SAE Aerospace
An SAE International Group

AEROSPACE STANDARD

SAE AS3507 REV. A

Issued 1993-02
Revised 1993-06
Reaffirmed 2004-07

Insert - Thin Wall, Self-Locking Short and Long Length Installation and Removal of

1. SCOPE:

1.1 This SAE Aerospace Standard (AS) provides minimum design, installation, and removal requirements for AS3504 and AS3505 thin wall inserts and is applicable when specified on engineering drawings or in procurement documents.

2. REFERENCES:

2.1 Applicable Documents:

The following publications form a part of this specification to the extent specified herein. The latest issue of SAE publications shall apply. The applicable issue of other documents shall be the issue in effect on the date of the purchase order.

2.1.1 SAE Publications: Available from SAE, 400 Commonwealth Drive, Warrendale, PA 15096-0001.

AS3504	Insert - Thin Wall, Short, Self-Locking, 1025 °F, Silver Plated, UNS N07718, UNJ Thread
AS3505	Insert - Thin Wall, Long, Self-Locking, 1025 °F, Silver Plated, UNS N07718, UNJ Thread
AS3508	Insert - Thin Wall, Short and Long Hole Preparation For

3. GENERAL DESIGN INFORMATION:

3.1 These self-locking inserts shall have knurled areas indented into parent material to prevent rotational movement during service and while assembling or removing the mating bolt.

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

3.2 The AS3504 short insert series are primarily designed for use in hard materials (e.g., steels, nickel, titanium, etc.) and the AS3505 long insert series are primarily designed for use in soft light alloy materials (e.g., aluminum, magnesium, etc.) at 1025 °F maximum operating temperature.

3.3 The AS3504 and AS3505 inserts are to be installed per this document into holes prepared per AS3508.

3.4 The dimensions are in inches.

4. DESIGN REQUIREMENTS:

4.1 Minimum data to be specified on engineering drawing or specification.

4.1.1 Boss diameter to be at least the minimum specified in AS3508.

4.1.2 Location of holes and thread sizes. If tap drill depth is not through, specify control depth dimension.

4.1.3 Applicable insert part number per AS3504 or AS3505.

4.1.4 If application requires a corrosion protective coating, so specify.

4.1.5 Install the insert per AS3507.

4.1.6 Inserts require special tooling for proper installation. Tooling may be obtained from the insert supplier.

5. INSTALLATION OF INSERT:

5.1 Apply a corrosion protective coating in the prepared hole if applicable (see 4.1.4).

5.2 Engage the hex of applicable drive wrench into insert and wrench insert into the hole to .010 to .020 depth as shown in Figure 1.

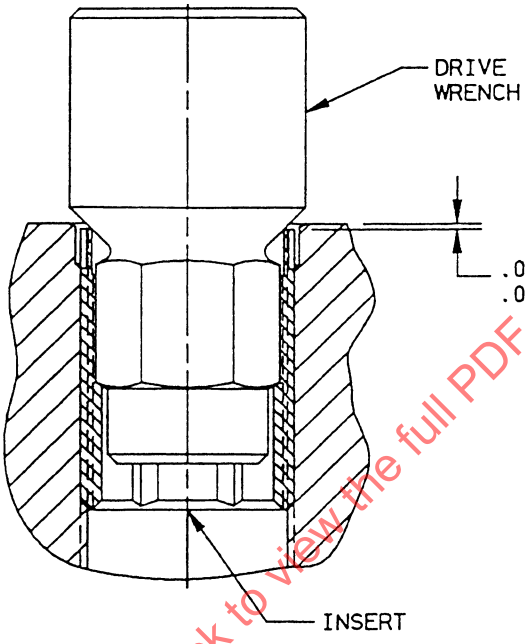

FIGURE 1

5.3 Position applicable swage tool into insert and apply a downward force sufficient to bottom the nylon stop against the parent material as shown in Figure 2. The insert should now be correctly swaged and locked.

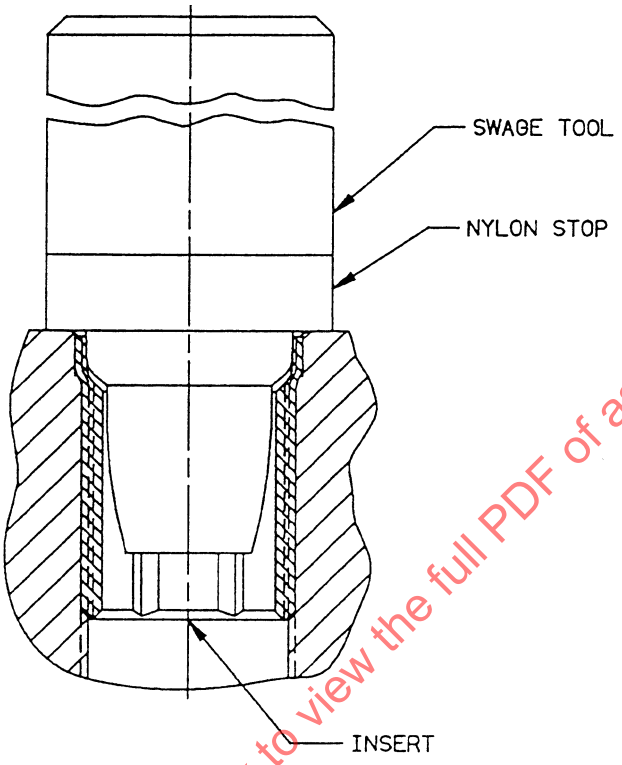

FIGURE 2

CAUTION:

a. Care must be taken when a serrated counterbore is used that the knurls around the insert line up with the counterbore serrations.
b. When swaging, ensure structure is sufficiently supported.

