

*Roller Turner Type Cutting Tools,
Single Point*

SPONSOR
Cemented Carbide Producers' Association

Approved October 29, 2002



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American National Standard
Roller Turner Type Cutting Tools,
Single Point

Secretariat
Cemented Carbide Producers' Association

Approved October 29, 2002
American National Standards Institute, Inc.

American National Standard

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Foreword (This Foreword is not part of American National Standard B212.13-1993)

In order to satisfy the apparent need for standardization of roller turner tools, the Standards Committee of the Cemented Carbide Producers' Association undertook to develop the necessary material. The committee's first task was to assemble factual data, which was then correlated in terms of popularity of each style and size, and from this material a recommendation was prepared. The recommendation was then submitted to the manufacturers of roller turner machines and tools for review and comment. All suggestions were incorporated into a final draft and that draft submitted to the American Standards Association on February 1, 1958, for approval as an American Standard under the Existing Standards Method. This was published as ASA B81.1-1961.

The document was revised by American National Standards Committee B94 and approved and redesignated by the American National Standards Institute as ANSI B94.37-1972 on April 14, 1972.

The current standard, renamed "Roller Turner Type Cutting Tools, Single Point" was revised by TC-1 of Standards Committee B94 and was submitted to the ASME on January 31, 1979. It was approved as an American National Standard on October 30, 1979.

Suggestions for improvement of this standard will be welcome. They should be sent to the Cemented Carbide Producers' Association, 30200 Detroit Avenue, Cleveland, OH 44145-1967.

This standard was processed and approved for submittal to ANSI by Accredited Standards Committee for Cemented Carbides, B212. Committee approval of the standard does not necessarily imply that all committee members voted for its approval. At the time it approved this standard, the B212 Committee had the following members:

Gerald J. Rhodes, Chairman
J. Jeffery Wherry, Secretary

Organization Represented	Name of Representative
The Association for Manufacturing Technology (AMT)	Anthony M. Bratkovich, P.E.
Carboloy, Inc.	Don Reinert
Cemented Carbide Producers' Association	J. Jeffery Wherry
Dresser-Rand Company	Gerald J. Rhodes
Greenleaf Corporation	Donald R. Hughes
Ingersoll Cutting Tool Company	Jim Schultz
Kennametal, Inc.	Lee Yothers
Machining Research, Inc.	John D. Christopher
Sandvik Coromant Company	Keith Crawford
TechSolve	Anil Srivastava, Ph.D.
United States Cutting Tool Institute	Charles Stockinger
Valenite, Inc.	James J. Robinson

The TC-1 Technical Subcommittee of Committee B212, which was responsible for the development of this standard, had the following members:

Gerald J. Rhodes, Chairman
J. Jeffery Wherry, Secretary

Richard Black
Jeff Burton
Keith Crawford
Donald R. Hughes
Jeff Kleven
Joseph J. Ley
Thomas Morey

Mile Powell
Don Reinert
James J. Robinson
Gary W. Roderick
Jim Schultz
David Wills
Lee Yothers

American National Standard

Roller Turner Type Cutting Tools, Single Point

1 Scope

This Standard covers the dimensional envelope for various styles of single-point roller-turner tools covering brazed, solid, or indexable insert types.

The numbers shown are designated brazed tools, but the envelope covers all style tools — for designation of solid or indexable insert styles see individual tool manufacturers' catalogs.

The values stated in U.S. customary units are to be regarded as the standard.

2 Identification system

Letters are used to identify single-point, cemented carbide-tipped roller turner tools used with various types of holders, and numbers are used to designate the shank cross-section size of the tool.

2.1 Holder designations

2.1.1 Style GS

The letters "GS" are used to designate a tool used in a 15 x 15 degree compound angle holder. See table 1 for dimensions, style and designations.

2.1.2 Style JL

The letters "JL" are used to designate a tool used in a 5 degree angle holder. See table 2 for dimensions, style, and designations.

2.1.3 Style WS

The letters "WS" are used to designate a tool used in a 15 x 20 degree compound angle holder. See tables 3 and 4 for dimensions, style, and designations. A third letter, either A or B, added to the WS designation indicates use of the tool.

2.1.3.1 Style WSA

The letter "A," added to the WS designation, indicates a tool used primarily for light cuts terminating at a square (90 degree) shoulder. See table 3.

