



 **Valcarb**

**CATALOG**

**2021**

*Metalcutting Tools, Fluids & Accessories*

*What's Inside...*

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## SG-ESS Drill Stub Length



- ▶ Utilizes a high accuracy shape of lip relief (3 rake, 2 rake + x-thinning)
- ▶ Made from premium powder metal with Composite Multi-Layer SG Coating (TiCN)
- ▶ End mill style shanks for highly precise and accurate drilling

Drilling

L7572P Metric  
L7573P Fractional, Wire & Letter

EDP	Size	Decimal	Wire/Fractional Equivalent	Flute Length	OAL	Shank Dia.
0573780	1.00	0.0394		6	38	3
0693879	1.02	0.0402	#60	6	38	3
0693891	1.04	0.0409	#59	6	38	3
0693913	1.07	0.0421	#58	7	39	3
0693936	1.09	0.0429	#57	7	39	3
0694009	1.18	0.0465	#56	7	39	3
0694015	1.19	0.0469	3/64	8	40	3
0694118	1.32	0.0520	#55	9	41	3
0573831	1.50	0.0591		9	41	3
0694262	1.51	0.0594	#53	10	42	3
0694336	1.59	0.0626	1/16	10	42	3
0694342	1.61	0.0634	#52	10	42	3
0694480	1.78	0.0701	#50	11	43	3
0694525	1.83	0.0720	#49	11	43	3
0694605	1.93	0.0760	#48	12	44	3
0694640	1.98	0.0780	5/64	12	44	3
0694657	1.99	0.0783	#47	12	44	3
0572514	2.00	0.0787		12	44	3
0694708	2.06	0.0811	#46	12	44	3
1363043	2.08	0.0820	#45	3/4	2	1/8
0572520	2.10	0.0827		12	44	3
1363050	2.18	0.0860	#44	3/4	2	1/8
0572537	2.20	0.0866		13	45	3
1363066	2.26	0.0890	#43	3/4	2	1/8
0572543	2.30	0.0906		13	45	3
1363072	2.37	0.0935	#42	3/4	2	1/8
1245365	2.38	0.0938		1/2	1-3/4	1/8
0572550	2.40	0.0949	3/32	14	46	3
1363089	2.44	0.0960	#41	4/5	2-1/16	1/8
1280931	2.49	0.0980	#40	4/5	2-1/4	1/8
0572566	2.50	0.0984		14	46	3
1363095	2.53	0.0995	#39	13/16	2-1/4	1/8
1363100	2.58	0.1015	#38	13/16	2-1/4	1/8
0572572	2.60	0.1024		14	46	3
1363117	2.64	0.1040	#37	13/16	2-1/4	1/8
0572589	2.70	0.1063		16	48	3
1245823	2.71	0.1065	#36	13/16	2-1/4	1/8
1245371	2.78	0.1094	7/64	5/8	1-7/8	1/8
0572595	2.80	0.1102		16	48	3

EDP	Size	Decimal	Wire/Fractional Equivalent	Flute Length	OAL	Shank Dia.
1363130	2.82	0.1110	#34	7/8	2-5/16	1/8
1363146	2.87	0.1130	#33	7/8	2-5/16	1/8
0572600	2.90	0.1142		16	48	3
0572617	3.00	0.1181		16	48	3
0572623	3.10	0.1220		18	50	4
1245388	3.18	0.1250	1/8	3/4	2	1/8
0572630	3.20	0.1260		18	50	4
1289836	3.26	0.1285	#30	15/16	2-3/8	3/16
0572646	3.30	0.1299		18	50	4
0572652	3.40	0.1343		20	52	4
1245817	3.46	0.1365	#29	15/16	2-3/8	3/16
0572669	3.50	0.1378		20	52	4
1363169	3.57	0.1405	#28	15/16	2-3/8	3/16
1245394	3.57	0.1406	9/64	13/16	2-1/8	3/16
0572675	3.60	0.1417		20	52	4
1363175	3.66	0.1440	#27	1	2-7/16	3/16
0572681	3.70	0.1457		20	52	4
1363181	3.73	0.1470	#26	1	2-7/16	3/16
1245800	3.80	0.1495	#25	1	2-7/16	3/16
0572698	3.80	0.1496		22	54	4
1363198	3.86	0.1520	#24	1	2-7/16	3/16
0572703	3.90	0.1535		22	54	4
1363203	3.91	0.1540	#23	1	2-7/16	3/16
1245400	3.97	0.1563	5/32	13/16	2-1/8	3/16
1363210	3.99	0.1570	#22	1-1/16	2-7/16	3/16
0572710	4.00	0.1575		22	54	4
1245795	4.04	0.1590	#21	1-1/16	2-7/16	3/16
1363226	4.09	0.1610	#20	1-1/16	2-7/16	3/16
0572726	4.10	0.1614		22	66	6
0572732	4.20	0.1654		22	66	6
1363232	4.22	0.1660	#19	1-1/16	2-7/16	3/16
0574749	4.30	0.1693		23	68	6
1245416	4.37	0.1719	11/64	1	2-3/8	3/16
0572755	4.40	0.1732		24	68	6
0572761	4.50	0.1772		24	68	6
1363278	4.57	0.1800	#15	1-1/8	2-9/16	3/16
0572778	4.60	0.1811		24	68	6
1363284	4.62	0.1820	#14	1-1/8	2-9/16	3/16
0572784	4.70	0.1850		24	68	6



## SG-ESS Drill Stub Length



- ▶ Utilizes a high accuracy shape of lip relief (3 rake, 2 rake + x-thinning)
- ▶ Made from premium powder metal with Composite Multi-Layer SG Coating (TiCN)
- ▶ End mill style shanks for highly precise and accurate drilling

L7572P Metric  
L7573P Fractional, Wire & Letter

EDP	Size	Decimal	Wire/Fractional Equivalent	Flute Length	OAL	Shank Dia.
1245422	4.76	0.1875	3/16	1	2-3/8	3/16
0572790	4.80	0.1890		26	70	6
0572806	4.90	0.1929		26	70	6
1363329	4.91	0.1935	#10	1-3/16	3	1/4
1363335	4.98	0.1960	#9	1-3/16	3	1/4
0572812	5.00	0.1969		26	70	6
1280954	5.05	0.1990	#8	1-3/16	3	1/4
0572829	5.10	0.2008		26	70	6
1245789	5.11	0.2010	#7	1-3/16	3	1/4
1245439	5.16	0.2031	13/64	1-1/8	2-7/8	1/4
1280960	5.18	0.2040	#6	1-1/4	3-1/16	1/4
0572835	5.20	0.2047		26	70	6
1363341	5.22	0.2055	#5	1-1/4	3-1/16	1/4
0572841	5.30	0.2087		26	70	6
1363358	5.31	0.2090	#4	1-1/4	3-1/16	1/4
0572858	5.40	0.2126		28	72	6
1363364	5.41	0.2130	#3	1-1/4	3-1/16	1/4
0572864	5.50	0.2165		28	72	6
1245445	5.56	0.2188	7/32	1-1/8	2-7/8	1/4
0572870	5.60	0.2205		28	72	6
1363370	5.61	0.2210	#2	1-5/16	3-1/8	1/4
0572887	5.70	0.2244		28	72	6
1363387	5.79	0.2280	#1	1-5/16	3-1/8	1/4
0572893	5.80	0.2283		28	72	6
0572909	5.90	0.2223		28	72	6
1245451	5.95	0.2344	15/64	1-1/4	3	1/4
0572915	6.00	0.2362		28	72	6
1363409	6.05	0.2380	B	1-3/8	3-3/16	1/4
0572921	6.10	0.2402		31	75	8
1363415	6.15	0.2420	C	1-3/8	3-3/16	1/4
0572938	6.20	0.2441		31	75	8
1363415	6.25	0.2460	D	1-3/8	3-3/16	1/4
0572944	6.30	0.2480		31	75	8
1245468	6.35	0.2500	1/4	1-1/4	3	1/4
0572950	6.40	0.2520		31	75	8
0572967	6.50	0.2559		31	75	8
1245830	6.53	0.2570	F	1-7/16	3-1/4	3/8
0572973	6.60	0.2598		31	75	8
1363444	6.63	0.2610	G	1-7/16	3-1/4	3/8

EDP	Size	Decimal	Wire/Fractional Equivalent	Flute Length	OAL	Shank Dia.
0572980	6.70	0.2628		31	75	8
1245474	6.75	0.2656	17/64	1-3/8	3-3/8	3/8
0572996	6.80	0.2677		34	78	8
0573000	6.90	0.2717		34	78	8
1363450	6.91	0.2720	I	1-1/2	3-5/16	3/8
0573017	7.00	0.2756		34	78	8
1363467	7.04	0.2770	J	1-3/8	3-3/16	3/8
0573023	7.10	0.2795		34	78	8
1245480	7.14	0.2813	9/32	1-3/8	3-3/16	3/8
0573030	7.20	0.2835		34	78	8
0573046	7.30	0.2874		34	78	8
1363473	7.37	0.2900	L	1-9/16	3-3/8	3/8
0573052	7.40	0.2913		34	78	8
1363480	7.49	0.2950	M	1-9/16	3-3/8	3/8
0573069	7.50	0.2953		34	78	8
1245497	7.54	0.2969	19/64	1-3/8	3-3/16	3/8
0573075	7.60	0.2992		37	81	8
1363496	7.67	0.3020	N	1-5/8	3-7/16	3/8
0573081	7.70	0.3031		37	81	8
0573098	7.80	0.3071		37	81	8
0573103	7.90	0.3110		37	81	8
1245502	7.94	0.3125	5/16	1-1/2	3-3/8	3/8
0573110	8.00	0.3150		37	81	8
1363501	8.03	0.3160	O	1-11/16	3-1/2	3/8
0573126	8.10	0.3189		37	87	10
0573132	8.20	0.3228		37	87	10
0573149	8.30	0.3268		37	87	10
1245519	8.33	0.3281	21/64	1-1/2	3-3/8	3/8
0573155	8.40	0.3307		37	87	10
1363524	8.43	0.3320	Q	1-11/16	3-1/2	3/8
0573161	8.50	0.3346		37	87	10
0573178	8.60	0.3386		37	87	10
1363530	8.61	0.3390	R	1-11/16	3-1/2	3/8
0573184	8.70	0.3425		40	90	10
1245525	8.73	0.3438	11/32	1-5/8	3-1/2	3/8
0573190	8.80	0.3465		40	90	10
0573206	8.90	0.3504		40	90	10
0573212	9.00	0.3543		40	90	10
0573229	9.10	0.3583		40	90	10

Drilling

## SG-ESS Drill Stub Length



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- ▶ End mill style shanks for highly precise and accurate drilling

Drilling

L7572P Metric  
L7573P Fractional, Wire & Letter

EDP	Size	Decimal	Wire/Fractional Equivalent	Flute Length	OAL	Shank Dia.
1245531	9.13	0.3594	23/64	1-5/8	3-1/2	3/8
0573235	9.20	0.3622		40	90	10
0573241	9.30	0.3661		40	90	10
1280977	9.35	0.3680	U	1-5/8	3-5/8	3/8
0573258	9.40	0.3701		40	90	10
0573264	9.50	0.3740		40	90	10
1245548	9.53	0.3750	3/8	1-5/8	3-1/12	3/8
1363560	9.58	0.3770	V	1-7/8	3-31/32	1/2
0573270	9.60	0.3780		43	93	10
0573287	9.70	0.3819		43	93	10
0573293	9.80	0.3858		43	93	10
0573309	9.90	0.3898		43	93	10
1245554	9.92	0.3906	25/64	1-11/16	3-7/8	1/2
0573315	10.00	0.3937		43	93	10
0573321	10.10	0.3976	X	1-1/16	4-1/32	1/2
0573338	10.20	0.4016		43	100	1/2
1363599	10.26	0.4040	Y	1-15/16	4-1/32	1/2
0573344	10.30	0.4055		43	100	12
1245560	10.32	0.4063	13/32	1-11/16	3-7/8	1/2
0573350	10.40	0.4094		43	100	12
1363604	10.49	0.4130	Z	2	4-3/32	1/2
0573367	10.50	0.4134		43	100	12
0573373	10.60	0.4173		43	100	12
0573380	10.70	0.4213		47	104	12
1245577	10.72	0.4219	27/64	1-7/8	4-1/8	1/2
0573396	10.80	0.4252		47	104	12
0573401	10.90	0.4291		47	104	12
0573418	11.00	0.4331		47	104	12
0573424	11.10	0.4370		47	104	12
1245583	11.11	0.4375	7/16	1-7/8	4-1/8	1/2
0573430	11.20	0.4409		47	104	12
0573447	11.30	0.4449		47	104	12
0573453	11.40	0.4488		47	104	12
0573460	11.50	0.4528		47	104	12
1245590	11.51	0.4531	29/64	1-7/8	4-1/8	1/2
0573476	11.60	0.4567		47	104	12
0573482	11.70	0.4606		47	104	12
0573499	11.80	0.4646		47	104	12

EDP	Size	Decimal	Wire/Fractional Equivalent	Flute Length	OAL	Shank Dia.
0573504	11.90	0.4685		51	108	12
1245605	11.91	0.4688	15/32	2	4-1/4	1/2
0573510	12.00	0.4724		51	108	12
0573527	12.10	0.4764		51	108	12
0573533	12.20	0.4803		51	108	12
0573540	12.30	0.4843		51	108	12
1245611	12.30	0.4844	31/64	2	4-1/4	1/2
0573556	12.40	0.4882		51	108	12
0573562	12.50	0.4921		51	108	12
0573579	12.60	0.4961		51	108	12
0573585	12.70	0.5000		51	108	12
1245628	12.70	0.5000	1/2	2	4-1/4	1/2
0573591	12.80	0.5039		51	108	12
0573607	12.90	0.5079		51	108	12
0573613	13.00	0.5118		51	108	12
1280851	13.49	0.5313	17/32	2-7/8	5-3/16	5/8
0573620	13.50	0.5315		72	132	16
0573636	14.00	0.5512		72	132	16
1280868	14.29	0.5625	9/16	3	5-3/8	1/2
0573642	14.50	0.5709		76	136	16
0573659	15.00	0.5906		76	142	20
1280874	15.08	0.5938	19/32	3	5-5/8	3/4
0573665	15.50	0.6102		80	146	20
1220880	15.88	0.6250	5/8	3-3/16	5-3/4	3/4
0573671	16.00	0.6299		80	146	20
0573688	16.50	0.6496		84	150	20
1280897	16.67	0.6563	21/32	3-3/8	5-15/16	3/4
0573694	17.00	0.6693		84	150	20
1280902	17.46	0.6875	11/16	3-7/16	6	3/4
0573700	17.50	0.6890		87	153	20
0573716	18.00	0.7087		87	153	20
1280919	18.26	0.7188	23/32	3-7/16	6	7/8
0573722	18.50	0.7283		90	156	20
0573739	19.00	0.7480		90	164	25
1280925	19.05	0.7500	3/4	3-9/16	6-1/2	7/8
0573745	19.50	0.7677		94	168	25
0573751	20.00	0.7874		94	168	25

## Straight Shank Jobber Length



- ▶ Standard two flute design.
- ▶ Standard spiral, helical flutes.
- ▶ Self-centering and reduces the thrust required in drilling tougher materials.

L501 General Purpose, Fractional, Wire & Letter

EDP	Size			Decimal Equivalent	Flute Length	OAL
	Fractional	Wire	Letter			
0011097		#60		0.0400	11/16	1 5/8
0011102		#59		0.0410	11/16	1 5/8
0011119		#58		0.0420	11/16	1 5/8
0011125		#57		0.0430	3/4	1 3/4
0011131		#56		0.0465	3/4	1 3/4
0011148	3/64			0.0469	3/4	1 3/4
0011154		#55		0.0520	7/8	1 7/8
0011160		#54		0.0550	7/8	1 7/8
0011177		#53		0.0535	7/8	1 7/8
0011183	1/16			0.0625	7/8	1 7/8
0011190		#52		0.0635	7/8	1 7/8
0011205		#51		0.0670	1	2
0011211		#50		0.0700	1	2
0011228		#49		0.0730	1	2
0011234		#48		0.0730	1	2
0011240	5/64			0.0781	1	2
0011257		#47		0.0785	1	2
0011263		#46		0.0810	1 1/8	2 1/8
0011270		#45		0.0820	1 1/8	2 1/8
0011286		#44		0.0860	1 1/8	2 1/8
0011292		#43		0.0890	1 1/4	2 1/4
0011308		#42		0.0935	1 1/4	2 1/4
0011314	3/32			0.0938	1 1/4	2 1/4
0011320		#41		0.0960	1 3/8	2 3/8
0590530		#40		0.0980	1 3/8	2 3/8
0011343		#39		0.0995	1 3/8	2 3/8
0011350		#38		0.1015	1 7/16	2 1/2
0011366		#37		0.1040	1 7/16	2 1/2
0011372		#36		0.1065	1 7/16	1/12
0011389	7/64			0.1094	1 1/2	2 5/8
0011395		#35		0.1100	1 1/2	2 5/8
0011400		#34		0.1110	1 1/2	2 5/8
0011417		#33		0.1130	1 1/2	2 5/8
0011423		#32		0.1160	1 5/8	2 3/4
0011430		#31		0.1200	1 5/8	2 3/4
0011446	1/8			0.1250	1 5/8	2 3/4
0011452		#30		0.1285	1 5/8	2 3/4
0011469		#29		0.1360	1 3/4	2 7/8
0011475		#28		0.1405	1 3/4	2 7/8
0011481	9/64			0.1406	1 3/4	2 7/8
0011498		#27		0.1440	1 7/8	3

EDP	Size			Decimal Equivalent	Flute Length	OAL
	Fractional	Wire	Letter			
0011503		#26		0.1470	1 7/8	3
0011510		#25		0.1495	1 7/8	3
0011526		#24		0.1520	2	3 1/8
0011532		#23		0.1540	2	3 1/8
0011549	5/32			0.1563	2	3 1/8
0011555		#22		0.1570	2	3 1/8
0011561		#21		0.1590	2 1/8	3 1/4
0011578		#20		0.1610	2 1/8	3 1/4
0011584		#19		0.1660	2 1/8	3 1/4
0011590		#18		0.1695	2 1/8	3 1/4
0011612		#16		0.1700	2 3/16	3 1/4
0011606	11/64			0.1719	2 1/8	3 1/4
0011629		#17		0.1730	2 3/16	3 3/8
0011635		#15		0.1800	2 3/16	3 3/8
0011641		#14		0.1820	2 3/16	3 3/8
0011658		#13		0.1850	2 5/16	3 1/2
0011664	3/16			0.1875	2 5/16	3 1/2
0011670		#12		0.1890	2 5/16	3 1/2
0011687		#11		0.1910	2 5/16	3 1/2
0011693		#10		0.1935	2 7/16	3 5/8
0011709		#9		0.1960	2 7/16	3 5/8
0011715		#8		0.1990	2 7/16	3 5/8
0011721		#7		0.2010	2 7/16	3 5/8
0011738	13/64			0.2031	2 7/16	3 5/8
0011744		#6		0.2040	2 1/2	3 3/4
0011750		#5		0.2055	2 1/2	3 3/4
0011767		#4		0.2090	2 1/2	3 3/4
0011773		#3		0.2130	2 1/2	3 3/4
0011780	7/32			0.2188	2 1/2	3 3/4
0011796		#2		0.2210	2 5/8	3 7/8
0011801		#1		0.2280	2 5/8	3 7/8
0553836			A	0.2340	2 5/8	3 7/8
0011818	15/64			0.2344	2 5/8	3 7/8
0553842			B	0.2344	2 5/8	4
0553859			C	0.2420	2 3/4	4
0553865			D	0.2460	2 3/4	4
0553871			E	0.2500	2 3/4	4
0011824	1/4			0.2500	2 3/4	4
0553888			F	0.2570	2 7/8	4 1/8
0553894			G	0.2610	2 7/8	4 1/8
0011830	17/64			0.2656	2 7/8	4 1/8

## Straight Shank Jobber Length



- ▶ Standard two flute design.
- ▶ Standard spiral, helical flutes.
- ▶ Self-centering and reduces the thrust required in drilling tougher materials.

