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AMERICAN STANDARD

SPINDLE NOSES AND ADJUSTABLE ADAPTERS FOR MULTIPLE SPINDLE DRILLING HEADS

ASA B5.11-1964
UDC 621.9-229

ANSI B5.11 — 1973 (R-1964)

ONE OF A SERIES OF STANDARDS FOR SMALL TOOLS AND MACHINE TOOL ELEMENTS

Sponsors

American Society of Tool and Manufacturing Engineers
Society of Automotive Engineers
National Machine Tool Builders' Association
The American Society of Mechanical Engineers

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Foreword

THIS standard for Adjustable Adapters for Multiple Spindle Drilling Heads was developed by Sectional Committee B5 on the Standardization of Small Tools and Machine Tool Elements, organized September, 1922, under procedure of the American Standards Association and is sponsored by the National Machine Tool Builders' Association, the Society of Automotive Engineers, American Society of Tool and Manufacturing Engineers, and The American Society of Mechanical Engineers.

On December 2, 1937, this standard was approved by the American Standards Association and designated as American Standard (ASA B5.11-1937).

Subsequent to a request from the sponsor organizations for a revision of the standard, a new technical committee was appointed on September 24, 1947, to review and make recommendations for revision.

In August, 1953, at the request of the sponsors, the technical committee was authorized to include the standardization of spindle noses for use with adjustable adapters. With the inclusion of spindle noses, the title of the project was changed to Spindle Noses and Adjustable Adapters for Multiple Spindle Drilling Heads.

A draft dated December 1, 1953, was approved by Technical Committee No. 18 and in February, 1954, the proposal was presented to the members of Sectional Committee B5 for letter ballot vote.

Following approval of the sectional committee and sponsor organizations, the proposal was submitted to the American Standards Association for approval and designation as American Standard. This was granted on August 18, 1954, and it was designated as American Standard (ASA B5.11–1954).

In 1959 the committee was reactivated for the purpose of the regular five-year review. Concurrently with the review by committee, a request was received from ASTME Chapter No. 5 of Chicago, Illinois to extend the standard to smaller sizes of adjustable adapters. We acknowledge the help and suggestions received from them.

In a meeting in 1962 it was agreed to consider the subject of the smaller size adapters as a separate standard, both to expedite the issuance of the existing standard for approval of revisions, and also because the physical construction of the smaller sizes had to depart from that of the larger sizes.

The revised standard was submitted to B5 Sectional Committee for letter ballot on December 14, 1962. Following approval by the Sectional Committee and the sponsors, the standard was approved by ASA on June 10, 1964 and designated as American Standard (ASA B5.11–1964).

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AMERICAN STANDARD

Spindle Noses and Adjustable Adapters for Multiple Spindle Drilling Heads

SCOPE AND PURPOSE

This standard is to provide the means for individual axial adjustment of drilling, reaming, and tapping tools, etc. in the spindles of single or multiple spindle heads.

Further, its purpose is to permit interchangeability of adapters into different manufacturers' machines consistent with necessary accuracy.

Its scope is primarily in the medium to large size of drill spindles, i.e. from No. 0 Morse Taper and .375 American Standard Taper through No. 4 American Standard Taper.

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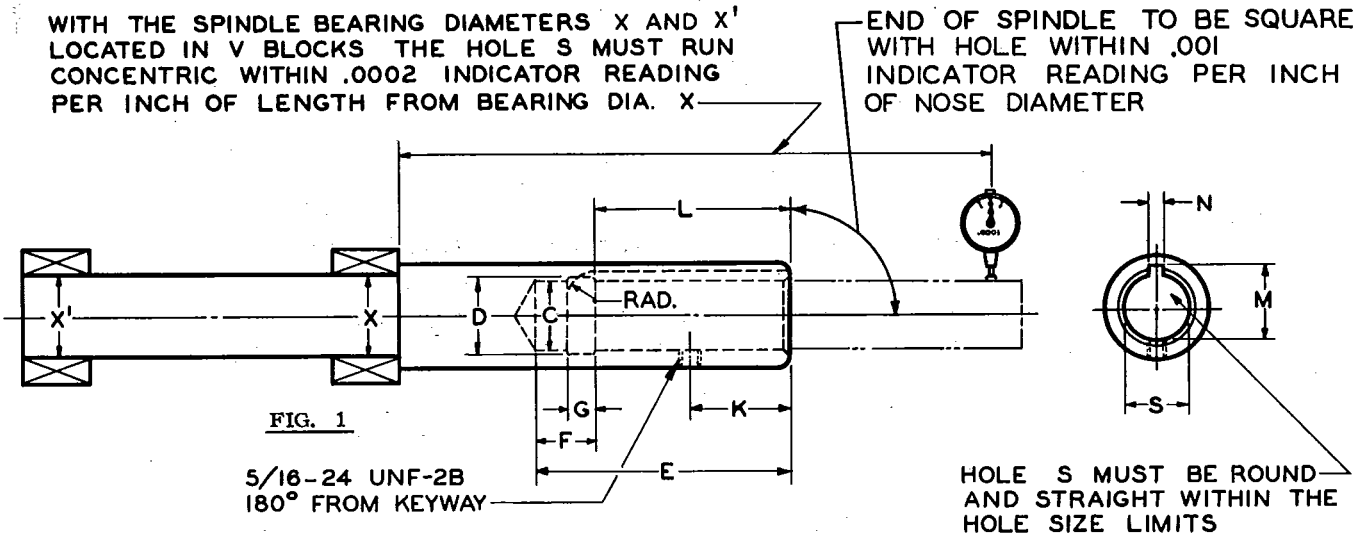