2.1.3.2 Style WSB

The letter "B," added to the WS designation, indicates a tool used for turning with a 5 degree lead angle. See table 4.

2.2 Shank cross section designations

2.2.1 Rectangular shank sizes

Two digits are to designate the rectangular shank sizes. The first digit expresses the width in $\frac{1}{8}$ ths of an inch (3.18mm); the second expresses the height in $\frac{1}{4}$ ths of an inch (6.35mm). Exceptions: In style WS, the $\frac{7}{8}$ x $1\frac{1}{8}$ inch size is assigned the number 75 and in style JL, the $1\frac{1}{16}$ x $\frac{7}{8}$ inch size is assigned the number 12.

2.2.2 Square shank sizes

The number given expresses the width and height in $\frac{1}{16}$ ths of an inch (1.588mm).

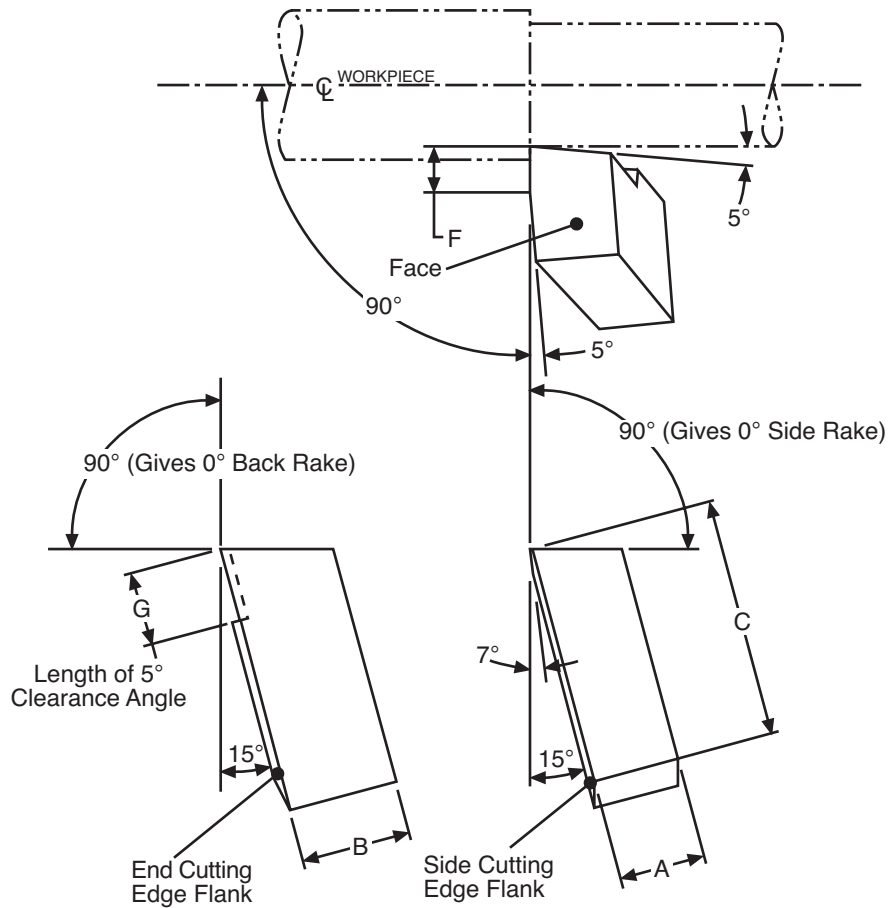


Table 1 – Roller turner tools, Style GS – 15° x 15° compound angle for square shoulder turning

Tool Designation	Tool Dimensions					
	A		B		C	
	inch	mm	inch	mm	inch	mm
GS-43	0.500 ^{+0.000} _{-0.010}	12.70 ^{+0.00} _{-0.25}	0.750 ^{+0.000} _{-0.010}	19.05 ^{+0.00} _{-0.25}	2.75 ± 0.12	69.8 ± 3.2
GS-16	1.000 ^{+0.000} _{-0.010}	25.40 ^{+0.00} _{-0.25}	1.000 ^{+0.000} _{-0.010}	25.40 ^{+0.00} _{-0.25}	3.50 ± 0.12	88.9 ± 3.2
GS-20	1.250 ^{+0.000} _{-0.015}	31.75 ^{+0.00} _{-0.38}	1.250 ^{+0.000} _{-0.015}	31.75 ^{+0.00} _{-0.38}	4.00 ± 0.12	101.6 ± 3.2

