U S A S T A N D A R D

WOODRUFF KEYS and KEYSEATS

USAS B17.2 - 1967

(Revision of USAS B17f-1930)

REAFFIRMED 1990

REAFFIRMED 1998

FOR CURRENT COMMITTEE PERSONNEL
PLEASE SEE ASME MANUAL AS-11

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Foreword

THIS standard on Woodruff Keys and Keyseats is a revision of USA Standard Woodruff Keys, Keyslots and Cutters, USAS B17f-1930, which standard was developed by sub-committee No. 5 of USA Standards Committee B17 on Shafting.

The sub-committee's initial work was started in 1925 and after numerous drafts and revisions was accepted by industry and designated by ASA (later changed to USASI) as an American Standard on December 31, 1930.

The B17f-1930 standard was reaffirmed in 1955 but it was recognized that the standard was not in conformity with current practice.

In 1962 the USA Standards Committee B17 was reactivated and a sub-committee developed and established this updated standard on Woodruff Keys and Keyseats which is in part a revision of B17f-1930.

Following approval by the USA Standards Committee B17 and the sponsor, the proposed revision was approved on September 18, 1967 by the USA Standards Institute, and redesignated B17.2–1967.

USA STANDARD

This USA Standard is one of nearly 3000 standards approved as American Standards by the American Standards Association. On August 24, 1966, the ASA was reconstituted as the United States of America Standards Institute. Standards approved as American Standards are now designated USA Standards. There is no change in their index identification or technical content.

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Keys and Keyseats

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SUBCOMMITTEE 3, WOODRUFF KEYS

W. C. Sheers, *Chairman*, Standard Horse Nail Corp., P.O. Box 316, New Brighton, Pennsylvania 15066
E. J. Flewelling, Massey-Ferguson, Inc., P.O. Box 322 R.P.A., Detroit, Michigan 48232
P. L. Houser, Metal Cutting Tool Institute, 405 Lexington Avenue, New York, N.Y. 10017

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USA STANDARD

Woodruff Keys and Keyseats

1. Scope

This standard covers nomenclature, definitions, identification number, dimensions and tolerances of Woodruff Keys and Keyseats.

It represents manufacturing practices for sizes and types from 1/16 in. × 1/4 in. thru 3/4 in. × 3 1/2 in. covering 66 listings.

Material, heat treatment, hardness or finish is not within the scope of this standard.

Dimensional features only are included.

2. Definitions

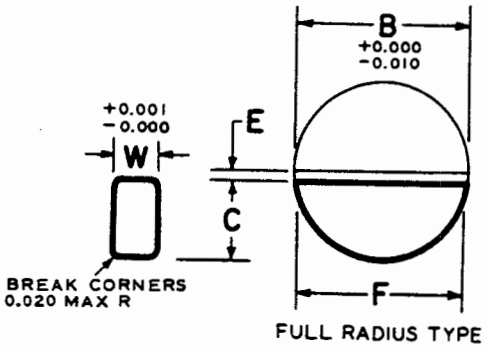
Woodruff Key. A demountable machinery part which, when assembled into keyseats, provides a positive means for transmitting torque between the shaft and hub.

Woodruff Key Number. An identification number by which the size of key may be readily determined (see footnote to Table 1).

Woodruff Keyseat — Shaft. The circular pocket in which the key is retained.

Woodruff Keyseat — Hub. An axially located rectangular groove in a hub. (Has been referred to as a keyway.)

Woodruff Keyseat Milling Cutter. An arbor type or shank type milling cutter normally used for milling Woodruff keyseats in shafts. (See USA Standard B5.3–1960 Milling Cutters for sizes and types).



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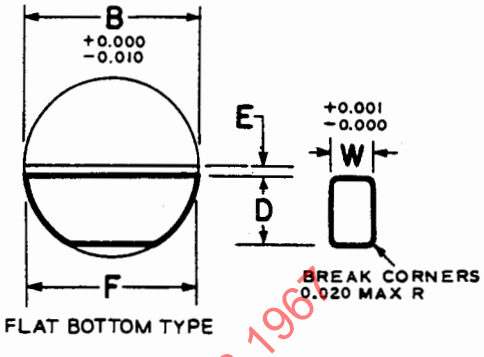

