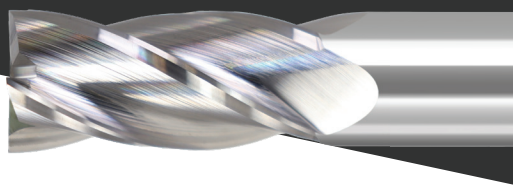
CASTELAR TOOL

G4

SPEEDS AND FEEDS

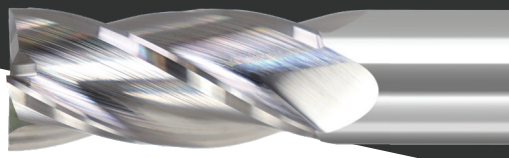


WORK MATERIAL		TYPE OF CUT	ADOC	RDOC	SFM	IPT			
						1/8" Ø	1/4" Ø	3/8" Ø	1/2" Ø
ALUMINUM	ALUMINUM ALLOYS Low Silicon Content 20xx; 50xx; 60xx; 70xx	Slotting	1 x D	1 x D	590-680	0.0005-0.0007	0.0009-0.0012	0.0014-0.0018	0.0018-0.0024
		Roughing	1 x D	<.75 x D	840-960	0.0006-0.0008	0.0011-0.0015	0.0016-0.0022	0.0021-0.003
		Adaptive	2 x D	<.2 x D	1050-1160	0.0008-0.0013	0.0016-0.0026	0.0023-0.004	0.0031-0.0052
		Finishing	1.5 x D	<.01 x D	1000-1100	0.0005-0.0009	0.001-0.0017	0.0016-0.0026	0.002-0.0034
	ALUMINUM DIE CAST ALLOY High Silicon Content A-38x; A-39x; B39x	Slotting	.75 x D	1 x D	570-650	0.0004-0.0005	0.0008-0.001	0.0012-0.0016	0.0015-0.0021
		Roughing	1 x D	<.5 x D	700-810	0.0005-0.0007	0.001-0.0013	0.0014-0.002	0.0019-0.0027
		Adaptive	2 x D	<.15 x D	880-980	0.0007-0.001	0.0012-0.0021	0.0018-0.0032	0.0025-0.0042
		Finishing	1.5 x D	<.01 x D	860-940	0.0005-0.0008	0.0009-0.0016	0.0014-0.0023	0.0018-0.0031
NON-FERROUS	COPPER ALLOYS, BRASS, & BRONZE 39 to 48 HRc Tin Bronze, Manganese	Slotting	1 x D	1 x D	460-520	0.0004-0.0005	0.0008-0.001	0.0012-0.0016	0.0015-0.0021
		Roughing	1 x D	<.75 x D	560-650	0.0005-0.0007	0.001-0.0013	0.0014-0.002	0.0019-0.0027
		Adaptive	2 x D	<.2 x D	700-780	0.0007-0.0012	0.0014-0.0024	0.0021-0.0036	0.0028-0.0047
		Finishing	1.5 x D	<.01 x D	680-750	0.0005-0.0008	0.0009-0.0016	0.0014-0.0023	0.0018-0.0031
CARBON STEEL	LOW CARBON STEELS ≤ 38 HRc 10xx; 11xx; 12xx; 12Lxx, 15xx	Slotting	≤1 x D	1 x D	215-255	0.0003-0.0005	0.0006-0.001	0.0007-0.0012	0.001-0.0016
		Roughing	≤1.5 x D	<.5 x D	270-320	0.0006-0.001	0.0012-0.002	0.001-0.0018	0.0014-0.0024
		Adaptive	≤2 x D	<.2 x D	340-400	0.0011-0.0018	0.0015-0.0025	0.0014-0.0024	0.0017-0.0028
		Finishing	≤1.5 x D	<.15 x D	310-370	0.0009-0.0015	0.0011-0.0018	0.001-0.0017	0.0012-0.002
	MEDIUM CARBON STEELS ≤ 38 HRc 13xx; 41xx; 43xx; 86xx, 92xx; 93xx;	Slotting	≤1 x D	1 x D	210-245	0.0003-0.0005	0.0004-0.0007	0.0005-0.0008	0.0008-0.0014
		Roughing	≤1.5 x D	<.5 x D	260-305	0.0005-0.0008	0.0006-0.001	0.0007-0.0012	0.0014-0.0022
		Adaptive	≤2 x D	<.2 x D	325-380	0.0006-0.001	0.0012-0.002	0.001-0.0016	0.0014-0.0024
		Finishing	≤1.5 x D	<.15 x D	295-350	0.0006-0.001	0.0008-0.0013	0.0009-0.0014	0.001-0.0016
TOOL STEEL	TOOL & DIE STEELS ≤ 38 HRc A2; A3; D2; H11; H13; M1; O-1; S-7; NAK 55	Slotting	≤1 x D	1 x D	165-190	0.0003-0.0005	0.0005-0.0008	0.0006-0.001	0.0008-0.0014
		Roughing	≤1.5 x D	<.5 x D	205-240	0.0004-0.0007	0.0006-0.001	0.001-0.0016	0.0014-0.0022
