

DeburFlex 配套工具-旋转锉

Having a Hard Time Deburring?

Sometimes the basic fluting options don't hold up in very hard materials. Try using our fine cut flute style. The increased number of flutes in combination with the shallow flute depth of the fine cut design improves edge strength. This stronger tool design extends tool life by reducing edge chipping and tool chatter while also leaving a better part finish.

In aerospace materials such as titanium and nickel based alloys, try coarse cut burs. This "open" fluting style allows for better chip evacuation while retaining cutting edge strength. Try this when working in materials with low machinability ratings.

Material packing can be an issue in ferrous materials. Special order burs with negative rake in standard, double or fine cut fluting styles may help. The negative rake keeps material from being pulled into the flute, eliminating evacuation issues. Please note: The negative rake does reduce the shearing action of the bur and should only be considered for applications in which chip packing is an issue.

BURS AND ROUTERS

our carbide burs are offered in an array of shapes, fluting patterns and lengths suitable for all types of deburring applications.

Precision flute grinding assures chatterless operation and long tool life.

Results: Smooth deburring operations using fewer tools produce exceptional savings and lower part costs.

Double Cut

Right- and left-hand flutes combine to produce a chisel-type cutting edge. Permits faster penetration and stock removal. Reduced pull improves control and reduces operator fatigue.



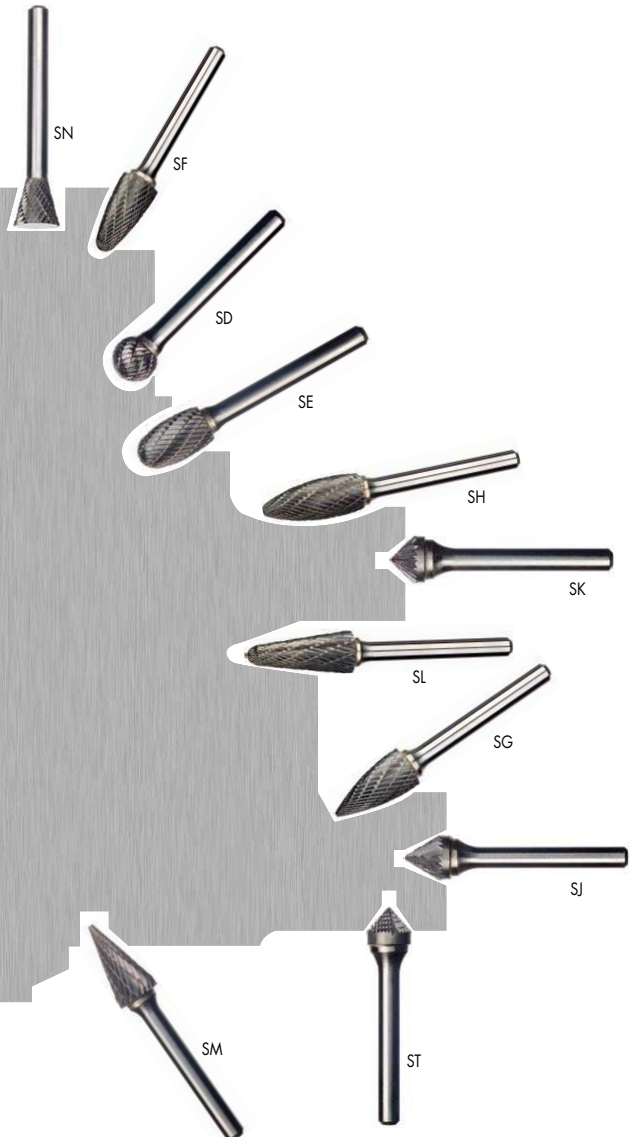
Standard Cut

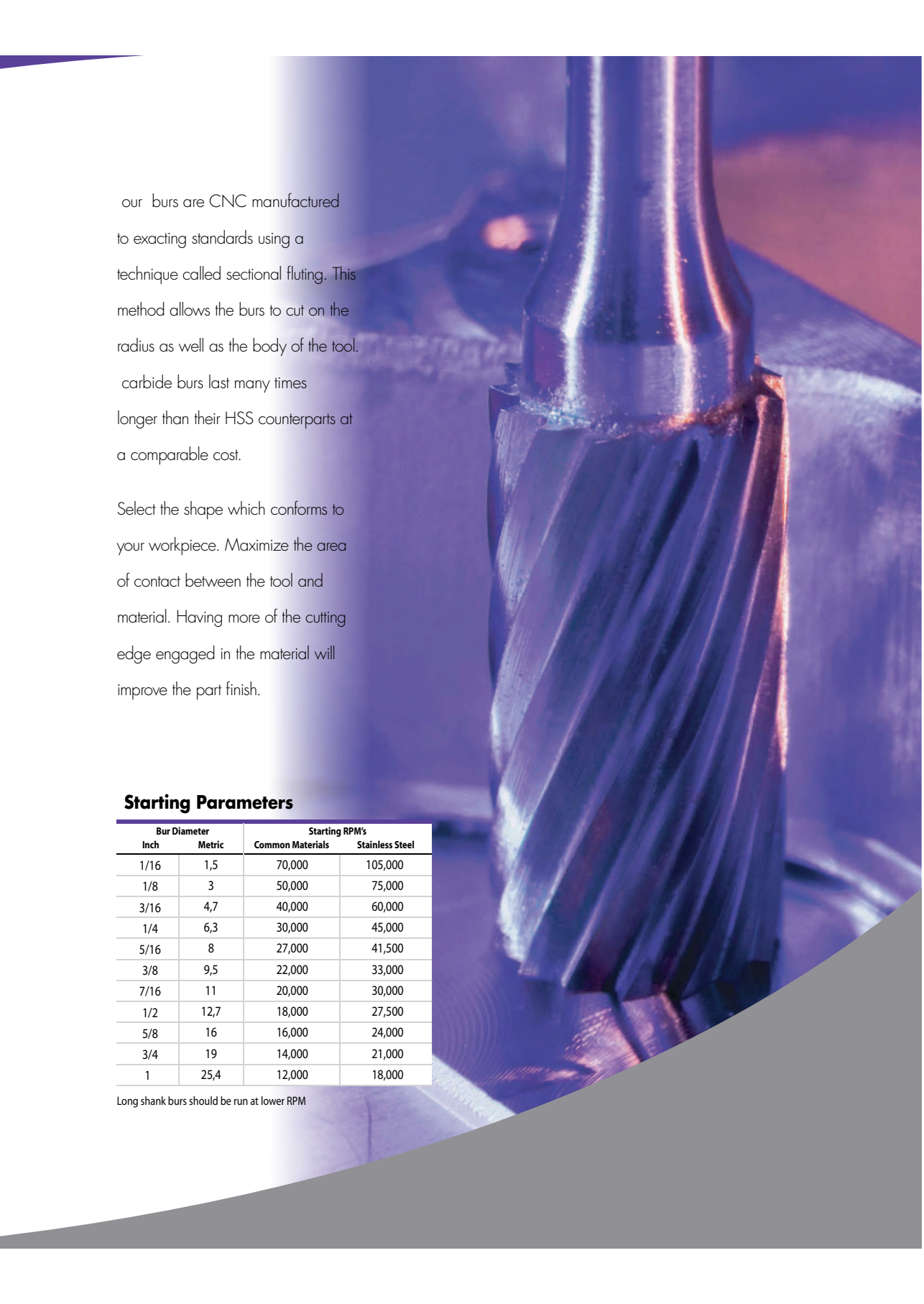
Features only right-hand spiral flutes. Good stock removal and excellent surface finishes. For general purpose use on cast iron, steel, copper alloys, brass alloys and other ferrous materials.



Aluma Cut

Features wide flutes for easy chip removal and an advanced relief design for added strength and longer tool life. For rapid stock removal in aluminum, brass, zinc alloys, most plastics and soft, nonferrous materials.





our burs are CNC manufactured to exacting standards using a technique called sectional fluting. This method allows the burs to cut on the radius as well as the body of the tool. carbide burs last many times longer than their HSS counterparts at a comparable cost.

Select the shape which conforms to your workpiece. Maximize the area of contact between the tool and material. Having more of the cutting edge engaged in the material will improve the part finish.

