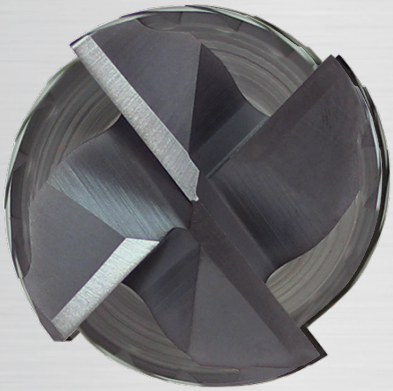
453 SERIES

PRECISION CUTTING TOOLS
Member IMC Group

HIGH-PERFORMANCE MILLING

Application: Ideal for plunging, slotting, ramping and heavy peripheral milling.
ISO Material Grades : P M K



1. 4 Flute Chipbreaker Endmill – with a unique variable flute design and Chipbreakers for optimal chip control in a High material removal applications.

2. Increase Metal removal – Increase depth-of-cut with chatter free machining

3. Varianta Supral Coating – great wear resistance in high speed operations; semi-dry and dry machining

MADE IN THE USA
SALES@PCT-IMC.COM
WWW.PCT-IMC.COM
562-921-7898

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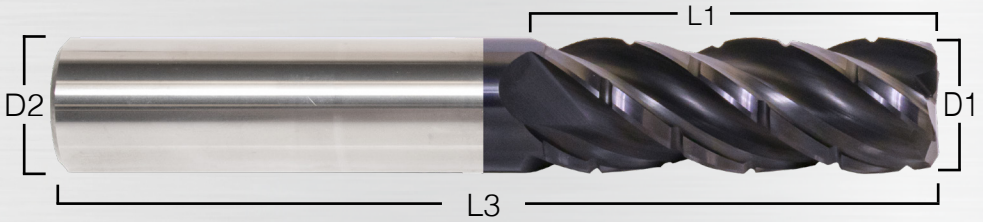
D1 Diameter	D2 Shank	L1 LOC	L3 OAL	0.015 RAD	0.030 RAD	0.060 RAD	0.090 RAD	0.125 RAD	Ball
1/4	1/4	3/8	2	9502046	9504865				9529769
1/4	1/4	3/4	2 1/2	9502050	9504869				9529777
1/4	1/4	1	3	9502051	9504870				9529779
1/4	1/4	1 1/4	4	9502052	9504871				9529783
1/4	1/4	1 3/4	4	9502053	9504872				9529785
5/16	5/16	1/2	2	9502054	9504873				9529787
5/16	5/16	7/8	2 1/2	9502055	9504874				9529789
5/16	5/16	1	3	9502056	9504875				9529791
5/16	5/16	1 1/4	4	9502057	9504876				9529795
5/16	5/16	1 5/8	4	9502058	9504877				9529797
3/8	3/8	1/2	2	9502059	9504878	9584878			9529799
3/8	3/8	1	2 1/2	9502062	9504881	9584881			9529807
3/8	3/8	1	3	9502063	9504882	9508006			9529809
3/8	3/8	1 1/2	4	9502064	9504883	9584882			9529812
3/8	3/8	2 1/2	5	9502065	9504884	9584883			9529816
1/2	1/2	5/8	2 1/2		9504889	9508007	9585107	9585306	9529827
1/2	1/2	1	3		9504896	9508011	9509703	9585310	9529837
1/2	1/2	1 1/4	3		9504898	9508012	9585111	9585311	9529839
1/2	1/2	1 1/2	4		9504899	9508013	9585112	9512737	9529842
1/2	1/2	2	4		9504901	9508014	9585113	9585312	9529846
1/2	1/2	2 1/2	5		9504902	9508016	9585114	9585313	9529850
1/2	1/2	3	6		9504903	9508017	9585115	9585314	9529852
5/8	5/8	3/4	3		9504904	9508018	9509704	9585315	9529854
5/8	5/8	1 1/4	3 1/2		9504910	9508022	9509708	9585319	9529865
5/8	5/8	1 3/4	4		9504911	9508023	9509709	9585320	9529867
5/8	5/8	2 1/4	5		9504912	9508024	9509710	9585321	9529869
5/8	5/8	3	6		9504913	9508025	9509711	9585322	9529873
3/4	3/4	7/8	3			9508026	9509712	9512738	9529879
3/4	3/4	1 1/2	4			9508032	9509716	9512742	9529896
3/4	3/4	1 5/8	4			9508034	9509717	9512743	9529898
3/4	3/4	2 1/4	5			9508036	9509718	9512744	9529903
3/4	3/4	3	6			9508037	9509719	9512745	9529905
3/4	3/4	4	7			9508038	9509720	9512746	9529910
1	1	1 1/2	4			9508042	9509724	9512750	9529922
1	1	2	4 1/2			9508043	9509725	9512751	9529925
1	1	2 1/4	5			9508044	9509726	9512752	9529929
1	1	3	6			9508045	9509727	9512753	9529932
1	1	4	7			9508046	9509728	9512754	9529936



