ASME B18.7-2007

[Revision of ANSI B18.7-1972 (R2005)]

General Purpose Semi-Tubular Rivets, Full Tubular Rivets, Split Rivets, and End Caps

AN AMERICAN NATIONAL STANDARD

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Three Park Avenue • New York, NY 10016

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

ASME issues written replies to inquiries concerning interpretations of technical aspects of this document. Periodically, certain actions of the ASME B18 Committee may be published as Cases. Cases and interpretations are published on the ASME Web site under the Committee Pages at http://cstools.asme.org as they are issued.

The American Society of Mechanical Engineers
Three Park Avenue, New York, NY 10016-5990

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FOREWORD

American National Standards Committee B18 for the standardization of bolts, screws, nuts, rivets, and similar fasteners was organized in March 1922 as Sectional Committee B18 under the aegis of the American Engineering Standards Committee (later the American Standards Association, then 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.

Subcommittee 11 was established in 1953 and charged with the responsibility for the development of standards for semi-tubular rivets, full tubular rivets, and split rivets. In the years between 1953 and 1962, meetings of the subcommittee were held and numerous attempts were made to arrive at suitable standards. However, problems stemming from the wide variety of these products and their applications continually prevented the Subcommittee from reaching a consensus.

At a meeting held on October 2, 1962, the Subcommittee agreed to limit the scope of the standard to only those products suitable for general purpose applications. Thorough cooperation between the user and manufacturing members culminated in the development of a draft proposal which was approved by letter ballot of Subcommittee 11 on August 6, 1964. The proposed standard was circulated for letter ballot approval of the B18 Committee on May 13, 1965. Following favorable action by this committee and the sponsor organizations, the proposal was approved by the United States of America Standards Institute and designated a USA Standard on September 2, 1966.

The previous edition incorporated the addition of nominal sizes to dimensional tables and standard designations for the various products. Also, numerous editorial refinements were developed and approved by Subcommittee 7 in April 1970. Subsequent to letter ballot approval by the B18 Committee and the sponsors, this proposal was submitted to the American National Standards Institute for designation as an American National Standard. This was granted on July 28, 1972 and last reaffirmed without change in 2005.

This edition was balloted and approved by the B18 Standards Committee and B18 Subcommittee 2 on December 28, 2006. The proposal was submitted to the American National Standards Institute (ANSI) and designated as an American National Standard on March 7, 2007.

ASME B18 COMMITTEE
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.)

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CORRESPONDENCE WITH THE B18 COMMITTEE

General. ASME Standards are developed and maintained with the intent to represent the consensus of concerned interests. As such, users of this Standard may interact with the Committee by requesting interpretations, proposing revisions, and attending Committee meetings. Correspondence should be addressed to:

Secretary, B18 Standards Committee
The American Society of Mechanical Engineers
Three Park Avenue
New York, NY 10016-5990

Proposing Revisions. Revisions are made periodically to the Standard to incorporate changes that appear necessary or desirable, as demonstrated by the experience gained from the application of the Standard. Approved revisions will be published periodically.

The Committee welcomes proposals for revisions to this Standard. Such proposals should be as specific as possible, citing the paragraph number(s), the proposed wording, and a detailed description of the reasons for the proposal, including any pertinent documentation.

Proposing a Case. Cases may be issued for the purpose of providing alternative rules when justified, to permit early implementation of an approved revision when the need is urgent, or to provide rules not covered by existing provisions. Cases are effective immediately upon ASME approval and shall be posted on the ASME Committee Web page.

Requests for Cases shall provide a Statement of Need and Background Information. The request should identify the standard, the paragraph, figure or table number(s), and be written as a Question and Reply in the same format as existing Cases. Requests for Cases should also indicate the applicable edition(s) of the standard to which the proposed Case applies.

Interpretations. Upon request, the B18 Standards Committee will render an interpretation of any requirement of the Standard. Interpretations can only be rendered in response to a written request sent to the Secretary of the B18 Standards Committee.

The request for an interpretation should be clear and unambiguous. It is further recommended that the inquirer submit his/her request in the following format:

Subject:	Cite the applicable paragraph number(s) and the topic of the inquiry.
Edition:	Cite the applicable edition of the Standard for which the interpretation is being requested.
Question:	Phrase the question as a request for an interpretation of a specific requirement suitable for general understanding and use, not as a request for an approval of a proprietary design or situation. The inquirer may also include any plans or drawings, which are necessary to explain the question; however, they should not contain proprietary names or information.

Requests that are not in this format may be rewritten in the appropriate format by the Committee prior to being answered, which may inadvertently change the intent of the original request.

ASME procedures provide for reconsideration of any interpretation when or if additional information that might affect an interpretation is available. Further, persons aggrieved by an interpretation may appeal to the cognizant ASME Committee or Subcommittee. ASME does not "approve," "certify," "rate," or "endorse" any item, construction, proprietary device, or activity.

Attending Committee Meetings. The B18 Standards Committee regularly holds meetings, which are open to the public. Persons wishing to attend any meeting should contact the Secretary of the B18 Standards Committee.

GENERAL PURPOSE SEMI-TUBULAR RIVETS, FULL TUBULAR RIVETS, SPLIT RIVETS, AND END CAPS

1 GENERAL

1.1 Scope

1.1.1 This Standard covers complete general and dimensional data for semi-tubular rivets, full tubular rivets, split rivets, and rivet caps for use in general purpose applications. The products described are suitable for joining metallic and nonmetallic materials or combinations thereof. It should be noted that while these products are suitable for general purpose assembly, other special purpose types are available to satisfy particular requirements and manufacturers should be consulted for special requirements.

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

1.2 Types of Rivets

The rivets specified in this Standard are included in paras. 1.2.1 through 1.2.3

1.2.1 Semi-Tubular Rivets. The semi-tubular rivets are available in the head styles listed below and shall have straight holes, Type S, normally produced by extruding or drilling; or tapered holes, Type T, normally produced by swaging.