		Adaptive	≤2 x D	<.2 x D	255-300	0.0006-0.001	0.0011-0.0018	0.001-0.0016	0.0014-0.0024
		Finishing	≤1.5 x D	<.15 x D	235-275	0.0006-0.001	0.0007-0.0012	0.0009-0.0014	0.001-0.0016
	TOOL & DIE STEELS 39 to 48 HRc P20; P21; S-136; PX-5; NAK 80	Slotting	≤.75 x D	1 x D	80-95	0.0002-0.0003	0.0003-0.0005	0.0004-0.0006	0.0005-0.0008
		Roughing	≤1.5 x D	<.2 x D	105-120	0.0003-0.0005	0.0005-0.0009	0.0006-0.0011	0.0009-0.0014
		Adaptive	≤2 x D	<.1 x D	130-150	0.0006-0.001	0.0006-0.001	0.0009-0.0014	0.0012-0.002
		Finishing	≤1.5 x D	<.1 x D	120-140	0.0006-0.001	0.0006-0.001	0.0007-0.0012	0.001-0.0016
STAINLESS STEEL	MARTENSITIC 72 - 85 HRb 410; 416; 420; 430F; 440C	Slotting	≤1 x D	1 x D	155-185	0.0003-0.0005	0.0005-0.0008	0.0005-0.0009	0.0007-0.0012
		Roughing	≤1.25 x D	.3 x D	195-230	0.0005-0.0007	0.0008-0.0014	0.0009-0.0014	0.0013-0.0022
		Adaptive	≤2 x D	.15 x D	250-290	0.0005-0.0009	0.0011-0.0018	0.0013-0.0022	0.0017-0.0029
		Finishing	≤1.5 x D	<.15 x D	230-270	0.0005-0.0007	0.001-0.0016	0.0009-0.0016	0.0012-0.0019
	AUSTENETIC 79 - 85 HRb 25 - 41 HRc 304; 304L; 316; 316L; 320; 321; 347; 36;	Slotting	≤1 x D	1 x D	145-170	0.0002-0.0004	0.0005-0.0008	0.0006-0.0009	0.0008-0.0013
		Roughing	≤1.25 x D	.3 x D	175-210	0.0005-0.0007	0.0008-0.0014	0.0009-0.0014	0.0013-0.0022
		Adaptive	≤2 x D	.1 x D	220-260	0.0005-0.0009	0.0011-0.0018	0.0011-0.0018	0.0017-0.0029
		Finishing	≤1.5 x D	<.1 x D	205-240	0.0005-0.0007	0.0007-0.0012	0.0008-0.0013	0.001-0.0017
CAST IRON	GRAY 100 - 200 HRb	Slotting	≤1 x D	1 x D	215-255	0.0004-0.0007	0.0008-0.0013	0.0009-0.0014	0.0012-0.002
		Roughing	≤1.5 x D	.5 x D	270-320	0.0008-0.0013	0.0011-0.0018	0.0014-0.0024	0.0017-0.0028
		Adaptive	≤2 x D	.2 x D	340-400	0.0009-0.0015	0.0013-0.0022	0.0017-0.0028	0.0019-0.0032
		Finishing	≤1.5 x D	<.15 x D	310-370	0.0009-0.0015	0.0011-0.0018	0.001-0.0017	0.0017-0.0028
	DUCTILE 150 - 300 HRb	Slotting	≤1 x D	1 x D	145-170	0.0003-0.0005	0.0005-0.0008	0.0006-0.001	0.0008-0.0014
		Roughing	≤1.5 x D	.5 x D	175-210	0.0005-0.0008	0.0008-0.0013	0.001-0.0018	0.0014-0.0024
		Adaptive	≤2 x D	.2 x D	220-260	0.0006-0.001	0.0011-0.0018	0.0014-0.0022	0.0017-0.0028
		Finishing	≤1.5 x D	<.15 x D	205-240	0.0005-0.0008	0.0009-0.0015	0.0012-0.002	0.0014-0.0022
	MALLEABLE 150 - 310 HRb	Slotting	≤.75 x D	1 x D	190-225	0.0003-0.0005	0.0005-0.0008	0.0006-0.001	0.0008-0.0014
		Roughing	≤1.5 x D	.5 x D	240-280	0.0005-0.0008	0.0008-0.0013	0.001-0.0018	0.0014-0.0024
		Adaptive	≤2 x D	.2 x D	300-350	0.0006-0.001	0.0011-0.0018	0.0014-0.0022	0.0017-0.0028
		Finishing	≤1.5 x D	<.15 x D	270-320	0.0005-0.0008	0.0009-0.0015	0.0012-0.002	0.0014-0.0022

