ASME B18.8.3M-1995
(Revision of ASME B18.8.3M-1994)

SPRING PINS — COILED TYPE (METRIC SERIES)

AN AMERICAN NATIONAL STANDARD

GOVERNMENT KEY WORDS
PIN, SPRING, TUBULAR, COILED
(STANDARD, HEAVY, AND LIGHT DUTY)

The American Society of Mechanical Engineers

The American Society of Mechanical Engineers

AN AMERICAN NATIONAL STANDARD

SPRING PINS — COILED TYPE (METRIC SERIES)

ASME B18.8.3M-1995
(Revision of ASME B18.8.3M-1994)

Date of Issuance: March 7, 1996

This Standard will be revised when the Society approves the issuance of a new edition. There will be no addenda or written interpretations of the requirements of this Standard issued to this edition.

This code or standard was developed under procedures accredited as meeting the criteria for American National Standards. The Consensus committee that approved the code or standard was balanced to assure that individuals from competent and concerned interests have had an opportunity to participate. The proposed code or standard was made available for public review and comment which provides an opportunity for additional public input from industry, academia, regulatory agencies, and the public-at-large.

ASME does not "approve," "rate," or "endorse" any item, construction, proprietary device, or activity.

ASME does not take any position with respect to the validity of any patent rights asserted in connection with any items mentioned in this document, and does not undertake to insure anyone utilizing a standard against liability for infringement of any applicable Letters Patent, nor assume any such liability. Users of a code or standard are expressly advised that determination of the validity of any such patent rights, and the risk of infringement of such rights, is entirely their own responsibility.

Participation by federal agency representative(s) or person(s) affiliated with industry is not to be interpreted as government or industry endorsement of this code or standard.

ASME accepts responsibility for only those interpretations issued in accordance with governing ASME procedures and policies which preclude the issuance of interpretations by individual volunteers.

FOREWORD

(This Foreword is not part of ASME B18.8.3M-1995.)

The need for a standard covering machine pins was recognized by industry as far back as March, 1926, when the Sectional Committee on the Standardization of Machine Pins was organized under the procedure of the American Standards Association (later the United States of America Standards Institute and as of October 6, 1969, the American National Standards Institute, Inc.), with the Society of Automotive Engineers and the American Society of Mechanical Engineers as joint sponsors.

For the next year or two, an effort was made via correspondence to develop a basis on which a standard for straight, taper, split, and dowel pins might be established. This correspondence developed a distinct difference of opinion on the part of the manufacturers and users of taper machine pins, which fact seemed to discourage the members of the committee from attempting standardization on any of the types of pins within its scope. The sponsor organizations made frequent efforts to revive this project through letters and the distribution of technical literature on this general subject, without avail.

In December, 1941, in its periodic review of standards projects for which the Society is sponsor, the ASME Standardization Committee decided that there was little hope for reviving this project and voted, subject to acceptance by the sponsors, to suggest to the ASA the transfer of this project to Sectional Committee B5 on the Standardization of Small Tools and Machine Tool Elements. The sponsors agreed and on July 7, 1942, the ASA sanctioned this action and Sectional Committee B43 was discharged and the project was officially transferred to Sectional Committee B5.

At its meeting in December, 1942, Sectional Committee B5 voted to enlarge its scope to include machine pins. Technical Committee No. 23 was subsequently established and charged with the responsibility for technical content of standards covering machine pins. This group held its first meeting on November 30, 1943, at which time a Subgroup on Correlation and Recommendations was appointed and it was voted to include clevis pins in addition to the other pin types already under consideration. Several drafts were prepared by the subgroup, distributed for critical comment to users, manufacturers, and general interests, and revised and resubmitted for comments. This action finally resulted in acceptance by Technical Committee 23 of a draft dated November, 1945, which was duplicated in printer's proof form, under a date of October, 1946, and distributed to the members of Sectional Committee B5 for letter ballot approval. Subsequent to the approval of the Sectional Committee, the proposal was next approved by the sponsor bodies, and presented to the American Standards Association for approval as an American Standard. This designation was granted on July 7, 1947.

Following the issuance of the standard, it became apparent that the table on cotter pins needed revision. Accordingly, in 1953 a proposed revision was submitted to the Sectional Committee. After attaining Sectional Committee and sponsor approval, this revision was approved by the American Standards Association on July 9, 1954 as ASA B5.20-1954.

In 1956 and 1957, in response to requests from industry, extensive changes were incorporated into a proposed revision. These included revisions to chamfer values and tolerances on straight pins and unhardened ground dowel pins; revisions to under head to hole, pin end dimensions, and hole size tolerances on clevis pins; addition of chisel point to cotter pin end

styles and the incorporation of coverage on grooved pins. Following Sectional Committee and sponsor approvals, this revision was adopted by the American Standards Association on March 25, 1958, as ASA B5.20-1958.

Late in 1961, Sectional Committee B5 suggested that Sectional Committee B18 on the standardization of bolts, nuts, rivets, screws, and similar fasteners assume jurisdiction over standards for pins. Recognizing that the bulk of the products covered in the ASA B5.20 standards were fastener rather than machine oriented, this recommendation was supported by the B18 Committee and officially endorsed by the sponsor organizations. Consequently, at the September 14, 1962 meeting of this Committee it was decreed that Subcommittee 23[1] should be formed to undertake a review and updating of the pin standard.