(a) oval head semi-tubular rivets (see Table 1)
(b) truss head semi-tubular rivets (see Table 2)
(c) 150-deg flat countersunk head semi-tubular rivets (see Table 3)
(d) 150-deg large flat countersunk head semi-tubular rivets (see Table 4)
(e) 120-deg flat countersunk head semi-tubular rivets (see Table 5)

1.2.2 Full Tubular Rivets. The full tubular rivets are available in the head styles listed below and shall normally have straight holes produced by extruding or drilling.

(a) oval head full tubular rivets (see Table 6)
(b) truss head full tubular rivets (see Table 6)
(c) flat-countersunk head full tubular rivets (see Table 6)

1.2.3 Split Rivets. The split rivets covered herein consist of the following head styles:

(a) oval head split rivets (see Table 7)
(b) flat countersunk head split rivets (see Table 8)

1.3 Rivet Caps

The rivet caps for use with split and full tubular rivets are given in Table 9.

1.4 Options

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

1.5 Dimensions

(a) Unless otherwise stated, all dimensions in this Standard are in inches and apply before any coating. When plating or coating is specified, the finished product dimensions shall be as agreed upon by the supplier and purchaser.
(b) Symbols specifying geometric characteristics are in accordance with ASME Y14.5M.

1.6 Terminology

For definitions of terms relating to fasteners or component features thereof used in this Standard, refer to ASME B18.12.

1.7 Related Standards

It should be noted that standards for small solid rivets, large rivets, and other related products are published under separate covers as listed on the last page of this Standard.

1.8 References

The following is a list of publications referenced in this Standard. Unless otherwise specified, the referenced standard shall be the most recent issue at the time of order placement.

ASME B18.12, Glossary of Terms for Mechanical Fasteners
ASME B18.24, Part Identifying Number (PIN) Code System Standard for B18 Fastener Products
ASME Y14.5M, Dimensioning and Tolerancing

Publisher: The American Society of Mechanical Engineers (ASME), Three Park Avenue, New York, NY 10016-5990; Order Department: 22 Law Drive, P.O. Box 2300, Fairfield, NJ 07007-2300

ASTM E 527 Standard Practice for Numbering Metals and Alloys (UNS)

Publisher: ASTM International (ASTM), 100 Barr Harbor Drive, P.O. Box C700, West Conshohocken, PA, 19428-2959

2 GENERAL DATA FOR SEMI-TUBULAR AND FULL TUBULAR RIVETS

2.1 Heads

2.1.1 Because the heads of these rivets are not machined or trimmed, the circumference may be somewhat irregular and edges may be rounded or flat.

2.1.2 The bearing surface of oval and truss head rivets shall be perpendicular to the axis of the rivet shank within 2 deg.

2.1.3 The rivet head and the rivet shank shall be concentric within 11% of the nominal shank diameter on the basis of full indicator movement (FIM).

2.2 Underhead Fillets

Oval and truss head rivets shall be furnished with a definite fillet under the head; however, the radius of fillet shall not exceed the values specified in the dimensional tables.

2.3 Length

2.3.1 Measurement. The length of oval and truss head rivets shall be measured, parallel to the axis of rivet, from the underside of the head to the extreme end. The length of flat countersunk head rivets shall be measured, parallel to the axis of rivet, from the juncture of the conical underside of head with rivet shank to the extreme end, except for the 120-deg flat countersunk head rivets in Table 5, on which the length shall be measured from the top of the head to the extreme end.

2.3.2 Length Increments. The minimum lengths and increments applicable to longer lengths shall be as specified in Table 10.

2.3.3 Tolerance on Length. The tolerance on length of rivets shall be as specified in Table 10.

2.4 Hole Depth

2.4.1 Hole depth shall be measured parallel to the axis of the rivet from the extreme end of the rivet to the intersection of the diameter of the hole with the contour at the bottom of the hole. The hole depth to the extreme point on the bottom contour of the hole shall not be greater than the shank length of the rivet.

2.4.2 The tolerance on hole depth shall be the same as the tolerance on length of the rivet.

2.5 Material

Semi-tubular and full tubular rivets shall be made from low carbon steel (0.1% carbon or less) (UNS G10050), commercial yellow brass (UNS C26800), copper (UNS C14700), aluminum (UNS A95052), or other materials as agreed upon between the manufacturer and the purchaser.

2.6 Finish

Unless otherwise specified, rivets shall be supplied with a natural (as processed) finish, unplated or uncoated. Rivets may be furnished plain (bare metal) or with a protective coating (electrodeposited plating and/or chemical conversion coating) as specified by the user. All rivets shall be provided with a supplementary lubricant if necessary to meet the stated performance requirements without galling. The lubricant shall be clean and dry to the touch, shall not be irritating to normal skin, nor emit an unpleasant odor during rivet assembly. The performance of rivets that are furnished with a protective coating shall not deteriorate when the rivets are stored indoors for a period of 6 months. In cases where rivets are given a protective coating or are cleaned following delivery to the purchaser, the rivet producer shall not be held responsible for failure of the rivet to meet dimensional, mechanical, or performance requirements traceable to plating, coating, or cleaning practice. Lubrication (e.g., waxing) may improve the setting of the rivet.

NOTE: Nickel and chromium finishes are very hard and, therefore, will have a tendency to flake off the end of the rivet when it is set by the user.

2.7 Workmanship

The rivets shall be free from all burrs, seams, or other imperfections that might impair their usability. Rivets are not machined or trimmed, and unevenness of the tubular end shall not be such that the usability of the rivet shall be impaired, when clinched with properly aligned, appropriate setting tools.