CASTELAR TOOL

G4

SPEEDS AND FEEDS



WORK MATERIAL		TYPE OF CUT	ADOC	RDOC	SFM	IPT			
						5/8" Ø	3/4" Ø	1" Ø	1-1/4" Ø
ALUMINUM	ALUMINUM ALLOYS Low Silicon Content 20xx; 50xx; 60xx; 70xx	Slotting	1 x D	1 x D	590-680	0.0022-0.003	0.0027-0.0036	0.0035-0.0048	0.004-0.0055
		Roughing	1 x D	<.75 x D	840-960	0.0027-0.0037	0.0033-0.0044	0.0043-0.0059	0.0049-0.0068
		Adaptive	2 x D	<.2 x D	1050-1160	0.0039-0.0066	0.0047-0.0079	0.0063-0.0105	0.0073-0.012
		Finishing	1.5 x D	<.01 x D	1000-1100	0.0025-0.0042	0.0031-0.0051	0.004-0.0068	0.0046-0.0079
	ALUMINUM DIE CAST ALLOY High Silicon Content A-38x; A-39x; B39x	Slotting	.75 x D	1 x D	570-650	0.0019-0.0026	0.0023-0.0032	0.003-0.0042	0.0034-0.0049
		Roughing	1 x D	<.5 x D	700-810	0.0023-0.0033	0.0029-0.004	0.0038-0.0053	0.0044-0.0061
		Adaptive	2 x D	<.15 x D	880-980	0.0031-0.0052	0.0036-0.0062	0.0049-0.0084	0.0056-0.0096
		Finishing	1.5 x D	<.01 x D	860-940	0.0023-0.0038	0.0027-0.0046	0.0036-0.0062	0.0042-0.0071
NON-FERROUS	COPPER ALLOYS, BRASS, & BRONZE 39 to 48 HRc Tin Bronze, Manganese	Slotting	1 x D	1 x D	460-520	0.0019-0.0026	0.0023-0.0032	0.003-0.0042	0.0034-0.0049
		Roughing	1 x D	<.75 x D	560-650	0.0023-0.0033	0.0029-0.004	0.0038-0.0053	0.0044-0.0061
		Adaptive	2 x D	<.2 x D	700-780	0.0035-0.0059	0.0042-0.0071	0.0057-0.0095	0.0065-0.0109
		Finishing	1.5 x D	<.01 x D	680-750	0.0023-0.0038	0.0027-0.0046	0.0036-0.0062	0.0042-0.0071
CARBON STEEL	LOW CARBON STEELS ≤ 38 HRc 10xx; 11xx; 12xx; 12Lxx, 15xx	Slotting	≤1 x D	1 x D	215-255	0.0012-0.002	0.0014-0.0024	0.0017-0.0028	0.0019-0.0032
		Roughing	≤1.5 x D	<.5 x D	270-320	0.0018-0.003	0.0022-0.0036	0.0024-0.004	0.0026-0.0044
		Adaptive	≤2 x D	<.2 x D	340-400	0.002-0.0034	0.0024-0.004	0.0029-0.0048	0.0034-0.0056
		Finishing	≤1.5 x D	<.15 x D	310-370	0.0013-0.0022	0.0014-0.0024	0.0014-0.0024	0.0014-0.0024
	MEDIUM CARBON STEELS ≤ 38 HRc 13xx; 41xx; 43xx; 86xx, 92xx; 93xx;	Slotting	≤1 x D	1 x D	210-245	0.0008-0.0014	0.0008-0.0014	0.001-0.0016	0.0011-0.0018
		Roughing	≤1.5 x D	<.5 x D	260-305	0.0014-0.0023	0.0014-0.0024	0.0019-0.0032	0.0024-0.004
		Adaptive	≤2 x D	<.2 x D	325-380	0.0017-0.0028	0.0019-0.0032	0.0024-0.004	0.0029-0.0048
		Finishing	≤1.5 x D	<.15 x D	295-350	0.0012-0.0021	0.0015-0.0026	0.0019-0.0032	0.0023-0.0038
TOOL STEEL	TOOL & DIE STEELS ≤ 38 HRc A2; A3; D2; H11; H13; M1; O-1; S-7; NAK 55	Slotting	≤1 x D	1 x D	165-190	0.0008-0.0014	0.0008-0.0014	0.001-0.0016	0.0011-0.0018
		Roughing	≤1.5 x D	<.5 x D	205-240	0.0014-0.0023	0.0014-0.0024	0.0019-0.0032	0.0024-0.004
		Adaptive	≤2 x D	<.2 x D	255-300	0.0017-0.0028	0.0019-0.0032	0.0024-0.004	0.0029-0.0048