Drilling

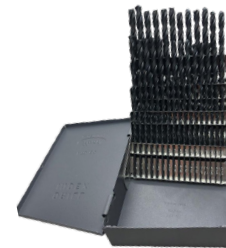
L501 General Purpose, Fractional, Wire & Letter

EDP	Size			Decimal Equivalent	Flute Length	OAL
	Fractional	Wire	Letter			
0553900			H	0.2660	2 7/8	4 1/8
0553916			I	0.2720	2 7/8	4 1/8
0553922			J	0.2770	2 7/8	4 1/8
0553939			K	0.2810	2 15/16	4 1/4
0011847	9/32			0.2813	2 15/16	4 1/4
0553945			L	0.2900	2 15/16	4 1/4
0553951			M	0.2950	3 1/16	4 3/8
0011853	19/64			0.2969	3 1/16	4 3/8
0011860	5/16			0.3125	3 3/16	4 1/2
0553974			O	0.3160	3 3/16	4 1/2
0553980			P	0.3230	3 5/16	4 5/8
0011876	21/64			0.3281	3 5/16	4 5/8
0553997			Q	0.3320	3 7/16	4 3/4
0554001			R	0.3390	3 7/16	4 3/4
0011882	11/32			0.3438	3 7/16	4 3/4
0554018			S	0.3480	3 1/2	4 7/8
0554024			T	0.3580	3 1/2	4 7/8
0011899	23/64			0.3594	3 1/2	4 7/8
0554030			U	0.3680	3 5/8	5
0011904	3/8			0.3750	3 5/8	5
0554047			V	0.3770	3 5/8	5
0554053			W	0.3860	3 3/4	5 1/8
0011910	25/64			0.3906	3 3/4	5 1/8

EDP	Size			Decimal Equivalent	Flute Length	OAL
	Fractional	Wire	Letter			
0011910	25/64			0.3906	3 3/4	5 1/8
0554060			X	0.3970	3 3/4	5 1/8
0554076			Y	0.4040	3 7/8	5 1/4
0011927	13/32			0.4063	3 7/8	5 1/4
0554082			Z	0.4130	3 7/8	5 1/4
0011933	27/64			0.4219	3 15/16	5 3/8
0011940	7/16			0.4375	4 1/16	5 1/2
0011956	29/64			0.4219	4 3/16	5 5/8
0011962	15/32			0.4688	4 5/16	5 3/4
0011979	31/64			0.4844	4 3/8	5 7/8
0011985	1/2			0.5000	4 1/2	6
1131669	33/64			0.4844	4 13/16	6 5/8
1131675	17/32			0.5313	4 13/16	6 5/8
1131681	35/64			0.5469	4 13/16	6 5/8
1131698	9/16			0.5625	4 13/16	6 5/8
1131703	37/64			0.5781	4 13/16	6 5/8
1131710	19/32			0.5938	5 3/16	7 1/8
1131726	39/64			0.6094	5 3/16	7 1/8
1131732	5/8			0.6250	5 3/16	7 1/8
1131749	41/64			0.6406	5 3/16	7 1/8
1131755	21/32			0.6563	5 3/16	7 1/8
1131761	43/64			0.6719	5 5/8	7 5/8
1131778	11/16			0.6875	5 5/8	7 5/8

## Drill Set Jobber Length

EDP	High Speed Drill Sets	Set No.
<b>Fractional Sizes</b>		
3599013	1/16" to 1/4" By 64ths	S13
3599015	1/16" to 1/2" By 32nds	S15
3599021	1/16" to 3/8 By 64ths	S21
3599129	1/16" to 1/2" By 64ths	S29
<b>Wire Gauge Sizes</b>		
3599060	No.1 to No.60	S60
3599020	No.61 to No.80	S20
<b>Letter Sizes</b>		
3599026	A to Z	S26
<b>Combination Sizes</b>		
3599115	S29, S60, S26	S115
EDP	Cobalt Drill Sets	Set No.
<b>Fractional Sizes</b>		
3599029	1/16" to 1/2" by 64th	C29





## 142° NC Spot Drill



- ▶ 142° NC Spot Drill is used to create an accurate starting point for secondary drilling operations for high performance carbide drills with 135° or 140° point angles.
- ▶ These tools are TiAlN -T14 coated for additional heat and wear resistance.

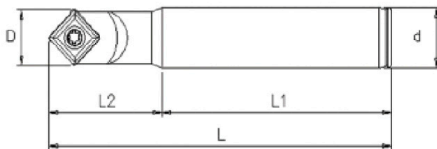
### Features

- ▶ Premium sub-micrograin carbide
- ▶ TiAlN coated for additional heat and wear resistance
- ▶ 142° point angle with web thinning
- ▶ HA - cylindrical shank
- ▶ h6 tolerance on shank diameter
- ▶ Suitable for a wide range of materials

EDP	Diameter	Overall Length	Flute Length
EFUT33000317	1/8	2.00	0.75
EFUT33000635	1/4	2.50	0.75
EFUT33000952	3/8	3.00	1.00
EFUT33001270	1/2	3.00	1.00
EFUT33001587	5/8	4.00	1.25
EFUT33001905	3/4	4.00	1.75

Drilling

## Center Drill Kit



Aluminium Kit

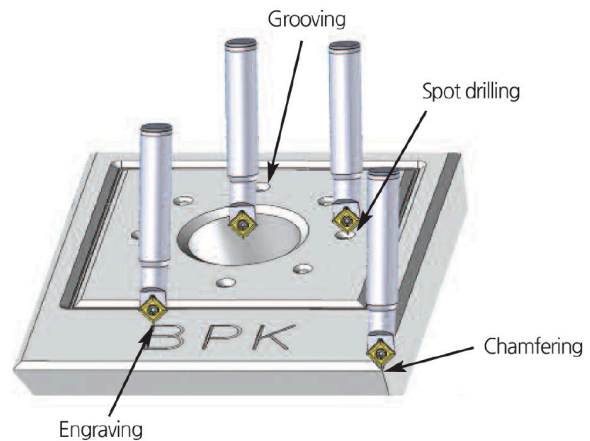


Steel Kit

### Features

- ▶ 90° Degree Center Drills
- ▶ 5/8 body cutter
- ▶ 6 Inserts
- ▶ Available in Steel and Aluminium geometries

	EDP	d	L	L1	D	Screw	Key
Holder	CMN-1411152-5/8	5/8	4	1-1/4	.55	TSB-3508	TXL-15
Insert	XDBP11T308	-P for Steel, -C for Aluminium					
Kit	CMN-1411100-5/8CSET	Drill Set - Aluminium - 1 Holder + 6 Inserts					
Kit	CMN-1411100-5/8PSET	Drill Set - Steel, 1 Holder + 6 Inserts					



## 2 & 4 Flute Regular Length

- ▶ These are designed for slotting, drilling, pocketing and general operation.
- ▶ Possible for High-speed cutting, suitable for high efficiency machining for hardened & high alloy steels, steel casting, chill casting, suitable cast iron, CrNi-steels, brass, copper, aluminium with a high percentage of silicon and abrasive plastics.

Milling

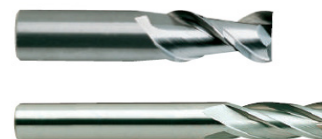
2 FL Uncoated	4 FL Coated	Mill Dia.	Shank Dia.	Length of Cut	OAL
01552	130-4031	1/32	1/8	5/64	1-1/2
01553	130-4046	3/64	1/8	7/64	1-1/2
01554	07554TF	1/16	1/8	3/16	1-1/2
01555	07555TF	5/64	1/8	3/16	1-1/2
01556	07556TF	3/32	1/8	3/8	1-1/2
01557	07557TF	7/64	1/8	3/8	1-1/2
01558	07558TF	1/8	1/8	1/2	1-1/2
01560	07560TF	9/64	3/16	1/2	2
01562	07561TF	5/32	3/16	9/16	2
01564	07564TF	11/64	3/16	5/8	2
01565	07565TF	3/16	3/16	5/8	2
01569	07569TF	13/64	1/4	5/8	2-1/2
01570	07570TF	7/32	1/4	5/8	2-1/2
01572	07572TF	15/64	1/4	3/4	2-1/2
01573	07573TF	1/4	1/4	3/4	2-1/2
01579	07579TF	5/16	5/16	13/16	2-1/2
01584	07584TF	3/8	3/8	1	2-1/2
01588	07588TF	7/16	7/16	1	2-3/4
01593	07593TF	1/2	1/2	1	3
01595	07595TF	5/8	5/8	1-1/4	3-1/2
01598	07598TF	3/4	3/4	1-1/2	4
01600	07600TF	1	1	1-1/2	4



## 2 & 4 Flute Long Length

Suitable for cutting hardened & high alloy steels, steel casting, chill casting, malleable cast iron, CrNi-steels, brass, copper, aluminium with high percentage of silicon and abrasive plastics.

2FL Uncoated	4 FL Coated	Mill Dia.	Shank Dia.	Length of cut	OAL
02558	08558TF	1/8	1/8	3/4	2-1/4
02565	08565TF	3/16	3/16	3/4	2-1/2
02573	08573TF	1/4	1/4	1-1/8	3
02579	08579TF	5/16	5/16	1-1/8	3
02584	08584TF	3/8	3/8	1-1/8	3
02588	08588TF	7/16	7/16	2	4
02593	08593TF	1/2	1/2	2	4
02595	08595TF	5/8	5/8	2-1/4	5
02598	08598TF	3/4	3/4	2-1/4	5
02600	08600TF	1	1	2-1/4	5



## 2 & 4 Flute Extra Long Length

Suitable for cutting hardened & high alloy steels, steel casting, chill casting, malleable cast iron, CrNi-steels, brass, copper, aluminium with a high percentage of silicon and abrasive plastics.



2 FL Uncoated	4 FL Coated	Mill Dia.	Shank Dia.	Length of cut	OAL
54558	55558TF	1/8	1/8	1	3
54565	55565TF	3/16	3/16	1-1/8	3
54904	55904TF	3/16	3/16	1	4
54573	55573TF	1/4	1/4	1-1/2	4
54901	55901TF	1/4	1/4	1-1/2	6
	777-4256	1/4	1/4	3	6
54579	55579TF	5/16	5/16	1-5/8	4
	777-4316	5/16	5/16	3	6
54584	55584TF	3/8	3/8	1-3/4	4
54902	55902TF	3/8	3/8	1-1/2	6
	777-2357	3/8	3/8	4	7
54588	55588TF	7/16	7/16	3	6
54903	55903TF	1/2	1/2	1-1/2	6
54593	55593TF	1/2	1/2	3	6
	777-4507	1/2	1/2	4	7
	777-4508	1/2	1/2	5	8
54595	55595TF	5/8	5/8	3	6
	777-4627	5/8	5/8	4	7
	777-4628	5/8	5/8	5	8
	777-4629	5/8	5/8	6	9
54598	55598TF	3/4	3/4	3	6
	777-4758	3/4	3/4	5	8
	777-4759	3/4	3/4	6	9
54600	55600TF	1	1	3	6
	180-4107	1	1	4	7
	777-4108	1	1	5	8
	777-4109	1	1	6	9

Milling

## 2 & 4 Regular Length Ball Nose

Suitable for cutting hardened & high alloy steels, steel casting, chill casting, malleable cast iron, CrNi-steels, brass, copper, aluminium with a high percentage of silicon and abrasive plastics.



2 FL Uncoated	4 FL Coated	Mill Dia.	Shank Dia.	Length of cut	OAL
135-2031	145-4031	1/32	1/8	3/32	1-1/2
135-2046	145-4046	3/64	1/8	1/8	1-1/2
135-2062	145-4062	1/16	1/8	3/16	1-1/2
41558	43558TF	1/8	1/8	1/2	1-1/2
41561	43561TF	5/32	3/16	9/16	2
41565	43565TF	3/16	3/16	5/8	2
41570	43570TF	7/32	1/4	5/8	2-1/2
41573	43573TF	1/4	1/4	3/4	2-1/2
41579	43579TF	5/16	5/16	13/16	2-1/2

## 2 & 4 Regular Length Ball Nose

Suitable for cutting hardened & high alloy steels, steel casting, chill casting, malleable cast iron, CrNi-steels, brass, copper, aluminium with a high percentage of silicon and abrasive plastics.

2 FL Uncoated	4 FL Coated	Mill Dia.	Shank Dia.	Length of cut	OAL
41584	43584TF	3/8	3/8	1	2-1/2
41588	43588TF	7/16	7/16	1	2-3/4
41593	43593TF	1/2	1/2	1	3
41595	43595TF	5/8	5/8	1-1/4	3-1/2
41595	43598TF	3/4	3/4	1-1/2	4
41600	43600TF	1	1	1-1/2	4



Milling

## 4 Flute Long & Extra Long Length Ball Nose

Suitable for cutting hardened & high alloy steels, steel casting, chill casting, malleable cast iron, CrNi-steels, brass, copper, aluminium with high percentage of silicon and abrasive plastics.

4 FL Coated	Mill Dia.	Shank Dia.	Length of cut	OAL
51558TF	1/8	1/8	3/4	2-1/4
51565TF	3/16	3/16	3/4	2-1/2
51573TF	1/4	1/4	1-1/8	3
51579TF	5/16	5/16	1-1/8	3
51584TF	3/8	3/8	1-1/8	3
51588TF	7/16	7/16	2	4
51593TF	1/2	1/2	2	4
51595TF	5/8	5/8	2-1/4	5
51598TF	3/4	3/4	2-1/4	5
51600TF	1	1	2-1/4	5
53558TF	1/8	1/8	1	3
53565TF	3/16	3/16	1-1/8	3
53573TF	1/4	1/4	1-1/2	4
53901TF	1/4	1/4	1-1/2	6
53579TF	5/16	5/16	1-5/8	4
53584TF	3/8	3/8	1-3/4	4
53902TF	3/8	3/8	1-1/2	6
53588TF	7/16	7/16	3	6
53903TF	1/2	1/2	1-1/2	6
53593TF	1/2	1/2	3	6
53595TF	5/8	5/8	3	6
53904TF	5/8	5/8	1-1/2	6
53598TF	3/4	3/4	3	6
53905TF	3/4	3/4	1-1/2	6
53600TF	1	1	3	6
53906TF	1	1	1-1/2	6





# High Performance Endmills V7 Plus

## 4 Flute Square (Sharp Corner)

For Alloy & Mild Steels, Stainless Steel, Cast Iron, High-Temp Alloys

- ▶ Multiple helix geometry delivers silent cutting and eliminates chatter
- ▶ Excellent work piece finishes
- ▶ Higher speeds, deeper cuts and higher metal removal rates



EDP Plain	EDP Flat	Mill Dia.	Shank Dia.	Length of cut	OAL
GMF68008		1/8	1/8	1/8	1-1/2
GMF68901		1/8	1/8	3/8	1-1/2
UGMF68S915		1/8	1/8	1/2	2-1/2
GMF68010		5/32	3/16	3/16	2
GMF68902		5/32	3/16	7/16	2
GMF68012		3/16	3/16	3/16	2
GMF68903		3/16	3/16	7/16	2
GMF68014		7/32	1/4	1/4	2
GMF68904		7/32	1/4	7/16	2-1/2
GMF68918		1/4	1/4	1/2	2-1/2
GMF68016		1/4	1/4	3/8	2
GMF68905		1/4	1/4	3/4	2-1/2
GMF68018		9/32	5/16	5/8	2-1/2
GMF68020		5/16	5/16	7/16	2
GMF68906		5/16	5/16	13/16	2-1/2
GM99931306		5/16	5/16	1-1/4	3-1/4
	GMF69022	11/32	3/8	1/2	2-1/2
	GMF68024	3/8	3/8	1/2	2-1/2
	GMF69907	3/8	3/8	7/8	2-1/2
	GM99931307	3/8	3/8	1	2-1/2
	GM99931308	3/8	3/8	1-1/2	4
	GMF69028	7/16	7/16	5/8	2-1/2
	GMF69908	7/16	7/16	1	2-3/4
	GMF69032	1/2	1/2	5/8	2-1/2
	GM99931309	1/2	1/2	1/2	3
	UGMF69909	1/2	1/2	1	3
	UGMF69917	1/2	1/2	1-1/4	3
	UGMF68910	1/2	1/2	1-1/4	3-1/2
	GM99931311	1/2	1/2	1-1/2	3-1/2
	GM99931312	1/2	1/2	1-5/8	3-1/2
	GM99931313	1/2	1/2	2	4
	GMF69040	5/8	5/8	3/4	3
	GMF69911	5/8	5/8	1-1/4	3-1/2
	GM99931314	5/8	5/8	1-5/8	3-1/2
	GM99931315	5/8	5/8	2	4
	GM99931316	5/8	5/8	2-1/8	4
	GMF69048	3/4	3/4	3/4	3
	GMF69912	3/4	3/4	1-1/2	4

Milling

# High Performance Endmills V7 Plus

## 4 Flute Square (Sharp Corner)

For Alloy & Mild Steels, Stainless Steel, Cast Iron, High-Temp Alloys

- ▶ Multiple helix geometry delivers silent cutting and eliminates chatter
- ▶ Excellent work piece finishes
- ▶ Higher speeds, deeper cuts and higher metal removal rates

EDP Plain	EDP Flat	Mill Dia.	Shank Dia.	Length of cut	OAL
	GM99931317	3/4	3/4	1-5/8	4
	GM99931318	3/4	3/4	2	4
	GMF69064	1	1	1	4
	GMF69913	1	1	1-1/2	4
	GMF69914	1	1	2	5



Milling

## 4 Flute Square (Sharp Corner) Metric

For Alloy & Mild Steels, Stainless Steel, Cast Iron, High-Temp Alloys

- ▶ Multiple helix geometry delivers silent cutting and eliminates chatter
- ▶ Excellent work piece finishes
- ▶ Higher speeds, deeper cuts and higher metal removal rates

EDP Plain	EDP Flat	Mill Dia.	Shank Dia.	Length of Cut	OAL
	GM99931391	3	6	8	57
	GM99931392	4	6	11	57
	GM99931393	5	6	13	57
	GM99931394	6	6	13	57
	GM99931395	8	8	19	63
	GM99931396	10	10	22	72
	GM99931397	12	12	26	83
	GM99931398	14	14	26	83
	GM99931399	16	16	32	92
	GM99931400	18	18	32	92
	GM99931401	20	20	38	104
	GM99931402	25	25	38	104



# High Performance Endmills V7 Plus

## 4 Flute Corner Radius

For Alloy & Mild Steels, Stainless Steel, Cast Iron, High-Temp Alloys

- ▶ Multiple helix geometry delivers silent cutting and eliminates chatter
- ▶ Excellent work piece finishes
- ▶ Higher speeds, deeper cuts and higher metal removal rates



