



WH 903

General Requirements and Physical Properties for Slotted Spring Pins - Heavy Series

1. SCOPE. This standard specifies the general requirements for gauging and physical properties for heavy series slotted spring pins intended for general use.

1.1 REFERENCES.

- ISO 3670 - Blanks for plug gauges and handles (taper lock and trilock) and ring gauges -Design and general dimensions.
ISO 6507/1 - Metallic materials - Hardness test - Vickers test.
ISO 6508 - Metallic materials - Hardness test - Rockwell test.
WSD-M1A283-B38/B39/ B50/B51/B52/B55 - Steel, cross references for standard parts.

2. GENERAL REQUIREMENTS.

- 2.1 DIAMETER. Pin diameters shall be inspected using Go/No Go ring gauges. Dimensions shown in Table 1. with the thickness as specified in ISO 3670.

Table 1.

Dimensions in mm

Pin Size	2	3	4	5	6	8	10
Go Gauge	2.4	3.5	4.6	5.6	6.7	8.8	10.8
	2.41	3.51	4.61	5.61	6.71	8.81	10.81
No Go Gauge	2.29	3.29	4.39	5.39	6.39	8.49	10.49
	2.3		4.4	5.4	6.4	8.5	10.5

- 2.2 STRAIGHTNESS. Straightness of pins shall be within limits necessary to permit pins to fall through a ring gauge by their own weight. Ring gauge dimensions are shown in Table 2.

Table 2.

Dimensions in mm

Pin Length	Gauge Length		Gauge Hole Dia. *	
	Max.	Min.	Min.	Max.
Up to and including 25	25.12	24.35	0.20	0.21
Over 25 to 50	50.15	49.35	0.40	0.42
Over 50	75.15	74.35	0.60	0.63

* Gauge Hole Diameter = Max. pin diameter plus indicated values.

3. MATERIAL AND HEAT TREATMENT.

- 3.1 MATERIAL. Steel to WSD-M1A283-B38/39/50/51/52/55.

- 3.2 HEAT TREATMENT. Harden and Temper HV420 - 520 or Austemper HV420 - 560.

4. PHYSICAL PROPERTIES.

- 4.1 HARDNESS TESTING. The hardness testing shall be performed in accordance with the following procedures:

Vickers Hardness to ISO 6507/1 and 2:10 kg load.

Rockwell Hardness to ISO 6508.

NOTE: In case of dispute the Vickers Hardness test is decisive for acceptance.



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- 4.2 PERFORMANCE. Pins shall be capable of withstanding the double shear loads specified in Table 3. The shear test shall be performed in a fixture in which the pin support member and the member for apply the load shall have holes with diameters as recommended for the pins and shall have a hardness of HV 700 minimum. The clearance between the supporting members and the load member shall no exceed 0.15mm and the shear plane shall be at least one pin diameter away from each end and at least two diameters apart. Pins too short to be tested in double shear shall be tested by shearing two pins simultaneously in single shear. Speed of testing shall not exceed 13mm/minute. Pins shall be tested to failure. The maximum load applied to the pin coincident with or prior to pin failure shall be recorded as the double shear strength of the pin. Pins tested for shear strength shall show a ductile shear without longitudinal cracks.

Table 3.

Dimensions in mm

Nominal Pin Size	2	3	4	5	6	8	10
Min. Double Shear Strength - kN	2.82	6.32	11.24	17.54	26.04	42.76	70.16