	E		F		G	
	inch	mm	inch	mm	inch	mm
GS-43	0.031	0.79	0.312	7.94	0.500 ± 0.12	12.70 ± 3.2
GS-16	0.031	0.79	0.375	9.52	1.000 ± 0.12	25.40 ± 3.2
GS-20	0.062	1.59	0.625	15.88	1.250 ± 0.12	31.75 ± 3.2

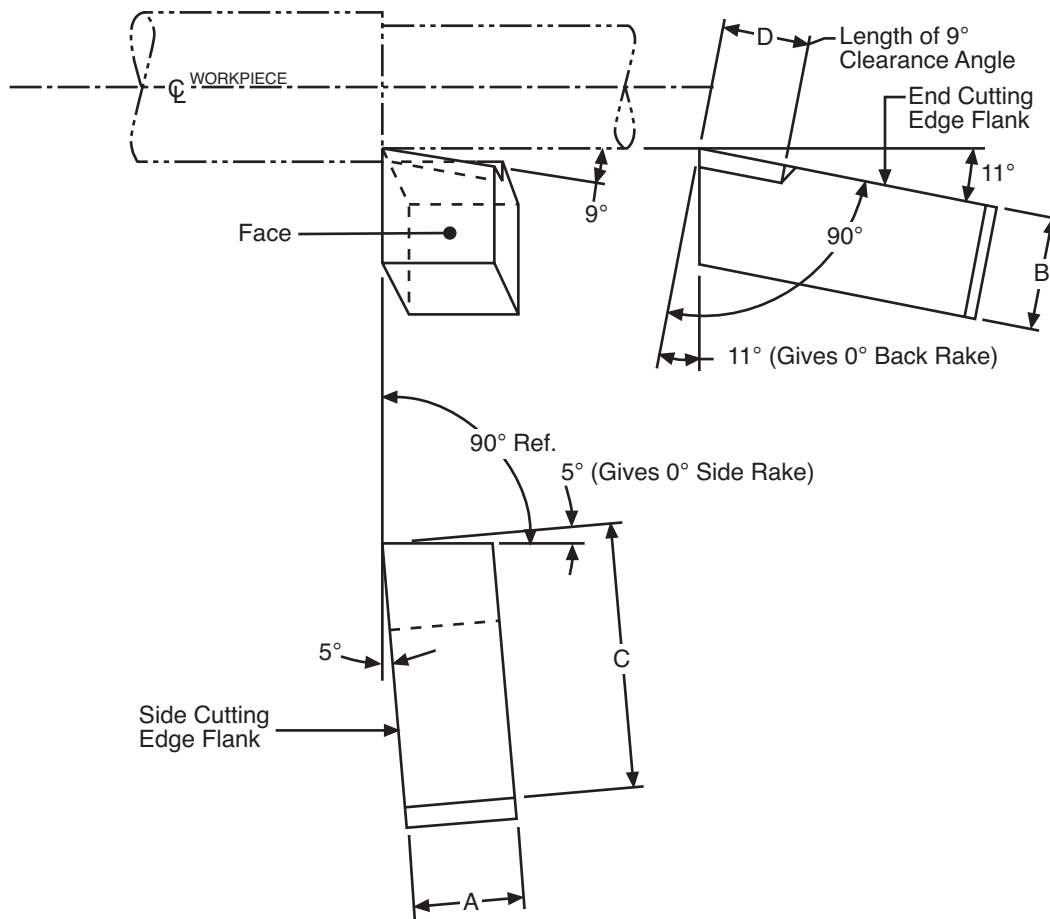


Table 2 – Roller turner tools, Style JL – 5° angle for square shoulder turning

Tool Designation	Tool Dimensions									
	A		B		C		E			
	inch	mm	inch	mm	inch	mm	inch	mm		
JL-32	0.375 +0.000 -0.010	9.52 +0.00 -0.25	0.500 +0.000 -0.010	12.70 +0.00 -0.25	2.50 ± 0.12	63.50 ± 3.2	0.375	9.52		
JL-12	0.688 +0.000 -0.010	17.47 +0.00 -0.25	0.750 +0.000 -0.010	19.05 +0.00 -0.25	3.75 ± 0.12	95.25 ± 3.2	0.625	15.87		
JL-64	0.750 +0.000 -0.010	19.05 +0.00 -0.25	1.000 +0.000 -0.010	25.40 +0.00 -0.25	4.25 ± 0.12	107.95 ± 3.2	0.750	19.05		
JL-85	1.000 +0.000 -0.010	25.40 +0.00 -0.25	1.250 +0.000 -0.015	31.75 +0.00 -0.38	5.25 ± 0.12	133.35 ± 3.2	0.750	19.05		