EDP Plain	EDP Flat	Mill Dia.	Shank Dia.	Length of cut	OAL	Corner Radius
GM99931319		1/8	1/8	1/8	1-1/2	R.015
GM99931320		1/8	1/8	3/8	1-1/2	R.015
GMF70902		1/8	1/8	3/8	1-1/2	R.030
GM99931321		5/32	3/16	7/16	2	R.015
GM99931322		3/16	3/16	3/16	2	R.015
GM99931323		3/16	3/16	7/16	2	R.015
GMF70904		3/16	3/16	7/16	2	R.030
GM99931324		1/4	1/4	1/2	2	R.015
GMF70905		1/4	1/4	3/8	2	R.030
GMF70906		1/4	1/4	3/8	2	R.060
GM99931325		1/4	1/4	1/2	2	R.030
GM99931326		1/4	1/4	1/2	2	R.060
GMF70908		1/4	1/4	3/4	2-1/2	R.015
GMF70909		1/4	1/4	3/4	2-1/2	R.030
GMF70020		5/16	5/16	7/16	2	R.030
GM99931327		5/16	5/16	13/16	2-1/2	R.015
GMF70911		5/16	5/16	13/16	2-1/2	R.030
GMF70912		5/16	5/16	13/16	2-1/2	R.060
	GM99931328	3/8	3/8	1/2	2-1/2	R.015
	GMF71913	3/8	3/8	1/2	2-1/2	R.030
	GMF71914	3/8	3/8	1/2	2-1/2	R.060
	GM99931329	3/8	3/8	7/8	2-1/2	R.015
	GMF71916	3/8	3/8	7/8	2-1/2	R.030
	GMF71917	3/8	3/8	7/8	2-1/2	R.060
	GM99931330	3/8	3/8	1-1/4	2-1/2	R.015
	GM99931331	3/8	3/8	1-1/4	2-1/2	R.030
	GM99931332	3/8	3/8	1-1/4	2-1/2	R.060
	GMF71028	7/16	7/16	5/8	2-1/2	R.015
	GMF71918	7/16	7/16	5/8	2-1/2	R.030
	GM99931431	7/16	7/16	1	2-3/4	R.015
	GMF71920	7/16	7/16	1	2-3/4	R.030
	GMF71921	7/16	7/16	1	2-3/4	R.060
	GMF71922	1/2	1/2	5/8	2-1/2	R.015
	GMF71923	1/2	1/2	5/8	2-1/2	R.030
	GMF71924	1/2	1/2	5/8	2-1/2	R.060
	GM99931333	1/2	1/2	1	3	R.015
	UGMF71926	1/2	1/2	1	3	R.030
	UGMF71927	1/2	1/2	1	3	R.060
	GM99913334	1/2	1/2	1	3	R.090
	GMF71928	1/2	1/2	1	3	R.125
	GM99931335	1/2	1/2	1-1/4	3	R.015

Milling

# High Performance Endmills V7 Plus



## 4 Flute Corner Radius

For Alloy & Mild Steels, Stainless Steel, Cast Iron, High-Temp Alloys

- ▶ Multiple helix geometry delivers silent cutting and eliminates chatter
- ▶ Excellent work piece finishes
- ▶ Higher speeds, deeper cuts and higher metal removal rates

Milling

EDP Plain	EDP Flat	Mill Dia.	Shank Dia.	Length of cut	OAL	Corner Radius
	GM99931336	1/2	1/2	1-1/4	3	R.030
	GM99931337	1/2	1/2	1-1/4	3	R.060
	GM99931338	1/2	1/2	1-1/4	3	R.090
	GM99931339	1/2	1/2	1-1/4	3	R.120
	GMF71930	1/2	1/2	1-1/4	3-1/2	R.015
	GMF71931	1/2	1/2	1-1/4	3-1/2	R.030
	GMF71932	1/2	1/2	1-1/4	3-1/2	R.060
	GMF71933	1/2	1/2	1-1/4	3-1/2	R.125
	GM99931340	1/2	1/2	1-5/8	4	R.015
	GM99931341	1/2	1/2	1-5/8	4	R.030
	GM99931342	1/2	1/2	1-5/8	4	R.060
	GM99931343	1/2	1/2	1-5/8	4	R.090
	GM99931344	1/2	1/2	2	4	R.015
	UGMF70S890	1/2	1/2	2	4	R.030
	GM99931346	1/2	1/2	2	4	R.060
	UGMF70S892	1/2	1/2	2	4	R.090
	UGMF70S893	1/2	1/2	2	4	R.125
	GMF9991348	5/8	5/8	3/4	3	R.015
	GMF71934	5/8	5/8	3/4	3	R.030
	GMF71935	5/8	5/8	3/4	3	R.060
	GMF71937	5/8	5/8	1-1/4	3-1/2	R.015
	GMF71938	5/8	5/8	1-1/4	3-1/2	R.030
	GMF71939	5/8	5/8	1-1/4	3-1/2	R.060
	GM99931349	5/8	5/8	1-1/4	3-1/2	R.090
	GMF71940	5/8	5/8	1-1/4	3-1/2	R.125
	GM99931350	5/8	5/8	1-5/8	3-1/2	R.015
	GM99931351	5/8	5/8	1-5/8	3-1/2	R.030
	GM99931352	5/8	5/8	1-5/8	3-1/2	R.060
	GM99931355	5/8	5/8	2	4	R.060
	GM99931356	5/8	5/8	2-1/4	4	R.015
	GM99931357	5/8	5/8	2-1/4	4	R.030
	GM99931358	5/8	5/8	2-1/4	4	R.060
	UGMF71048	3/4	3/4	3/4	3	R.030
	GMF71941	3/4	3/4	3/4	3	R.060
	GM99931360	3/4	3/4	1-5/8	4	R.015
	GM99931361	3/4	3/4	1-5/8	4	R.030
	GM99931362	3/4	3/4	1-5/8	4	R.060
	GM99931363	3/4	3/4	2-1/4	5	R.015
	GM99931364	3/4	3/4	2-1/4	5	R.030
	GM99931365	3/4	3/4	2-1/4	5	R.060
	GMF71064	1	1	1	4	R.015
	GMF71946	1	1	1	4	R.030
	GMF71947	1	1	1	4	R.060
	GMF71948	1	1	1-1/2	4	R.015
	GMF71949	1	1	1-1/2	4	R.030





# High Performance Endmills V7 Plus

## 4 Flute Corner Radius

For Alloy & Mild Steels, Stainless Steel, Cast Iron, High-Temp Alloys

- ▶ Multiple helix geometry delivers silent cutting and eliminates chatter
- ▶ Excellent work piece finishes
- ▶ Higher speeds, deeper cuts and higher metal removal rates



EDP Plain	EDP Flat	Mill Dia.	Shank Dia.	Length of cut	OAL	Corner Radius
	GMF71950	1	1	1-1/2	4	R.060
	GMF71951	1	1	1-1/2	4	R.125
	GM99931366	1	1	2	4	R.015
	GM99931367	1	1	2	4	R.030
	GM99931368	1	1	2	4	R.060
	GMF71952	1	1	2	5	R.015
	GMF71953	1	1	2	5	R.030
	GMF71954	1	1	2	5	R.060
	GM99931369	1	1	2-1/4	5	R.015
	GM99931370	1	1	2-1/4	5	R.030
	GM99931371	1	1	2-1/4	5	R.060
	GM99931372	1	1	2-5/8	5	R.015
	GM99931373	1	1	2-5/8	5	R.030
	GM99931374	1	1	2-5/8	5	R.060

Milling

## 4 Flute Ball Nose

For Alloy & Mild Steels, Stainless Steel, Cast Iron, High-Temp Alloys

- ▶ Multiple helix geometry delivers silent cutting and eliminates chatter
- ▶ Excellent work piece finishes
- ▶ Higher speeds, deeper cuts and higher metal removal rates



EDP Plain	EDP Flat	Mill Dia.	Shank Dia.	Length of cut	OAL
	GMG53008	1/8	1/8	3/8	1-1/2
	UGMG53S902	1/8	1/8	1/2	2-1/2
	GMG53010	5/32	3/16	7/16	2
	GMG53012	3/16	3/16	7/16	2
	GMG53016	1/4	1/4	1/2	2-1/2
	GMG53909	1/4	1/4	3/4	2-1/2
	GMG53020	5/16	5/16	13/16	2-1/2
	GMG54024	3/8	3/8	7/8	2-1/2
	GMG54032	1/2	1/2	1	3
	GM99931390	1/2	1/2	1-1/4	3
	UGMG5340	5/8	5/8	1-1/4	3-1/2
	GMG54048	3/4	3/4	1-1/2	4
	GMG54064	1	1	1-1/2	4

# High Performance Endmills V7Plus



## 4 Flute Ball Nose Metric

For Alloy & Mild Steels, Stainless Steel, Cast Iron, High-Temp Alloys

- ▶ Multiple helix geometry delivers silent cutting and eliminates chatter
- ▶ Excellent work piece finishes
- ▶ Higher speeds, deeper cuts and higher metal removal rates

Milling

EDP Plain	EDP Flat	Mill Dia.	Shank Dia.	Length of cut	OAL
GMG55030		3	6	8	57
GMG55040		4	6	11	57
GMG55050		5	6	13	57
GMG55060		6	6	13	57
GMG55080		8	8	19	63
GMG55100		10	10	22	72
	GMG55120	12	12	26	83
	GMG55160	16	16	32	92
	GMG55200	20	20	38	104
	GMG55250	25	25	38	104



## 3 Flute High Performance Carbide

- ▶ Longer tool life
- ▶ Balanced cutting with less vibration
- ▶ Ability to run at higher speeds with less heat in aluminium
- ▶ More efficient chip evacuation
- ▶ Ability to counteract extreme radial forces

SQUARE



CORNER RADIUS



Dia	LOC	OAL	EDP	Corner Radius	
			Square End	0.010	0.30
1/8	1/4	1-1/2	E5G95008	E5G97008	E5G97901
	3/8	1-1/2	E5G95901	E5G97902	E5G97903
3/16	5/16	2	E5G95012	E5G97012	E5G97904
	9/16	2	E5G95902	E5G97905	E5G97906
1/4	5/8	2-1/2	E5G95903	E5G97909	E5G97910
	1-1/4	3-1/4	E5G95904	E5G97912	E5G97913
5/16	5/8	2-1/2	E5G95905	E5G97918	
	1-1/4	3-1/2	E5G95906		E5G97923
3/8	1/2	2	E5G95024		
	1	2-1/2	E5G95907	E5G97930	E5G97931
	1-1/2	3-1/2	E5G95908	E5G97935	E5G97936
	2	4	E5G95909		
7/16	9/16	2-1/2		E5G97028	E5G97945
	1-1/4	2-3/4	E5G95910		
1/2	5/8	2-1/2	E5G95032	E5G97032	E5G97959
	1	3	E5G95927		
	1-1/4	3	E5G95912	E5G97964	E5G97965
	2	4	E5G95914	E5G97976	E5G97977
	3	5	E5G95916	E5G97988	E5G97989
	3/4	3	E5G95040	E5G97040	E5G97994
5/8	1-5/8	3-1/2	E5G95917	E5G97999	E5G97801
	2-1/2	5	E5G95918	E5G97806	E5G97807
	3	5-1/4	E5G95919	E5G97812	E5G97813
3/4	1-5/8	4	E5G95920	E5G97824	E5G97825
	2-1/4	5	E5G95921	E5G97831	E5G97832
	3-1/4	6	E5G95922	E5G97838	E5G97839
	4	6-1/4	E5G95923	E5G97845	E5G97846
1	2	5	E5G95924	E5G97858	E5G97859
	4	7	E5G95926	E5G97872	E5G97873

# Drill Mill

## 2 & 4 Flute 90° Point ALTiN Coated

Drill Mill performs drilling, spotting, countersinking, chamfering, slotting, side milling, profile milling, "V" grooving and other drilling & milling operations with the same tool in vertical milling machine applications.



Milling

2 Flute	4 Flute	Cutter Diameter	Shank Diameter	Flute Length	OAL
505-2125	505-4125	1/8	1/8	1/2	1-1/2
505-2187	505-4187	3/16	3/16	5/8	2
505-2250	505-4250	1/4	1/4	3/4	2-1/2
505-2312	505-4312	5/16	5/16	13/16	2-1/2
505-2375	505-4375	3/8	3/8	1	2-1/2
505-2500	505-4500	1/2	1/2	1	3



## 60° and 90° Carbide Chamfer Mills

Quickly mill linear chamfer angles and create chamfer angles for threaded holes.

Chamfer Mills are multi-functional – used for deburring, chamfering or countersinking. For optimum performance this style tool is used in a milling pass and not as a plunging tool.



- ▶ Multiple helix geometry delivers silent cutting and eliminates chatter
- ▶ Excellent work piece finishes
- ▶ Ultra-fine grain carbide
- ▶ Higher speeds, deeper cuts and higher metal removal rates
- ▶ TiAlN coated for wear and heat resistance
- ▶ For chamfering edges and threaded hole chamfers.
- ▶ 60° and 90° chamfer angles
- ▶ Straight cylindrical shank ground to an h6 tolerance

Diameter	Angle	Shank (in)	OAL (in)	No. of Flutes	EDP
1/8	60°	0.125	2.0	4	1715A.060125
1/4		0.250	2.5	4	1715A.060250
3/8		0.375	3.0	4	1715A.060375
1/2		0.500	3.0	4	1715A.060500
5/8		0.625	4.0	4	1715A.060625
1/8	90°	0.125	2.0	4	1715A.090125
1/4		0.250	2.5	4	1715A.090250
3/8		0.375	3.0	4	1715A.090375
1/2		0.500	3.0	4	1715A.090500
5/8		0.625	4.0	4	1715A.090625

# Indexable Milling

## Shank Type



Insert	Dia	Designation	OAL	Reach	Z
JOMW06T215ZZSR	5/8	AJXU06R102FA10S	3.75	1.25	2
JOMW080320ZZSR	3/4	AJX08R122WA12S	4.75	2	2
JOMW080320ZZSR	3/4	AJXU08R12SA12L	7	4	2
WDNWO9T320	1	AJXU09R162WA16S	5.625	2.375	2
WDNWO9T320	1	AJXU09R162SA16L	8	4.75	2
WDNW120420	1-1/4	AJXU12R202SA20L	8	4.75	3
WDNW120420	1-1/2	AJXU12R243WA20M	8	2.375	4

Milling

## Arbor Type



Insert	Dia	Designation	Bore	Z
WDNW120420	2	AJXU12R0204	3/4	4

## Inserts



Insert
JOMW06T215ZZSR
JOMW080320ZZSR
WDNWO9T320
WDNW120420
WDNW140520

## Multi Tap

### Spiral Point Taps (DIN/ANSI)



- ▶ MultiTAP will cut a wide range of material including carbon steel, steel alloys, stainless steel, aluminum and copper. This all purpose design is well suited to the job shop, short run tapping environment.
- ▶ 2B/3B class of fit tolerances.
- ▶ Form B (4-5 P) chamfer length.

Ne2 Coated	Size	OAL (in)	Shank Dia. (in)
BU497300.5003	4-40 NC	2.205	0.141
BU497300.5004	5-40 NC	2.205	0.141
BU497300.5005	6-32 NC	2.205	0.141
BU497300.5006	8-32 NC	2.480	0.168
BU497300.5007	10-24 NC	2.756	0.194
BU497300.5008	12-24 NC	3.150	0.220
BU497300.5009	1/4-20 NC	3.150	0.255
BU497300.5010	5/16-18 NC	3.543	0.318
BU497300.5011	3/8-16 NC	3.937	0.381
CU497300.5012	7/16-14 NC	3.937	0.323
CU497300.5013	1/2-13 NC	3.937	0.367
CU497300.5014	9/16-12 NC	3.937	0.429
CU497300.5015	5/8-11 NC	3.937	0.480
CU497300.5016	3/4-10 NC	4.330	0.590
CU497300.5017	7/8-9 NC	4.921	0.697
CU497300.5018	1"-8 NC	5.512	0.800

Ne2 Coated	Size	OAL (in)	Shank Dia. (in)
BU497300.5037	4-48 NF	2.205	0.141
BU497300.5038	5-44 NF	2.205	0.141
BU497300.5039	6-40 NF	2.205	0.141
BU497300.5040	8-36 NF	2.480	0.168
BU497300.5041	10-32 NF	2.756	0.194
BU497300.5042	12-28 NF	3.150	0.220
BU497300.5043	1/4-28 NF	3.150	0.255
BU497300.5044	5/16-24 NF	3.543	0.318
BU497300.5045	3/8-24 NF	3.937	0.381
CU497300.5046	7/16-20 NF	3.937	0.323
CU497300.5047	1/2-20 NF	3.937	0.367
CU497300.5048	9/16-18 NF	3.937	0.429
CU497300.5049	5/8-18 NF	3.937	0.480
CU497300.5050	3/4-16 NF	4.330	0.590
CU497300.5051	7/8-14 NF	4.921	0.697
CU497300.5052	1"-12 NF	5.512	0.800

Threading

## Metric

Ne2 Coated	Size	OAL (mm)	Shank Dia. (in)
BU497300.0040	M4x0.7	63	0.168
BU497300.0050	M5x0.8	70	0.194
BU497300.0060	M6x1.0	80	0.255
BU497300.0080	M8x1.25	90	0.318
BU497300.0100	M10x1.5	100	0.381
CU497300.0112	M12x1.75	110	0.367
CU497300.0116	M16x2.0	110	0.480
CU497300.0118	M18x2.5	125	0.542
CU497300.0120	M20x2.5	140	0.652
CU497300.0124	M24x3.0	160	0.760

Ne2 Coated	Size	OAL (mm)	Shank Dia. (mm)
B1577300.0040	M4x0.7	63	4.5
B1577300.0050	M5x0.8	70	6.0
B1577300.0060	M6x1.0	80	6.0
B1577300.0080	M8x1.25	90	8.0
B1577300.0100	M10x1.5	100	10.0
C1577300.0112	M12x1.75	110	9.0
C1577300.0116	M16x2.0	110	12.0
C1577300.0118	M18x2.5	125	14.0
C1577300.0120	M20x2.5	140	16.0
C1577300.0124	M24x3.0	160	18.0

## Multi Tap

### Spiral Flute Taps (DIN/ANSI)



- ▶ MultiTAP will cut a wide range of material including carbon steel, steel alloys, stainless steel, aluminum and copper. This all purpose design is well suited to the job shop, short run tapping environment.
- ▶ 2B/3B class of fit tolerances.
- ▶ Form C (2-3 P) chamfer length.

Threading

Ne2 Coated	Size	OAL (in)	Shank Dia. (in)
BU533200.5003	4-40 NC	2.205	0.141
BU533200.5004	5-40 NC	2.205	0.141
BU533200.5005	6-32 NC	2.205	0.141
BU533200.5006	8-32 NC	2.480	0.168
BU533200.5007	10-24 NC	2.756	0.194
BU533200.5008	12-24 NC	3.150	0.220
BU533200.5009	1/4-20 NC	3.150	0.255
BU533200.5010	5/16-18 MC	3.543	0.318
BU533200.5011	3/8-16 NC	3.937	0.381
CU533200.5012	7/16-14 NC	3.937	0.323
CU533200.5013	1/2-13 NC	3.937	0.367
CU533200.5014	9/16-12 NC	3.937	0.429
CU533200.5015	5/8-11 NC	3.937	0.480
CU533200.5016	3/4-10 NC	4.330	0.590
CU533200.5017	7/8-9 NC	4.921	0.697
CU533200.5018	1"-8 NC	5.512	0.800

Ne2 Coated	Size	OAL (in)	Shank Dia. (in)
BU533200.5037	4-48 NF	2.205	0.141
BU533200.5038	5-44 NF	2.205	0.141
BU533200.5039	6-40 NF	2.205	0.141
BU533200.5040	8-36 NF	2.480	0.168
BU533200.5041	10-32 NF	2.756	0.194
BU533200.5042	12-28 NF	3.150	0.220
BU533200.5043	1/4-28 NF	3.150	0.255
BU533200.5044	5/16-24 NF	3.543	0.318
BU533200.5045	3/8-24 NF	3.937	0.381
CU533200.5046	7/16-20 NF	3.937	0.323
CU533200.5047	1/2-20 NF	3.937	0.367
CU533200.5048	9/16-18 NF	3.937	0.429
CU533200.5049	5/8-18 NF	3.937	0.480
CU533200.5050	3/4-16 NF	4.330	0.590
CU533200.5051	7/8-14 NF	4.921	0.697
CU533200.5052	1"-12 NF	5.512	0.800

## Metric

Ne2 Coated	Size	OAL (mm)	Shank Dia. (in)
BU533200.0040	M4x0.7	63	0.168
BU533200.0050	M 5x0.8	70	0.194
BU533200.0060	M 6x1.0	80	0.255
BU533200.0080	M 8x1.25	90	0.318
BU533200.0100	M 10x1.5	100	0.381
CU533200.0112	M 12x1.75	110	0.367
CU533200.0116	M 16x2.0	110	0.48
CU533200.0118	M 18x2.5	125	0.542
CU533200.0120	M 20x2.5	140	0.652
CU533200.0124	M 24x3.0	160	0.76

Ne2 Coated	Size	OAL (mm)	Shank Dia. (mm)
B4933200.0040	M4x0.7	63	4.5
B4933200.0050	M5x0.8	70	6.0
B4933200.0060	M6x1.0	80	6.0
B4933200.0080	M8x1.25	90	8.0
B4933200.0100	M10x1.5	100	10.0
C4933200.0112	M12x1.75	110	9.0
C4933200.0116	M16x2.0	110	12.0
C4933200.0118	M18x2.5	125	14.0
C4933200.0120	M20x2.5	140	16.0
C4933200.0124	M24x3.0	160	18.0

## Multi Tap-Form

### Roll Form Taps



MultiTAP Form is a chipless roll form version of the universal MultiTAP design. This all purpose design is well suited to the job shop, short run tapping environment.