		Finishing	≤1.5 x D	<.15 x D	235-275	0.0012-0.0021	0.0015-0.0026	0.0019-0.0032	0.0023-0.0038
	TOOL & DIE STEELS 39 to 48 HRc P20; P21; S-136; PX-5; NAK 80	Slotting	≤.75 x D	1 x D	80-95	0.0006-0.001	0.0007-0.0012	0.0009-0.0015	0.001-0.0018
		Roughing	≤1.5 x D	<.2 x D	105-120	0.001-0.0017	0.0012-0.002	0.0017-0.0028	0.0022-0.0036
		Adaptive	≤2 x D	<.1 x D	130-150	0.0014-0.0024	0.0017-0.0028	0.0019-0.0032	0.0022-0.0036
		Finishing	≤1.5 x D	<.1 x D	120-140	0.001-0.0017	0.0011-0.0018	0.0014-0.0024	0.0018-0.003
STAINLESS STEEL	MARTENSITIC 72 - 85 HRb 410; 416; 420; 430F; 440C	Slotting	≤1 x D	1 x D	155-185	0.0009-0.0015	0.0011-0.0018	0.0013-0.0022	0.0015-0.0025
		Roughing	≤1.25 x D	.3 x D	195-230	0.0015-0.0025	0.0017-0.0029	0.0019-0.0032	0.0022-0.0036
		Adaptive	≤2 x D	.15 x D	250-290	0.0019-0.0032	0.0022-0.0036	0.0024-0.004	0.0026-0.0043
		Finishing	≤1.5 x D	<.15 x D	230-270	0.0012-0.0019	0.0012-0.002	0.0014-0.0023	0.0015-0.0026
	AUSTENETIC 79 - 85 HRb 25 - 41 HRc 304; 304L; 316; 316L; 320; 321; 347; 36;	Slotting	≤1 x D	1 x D	145-170	0.0009-0.0015	0.001-0.0017	0.0013-0.0022	0.0016-0.0026
		Roughing	≤1.25 x D	.3 x D	175-210	0.0015-0.0025	0.0017-0.0029	0.0019-0.0032	0.0022-0.0036
		Adaptive	≤2 x D	.1 x D	220-260	0.0019-0.0032	0.0022-0.0036	0.0024-0.004	0.0026-0.0043
		Finishing	≤1.5 x D	<.1 x D	205-240	0.0011-0.0018	0.0012-0.0019	0.0014-0.0023	0.0016-0.0027
CAST IRON	GRAY 100 - 200 HRb	Slotting	≤1 x D	1 x D	215-255	0.0013-0.0022	0.0014-0.0024	0.0017-0.0028	0.0019-0.0032
		Roughing	≤1.5 x D	.5 x D	270-320	0.0021-0.0035	0.0025-0.0042	0.0029-0.0048	0.0033-0.0054
		Adaptive	≤2 x D	.2 x D	340-400	0.0024-0.0039	0.0028-0.0046	0.0034-0.0056	0.0039-0.0066
		Finishing	≤1.5 x D	<.15 x D	310-370	0.0016-0.0026	0.0014-0.0024	0.0017-0.0028	0.0019-0.0032
	DUCTILE 150 - 300 HRb	Slotting	≤1 x D	1 x D	145-170	0.0009-0.0016	0.001-0.0018	0.0014-0.0024	0.0018-0.003
		Roughing	≤1.5 x D	.5 x D	175-210	0.0017-0.0028	0.0019-0.0032	0.0022-0.0036	0.0024-0.004
		Adaptive	≤2 x D	.2 x D	220-260	0.002-0.0034	0.0024-0.004	0.0026-0.0044	0.0029-0.0048
		Finishing	≤1.5 x D	<.15 x D	205-240	0.0015-0.0025	0.0017-0.0028	0.0017-0.0028	0.0017-0.0028
	MALLEABLE 150 - 310 HRb	Slotting	≤.75 x D	1 x D	190-225	0.0009-0.0016	0.001-0.0018	0.0014-0.0024	0.0018-0.003
		Roughing	≤1.5 x D	.5 x D	240-280	0.0017-0.0028	0.0019-0.0032	0.0022-0.0036	0.0024-0.004
		Adaptive	≤2 x D	.2 x D	300-350	0.002-0.0034	0.0024-0.004	0.0026-0.0044	0.0029-0.0048
		Finishing	≤1.5 x D	<.15 x D	270-320	0.0015-0.0025	0.0017-0.0028	0.0017-0.0028	0.0017-0.0028