At the initial meeting of Subcommittee 23 held on June 3, 1964, it was decided to add standards for spring pins (inch series) and to establish seven subgroups, each of which would have technical responsibility for specific pin products, and to publish respective products under separate cover as projects were completed.

Over the ensuing several years, work by Subgroups 2, 3, 4, 5, and 6 culminated in the development of a proposal for revision of the standards covering taper, dowel, straight, and grooved pins and including coverage for spring pins (inch series) which was approved by letter ballot of Subcommittee 8 on February 24, 1977. Subsequent to acceptance by American National Standards Committee B18 and the sponsor organizations, this document was duly submitted to the American National Standards Institute for approval as an American National Standard. This was granted on April 5, 1978 and the standard was published under the designation ANSI B18.8.2, superseding in part the coverage provided in ASA B5.20-1958.

ANSI B18.8.2-1978 was reaffirmed in 1979, 1983, and 1988.

In response to increased user demand as well as to the federally endorsed metrication program, a metric standard was developed for spring pins, coiled type. This metric standard was reviewed by Technical Committee ISO/TC2 and resulted in the issuance on December 1, 1987 of ISO 8748, Spring Pin-Coiled Type, Heavy Duty; ISO 8750, Spring Pin-Coiled Type, Standard Duty; and ISO 8751, Spring Pin-Coiled Type, Light Duty.

At the December 8, 1988 meeting of Subcommittee 8, the proposed ASME/ANSI Spring Pin, Coiled Type, Metric Series standard was discussed and Subcommittee 8 proposed to ASME B18 that the proposed document be adopted. ASME B18.8.3M-1990 was approved by ANSI on September 14, 1990.

B18 Subcommittee 8 submitted proposed revisions to the 1990 standard in September of 1993. Following additional changes made to the proposal, the Board on Standardization approved this Standard on April 30, 1994. This Standard was approved by ANSI on November 14, 1994.

B18 Subcommittee 8 proposed revisions to the 1994 standard in early 1995 and these were approved by ANSI on December 19, 1995.

[1] As of April 1, 1966 Subcommittee 23 was redesignated Subcommittee 8.

ASME STANDARDS COMMITTEE B18
STANDARDIZATION OF BOLTS, NUTS, RIVETS, SCREWS, WASHERS, AND SIMILAR FASTENERS

(The following is the roster of the Committee at the time of approval of this Standard.)

OFFICERS

K. E. McCullough, *Chair*
D. A. Clever, *Vice Chair*
E. Schwartz, *Vice Chair*
A. M. Nickles, *Secretary*

COMMITTEE PERSONNEL

J. C. Akins, Safety Socket Screw Corp.
J. B. Belford, Lawson Products, Inc.
D. J. Broomfield, Illinois Tool Works Inc.
J. A. Buda, SPS Technologies
R. M. Byrne, Trade Association Management Inc.
D. A. Clever, Deere & Co.
A. P. Cockman, Ford Motor Co.
A. C. DiCola, Wrought Washer Manufacturing, Inc.
B. A. Dusina, Federal Screw Works
H. W. Ellison, Consultant
G. A. Gobb, Consultant
R. J. Harrington, Spirol International Corp.
A. Herskovitz, U.S. Army
A. C. Hood, ACH Technologies
F. W. Kern, Society of Automotive Engineers
W. H. Kopke, ITW Shakeproof Industrial Products
P. D. Korsmo, Consultant
J. G. Langenstein, Caterpillar Inc.
M. Levinson, ITW Shakeproof Industrial Products
J. B. Levy, Consultant
K. E. McCullough, Consultant
D. J. Miley, Caterpillar Inc.
A. M. Nickles, The American Society of Mechanical Engineers
M. D. Prasad, General Motors Corp.
W. Schevey, BGM Fastener Co., Inc.
E. Schwartz, Consultant
R. M. Serabin, Bowman Distribution
R. D. Strong, General Motors Corp.
J. F. Sullivan, Accurate Fasteners, Inc.
R. L. Tennis, Caterpillar Inc.
S. W. Vass, Lake Erie Screw Corp.
R. G. Weber, Fairfield University
C. J. Wilson, Industrial Fasteners Institute
R. B. Wright, Wright Tool Co.
J. G. Zeratsky, National Rivet & Manufacturing Co.

MEMBERS OF SUBCOMMITTEE 8 — MACHINE PINS

R. J. Harrington, *Chair*, Spirol International Corp.
G. L. Fechter, *Secretary*, The American Society of Mechanical Engineers
A. E. Barry, Standard Lock Washer Co.
J. Beshar, Groov-Pin Corp.
J. A. Buda, SPS Technologies
R. M. Byrne, Trade Association Management Inc.
D. A. Clever, Deere & Co.
M. J. Dagle, Spirol International Corp.
L. E. Hampel, Allied-Locke Industries Inc.
A. Herskovitz, U.S. Army
H. H. Koehl, Spirol International Corp.
W. H. Kopke, ITW Shakeproof Industrial Products
J. G. Langenstein, Caterpillar Inc.
M. Levinson, ITW Shakeproof Industrial Products
K. E. McCullough, Consultant
N. M. Sakatos, Vogelsang Corp.
T. Schaumburg, Driv-Lok
D. A. Thonus, Precise Products
C. J. Wilson, Industrial Fasteners Institute

CONTENTS

SPRING PINS — COILED TYPE (METRIC SERIES)

1 INTRODUCTORY NOTES

1.1 Scope

1.1.1 This Standard covers the dimensional and general data for coiled spring pins recognized as American National Standard, which are widely used in general industrial applications.