Starting Parameters

Bur Diameter		Starting RPM's	
Inch	Metric	Common Materials	Stainless Steel
1/16	1,5	70,000	105,000
1/8	3	50,000	75,000
3/16	4,7	40,000	60,000
1/4	6,3	30,000	45,000
5/16	8	27,000	41,500
3/8	9,5	22,000	33,000
7/16	11	20,000	30,000
1/2	12,7	18,000	27,500
5/8	16	16,000	24,000
3/4	19	14,000	21,000
1	25,4	12,000	18,000

Long shank burs should be run at lower RPM

SA CYLINDRICAL SHAPE BURS

For general purpose deburring operations

SA

Cylindrical shape



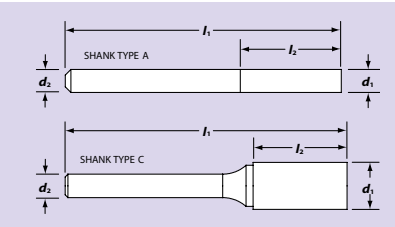
SA • Standard Cut



SA • Double Cut



SA • Aluma Cut



Inch

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut	Aluma Cut
SA-41	1/16	1/8	1/4	1-1/2	A	35066	35067	
SA-42	3/32	1/8	7/16	1-1/2	A	35071	35072	
SA-43	1/8	1/8	9/16	1-1/2	A	35076	35077	
SA-43L2	1/8	1/8	9/16	2	A	34906	34907	
SA-43L3	1/8	1/8	9/16	3	A	34909	90232	
SA-11	1/8	1/4	1/2	2	A	35011	35012	
SA-52	5/32	1/8	1/2	1-1/2	A	35096	35097	
SA-53	3/16	1/8	1/2	1-1/2	A	35101	35102	
SA-14	3/16	1/4	5/8	2	A	35021	35022	
SA-50	1/4	1/8	3/16	1-11/16	C	35086	35087	
SA-51	1/4	1/8	1/2	2	C	35091	35092	
SA-1	1/4	1/4	5/8	2	A	35001	35002	
SA-1	1/4	1/4	3/4	2	A			36230
SA-1A	1/4	1/4	1	2	A	35006	35007	
SA-1L4	1/4	1/4	1/2	4-1/2	C	35028	35030	
SA-1L6	1/4	1/4	1/2	6-1/2	C	34901	91185	
SA-2	5/16	1/4	3/4	2-3/4	C	35046	35047	
SA-3	3/8	1/4	3/4	2-3/4	C	35051	35052	36231
SA-3A	3/8	1/4	1	3	C	35056	35057	
SA-3L4	3/8	1/4	3/4	4-3/4	C	35033	35034	
SA-3L6	3/8	1/4	3/4	6-3/4	C	34903	34904	
SA-4	7/16	1/4	1	3	C	35061	35062	
SA-5	1/2	1/4	1	3	C	35081	35082	36232
SA-5L4	1/2	1/4	1	5	C	35038	35040	
SA-5L6	1/2	1/4	1	7	C	34911	91186	
SA-6	5/8	1/4	1	3	C	35106	35107	36233
SA-7	3/4	1/4	1	3	C	35121	35122	36234
SA-9	1	1/4	1	3	C	35136	35137	

Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

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DIN
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Standard Double Aluma

	Carbon & tool steels ≤ 48 HRC	✓	✓✓	
	Carbon & tool steels > 48 HRC	✓	✓✓	
	Stainless steels	✓	✓✓	
	Super alloys, Inconel®, titanium	✓	✓✓	
	Cast irons	✓	✓✓	
	Aluminum and non-ferrous			✓✓

✓ Suitable ✓✓ Recommended

Piloted Style



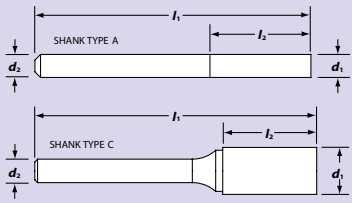
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SA CYLINDRICAL SHAPE BURS

For general purpose deburring operations

SA

Cylindrical shape



Metric

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut	Aluma Cut
SA-41M	1,5	3	6	38	A	60040	60080	
SA-42M	2,5	3	11	38	A	60041	60081	
SA-43M	3	3	14	38	A	60042	60082	
SA-43ML2	3	3	14	50	A	60065	60097	
SA-43ML3	3	3	14	76	A	60069	60101	
SA-11M	3	6	12	50	A	60043	60083	
SA-52M	4	3	12,7	38	A	60044	60084	
SA-53M	4,7	3	12,7	38	A	60045	60085	
SA-14M	4,7	6	16	50	A	60046	60086	
SA-1M	6	6	16	50	A	60048	60088	
SA-1M	6	6	19	50	A			60105
SA-1ML4	6	6	12,7	114	C	60066	60098	
SA-1ML6	6	6	12,7	163	C	60070	60102	
SA-51M	6,3	3	12,7	50	C	60047	60087	
SA-2M	8	6	20	63	C	60049	60089	
SA-3M	9,5	6	19	63	C	60058	60090	60106
SA-3ML4	9,5	6	19	120	C	60067	60099	
SA-3ML6	9,5	6	19	171	C	60071	60103	
SA-4M	11	6	25	68	C	60059	60091	
SA-5M	12,7	6	25	68	C	60060	60092	60107
SA-5ML4	12,7	6	25	127	C	60068	60100	
SA-5ML6	12,7	6	25	177	C	60072	60104	
SA-6M	16	6	25	68	C	60061	60093	60108
SA-7M	19	6	25	68	C	60063	60095	60109
SA-9M	25,4	6	25	68	C	60064	60096	

Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

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Standard Double Aluma

	Carbon & tool steels ≤ 48 HRC	✓	✓✓	
	Carbon & tool steels > 48 HRC	✓	✓✓	
	Stainless steels	✓	✓✓	
	Super alloys, Inconel®, titanium	✓	✓✓	
	Cast irons	✓	✓✓	
	Aluminum and non-ferrous			✓✓

✓ Suitable ✓✓ Recommended

SB CYLINDRICAL END CUT BURS

For general purpose deburring operations

SB

Cylindrical shape End cut



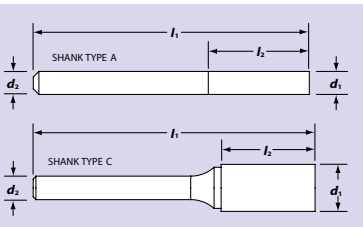
SB • Standard Cut



SB • Double Cut



SB • Aluma Cut



Inch

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut	Aluma Cut
SB-41	1/16	1/8	1/4	1-1/2	A	35216	35217	
SB-42	3/32	1/8	7/16	1-1/2	A	35221	35222	
SB-43	1/8	1/8	9/16	1-1/2	A	35226	35227	
SB-43L2	1/8	1/8	9/16	2	A	35803	95234	
SB-43L3	1/8	1/8	9/16	3	A	96806	98586	
SB-11	1/8	1/4	1/2	2	A	35161	35162	
SB-52	5/32	1/8	1/2	1-1/2	A	35246	35247	
SB-53	3/16	1/8	1/2	1-1/2	A	35251	35252	
SB-14	3/16	1/4	5/8	2	A	35171	35172	
SB-50	1/4	1/8	3/16	1-11/16	C	35236	35237	
SB-51	1/4	1/8	1/2	2	C	35241	35242	
SB-1	1/4	1/4	5/8	2	A	35151	35152	
SB-1	1/4	1/4	3/4	2	A			36264
SB-1A	1/4	1/4	1	2	A	35156	35157	
SB-1L4	1/4	1/4	1/2	4-1/2	C	35820	35805	
SB-1L6	1/4	1/4	1/2	6-1/2	C	35831	35813	
SB-2	5/16	1/4	3/4	2-3/4	C	35196	35197	
SB-3	3/8	1/4	3/4	2-3/4	C	35201	35202	36265
SB-3A	3/8	1/4	1	3	C	35206	35207	
SB-3L4	3/8	1/4	3/4	4-3/4	C	35823	35808	
SB-3L6	3/8	1/4	3/4	6-3/4	C	35828	35815	
SB-4	7/16	1/4	1	3	C	35211	35212	
SB-5	1/2	1/4	1	3	C	35231	35232	36266
SB-5L4	1/2	1/4	1	5	C	35825	35810	
SB-5L6	1/2	1/4	1	7	C	35830	35818	
SB-6	5/8	1/4	1	3	C	35256	35257	36267
SB-7	3/4	1/4	1	3	C	35271	35272	36268

Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

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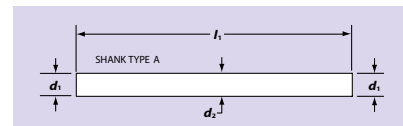
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Standard Double Aluma