FIG. 1

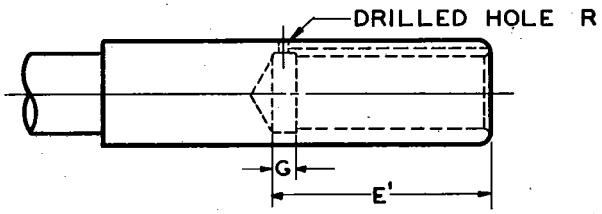


FIG. 1A
ALTERNATE METHOD FOR CUTTING KEYWAY

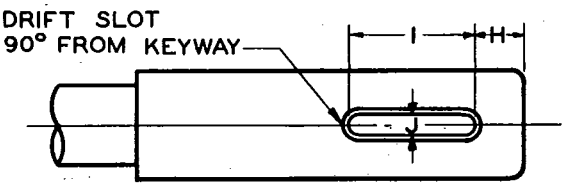


FIG. 1B
SPINDLE NOSE WITH DRIFT SLOT

TABLE 1 GENERAL DIMENSIONS FOR SPINDLE NOSES

Spindle Nose for Adapter Nominal Size	Hole Diameter S		Hole Diameter	Diameter of Relief	Length of Hole			Length of Relief
	Min	Max	C	D	E	E'	F	G
1/2	0.5000	0.5005	0.493	9/16	3 1/8	2 7/8	5/8	3/8
5/8	0.6250	0.6255	0.618	11/16	3 1/8	2 7/8	5/8	3/8
3/4	0.7500	0.7505	0.740	13/16	3 1/8	2 7/8	5/8	3/8
7/8	0.8750	0.8755	0.865	15/16	4	3 1/2	7/8	3/8
1	1.0000	1.0005	0.990	1 1/16	4	3 1/2	7/8	3/8
1 1/16	1.0625	1.0630	1.052	1 1/8	4	3 1/2	7/8	3/8
1 3/8	1.3750	1.3755	1.365	1 7/16	5 1/8	4 1/2	1	3/8
1 7/8	1.8750	1.8755	1.860	1 15/16	6 3/8	5 3/8	1 3/8	3/8

TABLE 1 GENERAL DIMENSIONS FOR SPINDLE NOSES (Cont.)

Spindle Nose For Adapter Nominal Size	End of Spindle to Drift Slot H	Drift Slot		End of Spindle to Tapped Hole K	Length of Keyway L	Woodruff Keyway Dimensions				Drilled Hole
		Length I	Width J			Keyway Dimension M		Width N		
						Min	Max	Min	Max	R
1/2	3/8	1 3/4	1/4	1 1/4	2 7/16	0.5756	0.5856	0.1290	0.1330	3/16
5/8	11/16	1 3/4	1/4	1 1/4	2 7/16	0.7032	0.7132	0.1603	0.1643	7/32
3/4	11/16	1 3/4	1/4	1 1/4	2 7/16	0.8299	0.8399	0.1603	0.1643	7/32
7/8	11/16	2 5/16	5/16	1 9/16	3 1/8	0.9685	0.9785	0.1915	0.1955	1/4
1	11/16	2 5/16	5/16	1 9/16	3 1/8	1.0948	1.1048	0.1915	0.1955	1/4
1 1/16	11/16	2 5/16	5/16	1 9/16	3 1/8	1.1579	1.1679	0.1915	0.1955	1/4
1 3/8	3/4	3 1/8	3/8	1 13/16	4	1.4985	1.5085	0.2540	0.2580	5/16
1 7/8	1 1/16	3 7/16	9/16	2 5/16	4 7/8	2.0281	2.0381	0.3165	0.3205	3/8

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SPINDLE NOSES AND ADJUSTABLE ADAPTERS FOR MULTIPLE SPINDLE DRILLING HEADS

The purpose of these adapters is to obtain axial adjustment for taper shank tools.