1.1.2 The inclusion of dimensional data in this Standard is not intended to imply that all products described are stock production sizes. Consumers are requested to consult with suppliers concerning the availability of product.

1.2 Description

Coiled spring pins shall have straight cylindrical sides with both ends chamfered. They are available in standard duty, heavy duty, and light duty to suit various design requirements. Coiled type spring pins have multiple walls, are spirally wrapped from strip stock to a diameter larger than basic, and are heat treated as necessary or cold worked. Upon installation, the pin diameters contract and the spring reaction against the sides of the hole tends to retain the pin. Dimensions of coiled type spring pins are given in Table 1.

1.3 Dimensions

All dimensions in this Standard are in millimeters unless otherwise noted.

1.4 Options

Options, where specified, shall be at the discretion of the supplier, unless otherwise agreed upon by the supplier and purchaser.

1.5 Terminology

For definitions of terms relating to fasteners or component features thereof used in this Standard, refer to ANSI B18.12, Glossary of Terms for Mechanical Fasteners.

1.6 Comparison With ISO 8748, ISO 8750, and ISO 8751

1.6.1 ISO 8748, ISO 8750, and ISO 8751 were prepared by Technical Committee ISO/TC2 and published in 1987.

1.6.2 ISO 8748 covers the heavy duty, ISO 8750 covers the standard duty, and ISO 8751 covers the light duty. This Standard includes all three duties.

1.6.3 At this time, all three ISO documents cover carbon steel only. This Standard covers the following materials:

(*a*) 1070–1095 carbon steel (UNS G10700 — UNS G10950)

(*b*) 6150 alloy steel (UNS H61500)

(*c*) 420 corrosion resistant steel (UNS S42000)

(*d*) 302 or 304 corrosion resistant steel (UNS S30200 or UNS S30400)

The ISO documents detail the chemical elements of the materials, while this Standard identifies the materials using the applicable UNS designation.

1.6.4 The pin hardness in the three ISO documents for carbon steel is listed as 420 to 520 HV. This Standard lists the hardness for carbon steel and alloy steel as 420 to 545 HV. This difference has been called to the attention of the proper ISO committee for resolution.

1.7 Referenced Standards

Copies of referenced ISO standards may be obtained from the American National Standards Institute, Inc., 11 West 42nd Street, New York, NY 10036.

Copies of referenced ANSI and ASME/ANSI standards may be obtained from ANSI at the address above or from The American Society of Mechanical Engineers, 22 Law Drive, Box 2900, Fairfield, NJ 07007-2900.

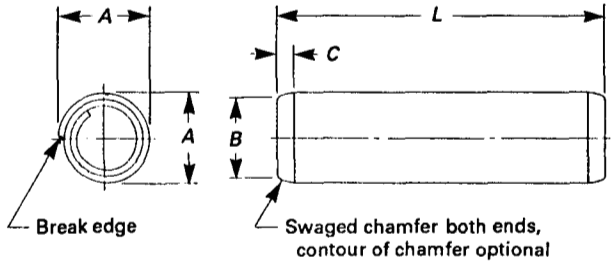


TABLE 1 DIMENSIONS OF COILED SPRING PINS

Nominal Pin Size	A						B	C			Minimum Double Shear, kN					
	Pin Diameter						Chamfer		Recommended Hole Size		Standard Duty		Heavy Duty		Light Duty	
											UNS Material Designation Number					
	Standard Duty		Heavy Duty		Light Duty		Diam.	Length			G10700 G10950 S42000	S30200 or S30400	G10700 G10950 S42000	S30200 or S30400	G10700 G10950 S42000	S30200 or S30400
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Ref.	Max.	Min.						
0.8	0.91	0.85	...	...	...	...	0.75	0.3	0.84	0.8	0.4[1]	0.3	...	...	...	...
1	1.15	1.05	...	...	...	...	0.95	0.3	1.04	1	0.6[1]	0.45	...	...	...	...
1.2	1.35	1.25	...	...	...	...	1.15	0.4	1.24	1.2	0.9[1]	0.65	...	...	...	...
1.5	1.73	1.62	1.71	1.61	1.75	1.62	1.4	0.5	1.6	1.5	1.45	1.05	1.9	1.45	0.8	0.65
2	2.25	2.13	2.21	2.11	2.28	2.13	1.9	0.7	2.1	2	2.5	1.9	3.5	2.5	1.5	1.1
2.5	2.78	2.65	2.73	2.62	2.82	2.65	2.4	0.7	2.6	2.5	3.9	2.9	5.5	3.8	2.3	1.8
3	3.3	3.15	3.25	3.12	3.35	3.15	2.9	0.9	3.1	3	5.5	4.2	7.6	5.7	3.3	2.5
3.5	3.84	3.67	3.79	3.64	3.87	3.67	3.4	1	3.62	3.5	7.5	5.7	10	7.6	4.5	3.4
4	4.4	4.2	4.3	4.15	4.45	4.2	3.9	1.1	4.12	4	9.6	7.6	13.5	10	5.7	4.4
5	5.5	5.25	5.35	5.15	5.5	5.2	4.85	1.3	5.12	5	15	11.5	20	15.5	9	7
6	6.5	6.25	6.4	6.18	6.55	6.25	5.85	1.5	6.12	6	22	16.8	30	23	13	10
8	8.63	8.3	8.55	8.25	8.65	8.3	7.8	2	8.15	8	39	30	53	41	23	18
10	10.8	10.35	10.65	10.3	...	...	9.75	2.5	10.15	10	62	48	84	64	...	...
12	12.85	12.4	12.75	12.35	...	...	11.7	3.0	12.18	12	89	67	120	91	...	...
14	14.95	14.45	14.85	14.4	...	...	13.6	3.5	14.18	14	120[2]	...	165[2]	...	...	...
16	17	16.45	16.9	16.4	...	...	15.6	4	16.18	16	155[2]	...	210[2]	...	...	...
20	21.1	20.4	21	20.4	...	...	19.6	4.5	20.21	20	250[2]	...	340[2]	...	...	...