- ▶ 2B/3B class of fit tolerances
- ▶ Form E (1.5-2 P) bottoming chamfer length
- ▶ TIN coated for extended tool life
- ▶ Lubrication grooves for improved forming action
- ▶ DIN / ANSI taps made with Emuge's trademark long shanks- DIN length for extra reach and ANSI shanks

EDP	Size	OAL (in)	Shank Dia. (in)
BU591410.5003	4-40	2.205	0.141
BU591410.5004	5-40	2.205	0.141
BU591410.5005	6-32	2.205	0.141
BU591410.5006	8-32	2.480	0.168
BU591410.5007	10-24	2.756	0.194
BU591410.5008	12-24	3.150	0.220
BU591410.5009	1/4-20	3.150	0.255
BU591410.5010	5/16-18	3.543	0.318
BU591410.5011	3/8-16	3.937	0.381
BU591410.5037	4-48	2.205	0.141
BU591410.5038	5-44	2.205	0.141
BU591410.5039	6-40	2.205	0.141
BU591410.5040	8-36	2.480	0.168
BU591410.5041	10-32	2.756	0.194
BU591410.5042	12-28	3.150	0.220
BU591410.5043	1/4-28	3.150	0.255
BU591410.5044	5/16-24	3.543	0.318
BU591410.5045	3/8-24	3.937	0.323

### Metric

EDP	Size	OAL (mm)	Shank Dia. (mm)
B5991400.0020	M2x.04	45	2.8
B5991400.0030	M3x.05	56	3.5
B5991400.0040	M4x.07	63	4.5
B5991400.0050	M5x.08	70	6.0
B5991400.0060	M6x1.0	80	6.0
B5991400.0080	M8x1.25	90	8.0
B5991400.0100	M10x1.5	100	10.0

Threading



## A Tap Spiral Point Inch & Metric

### Advanced Performance Taps for a Variety of Materials

- ▶ Sharp Cutting Edge - Stabilizes Chip Shape
- ▶ OSG's Proprietary V Coating - Long tool life
- ▶ Powder Metallurgy HSS - High Wear Resistance

Threading

EDP	Tap Size	Thread Limit	No. of Flutes	OAL	Neck Length
1651500108	4-40 UNC	H2	2	2.20	0.708
1651500608	6-32 UNC	H2	2	2.20	0.787
1651500908	8-32 UNC	H2	2	2.48	0.826
1651501108	10-24 UNC	H3	2	2.75	0.984
1651501308	10-32 UNF	H2	2	2.75	0.976
1651501708	1/4-20 UNC	H3	3	3.14	1.177
1651501908	1/4-28 UNF	H3	3	3.14	1.173
1651502108	5/16-18 UNC	H3	3	3.54	1.377
1651502308	5/16-24 UNF	H3	3	3.54	1.374
1651502508	3/8-16 UNC	H3	3	3.93	1.535
1651502708	3/8-24 UNF	H3	3	3.54	1.377
1651502908	7/16-14 UNC	H3	3	3.93	1.291
1651503108	7/16-20 UNF	H3	3	3.93	1.291
1651503308	1/2-13 UNC	H3	3	4.33	1.354
1651503508	1/2-20 UNF	H3	3	3.93	1.354
1651503708	9/16-12 UNC	H3	3	4.33	1.472
1651503908	9/16-18 UNF	H3	3	3.93	1.472
1651504108	5/8-11 UNC	H3	3	4.33	1.562
1651504308	5/8-18 UNF	H3	3	3.93	1.562
1651504508	3/4-10 UNC	H3	3	4.92	1.712
1651504708	3/4-16 UNF	H3	3	4.33	1.712
1651504908	7/8-9 UNC	H3	3	5.51	1.885
1651505108	7/8-14 UNF	H3	3	4.92	1.885
1651505308	1-8 UNC	H4	3	6.29	2.090
<hr/>					
1651000308	M4x0.7	D4	3	63	20.8
1651000508	M5x0.8	D4	3	70	24.8
1651000708	M6x0.75	D4	3	80	29.7
1651001008	M8x1.25	D5	3	90	34.7
1651001208	M10x1.25	D5	3	100	38.9
1651001508	M12x1.25	D6	3	100	32.0

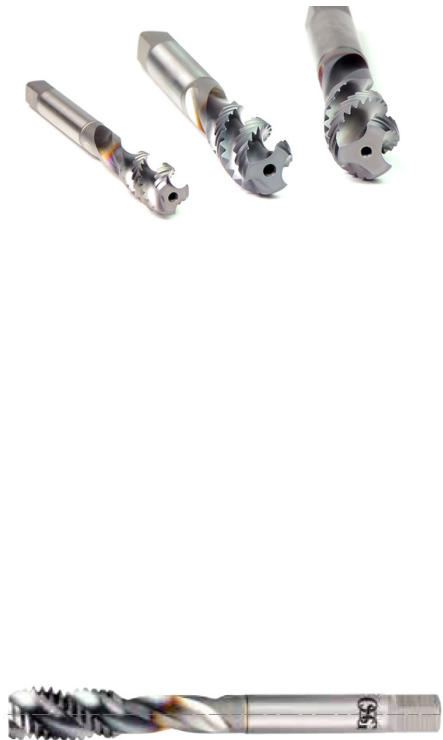




## A Tap Spiral Flute Inch & Metric

Advanced Performance Taps for a Variety of Materials

- ▶ Sharp Cutting Edge - Stabilizes Chip Shape
- ▶ OSG's Proprietary V Coating - Long tool life
- ▶ Powder Metallurgy HSS - High Wear Resistance



EDP	Tap Size	Thread Limit	No. of Flutes	OAL	Neck Length
1650508908	4-40 UNC	H2	2	2.20	0.704
1650509308	6-32 UNC	H2	3	2.20	0.783
1650509608	8-32 UNC	H2	3	2.48	0.826
1650509908	10-24 UNC	H3	3	2.75	0.976
1670510008	10-32 UNF	H2	3	2.75	0.326
1650510608	1/4-20 UNC	H3	3	3.14	1.177
1650510908	1/4-28 UNF	H3	3	3.14	1.177
1650511108	5/16-18 UNC	H3	3	3.54	1.377
1650511308	5/16-24 UNF	H3	3	3.54	1.377
1650511608	3/8-16 UNC	H3	3	3.93	1.535
1650511808	3/8-24 UNF	H3	3	3.54	1.377
1650512108	7/16-14 UNC	H3	3	3.93	1.712
1650512308	7/16-20 UNF	H3	3	3.93	1.712
1650512608	1/2-13 UNC	H3	3	4.33	1.933
1650512808	1/2-20 UNF	H3	3	3.93	1.933
1650503708	9/16-12 UNC	H3	3	4.33	1.972
1650503908	9/16-18 UNF	H3	3	3.93	1.972
1650504108	5/8-11 UNC	H3	3	4.33	2.125
1650504308	5/8-18 UNF	H3	3	3.93	2.125
1650504508	3/4-10 UNC	H3	4	4.92	2.433
1650504708	3/4-16 UNF	H3	4	4.33	2.433
1650504908	7/8-9 UNC	H4	4	5.51	2.653
1650505108	7/8-14 UNF	H4	4	4.92	2.653
1650505208	1-8 UNC	H4	4	6.29	3.011
1650010208	M4x0.7	D4	3	63	20.9
1650010608	M5x0.8	D4	3	70	25.1
1650011008	M6x1.0	D5	3	80	29.9
1650011508	M8x1.25	D5	3	90	35.0
1650012108	M10x1.25	D5	3	100	39.0
1650012808	M12x1.25	D6	3	100	49.1

Threading

## HY-PRO NRT Inch & Metric

### Premium Design for a Wide Range of Materials

- ▶ Bottoming chamfers are used for threading blind holes to the bottom. They have 1 to 2 threads.
- ▶ Titanium carbonitride (TiCN) is harder and more wear resistant than TiN. It is used on stainless steels, cast iron and aluminum alloys.
- ▶ Cobalt is harder than high speed steel and provides better wear resistance. It is commonly used on high tensile alloys.

Threading

EDP	Tap Size	Lead	Thread Limit	Tap Drill Size	
				Min	Max
1400104908	4-40 UNC	1.5 P	H3	0.099	0.102
1400110008	6-32 UNC	1.5 P	H3	0.122	0.125
1400113908	8-32 UNC	1.5 P	H3	0.148	0.151
1400117808	10-24 UNC	1.5 P	H3	0.169	0.173
1400125608	1/4-20 UNC	1.5 P	H3	0.225	0.230
1400127808	1/4-28 UNF	1.5 P	H4	0.232	0.235
1400130008	5/16-18 UNC	1.5 P	H6	0.284	0.290
1400132208	5/16-24 UNF	1.5 P	H4	0.291	0.296
1400134508	3/8-16 UNC	1.5 P	H5	0.343	0.350
1400136808	3/8-24 UNF	1.5 P	H4	0.354	0.358
1400139108	7/16-14 UNC	2.5 P	H4	0.401	0.408
1400140908	7/16-20 UNF	2.5 P	H4	0.412	0.417
1400142708	1/2-13 UNC	2.5 P	H4	0.461	0.469
1400144508	1/2-20 UNF	2.5 P	H4	0.475	0.480
1410100408	M2 x 0.4	1.5 P	D3	1.80	1.84
1410101408	M3 x 0.5	1.5 P	D3	2.75	2.80
1410102408	M4 x 0.7	1.5 P	D4	3.64	3.71
1410103008	M5 x 0.8	1.5 P	D4	4.59	4.67
1410103908	M6 x 1.0	1.5 P	D5	5.49	5.59
1410104208	M8 x 1.25	1.5 P	D5	7.36	7.49
1410104808	M10 x 1.5	1.5 P	D6	9.24	9.39
1410105408	M12 x 1.75	1.5 P	D6	11.11	11.29



## Spiral Pointed Taps Plug Style Inch & Metric



### Cutting Applications

Materials Main Group	Sub-Group	Condition	Hardness (HRc)	Cutting Speed (SFM)
Stainless Steel	200Series	Annealed	<28	20-35
	300Series	Annealed	<28	20-35
	17-4, 15-5	Annealed	<25	10-15
	AM286	Annealed	<25	15-25
	400Series	Annealed	<28	20-35
Low Carbon Steel	1010	Normalized	<20	25-50
	1018			
	1035			
Medium Carbon Steel	1030, 1035	Normalized	<28	20-40
	1038, 1040			
	1045, 1050			
High Carbon Steel	1065, 1070	Normalized	<30	15-25
	1080, 1090			
	1095, 1561			
	1572			
High Strength Steel	4140, 4340	Normalized	<30	15-25
Tool Steel	A-2, D-2, H-13, P-20	Annealed	<30	15-25
Aluminum	Cast, wrought	-	-	30-90
Magnesium	-	-	-	40-80
Copper	-	-	-	50-60
Brass	-	-	-	30-65
Zinc	-	-	-	30-65

EDP	Size	Thread Per Inch		No. of Flutes	Thread Limit
		UNC	UNF		
I0082	2	56		2	H2
I0162	4	40		2	H2
I0202	5	40		3	H2
I0243	6	32		3	H3
I0283	8	32		3	H3
I0323	10	24		3	H3
I0343	10		32	3	H3
I0403	1/4	20		3	H3
I0423	1/4		28	3	H3
I0443	5/16	18		3	H3
I0463	5/16		24	3	H3
I0483	3/8	16		3	H3
I0503	3/8		24	3	H3
I0523	7/16	14		3	H3
I0543	7/16		20	3	H3
I0563	1/2	13		3	H3
I0583	1/2		20	3	H3
I0603	9/16	12		3	H3
I0623	9/16		18	3	H3
I0643	5/8	11		3	H3
I0703	3/4	10		3	H3
I0725	3/4		16	3	H5
I0744	7/8	9		3	H4
I0766	7/8		14	3	H6
I0784	1	8		3	H4
I0806	1		12	3	H6
T1266824	1-1/8	7		4	H4
T1266864	1-1/4	7		4	H4
T1266904	1-3/8	6		4	H4
T1266924	1-3/8		12	4	H4
T1266944	1-1/2	6		4	H4

EDP	Size	Pitch	No. of Flutes	Thread Limit
O9203	M3	0.5	3	D3
O9224	M3.5	0.6	3	D4
O9244	M4	0.7	3	D4
O9284	M5	0.8	3	D4
O9315	M6	1.0	3	D5
O9345	M7	1.0	3	D5
O9365	M8	1.25	3	D5
O9375	M8	1.0	3	D5
O9426	M10	1.5	3	D6
O9435	M10	1.25	3	D5
O9506	M12	1.75	3	D6
O9525	M12	1.25	3	D5
O9547	M14	2.0	3	D7
O9556	M14	1.5	3	D6
O9607	M16	2.0	3	D7
O9616	M16	1.5	3	D6
O9657	M18	2.5	3	D7
O9676	M18	1.5	3	D6
T1235787	M24	3.0	3	D7

## Spiral Fluted Taps Modified Bottoming Style Inch & Metric

EDP	Size	Thread Per Inch		No. of Flutes	Thread Limit
		UNC	UNF		
B0082	2	56		2	H2
B0162	4	40		2	H2
B0203	5	40		3	H3
B0243	6	32		3	H3
B0283	8	32		3	H3
B0323	10	24		3	H3
B0343	10		32	3	H3
B0403	1/4	20		3	H3
B0423	1/4		28	3	H3
B0443	5/16	18		3	H3
B0463	5/16		24	3	H3
B0483	3/8	16		3	H3
B0503	3/8		24	3	H3
B0523	7/16	14		3	H3
B0543	7/16		20	3	H3
B0563	1/2	13		3	H3
B0583	1/2		20	3	H3
B0603	9/16	12		3	H3
B0623	9/16		18	3	H3
B0643	5/8	11		4	H3
B0663	5/8		18	4	H5
B0703	3/4	10		4	H3
B0723	3/4		16	4	H3
B0744	7/8	9		4	H4
B0764	7/8		14	4	H4
B0784	1	8		4	H4
B0804	1		12	4	H4
B0824	1-1/8	7		4	H4
B0864	1-1/4	7		4	H4
B0904	1-3/8	6		4	H4

EDP	Size	Pitch	No. of Flutes	Thread Limit
BS203	M3	0.5	3	D3
BS224	M3.5	0.6	3	D4
BS244	M4	0.7	3	D4
BS284	M5	0.8	3	D4
BS315	M6	1.0	3	D5
BS345	M7	1.0	3	D5
BS365	M8	1.25	3	D5
BS375	M8	1.0	3	D5
BS426	M10	1.5	3	D6
BS435	M10	1.25	3	D5
BS506	M12	1.75	3	D6
BS525	M12	1.25	3	D5
BS547	M14	2.0	3	D7
BS556	M14	1.5	3	D6
BS607	M16	2.0	3	D7
BS616	M16	1.5	3	D6
BS657	M18	2.5	4	D7
BS676	M18	1.5	4	D6
T1185805	M24	1.5	4	D7



### Cutting Applications

Materials Main Group	Sub-Group	Condition	Hardness (HRC)	Cutting Speed (SFM)
Stainless Steel	200Series	Annealed	<28	20-35
	300Series	Annealed	<28	20-35
	17-4, 15-5	Annealed	<25	10-15
	AM286	Annealed	<25	15-25
	400Series	Annealed	<28	20-35
Low Carbon Steel	1010	Normalized	<20	25-50
	1018			
	1035			
Medium Carbon Steel	1030, 1035	Normalized	<28	20-40
	1038, 1040			
	1045, 1050			
High Carbon Steel	1065, 1070	Normalized	<30	15-25
	1080, 1090			
	1095, 1561			
	1572			
High Strength Steel	4140, 4340	Normalized	<30	15-25
Tool Steel	A-2, D-2, H-13, P-20	Annealed	<30	15-25
Aluminum	Cast, wrought	-	-	30-90
Magnesium	-	-	-	40-80
Copper	-	-	-	50-60
Brass	-	-	-	30-65
Zinc	-	-	-	30-65

# Pipe Taps

## Straight Flute Standard NPT Taps

For Cast Irons and Steels



Straight flute standard projection for all materials

EDP No.	Size	Thread Per Inch	No. of Flutes
Bright Finish			
R7020	1/16	27	4
R7200	1/8	27	4
R7400	1/4	27	4
R7480	3/8	18	4
R7560	1/2	14	4
R7700	3/4	14	4

## BSP Taps Whitworth Pipe Threads



EDP	Size	TPI	Thread Length	Overall Length	Neck Length	Shank Diameter	No. of Flutes
TC727200	1/8	28	20	90	36	7	3
TC727400	1/4	19	22	100	40	11	3
TC727480	3/8	19	22	100	40	12	3
TC727560	1/2	14	25	125	50	16	4
TC727700	3/4	14	28	140	54	20	4
TC727780	1	11	30	160	60	25	4

Threading

## Self-Locking Tap Extensions

Threading

Standard ANSI Tap Extensions				
Diameter	Price			
	Length			
	4"	6"	8"	12"
#0-6	○	○	●	○
#8	○	○	●	○
#10	○	○	●	○
#12	○	○	○	○
1/4	○	○	●	○
5/16	○	○	●	○
3/8	○	○	●	○
7/16	○	○	●	○
1/2	○	○	●	○
9/16	○	○	○	○
5/8	○	○	○	○
11/16	○	○	●	○
3/4	○	○	●	○
13/16	○	○	●	○
7/8	○	○	●	○
15/16	○	○	●	○
1	○	○	●	○
1-1/8	○	○	●	○
1-1/4	○	○	○	○

NPT Tap Extensions				
Diameter	Price			
	Length			
	4"	6"	8"	12"
1/16	○	○	●	○
1/8	○	○	●	●
1/4	○	○	●	●
3/8	○	○	●	●
1/2	○	○	●	●
3/4	○	○	●	●
1	○	○	○	○
1-1/4	○	○	○	○
1-1/2	○	○	○	○



- ▶ Designed for close quarter and long tapping.
- ▶ No Set Screws & No Collets Needed - only the drift can dislodge the Extension from the Tap.
- ▶ The unique self-locking design is a precision machined EDM cavity that receives the end of Standard Tap
- ▶ Available lengths 2, 2.5, 3, 3.5, 4, 5, 6, 7, 8, and 12 inches.

- Available On Request
- Available In Stock



## Precision Thread Gauges

Emuge's comprehensive line of thread gauges consist of GO/NO-GO plug gauges and thread depth plug gauges.

Gauges inspect the pitch diameter and functional thread for internal-threaded components.

- ▶ Exceptionally hardened tool and highly accurate
- ▶ Full range of inch, metric sizes in coarse, fine, UNC, UNF, UNS, NPT, NPTF, along with Emuge Self-Lock™ threads forms
- ▶ Accomodates 2B, 3B, 6H classes of fit
- ▶ Stable thread start for easy insertion
- ▶ Eliminate thread damage in demanding environments
- ▶ Short form Certificate of Accuracy is furnished free with each gauge. Long form Certificates are available upon request.