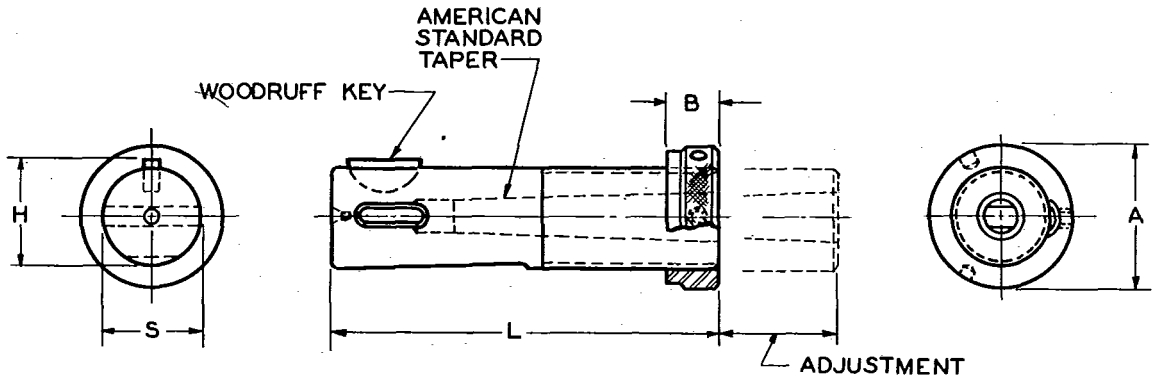


FIG. 2

TABLE 2 GENERAL DIMENSIONS OF ADJUSTABLE ADAPTER ASSEMBLY

Adapter Nominal Size S	American Standard Taper Number	Woodruff Key Size	Top of Key to Opposite Side of Diameter H		Adapter Length L	Diameter of Nut A	Thickness of Nut B	Approx. Adjustment of Adapter
			Min	Max				
1/2	0	1/8 x 5/8	0.5605	0.5706	3	3/4	1/2*	15/16
1/2	0	1/8 x 5/8	0.5605	0.5706	3	7/8	1/2	15/16
1/2	.375	1/8 x 5/8	0.5605	0.5706	3	3/4	1/2*	15/16
1/2	.375	1/8 x 5/8	0.5605	0.5706	3	7/8	1/2	15/16
5/8	0	5/32 x 5/8	0.6882	0.6982	3	7/8	1/2*	1
5/8	0	5/32 x 5/8	0.6882	0.6982	3	1	1/2	1
5/8	1	5/32 x 5/8	0.6882	0.6982	3	7/8	1/2*	1
5/8	1	5/32 x 5/8	0.6882	0.6982	3	1	1/2	1
3/4	1	5/32 x 5/8	0.8149	0.8249	3	1 1/4	9/16	15/16
7/8	1	3/16 x 3/4	0.9535	0.9635	3 5/8	1 1/4	9/16	1 1/16
7/8	2	3/16 x 3/4	0.9535	0.9635	3 5/8	1 1/4	9/16	1 1/16
1	1	3/16 x 7/8	1.0798	1.0898	3 5/8	1 1/2	9/16	1 1/16
1	2	3/16 x 7/8	1.0798	1.0898	3 5/8	1 1/2	9/16	1 1/16
1 1/16	1	3/16 x 7/8	1.1429	1.1529	3 5/8	1 9/16	9/16	1 1/16
1 1/16	2	3/16 x 7/8	1.1429	1.1529	3 5/8	1 9/16	9/16	1 1/16
1 3/8	2	1/4 x 1	1.4835	1.4935	4 5/8	1 7/8	9/16	1 5/16
1 3/8	3	1/4 x 1	1.4835	1.4935	4 5/8	1 7/8	9/16	1 5/16
1 7/8	3	5/16 x 1 1/4	2.0131	2.0231	5 5/8	2 5/8	3/4	1 3/4
1 7/8	4	5/16 x 1 1/4	2.0131	2.0231	5 5/8	2 5/8	3/4	1 3/4

* **Jam nut used in pairs. Dimension includes both nuts.**
All dimensions given in inches.
FINISH. All surfaces must be finished.
MARKING. Thread size, and manufacturer's name or trademark, and American Standard taper number to be marked on end.
MANUFACTURE. Tolerances on fractional dimensions are ±0.010 unless otherwise specified.
No. 0 TAPER. Size No. 0 is not an American Standard Taper, but is included to meet special needs.

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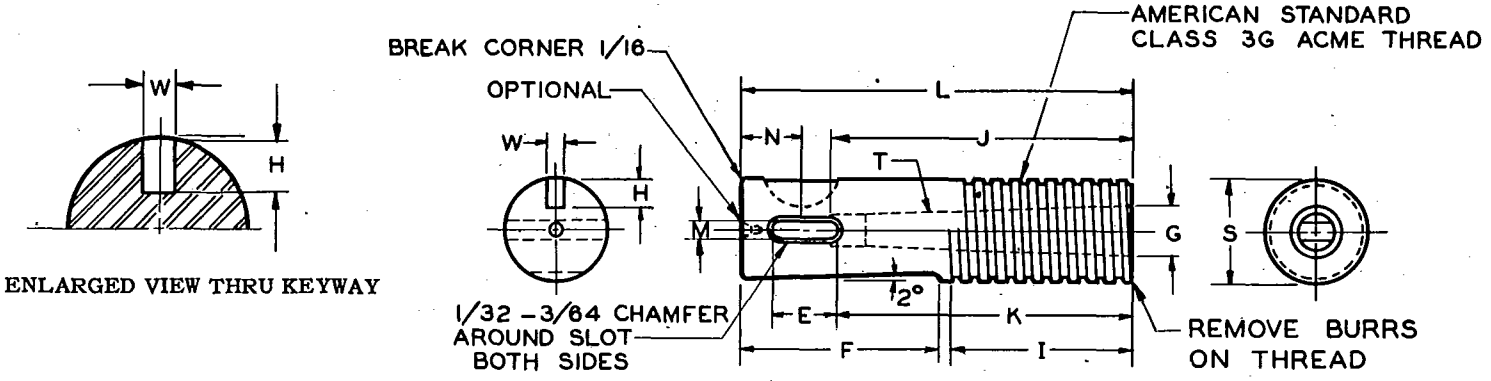


FIG. 3

TABLE 3 DETAIL DIMENSIONS OF ADJUSTABLE ADAPTER BODY

Adapter Nominal Size	Length of Adapter	American Standard Class 3G ACME Thread								Length of Thread	Length of Flat
		Body Diameter and Major Diameter		Pitch Diameter		Minor Diameter		Threads per Inch	Helix Angle at Basic Pitch Dia		
S	L	Max	Min	Max	Min	Max	Min			I	F
1/2	3	0.4993	0.4990	0.46455	0.45905	0.42750	0.41925	16	2° 25′ 49″	1 7/16	1 1/2
5/8	3	0.6243	0.6240	0.58905	0.58335	0.55250	0.54395	16	1° 55′ 9″	1 1/2	1 3/8
3/4	3	0.7493	0.7490	0.70313	0.69663	0.65667	0.64692	12	2° 8′ 40″	1 1/2	1 3/8
7/8	3 5/8	0.8743	0.8740	0.82773	0.82103	0.78167	0.77162	12	1° 49′ 23″	1 5/8	1 7/8
1	3 5/8	0.9993	0.9990	0.95233	0.94533	0.90667	0.89647	12	1° 35′ 8″	1 5/8	1 7/8
1 1/16	3 5/8	1.0615	1.0612	1.01483	1.00783	0.96917	0.95867	12	1° 29′ 18″	1 5/8	1 7/8
1 3/8	4 5/8	1.3740	1.3737	1.32633	1.31901	1.28167	1.27069	12	1° 8′ 23″	1 7/8	2 5/8
1 7/8	5 5/8	1.8740	1.8737	1.82543	1.81743	1.78167	1.76967	12	0° 49′ 44″	2 1/2	3

(Cont. on next page.)