NOTES:
(1) Sizes 0.8 through 1.2 are not available in 1070–1095 carbon steel (UNS G10700 — UNS G10950).
(2) Sizes 14 and larger are produced from 6150 alloy steel (UNS H61500), not UNS G10700 — UNS G10950.

Copies of referenced ASTM standards may be obtained from The American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

Copies of referenced Federal or MIL specifications may be obtained from the Standardization Documents Order Desk, Building #4, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

2 GENERAL DATA FOR SPRING PINS — COILED TYPE

2.1 Diameter

The nature of the manufacturing process and the overlapping coil cause the outer periphery of coiled type spring pins to deviate from true round. Thus, conformance with specified minimum and maximum diameter limits shall be determined by the use of go and no go plain ring gages, respectively. The length of the holes in the ring gages shall not be greater than 3 mm. The full length of the pin shall pass freely through the go ring gage. Neither end of the pin shall enter the no go ring gage beyond the length of the chamfer on the pin.

2.2 Ends

Both ends of coiled spring pins shall be chamfered as shown and specified in Table 1.

2.3 Length

2.3.1 Measurement. The length of coiled spring pins shall be measured overall from end to end, parallel to the longitudinal axis of the pin.

2.3.2 Tolerance on Length. The tolerance of the length of coiled spring pins shall be as given in the table below.

Nominal Pin Length	Length Tolerance
Up to 10 mm, incl.	±0.25 mm
Over 10 to 50 mm, incl.	±0.5 mm
Over 50 mm	±0.75 mm

2.3.3 Practical Lengths. The diameter–length combinations in which coiled spring pins are normally available are included in Table 2. Suppliers should be consulted concerning the availability of other diameter–length combinations or various duties and materials.

2.3.4 Straightness. The straightness over the length of coiled spring pins shall be such that pins will pass freely through a ring gage whose length is as tabulated in Table 3 for the respective pin lengths. The diameter of the ring gage holes shall be as specified in Table 3.

2.4 Materials

2.4.1 Coiled spring pins are normally made from 1070–1095 carbon steel (UNS G10700 — UNS G10950), 6150 alloy steel (UNS H61500), 420 corrosion resistant steel (UNS S42000), or 302 or 304 corrosion resistant steel (UNS S30200 or UNS S30400) as designated in Table 1.

2.4.2 Pins shall be heat treated as necessary or cold worked to meet the mechanical and performance requirements as set forth in this Standard.

2.4.3 Where required for specific applications, pins may also be made from other materials having chemical and mechanical properties as agreed upon between the purchaser and supplier.

2.5 Hardness

The hardness of the coiled spring pins shall conform to the Vickers hardness readings, or equivalent, as listed in Table 4.

2.5.1 Specimen Preparation. Specimen for hardness testing needs to be properly mounted to avoid false readings due to pin flexibility.

2.6 Performance Requirements

Coiled spring pins shall be capable of withstanding the minimum double shear loads specified in Table 1 when tested in accordance with the double shear testing procedure specified in Appendix A.

2.7 Finishes

Unless otherwise specified, steel coiled spring pins shall be furnished with a natural (as processed) oiled finish, unplated or uncoated. Where corrosion preventive treatment is required, steel pins may be cadmium or zinc plated or phosphate coated as agreed upon between the supplier and the purchaser. When a corrosion preventive finish applied to carbon steel or alloy steel spring pins is such that it might produce hydrogen embrittlement, the pins shall be baked for a suitable time at a temperature that will obviate such embrittlement in conformance with the pertinent plating or coating specification. Baking shall be accomplished as soon as possible following the plating or coating operation,

inasmuch as delay is detrimental to achievement of the desired results.

Other coatings can be supplied as agreed upon between the purchaser and manufacturer.

All tolerances shall apply prior to the application of a plating or coating.

Corrosion resistant steel coiled spring pins shall be furnished passivated in accordance with Federal Specification QQ-P-35.