### UNC

Size (in)	EDP No.
#1-64	L0100100.5000
#2-56	L0100100.5001
#3-48	L0100100.5002
#4-40	L0100100.5003
#5-40	L0100100.5004
#6-32	L0100100.5005
#8-32	L0100100.5006
#10-24	L0100100.5007
#12-24	L0100100.5008
1/4-20	L0100100.5009
5/16-18	L0100100.5010
3/8-16	L0100100.5011
7/16-14	L0100100.5012
1/2-13	L0100100.5013
9/16-12	L0100100.5014
5/8-11	L0100100.5015
3/4-10	L0100100.5016
7/8-9	L0100100.5017
1"-8	L0100100.5018
1 1/8-7	L0100100.5019
1 1/4-7	L0100100.5020
1 3/8-6	L0100100.5021
1 1/2-6	L0100100.5022

2B Class of Fit

### UNF

Size (in)	EDP No.
#0-80	L0100100.5033
#1-72	L0100100.5034
#2-64	L0100100.5035
#3-56	L0100100.5036
#4-48	L0100100.5037
#5-44	L0100100.5038
#6-40	L0100100.5039
#8-36	L0100100.5040
#10-32	L0100100.5041
#12-28	L0100100.5042
1/4-28	L0100100.5043
5/16-24	L0100100.5044
3/8-24	L0100100.5045
7/16-20	L0100100.5046
1/2-20	L0100100.5047
9/16-18	L0100100.5048
5/8-18	L0100100.5049
3/4-16	L0100100.5050
7/8-14	L0100100.5051
1"-12	L0100100.5052
1 1/8-12	L0100100.5053
1 1/4-12	L0100100.5054
1 3/8-12	L0100100.5050
1 1/2-12	L0100100.5056

2B Class of Fit

### Metric

Size (in)	EDP No.
M 1.6	LU100100.0016
M 2	LU100100.0020
M 2.5	LU100100.0025
M 3	LU100100.0030
M 3.5	LU100100.0035
M 4	LU100100.0040
M 5	LU100100.0050
M 6	LU100100.0060
M 8	LU100100.0080
M 10	LU100100.0100
M 11	LU100100.0111
M 12	LU100100.0112
M 14	LU100100.0114
M 16	LU100100.0116
M 18	LU100100.0118
M 20	LU100100.0120
M 22	LU100100.0122
M 24	LU100100.0124
M 30	LU100100.0130
M 36	LU100100.0136
M5 x 0.5	LU100100.0218
M 6 x 0.75	LU100100.0229
M 8 x 0.75	LU100100.0250
M 8 x 1	LU100100.0251
M 10 x 1	LU100100.0276
M 10 x 1.25	LU100100.0277
M 12 x 1.25	LU100100.0302
M 12 x 1.5	LU100100.0303
M 14 x 1.5	LU100100.0331
M 15 x 1.5	LU100100.0345
M 16 x 1.5	LU100100.0359
M 18 x 1.5	LU100100.0390
M 20 x 1.5	LU100100.0422
M 22 x 1.5	LU100100.0438

6B Class of Fit

### NPT

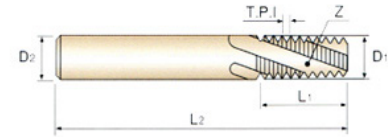
Size (in)	EDP No.
1/16-27	L0500100.5763
1/8-27	L0500100.5764
1/4-16	L0500100.5765
3/8-18	L0500100.5766
1/2-14	L0500100.5767
3/4-14	L0500100.5768
1"-11-1/2	L0500100.5769

### NPTF

Size (in)	EDP No.
1/16-27	L0520100.5782
1/8-27	L0520100.5783
1/4-16	L0520100.5784
3/8-18	L0520100.5785
1/2-14	L0520100.5786
3/4-14	L0520100.5787

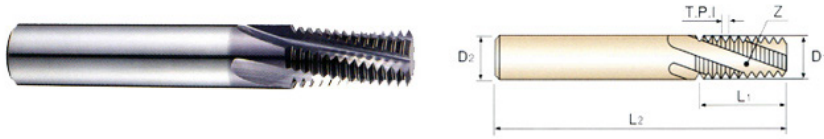
## Solid Carbide Thread Mill

- ▶ Material: Solid Carbide
- ▶ Shank: Plain Straight
- ▶ Spiral Angle: 15



EDP	Size	Pitch	Cutter Dia.	Shank Dia.	Thread Length	OAL	No. of Flute
TE080	#2	56	0.065	0.125	0.125	2.000	3
TE120	#3	48	0.075	0.125	0.167	2.000	3
TE220	#5	44	0.095	0.125	0.228	2.000	3
TE160	#4	40	0.850	0.125	0.175	2.000	3
TE300	#8	36	0.115	0.125	0.250	2.000	3
TE240	#6	32	0.100	0.125	0.128	2.000	3
TE280	#8	32	0.115	0.125	0.250	2.000	3
TE340	#10	32	0.120	0.125	0.312	2.000	3
TEF90	1/2	32	0.370	0.375	1.000	3.500	4
TEK90	#10	28	0.120	0.125	0.312	2.000	3
TE420	1/4	28	0.180	0.187	0.500	2.500	3
TE590	1/2	28	0.370	0.375	1.000	3.500	4
TE320	#10	24	0.120	0.125	0.312	2.000	3
TE460	5/16	24	0.235	0.250	0.625	2.500	3
TE500	3/8	24	0.285	0.312	0.750	3.000	4
TE570	1/2	24	0.370	0.375	1.000	3.500	4
TE400	1/4	20	0.180	0.187	0.500	2.500	3
TE540	7/16	20	0.335	0.375	0.875	3.500	4
TE580	1/2	20	0.370	0.375	1.000	3.500	4
TE440	5/16	18	0.235	0.250	0.625	2.500	3
TE620	9/16	18	0.370	0.375	0.875	3.500	4
TE480	3/8	16	0.285	0.312	0.750	3.000	4
TE720	3/4	16	0.490	0.500	1.250	3.500	4
TE520	7/16	14	0.305	0.312	0.750	3.000	4
TE760	7/8	14	0.490	0.500	1.250	3.500	4
TE560	1/2	13	0.350	0.375	0.875	3.500	4
TE600	9/16	12	0.370	0.375	0.875	3.500	4
TE710	3/4	12	0.495	0.500	1.250	3.500	4
TE640	5/8	11	0.470	0.500	1.250	3.500	4
TE700	3/4	10	0.495	0.500	1.250	3.500	4
TE740	7/8	9	0.620	0.625	1.375	4.000	4
TE780	1	8	0.620	0.625	1.375	4.000	4
TE800	1	12	0.745	0.750	1.500	4.000	5
TE820	1-1/8 & 1-1/4	7	0.745	0.750	1.572	4.500	5

## Solid Carbide Thread Mill Metric

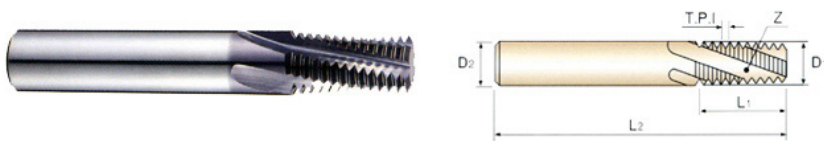


- ▶ Material: Solid Carbide
- ▶ Shank: Plain Straight
- ▶ Spiral Angle: 15

EDP	Size	Pitch	Cutter Dia.	Shank Dia.	Thread Length	OAL	No. of Flute
TD200	M3	0.50	0.085	0.125	0.178	2.000	3
TD240	M4	0.70	0.115	0.125	0.276	2.000	3
TD260	M4.5	0.75	0.120	0.125	0.250	2.000	3
TD380	M8	0.75	0.235	0.250	0.625	2.500	3
TD280	M5	0.80	0.120	0.125	0.312	2.000	3
TD310	M6	1.00	0.170	0.187	0.500	2.500	3
TD530	M12	1.00	0.360	0.375	0.875	3.500	4
TD360	M8	1.25	0.235	0.250	0.625	2.500	3
TD420	M10	1.50	0.300	0.312	0.750	3.000	4
TD550	M14	1.50	0.370	0.375	0.875	3.500	4
TD670	M18	1.50	0.490	0.500	1.250	3.500	4
TD500	M12	1.75	0.360	0.375	0.875	3.500	4
TD600	M16	2.00	0.470	0.500	1.250	3.500	4
TD700	M20	2.50	0.495	0.500	1.250	3.500	4
TD780	M24	3.00	0.620	0.625	1.375	4.000	4

Threading

## Solid Carbide Thread Mill for Taper Pipe Threads



- ▶ Material: Solid Carbide
- ▶ Shank: Plain Straight
- ▶ Spiral Angle: 15

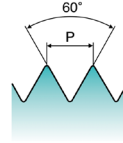
EDP	Size	Pitch	Large End Cutter Diameter	Shank Dia.	Thread Length	OAL	No. of Flute
TF020	1/16 & 1/8 NPT	27	0.245	0.250	0.437	2.500	3
TF400	1/4 & 3/8 NPT	18	0.305	0.312	0.625	3.000	4
TF480	1/4 & 3/8 NPT	18	0.363	0.375	0.680	3.500	4
TF560	1/2 & 3/4 NPT	14	0.495	0.500	0.875	3.500	4
TF780	1" - 2" NPT	11.5	0.620	0.625	1.125	4.000	4
TFF40	2-1/2"-6" NPT	8	0.745	0.750	1.500	5.000	4
TG020	1/16 & 1/8 NPTF	27	0.245	0.250	0.437	2.500	3
TG400	1/4 & 3/8 NPTF	18	0.305	0.312	0.625	3.000	4
TG560	1/2 & 3/4 NPTF	14	0.495	0.500	0.875	3.500	4
TG780	1" - 2" NPTF	11.5	0.620	0.625	1.125	4.000	4
TGF40	2-1/2" - 6" NPTF	8	0.745	0.750	1.500	5.000	4

# Thread Mill

## Solid Carbide Miniature Thread Mill for Hard Materials Metric



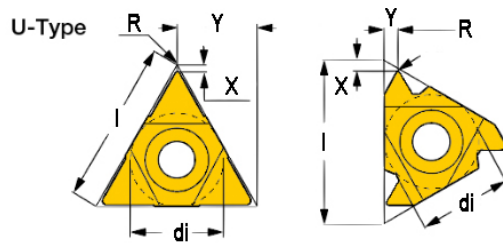
- ▶ Material: Solid Carbide
- ▶ Left hand cut, Straight Flute
- ▶ Thread Length: 2 X P
- ▶ The work direction is from top to bottom (Climb Milling)
- ▶ For hard materials up to HRC62



Threading

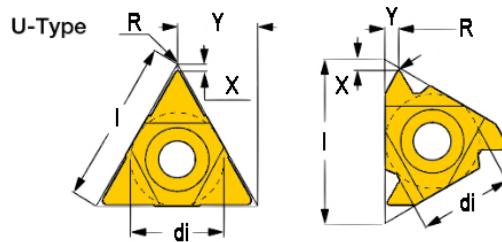
EDP	Size	Pitch	Cutter Diameter	Shank Dia.	Thread Length	OAL	No. of Flute
L19E1310	M6	1.0	4.8	6	2.0	57	5
L19E1360	M8	1.25	6.5	8	2.5	63	5
L19E1420	M10	1.5	8.2	10	3.0	73	6
L19E1500	M12	1.75	9.9	10	3.5	73	6

## External 60° Partial Profile



EDP	Designation	di	P <sub>min</sub> (mm)	P <sub>max</sub> (mm)	TPI max	TPI min	I	R	X	Y	Grade
5921206	16ERM A 60	0.375	0.50	1.50	48	16	0.630	0.002	0.03	0.04	IC908
5901519	16ERM AG 60	0.375	0.50	3.00	48	8	0.630	0.002	0.05	0.07	IC908
5921207	16ERM G 60	0.375	1.75	3.00	14	8	0.630	0.007	0.05	0.07	IC908

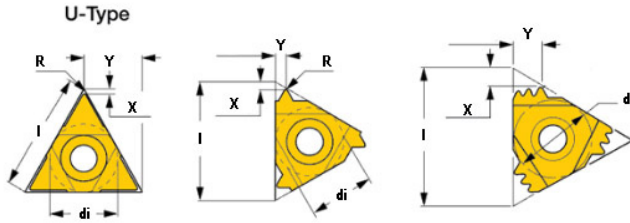
## Internal 60° Partial Profile



EDP	Designation	di	P <sub>min</sub> (mm)	P <sub>max</sub> (mm)	TPI max	TPI min	I	R	X	Y	Grade
5902389	16IRM A 60	0.375	0.50	1.50	48	16	0.630	0.002	0.03	0.04	IC908
5901523	16IRM AG 60	0.375	0.50	3.00	48	8	0.630	0.002	0.05	0.07	IC908
5921211	16IRM G 60	0.375	1.75	3.00	14	8	0.630	0.004	0.05	0.07	IC908

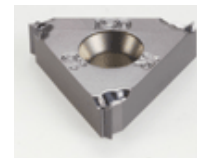
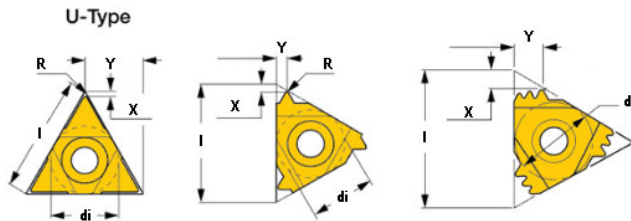
Threading

## External ISO Metric



EDP	Designation	di	Pitch mm	I	R	X	Y	Z	Grade
5921221	16ERM 0.75 ISO	0.375	0.75	0.630	0.003	0.02	0.02	1	IC908
5901517	16ERM 1.00 ISO	0.375	1.00	0.630	0.004	0.03	0.03	1	IC908
5901562	16ERM 1.25 ISO	0.375	1.25	0.630	0.006	0.03	0.04	1	IC908
5992237	16ERM 1.50 ISO	0.375	1.50	0.630	0.007	0.03	0.04	1	IC908
5901563	16ERM 1.75 ISO	0.375	1.75	0.630	0.008	0.04	0.05	1	IC908
5992257	16ERM 2.00 ISO	0.375	2.00	0.630	0.009	0.04	0.05	1	IC908
5901564	16ERM 2.50 ISO	0.375	2.50	0.630	0.012	0.04	0.06	1	IC908
5901518	16ERM 3.00 ISO	0.375	3.00	0.630	0.015	0.05	0.06	1	IC908

## Internal ISO Metric



EDP	Designation	di	Pitch mm	I	R	X	Y	Z	Grade
5901520	16IRM 1.00 ISO	0.375	1.00	0.630	0.002	0.02	0.03	1	IC908
5901574	16IRM 1.25 ISO	0.375	1.25	0.630	0.002	0.03	0.04	1	IC908
5992247	16IRM 1.50 ISO	0.375	1.50	0.630	0.003	0.03	0.04	1	IC908
5901575	16IRM 1.75 ISO	0.375	1.75	0.630	0.004	0.04	0.05	1	IC908
5992277	16IRM 2.00 ISO	0.375	2.00	0.630	0.004	0.04	0.05	1	IC908
5901576	16IRM 2.50 ISO	0.375	2.50	0.630	0.006	0.04	0.06	1	IC908
5901521	16IRM 3.00 ISO	0.375	3.00	0.630	0.007	0.04	0.06	1	IC908

## External American UN Full Profile



EDP	Designation	di	TPI	I	R	X	Y	Z	Grade
5902384	16ERM 24 UN	0.375	24.0	0.630	0.004	0.03	0.03	1	IC908
5901570	16ERM 20 UN	0.375	20.0	0.630	0.006	0.03	0.04	1	IC908
5901569	16ERM 18 UN	0.375	18.0	0.630	0.006	0.03	0.04	1	IC908
5901568	16ERM 16 UN	0.375	16.0	0.630	0.007	0.04	0.04	1	IC908
5902294	16ERM 14 UN	0.375	14.0	0.630	0.009	0.04	0.05	1	IC908
5902339	16ERM 13 UN	0.375	13.0	0.630	0.009	0.04	0.05	1	IC908
5901567	16ERM 12 UN	0.375	12.0	0.630	0.010	0.04	0.06	1	IC908
5902383	16ERM 8 UN	0.375	8.0	0.630	0.016	0.05	0.06	1	IC908

Threading

## Internal American UN Full Profile

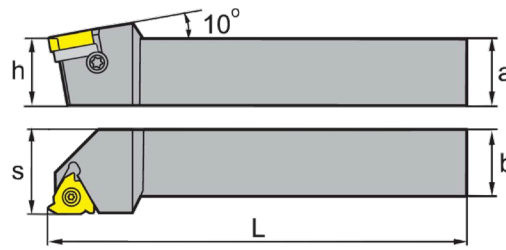
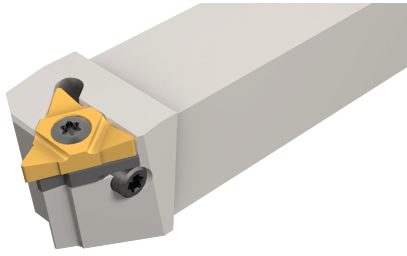


EDP	Designation	di	TPI	I	R	X	Y	Z	Grade
5901582	16IRM 20 UN	0.375	20.0	0.630	0.002	0.03	0.04	1	IC908
5901581	16IRM 18 UN	0.375	18.0	0.630	0.003	0.03	0.04	1	IC908
5901580	16IRM 16 UN	0.375	16.0	0.630	0.004	0.04	0.04	1	IC908
5902295	16IRM 14 UN	0.375	14.0	0.630	0.004	0.04	0.05	1	IC908
5901579	16IRM 12 UN	0.375	12.0	0.630	0.005	0.04	0.06	1	IC908
5902387	16IRM 8 UN	0.375	8.0	0.630	0.008	0.04	0.06	1	IC908



# Threading Toolholders

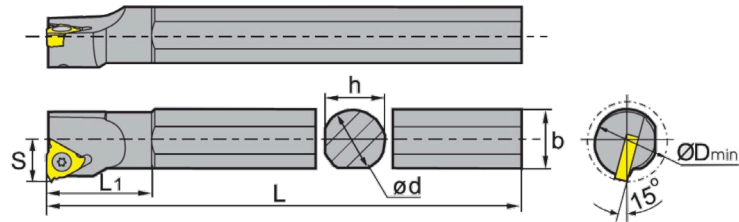
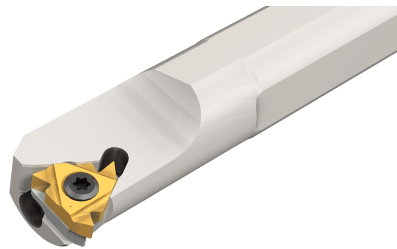
## External Threading Tools



EDP	Description	a	h	b	l	s
4320000082	SER10A03	0.625	0.625	0.625	4	0.75
4320000063	SER12C03	0.750	0.750	0.750	5	1.00
4320000060	SER16D03	1.000	1.000	1.000	6	1.25
4320000083	SER20E03	1.250	1.250	1.250	7	1.50

Threading

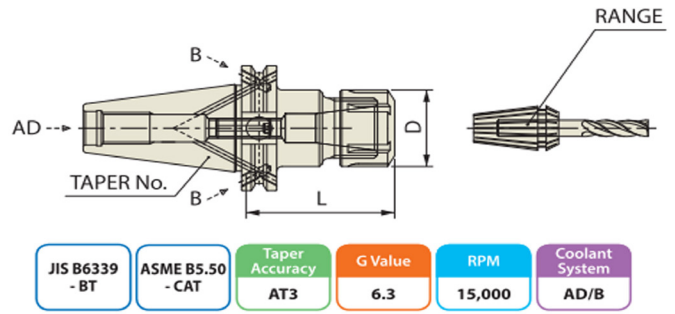
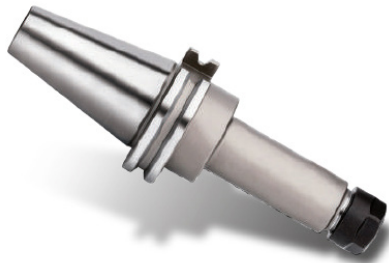
## Internal Threading Tools



