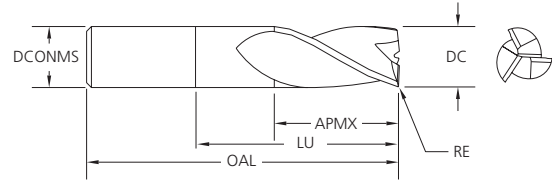
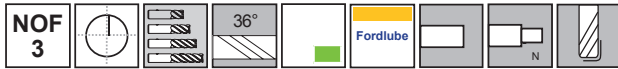


TuffCut® X-AL - Series 138N



Uncoated		Fordlube*		DC		DCONMS	OAL	APMX	LU	RE
Tool No.	EDP	Tool No.	EDP	Inch	Decimal	Inch	Inch	Inch	Inch	Inch
13812508N	14120			1/8	.1250	1/8	2	3/16	1/2	
13812508NR.015	11790			1/8	.1250	1/8	2	3/16	1/2	.015
13812509N	14121			1/8	.1250	1/8	2	3/16	3/4	
13812509NR.015	11792			1/8	.1250	1/8	2	3/16	3/4	.015
13812550N	14122			1/8	.1250	1/8	2	3/16	1	
13812550NR.015	11794			1/8	.1250	1/8	2	3/16	1	.015
13818750N	14123			3/16	.1875	3/16	2	1/4	1/2	
13818750NR.015	11796			3/16	.1875	3/16	2	1/4	1/2	.015
13818756N	14124			3/16	.1875	3/16	2	1/4	3/4	
13818756NR.015	11798			3/16	.1875	3/16	2	1/4	3/4	.015
13818757N	14125			3/16	.1875	3/16	2	1/4	1	
13818757NR.015	11800			3/16	.1875	3/16	2	1/4	1	.015
13825011N	14126			1/4	.2500	1/4	4	1/2	3/4	
13825011NR.015	11802			1/4	.2500	1/4	4	1/2	3/4	.015
13825011NR.030	11804			1/4	.2500	1/4	4	1/2	3/4	.030
13825002N	14450	13825002NF	14459	1/4	.2500	1/4	4	1/2	1-1/8	
13825002NR.015	11806			1/4	.2500	1/4	4	1/2	1-1/8	.015
13825002NR.030	11808			1/4	.2500	1/4	4	1/2	1-1/8	.030
13825012N	14127			1/4	.2500	1/4	4	1/2	2-1/8	
13825012NR.015	11810			1/4	.2500	1/4	4	1/2	2-1/8	.015
13825012NR.030	11812			1/4	.2500	1/4	4	1/2	2-1/8	.030
13831259N	14129			5/16	.3125	5/16	4	7/16	1-1/8	
13831259NR.015	11814			5/16	.3125	5/16	4	7/16	1-1/8	.015
13831259NR.030	11816			5/16	.3125	5/16	4	7/16	1-1/8	.030
13831252N	14451	13831252NF	14460	5/16	.3125	5/16	4	7/16	2-1/8	
13831252NR.015	11818			5/16	.3125	5/16	4	7/16	2-1/8	.015
13831252NR.030	11820			5/16	.3125	5/16	4	7/16	2-1/8	.030
13831210N	14128			5/16	.3125	5/16	6	7/16	3-1/8	
13831210NR.015	11822			5/16	.3125	5/16	6	7/16	3-1/8	.015
13831210NR.030	11824			5/16	.3125	5/16	6	7/16	3-1/8	.030
13837512N	14130			3/8	.3750	3/8	4	5/8	1-1/8	
13837512NR.015	11826			3/8	.3750	3/8	4	5/8	1-1/8	.015
13837512NR.030	11828			3/8	.3750	3/8	4	5/8	1-1/8	.030
13837512NR.060	11830			3/8	.3750	3/8	4	5/8	1-1/8	.060
13837503N	14452	13837503NF	14461	3/8	.3750	3/8	4	5/8	2-1/8	

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Weldon flats available. Please specify when ordering. When ordering Weldon flats please call customer service for pricing.