2.8 Workmanship

Coiled spring pins shall be free of burrs, loose scale, seams, notches, sharp edges and corners, and other irregularities or detrimental defects which could affect their serviceability.

2.9 Designation

Coiled spring pins shall be designated by the following data, in the sequence shown: product name (noun first), series, nominal diameter, nominal length, duty, material, and finish. See example below.

EXAMPLES:

(1) Pin, Coiled Spring, Metric Series, 6 × 30 Standard Duty, Steel, Plain Finish

(2) Pin, Coiled Spring, Metric Series, 6 × 30 Standard Duty, 302 or 304 Corrosion Resistant Steel, Passivated

2.10 Quality Assurance Provisions

Unless otherwise specified by the purchaser, acceptability of coiled spring pins shall be based on conformance with the requirements specified in ASME/ANSI B18.18.1M, Inspection and Quality Assurance for General Purpose Fasteners.

TABLE 2 PRACTICAL SIZES AND LENGTHS OF COILED SPRING PINS

Nominal Length	Nominal Size																
	0.8	1	1.2	1.5	2	2.5	3	3.5	4	5	6	8	10	12	14	16	20
4	×	×	×	×	×												
5	×	×	×	×	×	×											
6	×	×	×	×	×	×	×	×									
8	×	×	×	×	×	×	×	×	×								
10	×	×	×	×	×	×	×	×	×	×							
12	×	×	×	×	×	×	×	×	×	×	×						
14	×	×	×	×	×	×	×	×	×	×	×						
16	×	×	×	×	×	×	×	×	×	×	×	×					
18				×	×	×	×	×	×	×	×	×					
20				×	×	×	×	×	×	×	×	×	×				
22				×	×	×	×	×	×	×	×	×	×				
24				×	×	×	×	×	×	×	×	×	×	×			
26				×	×	×	×	×	×	×	×	×	×	×			
28					×	×	×	×	×	×	×	×	×	×	×		
30					×	×	×	×	×	×	×	×	×	×	×		
32					×	×	×	×	×	×	×	×	×	×	×		
35					×	×	×	×	×	×	×	×	×	×	×	×	
40					×	×	×	×	×	×	×	×	×	×	×	×	
45						×	×	×	×	×	×	×	×	×	×	×	×
50							×	×	×	×	×	×	×	×	×	×	×
55									×	×	×	×	×	×	×	×	×
60									×	×	×	×	×	×	×	×	×
65											×	×	×	×	×	×	×
70											×	×	×	×	×	×	×
75											×	×	×	×	×	×	×
80												×	×	×	×	×	×
85												×	×	×	×	×	×
90												×	×	×	×	×	×
95												×	×	×	×	×	×
100												×	×	×	×	×	×
120												×	×	×	×	×	×
140														×	×	×	×
160														×	×	×	×
180															×	×	×
200															×	×	×

GENERAL NOTE:
Pins indicated above are normally available in sizes and materials for which double shear strengths are specified in Table 1. Suppliers should be consulted relative to availability of other sizes, lengths, or materials.

TABLE 3 STRAIGHTNESS LIMITS

Pin Length (Metric Pins)	Gage Length		Gage Hole Diameter	
	Max.	Min.	Maximum Specified Pin Diam., Plus	Minimum Specified Pin Diam., Plus
Up to 24 mm, incl.	25.15 mm	24.85 mm	0.20 mm	0.18 mm
Over 24 to 50 mm, incl.	50.15 mm	49.85 mm	0.34 mm	0.30 mm
Over 50 mm	75.15 mm	74.85 mm	0.48 mm	0.42 mm

TABLE 4 HARDNESS

Material	Vickers Hardness
1070–1095 carbon steel (UNS G10700 — UNS G10950)	420–545
6150 alloy steel (UNS H61500)	420–545
420 corrosion resistant steel (UNS S42000)	460–560
302 corrosion resistant steel (UNS S30200)	Work hardened
304 corrosion resistant steel (UNS S30400)	Work hardened

APPENDIX A
DOUBLE SHEAR TESTING OF PINS

(This Appendix is not part of ASME B18.8.3M-1995, and is included here for information purposes only.)

The following specifications and procedures are set forth to establish uniformity in the testing of pins in double shear. The shear test shall be performed in a suitable fixture in which the pin support members and the member for applying the shear load have holes for the pin of a diameter conforming to the nominal hole size (tolerance H8) and a hardness of 700 HV or equivalent. The clearance between the supporting member and loading member shall not exceed 0.15 mm and means for keeping the loading member aligned perpendicular to the axis of the pin shall be provided. The rate of load application shall not exceed 13 mm/min.

The shear planes shall be located at a minimum distance equivalent to one pin diameter from each end of the pin and at least two diameters apart. Pins of lengths that are too short to be tested in double shear shall be evaluated by testing two pins simultaneously in single shear.

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. Coiled spring pins which have been sheared at loads exceeding the minimum specified shall exhibit a ductile fracture at the shear plane with no longitudinal cracks. This test method is covered in ISO 8749.

Two typical pin shear test fixtures are illustrated in Fig. A1.