JL-86	1.000 +0.000 -0.010	25.40 +0.00 -0.25	1.500 +0.000 -0.015	38.10 +0.00 -0.38	7.00 ± 0.12	177.80 ± 3.2	0.625	15.87		

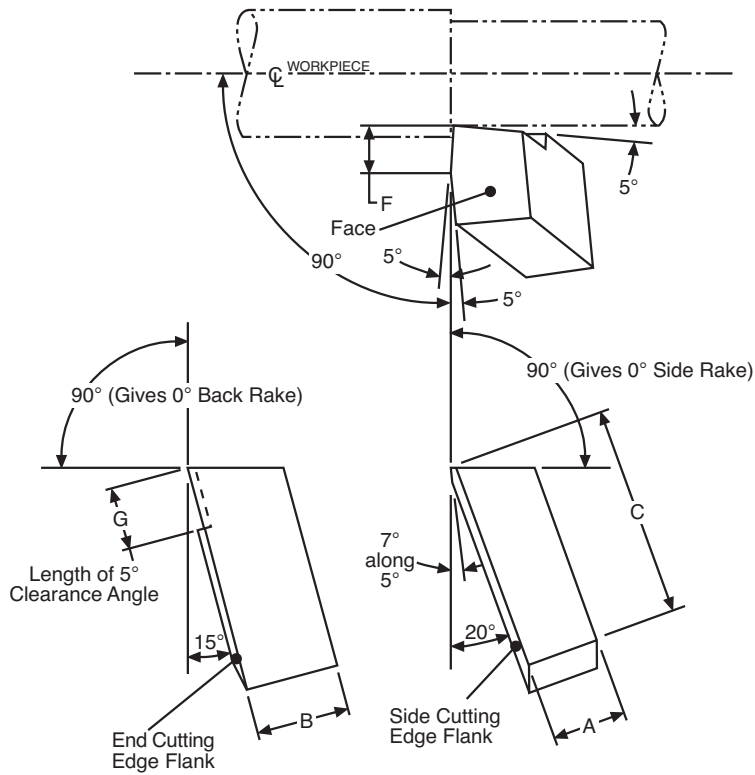


Table 3 – Roller turner tools, Style WSA – 15° x 20° compound angle for square shoulder turning

Tool Designation	Tool Dimensions					
	A		B		C	
	inch	mm	inch	mm	inch	mm
WSA-32	0.375 +0.000 -0.010	9.53 +0.00 -0.25	0.500 +0.000 -0.010	12.70 +0.00 -0.25	1.50 ± 0.12	38.1 ± 3.2
WSA-43	0.500 +0.000 -0.010	12.70 +0.00 -0.25	0.750 +0.000 -0.010	19.05 +0.00 -0.25	2.62 ± 0.12	66.7 ± 3.2
WSA-64	0.750 +0.000 -0.010	19.05 +0.00 -0.25	1.000 +0.000 -0.010	25.40 +0.00 -0.25	3.00 ± 0.12	76.2 ± 3.2
WSA-75	0.875 +0.000 -0.010	22.22 +0.00 -0.25	1.125 +0.000 -0.015	28.58 +0.00 -0.38	3.62 ± 0.12	92.1 ± 3.2
WSA-85	1.000 +0.000 -0.010	25.40 +0.00 -0.25	1.250 +0.000 -0.015	31.75 +0.00 -0.38	4.00 ± 0.12	101.6 ± 3.2