Inch		Inch	
DC	Tolerance	RE	Tolerance
1/8 - 1.0	+0.00/-0.005	1/8 - 1	+0.008/-0.008



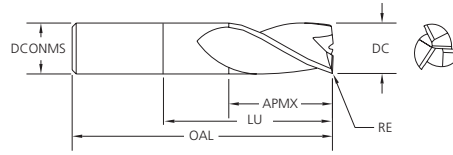
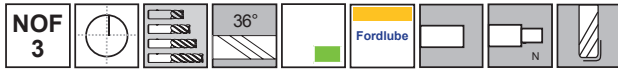
Uncoated		Fordlube*		DC		DCONMS	OAL	APMX	LU	RE
Tool No.	EDP	Tool No.	EDP	Inch	Decimal	Inch	Inch	Inch	Inch	Inch
13837503NR.015	11832			3/8	.3750	3/8	4	5/8	2-1/8	.015
13837503NR.030	11834			3/8	.3750	3/8	4	5/8	2-1/8	.030
13837503NR.060	11836			3/8	.3750	3/8	4	5/8	2-1/8	.060
13837513N	14131			3/8	.3750	3/8	6	5/8	3-1/8	
13837513NR.015	11838			3/8	.3750	3/8	6	5/8	3-1/8	.015
13837513NR.030	11840			3/8	.3750	3/8	6	5/8	3-1/8	.030
13837513NR.060	11842			3/8	.3750	3/8	6	5/8	3-1/8	.060
13850000N	14453	13850000NF	14462	1/2	.5000	1/2	3	5/8	1-3/8	
13850012N	14132			1/2	.5000	1/2	4	5/8	1-3/8	
13850012NR.015	11844			1/2	.5000	1/2	4	5/8	1-3/8	.015
13850012NR.030	11846			1/2	.5000	1/2	4	5/8	1-3/8	.030
13850012NR.060	11848			1/2	.5000	1/2	4	5/8	1-3/8	.060
13850012NR.090	11850			1/2	.5000	1/2	4	5/8	1-3/8	.090
13850012NR.120	11852			1/2	.5000	1/2	4	5/8	1-3/8	.120
13850010N	14454	13850010NF	14463	1/2	.5000	1/2	4	5/8	2-3/8	
13850010NR.015	11854			1/2	.5000	1/2	4	5/8	2-3/8	.015
13850010NR.030	11856			1/2	.5000	1/2	4	5/8	2-3/8	.030
13850010NR.060	11858			1/2	.5000	1/2	4	5/8	2-3/8	.060
13850010NR.090	11860			1/2	.5000	1/2	4	5/8	2-3/8	.090
13850010NR.120	11862			1/2	.5000	1/2	4	5/8	2-3/8	.120
13850011N	14455	13850011NF	14464	1/2	.5000	1/2	6	3/4	3-3/8	
13850011NR.015	11864			1/2	.5000	1/2	6	3/4	3-3/8	.015
13850011NR.030	11866			1/2	.5000	1/2	6	3/4	3-3/8	.030
13850011NR.060	11868			1/2	.5000	1/2	6	3/4	3-3/8	.060
13850011NR.090	11870			1/2	.5000	1/2	6	3/4	3-3/8	.090
13850011NR.120	11872			1/2	.5000	1/2	6	3/4	3-3/8	.120
13850013N	14133			1/2	.5000	1/2	6	3/4	4-3/8	
13850013NR.015	11874			1/2	.5000	1/2	6	3/4	4-3/8	.015
13850013NR.030	11876			1/2	.5000	1/2	6	3/4	4-3/8	.030
13850013NR.060	11878			1/2	.5000	1/2	6	3/4	4-3/8	.060
13850013NR.090	11880			1/2	.5000	1/2	6	3/4	4-3/8	.090
13850013NR.120	11882			1/2	.5000	1/2	6	3/4	4-3/8	.120
13862508N	14134			5/8	.6250	5/8	4	3/4	1-3/8	
13862508NR.030	11884			5/8	.6250	5/8	4	3/4	1-3/8	.030
13862508NR.060	11886			5/8	.6250	5/8	4	3/4	1-3/8	.060
13862508NR.090	11888			5/8	.6250	5/8	4	3/4	1-3/8	.090
13862508NR.120	11890			5/8	.6250	5/8	4	3/4	1-3/8	.120
13862509N	14135			5/8	.6250	5/8	6	3/4	2-3/8	
13862509NR.030	11892			5/8	.6250	5/8	6	3/4	2-3/8	.030
13862509NR.060	11894			5/8	.6250	5/8	6	3/4	2-3/8	.060
13862509NR.090	11896			5/8	.6250	5/8	6	3/4	2-3/8	.090
13862509NR.120	11898			5/8	.6250	5/8	6	3/4	2-3/8	.120
13862501N	14456	13862501NF	14465	5/8	.6250	5/8	6	3/4	3-3/8	
13862501NR.030	11900			5/8	.6250	5/8	6	3/4	3-3/8	.030
13862501NR.060	11902			5/8	.6250	5/8	6	3/4	3-3/8	.060
13862501NR.090	11904			5/8	.6250	5/8	6	3/4	3-3/8	.090
13862501NR.120	11906			5/8	.6250	5/8	6	3/4	3-3/8	.120

TuffCut® End Mills
Series 138N

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Weldon flats available. Please specify when ordering. When ordering Weldon flats please call customer service for pricing.