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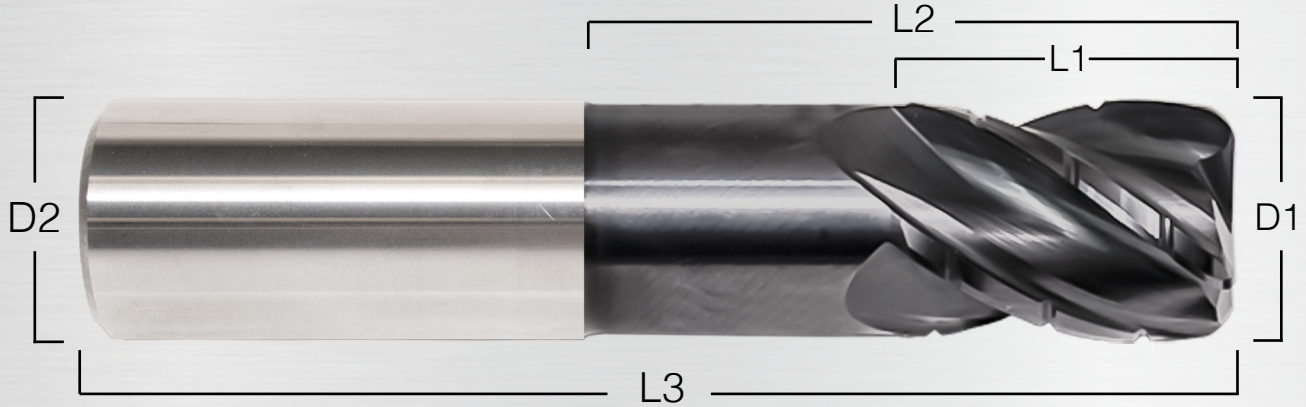
Extended Neck

D1 Diameter	D2 Shank	L1 LOC	L2 Reach	L3 OAL	.015 RAD	.030 RAD	.060 RAD	.125 RAD	Ball
1/4	1/4	1/2	1 1/4	3	9581549	9581838	9584876		9585594
1/4	1/4	1/2	2 1/8	4	9581550	9581839	9584877		9585595
3/8	3/8	3/4	1 1/4	3	9581551	9581840	9584879		9585596
3/8	3/8	3/4	2 1/8	4	9581552	9581841	9584880		9585597
1/2	1/2	7/8	1 3/8	3		9504893	9584884	9585307	9585598
1/2	1/2	7/8	2 1/8	4		9504894	9584885	9585308	9529834
1/2	1/2	7/8	3 1/8	5		9581842	9585985	9586094	9586180
1/2	1/2	7/8	4 1/8	6		9504895	9584886	9585309	9585599
5/8	5/8	1	2	4		9581843	9584887	9585316	9585600
5/8	5/8	1	3	5		9504908	9584888	9585317	9529863
5/8	5/8	1	4	6		9504909	9584889	9585318	9585601
3/4	3/4	1 1/4	2	4			9584890	9585323	9585602
3/4	3/4	1 1/4	3	5			9508031	9585324	9585603
3/4	3/4	1 1/4	4	6			9584891	9585325	9585604
1	1	1 1/2	3	5			9585986	9586095	9585605
1	1	1 1/2	4	6			9585987	9586096	9585606
1	1	1 1/2	5	7			9585988	9586097	9585607