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TABLE 3 DETAIL DIMENSIONS OF ADJUSTABLE ADAPTER BODY (Cont.)

Adapter Nominal Size	American Standard Taper					End of Body to Drive Slot	Drive Slot			End of Body to Center of Key	Woodruff Key Slot					
	Diameter Large End G		Taper Per Foot	Depth Taper Socket	ASA Taper Number		Length	Width M			Woodruff Key Nominal Size	American Standard Number	Width W		Depth H	
S	Max	Min	T	J		K	E	Max	Min	N			Max	Min	Max	Min
1/2	0.356	0.354	0.62460	2 1/16	0	1 15/16	9/16	0.178	0.172	7/16	1/8 x 5/8	405	0.1255	0.1240	0.1875	0.1825
1/2	0.375	0.373	0.50200	1 5/8	.375	1 15/32	5/8	0.209	0.203	7/16	1/8 x 5/8	405	0.1255	0.1240	0.1875	0.1825
5/8	0.356	0.354	0.62460	2 1/16	0	1 15/16	9/16	0.178	0.172	1/2	5/32 x 5/8	505	0.1568	0.1553	0.1719	0.1669
5/8	0.475	0.473	0.59858	2 3/16	1	2 1/16	3/4	0.224	0.218	1/2	5/32 x 5/8	505	0.1568	0.1553	0.1719	0.1669
3/4	0.475	0.473	0.59858	2 3/16	1	2 1/16	3/4	0.224	0.218	1/2	5/32 x 5/8	505	0.1568	0.1553	0.1719	0.1669
7/8	0.475	0.473	0.59858	2 3/16	1	2 1/16	3/4	0.224	0.218	1/2	3/16 x 3/4	606	0.1880	0.1863	0.2193	0.2143
7/8	0.700	0.698	0.59941	2 21/32	2	2 1/2	7/8	0.272	0.266	1/2	3/16 x 3/4	606	0.1880	0.1863	0.2193	0.2143
1	0.475	0.473	0.59858	2 3/16	1	2 1/16	3/4	0.224	0.218	5/8	3/16 x 7/8	607	0.1880	0.1863	0.2813	0.2763
1	0.700	0.698	0.59941	2 21/32	2	2 1/2	7/8	0.272	0.266	5/8	3/16 x 7/8	607	0.1880	0.1863	0.2813	0.2763
1 1/16	0.475	0.473	0.59858	2 3/16	1	2 1/16	3/4	0.224	0.218	5/8	3/16 x 7/8	607	0.1880	0.1863	0.2813	0.2763
1 1/16	0.700	0.698	0.59941	2 21/32	2	2 1/2	7/8	0.272	0.266	5/8	3/16 x 7/8	607	0.1880	0.1863	0.2813	0.2763
1 3/8	0.700	0.698	0.59941	2 21/32	2	2 1/2	7/8	0.272	0.266	3/4	1/4 x 1	808	0.2505	0.2487	0.3130	0.3080
1 3/8	0.938	0.936	0.60235	3 5/16	3	3 1/16	1 3/16	0.334	0.328	3/4	1/4 x 1	808	0.2505	0.2487	0.3130	0.3080
1 7/8	0.938	0.936	0.60235	3 5/16	3	3 1/16	1 3/16	0.334	0.328	15/16	5/16 x 1 1/4	1010	0.3130	0.3111	0.3908	0.3858
1 7/8	1.231	1.229	0.62326	4 3/16	4	3 7/8	1 1/4	0.490	0.484	15/16	5/16 x 1 1/4	1010	0.3130	0.3111	0.3908	0.3858

CONCENTRICITY OF HOLE G. Hole must run true with respect to outside diameter, within 0.002 in. total indicator reading on a test plug, at all points up to 6 in. away from end of adapter.

CENTRALITY OF DRIVING SLOT M. To be within .0025 with center line of taper (.005 Total Indicator Variation).

MARKING. Adapter size and ASA taper number to be marked on end.

MANUFACTURING. All burrs must be removed and threaded portion must be free of scale. Tolerances on fractional dimensions are ±0.010 in. unless otherwise specified.

SCREW THREAD. The pitch diameter of the threads and the axial center line of adapter shall be parallel within 0.002 in. per inch of length. The major diameter is based on maintaining the basic mating hole size of +0.0005 −0.0000.

No. 0 TAPER. Size No. 0 is not an American Standard Taper, but is included to meet special needs.

WOODRUFF KEY. Assembling of key must not result in growth of shank O.D. beyond maximum diameter given.

