SGS®

Rotary Carbide Burs

Durable Industry Performance

ata tools inc.

part of the ata group

As one of the world's most technologically advanced bur manufacturing companies, ATA offers bur configurations for every imaginable ferrous or nonferrous application for efficient stock removal and excellent surface finish. With a state-of-the-art, climate controlled manufacturing facility, SGS burs are the most widely used burs in the world serving a variety of industries, materials and applications.

- Offering complete with miniature sizes
- Ideal for handheld or robotic applications
- Superior surface finishes
- Durable construction in demanding applications
- Extended length shanks available for long reach applications
- Full factory resharpening services available
- Custom design and build capabilities
- Also available with Coating

Mold & Die industry requires deburring tools that can handle the complexity of workpiece configurations and deliver accuracy required for tight tolerance applications. SGS burs are precisely ground on multiaxis CNC grinding machines offering unparalleled performance meeting the demands of challenging materials, including carbon steels, hardened steels, tool steels, stainless steels, and aluminum.

- Chamfering, Creating a Radium, Weld Removal and Blending, Beveling, Repair

Castings & Foundry work requires safe, effective, and consistent performance when it comes to approaching high-strength and heat-resistant materials. ATA is an ISO Certified Company, utilizing rigorous quality control measures throughout the manufacturing process. Our quality burs are ideal for cast materials, including iron, steel, copper-based alloys, aluminum based alloys, exotic alloys, titanium alloys.

- Parting Line Removal, Fin Removal, Finishing of Casting Risers and Flash Removal

Power Generation requires tooling specifically developed for efficient and economical removal of difficult to machine materials. SGS burs maintain superior tool life and control achieved through engineered geometry and consistent braze. Bur construction is torque measured to ensure braze strength and durability.

- Turbine Manufacturing and Repair

Automotive machining means high production and cost control without sacrificing quality. The durability of SGS burs can be seen within automotive manufacturing or aftermarket service repair.

- Flash Removal, Chamfering, Weld Removal and Blending, Beveling, Aftermarket Repair

Burs

Omega Burs – Aggressive, Deep Double Cut

Omega Burs are Deep, Aggressive Double Cut Burs designed to handle your most challenging applications. With a deep, aggressive tooth pattern, Omega Burs allow for improved chip control and rapid stock removal in harder materials . . . with minimal chatter.

BURS
OMEGA BURS
Aggressive Deep Double Cut

Features & Benefits:

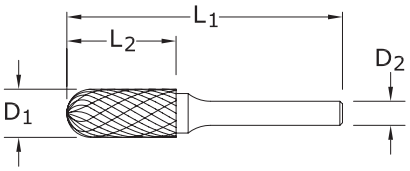
- **Enhanced geometry and deep flute configuration for increased tooth strength**
- **Longer tool life vs. conventional burs**
- **Maximum stock removal**
- **Improved productivity and cost savings**

Applications include:

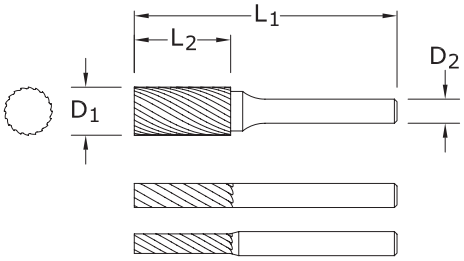
- **Mild steels**
- **Stainless steel**
- **Cast iron**
- **Other ferrous metals**

Industries:

- **Marine & shipbuilding**
- **Offshore MRO**
- **Foundries**
- **Automotive**
- **Metal fabrication**