2.8 Designation

2.8.1 Semi-tubular and full tubular rivets shall be designated by the following data in the sequence shown:

(a) nominal size
(b) length (fraction or decimal equivalent)
(c) product name
(d) material
(e) protective finish, if required

EXAMPLES:

(1) ASME B18.7, 146 × 500 Semi-Tubular Rivet, Oval Head, Steel, Zinc-Plated

(2) ASME B18.7, 188 × $\frac{3}{4}$ Full Tubular Rivet, Flat, Countersunk Head, Steel

2.8.2 For a recommended part identifying number (PIN) system for rivets, see ASME B18.24.

3 GENERAL DATA FOR SPLIT RIVETS

3.1 Heads

3.1.1 Because the heads of these rivets are not machined or trimmed, the circumference may be somewhat irregular and edges may be rounded or flat.

3.1.2 The bearing surface of oval head rivets shall be perpendicular to the axis of the rivet shank within 2 deg.

3.1.3 The rivet head and the rivet shank shall be concentric within 11% of the nominal shank diameter on the basis of full indicator movement (FIM).

3.2 Underhead Fillets

Oval head rivets shall be furnished with a definite fillet under the head; however, the radius of fillet shall not exceed the values specified in the dimensional tables.

3.3 Length

3.3.1 Measurement. The length of oval head split rivets shall be measured, parallel to the axis of rivet, from the underside of the head to the extreme end. The length of flat, countersunk head split rivets shall be measured, parallel to the axis of rivet, from the top of the head to the extreme end.

3.3.2 Tolerance on Length. The tolerance on length of rivets shall be as tabulated below:

Size	Tolerance on Length
0.092	±0.010
0.125	±0.015
0.152	±0.015
0.190	±0.015

3.4 Slots

3.4.1 The slots in split rivets are produced by either punching or broaching the rivet blanks (i.e., the method of manufacture imparting definite characteristics to the contour of the slot and rivet performance).

3.4.1.1 Basically, the broached or sawed slot rivet is used for piercing hard materials including light gages of sheet metal.

3.4.1.2 The punched slot rivet is satisfactory for use in lighter materials.

3.4.2 In selecting or specifying a split rivet, it is recommended that the manufacturer be consulted for the type best suited for the application. Accordingly, the slot widths, slot depths, and contour shall vary with the manufacturers' standards and recommendations.

3.5 Material

Split rivets shall be made from low carbon steel (UNS G10050), commercial yellow brass (UNS C26800), copper (UNS C14700), aluminum (UNS A95052), or other materials as agreed upon between the manufacturer and the purchaser.

3.6 Finish

Unless otherwise specified, rivets shall be supplied with a natural (as processed) finish, unplated or uncoated. Rivets may be furnished plain (bare metal) or with a protective coating (electrodeposited plating and/or chemical conversion coating) as specified by the user. All rivets shall be provided with a supplementary lubricant if necessary to meet the stated performance requirements without galling. The lubricant shall be clean and dry to the touch, shall not be irritating to normal skin, nor emit an unpleasant odor during rivet assembly. The performance of rivets that are furnished with a protective coating shall not deteriorate when the rivets are stored indoors for a period of 6 months. In cases where rivets are given a protective coating or are cleaned following delivery to the purchaser, the rivet producer shall not be held responsible for failure of the rivet to meet dimensional, mechanical, or performance requirements traceable to plating, coating, or cleaning practice. Lubrication (e.g., waxing) may improve the setting of the rivet.

NOTE: Nickel and chromium finishes are very hard, and therefore will have a tendency to flake off the end of the rivet when it is set by the user.

3.7 Workmanship

The rivets shall be free from all burrs, seams, or other imperfections that might impair their usability. Rivets are not machined or trimmed, and unevenness of the end shall not be such that the usability of the rivet shall be impaired, when clinched with properly aligned, appropriate setting tools.

3.8 Designation

Split rivets shall be designated by the following data in the sequence shown:

(a) nominal size
(b) length (fraction or decimal equivalent)
(c) product name
(d) material
(e) protective finish, if required

EXAMPLES:

(1) ASME B18.7, 125 × 750 Split Rivet, Oval Head, Steel, Nickel Plated
(2) ASME B18.7, 152 × $\frac{7}{8}$ Split Rivet, Large Flat Countersunk Head, Brass

For a recommended PIN system for rivets, see ASME B18.24.

4 GENERAL DATA FOR RIVET CAPS

4.1 General

The rivet caps contained herein are for use with full tubular rivets and split rivets. The design and dimensional detail of the internal construction of rivet caps

vary with each manufacturer depending on the tooling developed for production of the cap and the rivet setting machine requirements.

The maximum heights, internal contours, and hole diameters shall be such as to permit any of the various cap diameters specified to be used with the respective rivet shank diameters to suit the requirements of particular applications.

4.2 Material

Rivet caps shall be made from steel, brass, or other materials as agreed upon between the manufacturer and the purchaser.

4.3 Finish

Unless otherwise specified, rivet caps shall be supplied with a natural (as processed) finish, unplated or uncoated. Many different types of plating or protective coatings may be specified. The following types are in common use:

(a) zinc
(b) nickel
(c) brass
(d) chromium
(e) copper
(f) anodized aluminum
(g) tin

Caution should be used in selecting a finish to ensure that it is compatible with the use of the end products.

4.4 Workmanship

Rivet caps shall be free from burrs, cracks, and all other defects that might affect their usability.

