



# AEROSPACE STANDARD

AS4847™

REV. B

Issued	1994-11
Reaffirmed	2012-11
Revised	2018-03

Superseding AS4847A

Shank Nuts, Captive Blind Fastener,  
Mating Retaining Flange,  
Design Standard For

## RATIONALE

Update to include AS6922 part standard, add reference for AS8879 threads, general editorial update.

### 1. SCOPE

This design standard provides information on the use of self-locking shank nuts, thread sizes .1640-36 through .3750-24, together with details of flange hole and abutment shoulder for their installation.

#### 1.1 Purpose

To standardize on the dimensional particulars of the attachment flange hole, abutment shoulder, and length of shank on the nut.

#### 1.2 Application

Primarily for aerospace propulsion system blind bolted applications where high temperature self-locking double hexagon nuts cannot be used.

#### 1.3 Description

A self-locking shank nut is held captive by flaring the shank into a countersink in the flanged component. The nut is prevented from turning during the assembly and removal of the bolt by means of a flat on the nut that abuts a machined shoulder on the flanged component part (see Figure 1).

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

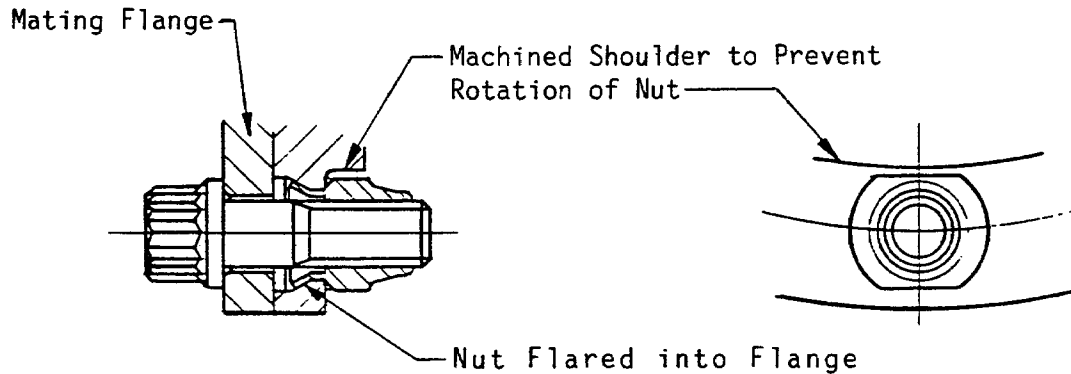
Copyright © 2018 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

**TO PLACE A DOCUMENT ORDER:** Tel: 877-606-7323 (inside USA and Canada)  
Tel: +1 724-776-4970 (outside USA)  
Fax: 724-776-0790  
Email: CustomerService@sae.org  
http://www.sae.org

SAE WEB ADDRESS:

**SAE values your input. To provide feedback on this  
Technical Report, please visit  
<http://standards.sae.org/AS4847B>**



**Figure 1 - Shank nut and bolt assembly**

## 2. REFERENCES

### 2.1 Applicable Documents

The following publications form a part of this document to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other publications shall be the issue in effect on the date of the purchase order. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

#### 2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA), [www.sae.org](http://www.sae.org).

ARP4848	Flaring (Swaging) and Removal of Shank Nuts
AS3534	Nut, Self-Locking, Shank, UNS S66286, Silver Plated on Thread Only, UNJ Thread
AS3535	Nut, Self-Locking, Shank, UNS N07001, Silver Plated, UNJ Thread
AS6922	Nut, Self-Locking, Shank, 1400°F, 180 KSI, Nickel Alloy (UNS N07001), Silver Plated Threads Only, UNJ Thread
AS7466	Bolt and Screws, Nickel Alloy, UNS N07718 Tensile Strength 185 ksi Fatigue Rated, Procurement Specification
AS7471	Bolt and Screws, Nickel Alloy, UNS N07001 Tensile Strength 165 ksi, Corrosion and Heat Resistant Procurement Specification
AS7477	Bolt and Screws, Steel, UNS S66286 Tensile Strength 130 ksi, Procurement Specification
AS8879	Screw Threads - UNJ Profile, Inch, Controlled Radius Root with Increased Minor Diameter

### 2.1.2 ASME Publications

Available from ASME, P.O. Box 2900, 22 Law Drive, Fairfield, NJ 07007-2900, Tel: 800-843-2763 (U.S./Canada), 001-800-843-2763 (Mexico), 973-882-1170 (outside North America), [www.asme.org](http://www.asme.org).

ANSI Y14.5M-1982 Dimensioning and Tolerancing

### 2.1.3 Industry Publications

Available from Battelle Headquarters, 505 King Avenue, Columbus, OH 43201, [www.mmpds.org](http://www.mmpds.org) or e-mail [bcompds@battelle.org](mailto:bcompds@battelle.org).

DOT/FAA/AR-MMPDS Metallic Materials Properties Development and Standardization (MMPDS)

## 2.2 Units

Unless otherwise specified herein, linear dimensions are in inches.

## 2.3 Dimensioning and Tolerancing

Is in accordance with ANSI Y14.5M-1982 (ASME Publication).

## 2.4 Threads

All threads referenced are UNJ threads in accordance with AS8879.

## 3. TECHNICAL REQUIREMENTS

### 3.1 Standard Shank Nuts

Table 1 lists the available SAE standard drawings for UNJ threaded shank nuts, range of sizes, type of material, and maximum operating temperature.

**Table 1 - SAE standard shank nuts**

AS Standard Number	Thread Size Range	Material	Plating	Maximum Operating Temperature
AS3534	.1640-36 thru .3750-24	A286	Silver on threads only	1200 °F
AS3535	.1640-36 thru .3750-24	Waspaloy	Silver	1400 °F
AS6922	.1640-36 thru .3750-24	Waspaloy	Silver on threads only	1400 °F

#### 3.1.1 Performance

Shank nuts have a locking feature that is subject to the same reusability performance tests as the standard double hexagon self-locking nuts. Performance test requirements are as follows:

- a. Twelve usage cycles at room temperature.
- b. Five usage cycles at maximum operating temperature.