
SELECTION GUIDE

SOLID END MILLS

2023 | INCH
























WIDIA 
widia.com
























**EXPERIENCE
AFFORDABLE
PERFORMANCE**






















Multi-Purpose End Mills • Selection Guide • Inch

WIDIA Solid End Milling Portfolio								
	WCE4	WCE4	WCE4	WCE4	WCE4	WCE4	WCE4	
								
UOM	Inch	Inch	Inch	Inch	Inch	Inch	Inch	
Series	W401	W401	W401	W401	W401	W401	W411	
Page	1	1	1	1	1	1	1	
Flute	4	4	4	4	4	4	4	
Diameter D1	1/8–7/16"	1/8–7/16"	1/8–7/16"	1/2–1"	1/2–1"	1/2–1"	1/8–7/16"	
Shank								
Length of Cut	Regular	Regular	Regular	Regular	Regular	Regular	Long	
Corner Style								
Chamfer Size	–	.010–.020"	–	–	.020"	–	–	
Radius Sizes	–	–	.015–.090"	–	–	.030–.120"	–	
Helix Angle	37° / 39°	37° / 39°	37° / 39°	37° / 39°	37° / 39°	37° / 39°	37° / 39°	
Center Cutting	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Neck	No	No	No	No	No	No	No	
Materials	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H



















Multi-Purpose End Mills • Selection Guide • Inch

WIDIA Solid End Milling Portfolio							
	WCE4	WCE4	WCE4	WCE4	WCE4	WCE4	WCE4
							
UOM	Inch	Inch	Inch	Inch	Inch	Inch	Inch
Series	W411	W411	W411	W411	W411	W421	W421
Page	2	2	2	2	2	2	2
Flute	4	4	4	4	4	4	4
Diameter D1	1/8–7/16"	1/8–7/16"	1/2–1"	1/2–1"	1/2–1"	1/4–7/16"	1/4–7/16"
Shank							
Length of Cut	Long	Long	Long	Long	Long	Extended	Extended
Corner Style							
Chamfer Size	.010–.020"	–	–	.020"	–	–	.016–.020"
Radius Sizes	–	.015–.090"	–	–	.015–.090"	–	–
Helix Angle	37° / 39°	37° / 39°	37° / 39°	37° / 39°	37° / 39°	37° / 39°	37° / 39°
Center Cutting	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Neck	No	No	No	No	No	No	No
Materials	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H






















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WIDIA Solid End Milling Portfolio								
	WCE4	WCE4	WCE4	WCE4	WCE4	WCE4	WCE4	
								
UOM	Inch	Inch	Inch	Inch	Inch	Inch	Inch	
Series	W421	W421	W421	W421	W431	W431	W431	
Page	3	3	3	3	3	3	3	
Flute	4	4	4	4	4	4	4	
Diameter D1	1/4–3/8"	1/2–3/4"	1/2–1"	1/2–1"	1/2–1"	1/2–1"	1/2–1"	
Shank								
Length of Cut	Extended	Extended	Extended	Extended	X-Long	X-Long	X-Long	
Corner Style								
Chamfer Size	–	–	.020"	–	–	.020"	–	
Radius Sizes	.015–.090"	–	–	.030–.120"	–	–	.030–.120"	
Helix Angle	37° / 39°	37° / 39°	37° / 39°	37° / 39°	37° / 39°	37° / 39°	37° / 39°	
Center Cutting	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Neck	No	No	No	No	No	No	No	
Materials	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H







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WIDIA Solid End Milling Portfolio						
	WCE4	WCE4	WCE4	WCE4	WCE4	WCE4
						
UOM	Inch	Inch	Inch	Inch	Inch	Inch
Series	W441	W441	W441	W40B	W40B	W41B
Page	4	4	4	4	4	4
Flute	4	4	4	4	4	4
Diameter D1	1/2"	1/2"	1/2"	1/8–3/8"	1/2–1"	1/2"
Shank						
Length of Cut	X-Long	X-Long	X-Long	Regular	Regular	Long
Corner Style						
Chamfer Size	–	.020"	–	–	–	–
Radius Sizes	–	–	.030–.120"	–	–	–
Helix Angle	37° / 39°	37° / 39°	37° / 39°	38°	38°	38°
Center Cutting	Yes	Yes	Yes	Yes	Yes	Yes
Neck	No	No	No	No	No	No
Materials	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H





