EDP	Description	Ød	L	b	ØDmin	s	h	L1
4320000085	SIR0625M03	0.625	6	0.610	0.80	0.472	0.591	1.063
4320000061	SIR0750Q03	0.750	7	0.748	1.00	0.551	0.709	1.130
4320000087	SIR1000M03	1.000	6	0.945	1.25	0.669	0.906	1.134
4320000672	SIR1250S03	1.250	10	1.220	1.50	0.866	1.181	1.217
4320000089	SIR1500T03	1.500	12	1.516	2.00	1.063	1.457	1.240

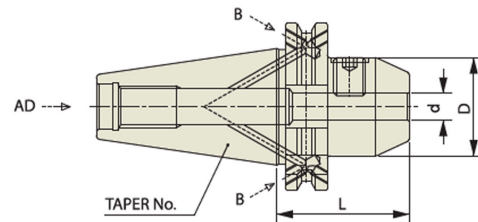
# Rotary Tooling

## ER Collet Chuck



Type	EDP	Description	L	D	Collet Series
(Short)	BK020SHT	CAT40-ER32-SHORT	1.063	-	ER32
	BL020SHT	CAT50-ER32-SHORT	1.063	-	ER32
CAT (Stub)	BK232B	CAT40AD/B-ER20-2.55	2.55	1.26	ER20
	BK233B	CAT40AD/B-ER25-2.55	2.50	1.65	ER25
	BK234B	CAT40AD/B-ER11-3.00	3.00	1.88	ER32
CAT (Standard)	BK030B	CAT40AD/B-ER11-3.00	3.00	0.63	ER11
	BK031B	CAT40AD/B-ER16-3.00	3.00	1.08	ER16
	BK032B	CAT40AD/B-ER20-4.00	4.00	1.26	ER20
	BK133B	CAT40AD/B-ER25-4.00	4.00	1.65	ER25
	BK134B	CAT40AD/B-ER32-4.00	4.00	1.88	ER32
	BL031B	CAT50AD/B-ER16-4.00	4.00	1.08	ER16
	BL033B	CAT50AD/B-ER25-4.00	4.00	1.65	ER25
	BL034B	CAT50AD/B-ER32-4.00	4.00	1.88	ER32
CAT (Extended)	BK331B	CAT40AD/B-ER16-6.00	6.00	1.08	ER16
	BK332B	CAT40AD/B-ER20-6.00	6.00	1.26	ER20
	BK333B	CAT40AD/B-ER25-6.00	6.00	1.65	ER25
	BK334B	CAT40AD/B-ER32-6.00	6.00	1.88	ER32
	BL334B	CAT50AD/B-ER32-6.00	6.00	1.88	ER32
BT (Stub)	BH232B	BT40AD/B-ER20-2.20	2.20	1.26	ER20
	BH233B	BT40AD/B-ER25-2.50	2.50	1.65	ER25
	BH234B	BT40AD/B-ER32-2.40	2.40	1.88	ER32
BT (Standard)	BH031B	BT40AD/B-ER16-3.00	3.00	1.08	ER16
	BH133B	BT40AD/B-ER25-4.00	4.00	1.65	ER25
	BH134B	BT40AD/B-ER32-4.00	4.00	1.88	ER32

## Endmill Holders



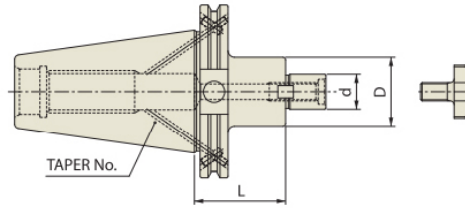
JIS B6339 - BT	ASME B5.50 - CAT	Taper Accuracy AT3	G Value 6.3	RPM 15,000	Coolant System AD/B
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Rotary Tooling

Type	EDP	Description	d1	L	D1
CAT (Standard)	AK000B	CAT40AD/B-EMH 1/8-2.50	1/8	2.50	0.69
	AK001B	CAT40AD/B-EMH 3/16-2.50	3/16	2.50	0.69
	AK002B	CAT40AD/B-EMH 1/4-2.50	1/4	2.50	0.78
	AK003B	CAT40AD/B-EMH 5/16-2.50	5/16	2.50	0.88
	AK004B	CAT40AD/B-EMH 3/8-2.50	3/8	2.50	1
	AK005B	CAT40AD/B-EMH 7/16-2.50	7/16	2.50	1.13
	AK006B	CAT40AD/B-EMH 1/2-2.63	1/2	2.63	1.25
	AK008B	CAT40AD/B-EMH 5/8-3.75	5/8	3.75	1.5
	AK010B	CAT40AD/B-EMH 3/4-3.75	3/4	3.75	1.75
	AK014B	CAT40AD/B-EMH 1-4.00	1	4.00	2
	AK017B	CAT40AD/B-EMH 1-1/4-4.25	1-1/4	4.25	2.5
	AK104B	CAT40AD/B-EMH 3/8-4.50	3/8	4.50	1.00
	AK106B	CAT40AD/B-EMH 1/2-4.63	1/2	4.63	1.25
	AK108B	CAT40AD/B-EMH 5/8-5.75	5/8	5.75	1.50
	AK110B	CAT40/B-EMH 3/4-5.75	3/4	5.00	1.75
	AK112B	CAT40AD/B-EMH 7/8-6.00	7/8	6.00	1.88
	AK114B	CAT40AD/B-EMH 1-6.00	1	6.25	2.00
	AL002B	CAT50AD/B-EMH 1/4-2.50	1/4	2.50	0.69
	AL003B	CAT50AD/B-EMH 5/16-2.50	5/16	2.50	0.69
	AL004B	CAT50AD/B-EMH 3/8-2.50	3/8	2.50	0.78
AL005B	CAT50AD/B-EMH 7/16-2.63	7/16	2.50	1.13	
AL006B	CAT50AD/B-EMH 1/2-2.63	1/2	2.63	1.25	
AL008B	CAT50AD/B-EMH 5/8-3.75	5/8	3.75	1.50	
AL010B	CAT50AD/B-EMH 3/4-3.75	3/4	3.75	1.75	
AL012B	CAT50AD/B-EMH 7/8-3.75	7/8	4.00	1.88	
AL014B	CAT50AD/B-EMH 1-4.00	1	4.00	2.00	
AL017B	CAT50AD/B-EMH 1-1/4-4.00	1-1/4	4.25	2.50	
CAT (Extended)	AL104B	CAT50AD/B-EMH 3/8-4.50	3/8	4.50	1.00
	AL106B	CAT50AD/B-EMH 1/2-4.63	1/2	4.63	1.25
	AL108B	CAT50AD/B-EMH 5/8-5.75	5/8	5.75	1.50
	AL110B	CAT50AD/B-EMH 3/4-5.75	3/4	6.00	1.75
	AL112B	CAT50AD/B-EMH 7/8-5.75	1	6.25	2.00
BT (Standard)	AH000B	BT40AD/B-EMH 1/8-2.50	1/8	2.50	0.69
	AH001B	BT40AD/B-EMH 3/16-2.50	3/16	2.50	0.69
	AH002B	BT40AD/B-EMH 1/4-2.50	1/4	2.50	0.78
	AH003B	BT40AD/B-EMH 5/16-2.50	5/16	2.50	0.88
	AH004B	BT40AD/B-EMH 3/8-2.50	3/8	2.50	1.00
	AH005B	BT40AD/B-EMH 7/16-2.50	7/16	2.50	1.13
	AH006B	BT40AD/B-EMH 1/2-2.50	1/2	2.50	1.25
	AH008B	BT40AD/B-EMH 5/8-2.50	5/8	2.50	1.50
	AH010B	BT40AD/B-EMH 3/4-2.50	3/4	2.50	1.75

# Rotary Tooling

## Shell Mill Arbor

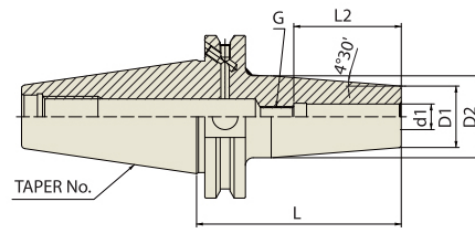


JIS B6339 -BT	ASME B5.50 -CAT	Taper Accuracy AT3	G Value 6.3	RPM 15,000	Coolant System AD/B
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Type	EDP	Description	L	D
Shell Mill Arbor (Standard)	EK010B	CAT40 AD/B-SMA 3/4-1.50	1.5	1.69
	EK014B	CAT40 AD/B-SMA 1-2.00	2.00	2.19
	EK017B	CAT40 AD/B-SMA 1 1/4-2.00	2.00	2.75
	EL010B	CAT40 AD/B-SMD 3/4-1.50	1.50	1.69
	EL014B	CAT50 AD/B-SMA 1-2.00	2.00	2.19
	EL017B	CAT50 AD/B-SMA 1 1/4-2.00	2.50	2.75
Shell Mill Arbor (Extended)	EK310B	CAT40 AD/B-SMA 3/4-3.50	3.50	1.69
	EK314B	CAT AD/B-SMA 1-4.00	4.00	2.19
	EK317B	CAR40 AD/B-SMA 1 1/4-4.00	4.00	2.75
	EL310B	CAT50 AD/B-SMA 3/4-3.50	3.50	1.69
	EL314B	CAT50 AD/B-SMA 1-4.00	4.00	2.19
	EL317B	CAT50 AD/B-SMA 1 1/4-4.00	4.00	2.75
Shell Mill Arbor (Standard)	EH010B	BT40 AD/B-SMA 3/4-1.77	1.77	1.69
	EH014B	BT40 AD/B-SMA 1-1.77	1.77	2.19
	EH017B	BT40 AD/B-SMA 1 1/4-1.81	1.81	2.75
Shell Mill Arbor (Extended)	EH314B	BT40 AD/B-SMA 1-4.13	4.13	2.19
	EH317B	BT40 AD/B-SMA 1/4-4.13	4.13	2.75

Rotary Tooling

## Shrink Fit Holder

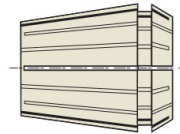


JIS B6339 -BT	ASME B5.50 -CAT	Taper Accuracy AT3	G Value 2.5	RPM 25,000	Run-Out (at 3D) ≤0.00012"	Coolant System AD/B
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Type	EDP	Description	d1	L	D1
CAT (Standard)	VK020	CAT40AD/B-SFH1/8-3.15	1/8	3.15	0.394
	VK022	CAT40AD/B-SFH3/16-3.15	3/16	3.15	0.394
	VK024	CAT40AD/B-SFH1/4-3.15	1/4	3.15	0.827
	VK026	CAT40AD/B-SFH1/4-6.30	1/4	6.3	0.827
	VK028	CAT40AD/B-SFH3/8-3.15	3/8	3.15	0.945
	VK030	CAT40AD/B-SFH3/8-6.30	3/8	6.3	0.945
	VK032	CAT40ADB-SFH1/2-3.15	1/2	3.15	0.945
	VK034	CAT40AD/B-SFH1/2-6.30	1/2	6.3	0.945
	VK036	CAT40AD/B-SFH5/8-3.15	5/8	3.15	1.063
	VK038	CAT40AD/B-SFH5/8-6.30	5/8	6.30	1.063

## Ultra Precision ER Collets - Inch

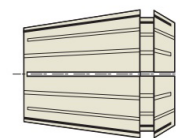
Size	ER11	ER16	ER20	ER25	ER32
1/32	-	-	ER20-132	-	-
1/16	ER11-116	ER16-116	ER20-116	ER25-116	-
3/32	ER11-332	ER16-332	ER20-332	ER25-332	ER32-332
1/8	ER11-18	ER16-18	ER20-18	ER25-18	ER32-18
5/32	ER11-532	ER16-532	ER20-532	ER25-532	ER32-532
3/16	ER11-316	ER16-316	ER20-316	ER25-316	ER32-316
7/32	ER11-732	ER16-732	ER20-732	ER25-732	ER32-732
1/4	ER11-14	ER16-1/4	ER20-14	ER25-14	ER32-14
9/32	-	-	ER20-932	ER25-932	ER32-932
5/16	-	ER16-516	ER20-516	ER25-516	ER32-516
11/32	-	ER16-1132	ER20-1132	ER25-1132	ER32-1132
3/8	-	-	ER20-38	ER25-38	ER32-38
13/32	-	-	ER20-1332	ER25-1332	ER32-1332
7/16	-	-	ER20-716	ER25-716	ER32-716
1/2	-	-	ER20-12	ER25-12	ER32-12
15/32	-	-	ER20-1532	ER25-1532	ER32-1532
17/32	-	-	-	ER25-1732	ER32-1732
9/16	-	-	-	ER25-916	ER32-916
19/32	-	-	-	ER25-1932	ER32-1932
5/8	-	-	-	ER25-58	-
21/32	-	-	-	-	-
11/16	-	-	-	-	-
23/32	-	-	-	-	-
3/4	-	-	-	-	-



Rotary Tooling

## Ultra Precision ER Collets - Metric

Size	ER11	ER16	ER20	ER25	ER32
1	ER11-1MM	-	-	-	-
2	ER11-2MM	ER16-2MM	-	-	-
3	ER11-3MM	ER16-3MM	ER20-3MM	ER25-3MM	ER32-3MM
4	ER11-4MM	ER16-4MM	ER20-4MM	ER25-4MM	ER32-4MM
5	ER11-5MM	ER16-5MM	ER20-5MM	ER25-5MM	ER32-5MM
6	ER11-6MM	ER16-6MM	ER20-6MM	ER25-6MM	ER32-6MM
7	-	ER16-7MM	ER20-7MM	ER25-7MM	ER32-7MM
8	-	ER16-8MM	ER20-8MM	ER25-8MM	ER32-8MM
9	-	-	-	ER25-9MM	ER32-9MM
10	-	ER16-10MM	ER20-10MM	ER25-10MM	ER32-10MM
11	-	-	-	ER25-11MM	-
12	-	-	ER20-12MM	ER25-12MM	ER32-12MM
13	-	-	-	-	ER32-13MM
18	-	-	-	-	ER32-18MM
20	-	-	-	-	ER32-20MM



# Rotary Tooling

## ER Collet Chuck Straight Shank

- ▶ Ideal for extending the tool to machine hard-to-reach spots.
- ▶ Use in combination with other toolholder and adapter systems.



EDP	Shank Dia.	OAL	Head Dia.	ER Size
SCC58ER11M-150	5/8	150	16	ER11
SCC58ER16M-150	5/8	150	22	ER16
SCC58ER20M-150	5/8	150	28	ER20
SCC34ER16M-150	3/4	150	22	ER16
SCC34ER16M-180	3/4	180	22	ER16
SCC34ER20M-150	3/4	150	28	ER20
SCC34ER20M-180	3/4	180	28	ER20
SCC34ER25M-150	3/4	150	35	ER25
SCC34ER25M-180	3/4	180	35	ER25
SCC1ER25M-150	1	150	35	ER25
SCC1ER25M-180	1	180	35	ER25
SCC1ER32M-150	1	150	44	ER32
SCC1ER32M-180	1	180	44	ER32

## Ultra Precision & Standard Precision Sets

Ultra Precision	Standard Precision	Size	Set
ER16-SET	ER16STD-SET	ER16	10 Pcs
ER20-SET	ER20STD-SET	ER20	12 Pcs
ER25-SET	ER25STD-SET	ER25	15 Pcs
ER32-SET	ER32STD-SET	ER32	18 Pcs



## Wrench

EDP	Description
ER11-M	ER 11 Mini Nut Wrench
ER16-A	ER 16 Collet Chuck Wrench
ER16-M	ER 16 Mini Nut Wrench
ER16-A	ER 16 Collet Chuck Wrench
ER16-M	ER16 Mini Nut Wrench
ER20-A	ER20 Collet Chuck Wrench
ER20-M	ER20 Mini Nut Wrench
ER25-C	ER25 Collet Chuck Wrench
ER32-C	ER32 Collet Chuck Wrench
032-000-WC	ER 32 Constellation Wrench
ER40-UM	ER40 Collet Wrench



## Nuts

Size
ER16-T1
ER20-T1
ER25-T2
ER32-T2



## Bandsaw Blades



### 528 FICUT S

#### Applications

Universal applications, small to medium size profiles and solids.

Width x Thickness	TPI
1/2" x 0.025"	6-10, 8-12, 10-14, 14-18
3/4" x 0.035"	4-6, 5-8, 6-10, 8-12, 10-14
1" x 0.035"	4-6, 5-8, 6-10, 8-12
1-1/4" x 0.042"	4-6, 5-8, 8-12
1-1/2" x 0.050"	4-6, 5-8, 8-12

### 524 FICUT PRO

#### Applications

Structural applications, profiles and beams.

Width x Thickness	TPI
1" x 0.035"	3-4, 4-6
1-1/4" x 0.042"	2-3, 3-4, 4-6
1-1/2" x 0.050"	2-3, 3-4, 4-6

### 529 FICUT L

#### Applications

Universal applications, medium to large size profiles and solids.

Width x Thickness	TPI
1" x 0.035"	2-3, 3-4
1-1/4" x 0.042"	2-3, 3-4
1-1/2" x 0.050"	2-3, 3-4

### 624 AA PRO

#### Applications

High-performance blade for structural applications, profiles and beams for large size

Width x Thickness	TPI
2" x 0.063"	3-4
2-5/8" x 0.063"	3-4

### 631 AA

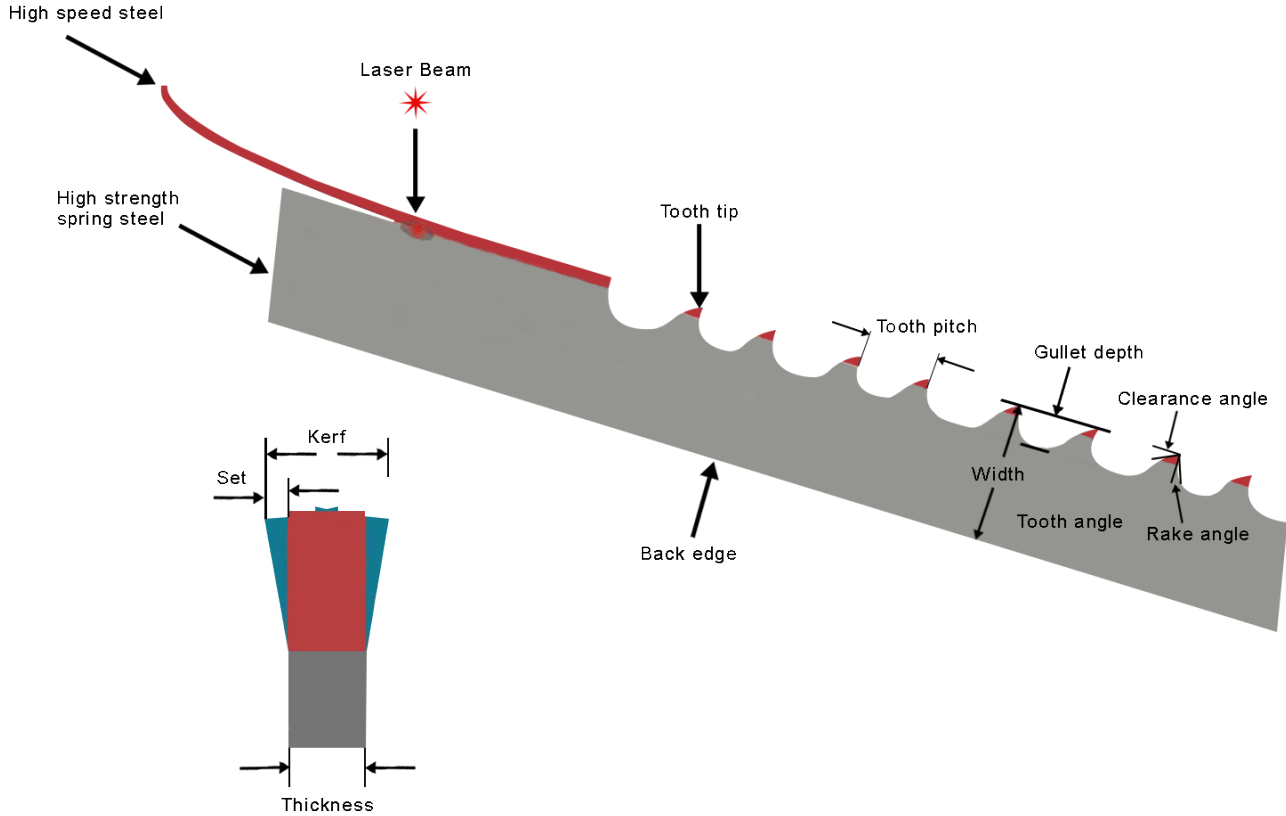
#### Applications

Performance applications for medium to large size solids.