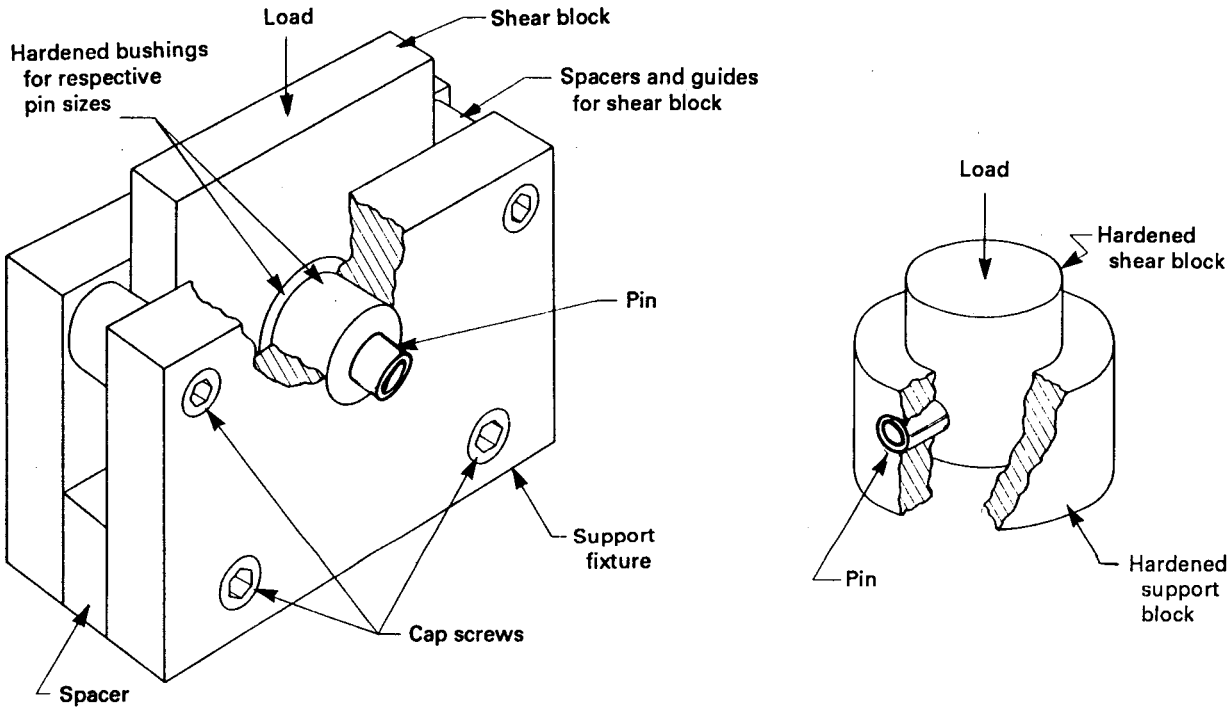


FIG. A1 TYPICAL PIN SHEAR TEST FIXTURES

APPENDIX B

GOVERNMENT STANDARD ITEMS AND PART NUMBERING SYSTEM FOR PIN, SPRING, TUBULAR, COILED (STANDARD, HEAVY, AND LIGHT DUTY) METRIC

(This Appendix is not part of ASME B18.8.3M-1995, and is included here for information purposes only.)

NOTE: The government encourages the general use of this Appendix to achieve maximum parts standardization.

This Appendix, together with ASME B18.8.3M, establishes the standard items for government application, selected from the possible variations of items within the scope of the Standard, and provides a part numbering system for identification and application in engineering documents for pins, spring, tubular, coiled (standard, heavy, and light duty) metric products.

(*a*) *Variations.* The following variations shall be standard:

(*1*) document identifier — ASME standard number less decimal points;

(*2*) type designation — standard, heavy duty, or light duty — as coded in Part Numbering System;

(*3*) diameter/length combinations — as specified in Table;

(*4*) material — carbon steel, alloy steel, or corrosion-resistant steel — as coded in Part Numbering System;

(*5*) finish — cadmium plating, zinc coating, or phosphate coating as coded in Part Numbering System.

(*b*) *Part Number.* The part number shall consist of the following element codes in the order shown:

(*1*) document identifier — ASME standard number less decimal points

(*2*) nominal diameter

(*3*) nominal length

(*4*) pin type (standard, heavy duty, or light duty)

(*5*) material

(*6*) finish

NOTE: The Part Numbering System may also be used for nonstandard diameter and length combinations.

(*c*) *Packaging.* Packaging shall be in accordance with ASTM D 3951 and cite country of origin.