	Carbon & tool steels ≤ 48 HRC	✓	✓✓	
	Carbon & tool steels > 48 HRC	✓	✓✓	
	Stainless steels	✓	✓✓	
	Super alloys, Inconel®, titanium	✓	✓✓	
	Cast irons	✓	✓✓	
	Aluminum and non-ferrous			✓✓

✓ Suitable ✓✓ Recommended

Cylindrical shape End cut only • Double end



Inch

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₁ Overall Length	Shk Type	EDP Number
SB-40	1/8	1/8	1-1/2	A	36161
SB-0	1/4	1/4	2	A	36156

SB CYLINDRICAL END CUT BURS

For general purpose deburring operations

SB

Cylindrical shape End cut



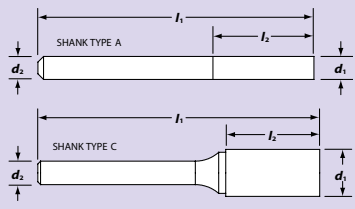
SB • Standard Cut



SB • Double Cut



SB • Aluma Cut



Standard Double Aluma

	Carbon & tool steels ≤ 48 HRC	✓	✓✓	
	Carbon & tool steels > 48 HRC	✓	✓✓	
	Stainless steels	✓	✓✓	
	Super alloys, Inconel®, titanium	✓	✓✓	
	Cast irons	✓	✓✓	
	Aluminum and non-ferrous			✓✓

✓ Suitable ✓✓ Recommended

Metric

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut	Aluma Cut
SB-41M	1,5	3	6	38	A	60121	60140	
SB-42M	2,5	3	11	38	A	60122	60141	
SB-43M	3	3	14	38	A	60123	60142	
SB-43ML2	3	3	14	50	A	60578	60579	
SB-43ML3	3	3	14	76	A	60586	60587	
SB-11M	3	6	12	50	A	60124	60143	
SB-52M	4	3	12,7	38	A	60125	60144	
SB-53M	4,7	3	12,7	38	A	60126	60145	
SB-14M	4,7	6	16	50	A	60127	60146	
SB-1M	6	6	16	50	A	60130	60149	
SB-1M	6	6	19	50	A			60160
SB-1ML4	6	6	12,7	114	C	60580	60581	
SB-1ML6	6	6	12,7	163	C	60588	60589	
SB-50M	6,3	3	5	43	C	60128	60147	
SB-51M	6,3	3	12,7	50	C	60129	60148	
SB-2M	8	6	20	63	C	60131	60150	
SB-3M	9,5	6	19	63	C	60132	60151	60161
SB-3ML4	9,5	6	19	120	C	60582	60583	
SB-3ML6	9,5	6	19	171	C	60590	60591	
SB-4M	11	6	25	68	C	60133	60152	
SB-5M	12,7	6	25	68	C	60134	60153	60162
SB-5ML4	12,7	6	25	127	C	60584	60585	
SB-5ML6	12,7	6	25	177	C	60592	60593	
SB-6M	16	6	25	68	C	60135	60154	60163
SB-7M	19	6	25	68	C	60137	60156	60164

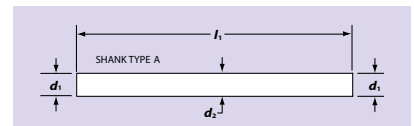
Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

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Cylindrical shape End cut only • Double end



Metric

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₁ Overall Length	Shk Type	EDP Number
SB-40M	3	3	38	A	60120

SC CYLINDRICAL RADIUS END SHAPE BURS

For general purpose deburring operations

SC

Cylindrical shape Radius end



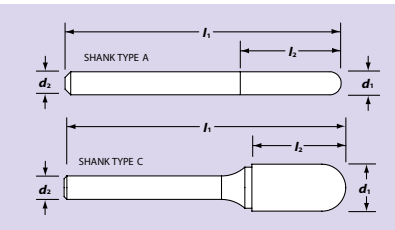
SC • Standard Cut



SC • Double Cut



SC • Aluma Cut



Standard Double Aluma

	Carbon & tool steels ≤ 48 HRC	✓	✓✓	
	Carbon & tool steels > 48 HRC	✓	✓✓	
	Stainless steels	✓	✓✓	
	Super alloys, Inconel®, titanium	✓	✓✓	
	Cast irons	✓	✓✓	
	Aluminum and non-ferrous			✓✓

✓ Suitable ✓✓ Recommended

Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

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Inch

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut	Aluma Cut
SC-41	3/32	1/8	7/16	1-1/2	A	35346	35347	
SC-42	1/8	1/8	9/16	1-1/2	A	35351	35352	
SC-42L2	1/8	1/8	9/16	2	A	34919	34920	
SC-42L3	1/8	1/8	9/16	3	A	34922	34923	
SC-11	1/8	1/4	1/2	2	A	35311	35312	
SC-52	5/32	1/8	1/2	1-1/2	A	35366	35367	
SC-53	3/16	1/8	1/2	1-1/2	A	35371	35372	
SC-14	3/16	1/4	5/8	2	A	35321	35322	
SC-51	1/4	1/8	1/2	2	C	35361	35362	
SC-1	1/4	1/4	5/8	2	A	35301	35302	
SC-1	1/4	1/4	3/4	2	A			36236
SC-1A	1/4	1/4	1	2	A	35306	35307	
SC-1L4	1/4	1/4	1/2	4-1/2	C	35410	35411	
SC-1L6	1/4	1/4	1/2	6-1/2	C	34913	34914	
SC-2	5/16	1/4	3/4	2-3/4	C	35326	35327	
SC-3	3/8	1/4	3/4	2-3/4	C	35331	35332	36237
SC-3A	3/8	1/4	1	3	C	35336	35337	
SC-3L4	3/8	1/4	3/4	4-3/4	C	35412	35413	
SC-3L6	3/8	1/4	3/4	6-3/4	C	34916	34917	
SC-4	7/16	1/4	1	3	C	35341	35342	
SC-5	1/2	1/4	1	3	C	35356	35357	36238
SC-5L4	1/2	1/4	1	5	C	35414	35415	
SC-5L6	1/2	1/4	1	7	C	34925	34926	
SC-6	5/8	1/4	1	3	C	35376	35377	36239
SC-7	3/4	1/4	1	3	C	35386	35387	36240

Metric

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut	Aluma Cut
SC-41M	2,5	3	11	38	A	60170	60192	
SC-42M	3	3	14	38	A	60171	60193	
SC-42ML2	3	3	14	50	A	60184	60206	
SC-42ML3	3	3	14	76	A	60188	60210	
SC-11M	3	6	12	50	A	60172	60194	
SC-52M	4	3	12,7	38	A	60173	60195	
SC-53M	4,7	3	12,7	38	A	60174	60196	
SC-14M	4,7	6	16	50	A	60175	60197	
SC-1M	6	6	16	50	A	60177	60199	
SC-1M	6	6	19	50	A			60215
SC-1ML4	6	6	12,7	114	C	60185	60207	
SC-1ML6	6	6	12,7	163	C	60189	60211	
SC-51M	6,3	3	12,7	50	C	60176	60198	
SC-2M	8	6	20	63	C	60178	60200	
SC-3M	9,5	6	19	63	C	60179	60201	60216
SC-3ML4	9,5	6	19	120	C	60186	60208	
SC-3ML6	9,5	6	19	171	C	60190	60212	
SC-4M	11	6	25	68	C	60180	60202	
SC-5M	12,7	6	25	68	C	60181	60203	60217
SC-5ML4	12,7	6	25	127	C	60187	60209	
SC-5ML6	12,7	6	25	177	C	60191	60213	
SC-6M	16	6	25	68	C	60182	60204	60218
SC-7M	19	6	25	68	C	60183	60205	60219

SD BALL SHAPE BURS

For general purpose deburring operations

SD

Ball shape



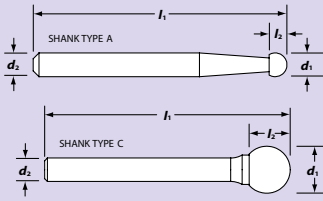
SD • Standard Cut



SD • Double Cut



SD • Aluma Cut



Standard Double Aluma

	Carbon & tool steels ≤ 48 HRC	✓	✓✓	
	Carbon & tool steels > 48 HRC	✓	✓✓	
	Stainless steels	✓	✓✓	
	Super alloys, Inconel®, titanium	✓	✓✓	
	Cast irons	✓	✓✓	
	Aluminum and non-ferrous			✓✓