Width x Thickness	TPI
1" x 0.035"	3-4, 4-6
1-1/4" x 0.042"	2-3, 3-4
1-1/2" x 0.050"	1.4-2, 2-3, 3-4
2" x 0.063"	0.75-1.25, 1.0-1.5, 1.4-2.0, 2-3, 3-4
2-5/8" x 0.063"	1.0-1.5, 1.4-2, 2-3



# Bandsaw Geometry



## Tooth Pitch Selection Chart for Solids

Cutting Width W				TPI
mm		inches		
from	to	from	to	
<5	10	<3/16	3/8	14-18
5	20	3/16	3/4	10-14
15	30	5/8	1 1/4	8-12
20	40	3/4	1 1/2	6-10
30	75	1 1/4	3	5-8
50	100	2	4	4-6
80	150	3	6	3-4
140	300	5 1/2	12	2-3
250	600	10	24	1.4-2.0
400	750	16	30	1.0-1.5
700	>1000	27	>40	0.75-1.25

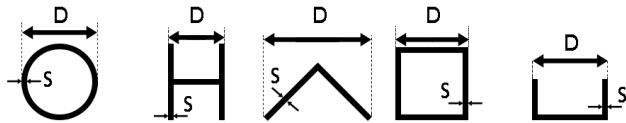
Band Sawing

# Tooth Pitch Selection Chart for Tubes and Profiles

Thickness S		Diameter / Width D in mm (inches)													
mm	Inches	15 (5/8)	20 (3/4)	40 (1 1/4)	60 (2 1/2)	80 (3)	100 (4)	120 (5)	150 (6)	200 (8)	300 (12)	400 (16)	500 (20)	600 (24)	>700 (27)
2	5/64	14-18	14-18	14-18	10-14	10-14	10-14	10-14	10-14	8-12	8-12	8-12	6-10	6-10	5-8
3	1/8	14-18	14-18	10-14	10-14	10-14	8-12	8-12	8-12	8-12	6-10	6-10	6-10	5-8	5-8
4	5/32	14-18	10-14	10-14	10-14	8-12	8-12	6-10	6-10	6-10	5-8	5-8	4-6	4-6	4-6
5	3/16	10-14	10-14	8-12	8-12	8-12	6-10	6-10	5-8	5-8	5-8	4-6	4-6	4-6	4-6
6	1/4	10-15	10-14	8-12	8-12	6-10	5-8	5-8	5-8	4-6	4-6	4-6	4-6	4-6	3-4
8	5/16		10-14	8-12	6-10	6-10	5-8	5-8	4-6	4-6	4-6	4-6	4-6	4-6	3-4
10	3/8			6-10	6-10	5-8	5-8	5-8	4-6	4-6	4-6	4-6	3-4	3-4	3-4
12	1/2			6-10	5-8	5-8	4-6	4-6	4-6	4-6	4-6	3-4	3-4	3-4	3-4
15	5/8			6-10	4-6	4-6	4-6	4-6	4-6	3-4	3-4	3-4	3-4	3-4	2-3
20	3/4				4-6	4-6	3-4	3-4	3-4	2-3	2-3	2-3	2-3	2-3	2-3
30	1 1/4					3-4	3-4	3-4	3-4	2-3	2-3	2-3	2-3	2-3	2-3
50	2							2-3	2-3	2-3	2-3	2-3	2-3	2-3	1.4-2.0
75	3									2-3	2-3	2-3	1.4-2.0	1.4-2.0	1.4-2.0
100	4											1.4-2.0	1.4-2.0	1.0-1.5	1.0-1.5
150	6											1.4-2.0	1.4-2.0	0.75-1.25	1.0-1.5
200	8												1.0-1.5	0.75-1.25	0.75-1.25
250	12														0.75-1.25
>300	>12														0.75-1.25

Band Sawing

For layer or bundle cutting double the wall thickness.



## Recommended Cutting Speeds

Structural Steel		Carbon Steel		Alloy Steel		Stainless Steel		Non-ferrous Materials	
Material Grade	Speed	Material Grade	Speed	Material grade	Speed	Material Grade	Speed	Material Grade	Speed
Tube	330 FPM	1018	330 FPM	H13	150 FPM	304	120 FPM	Aluminium	330 FPM
Pipe	330 FPM	1045	230 FPM	D2	110 FPM	316	80 FPM	Copper	270 FPM
Channel	330 FPM	1070	200 FPM	4140	230 FPM	420	135 FPM	Brass	330 FPM
Angle Iron	330 FPM			4340	230 FPM			Plastic	330 FPM

## CIMPULSE 33

CIMPULSE 33MP is an oil free multi purpose, moderate to heavy-duty fluid for machining and grinding. It offers high performance without the use of traditional extreme pressure lubricants and is recommended for turning, drilling, milling, reaming, boring, tapping, and grinding of most metals. CIMPULSE 33MP can be used on nearly all metal removal applications including form tapping. Not recommended for magnesium alloys.

- ▶ Oil Free Product
- ▶ For use on Ferrous and Aluminum Alloys
- ▶ Low Foam Even in High Pressure Applications
- ▶ Excellent Oil Rejecting Qualities
- ▶ Excellent on Titanium and Hard Metal Alloys
- ▶ Residue Easily Removed with water
- ▶ DCHA, Triazine and Chlorine Free

Undyed	Quantity
B01896 P000	19L
B01896 D000	208L

## CIMPULSE 49

CIMPULSE 49MP is an oil containing, multi-purpose, moderate to heavy-duty fluid for machining and grinding. It offers high performance without the use of traditional extreme pressure lubricants and is recommended for turning, drilling, milling, reaming, boring, tapping, and grinding of most metals. Not recommended for magnesium alloys.

- ▶ For Most Metals and Most Operations
- ▶ For Use in a Wide Range of Water Quantities
- ▶ Excellent Foam Control and Sump Life
- ▶ Chlorine Free
- ▶ Does not contain DCHA
- ▶ Product leaves a Very Light, Easy to Remove Residue

Undyed	Quantity
B01907 P000	19L
B01907 D000	208L

## CIMPULSE 45

CIMPULSE 45MP is an oil-containing multipurpose fluid for machining and grinding. It offers a wide range of performance capability without the use of traditional extreme pressure lubricants and is recommended for machining of most metals. CIMPULSE 45MP can be used on nearly all general duty metalworking fluids applications. Not recommended for magnesium alloys.

- ▶ Oil Containing Product
- ▶ Good Multi-Metal Compatibility (Great for Job Shops)
- ▶ Good for Nearly All Metal Removal Applications
- ▶ DCHA and Chlorine Free
- ▶ Excellent Sump Life
- ▶ Very Clean Running on Parts and Machines

Undyed	Quantity
B01894 P000	19L
B01894 D000	208L

## CIMPULSE 51

CIMPULSE 51MP is a multi-purpose, heavy-duty fluid for machining and grinding. It offers high performance without the use of traditional extreme pressure lubricants and is recommended for machining and grinding for most metals other than magnesium alloys or cast aluminum.

- ▶ Hybrid Lubricity Oil CContaining Fluid
- ▶ DCHA, Triazine and Chlorine Free
- ▶ Works Well in a High Pressure Applications-Even in Soft Water
- ▶ Customer Results Gave 20% Better Tool Life; 20% Better Sump Life
- ▶ Excellent in CNC Machines
- ▶ Excellent Hard Water Tolerance

Undyed	Quantity
B01895 P000	19L
B01895 D000	208L

### CIMPULSE Application Guidelines; Ferrous Alloys

Product Name	Oil	Lubrication	Drilling	Milling	Turning	Cut Tap	Form Tap	Grinding
CIMPULSE 51MP	Yes	Heavy	Yes	Yes	Yes	Yes	Yes	Yes
CIMPULSE 49MP	Yes	Heavy	Yes	Yes	Yes	Yes	Yes	Yes
CIMPULSE 45MP	Yes	Moderate	Yes	Yes	Yes	Yes	Yes	Yes
CIMPULSE 33MP	No	Heavy	Yes	Yes	Yes	Yes		Yes

### CIMPULSE Application Guidelines; Aluminum Alloys

Product Name	Oil	Lubrication	Drilling	Milling	Turning	Cut Tap	Form Tap	Grinding
CIMPULSE 51MP	Yes	Heavy	Yes	Yes	Yes	Yes	Yes	Yes
CIMPULSE 49MP	Yes	Heavy	Yes	Yes	Yes	Yes	Yes	Yes
CIMPULSE 45MP	Yes	Moderate	Yes	Yes	Yes	Yes		Yes
CIMPULSE 33MP	No	Heavy	Yes	Yes	Yes	Yes	Yes	Yes

## CIMSTAR 10-700VLC

CIMSTAR 10-700VLC was developed for use on ferrous and most non-ferrous metals. It can be used on mild steels, stainless steels, hardened steels and most aluminum alloys. It should not be used on magnesium alloys.

For use in light to moderate duty machining and grinding applications, such as milling, drilling, cut tapping, reaming, boring and surface grinding.

- ▶ Versatile Product - Good lubricity. Physical and chemical lubricant agents provide good machining and grinding ability.
- ▶ Corrosion Protection - The oily residue keeps machine tools and work-piece materials free of corrosion and staining.
- ▶ Foam Control - CIMSTAR 10-700VLC has good foam control.
- ▶ CIMCOOL "VALUE-LINE" - Cost effectiveness with CIMCOOL performance.

Undyed	Blue	Quantity
B01258 P000	B01259 P000	19L
B01258 D000	B01259 P000	208L

## CIMSTAR 40B

CIMSTAR 40B was developed for use on ferrous and most non-ferrous materials. It can be used on mild steels, stainless steels, hardened steels, ceramics and exotic metals. It should not be used on magnesium alloys.

For use in light to moderate duty machining and grinding applications, such as milling, drilling, turning, and surface grinding.

- ▶ Versatile Product - Good lubricity
- ▶ Corrosion Protection - The oily residue keeps machine tools and work piece materials free of corrosion and staining. Good on non-ferrous alloys as well.
- ▶ Microbial Control - Good rancidity control if product concentrations properly controlled.
- ▶ Form Control - CIMSTAR 40B has additional foam control for high agitation systems.

Pink	Quantity
B00893 P000	19L
B00893 D000	208L

## CIMPERIAL 861

CIMPERIAL 861 is a choline free oil containing metalworking fluid for use in moderate duty machining and grinding applications, such as milling, drilling, cut tapping and surface grinding. It is ideal for aerospace, medical and general industry applications where a choline free premium fluid is needed.

- ▶ Good lubricity.
- ▶ Chlorine free
- ▶ Excellent machining and grinding fluid
- ▶ Very clean running product

Undyed	Quantity
B01862 P000	19L
B01862 D000	208L

## CIMSTAR 540

CIMSTAR 540 was developed for use on ferrous and most non-ferrous materials. It can be used on mild steels, stainless steels, hardened steels, ceramics and exotic metals. It should not be used on magnesium alloys.

For use in light to moderate duty machining and grinding applications, such as milling, drilling, turning and surface grinding.

- ▶ Versatile Product - Good lubricity. Physical and chemical lubricant agents provide good machining and grinding ability.
- ▶ Corrosion Protection - The oily residue keeps machine tools and work-piece materials free of corrosion and staining. Good on most non-ferrous alloys as well.
- ▶ Microbial Control - CIMSTAR 540 has excellent rancidity control. It contains patented microbial control package. Effective protection against bacteria and mold provides long fluid life and minimizes the use of additives.
- ▶ Form Control - CIMSTAR 540 has good form control.

Pink	Quantity
B00048 P000	19L
B00048 D000	208L

## Way Oils

MILPRO LUBRICANTS are clear colored lubricating oils designed to reduce friction and “stick-slip” on machine tool slide-ways. They provide a uniform oil film that insures smooth table motion even after extended shutdowns. Milpro way lubricants are fortified with extreme pressure and tackiness additives to reduce metal-to-metal wear. MILPRO WAY LUBRICANTS provide trouble-free lubrication on all plain bearing slide-ways regardless of table load or way speed.

### MILPRO WAY 32

### MILPRO SURE-WAY 68

### MILPRO WAY 220

Undyed	Quantity
B30017 P000	19L
B30017 D000	208L

Undyed	Quantity
B30493 P000	19L
B30493 D000	208L

Undyed	Quantity
B30016 P000	19L
B30016 D000	208L

Physical Specifications	Way 32	Sure-Way 68	Way 220
Cincinnati Milacron Lubricants	P-53	P-47	P-50
ISO Grade	32	68	220
Viscosity, SUS at 100° F	160	320	1230
Density(#/gal)	7.5	7.6	7.7
Sp. Gravity	0.90	0.908	0.93
API Gravity	26.5	30.2	20.8
Flash Point, °F	275	330	325

## Hydraulic Fluids

Premium grade hydraulic oils formulated to pass "Milacron" specifications and industry guidelines for hydraulic oil applications.

MILPRO Hydraulic Oils are recommended to be used in accordance with good machine maintenance and hygiene practices and should be changed a 1000 hours of operations or semi-annual frequency.

### MILPRO HY 32

### MILPRO HY 46

### MILPRO HY 68

Undyed	Quantity
B30009 P000	19L
B30009 D000	208L

Undyed	Quantity
B30012 P000	19L
B30012 D000	208L

Undyed	Quantity
B30409 P000	19L
B30409 D000	208L

Physical Specifications	HY 32	HY 46	HY 68
Cincinnati Milacron Spec No.	P-68	P-70	P-69
ISO Grade	32	46	68
Viscosity, SUS at 100° F	149-182	214-26	317-389
Viscosity Index	90 Min	90 Min	90 Min
Pour Point, °F	10 max	15 max	15 max
API Gravity	32.0 typical	30.4 typical	25.0 typical
Flash Point, °F	300° min	300° min	300° min
Neutralization Number	1.5 max	1.5 max	1.5 max

## Cleaners

### CIMCLEAN 30

CIMCLEAN 30 is a multi-purpose cleaner. It is an effective system cleaner for individual and central system clean out. CIMCLEAN 30 is recommended for cleaning individual machine and central system reservoirs, metalworking fluid lines, premix tanks, machines and parts.

- ▶ It effectively removes bio-films, dirt, grit, chip-deposits, insoluble soaps and oils from central systems and individual machine sumps.
- ▶ Contains corrosion inhibitors to protect machines and parts from rusting.
- ▶ It is intended for use in systems working ferrous metals.
- ▶ Can be used for general-purpose floor cleaning as well as
- ▶ used in power washers, steam cleaners and automated floor scrubbers.

Undyed	Quantity
B00605 C002	2 x 1 gallon jugs
B00605 P080	19L
B00605 D100	208L

### OAK KLEEN 322

OAK KLEEN 322 is a heavy duty solvent-based cleaner recommended for use for ferrous and non-ferrous metals.

OAK KLEEN 322 is recommended for any maintenance facility for machine wipe downs where heavy duty soils are encountered. It can be used as a part degreaser on multi-metal, including copper and galvanized metals

- ▶ Versatile Cleaner - OAK KLEEN 322 will cut through heavy soils, oils and greases throughout the shop. It is fast drying and no rinsing is necessary.

Pink	Quantity
B30272 P000	19L
B30272 D000	208L

## Tapping Fluids

### CIMTAP Paste

CIMTAP tapping compound is a water soluble paste that contains chemical and extreme pressure lubricants. It is recommended for a wide range of tapping operations, from hand tapping to high production automatic jobs on ferrous and non-ferrous metals.

- ▶ Maximum Tap Life - Good lubricity eliminates chip welding, tap burning and resultant tap breakage.
- ▶ Maximum Production - Works best at high tapping speeds.
- ▶ Clean - Readily soluble in water. Does not leave deposits on the machine. Blind threaded holes can be cleaned with water or an air hose.
- ▶ Residue - Does not harden to dry solid residue - Eliminates subsequent operations to remove residue.

Pink	Quantity
B00401 5001	24 x 1 pint cans
B00401 P000	19L



## CIMTAP II Liquid Tapping Compound

CIMTAP II is a water soluble general purpose tapping compound. CIMTAP II can be used on steels, cast iron, stainless steel alloys, nickel alloys, aluminium, copper and brass. Not recommended for magnesium or magnesium alloys.

- ▶ Maximum Tap Life - Good lubricity eliminates chip welding, tap burning and resultant tap breakage.
- ▶ Accurate Threads - Produces accurate threads on a wide variety of metals.
- ▶ Maximum Production - Works best at high tapping speeds.
- ▶ Quick, Easy Application - CIMTAP II is a liquid and can be applied from the squirt bottle, either during production or when the tap is stationary.
- ▶ Clean - Readily soluble in water. Does not leave deposits on the machine. Blind threaded holes can be cleaned with water or an air hose.
- ▶ Residue - Does not harden to a dry solid residue. Eliminates subsequent operations to remove residue.

Pink	Quantity
B00403 S000	12 x 16 oz bottles
B00403 C004	4 x 4 litre jugs
B00403 P000	19L
B00403 D000	208L



## CIMTAP HD Heavy Duty Tapping Oil

CIMTAP HD is a heavy duty tapping oil. CIMTAP HD contains extreme pressure lubricants for cutting, and physical lubricants to prevent rubbing on the tool flank. Recommended for a wide range of tapping operations from hand tapping to high production automatic jobs.

- ▶ Maximum Tap Life - Good lubricity eliminates chip welding, tap burning and resultant tap breakage.
- ▶ Lubrication - Designed for difficult operations such as reaming, tapping and threading.
- ▶ Maximum Production - Works best at high tapping speeds.
- ▶ Residue - Does not harden to a dry solid residue. Eliminates subsequent operations needed to remove residue.

Undyed	Quantity
B00676 S000	12 x 16 oz bottles
B00676 C004	4 x 4 litre jugs
B00676 P000	19L
B00676 D000	208L



**EMUGE**

## Emuge Tapping Fluid

EMUGE Tapping Fluid is an extreme duty drilling and tapping fluid. It does not contain chlorinated solvents and is considered environmentally safe. EMUGE Tapping Fluid is thick like honey and will stick to the tap throughout the tapping operation. Ideal for tapping and drilling stainless steel, carbon steel, inconel, monel, hastalloy, titanium, aluminum and other alloys and exotics.