4.5 Designation

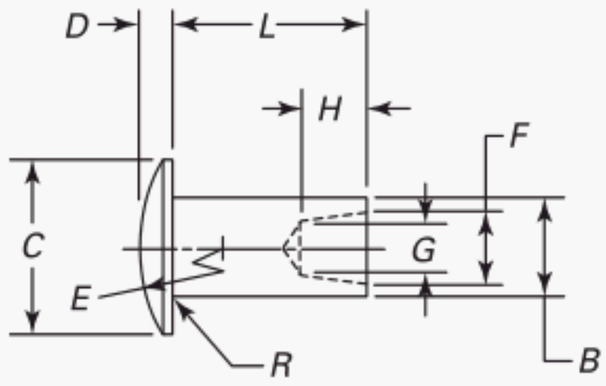
Rivet caps shall be designated by the following data in the sequence shown:

(a) style number
(b) cap outside diameter
(c) product name
(d) material
(e) finish, if required

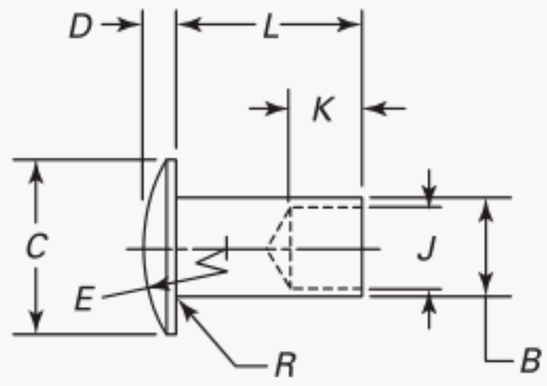
EXAMPLE: ASME B18.7, Style 1, .312 OD, Rivet Cap, Steel

For a recommended PIN system for rivets, see ASME B18.24.

Table 1 Dimensions of Oval Head Semi-Tubular Rivets



Type T



Type S

Nominal Size	Shank Diameter, *B*		Head Diameter, *C*		Head Thickness, *D*		Approx-imate Head Radius,	Type T Taper Hole Rivets				Type S Straight Hole Rivets			Max. Fillet Radius,
								Hole Diameter at End of Rivet, *F*		Minimum Hole Diameter at Bottom	Minimum Hole Depth to Start of	Hole Diameter at End of Rivet, *J*		Nominal Hole Depth to Start of Apex, *K*	
[Note (1)]	Max.	Min.	Max.	Min.	Max.	Min.	*E*	Max.	Min.	of Hole, *G*	Apex, *H*	Max.	Min.	[Note (2)]	*R*
0.061	0.061	0.058	0.114	0.104	0.019	0.015	0.16	0.046	0.042	0.032	0.042	0.044	0.039	0.046	0.008
0.089	0.089	0.085	0.152	0.142	0.026	0.020	0.22	0.068	0.064	0.050	0.057	0.068	0.062	0.064	0.012
0.099	0.099	0.095	0.192	0.182	0.032	0.026	0.27	0.076	0.072	0.057	0.065	0.076	0.070	0.077	0.012
0.123	0.123	0.118	0.223	0.213	0.038	0.030	0.31	0.095	0.091	0.079	0.082	0.090	0.084	0.094	0.016
0.146	0.146	0.141	0.239	0.229	0.045	0.035	0.27	0.112	0.106	0.085	0.104	0.107	0.100	0.126	0.020
0.188	0.188	0.182	0.318	0.306	0.065	0.055	0.25	0.145	0.139	0.110	0.135	0.141	0.134	0.155	0.025
0.217	0.217	0.210	0.444	0.430	0.075	0.061	0.63	0.166	0.158	0.136	0.151	0.163	0.155	0.189	0.025
0.252	0.252	0.244	0.507	0.493	0.085	0.071	0.72	0.191	0.181	0.150	0.183	0.184	0.176	0.219	0.030
0.310	0.310	0.302	0.570	0.554	0.100	0.086	0.69	0.235	0.225	0.190	0.214	0.219	0.211	0.243	0.030

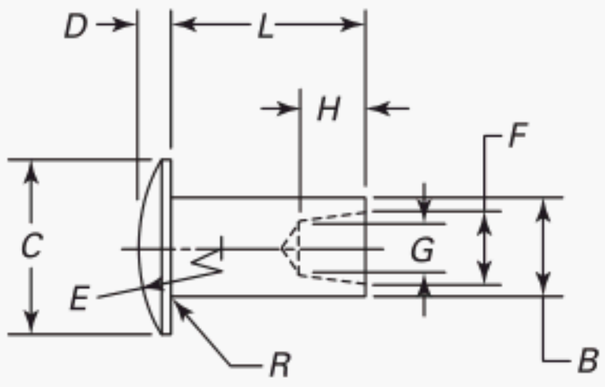
GENERAL NOTE: For additional requirements, refer to section 2, General Data.

NOTES:

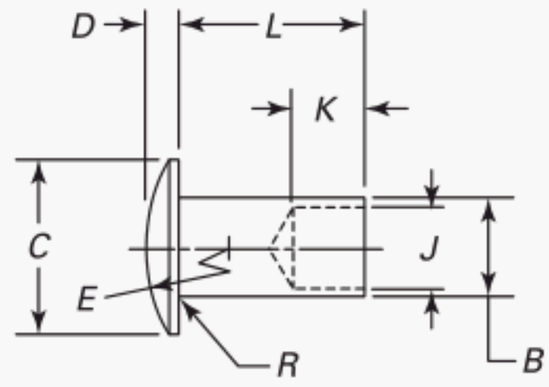
(1) Where specifying nominal size, zeros preceding decimal shall be omitted.

(2) For rivets having a length tolerance equal to or greater than ±0.015 in., the straight hole nominal depth shall be increased 0.010 in. beyond the depth specified in the table.