✓ Suitable ✓✓ Recommended

Inch

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut	Aluma Cut
SD-41	3/32	1/8	1/16	1-1/2	A	35446	35447	
SD-42	1/8	1/8	3/32	1-1/2	A	35451	35452	
SD-42L2	1/8	1/8	3/32	2	A	34934	34935	
SD-42L3	1/8	1/8	3/32	3	A	34937	34938	
SD-11	1/8	1/4	3/32	2	A	35421	35422	
SD-53	3/16	1/8	1/8	1-1/2	A	35466	35467	
SD-14	3/16	1/4	5/32	2	A	35426	35427	
SD-51	1/4	1/8	7/32	1-11/16	C	35461	35462	
SD-1	1/4	1/4	7/32	2	A	35416	35417	36242
SD-1L4	1/4	1/4	7/32	4-1/8	C	35505	35506	
SD-1L6	1/4	1/4	7/32	6-1/8	C	34928	34929	
SD-2	5/16	1/4	1/4	2-1/4	C	35431	35432	
SD-3	3/8	1/4	5/16	2-5/16	C	35436	35437	36243
SD-3L4	3/8	1/4	5/16	4-1/4	C	35507	35508	
SD-3L6	3/8	1/4	5/16	6-1/4	C	34931	34932	
SD-4	7/16	1/4	3/8	2-3/8	C	35441	35442	
SD-5	1/2	1/4	7/16	2-7/16	C	35456	35457	36244
SD-5L4	1/2	1/4	7/16	4-3/8	C	35509	35510	
SD-5L6	1/2	1/4	7/16	6-3/8	C	34940	34941	
SD-6	5/8	1/4	9/16	2-9/16	C	35471	35472	36245
SD-7	3/4	1/4	11/16	2-11/16	C	35481	35482	36246
SD-9	1	1/4	15/16	2-15/16	C	35496	35497	

Metric

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut	Aluma Cut
SD-41M	2,3	3	2	38	A	60220	60242	
SD-42M	3	3	2	38	A	60221	60243	
SD-42ML2	3	3	2	50	A	60234	60256	
SD-42ML3	3	3	2	76	A	60238	60260	
SD-11M	3	6	2	50	A	60222	60244	
SD-53M	4,7	3	4,5	38	A	60223	60245	
SD-14M	4,7	6	4,5	50	A	60224	60246	
SD-1M	6	6	5	50	A	60226	60248	60265
SD-51M	6,3	3	5	43	C	60225	60247	
SD-1ML4	6,3	6	5	107	C	60235	60257	
SD-1ML6	6,3	6	5	157	C	60239	60261	
SD-2M	8	6	7	50	C	60227	60249	
SD-3M	9,5	6	8	52	C	60228	60250	60266
SD-3ML4	9,5	6	8	108	C	60236	60258	
SD-3ML6	9,5	6	8	161	C	60240	60262	
SD-4M	11	6	9,5	52	C	60229	60251	
SD-5M	12,7	6	11	54	C	60230	60252	60267
SD-5ML4	12,7	6	11	111	C	60237	60259	
SD-5ML6	12,7	6	11	164	C	60241	60263	
SD-6M	16	6	14	58	C	60231	60253	60268
SD-7M	19	6	16	60	C	60232	60254	60269
SD-9M	25,4	6	24	68	C	60233	60255	

Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

DIN
ISO

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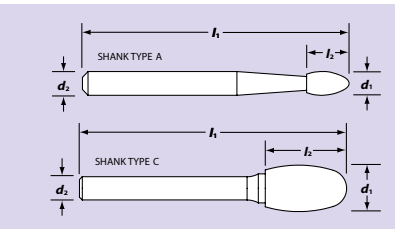
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SE OVAL SHAPE BURS

For general purpose deburring operations

SE

Oval shape



	Standard	Double	Aluma
Carbon & tool steels ≤ 48 HRC	✓	✓✓	
Carbon & tool steels > 48 HRC	✓	✓✓	
Stainless steels	✓	✓✓	
Super alloys, Inconel®, titanium	✓	✓✓	
Cast irons	✓	✓✓	
Aluminum and non-ferrous			✓✓

✓ Suitable ✓✓ Recommended

Inch

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut	Aluma Cut
SE-41	1/8	1/8	7/32	1-1/2	A	35521	35522	
SE-41L2	1/8	1/8	7/32	2	A	34949	34950	
SE-41L3	1/8	1/8	7/32	3	A	91340	34952	
SE-53	3/16	1/8	9/32	1-1/2	A	35536	35537	
SE-51	1/4	1/8	3/8	1-7/8	C	35531	35532	
SE-1	1/4	1/4	3/8	2	A	35511	35512	36247
SE-1L4	1/4	1/4	3/8	4-3/8	C	35557	35558	
SE-1L6	1/4	1/4	3/8	6-3/8	C	34943	34944	
SE-3	3/8	1/4	5/8	2-5/8	C	35516	35517	36248
SE-3L4	3/8	1/4	5/8	4-5/8	C	35559	35560	
SE-3L6	3/8	1/4	5/8	6-5/8	C	34946	34947	
SE-5	1/2	1/4	7/8	2-7/8	C	35526	35527	36249
SE-5L4	1/2	1/4	7/8	4-7/8	C	35563	35565	
SE-5L6	1/2	1/4	7/8	6-7/8	C	90292	11332	
SE-6	5/8	1/4	1	3	C	35541	35542	36250
SE-7	3/4	1/4	1	3	C	35551	35552	36251

Metric

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut	Aluma Cut
SE-41M	3	3	5	38	A	60270	60286	
SE-41ML2	3	3	5	50	A	60278	60304	
SE-41ML3	3	3	5	76	A	60282	60308	
SE-53M	4,7	3	7,1	38	A	60271	60287	
SE-1M	6	6	10	50	A	60273	60289	60312
SE-51M	6,3	3	9,5	47	C	60272	60288	
SE-1ML4	6,3	6	10	111	C	60279	60305	
SE-1ML6	6,3	6	10	163	C	60283	60309	
SE-3M	9,5	6	16	60	C	60274	60300	60313
SE-3ML4	9,5	6	16	117	C	60280	60306	
SE-3ML6	9,5	6	16	168	C	60284	60310	
SE-5M	12,7	6	22	66	C	60275	60301	60314
SE-5ML4	12,7	6	22	123	C	60281	60307	
SE-5ML6	12,7	6	22	177	C	60285	60311	
SE-6M	16	6	25	68	C	60276	60302	60315
SE-7M	19	6	25	68	C	60277	60303	60316

Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

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SF RADIUS END TREE SHAPE BURS

For general purpose deburring operations

SF

Tree shape Radius end



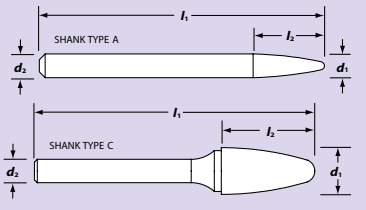
SF • Standard Cut



SF • Double Cut



SF • Aluma Cut



Standard Double Aluma

	Carbon & tool steels ≤ 48 HRC	✓	✓✓	
	Carbon & tool steels > 48 HRC	✓	✓✓	
	Stainless steels	✓	✓✓	
	Super alloys, Inconel®, titanium	✓	✓✓	
	Cast irons	✓	✓✓	
	Aluminum and non-ferrous			✓✓

✓ Suitable ✓✓ Recommended

Inch

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut	Aluma Cut
SF-41	1/8	1/8	1/4	1-1/2	A	35616	35617	
SF-42	1/8	1/8	1/2	1-1/2	A	35621	35622	
SF-42L2	1/8	1/8	1/2	2	A	34961	34962	
SF-42L3	1/8	1/8	1/2	3	A	91343	11326	
SF-11	1/8	1/4	1/2	2	A	35576	35577	
SF-53	3/16	1/8	1/2	1-1/2	A	35636	35637	
SF-51	1/4	1/8	1/2	2	C	35631	35632	
SF-1	1/4	1/4	3/4	2	A	35571	35572	36253
SF-1L4	1/4	1/4	1/2	4-1/2	C	35592	35593	
SF-1L6	1/4	1/4	1/2	6-1/2	C	34955	34956	
SF-3	3/8	1/4	3/4	2-3/4	C	35606	35607	36254
SF-3L4	3/8	1/4	3/4	4-3/4	C	35594	35595	
SF-3L6	3/8	1/4	3/4	6-3/4	C	34958	34959	
SF-4	7/16	1/4	1	3	C	35611	35612	
SF-13	1/2	1/4	3/4	2-3/4	C	35581	35582	
SF-5	1/2	1/4	1	3	C	35626	35627	36255
SF-5L4	1/2	1/4	1	5	C	35598	35600	
SF-5L6	1/2	1/4	1	7	C	34965	34966	
SF-6	5/8	1/4	1	3	C	35641	35642	36256
SF-7	3/4	1/4	1	3	C	35651	35652	
SF-14	3/4	1/4	1-1/4	3-1/4	C	35586	35587	36257
SF-15	3/4	1/4	1-1/2	3-1/2	C	35596	35597	