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TABLE 4 TAPER AND SHANK SIZES

Adapter Nominal Shank Size and ACME Thread S	Style "a"	Style "b"	American Standard Taper Number	Nose Dia D	Minimum Length of Extension From Nut C
1/2 - 16	a		0	1/2	3
1/2 - 16	a		.375	1/2	2 1/2
5/8 - 16		b	0	1/2	3
5/8 - 16	a		1	5/8	3
3/4 - 12		b	1	5/8	3
3/4 - 12	a		2	1 1/16	3 1/2
7/8 - 12		b	1	3/4	3
7/8 - 12	a		2	1 1/16	3 1/2
1 - 12		b	1	7/8	3
1 - 12		b	2	7/8	3 1/2
1 - 12	a		3	1 5/16	4 1/2
1 1/16 - 12		b	1	15/16	3
1 1/16 - 12		b	2	15/16	3 1/2
1 1/16 - 12	a		3	1 5/16	4 1/2
1 3/8 - 12		b	2	1 1/4	3 1/2
1 3/8 - 12		b	3	1 1/4	4 1/2
1 3/8 - 12	a		4	1 3/4	5 1/2
1 7/8 - 12		b	3	1 3/4	4 1/2
1 7/8 - 12		b	4	1 3/4	5 1/2

DIMENSION C. Additional lengths in 1/2 - inch increments.
No. 0 TAPER. Size No. 0 is not an American Standard Taper, but is included to meet special needs.

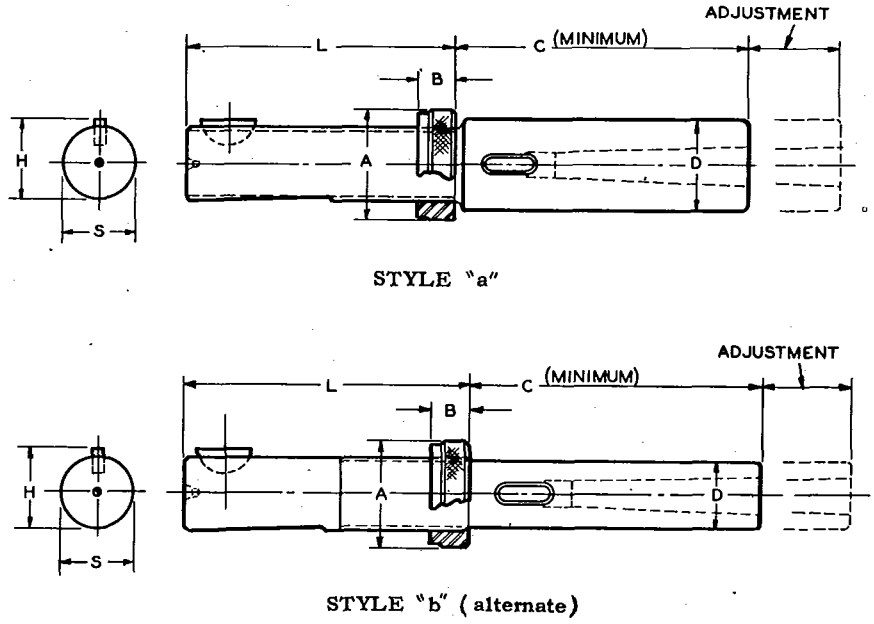


FIG. 4

TABLE 5 GENERAL DIMENSIONS OF ADJUSTABLE EXTENSION ADAPTER ASSEMBLY (STYLE "a" AND "b")

Adapter Nominal Shank Size S	Woodruff Key Size	Top of Key to Opposite Side of Dia H Min	H Max	Length of Shank L	Diameter of Nut A	Thickness of Nut B	Approximate Adjustment of Adapter
1/2	1/8 x 5/8	0.5605	0.5706	3	3/4	1/2*	15/16
1/2	1/8 x 5/8	0.5605	0.5706	3	7/8	1/2	15/16
5/8	5/32 x 5/8	0.6882	0.6982	3	7/8	1/2*	1
5/8	5/32 x 5/8	0.6882	0.6982	3	1	1/2	1
3/4	5/32 x 5/8	0.8149	0.8249	3	1 1/4	9/16	15/16
7/8	3/16 x 3/4	0.9535	0.9635	3 5/8	1 1/4	9/16	1 1/16
1	3/16 x 7/8	1.0798	1.0898	3 5/8	1 1/2	9/16	1 1/16
1 1/16	3/16 x 7/8	1.1429	1.1529	3 5/8	1 9/16	9/16	1 1/16
1 3/8	1/4 x 1	1.4835	1.4935	4 5/8	1 7/8	9/16	1 5/16
1 7/8	5/16 x 1 1/4	2.0131	2.0231	5 5/8	2 5/8	3/4	1 3/4

* Jam nut used in pairs. Dimension includes both nuts.
All dimensions given in inches.
FINISH. All surfaces must be finished.
MARKING. Thread size, and manufacturer's name or trademark, and ASA taper number to be marked on end.
MANUFACTURE. Tolerances on fractional dimensions are ±0.010 unless otherwise specified.

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SPINDLE NOSES AND ADJUSTABLE ADAPTERS FOR MULTIPLE SPINDLE DRILLING HEADS