Multi-Purpose End Mills • Selection Guide • Inch

WIDIA Solid End Milling Portfolio								
	WCE5	WCE5	WCE5	WCE5	WCE5	WCE5	WCE5	
								
UOM	Inch	Inch	Inch	Inch	Inch	Inch	Inch	
Series	W501	W501	W501	W501	W501	W501	W521	
Page	5	5	5	5	5	5	5	
Flute	5	5	5	5	5	5	5	
Diameter D1	1/4–1/2"	5/16–1/2"	3/16–1/4"	3/16–3/8"	1/2–1"	1/2–1"	1/2"	
Shank								
Length of Cut	Regular	Regular	Long	Long	Regular	Regular	Long	
Corner Style								
Chamfer Size	–	–	–	–	–	–	–	
Radius Sizes	–	.015"–.12"	–	.015"–.06"	–	.015"–.12"	–	
Helix Angle	38°	38°	38°	38°	38°	38°	38°	
Center Cutting	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Neck	No	No	No	No	No	No	No	
Materials	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H




































Multi-Purpose End Mills • Selection Guide • Inch

	WCE5	WCE5
		
UOM	Inch	Inch
Series	W511	W531
Page	6	6
Flute	5	5
Diameter D1	1/2"	1/2"
Shank		
Length of Cut	Long	Extended
Corner Style		
Chamfer Size	—	—
Radius Sizes	.015" – .09"	—
Helix Angle	38°	38°
Center Cutting	Yes	Yes
Neck	No	No
Materials	P M K S H	P M K S H













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WIDIA Solid End Milling Portfolio					
	GP	GP	GP	GP	GP
					
UOM	Inch	Inch	Inch	Inch	Inch
Series	I2S	I2R	I2B	I3S	I3S
Page	7	7	7	7	7
Flute	2	2	2	3	3
Diameter D1	1/64–1"	1/16–1"	1/32–1"	1/32–1"	1/32–1"
Shank					
Length of Cut	Regular	Regular	Regular	Regular	Regular
Corner Style					
Chamfer Size	–	–	–	–	–
Radius Sizes	–	.010–.125"	–	–	–
Helix Angle	30°	30°	30°	30°	30°
Center Cutting	Yes	Yes	Yes	Yes	Yes
Neck	No	No	No	No	No
Materials					

























Multi-Purpose End Mills • Selection Guide • Inch

WIDIA Solid End Milling Portfolio					
	GP	GP	GP	GP	GP
					
UOM	Inch	Inch	Inch	Inch	Inch
Series	I4C	I4C	I4C	I4C	I4C
Page	8	8	8	8	8
Flute	4	4	4	4	4
Diameter D1	7/32 - 1/2"	5/8 - 3/4"	5/32 - 1/4"	3/16 - 1/2"	1/8"
Shank					
Length of Cut	Regular	Regular	Long	X-Long	Extended
Corner Style					
Chamfer Size	.016 - .02	.02	.01 - .016	.01 - .02	0.01
Radius Sizes	—	—	—	—	—
Helix Angle	30°	30°	30°	30°	30°
Center Cutting	Yes	Yes	Yes	Yes	Yes
Neck	No	No	No	No	No
Materials	   	   	   	   	   

























Multi-Purpose End Mills • Selection Guide • Inch

WIDIA Solid End Milling Portfolio				
	GP	GP	GP	GP
				
UOM	Inch	Inch	Inch	Inch
Series	I4S	I4S	I4R	I4B
Page	8	8	8	8
Flute	4	4	4	4
Diameter D1	1/64–1 1/4"	1/2–1"	1/16–1"	1/32–1"
Shank				
Length of Cut	Regular	Regular	Regular	Regular
Corner Style				
Chamfer Size	–	–	–	–
Radius Sizes	–	–	.010–.125"	–
Helix Angle	30°	30°	30°	30°
Center Cutting	Yes	Yes	Yes	Yes
Neck	No	No	No	No
Materials	P M K N	P M K N	P M K N	P M K N

























Multi-Purpose End Mills • Selection Guide • Metric

WIDIA Solid End Milling Portfolio						
	WCE4	WCE4	WCE4	WCE4	WCE4	WCE4
						
UOM	Metric	Metric	Metric	Metric	Metric	Metric
Series	W401	W401	W401	W401	W4N1	W411
Page	9	9	9	9	9	9
Flute	4	4	4	4	4	4
Diameter D1	3–20mm	3–20mm	3–20mm	3–20mm	3–20mm	6–20mm
Shank						
Length of Cut	Regular	Regular	Regular	Regular	Regular	Long
Corner Style						
Chamfer Size	—	—	0,40–0,50mm	0,40–0,50mm	—	0,40–0,50mm
Radius Sizes	—	—	—	—	0,2–3mm	—
Helix Angle	37° / 39°	37° / 39°	37° / 39°	37° / 39°	37° / 39°	37° / 39°
Center Cutting	Yes	Yes	Yes	Yes	Yes	Yes
Neck	No	No	No	No	Yes	No
Materials						





