Table 2 Dimensions of Truss Head Semi-Tubular Rivets



Type T



Type S

Nominal Size	Shank Diameter, *B*		Head Diameter, *C*		Head Thickness, *D*		Approx-imate Head Radius,	Type T Taper Hole Rivets				Type S Straight Hole Rivets			
								Hole Diameter at End of Rivet, *F*	Hole Diameter at Bottom of Hole, *G*	Hole Depth to Start of Apex, *H*		Hole Diameter at End of Rivet, *J*	Nominal Hole Depth to Start of Apex, *K*		Max. Fillet Radius,
[Note (1)]	Max.	Min.	Max.	Min.	Max.	Min.	*E*	Max.	Min.	Min.		Max.	Min.	[Note (2)]	*R*
0.061	0.061	0.058	0.130	0.120	0.019	0.015	0.13	0.046	0.042	0.032	0.042	0.044	0.039	0.046	0.008
0.089	0.089	0.085	0.192	0.182	0.026	0.020	0.22	0.068	0.064	0.050	0.057	0.068	0.062	0.064	0.012
0.123	0.123	0.118	0.286	0.276	0.038	0.030	0.38	0.095	0.091	0.079	0.082	0.090	0.084	0.094	0.016
0.146	0.146	0.141	0.318	0.306	0.045	0.035	0.45	0.112	0.106	0.085	0.104	0.107	0.100	0.126	0.020
0.188	0.188	0.182	0.381	0.369	0.065	0.055	0.53	0.145	0.139	0.110	0.135	0.141	0.134	0.155	0.025

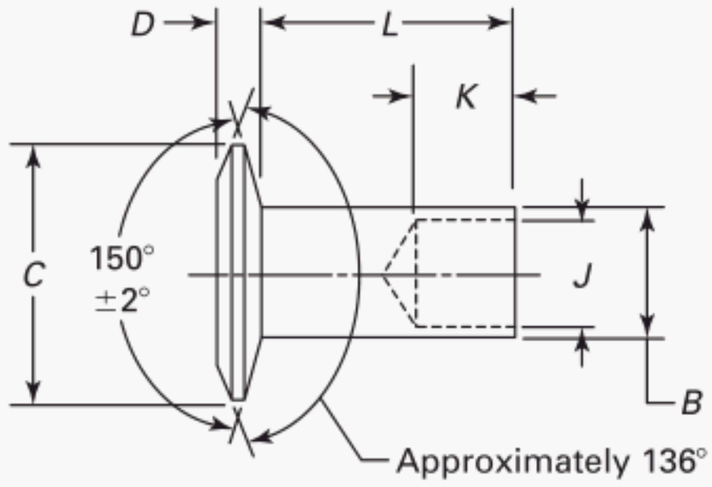
GENERAL NOTE: For additional requirements, refer to section 2, General Data.

NOTES:

(1) Where specifying nominal size, zeros preceding decimal shall be omitted.

(2) For rivets having a length tolerance equal to or greater than ±0.015 in., the straight hole nominal depth shall be increased 0.010 in. beyond the depth specified in the table.

Table 3 Dimensions of 150-deg Flat Countersunk Head Semi-Tubular Rivets (Recommended for Attachment of Friction Material)



Nominal Size [Note (1)]	Shank Diameter, *B*		Head Diameter, *C*		Head Thickness, *D*		Hole Diameter at End of Rivet, *J*		Hole Depth to Start of Apex, *K* [Note (2)] (Ref.)
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
0.146	0.146	0.141	0.303	0.289	0.045	0.035	0.105	0.099	0.141
0.188	0.188	0.182	0.367	0.351	0.051	0.041	0.139	0.133	0.188
0.252	0.252	0.244	0.478	0.458	0.067	0.053	0.183	0.173	0.250

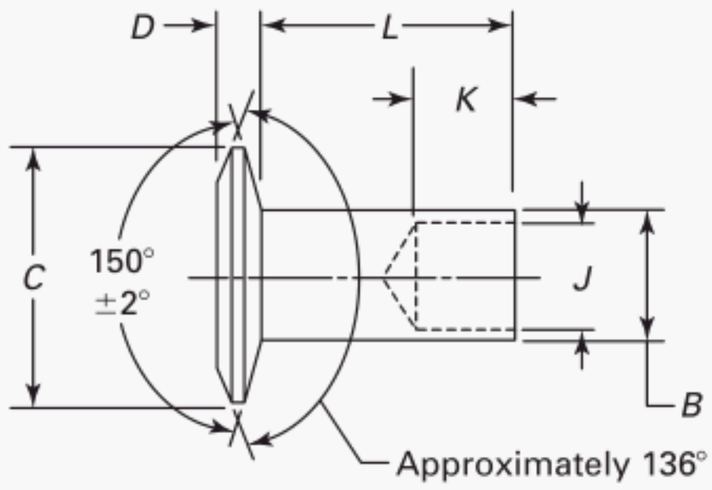
GENERAL NOTE: For additional requirements, refer to section 2, General Data.

NOTES:

(1) Where specifying nominal size, zeros preceding decimal shall be omitted.

(2) These are reference dimensions only. Hole depths will vary depending upon the purpose for which a particular rivet is designed.

Table 4 Dimensions of 150-deg Large Flat Countersunk Head Semi-Tubular Rivets (Recommended for Attachment of Friction Material)



Nominal Size [Note (1)]	Shank Diameter, *B*		Head Diameter, *C*		Head Thickness, *D*		Hole Diameter at End of Rivet, *J*		Hole Depth to Start of Apex, *K* [Note (2)] (Ref.)
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	
0.146	0.146	0.141	0.367	0.351	0.051	0.041	0.105	0.099	0.141
0.188	0.188	0.182	0.478	0.458	0.067	0.053	0.139	0.133	0.188