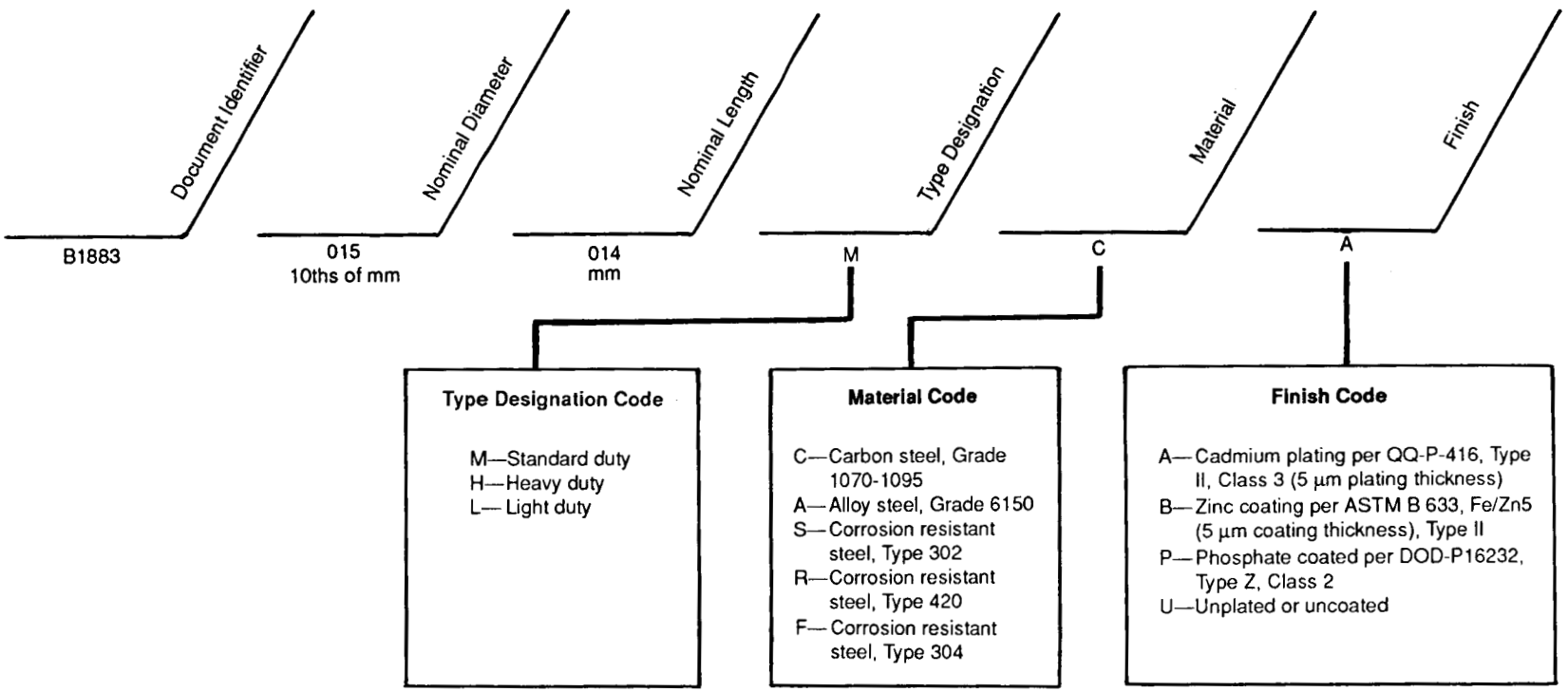
TABLE B1 METRIC COILED TUBULAR SPRING PINS – STANDARD SIZES FOR GOVERNMENT USE

Nominal Length	Nominal Size																
	0.8	1	1.2	1.5	2	2.5	3	3.5	4	5	6	8	10	12	14	16	20
4																	
5																	
6																	
8																	
10																	
12																	
14																	
16																	
18																	
20																	
22																	
24																	
26																	
28																	
30																	
32																	
35																	
40																	
45																	
50																	
55																	
60																	
65																	
70																	
75																	
80																	
85																	
90																	
95																	
100																	
120																	
140																	
160																	
180																	
200																	

STANDARD DIAMETER AND LENGTH COMBINATION

PART NUMBERING SYSTEM COVERING STANDARD ITEMS FOR GOVERNMENT USE

NOTE: THE GOVERNMENT ENCOURAGES THE GENERAL USE OF THIS SYSTEM TO ACHIEVE MAXIMUM PARTS STANDARDIZATION.



EXAMPLE: B1883015014MCA indicates a pin, spring, tubular, coiled (metric), 1.5 mm in diameter, 14 mm in length, standard, made of carbon steel, and cadmium plated.