6. INSPECTION AND GAGING:

6.1 After Swage Inspection:

After the insert has been swaged and the nylon stop washer has contacted the parent material surface, the swaged insert shall conform to the dimensional requirements of Figure 3 and Table 1.

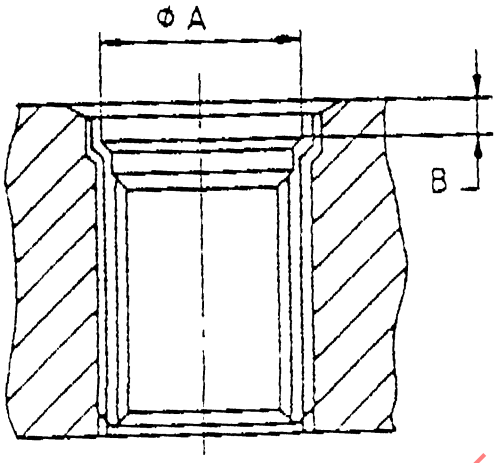

FIGURE 3

TABLE 1

Insert Number Short	Insert Number Long	øA Min	B ±.005
AS3504-01	AS3505-01	.211	.072
AS3504-02	AS3505-02	.280	.070
AS3504-03	AS3505-03	.345	.084
AS3504-04	AS3505-04	.408	.091
AS3504-05	AS3505-05	.470	.095
AS3504-06	AS3505-06	.536	.095

6.2 After Swage Gaging (Recommended Method):

After the insert has been swaged, use the appropriate gage per Figure 6. Insert the "Go" end ("G") of the gage into the counterbore of the insert. The shoulder of the gage must rest flush with the face of the parent material, this indicates that the insert has been successfully swaged, otherwise, the installation is not acceptable (see Figure 4). Now insert the "No Go" ("N") end of the gage into the counterbore. The shoulder must now be clear of the parent material surface to indicate the insert has not been driven too deep, otherwise, the installation is not acceptable (see Figure 5).

When both "Go" and "No Go" conditions are acceptable, the installation is correct and the insert is ready for use. If not, proceed to 6.5.

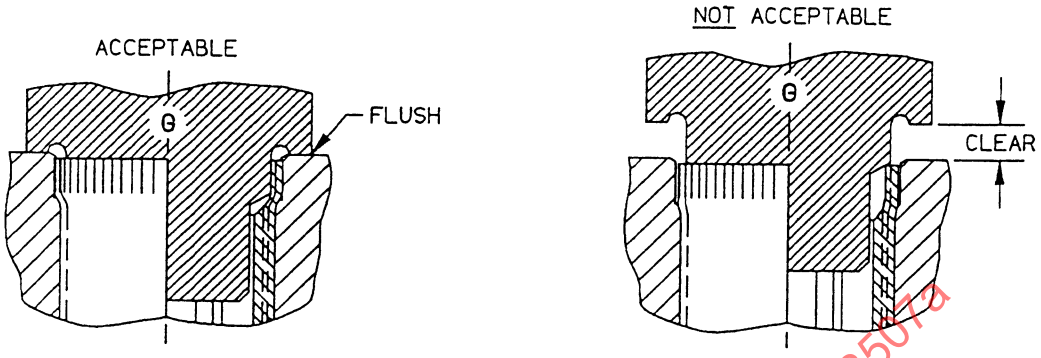

FIGURE 4

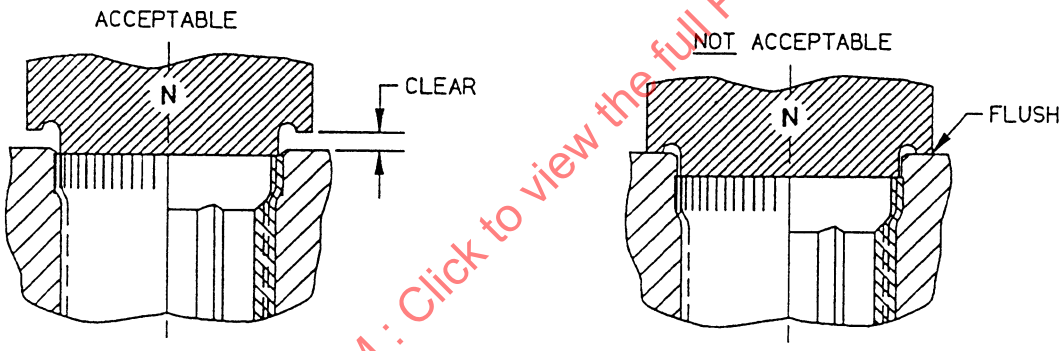

FIGURE 5

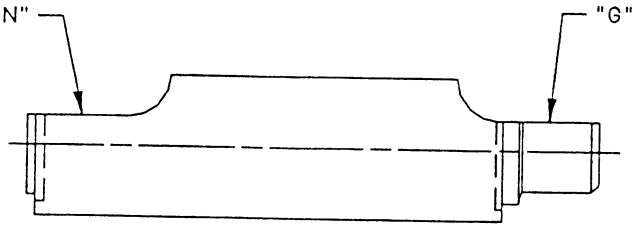

FIGURE 6