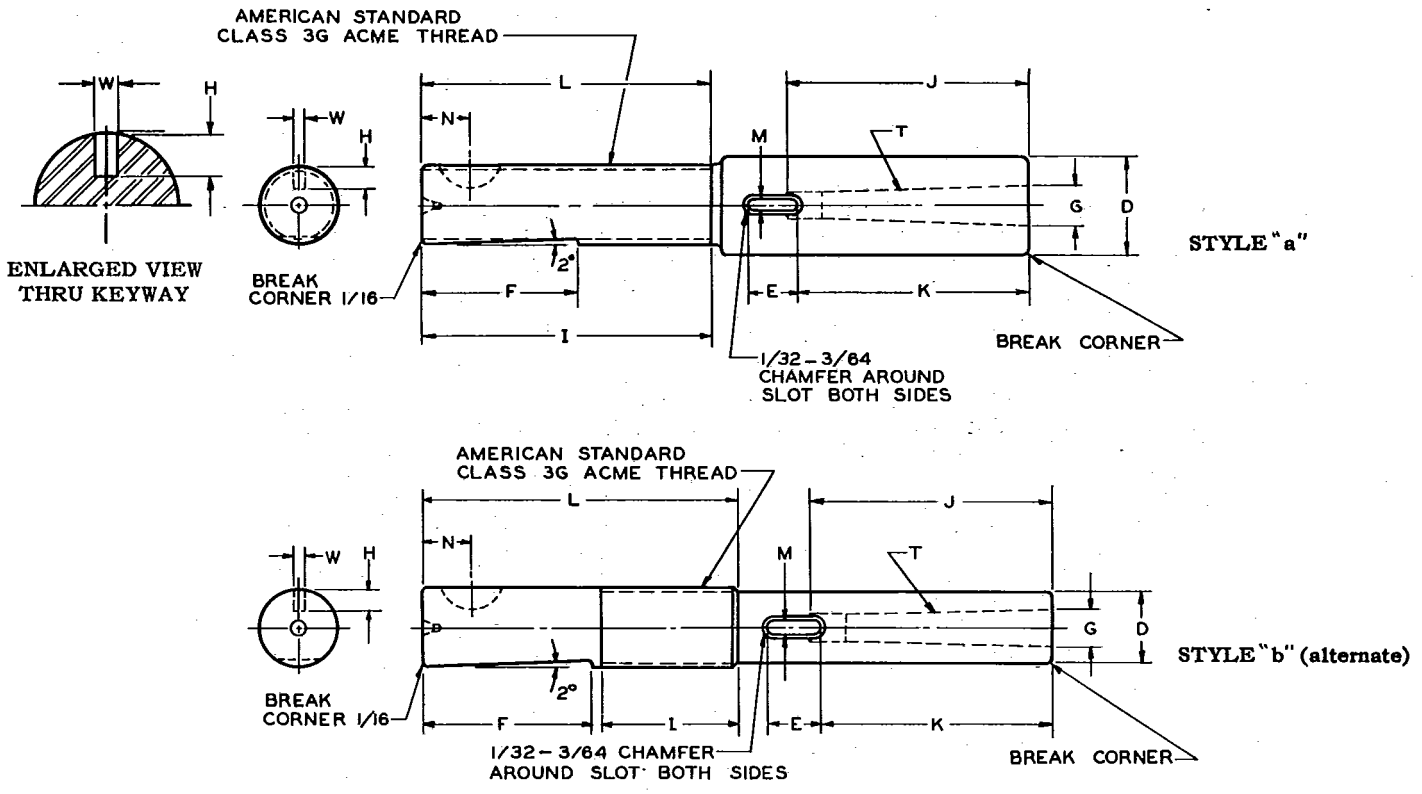


FIG. 5

TABLE 6 DETAIL DIMENSIONS OF ADJUSTABLE EXTENSION ADAPTERS (STYLE "a" AND "b")

THREAD DATA

Adapter Nominal Size and ACME Thread	American Standard Class 3G ACME Thread						Length of Shank L	Length of Flat F	Length of Thread I	
	Major Diameter		Pitch Diameter		Minor Diameter		Helix Angle at Basic Pitch Dia			
	Max	Min	Max	Min	Max	Min			Style "a"	Style "b"
1/2 - 16	0.4993	0.4990	0.46455	0.45905	0.42750	0.41925	2°25′49″	3.00	1 1/2		1 7/16
5/8 - 16	0.6243	0.6240	0.58905	0.58335	0.55250	0.54395	1°55′ 9″	3.00	1 3/8	3	1 1/2
3/4 - 12	0.7493	0.7490	0.70313	0.69663	0.65667	0.64692	2° 8′40″	3.00	1 3/8	3	1 1/2
7/8 - 12	0.8743	0.8740	0.82773	0.82103	0.78167	0.77162	1°49′23″	3.62	1 7/8	3 5/8	1 5/8
1 - 12	0.9993	0.9990	0.95233	0.94533	0.90667	0.89647	1°35′ 8″	3.62	1 7/8	3 5/8	1 5/8
1 1/16 - 12	1.0615	1.0612	1.01483	1.00783	0.96917	0.95867	1°29′18″	3.62	1 7/8	3 5/8	1 5/8
1 3/8 - 12	1.3740	1.3737	1.32633	1.31901	1.28167	1.27069	1° 8′23″	4.62	2 5/8	4 5/8	1 7/8
1 7/8 - 12	1.8740	1.8737	1.82543	1.81743	1.78167	1.76967	0°49′44″	5.62	3	5 5/8	

(Cont. on next page)

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TABLE 6 DETAIL DIMENSIONS OF ADJUSTABLE EXTENSION ADAPTERS (STYLE "a" AND "b") (Cont.)

KEY DATA

Adapter Nominal Size and ACME Thread	End of Shank to Center of Key N	Woodruff Key Slot				
		Nominal Size	American Standard Number	Width W		Depth H	
				Max	Min	Max	Min
1/2 - 16	7/16	1/8 x 5/8	405	0.1255	0.1240	0.1875	0.1825
5/8 - 16	1/2	5/32 x 5/8	505	0.1568	0.1553	0.1719	0.1669
3/4 - 12	1/2	5/32 x 5/8	505	0.1568	0.1553	0.1719	0.1669
7/8 - 12	1/2	3/16 x 3/4	606	0.1880	0.1863	0.2193	0.2143
1 - 12	5/8	3/16 x 7/8	607	0.1880	0.1863	0.2813	0.2763
1 1/16 - 12	5/8	3/16 x 7/8	607	0.1880	0.1863	0.2813	0.2763
1 3/8 - 12	3/4	1/4 x 1	808	0.2505	0.2487	0.3130	0.3080
1 7/8 - 12	15/16	5/16 x 1 1/4	1010	0.3130	0.3111	0.3908	0.3858

TABLE 6 DETAIL DIMENSIONS OF ADJUSTABLE EXTENSION ADAPTERS (STYLE "a" AND "b") (Cont.)