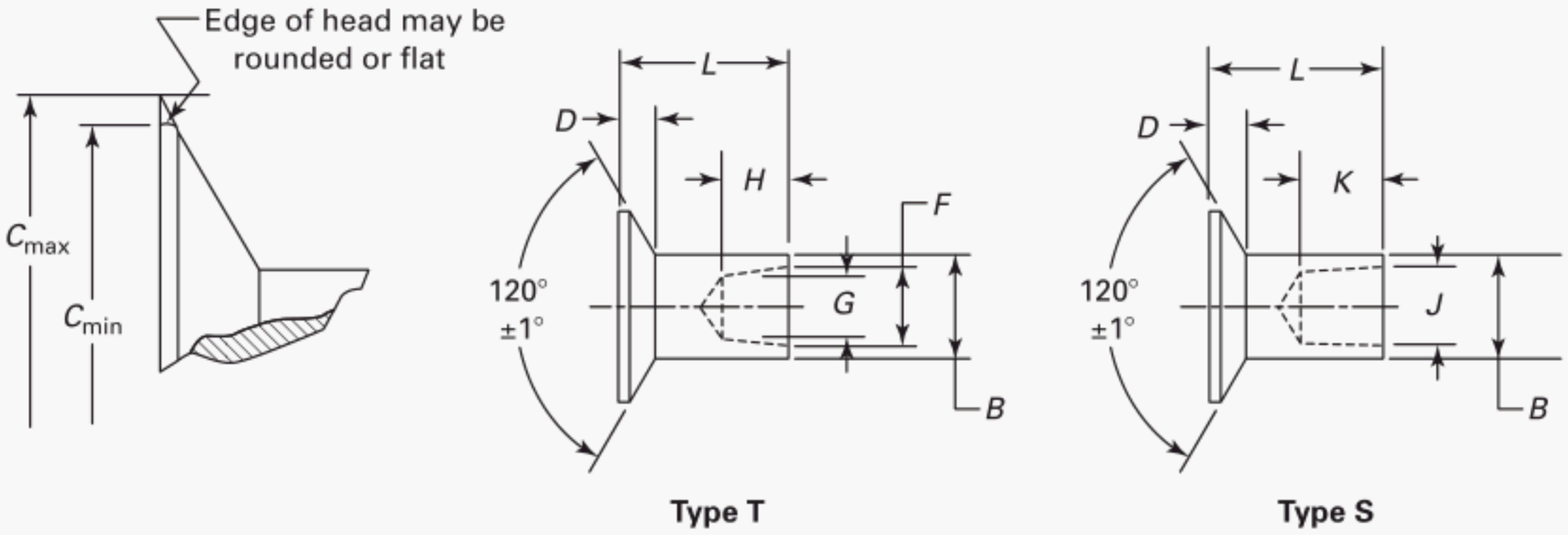
GENERAL NOTE: For additional requirements, refer to section 2, General Data.

NOTES:

(1) Where specifying nominal size, zeros preceding decimal shall be omitted.

(2) These are reference dimensions only. Hole depths will vary depending upon the purpose for which a particular rivet is designed.

Table 5 Dimensions of 120-deg Flat Countersunk Head Semi-Tubular Rivets (General Purpose)



Nominal Size [Note (1)]	Shank Diameter, *B*		Head Diameter, *C* [Note (2)]		Head Thickness, *D* (Ref.)	Type T Taper Hole Rivets				Type S Straight Hole Rivets		
						Hole Diameter at End of Rivet, *F*		Minimum Hole Diameter at Bottom of Hole, *G*	Minimum Hole Depth to Start of Apex, *H*	Hole Diameter at End of Rivet, *J*		Nominal Hole Depth to Start of Apex, *K* [Note (3)]
	Max.	Min.	Maximum Edge Sharp	Minimum Edge Rounded or Flat		Max.	Min.			Max.	Min.	
0.089	0.089	0.085	0.223	0.203	0.039	0.068	0.064	0.050	0.057	0.068	0.062	0.064
0.123	0.123	0.118	0.271	0.245	0.043	0.095	0.091	0.079	0.082	0.090	0.084	0.094
0.146	0.146	0.141	0.337	0.307	0.056	0.112	0.106	0.085	0.104	0.107	0.100	0.126
0.188	0.188	0.182	0.404	0.369	0.063	0.145	0.139	0.110	0.135	0.141	0.134	0.155
0.217	0.217	0.210	0.472	0.430	0.075	0.166	0.158	0.136	0.151	0.163	0.155	0.189
0.252	0.252	0.244	0.540	0.493	0.084	0.191	0.181	0.150	0.183	0.184	0.176	0.219

GENERAL NOTE: For additional requirements, refer to section 2, General Data.

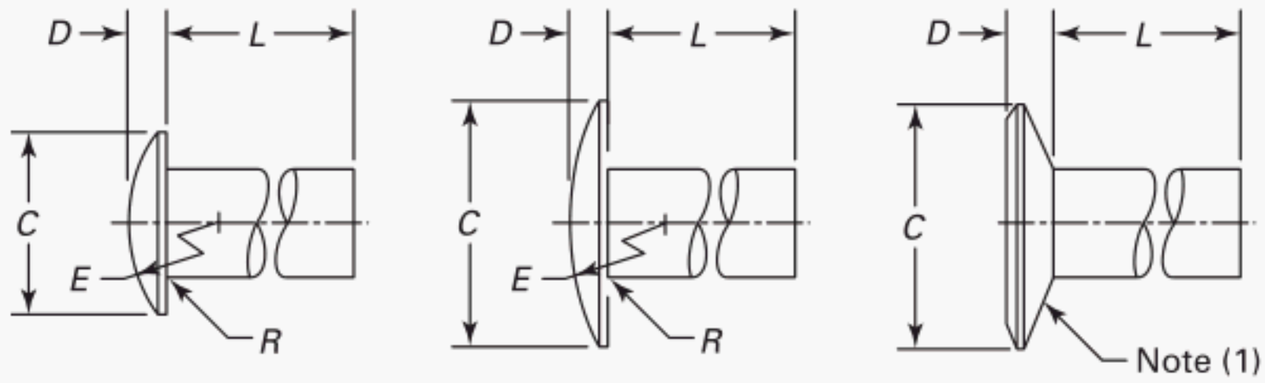
NOTES:

(1) Where specifying nominal size, zeros preceding decimal shall be omitted.