Metric

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut	Aluma Cut
SF-41M	3	3	6,3	38	A	60320	60342	
SF-42M	3	3	13	38	A	60321	60343	
SF-42ML2	3	3	13	50	A	60334	60356	
SF-42ML3	3	3	13	76	A	60338	60360	
SF-11M	3	6	13	50	A	60322	60344	
SF-53M	4,7	3	13	38	A	60323	60345	
SF-1M	6	6	19	50	A	60325	60347	60365
SF-1ML4	6	6	13	114	C	60335	60357	
SF-1ML6	6	6	13	163	C	60339	60361	
SF-51M	6,3	3	13	50	C	60324	60346	
SF-3M	9,5	6	19	63	C	60326	60348	60366
SF-3ML4	9,5	6	19	120	C	60336	60358	
SF-3ML6	9,5	6	19	171	C	60340	60362	
SF-4M	11	6	25	68	C	60327	60349	
SF-13M	12,7	6	19	63	C	60328	60350	
SF-5M	12,7	6	25	68	C	60329	60351	60367
SF-5ML4	12,7	6	25	127	C	60337	60359	
SF-5ML6	12,7	6	25	177	C	60341	60363	
SF-6M	16	6	25	68	C	60330	60352	60368
SF-7M	19	6	25	68	C	60331	60353	
SF-14M	19	6	32	76	C	60332	60354	60369
SF-15M	19	6	38	82	C	60333	60355	

Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

DIN
ISO

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SG POINTED END TREE SHAPE BURS

For general purpose deburring operations

SG

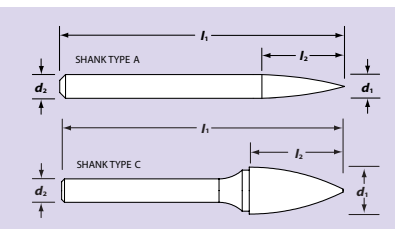
Tree shape Pointed end



SG • Standard Cut



SG • Double Cut



Standard Double

	Carbon & tool steels ≤ 48 HRC	✓	✓✓
	Carbon & tool steels > 48 HRC	✓	✓✓
	Stainless steels	✓	✓✓
	Super alloys, Inconel®, titanium	✓	✓✓
	Cast irons	✓	✓✓
	Aluminum and non-ferrous		

✓ Suitable ✓✓ Recommended

Inch

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut
SG-41	1/8	1/8	1/4	1-1/2	A	35701	35702
SG-42	1/8	1/8	5/16	1-1/2	A	35706	35707
SG-43	1/8	1/8	3/8	1-1/2	A	35711	35712
SG-44	1/8	1/8	1/2	1-1/2	A	36155	93853
SG-44L2	1/8	1/8	1/2	2	A	34974	34975
SG-44L3	1/8	1/8	1/2	3	A	34977	34978
SG-53	3/16	1/8	1/2	1-1/2	A	11320	11602
SG-51	1/4	1/8	1/2	2	C	35721	35722
SG-1	1/4	1/4	3/4	2	A	35671	35672
SG-1L4	1/4	1/4	1/2	4-1/2	C	35738	35740
SG-1L6	1/4	1/4	1/2	6-1/2	C	34968	34969
SG-2	5/16	1/4	3/4	2-3/4	C	35691	35692
SG-3	3/8	1/4	3/4	2-3/4	C	35696	35697
SG-3L4	3/8	1/4	3/4	4-3/4	C	35700	35743
SG-3L6	3/8	1/4	3/4	6-3/4	C	34971	34972
SG-13	1/2	1/4	3/4	2-3/4	C	35676	35677
SG-5	1/2	1/4	1	3	C	35716	35717
SG-5L4	1/2	1/4	1	5	C	35713	35745
SG-5L6	1/2	1/4	1	7	C	91029	90426
SG-6	5/8	1/4	1	3	C	35726	35727
SG-7	3/4	1/4	1	3	C	35736	35737
SG-15	3/4	1/4	1-1/2	3-1/2	C	35681	35682

Metric

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut
SG-41M	3	3	6,3	38	A	60370	60391
SG-43M	3	3	9,5	38	A	60371	60392
SG-44M	3	3	13	38	A	60372	60393
SG-44ML2	3	3	13	50	A	60383	60404
SG-44ML3	3	3	13	76	A	60387	60408
SG-53M	4,7	3	13	38	A	60373	60394
SG-1M	6	6	19	50	A	60375	60396
SG-1ML4	6	6	13	114	C	60384	60405
SG-1ML6	6	6	13	163	C	60388	60409
SG-51M	6,3	3	13	50	C	60374	60395
SG-2M	8	6	19	63	C	60376	60397
SG-3M	9,5	6	19	63	C	60377	60398
SG-3ML4	9,5	6	19	120	C	60385	60406
SG-3ML6	9,5	6	19	171	C	60389	60410
SG-13M	12,7	6	19	63	C	60378	60399
SG-5M	12,7	6	25	68	C	60379	60400
SG-5ML4	12,7	6	25	127	C	60386	60407
SG-5ML6	12,7	6	25	177	C	60390	60411
SG-6M	16	6	25	68	C	60380	60401
SG-7M	19	6	25	68	C	60381	60402
SG-15M	19	6	38	82	C	60382	60403

Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

DIN
ISO

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SH FLAME SHAPE BURS

For general purpose deburring operations

SH

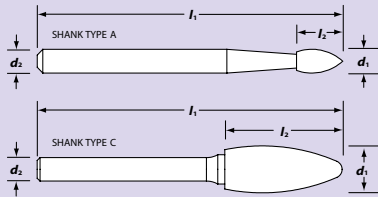
Flame shape



SH • Standard Cut



SH • Double Cut



	Standard	Double
Carbon & tool steels ≤ 48 HRC	✓	✓✓
Carbon & tool steels > 48 HRC	✓	✓✓
Stainless steels	✓	✓✓
Super alloys, Inconel®, titanium	✓	✓✓
Cast irons	✓	✓✓
Aluminum and non-ferrous		

✓ Suitable ✓✓ Recommended

Inch

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut
SH-41	1/8	1/8	1/4	1-1/2	A	35766	35767
SH-41L2	1/8	1/8	1/4	2	A	34984	34985
SH-41L3	1/8	1/8	1/4	3	A	34987	34988
SH-53	3/16	1/8	3/8	1-1/2	A	35776	35777
SH-1	1/4	1/4	5/8	2	A	35756	35757
SH-2	5/16	1/4	3/4	2-3/4	C	35761	35762
SH-2L4	5/16	1/4	3/4	4-3/4	C	35800	35794
SH-2L6	5/16	1/4	3/4	6-3/4	C	34981	34982
SH-5	1/2	1/4	1-1/4	3-1/4	C	35771	35772
SH-5L4	1/2	1/4	1-1/4	5-1/4	C	35832	35798
SH-5L6	1/2	1/4	1-1/4	7-1/4	C	34990	34991
SH-6	5/8	1/4	1-7/16	3-7/16	C	35781	35782
SH-7	3/4	1/4	1-5/8	3-5/8	C	35786	35787

Metric

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut
SH-41M	3	3	6	38	A	60414	60427
SH-41ML2	3	3	6	50	A	60421	60434
SH-41ML3	3	3	6	76	A	60424	60437
SH-53M	4,7	3	9,5	38	A	60415	60428
SH-1M	6	6	16	50	A	60416	60429
SH-2M	8	6	19	63	C	60417	60430
SH-2ML4	8	6	19	120	C	60422	60435
SH-2ML6	8	6	19	171	C	60425	60438
SH-5M	12,7	6	31	75	C	60418	60431
SH-5ML4	12,7	6	31	132	C	60423	60436
SH-5ML6	12,7	6	31	183	C	60426	60439
SH-6M	16	6	36	79	C	60419	60432
SH-7M	19	6	41	84	C	60420	60433

Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

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SL TAPER SHAPE BURS

For general purpose deburring operations

SL

Taper shape



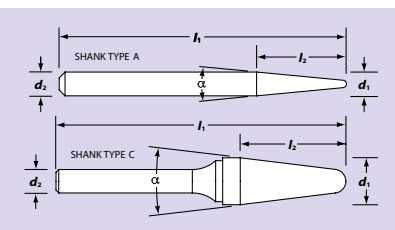
SL • Standard Cut



SL • Double Cut



SL • Aluma Cut



	Standard	Double	Aluma
Carbon & tool steels ≤ 48 HRC	✓	✓✓	
Carbon & tool steels > 48 HRC	✓	✓✓	
Stainless steels	✓	✓✓	
Super alloys, Inconel®, titanium	✓	✓✓	
Cast irons	✓	✓✓	
Aluminum and non-ferrous			✓✓

✓ Suitable ✓✓ Recommended

Inch

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	α Incl. Angle	Shk Type	Standard Cut	Double Cut	Aluma Cut
SL-41	1/8	1/8	3/8	1-1/2	10°	A	35921	35922	
SL-42	1/8	1/8	1/2	1-1/2	8°	A	35926	35927	
SL-42L2	1/8	1/8	1/2	2	8°	A	34815	34816	
SL-42L3	1/8	1/8	1/2	3	8°	A	34818	34819	
SL-53	3/16	1/8	1/2	1-1/2	14°	A	35931	35932	
SL-1	1/4	1/4	5/8	2	14°	A	35901	35902	36258
SL-1L4	1/4	1/4	5/8	4-5/8	14°	C	35947	35948	
SL-1L6	1/4	1/4	5/8	6-5/8	14°	C	34807	34808	
SL-2	5/16	1/4	7/8	2-7/8	14°	C	35906	35907	
SL-3	3/8	1/4	1-1/16	3-1/16	14°	C	35911	35912	36259
SL-3L4	3/8	1/4	1-1/16	5	14°	C	35949	35950	
SL-3L6	3/8	1/4	1-1/16	7	14°	C	34810	34811	
SL-4	1/2	1/4	1-1/8	3-1/8	14°	C	35916	35917	36260
SL-4L4	1/2	1/4	1-1/8	5-1/8	14°	C	35953	35955	
SL-4L6	1/2	1/4	1-1/8	7-1/8	14°	C	91028	34813	
SL-6	5/8	1/4	1-5/16	3-5/16	14°	C	35936	35937	36261
SL-7	3/4	1/4	1-1/2	3-1/2	14°	C	35941	35942	36262

Metric

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	α Incl. Angle	Shk Type	Standard Cut	Double Cut	Aluma Cut
SL-41M	3	3	9,5	38	10°	A	60440	60458	
SL-42M	3	3	12	38	8°	A	60441	60460	
SL-42ML2	3	3	12	50	8°	A	60449	60469	
SL-42ML3	3	3	12	76	8°	A	60453	60473	
SL-53M	4,7	3	12	38	14°	A	60442	60461	
SL-1M	6	6	16	50	14°	A	60443	60462	60478
SL-1ML4	6	6	16	117	14°	C	60450	60470	
SL-1ML6	6	6	16	168	14°	C	60454	60474	
SL-2M	8	6	22	66	14°	C	60444	60463	
SL-3M	9,5	6	27	71	14°	C	60445	60464	60479
SL-3ML4	9,5	6	27	127	14°	C	60451	60471	
SL-3ML6	9,5	6	27	179	14°	C	60455	60475	
SL-4M	12,7	6	28	72	14°	C	60446	60465	60480
SL-4ML4	12,7	6	28	129	14°	C	60452	60472	
SL-4ML6	12,7	6	28	180	14°	C	60456	60477	
SL-6M	16	6	30	76	14°	C	60447	60466	60481
SL-7M	19	6	38	82	14°	C	60448	60467	60482

Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

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SM CONE SHAPE BURS

For general purpose deburring operations

SM

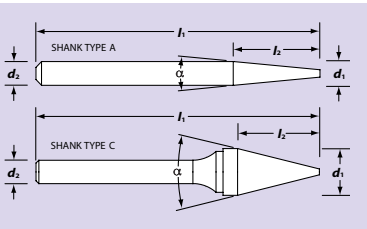
Cone shape



SM • Standard Cut



SM • Double Cut



Inch

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	α Incl. Angle	Shk Type	Standard Cut	Double Cut
SM-41	1/8	1/8	11/32	1-1/2	12°	A	35976	35977
SM-42	1/8	1/8	7/16	1-1/2	14°	A	35981	35982
SM-43	1/8	1/8	5/8	1-1/2	7°	A	35986	35987
SM-53	3/16	1/8	1/2	1-1/2	16°	A	36001	36002
SM-51	1/4	1/8	1/2	2	22°	C	35996	35997
SM-1	1/4	1/4	1/2	2	22°	A	35956	35957
SM-2	1/4	1/4	3/4	2	14°	A	35961	35962
SM-3	1/4	1/4	1	2	10°	A	35966	35967
SM-4	3/8	1/4	5/8	2-5/8	28°	C	35971	35972
SM-5	1/2	1/4	7/8	2-7/8	28°	C	35991	35992
SM-6	5/8	1/4	1	3	31°	C	36006	36007

Metric

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	α Incl. Angle	Shk Type	Standard Cut	Double Cut
SM-41M	3	3	8,7	38	12°	A	60485	60496
SM-42M	3	3	11	38	14°	A	60486	60497
SM-43M	3	3	16	38	7°	A	60487	60498
SM-53M	4,7	3	12,7	38	16°	A	60488	60499
SM-1M	6	6	12,7	50	22°	A	60490	60501
SM-2M	6	6	18	50	14°	A	60491	60502
SM-3M	6	6	25	50	10°	A	60492	60503
SM-51M	6,3	3	12,7	50	22°	C	60489	60500
SM-4M	9,5	6	16	60	28°	C	60493	60504
SM-5M	12,7	6	22	66	28°	C	60494	60505
SM-6M	16	6	25	68	31°	C	60495	60506

Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

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DIN
ISO

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	Standard	Double
Carbon & tool steels ≤ 48 HRC	✓	✓✓
Carbon & tool steels > 48 HRC	✓	✓✓
Stainless steels	✓	✓✓
Super alloys, Inconel®, titanium	✓	✓✓
Cast irons	✓	✓✓
Aluminum and non-ferrous		

✓ Suitable ✓✓ Recommended

SN INVERTED CONE SHAPE BURS

For general purpose deburring operations

SN

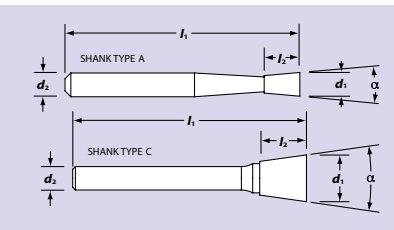
Inverted Cone shape



SN • Standard Cut



SN • Double Cut



Standard Double

	Standard	Double
Carbon & tool steels ≤ 48 HRC	✓	✓✓
Carbon & tool steels > 48 HRC	✓	✓✓
Stainless steels	✓	✓✓
Super alloys, Inconel®, titanium	✓	✓✓
Cast irons	✓	✓✓
Aluminum and non-ferrous		

✓ Suitable ✓✓ Recommended

Inch

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	α Incl. Angle	Shk Type	Standard Cut	Double Cut
SN-41	1/8	1/8	1/8	1-1/2	10°	A	36041	36042
SN-42	1/8	1/8	3/16	1-1/2	10°	A	36046	36047
SN-53	3/16	1/8	1/4	1-1/2	10°	A	36056	36057
SN-51	1/4	1/8	1/4	1-3/4	10°	C	36051	36052
SN-1	1/4	1/4	5/16	2	10°	A	36026	36027
SN-2	3/8	1/4	3/8	2-3/8	13°	C	36031	36032
SN-3	1/2	1/4	1/2	2-1/2	16°	C	36035	36038
SN-4	1/2	1/4	1/2	2-1/2	28°	C	36036	36037
SN-5	5/8	1/4	5/8	2-5/8	19°	C	36068	36069
SN-6	5/8	1/4	3/4	2-3/4	18°	C	36061	36062
SN-8	3/4	1/4	3/4	2-3/4	21°	C	36075	36076