	E		F		G	
	inch	mm	inch	mm	inch	mm
WSA-32	0.031	0.79	0.312	7.94	0.375 ± 0.12	9.52 ± 3.2
WSA-43	0.031	0.79	0.312	7.94	0.500 ± 0.12	12.70 ± 3.2
WSA-64	0.047	1.19	0.438	11.11	0.750 ± 0.12	19.05 ± 3.2
WSA-75	0.047	1.19	0.438	11.11	0.875 ± 0.12	22.22 ± 3.2
WSA-85	0.047	1.19	0.438	11.11	1.000 ± 0.12	25.40 ± 3.2

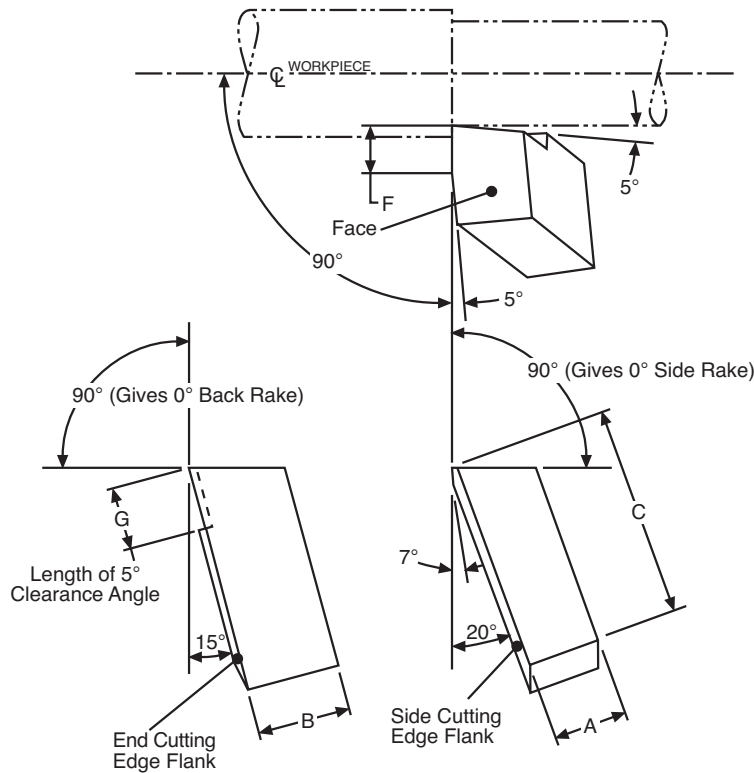


Table 4 – Roller turner tools, Style WSB – 15° x 20° compound angle for 5° lead angle turning

Tool Designation	Tool Dimensions					
	A		B		C	
	inch	mm	inch	mm	inch	mm
WSB-32	0.375 +0.000 -0.010	9.52 +0.00 -0.25	0.500 +0.000 -0.010	12.70 +0.00 -0.25	1.50 ± 0.12	38.1 ± 3.2
WSB-43	0.500 +0.000 -0.010	12.70 +0.00 -0.25	0.750 +0.000 -0.010	19.05 +0.00 -0.25	2.62 ± 0.12	66.7 ± 3.2
WSB-64	0.750 +0.000 -0.010	19.05 +0.00 -0.25	1.000 +0.000 -0.010	25.40 +0.00 -0.25	3.00 ± 0.12	76.2 ± 3.2
WSB-75	0.875 +0.000 -0.010	22.22 +0.00 -0.25	1.125 +0.000 -0.015	28.58 +0.00 -0.38	3.62 ± 0.12	92.1 ± 3.2
WSB-85	1.000 +0.000 -0.010	25.40 +0.00 -0.25	1.250 +0.000 -0.015	31.75 +0.00 -0.38	4.00 ± 0.12	101.6 ± 3.2

	E		F		G	
	inch	mm	inch	mm	inch	mm
WSB-32	0.062	1.59	0.312	7.94	0.375 ± 0.12	9.52 ± 3.2
WSB-43	0.062	1.59	0.312	7.94	0.500 ± 0.12	12.70 ± 3.2
WSB-64	0.078	1.98	0.438	11.11	0.750 ± 0.12	19.05 ± 3.2
WSB-75	0.078	1.98	0.438	11.11	0.875 ± 0.12	22.22 ± 3.2
WSB-85	0.078	1.98	0.438	11.11	1.000 ± 0.12	25.40 ± 3.2