TAPER DATA

American Standard Taper					Drive Slot			
American Standard Taper Number	Depth Taper Socket J	Taper per Foot T	Diameter Large End G		End of Nose to Slot K	Length E	Width M	
			Max	Min			Max	Min
0	2 1/16	0.62460	0.356	0.354	1 15/16	9/16	0.178	0.172
.375	1 5/8	0.50200	0.375	0.373	1 15/32	5/8	0.209	0.203
1	2 3/16	0.59858	0.475	0.473	2 1/16	3/4	0.224	0.218
2	2 21/32	0.59941	0.700	0.698	2 1/2	7/8	0.272	0.266
3	3 5/16	0.60235	0.938	0.936	3 1/16	1 3/16	0.334	0.328
4	4 3/16	0.62326	1.231	1.229	3 7/8	1 1/4	0.490	0.484

CONCENTRICITY OF HOLE G. Hole must run true with respect to outside diameter, within 0.002 in. total indicator reading on a test plug, at all points up to 6 in. away from end of adapter.

CENTRALITY OF DRIVING SLOT M. To be within 0.0025 with center line of taper (0.005 Total Indicator Variation).

MARKING. Adapter size and American Standard taper number to be marked on end.

MANUFACTURING. All burrs must be removed and threaded portion must be free of scale. Tolerances on fractional dimensions are ±0.010 in. unless otherwise specified.

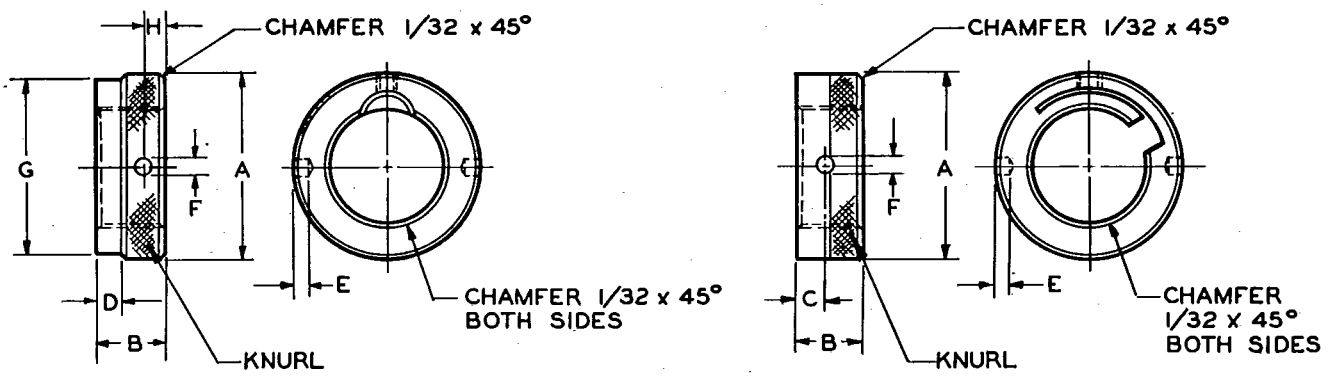
SCREW THREAD. The pitch diameter of the threads and the axial center line of adapter shall be parallel within 0.002 in. per inch of length. The major diameter is based on maintaining the basic mating hole size of +0.0005 −0.0000.

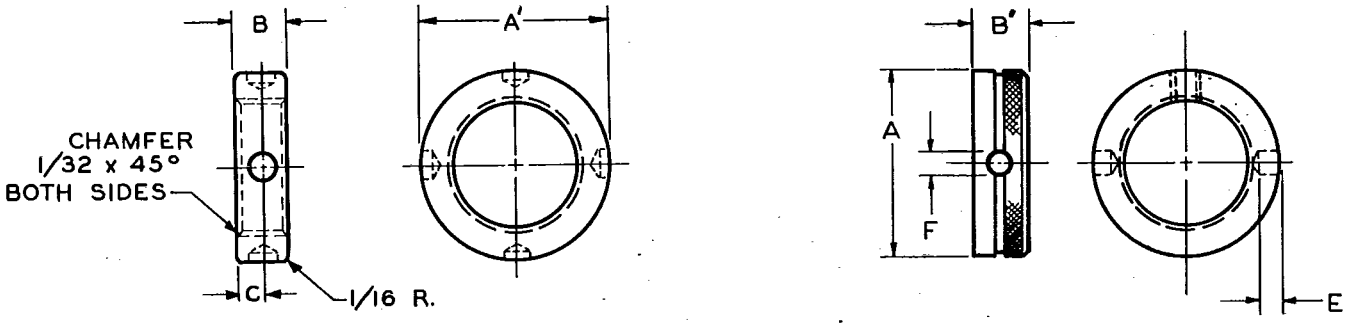
No. 0 TAPER. Size No. 0 is not an American Standard Taper, but is included to meet special needs.

WOODRUFF KEY. Assembling of key must not result in growth of shank O.D. beyond maximum diameter given.