FLAT BOTTOM TYPE

Table 1 Woodruff Keys

Key No.	Nominal Key Size W × B	Actual Length F +0.000-0.010	Height of Key				Distance Below Center E
			C		D		
			Max	Min	Max	Min	
202	1/16 × 1/4	0.248	0.109	0.104	0.109	0.104	1/64
202.5	1/16 × 5/16	0.311	0.140	0.135	0.140	0.135	1/64
302.5	3/32 × 5/16	0.311	0.140	0.135	0.140	0.135	1/64
203	1/16 × 3/8	0.374	0.172	0.167	0.172	0.167	1/64
303	3/32 × 3/8	0.374	0.172	0.167	0.172	0.167	1/64
403	1/8 × 3/8	0.374	0.172	0.167	0.172	0.167	1/64
204	1/16 × 1/2	0.491	0.203	0.198	0.194	0.188	3/64
304	3/32 × 1/2	0.491	0.203	0.198	0.194	0.188	3/64
404	1/8 × 1/2	0.491	0.203	0.198	0.194	0.188	3/64
305	3/32 × 5/8	0.612	0.250	0.245	0.240	0.234	1/16
405	1/8 × 5/8	0.612	0.250	0.245	0.240	0.234	1/16
505	5/32 × 5/8	0.612	0.250	0.245	0.240	0.234	1/16
605	3/16 × 5/8	0.612	0.250	0.245	0.240	0.234	1/16
406	1/8 × 3/4	0.740	0.313	0.308	0.303	0.297	1/16
506	5/32 × 3/4	0.740	0.313	0.308	0.303	0.297	1/16
606	3/16 × 3/4	0.740	0.313	0.308	0.303	0.297	1/16
806	1/4 × 3/4	0.740	0.313	0.308	0.303	0.297	1/16
507	5/32 × 7/8	0.866	0.375	0.370	0.365	0.359	1/16
607	3/16 × 7/8	0.866	0.375	0.370	0.365	0.359	1/16
707	7/32 × 7/8	0.866	0.375	0.370	0.365	0.359	1/16
807	1/4 × 7/8	0.866	0.375	0.370	0.365	0.359	1/16
608	3/16 × 1	0.992	0.438	0.433	0.428	0.422	1/16
708	7/32 × 1	0.992	0.438	0.433	0.428	0.422	1/16
808	1/4 × 1	0.992	0.438	0.433	0.428	0.422	1/16
1008	5/16 × 1	0.992	0.438	0.433	0.428	0.422	1/16
1208	3/8 × 1	0.992	0.438	0.433	0.428	0.422	1/16
609	3/16 × 1 1/8	1.114	0.484	0.479	0.475	0.469	5/64
709	7/32 × 1 1/8	1.114	0.484	0.479	0.475	0.469	5/64
809	1/4 × 1 1/8	1.114	0.484	0.479	0.475	0.469	5/64
1009	5/16 × 1 1/8	1.114	0.484	0.479	0.475	0.469	5/64

Table 1 Woodruff Keys (Concluded)

Key No.	Nominal Key Size W × B	Actual Length F +0.000-0.010	Height of Key				Distance Below Center E
			C		D		
			Max	Min	Max	Min	
610	3/16 × 1 1/4	1.240	0.547	0.542	0.537	0.531	5/64
710	7/32 × 1 1/4	1.240	0.547	0.542	0.537	0.531	5/64
810	1/4 × 1 1/4	1.240	0.547	0.542	0.537	0.531	5/64
1010	5/16 × 1 1/4	1.240	0.547	0.542	0.537	0.531	5/64
1210	3/8 × 1 1/4	1.240	0.547	0.542	0.537	0.531	5/64
811	1/4 × 1 3/8	1.362	0.594	0.589	0.584	0.578	3/32
1011	5/16 × 1 3/8	1.362	0.594	0.589	0.584	0.578	3/32
1211	3/8 × 1 3/8	1.362	0.594	0.589	0.584	0.578	3/32
812	1/4 × 1 1/2	1.484	0.641	0.636	0.631	0.625	7/64
1012	5/16 × 1 1/2	1.484	0.641	0.636	0.631	0.625	7/64
1212	3/8 × 1 1/2	1.484	0.641	0.636	0.631	0.625	7/64

All dimensions given are in inches.

The key numbers indicate nominal key dimensions. The last two digits give the nominal diameter B in eighths of an inch and the digits preceding the last two give the nominal width W in thirty-seconds of an inch.

Example:

No. 204 indicates a key 2/32 × 4/8 or 1/16 × 1/2.
No. 808 indicates a key 8/32 × 8/8 or 1/4 × 1.
No. 1212 indicates a key 12/32 × 12/8 or 3/8 × 1 1/2.