TuffCut® X-AL - Series 138N *Continued*



Uncoated		Fordlube*		DC		DCONMS	OAL	APMX	LU	RE
Tool No.	EDP	Tool No.	EDP	Inch	Decimal	Inch	Inch	Inch	Inch	Inch
13875013N	14136			3/4	.7500	3/4	6	1	1-3/8	
13875013NR.030	11908			3/4	.7500	3/4	6	1	1-3/8	.030
13875013NR.060	11910			3/4	.7500	3/4	6	1	1-3/8	.060
13875013NR.090	11912			3/4	.7500	3/4	6	1	1-3/8	.090
13875013NR.120	11914			3/4	.7500	3/4	6	1	1-3/8	.120
13875013NR.190	11916			3/4	.7500	3/4	6	1	1-3/8	.190
13875013NR.250	11918			3/4	.7500	3/4	6	1	1-3/8	.250
13875014N	14137			3/4	.7500	3/4	6	1	2-3/8	
13875014NR.030	11920			3/4	.7500	3/4	6	1	2-3/8	.030
13875014NR.060	11922			3/4	.7500	3/4	6	1	2-3/8	.060
13875014NR.090	11924			3/4	.7500	3/4	6	1	2-3/8	.090
13875014NR.120	11926			3/4	.7500	3/4	6	1	2-3/8	.120
13875014NR.190	11928			3/4	.7500	3/4	6	1	2-3/8	.190
13875014NR.250	11930			3/4	.7500	3/4	6	1	2-3/8	.250
13875002N	14457	13875002NF	14466	3/4	.7500	3/4	6	1	3-3/8	
13875002NR.030	11932			3/4	.7500	3/4	6	1	3-3/8	.030
13875002NR.060	11934			3/4	.7500	3/4	6	1	3-3/8	.060
13875002NR.090	11936			3/4	.7500	3/4	6	1	3-3/8	.090
13875002NR.120	11938			3/4	.7500	3/4	6	1	3-3/8	.120
13875002NR.190	11940			3/4	.7500	3/4	6	1	3-3/8	.190
13875002NR.250	11942			3/4	.7500	3/4	6	1	3-3/8	.250
13810010N	14138			1	1.0000	1	6	1-1/4	2-3/8	
13810010NR.030	11944			1	1.0000	1	6	1-1/4	2-3/8	.030
13810010NR.060	11946			1	1.0000	1	6	1-1/4	2-3/8	.060
13810010NR.090	11948			1	1.0000	1	6	1-1/4	2-3/8	.090
13810010NR.120	11950			1	1.0000	1	6	1-1/4	2-3/8	.120
13810010NR.190	11952			1	1.0000	1	6	1-1/4	2-3/8	.190
13810010NR.250	11954			1	1.0000	1	6	1-1/4	2-3/8	.250
13810000N	14458	13810000NF	14467	1	1.0000	1	6	1-1/4	3-3/8	
13810000NR.030	11956			1	1.0000	1	6	1-1/4	3-3/8	.030
13810000NR.060	11958			1	1.0000	1	6	1-1/4	3-3/8	.060
13810000NR.090	11960			1	1.0000	1	6	1-1/4	3-3/8	.090
13810000NR.120	11962			1	1.0000	1	6	1-1/4	3-3/8	.120
13810000NR.190	11964			1	1.0000	1	6	1-1/4	3-3/8	.190
13810000NR.250	11966			1	1.0000	1	6	1-1/4	3-3/8	.250
13810011N	14139			1	1.0000	1	7	1-1/4	4-3/8	
13810011NR.030	11968			1	1.0000	1	7	1-1/4	4-3/8	.030
13810011NR.060	11970			1	1.0000	1	7	1-1/4	4-3/8	.060
13810011NR.090	11972			1	1.0000	1	7	1-1/4	4-3/8	.090
13810011NR.120	11974			1	1.0000	1	7	1-1/4	4-3/8	.120
13810011NR.190	11976			1	1.0000	1	7	1-1/4	4-3/8	.190
13810011NR.250	11978			1	1.0000	1	7	1-1/4	4-3/8	.250

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