Metric

Tool Code	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	α Incl. Angle	Style Code	Standard Cut	Double Cut
SN-41M	2,3	3	3	38	10°	A	60556	60566
SN-42M	3	3	5	38	10°	A	60557	60567
SN-53M	4,7	3	6,3	38	10°	A	60558	60568
SN-1M	6	6	8	50	10°	A	60560	60570
SN-51M	6,3	3	6,3	44	10°	C	60559	60569
SN-2M	9,5	6	9,5	52	13°	C	60561	60571
SN-3M	12,7	6	12,7	56	16°	C	60562	60572
SN-4M	12,7	6	12,7	56	28°	C	60563	60573
SN-5M	16	6	16	60	19°	C	60564	60574
SN-6M	16	6	19	63	18°	C	60577	60575
SN-8M	19	6	19	63	21°	C	60565	60576

Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

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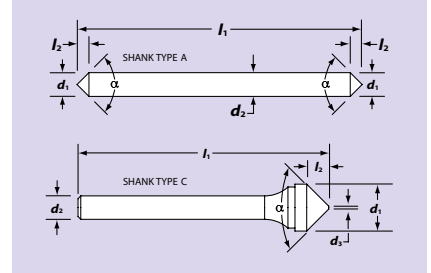
DIN
ISO

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SJ•SK•ST CONE SHAPE BURS

For general purpose countersinking operations

SJ•60°
ST•82°
SK•90°
Cone shapes



Standard Cut



Double Cut

- Often referred to as multi-flute countersinks
- For improved finish and closer tolerance countersinking
- May be used in high production equipment

		Standard	Double
	Carbon & tool steels ≤ 48 HRC	✓	✓✓
	Carbon & tool steels > 48 HRC	✓	✓✓
	Stainless steels	✓	✓✓
	Super alloys, Inconel®, titanium	✓	✓✓
	Cast irons	✓	✓✓
	Aluminum and non-ferrous		

✓ Suitable ✓✓ Recommended

Inch					SJ • 60° included angle (α)				ST • 82° included angle (α)					SK • 90° included angle (α)				
d ₁ Cutter Dia	d ₂ Shank Dia	d ₃ Max Tip	Shk Type	Tool Code	l ₂ Length of Cut	l ₁ Overall Length	Standard Cut	Double Cut	Tool Code	l ₂ Length of Cut	l ₁ Overall Length	Standard Cut	Double Cut	Tool Code	l ₂ Length of Cut	l ₁ Overall Length	Standard Cut	Double Cut
1/8	1/8	To Point	A	SJ-42	3/32	1-1/2	35811	35812	ST-42	1/16	1-1/2	36164	36165	SK-42	1/16	1-1/2	35861	35862
1/4	1/4	To Point	A	SJ-1	3/16	2	35801	35802	ST-1	1/8	2	36166	36167	SK-1	1/8	2	35851	35852
3/8	1/4	1/32	C	SJ-3	5/16	2-7/16	35806	35807	ST-3	3/16	2-5/16	36171	36172	SK-3	3/16	2-5/16	35856	35857
1/2	1/4	1/32	C	SJ-5	7/16	2-9/16	35816	35817	ST-5	1/4	2-3/8	36176	36177	SK-5	1/4	2-3/8	35866	35867
5/8	1/4	1/16	C	SJ-6	9/16	2-11/16	35821	35822	ST-6	5/16	2-1/2	36181	36182	SK-6	5/16	2-1/2	35871	35872
3/4	1/4	1/16	C	SJ-7	11/16	2-13/16	35826	35827	ST-7	3/8	2-9/16	36186	36187	SK-7	3/8	2-9/16	35876	35877
1	1/4	1/8	C	SJ-9	15/16	2-15/16	35841	35842	ST-9	1/2	2-11/16	36191	36192	SK-9	1/2	2-11/16	35891	35892

Metric																			
d ₁ Cutter Dia	d ₂ Shank Dia	d ₃ Max Tip	Shk Type	Tool Code	l ₂ Length of Cut	l ₁ Overall Length	Standard Cut	Double Cut	Tool Code	l ₂ Length of Cut	l ₁ Overall Length	Standard Cut	Double Cut	Tool Code	l ₂ Length of Cut	l ₁ Overall Length	Standard Cut	Double Cut	
3	3	To Point	A	SJ-42M	2	38	60508	60532						SK-42M	1	38	60524	60548	
6	6	To Point	A	SJ-1M	5	50	60510	60534						SK-1M	3	50	60526	60550	
9,5	6	1	C	SJ-3M	8	55	60511	60535						SK-3M	4,7	52	60527	60551	
12,7	6	1	C	SJ-5M	11	58	60512	60536						SK-5M	6,3	52	60528	60552	
16	6	1,5	C	SJ-6M	14	60	60513	60537						SK-6M	8	56	60529	60553	
19	6	1,5	C	SJ-7M	16	64	60514	60538						SK-7M	9	58	60530	60554	
25,4	6	3	C	SJ-9M	23	68	60515	60539						SK-9M	12,7	60	60531	60555	

Chipbreaker Cut
Coarse Cut
Fine Cut
Diamond Cut

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DIN
ISO

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ISO • DIN STANDARD BURS

For general purpose deburring operations

A • ZYA



Metric

ISO	DIN	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut
A031403	ZYA031403	3	3	14	38	A	64001	64101
A061606	ZYA061606	6	6	16	50	A	64002	64102
A082006	ZYA082006	8	6	20	63	C	64003	64103
A102006	ZYA102006	10	6	20	64	C	64004	64104
A122506	ZYA122506	12	6	25	68	C	64005	64105
A162506	ZYA162506	16	6	25	68	C	64006	64106

B • ZYB



Metric

ISO	DIN	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut
B031403	ZYB031403	3	3	14	38	A	64009	64109
B061606	ZYB061606	6	6	16	50	A	64010	64110
B082006	ZYB082006	8	6	20	63	C	64011	64111
B102006	ZYB102006	10	6	20	64	C	64012	64112
B122506	ZYB122506	12	6	25	68	C	64013	64113
B162506	ZYB162506	16	6	25	68	C	64014	64114

C • WRC



Metric

ISO	DIN	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut
C031403	WRC031403	3	3	14	38	A	64017	64117
C061606	WRC061606	6	6	16	50	A	64018	64118
C082006	WRC082006	8	6	20	63	C	64019	64119
C102006	WRC102006	10	6	20	64	C	64020	64120
C122506	WRC122506	12	6	25	68	C	64021	64121
C162506	WRC162506	16	6	25	68	C	64022	64122

D • KUD



Metric

ISO	DIN	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut
D030203	KUD030203	3	3	2	38	A	64044	64144
D060506	KUD060506	6	6	5	50	A	64045	64145
D080706	KUD080706	8	6	7	50	C	64046	64146
D100906	KUD100906	10	6	9	52	C	64047	64147
D121006	KUD121006	12	6	10	54	C	64048	64148
D161406	KUD161406	16	6	14	58	C	64049	64149

E • TRE



Metric

ISO	DIN	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut
E030503	TRE030503	3	3	5	38	A	64038	64138
E061006	TRE061006	6	6	10	50	A	64039	64139
E122006	TRE122006	12	6	20	64	C	64040	64140
E162506	TRE162506	16	6	25	68	C	64041	64141

F • RBF



Metric

ISO	DIN	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	Shk Type	Standard Cut	Double Cut
F031303	RBF031303	3	3	13	38	A	64025	64125
F061906	RBF061906	6	6	19	50	A	64026	64126
F122506	RBF122506	12	6	25	68	C	64027	64127
F162506	RBF162506	16	6	25	68	C	64028	64128

ISO • DIN STANDARD BURS

For general purpose deburring operations

G • SPG



Metric

ISO	DIN	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	d ₃ Tip Max	Shk Type	Standard Cut	Double Cut
G031303	SPG031303	3	3	13	38	N/A	A	64031	64131
G061906	SPG061906	6	6	19	50	N/A	A	64032	64132
G081906	SPG081906	8	6	19	63	N/A	C	64030	64130
G102006	SPG102006	10	6	20	64	N/A	C	64033	64133
G122506	SPG122506	12	6	25	68	N/A	C	64034	64134
G162506	SPG162506	16	6	25	68	N/A	C	64035	64135

H



Metric

ISO	DIN	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	d ₃ Tip Max	Shk Type	Standard Cut	Double Cut
H030603	---	3	3	6	38	N/A	A	64059	64159
H061606	---	6	6	16	50	N/A	A	64060	64160
H081906	---	8	6	19	63	N/A	C	64061	64161
H163606	---	16	6	36	79	N/A	C	64062	64162

J • KSJ



Metric

ISO	DIN	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	d ₃ Tip Max	Shk Type	Standard Cut	Double Cut
J030203	KSJ030203	3	3	2	38	To Point	A	64077	64177
J060506	KSJ060506	6	6	5	50	To Point	A	64078	64178
J161306	KSJ161306	16	6	13	60	1,5	C	64079	64179