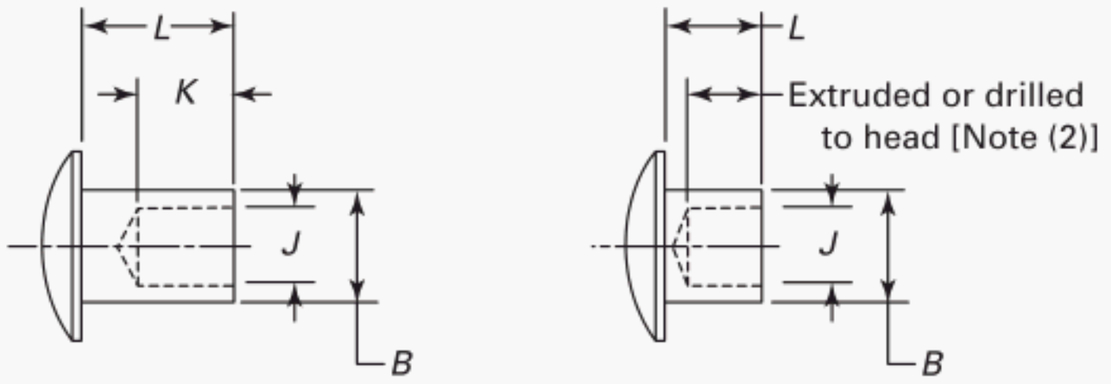
(2) Head diameters tabulated under “Maximum Edge Sharp” are theoretical values determined by projection.

(3) For rivets having a length tolerance equal to or greater than ±0.015 in., the straight hole nominal depth shall be increased 0.010 in. beyond the depth specified in the table.

Table 6 Dimensions of Full Tubular Rivets



Oval Head | Truss Head | Flat Countersunk Head



Head Style	Nominal Size [Note (3)]	Shank Diameter, *B*		Head Diameter, *C*		Head Thickness, *D*		Minimum Head Radius, *E* (Ref.)	Diameter of Hole, *J*		Diameter of Hole, *K*		Maximum Fillet Radius, *R*
		Max.	Min.	Max.	Min.	Max.	Min.		Max.	Min.	Max.	Min.	
Oval	0.146	0.146	0.141	0.239	0.229	0.045	0.035	0.27	0.107	0.100	To Head	0.375	0.020
Truss	0.146	0.146	0.141	0.318	0.306	0.045	0.035	0.45	0.107	0.100	To Head	0.375	0.020
	0.188	0.188	0.182	0.381	0.369	0.065	0.055	0.53	0.141	0.134	To Head	0.375	0.025
Flat countersunk	0.146	0.146	0.141	0.317	0.307	0.050	0.040	. . .	0.107	0.100	To Head	0.375	. . .
	0.188	0.188	0.182	0.364	0.352	0.060	0.048	. . .	0.141	0.134	To Head	0.375	. . .

GENERAL NOTE: For additional requirements, refer to section 2, General Data.

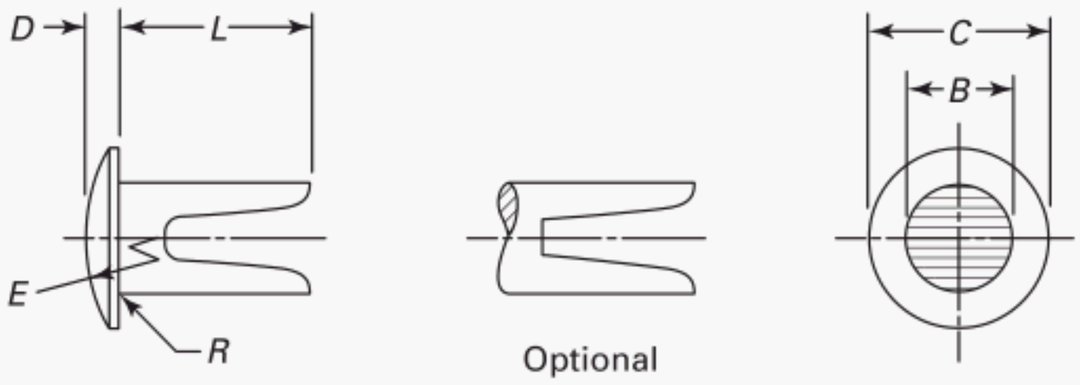
NOTES:

(1) The angle of head is not specified, it being assumed flat countersunk head full tubular rivets would generally be used in soft materials and, therefore, form their own countersink.

(2) Full tubular rivets having nominal lengths of $^{3}/_{8}$ in., or shorter, shall be extruded or drilled to head.

(3) Where specifying nominal size, zeros preceding decimal shall be omitted.

