

FED. SUP CLASS
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NOTICE—When Government drawings, specifications, or other data are used for any purpose other than in connection with a definitely related Government procurement operation, the United States Government thereby incurs no responsibility, nor any obligation whatsoever, and the fact that the Government may have furnished, furnished, or in any way supplied the said drawings, specifications, or other data is not to be regarded by implication or otherwise as in any manner constituting the holder or any other person a contractor, or conveying any right or permission to manufacture, use, or sell any patented invention that may in any way be related thereto.

- (A) SHEET SPRING NUTS SHALL BE OF A TYPE CONFORMING TO THE REQUIREMENTS OF SPECIFICATION MIL-N-3337 AND SHALL BE SUBJECT TO THE FOLLOWING LIMITATIONS OF USAGE.
1. SHEET SPRING NUTS SHALL BE USED PRIMARILY WITH THE COARSE SERIES OF STANDARD AIRCRAFT MACHINE SCREWS OR WITH TYPE B SHEET METAL SCREWS. SHEET SPRING NUTS MAY BE USED WITH FINE THREAD MACHINE SCREWS, BOLTS, AND STUDS ONLY AS LOCKING ELEMENTS. AIRCRAFT SHEET METAL NUTS (TYPE II) SHALL BE USED WITH TYPE B SCREWS ONLY.
 2. SHEET SPRING NUTS SHALL NOT BE USED ON AN504 AND AN506 TAPPING SCREWS.
 3. SHEET SPRING NUTS SHALL NOT BE USED AS PRIMARY OR SECONDARY STRUCTURAL FASTENERS IN PILOTED OR REUSABLE PILOTLESS AIRCRAFT.
 - (A) 4. SHEET SPRING NUTS SHALL NOT BE USED ON CONTROLS SUCH AS ALLERON, ELEVATOR, RUDDER, FLAP, TRIM TAB, ENGINE CONTROLS OR WHERE FAILURE MAY ENDANGER SAFETY OF FLIGHT.
 5. SHEET SPRING NUTS SHALL NOT BE USED IN LOCATIONS OR ASSEMBLIES WHERE THE INITIAL TENSION, DUE TO TIGHTENING OF THE NUT ON THE SCREW, MAY BE RELIEVED BY EXTERNAL FORCES ON THE ASSEMBLY, OR BY THE THERMAL EXPANSION OR CONTRACTION OF THE MATERIAL.
 6. SHEET SPRING NUTS SHALL NOT BE EXPOSED ON EXTERIOR SURFACES OF AIRCRAFT.
 7. SHEAR LOADS IN SCREWS USED WITH SHEET SPRING NUTS SHALL NOT BE IN EXCESS OF 35% OF THE ULTIMATE SHEAR STRENGTH OF THE SCREWS FOR JOINTS OF SHEET THICKNESS 3/32 INCH AND LESS, AND 50% OF THE ULTIMATE SHEAR STRENGTH OF THE SCREW FOR JOINTS OF SHEET THICKNESSES BETWEEN 3/32 INCH AND 1/4 INCH.
 8. SHEET SPRING NUTS USED IN JOINTS WHICH ARE SUBJECT TO FORCES PERPENDICULAR TO THE PLANE OF THE NUT ARE DESIGNED TO WITHSTAND THE TENSILE YIELD LOADS LISTED IN SPECIFICATION MIL-N-3337 WITHOUT PERMANENT SET AND ALSO TO WITHSTAND THE ULTIMATE TENSILE LOADS LISTED IN SPECIFICATION MIL-N-3337 WITHOUT FAILURE.
 9. SHEET SPRING NUTS SHALL NOT BE USED ON SCREWS THAT ARE SO SHORT THAT THE NUT FAILS TO GRIP AT LEAST TWO FULL THREADS OF THE SCREW.
 10. FLAT TYPE SHEET SPRING NUTS SHALL BE USED ONLY IN LOCATIONS WHERE THE IMPRESSION AREA HAS COMPLETE BEARING SURFACE THEREBY TAKING FULL ADVANTAGE OF THE NUT SPRING TENSION. AS INSTALLED, THE FLAT TYPE SHEET SPRING NUT SHOULD ARCH OUTWARD.
 11. CARBON STEEL SHEET SPRING NUTS SHALL NOT BE USED WHERE TEMPERATURES EXCEED 500°F.
 12. CORROSION RESISTANT STEEL SHEET SPRING NUTS SHALL NOT BE USED WHERE TEMPERATURES EXCEED 600°F.
 13. CORROSION RESISTANT STEEL SHEET SPRING NUTS SHALL BE USED ONLY ON CORROSION RESISTANT STEEL SCREWS, BOLTS, OR STUDS.
 14. INSTALLATION TORQUES SHALL BE AS SPECIFIED IN TABLE I.

(A) TABLE I

RECOMMENDED INSTALLATION TORQUE - LB - IN. MAX		
SCREW SIZE	TYPE I NUTS WITH COARSE THREAD MACHINE SCREWS	TYPE II NUTS WITH SHEET METAL SCREWS
NO. 4	3	7
NO. 6	6	11
NO. 8	9	17
NO. 10	15	29
1/4	34	59

15. SHEET SPRING NUTS SHALL NOT BE USED AS COMPONENT PARTS OF FASTENERS WHICH ARE SUBJECT TO FREQUENT REMOVAL. FREQUENT REMOVAL, AS IT IS USED HERE, MEANS ROUTINE REMOVAL IN THE COURSE OF SERVICING THE EQUIPMENT, SUCH AS THE REMOVAL OF ACCESS DOORS FOR REFUELING PURPOSES.
16. SHEET SPRING NUTS SHALL NOT BE USED IN APPLICATIONS WHERE THE ROTATION OF A COMPONENT WOULD TEND TO LOOSEN THE SCREW OR NUT.
17. SHEET SPRING NUTS SHALL BE USED ON SCREWS INSERTED IN THE RECOMMENDED SCREW CLEARANCE HOLES SPECIFIED IN TABLE II. THIS LIMITATION DOES NOT APPLY TO SELF-RETAINING SHEET SPRING NUTS, SUCH AS "U" AND "J" TYPES WHERE PART OF THE NUT ANCHORS IN THE CLEARANCE HOLE.
18. SHEET SPRING NUTS SHALL NOT BE USED IN CURRENT CARRYING CIRCUITS. THEY MAY BE USED WITH ELECTRICAL BONDING JUMPERS.

(A) TABLE II

SCREW SIZE	HOLE DIA
NO. 4	1/8
NO. 6	5/32
NO. 8	3/16
NO. 10	7/32
1/4	9/32

THIS IS A DESIGN STANDARD. DO NOT USE AS A PART NUMBER.

This standard has been approved by the Department of the Army and is hereby approved for use by the Navy and Air Force. All other military activities are requested to comply with standard where suitable.

P.A. ASG Other Cust Navy-Air USAF	TITLE	MILITARY STANDARD
	NUT, SHEET SPRING, LIMITATIONS FOR USAGE ON AIRCRAFT	MS33538(ASG)
PROCUREMENT SPECIFICATION NONE	SUPERSEDES:	SHEET 1 OF 1

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