AMERICAN NATIONAL STANDARDS FOR BOLTS, NUTS, RIVETS, SCREWS, WASHERS, AND SIMILAR FASTENERS

Small Solid Rivets ..... B18.1.1-1972(R1995)
Large Rivets ..... B18.1.2-1972(R1995)
Metric Small Solid Rivets ..... B18.1.3M-1983(R1995)
Square and Hex Bolts and Screws — Inch Series ..... B18.2.1-1981(R1992)
Square and Hex Nuts (Inch Series) ..... B18.2.2-1987(R1993)
Metric Hex Cap Screws ..... B18.2.3.1M-1979(R1995)
Metric Formed Hex Screws ..... B18.2.3.2M-1979(R1995)
Metric Heavy Hex Screws ..... B18.2.3.3M-1979(R1995)
Metric Hex Flange Screws ..... B18.2.3.4M-1984(R1995)
Metric Hex Bolts ..... B18.2.3.5M-1979(R1995)
Metric Heavy Hex Bolts ..... B18.2.3.6M-1979(R1995)
Metric Heavy Hex Structural Bolts ..... B18.2.3.7M-1979(R1995)
Metric Hex Lag Screws ..... B18.2.3.8M-1981(R1991)
Metric Heavy Hex Flange Screws ..... B18.2.3.9M-1984(R1995)
Metric Hex Nuts, Style 1 ..... B18.2.4.1M-1979(R1995)
Metric Hex Nuts, Style 2 ..... B18.2.4.2M-1979(R1995)
Metric Slotted Hex Nuts ..... B18.2.4.3M-1979(R1995)
Metric Hex Flange Nuts ..... B18.2.4.4M-1982(R1993)
Metric Hex Jam Nuts ..... B18.2.4.5M-1979(R1990)
Metric Heavy Hex Nuts ..... B18.2.4.6M-1979(R1990)
Socket Cap, Shoulder and Set Screws — Inch Series ..... B18.3-1986(R1995)
Socket Head Cap Screws (Metric Series) ..... B18.3.1M-1986(R1993)
Metric Series Hexagon Keys and Bits ..... B18.3.2M-1979(R1990)
Hexagon Socket Head Shoulder Screws (Metric Series) ..... B18.3.3M-1986(R1993)
Hexagon Socket Button Head Cap Screws (Metric Series) ..... B18.3.4M-1986(R1993)
Hexagon Socket Flat Countersunk Head Cap Screws (Metric Series) ..... B18.3.5M-1986(R1993)
Metric Series Socket Set Screws ..... B18.3.6M-1986(R1993)
Round Head Bolts (Inch Series) B18.5-1990
Metric Round Head Short Square Neck Bolts ..... B18.5.2.1M-1981(R1995)
Metric Round Head Square Neck Bolts B18.5.2.2M-1982
Round Head Square Neck Bolts With Large Head (Metric Series) B18.5.2.3M-1990
Wood Screws (Inch Series) ..... B18.6.1-1981(R1991)
Slotted Head Cap Screws, Square Head Set Screws, and Slotted Headless Set Screws ..... B18.6.2-1972(R1993)
Machine Screws and Machine Screw Nuts ..... B18.6.3-1972(R1983)
Thread Forming and Thread Cutting Tapping Screws and Metallic Drive Screws (Inch Series) ..... B18.6.4-1981(R1991)
Metric Thread Forming and Thread Cutting Tapping Screws ..... B18.6.5M-1986(R1993)
Metric Machine Screws ..... B18.6.7M-1985(R1993)
General Purpose Semi-Tubular Rivets, Full Tubular Rivets, Split Rivets and Rivet Caps ..... B18.7-1972(R1992)
Metric General Purpose Semi-Tubular Rivets ..... B18.7.1M-1984(R1992)
Clevis Pins and Cotter Pins (Inch Series) B18.8.1-1994
Taper Pins, Dowel Pins, Straight Pins, Grooved Pins, and Spring Pins (Inch Series) B18.8.2-1995
Spring Pins — Coiled Type (Metric Series) B18.8.3M-1995
Spring Pins — Slotted (Metric Series) B18.8.4M-1994
Machine Dowel Pins — Hardened Ground (Metric Series) B18.8.5M-1994
Cotter Pins (Metric Series) B18.8.6M-1995
Headless Clevis Pins (Metric Series) B18.8.7M-1994
Headed Clevis Pins (Metric Series) B18.8.8M-1994
Plow Bolts ..... B18.9-1958(R1995)
Track Bolts and Nuts ..... B18.10-1982(R1992)
Miniature Screws ..... B18.11-1961(R1992)
Glossary of Terms for Mechanical Fasteners ..... B18.12-1962(R1991)
Screw and Washer Assemblies — Sems (Inch Series) ..... B18.13-1987(R1993)
Screw and Washer Assemblies — Sems (Metric Series) B18.13.1M-1991
Forged Eyebolts ..... B18.15-1985(R1995)

Mechanical and Performance Requirements for Prevailing-Torque Type Steel Metric Hex Nuts and Hex Flange Nuts ..... B18.16.1M-1979(R1995)
Torque-Tension Test Requirements for Prevailing-Torque Type Steel Metric Hex Nuts and Hex Flange Nuts ..... B18.16.2M-1979(R1995)
Dimensional Requirements for Prevailing-Torque Type Steel Metric Hex Nuts and Hex Flange Nuts ..... B18.16.3M-1982(R1993)
Wing Nuts, Thumb Screws, and Wing Screws ..... B18.17-1968(R1983)
Inspection and Quality Assurance for General Purpose Fasteners ..... B18.18.1M-1987(R1993)
Inspection and Quality Assurance for High-Volume Machine Assembly Fasteners ..... B18.18.2M-1987(R1993)
Inspection and Quality Assurance for Special Purpose Fasteners ..... B18.18.3M-1987(R1993)
Inspection and Quality Assurance for Fasteners for Highly Specialized Engineered Applications ..... B18.18.4M-1987(R1993)
Lock Washers (Inch Series) B18.21.1-1994
Lock Washers (Metric Series) B18.21.2M-1994
Metric Plain Washers ..... B18.22M-1981(R1990)
Plain Washers ..... B18.22.1-1965(R1990)
Helical Coil Screw Thread Inserts (Inch Series) B18.29.1-1993

The ASME Publications Catalog shows a complete list of all the Standards published by the Society. For a complimentary catalog, or the latest information about our publications, call 1-800-THE-ASME (1-800-843-2763).


ISBN 0-7918-2355-5
9 780791 823552
M14295