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SPINDLE NOSES AND ADJUSTABLE ADAPTERS FOR MULTIPLE SPINDLE DRILLING HEADS





ALTERNATE THIN NUT

FIG. 6

TABLE 7 DETAIL DIMENSIONS FOR ADJUSTABLE ADAPTER LOCK NUTS

Adapter Nominal Size and ACME Thread	Internal American Standard Class 3G ACME Thread							Dia of Nut A	Dia of Nut A′	Thickness B	Thickness (Alt.) B′	C	D	Holes for Spanner Wrenches		G	H
	Major Diameter		Pitch Diameter		Minor Diameter		Helix Angle							Depth E	Dia F		
	Min	Max	Min	Max	Min	Max											
1/2 - 16	0.5100	0.5200	0.46875	0.47425	0.43750	0.44250	2° 25′ 49″		3/4	1/4	3/8	1/8		1/16	1/8		
1/2 - 16	0.5100	0.5200	0.46875	0.47425	0.43750	0.44250	2° 25′ 49″	7/8		1/2	3/8	1/4	3/16	3/32	3/16	13/16	5/32
5/8 - 16	0.63500	0.64500	0.59375	0.59945	0.56250	0.56750	1° 55′ 9″		7/8	1/4	3/8	1/8		1/16	1/8		
5/8 - 16	0.63500	0.64500	0.59375	0.59945	0.56250	0.56750	1° 55′ 9″	1		1/2	3/8	1/4	3/16	3/32	3/16	15/16	5/32
3/4 - 12	0.76000	0.77000	0.70833	0.71483	0.66667	0.67167	2° 8′ 40″	1 1/4		9/16	3/8	9/32	13/64	1/8	1/4	1 3/16	3/16
7/8 - 12	0.88500	0.89500	0.83333	0.83893	0.79167	0.79667	1° 49′ 23″	1 1/4		9/16	3/8	9/32	13/64	1/8	1/4	1 3/16	3/16
1 - 12	1.01000	1.02000	0.95833	0.96433	0.91667	0.92167	1° 35′ 8″	1 1/2		9/16	3/8	9/32	13/64	1/8	1/4	1 7/16	3/16
1 1/16 - 12	1.07250	1.08250	1.02083	1.02783	0.97917	0.98417	1° 29′ 18″	1 9/16		9/16	3/8	9/32	13/64	1/8	1/4	1 1/2	3/16
1 3/8 - 12	1.38500	1.39500	1.33333	1.34065	1.29167	1.29667	1° 8′ 23″	1 7/8		9/16	3/8	9/32	13/64	1/8	1/4	1 13/16	3/16
1 7/8 - 12	1.88500	1.89500	1.83333	1.84133	1.79167	1.79667	0° 49′ 44″	2 5/8		3/4	1/2	3/8	9/32	3/16	1/4	2 9/16	15/64

No attempt is made to identify the preferred means of locking, as this varies with different manufacturers.

MANUFACTURING. All burrs must be removed and threads must be free of scale. Tolerances on fractional dimensions are ± 0.010 in. unless otherwise specified. Face of nut to be square with respect to thread within 0.002 in. full indicator reading.

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American Standards for Small Tools and Machine Tool Elements

TITLE OF STANDARD	
T-Slots, Their Bolts, Nuts Tongues, and Cutters	B5.1–1949
Milling Cutters	B5.3–1960
Taps–Cut and Ground Threads	B5.4–1959
Rotating Air Cylinders and Adapters	B5.5–1959
Jig Bushings	B5.6–1962
Circular and Dovetailed Forming Tool Blanks	B5.7–1954
Chucks and Chuck Jaws	B5.8–1954 (Reaffirmed 1959)
Spindle Noses for Tool Room Lathes, Engine Lathes, Turret Lathes, and Automatic Lathes	B5.9–1960
Machine Tapers	B5.10–1963
Spindle Noses and Adjustable Adapters for Multiple Spindle Drilling Heads	B5.11–1964
Twist Drills	B5.12–1958
Reamers	B5.14–1959
Involute Splines, Serrations and Inspection	B5.15–1960
Accuracy of Engine and Tool Room Lathes	B5.16–1952
Markings for Identifying Grinding Wheels and Other Bonded Abrasives	B5.17–1958
Spindle Noses and Arbors for Milling Machines	B5.18–1960
Life Tests of Single-Point Tools	B5.19–1946 (Reaffirmed 1953)
Machine Pins	B5.20–1958
Straight Cut-Off Blades for Lathes and Screw Machines	B5.21–1949
Single Point Tools and Tool Posts	B5.22–1950
Inserted Blade Milling Cutter Bodies	B5.23–1958
Punch and Die Sets for Two-Post Punch Press Tools	B5.25–1950
Drill Drivers	B5.27–1959
Mounting Dimensions of Lubricating and Coolant Pumps for Machine Tools	B5.28–1958
High Speed Steel and Cast Nonferrous Single Point Tools and Tool Holders	B5.29–1959
Knurling	B5.30–1958
Designation and Working Ranges of Grinding Machines	B5.32 & 33–1953
Life Tests for Single-Point Tools of Sintered Carbide	B5.34–1956
Machine Mounting Specifications for Abrasive Discs and Plate Mounted Wheels	B5.35–1957
Carbide Blanks and Cutting Tools	B5.36–1957
Driving and Spindle Ends for Portable Air and Electric Tools	B5.38–1958
Spindle Flanges for Precision Boring Machines	B5.39–1961
Spindle Noses and Tool Shanks for Horizontal Boring Machines	B5.40–1962

Binders for holding standards are available.

A complete list of American Standards published by The American Society of Mechanical Engineers obtainable upon request.

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