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GROUP #	MATERIAL CARBON STEEL	MATERIAL EXAMPLES	HARDNESS	LOW SFM	HIGH SFM	RECOMMENDED MAX% STEPOVER 2@ XD IA LOC	IPT Ø 0.125	IPT Ø 0.1875	IPT Ø 0.250	IPT Ø 0.375	IPT Ø 0.500	IPT Ø 0.625	IPT Ø 0.750	IPT 1.000
P1	Low-Carbon Steels	1018, 1108, 1117, A36 12L14, 1200's, 1500's	<300 Hb	300	460	Slotting	0.0005	0.0007	0.0009	0.0018	0.0020	0.0029	0.0033	0.0037
				375	600	Roughing	0.0008	0.0012	0.0016	0.0026	0.0028	0.0041	0.0053	0.0064
				350	900	Finishing - HEM	0.0008	0.0011	0.0015	0.0021	0.0026	0.0027	0.0028	0.0029
P2	Medium & High Carbon Steels	1000-1200 SERIES	<300 Hb	200	350	Slotting	0.0005	0.0008	0.0010	0.0013	0.0016	0.0019	0.0023	0.0026
				300	500	Roughing	0.0006	0.0009	0.0012	0.0017	0.0021	0.0029	0.0037	0.0045
				350	850	Finishing - HEM	0.0007	0.0011	0.0014	0.0019	0.0023	0.0026	0.0028	0.0030
P3	Alloys Steels	4130, 4140, 5140, 6150, 8620	<300 Hb	250	350	Slotting	0.0005	0.0007	0.0013	0.0013	0.0016	0.0023	0.0026	0.0029
				300	450	Roughing	0.0006	0.0009	0.0017	0.0017	0.0022	0.0030	0.0039	0.0048
				350	1200	Finishing - HEM	0.0007	0.0011	0.0019	0.0019	0.0023	0.0027	0.0030	0.0033
P4	Tool Steel	A2, P20, S7, H13, L6	<300 Hb	150	300	Slotting	0.0005	0.0007	0.0009	0.0013	0.0016	0.0020	0.0024	0.0028
				250	400	Roughing	0.0006	0.0008	0.0011	0.0016	0.0021	0.0030	0.0039	0.0047
				350	650	Finishing - HEM	0.0007	0.0010	0.0013	0.0018	0.0022	0.0025	0.0028	0.0031
M1	Austenitic Stainless Steels	INOX, 200 SERIES, 300 SERIES AND 304L	<300 Hb	180	280	Slotting	0.0004	0.0006	0.0008	0.0012	0.0015	0.0019	0.0025	0.0028
				180	375	Roughing	0.0006	0.0009	0.0012	0.0017	0.0022	0.0030	0.0040	0.0050
				300	900	Finishing - HEM	0.0009	0.0014	0.0018	0.0022	0.0025	0.0026	0.0027	0.0029
K1	Cast Iron - Gray Low Strength	Class 20, 25, 30, 35 Grade G1800	>270	250	450	Slotting	0.0006	0.0008	0.0011	0.0016	0.0020	0.0024	0.0027	0.0030
				350	550	Roughing	0.0007	0.0010	0.0013	0.0019	0.0024	0.0036	0.0048	0.0060
				350	600	Finishing - HEM	0.0008	0.0011	0.0015	0.0021	0.0027	0.0032	0.0037	0.0040
K2	Cast Iron - Malleable Medium Strenght	60-14-18, 65-45-12, M3210, M4504	>320	200	425	Slotting	0.0005	0.0008	0.0010	0.0013	0.0016	0.0021	0.0026	0.0030
				300	500	Roughing	0.0006	0.0009	0.0012	0.0018	0.0023	0.0032	0.0041	0.0050
				350	600	Finishing - HEM	0.0007	0.0011	0.0014	0.0020	0.0025	0.0027	0.0029	0.0032

We recommend using air blast to cool the tool anytime you are running over 500 SFM

MILL PROCESS	ADOC	RDOC
SLOTTING	25%-75% Diameter	100%
ROUGHING	Up to 200% Diameter	16-40%
FINISH OR HEM	Up to 225% Diameter	2-15%

Must use chip thinning calculations when developing feedrates for FINISH OR HEM toolpaths