- ▶ Greatly extends tap and drill life
- ▶ Reduces torque
- ▶ Improves finish and size
- ▶ Mild pleasant odor
- ▶ Does not contain chlorinated solvents





## Proportioners

### Mix MAster II

The CIMCOOL Mix Master II is a simple, economical, and accurate method to mix CIMCOOL metalworking fluid concentrate with water. The most important requirement in the use of metalworking fluids is maintaining the proper mix ratio. The Mix Master II siphons concentrate from a 55 gallon (208 L) drum and mixes it with water to supply approximately 3 to 4\* gallons per minute of premixed fluid for an individual machine tool reservoir, central system, or premix tank. This is accomplished by a siphoning venturi operating on water pressure.



EDP	Description
E1008	Standard Venturi Proportioner

### Mix Station

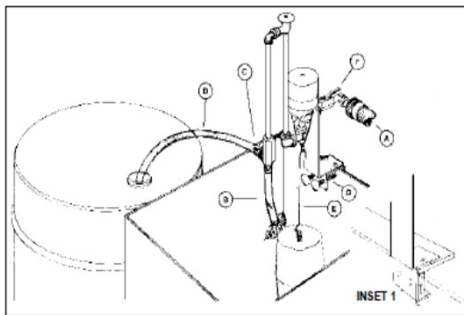
The CIMCOOL® Metalworking Fluid Mix Station is a simple and accurate method to control the concentration of charge and makeup solutions for a machine sump. A "charge" mix ratio is the concentration used to initially fill an empty sump. The "makeup" mix ratio is the concentration used to replace fluid losses due to carry-off and evaporation.



EDP	Description
E1013	Dual Venturi Proportioner

### Mix Master Automatic

The CIMCOOL Mix Master Automatic Proportioner is a simple, economical, and accurate method to mix CIMCOOL metalworking fluid concentrate with water. The proportioner automatically mixes CIMCOOL metalworking fluid concentrate with water and fills a reservoir to a pre-determined level. The most important requirement in the use of metalworking fluids is maintaining the proper mix ratio. This is easily controlled with the use of the CIMCOOL Automatic Mix Master Proportioner.



EDP	Description
E1007	Automatic Venturi Proportioner

### Mix Master S

The Mix Master S mixes CIMCOOL® metalworking fluid concentrates with water instantly, accurately and economically.

- ▶ Drum mounted
- ▶ Quick disconnect hose couplings
- ▶ All metal construction
- ▶ Corrosion and oil resistant
- ▶ Locking screw for secure concentration control
- ▶ No metering tips needed



EDP	Description
E1021	Standard Venturi Proportioner

Metalworking Fluids





## Matrix Cabinets

The Matrix family of automated tool dispensers powered by our unique management software can help you:

### ► Drives down costs

By measuring and controlling the deployment of your cutting tools, you will recognize enormous cost savings. Typically you can save 10-30% of your tool spend by implementing continuous method improvement, reduced stock, less waste and a leaner system that automates mundane tasks performed manually.

### ► Guarantee product output

Priority #1 is to keep your machines working and to minimize down time. Idle production creates huge costs for business, both in terms of delayed and cancelled orders, and the freezing of machine and human resources that are waiting for cutting tools to arrive. MATRIX keeps your production moving and dramatically reduces the risks of stock outs.

### ► Optimize stock levels

Simply stated MATRIX achieves MAXIMUM availability with MINIMUM stock. Excess and dead stock is common where guess work rather than an empirical calculation of stock levels is practiced. Most production plants are working with 10-40% excess or dead items on their shelves, tying up scarce capital resources at best or creating huge hidden losses for your business. MATRIX deploys a clever logistics model that factors in lead time, usage and frequency to optimize stock levels. Calculations are updated monthly to keep all parameters current and in line with changes. The system allows you to tweak for special cases and apply specific parameters that can compensate for temporary spikes in demand.

### ► Streamline purchasing

The frequency of orders, number of order lines and manual counting of stock that cannot be located or is unreported, influence the cost and time required to prepare orders for suppliers. MATRIX can literally slash purchasing costs by up to 50%. The automated purchasing module built into the software can turn the daily 'last minute' orders into a controlled weekly process that takes barely minutes to complete. Where needed MATRIX can transfer stock data to an ERP system for issuing orders and reference ERP orders during the receive process.

### ► Control cost per unit (CPU)

Benchmarking the actual cost of cutting tools per production unit is the foundation for good cost control and continuous improvement. MATRIX not only calculates CPU and tool life, it can also alert you automatically when a tool is underperforming, in order that you may initiate an appropriate investigation and preventive action.

### ► Select the right tools for each job

Whilst this is so basic to good production floor management, it cannot happen without a mechanism to limit access only to tools approved for a specific job. MATRIX can control the issue of items by job and part, so that you avoid the risk of using the wrong tools and risking damaged or scrapped parts. In industries where process cannot be compromised, MATRIX is a must.



Tool Management Systems

## Matrix MAXI

MAXI stands tall with a large capacity, surprisingly small footprint and a sleek, ergonomic design. Secure with electronically locked drawers & bins. MAXI leads the MATRIX range of automated tool dispensers, offering the widest selection of bin options and largest storage capacity. Suitable for a variety of cutting tools and related commodities, such as:

- ▶ Cutters, drills, holders and blades
- ▶ Inserts
- ▶ Solid carbide tools
- ▶ Gauges
- ▶ Measuring devices
- ▶ Small to medium sized grinding wheels
- ▶ Fixtures and accessories
- ▶ Small to medium sized industrial commodities



## Specification

- ▶ Cabinet weight varies depending on number of drawers and Auto-Locks:
- ▶ MAXI with 4 drawers and 4 Auto-Locks ~400kg/880lb;
- ▶ MAXI with 12 drawers ~600kg/1325lb
- ▶ Cabinet frame includes 4 adjustable legs and removable front panel for forklift access
- ▶ Cabinet dimensions: 1180mm/47" (W) x 752mm/30" (D) x 1469mm/58" (H)
- ▶ Available in 2 versions: TOUCH (stand-alone) and POD (add-on)
- ▶ TOUCH: supplied with PC, 17" touchscreen, UPS (surge protection and power backup), barcode reader, network switch and management software
- ▶ Manual override in case of power failure
- ▶ RFID, fingerprint and magnetic card readers are available
- ▶ Network: all versions can connect directly to the LAN. POD can also connect to a TOUCH
- ▶ Electrical supply: 110AC +/-10% 4.6A or 220AC +/-10% 2.2A
- ▶ Cabinet and drawer frames supplied in top-quality industrial grade zinc coated steel
- ▶ Hood and side panels supplied in ABS and bins supplied in PC-ABS
- ▶ All metal, plastic and electronic parts are made from recyclable material
- ▶ External colors: black (RAL9005) and silver (RAL9116)
- ▶ Manufactured under QMS ISO9001-2008

## Matrix MINI

Mini can go just about anywhere, sitting atop a workbench, lockable Matrix trolley or DLS 4D. Secure with electronically locked drawers & bins. MINI is the most compact solution in the MATRIX range of automated tool dispensers, offering a wide selection of bin options. Suitable for a variety of cutting tools and related commodities, such as:

- ▶ Cutters, drills, holders and blades
- ▶ Inserts
- ▶ Solid carbide tools
- ▶ Gauges

## Specification

- ▶ Cabinet weight varies depending on number of drawers and Auto-Locks:
- ▶ 4 drawers ~165kg/365lb
- ▶ Cabinet dimensions 860mm/34" (W) x 581mm/23" (D) x 800mm/32" (H)
- ▶ 16 bin sizes
- ▶ Available in 2 versions: TOUCH (stand-alone) and POD (add-on)
- ▶ TOUCH: supplied with PC, 15" touchscreen, UPS (surge protection and power backup), barcode reader, network switch and management software
- ▶ Manual override in case of power failure
- ▶ RFID, fingerprint and magnetic card readers are available
- ▶ Network: all versions can connect directly to the LAN. POD can also connect to a TOUCH
- ▶ Electrical supply: 110AC +/-10% 4.6A or 220AC +/-10% 2.2A
- ▶ Cabinet and drawer frames supplied in top-quality industrial grade zinc coated steel
- ▶ Hood and side panels supplied in ABS and bins supplied in PC-ABS
- ▶ All metal, plastic and electronic parts are made from recyclable material
- ▶ External colors: black (RAL9005) and silver (RAL9116)
- ▶ Manufactured under QMS ISO9001-2008





## Matrix MAX and MINI Bin Options

Code	H mm	D mm	W mm	H"	D"	W"
50A	50	39	42	1.9	1.5	1.6
50B	50	39	92	1.9	1.5	3.6
50C	50	39	142	1.9	1.5	5.5
50D	50	39	192	1.9	1.5	7.5
50E	50	39	242	1.9	1.5	9.5
75A	75	39	42	2.9	1.5	1.6
75B	75	39	92	2.9	1.5	3.6
75C	75	39	142	2.9	1.5	5.5
75G	75	89	142	2.9	3.5	5.5
75H	75	89	192	2.9	3.5	7.5
75L	75	89	292	2.9	3.5	11.5
100A	100	39	42	3.9	1.5	1.6
100J	100	139	142	3.9	5.4	5.5
100K	100	189	142	3.9	7.4	5.5
125XL	125	165	295	4.9	6.5	11.6
125XXL	125	165	445	4.9	6.5	17.5

## Wiz

Modular locker system. Perfect for large tooling and MRO. Multiple door/locker options.

## Specification

- ▶ Reconfigurable
- ▶ Sleek modern design, transparent doors and LED lighting
- ▶ "DIY" installation
- ▶ WIZ cabinet comprises:
  - Hood
  - Top and bottom frames
  - Base with forklift access
- ▶ 4-12 doors (lockers) per 2 column frame
- ▶ 6-18 doors (lockers) per 3 column frame
- ▶ Master cabinet houses 1 or 2 controllers - each controller can actuate 32 doors
- ▶ Up to 2 slave cabinets can be connected to a master cabinet
- ▶ Load weight per shelf - 15kg/33lbs
- ▶ Available as a POD (add-on) version
- ▶ Manual override in case of power failure
- ▶ Direct network connection
- ▶ Single power supply 12V 15A per cabinet
- ▶ Cabinet color - black (RAL9005)
- ▶ Cabinet dimensions - 2070mm/81.5" (H) x 914mm/36" (W) x 457mm/18" (D)
- ▶ 6 door options / locker dimensions:



	Door Code	H mm	W mm	D mm	H"	W"	D"
2 Column Frame	2C-S	157	457	457	6	18	18
	2C-D	305	457	457	12	18	18
	2C-T	457	457	457	18	18	18
3 Column Frame	3C-S	157	305	457	6	12	18
	3C-D	305	305	457	12	12	18
	3C-T	457	305	457	18	12	18

Tool Management Systems

## DLS 8D/4D

Economical solution with flexible drawer partitions suitable for small and large items. Semi-secure with 8 or 4 electronically locked drawers. DLS 8D rounds out the MATRIX range of automated tool dispensers, offering a spacious open drawer planning with configurable storage capacity. Suitable for a variety of cutting tools and related commodities, such as:

- ▶ Cutters, drills, holders and blades
- ▶ Inserts
- ▶ Solid carbide tools
- ▶ Long and large diameter tools, such as gun drills and slotting cutters
- ▶ Gauges
- ▶ Measuring devices
- ▶ Small to medium sized grinding wheels
- ▶ Fixtures and accessories
- ▶ Small to medium sized industrial commodities



## Specification - 8D

- ▶ 8 drawers per cabinet (H): 3 x 101mm/4"; 4 x 127mm/5"; 1 x 203mm/8"
- ▶ Net (internal) height of each drawer is 1"/25.4mm less than the above nominal heights
- ▶ Load weight per drawer: up to 180kg/397lb
- ▶ Partitions supplied with each drawer are pre-installed and bolted to the drawer base but may be changed (DLS 04 & 05 = 5 x 24"/610mm, DLS 08 = 3 x 24"/610mm)

## Specification - 4D

- ▶ 4 drawers per cabinet (H): 1 x 101mm/4"; 2 x 153mm/6"; 1 x 203mm/8"
- ▶ Net (internal) height of each drawer is 1"/25.4mm less than the above nominal heights
- ▶ Load weight per drawer: up to 180kg/397lb
- ▶ Partitions supplied with each drawer are pre-installed and bolted to the drawer base but may be changed (DLS 04 & 06 = 5 x 24"/610mm, DLS 08 = 3 x 24"/610mm)
- ▶ Dividers supplied with each drawer are not pre-installed and may be installed in any available slot (DLS 04 & 06 = 8 x 5"/127mm + 16 x 6"/152mm, DLS 08 = 8 x 8"/203mm)

## ToolPort 8D/4D

- ▶ Dispenses single inserts and small items, one by one.
- ▶ 100% Accountability & 100% Control.
- ▶ 8 drawer (8D) and 4 drawer (4D) models available in TOUCH and POD versions.
- ▶ Driven by MATRIX software.
- ▶ Dispensing cartridges are locked for complete control over each item.

ToolPort is the single insert specialist amongst the MATRIX range of automated tool dispensers. Also suitable for:

- ▶ Indexable drilling heads
- ▶ Small solid carbide end-mills
- ▶ Miniature tools
- ▶ Small parts



## EZset Tool Presetters



EZset tool presetters enable you to save time and money, putting you one very decisive step ahead of the competition. Your tools are set and measured while your machine is producing chips - without any downtime.

### The right kind of tool preparation pays rich dividends

Precisely measured tools, optimized machine uptimes and longer tool service lives make sound financial sense. Your productivity will be boosted by at least 15%. EZset tool presetters pay for themselves in no time. They are easy to use, low-budget but high-performance.

### Simple!

- ▶ The EZset concept: The user comes first and foremost, and is able to work efficiently on a day by day basis.
- ▶ The very latest image processing turns tool presetting into child's play
- ▶ Fast training thanks to the intuitive EZset operating concept

### Precise!

- ▶ Image processing system with dynamic crosshairs for inductive and precise tool measurement, independent of the operator
- ▶ Brand quality such as Bosch pneumatics, THK guides and Heidenhain glass scales deliver precision and a long and maintenance-free service life
- ▶ Tool holder spindle SK 50 with ultra-precise repeatability and integrated calibration edges

### Economical!

- ▶ Three in one: Tools are measured, set and tested
- ▶ All-in-one turnkey solution in a package that includes the table, adapter and utensils storage tray and label printer
- ▶ Quality 'Made in Germany' at an unbeatable price/performance ratio
- ▶ Worldwide service



## Image Controller Basic

The EZgo with ImageControllerbasic is the professional introduction to the world of tool presettors. Due to thorough testing and the use of high-quality brand-name components, the EZgo with ImageControllerbasic convinces with extremely simple operation and precise measuring results. With the unique EZclick pick-and push button, standard measuring functions such as length, diameter, radial and axial run-out can be started by gently pressing a button.

- ▶ Easy operations and quick start-up with minimal training
- ▶ Quickly measure, preset, and inspect tools (length and diameter)
- ▶ Large number of measurement programs, for instance to measure the concentricity and axial run-out of the cutting edge
- ▶ Quickly and conveniently print out measurement results
- ▶ Easily adjust tool contours with the EZmax software function



EZset with ICbasic	Measurement Range Z	Measurement Range X	Snap Gauge
EZset350	350 mm	320 mm	0 mm
EZset420	420 mm	420 mm	100 mm
EZset600	600 mm	420 mm	100 mm

## Image Controller 1

The EZset with ImageController1 is the professional introduction to the world of tool presettors. Due to thorough testing and the use of high-quality brand-name components, the EZset with ImageController1 convinces with extremely simple menu operation and precise measuring results without the need for time-consuming training. Standard measuring functions such as length, diameter, radius, two cutting edge angles and also radial and axial run-out can be measured by gently pressing a button.

Additional Benefits Over ICbasic:

- ▶ Quickly measure, preset, and inspect tools (length, diameter, radius, two cutting angles)
- ▶ 20x zoom on the cutting edge in incident light for quality control
- ▶ Easily position the camera to measure target values for tools, using the EZnavigator compass needle
- ▶ Power-operated tool clamping (optional)



EZset with ICbasic	Measurement Range Z	Measurement Range X	Snap Gauge
EZset350	350 mm	320 mm	0 mm
EZset420	420 mm	420 mm	100 mm
EZset600	600 mm	420 mm	100 mm
EZset600/570	600 mm	570 mm	0 mm

## Image Controller 2



The EZset with ImageController2 measures, saves and documents tool cutting edges within seconds. It is also possible to save multi-step tools, and measurement results can be transferred directly to the CNC machining centre at the push of a button. Fast and exceedingly simple measuring procedure with ImageController2 image processing via the EZtouch 13.3"/24" touchscreen monitor with large finger-friendly keys and a graphical user interface for intuitive operation.

**Additional Benefits Over IC1:**

- ▶ Easily measure and save tools, with  $\mu\text{m}$  precision
- ▶ Integrated tool management, for saving target values and tolerances and generating tool setup sheets
- ▶ 28x zoom on the cutting edge in incident light for quality control
- ▶ Optional autofocus (automatically focuses on the cutting tool edge)

EZset with ICbasic	Measurement Range Z	Measurement Range X	Snap Gauge
EZset350	350 mm	320 mm	0 mm
EZset420	420 mm	420 mm	100 mm
EZset600	600 mm	420 mm	100 mm
EZset600/570	600 mm	570 mm	0 mm

## Image Controller 3



The EZset with Image Controller 3 is the top of the range EZset tool presetter and comes with an integrated tool management with graphics library. Tool cutting edges can be visualized with Auto-focus and 28-fold magnification. The EZset with ImageController3 offers a modern, user-friendly and configurable IC3 image processing operated via EZslide 17" touch-screen control: The user interface features an easy, innovative and highly precise touch and slide function which is state-of-the-art technology.

**Additional Benefits Over IC3:**

- ▶ Integrated tool management: for saving target values and tolerances and generating tool setup
- ▶ 28x zoom on the cutting edge in incident light for quality control
- ▶ Optional autofocus (automatically focuses on the cutting tool edge)

EZset with ICbasic	Measurement Range Z	Measurement Range X	Snap Gauge
EZset350	350 mm	320 mm	0 mm
EZset420	420 mm	420 mm	100 mm
EZset600	600 mm	420 mm	100 mm
EZset600/570	600 mm	570 mm	0 mm

**ABRASIVES**

Carborundum CGW	Grobet USA	Pferd	Sia Abrasives
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**CUTTING TOOLS**

Emuge Iscar Fraisa USA Sterling Gun Drills Ultra-Dex USA	Nachi Imco Lexington HTC Tool Sawlutions	YG-1 Sumitomo Taylor Tool Mitsubishi Hitachi Tools	OSG Morse Cutting Tools NTK Cutting Tools Tri-Angle Precision Reamers
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**Tooling & Boring Systems**

Big Kaiser Briney Tooling Systems	CFT Systems GS Tooling	Rego-Fix Techniks	Precision Components
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**Workholding**

5th Axis H&R Mfg. and Supply	Samchully GS Tooling	Tecnomagnete	SMW Autoblok
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**Machinery & Equipment**

Fagor Automation	Nachi	Kalamazoo	Eclipse
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**Measuring & Gaging**

Starrett	Threadcheck Inc	Fowler
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**Static and Live Tooling**

Lyndex Nikken	Exsys Eppinger	WTO	Global CNC
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**Adhesives & Sealants**

G.F Thompson	Weicon
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**Material Handling**

Eclipse	Tecnomagnete
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**Sawing Products**

Sawlutions	Gaylee Saws	Starrett
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**Finishing Systems**

Elliott Tool Technologies	Brush Research
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**Coolants, Lubricants & Accessories**

Milacron	QPM	Commonwealth Oil
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**Tool Management Systems**

EZSet Presetters	Matrix Inventory Management Systems
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"Manufacturing Relationships. Distributing Quality"

**Valcarb Industrial Supplies Ltd.**

#1-52 West Beaver Creek Road, Richmond Hill ON L4B 1L9

Phone : 905 597 7705

Fax : 905 597 7715

Email : [service@valcarb.com](mailto:service@valcarb.com)

[www.valcarb.com](http://www.valcarb.com)

[www.shop.valcarb.com](http://www.shop.valcarb.com)