



WE954

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General Specifications, Assembly Information, Mechanical and Performance Requirements for ISO Metric Threaded Spring Nuts

Foreword:

Update 2007 March 1st

During the March 1st, 2007 update the only change was a cautionary note added to the Scope stating: Nuts of size M10 and larger are unsuitable for 'clamp load critical' applications.



**General Specifications, Assembly Information, Mechanical and Performance Requirements for ISO Metric Threaded Spring Nuts**

1. **SCOPE.** This standard covers material, heat treatment, and performance of ISO metric threaded spring nuts, in the range M4 to M12 inclusive.

NOTE: The design may vary between manufacturers provided all requirements of this standard are met. Nuts of size M10 and larger are unsuitable for 'clamp load critical' applications.

1.1 REFERENCES

ISO 261	-	General purpose metric screw threads - General plan.
ISO 683/18		Heat-treated steels, alloy steels and free cutting steels-Part 18: Wrought unalloyed steels in the normalized, or normalized and cold-drawn, or hot-rolled and cold-drawn condition.
ISO 898-2-		Mechanical properties of fasteners
ISO 965-2-		General purpose metric screw threads - Tolerances.
WSD-M1A283		(B37/B38/B39/B50/B52) Steel, cross reference standard parts.
W-HTX	-	Control of Heat Treating Processes and Auxiliary Equipment

2. MATERIAL AND HEAT TREATMENT

2.1 **MATERIAL.** The material shall be spring steel in accordance with WSD-M1A283-B37/B38/B39/B50/B52.

2.2 **HEAT TREATMENT.** Austemper to HV420 - 520, Process tests and controls per W-HTX.

2.3 **IDENTIFICATION.** Spring nuts shall be permanently and legibly marked with manufacturer's identification.

2.4 **THREADS** Threads in the extruded barrel shall be roll forming only and shall conform to the basic dimensions and Class 6H tolerances for internal metric screw threads in accordance with ISO 261 and ISO 965/2.

2.5 **RETAINING EXTRUSION.** Retainer formed width shall not exceed the minimum panel hole diameter as specified in Table 1. Retainer bottom leg clearance shall not exceed minimum panel thickness as specified in Table 1 and Figure 1.

2.6 **WORKMANSHIP.** Nuts shall be free from cracks, splits, burrs, loose scale and any defect(s) that affect fit, form, or function.

2.7 **PROPRIETARY VARIATIONS.** Design of retaining feature(s) and other dimensional details of parts produced by individual manufacturers may vary within envelope dimensions given, provided all requirements of this specification are met.

3. PERFORMANCE.

3.1 **INSTALLATION.** Spring nuts shall be designed to minimize required installation force to application panels. As applications vary considerably, maximum installation force specification shall be designated by individual spring nut design releases. Forces for installation shall be 55N maximum for 6mm and smaller spring nuts, and 90N maximum for 8mm through 12mm sizes on the following installation force test panel: Unless otherwise specified, installation force test panels shall be constructed of WSD-M1A283-B52 or equivalent steel, smooth (Ra 2.5µm) hardened to HV613-653, have a thickness of the maximum application panel, and have an edge radius per Table 2. Installation forces shall be applied at a travel rate of 4 ± 1 mm/second via a testing setup per Figure 2.