K • KSK



Metric

ISO	DIN	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	d ₃ Tip Max	Shk Type	Standard Cut	Double Cut
K030103	KSK030103	3	3	1	38	To Point	A	64082	64182
K060306	KSK060306	6	6	3	50	To Point	A	64083	64183
K160806	KSK160806	16	6	8	56	1,5	C	64084	64184

L • KEL



Metric

ISO	DIN	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	α Incl. Angle	Shk Type	Standard Cut	Double Cut
L031203	KEL031203	3	3	12	38	8°	A	64052	64152
L061606	KEL061606	6	6	16	50	14°	A	64053	64153
L082206	KEL082206	8	6	22	66	14°	C	64054	64154
L123006	KEL123006	12	6	30	74	14°	C	64055	64155
L163006	KEL163006	16	6	30	76	14°	C	64056	64156

M • SKM



Metric

ISO	DIN	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	α Incl. Angle	Shk Type	Standard Cut	Double Cut
M031103	SKM031103	3	3	11	38	14°	A	64065	64165
M061806	SKM061806	6	6	18	50	14°	A	64066	64166
M102006	SKM102006	10	6	20	64	28°	C	64067	64167
M122506	SKM122506	12	6	25	68	28°	C	64068	64168
M162506	SKM162506	16	6	25	68	31°	C	64069	64169

N • WKN



Metric

ISO	DIN	d ₁ Cutter Dia	d ₂ Shank Dia	l ₂ Length of Cut	l ₁ Overall Length	α Incl. Angle	Shk Type	Standard Cut	Double Cut
N030503	WKN030503	3	3	5	38	10°	A	64072	64172
N060806	WKN060806	6	6	8	50	10°	A	64073	64173
N161606	WKN161606	16	6	16	60	19°	C	64074	64174

BUR SETS

For general purpose deburring operations

BUR SETS



- Our most popular burs offered in convenient sets
- Assortment of bur shapes
- Standard and double cut available

Inch

Bur Set No.	d ₂ Shank Size	No. of Pieces	Bur Set Contains	Standard Cut	Double Cut
Set #1	1/8	12	SA-42, SA-43, SC-41, SC-42, SD-42, SE-41, SF-42, SG-44, SH-41, SL-42, SM-43, SN-42	36196	36197
Set #2	1/8	9	SA-51, SA-50, SC-51, SD-51, SE-51, SF-51, SG-51, SM-51, SN-51	36201	36202
Set #4	1/4	12	SA-1, SA-14, SC-14, SC-1, SD-14, SD-1, SE-1, SF-1, SG-1, SM-1, SM-2, SN-1	36211	36212
Set #5	1/4	8	SA-1, SC-1, SD-1, SE-1, SF-1, SG-1, SL-1, SM-2	36225	36226
Set #6	1/4	8	SA-5, SC-3, SC-5, SD-5, SF-3, SF-5, SG-3, SL-4	36227	36228
Set #7	1/4	9	SA-1, SA-3, SA-5, SC-1, SC-3, SC-5, SF-1, SF-3, SF-5	36216	36217
Set #9	1/8	9	SA-43, SC-42, SD-42, SE-41, SF-42, SH-41, SL-42, SM-43, SN-42	36221	36222

Metric

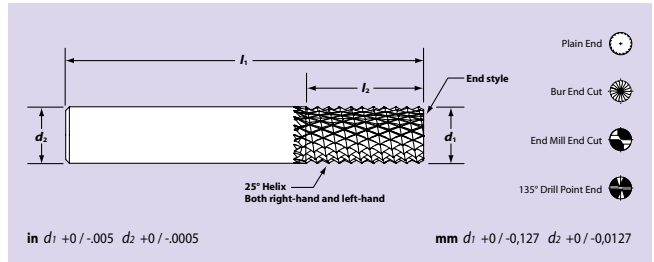
Bur Set No.	d ₂ Shank Size	No. of Pieces	Bur Set Contains	Standard Cut	Double Cut
Set #1M	3	12	SA-42M, SA-43M, SC-41M, SC-42M, SD-42M, SE-41M, SF-42M, SG-44M, SH-41M, SL-42M, SM-42M, SN-42M	36203	36205
Set #2M	3	9	SA-51M, SB-50M, SC-51M, SD-51M, SE-51M, SF-51M, SG-51M, SM-51M, SN-51M	36206	36207
Set #4M	6	12	SA-1M, SA-14M, SC-14M, SC-1M, SD-14M, SD-1M, SE-1M, SF-1M, SG-1M, SM-1M, SM-2M, SN-1M	36213	36214
Set #5M	6	8	SA-1M, SC-1M, SD-1M, SE-1M, SF-1M, SG-1M, SL-1M, SM-2M	36209	36215
Set #6M	6	8	SA-5M, SC-3M, SC-5M, SD-5M, SF-3M, SF-5M, SG-3M, SL-4M	36208	36210
Set #7M	6	9	SA-1M, SA-3M, SA-5M, SC-1M, SC-3M, SC-5M, SF-1M, SF-3M, SF-5M	36218	36219
Set #9M	3	9	SA-43M, SC-42M, SD-42M, SE-41M, SF-42M, SH-41M, SL-42M, SM-43M, SN-42M	36223	36224

FIBERGLASS ROUTERS

For routing fiberglass and graphite composite laminates

FR10

Diamond pattern flutes



No End Cut

Plain End - Used for edge routing or when the end of the router does not come in contact with the workpiece. Plain end routers are also referred to as 'safe end' tools.

The up cut geometry of the FR10 router pulls the workpiece tightly against the template resulting in clean, smooth cuts. Use the FR10 router in polyester glass-reinforced products such as printed circuit boards, phenolic-epoxy parts, graphite composite laminates, some grades of Kevlar® and other highly abrasive materials. Down cut routers available by quotation.



Bur End Cut

Bur End - Used for bottom cutting. This design will leave a smooth and even bottom surface with a square corner.



End Mill End Cut

End Mill End - Used for bottom cutting. This style produces a smooth bottom surface with a square corner.



135° Drill Point

Drill Point End - Used to plunge through the workpiece before beginning the routing operation. Care must be taken to ensure that the end of the router does not come into contact with the work holding after plunging through the workpiece.

Inch

Tool Code	d_1 Cutter Dia	d_2 Shank Dia	l_2 Length of Cut	l_1 Overall Length	Plain End EDP Number	Bur End EDP Number	End Mill End EDP Number	Drill Point End EDP Number
FR-2	1/8	1/8	1/2	1-1/2	36621	36622	36623	36624
FR-3	3/16	3/16	5/8	2	36631	36632	36633	36634
FR-5	1/4	1/4	3/4	2	36641	36642	36643	36644
FR-6	1/4	1/4	1	2-1/2	36651	36652	36653	36654
FR-6-1	1/4	1/4	1	3	36661	36662	36663	36664
FR-7	5/16	5/16	1	2-1/2	36671	36672	36673	36674
FR-8	3/8	3/8	1	2-1/2	36681	36682	36683	36684
FR-9	1/2	1/2	1	3	36701	36702	36703	36704

Metric

Tool Code	d_1 Cutter Dia	d_2 Shank Dia	l_2 Length of Cut	l_1 Overall Length	Plain End EDP Number	Bur End EDP Number	End Mill End EDP Number	Drill Point End EDP Number
MFR-2	3	3	12	38	36615	36616	36617	36618
MFR-3	4	4	16	50	36625	36626	36627	36628
MFR-6	6	6	25	63	36655	36656	36657	36658
MFR-6-1	6	6	25	76	36675	36676	36677	36678
MFR-7	8	8	25	63	36685	36686	36687	36688
MFR-8	10	10	25	70	36695	36696	36697	36698
MFR-9	12	12	25	76	36705	36706	36707	36708

Application Guide • Speed & Feed

Inch				mm			
Tool Dia.	Speed (M/Min.)	Feed Rate		Tool Dia.	Speed (SFM)	Feed Rate	
Inch	Min.	Max.	IPR	mm	Min.	Max.	IPR
1/16	600	900	0.002	2	183	274	0.051
1/8	600	900	0.002	3	183	274	0.051
3/16	600	900	0.002	4	183	274	0.051
1/4	600	900	0.002	6	183	274	0.051
5/16	600	900	0.002	8	183	274	0.051
3/8	600	900	0.002	10	183	274	0.051
1/2	600	900	0.002	12	183	274	0.051