Multi-Purpose End Mills • Selection Guide • Metric

WIDIA Solid End Milling Portfolio						
	WCE4	WCE4	WCE5	WCE5	WCE5	WCE5
						
UOM	Metric	Metric	Metric	Metric	Metric	Metric
Series	W4NB	W4NB	W501	W501	W501	W5N1
Page	10	10	11	11	11	11
Flute	4	4	5	5	5	5
Diameter D1	5–20mm	5–20mm	4 - 25	4 - 20	4 - 20	4 - 20
Shank						
Length of Cut	Regular	Regular	Regular	Regular	Regular	Regular
Corner Style						
Chamfer Size	–	–	–	0.2 – 0.5	0.2 – 0.5	–
Radius Sizes	–	–	–	–	–	0.2 – 4.0
Helix Angle	38°	38°	38°	38°	38°	38°
Center Cutting	Yes	Yes	Yes	Yes	Yes	Yes
Neck	Yes	Yes	No	No	No	No
Materials						





























Multi-Purpose End Mills • Selection Guide • Metric

WIDIA Solid End Milling Portfolio						
	GP	GP	GP	GP	GP	GP
						
UOM	Metric	Metric	Metric	Metric	Metric	Metric
Series	4002	4002	4012	4012	D002	D002
Page	12	12	12	12	12	12
Flute	2	2	2	2	2	2
Diameter D1	1–20mm	1–20mm	1–20mm	1–20mm	2–20mm	2–20mm
Shank						
Length of Cut	Regular	Regular	Long	Long	Regular	Regular
Corner Style						
Chamfer Size	–	0,1–0,3mm	–	0,1–0,3mm	–	0,1–0,3mm
Radius Sizes	–	–	–	–	–	–
Helix Angle	30°	30°	30°	30°	30°	30°
Center Cutting	Yes	Yes	Yes	Yes	Yes	Yes
Neck	No	No	No	No	No	No
Materials						






















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WIDIA Solid End Milling Portfolio							
	GP	GP	GP	GP	GP	GP	GP
							
UOM	Metric	Metric	Metric	Metric	Metric	Metric	Metric
Series	D002	D002	D002	D002	D002	D002	2819
Page	13	13	13	13	13	13	13
Flute	2	2	2	2	2	2	2
Diameter D1	12–20mm	12–20mm	2,5–20mm	2,5–20mm	2,5–20mm	2,5–20mm	3–20mm
Shank							
Length of Cut	Regular	Regular	Regular	Regular	Regular	Regular	Regular
Corner Style							
Chamfer Size	—	0,1–0,3mm	—	0,1–0,3mm	—	0,1–0,3mm	—
Radius Sizes	—	—	—	—	—	—	—
Helix Angle	30°	30°	30°	30°	30°	30°	30°
Center Cutting	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Neck	No	No	No	No	No	No	No
Materials							

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WIDIA Solid End Milling Portfolio							
	GP	GP	GP	GP	GP	GP	GP
							
UOM	Metric	Metric	Metric	Metric	Metric	Metric	Metric
Series	2819	4001	4011	4021	D001	D011	2838
Page	14	14	14	14	14	14	14
Flute	2	2	2	2	2	2	2
Diameter D1	3–20mm	1–20mm	1–20mm	1–20mm	2–20mm	3–20mm	2–16mm
Shank							
Length of Cut	Regular	Regular	Long	Extended	Regular	Long	Regular
Corner Style							
Chamfer Size	0,1–0,3mm	–	–	–	–	–	–
Radius Sizes	–	–	–	–	–	–	–
Helix Angle	30°	30°	30°	30°	30°	30°	30°
Center Cutting	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Neck	No	No	No	No	No	No	No
Materials							

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WIDIA Solid End Milling Portfolio							
	GP	GP	GP	GP	GP	GP	GP
							
UOM	Metric	Metric	Metric	Metric	Metric	Metric	Metric
Series	4003..S	4003..S	4013..S	4013..S	4003	4003	4013
Page	15	15	15	15	15	15	15
Flute	3	3	3	3	3	3	3
Diameter D1	1–20mm	6–16mm	3–20mm	3–20mm	4–16mm	6–16mm	4–20mm
Shank							
Length of Cut	Reguar	Regular	Regular	Regular	Regular	Regular	Long
Corner Style							
Chamfer Size	–	–	–	–	–	–	–
Radius Sizes	–	–	–	–	–	–	–
Helix Angle	30°	30°	30°	30°	30°	30°	30°
Center Cutting	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Neck	No	No	No	No	No	No	No
Materials	