Table 7 Dimensions of Oval Head Split Rivets



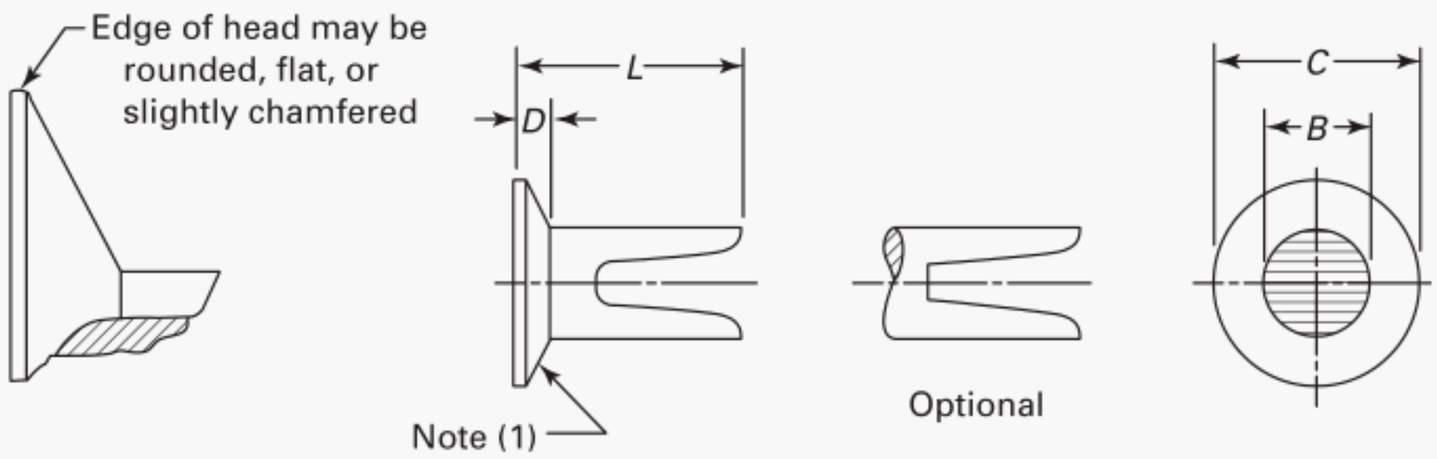
Nominal Size [Note (1)]	Shank Diameter, *B*		Head Diameter, *C*		Head Thickness, *D*		Approximate Radius of Head, *E*	Maximum Fillet Radius, *R*
	Max.	Min.	Max.	Min.	Max.	Min.		
0.092	0.092	0.085	0.152	0.142	0.026	0.020	0.22	0.012
0.125	0.125	0.113	0.223	0.213	0.035	0.027	0.31	0.016
0.152	0.152	0.144	0.318	0.306	0.045	0.035	0.27	0.020
0.190	0.190	0.180	0.349	0.337	0.055	0.045	0.25	0.025

GENERAL NOTE: For additional requirements, refer to section 3, General Data.

NOTE:

(1) Where specifying nominal size, zeros preceding decimal shall be omitted.

Table 8 Dimensions of Flat Countersunk Head Split Rivets



Nominal Size [Note (2)]	Shank Diameter, *B*		Head Diameter, *C*		Head Thickness, *D*	
	Max.	Min.	Max.	Min.	Max.	Min.
0.125	0.125	0.113	0.223	0.213	0.036	0.026
0.152	0.152	0.144	0.317	0.307	0.053	0.043
0.152	0.152	0.144	0.380 [Note (3)]	0.370 [Note (3)]	0.062 [Note (3)]	0.052 [Note (3)]
0.190	0.190	0.180	0.443	0.431	0.061	0.051

GENERAL NOTE: For additional requirements, refer to section 3, General Data.

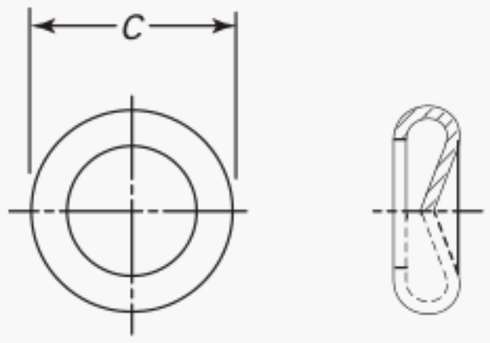
NOTES:

(1) The angle of head is not specified, it being assumed flat countersunk head split rivets would generally be used in soft materials and, therefore, form their own countersink.

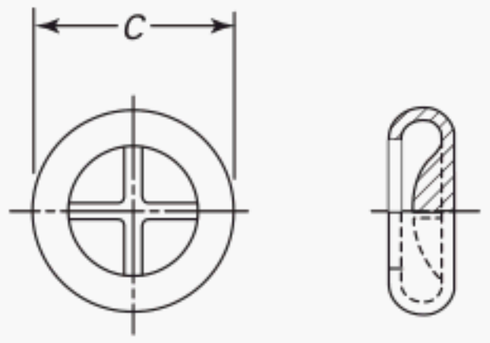
(2) Where specifying nominal size, zeros preceding decimal shall be omitted.

(3) Rivets in a 0.162-in. size having these head proportions shall be designated “Large Flat Countersunk Head.”

Table 9 Dimensions of Rivet Caps



Style 1



Style 2

Style	Rivet Shank Diameter (Ref.) Max.	Min.	Basic Cap Outside Diameters, *C*
Style 1			
[Note (1)]	0.092	0.085	0.281
	0.125	0.113	0.281, 0.312, 0.328
	0.152	0.144	0.312, 0.328, 0.359, 0.375
	0.190	0.180	0.359, 0.375
Style 2			
[Note (2)]	0.123	0.118	0.250
	0.146	0.141	0.328, 0.344
	0.188	0.182	0.422, 0.438

GENERAL NOTE: For additional requirements, refer to section 4, General Data.

NOTES:

(1) Style 1 rivet caps are designed primarily for use with split rivets.

(2) Style 2 rivet caps are designed primarily for use with full tubular rivets.

Table 10 Length Increments and Length Tolerances for Semi-Tubular and Full Tubular Rivets

Nominal Size	Length Increment Fraction	Length Increment Decimal	Minimum Nominal Rivet Length Fraction	Minimum Nominal Rivet Length Decimal	Tolerance on Length for Nominal Lengths: Up to and Including 4 Times Shank Diameter	Over 4 Times Shank Diameter and Up to and Including 8 Times Shank Diameter	Over 8 Times Shank Diameter
0.061	1/64	0.016	1/16	0.062	±0.007	±0.008	±0.010
0.089	1/64	0.016	3/64	0.078	±0.007	±0.008	±0.010
0.099	1/64	0.016	5/64	0.078	±0.007	±0.008	±0.010
0.123	1/64	0.016	3/32	0.094	±0.007	±0.010	±0.015
0.146	1/32	0.031	1/8	0.125	±0.010	±0.012	±0.015
0.188	1/32	0.031	5/32	0.156	±0.010	±0.012	±0.015
0.217	1/16	0.062	3/16	0.188	±0.010	±0.015	±0.020
0.252	1/16	0.062	7/32	0.219	±0.010	±0.015	±0.020
0.310	1/16	0.062	1/4	0.250	±0.010	±0.015	±0.020

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