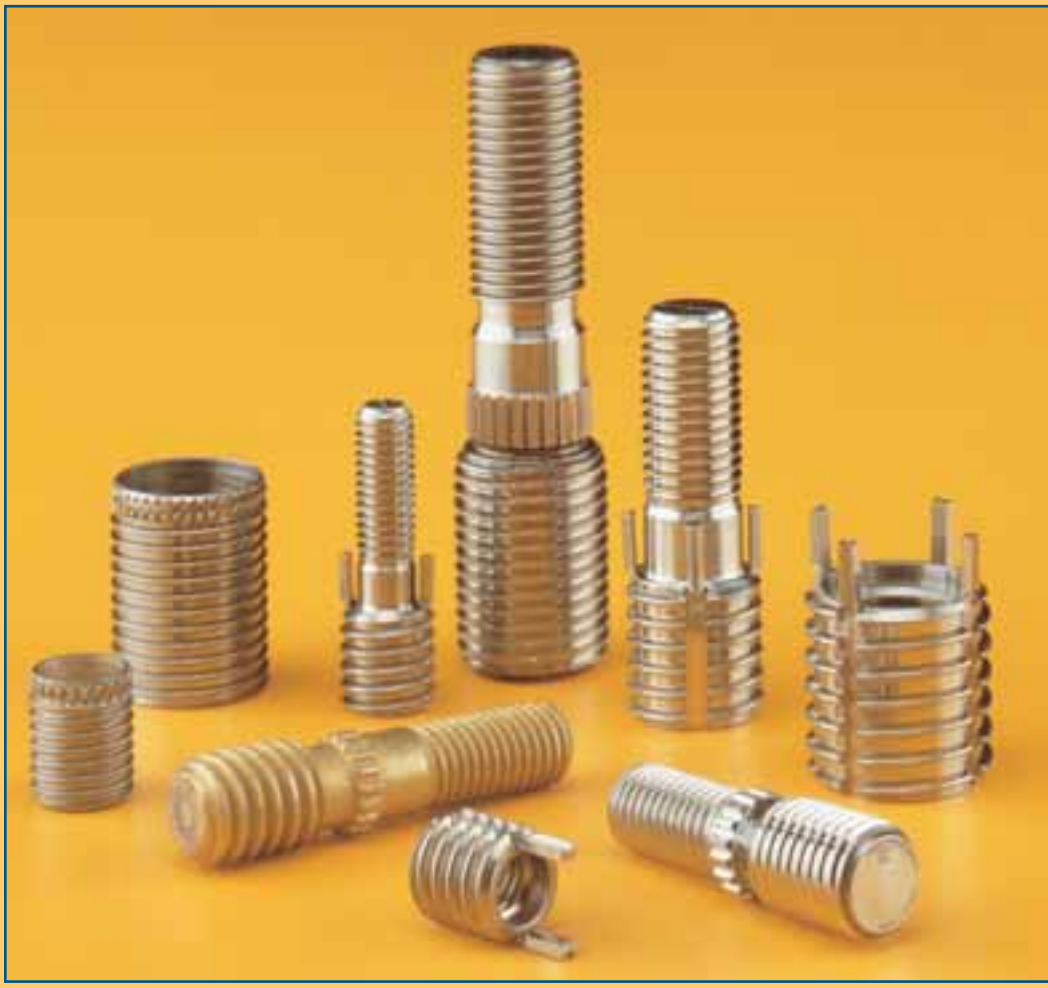
Fastener Tool & Supply

Proud distributor for
SPS Technologies

A Guide to

SPS Inserts and Studs



SPS TECHNOLOGIES
AEROSPACE FASTENERS GROUP

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.

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 eliminate pre-broaching in hard materials such as Alloy Steels, Inconel, Titanium and WASPALLOY®.

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.

Configuration
Miniature
Lightweight
Heavy Duty
Extra Heavy Duty
Blind End
Solid Plug

Materials
303 Stainless Steel
304 Stainless Steel
17-4 PH
A286
4140 Alloy Steel
Alloy 718
(INCONEL® 718)
Titanium

Sizes
#2 through 1¼ inch
4mm-24mm
internal thread

ID Threads
UNJF
UNJC
Metric

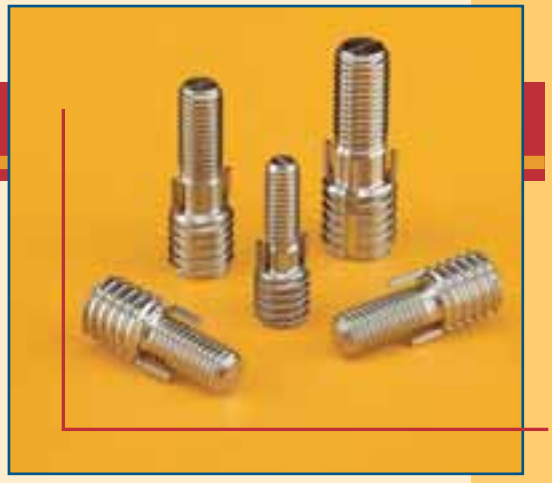
Standards
MS51830
MS51831
MS51832
NAS1394
NAS1395

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

Locking Feature Metal, VESPEL®

Performance MIL I45914

Staked Studs



Features Weight-saving and provides excellent resistance to torque-out and pullout. Integral stakes are driven into parent material for a positive mechanical lock. Can withstand high temperatures and loading.

Applications Staked studs are used in a number of turbine engine and transmission/gear box applications. Widely used for component assembly that cannot accept a through bolt and nut combination.

Configuration
Shear
Lightweight
Heavy Duty

Materials
303 Stainless
A286
4140 Alloy Steel
Alloy 718
(INCONEL® 718)
6A1-4V Titanium

Sizes
#10 through 1 inch
5mm-12mm

Nut End Threads
UNJF
UNJC
Metric

Standards
NASM51833
NASM51834

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.

Configuration
Reduced wall thickness insert, available in standard length and extra length

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

Sizes
#4 through ½ inch
5mm-10mm

ID Threads
UNJF
UNJC
Metric

Standards
MIL-I-45932/1
AS52760/63
AS52790/93
NSA5054
EN3236
AS3504

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.

Configuration
Shear
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.

SPS TECHNOLOGIES
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