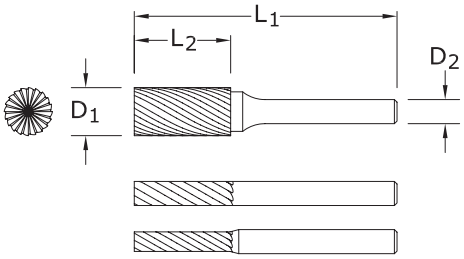


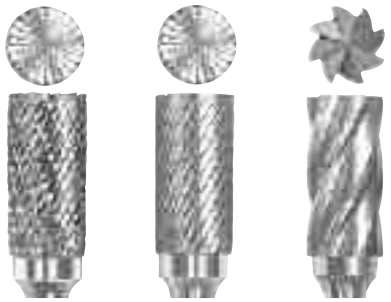
Series	Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Uncoated EDP	Ti-NAMITE-A (AlTiN) EDP No.
SA	SA-3M DDC	9,5	19	6	63	20269	20300
SA	SA-3ML6 DDC	9,5	19	6	169	20331	20354
SA	SA-5M DDC	12,7	25	6	69	20270	20301
SA	SA-5ML6 DDC	12,7	25	6	175	20331	20355
SA	SA-5M8 DDC	12,7	25	8	69	20271	20302
SB	SB-3M DDC	9,5	19	6	63	20272	20303
SB	SB-5M DDC	12,7	25	6	69	20273	20304
SB	SB-5M8 DDC	12,7	25	8	69	20274	20305
SC	SC-3M DDC	9,5	19	6	63	20275	20306
SC	SC-3ML6 DDC	9,5	19	6	169	20333	20356
SC	SC-5M DDC	12,7	25	6	69	20276	20307
SC	SC-5ML6 DDC	12,7	25	6	175	20334	20357
SC	SC-5M8 DDC	12,7	25	8	69	20277	20308
SC	SC-6M8 DDC	16,0	25	8	69	20278	20309
SD	SD-3M DDC	9,5	8	6	52	20279	20310
SD	SD-3ML6 DDC	9,5	8	6	158	20335	20358
SD	SD-5M DDC	12,7	11	6	55	20280	20311
SD	SD-5ML6 DDC	12,7	11	6	161	20336	20359
SD	SD-5M8 DDC	12,7	11	8	62	20281	20312
SE	SE-3M DDC	9,5	16	6	60	20282	20313
SE	SE-3ML6 DDC	9,5	16	6	166	20337	20360
SE	SE-5M DDC	12,7	22	6	66	20283	20314
SE	SE-5ML6 DDC	12,7	22	6	172	20338	20361
SE	SE-5M8 DDC	12,7	22	8	69	20284	20315
SF	SF-3M DDC	9,5	19	6	63	20285	20316
SF	SF-3ML6 DDC	9,5	19	6	169	20339	20362
SF	SF-5M DDC	12,7	25	6	69	20286	20317
SF	SF-5ML6 DDC	12,7	25	6	175	20340	20363
SF	SF-5M8 DDC	12,7	25	8	69	20287	20318
SF	SF-6M8 DDC	16,0	25	8	69	20288	20319
SG	SG-3M DDC	9,5	19	6	63	20289	20320
SG	SG-3ML6 DDC	9,5	19	6	169	20341	20364
SG	SG-5M DDC	12,7	25	6	69	20290	20321
SG	SG-5ML6 DDC	12,7	25	6	175	20342	20365
SG	SG-5M8 DDC	12,7	25	8	69	20291	20322
SG	SG-6M8 DDC	16,0	25	8	69	20292	20323
SH	SH-5M DDC	12,7	32	6	76	20293	20324
SH	SH-5ML6 DDC	12,7	32	6	182	20343	20366
SH	SH-5M8 DDC	12,7	32	8	76	20294	20325
SL	SL-3M DDC	9,5	27	6	74	20295	20326
SL	SL-3ML6 DDC	9,5	27	6	177	20344	20367
SL	SL-4M DDC	12,7	28	6	76	20296	20327
SL	SL-4ML6 DDC	12,7	28	6	178	20345	20368
SL	SL-4M8 DDC	12,7	28	8	76	20297	20328
SM	SM-5M DDC	12,7	22	6	69	20298	20329
SM	SM-5M8 DDC	12,7	22	8	69	20299	20330



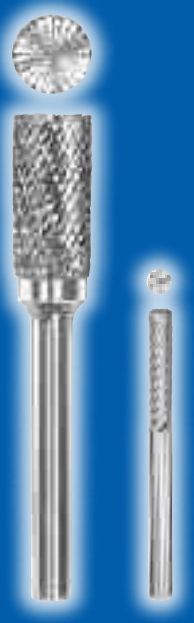
Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.	Nonferrous Cut EDP No.
SA-41M	1,5	6	3	38	20603	20600	–
SA-41ML2	1,5	6	3	50	27103	27100	–
SA-41ML3	1,5	6	3	75	27128	27125	–
SA-42M	2,5	11	3	38	20628	20625	–
SA-42ML2	2,5	11	3	50	27153	27150	–
SA-42ML3	2,5	11	3	75	27178	27175	–
SA-43M	3	14	3	38	20653	20650	–
SA-43ML2	3	14	3	50	27203	27200	–
SA-43ML3	3	14	3	75	27228	27225	–
SA-11M	3	12	6	56	20403	20400	–
SA-12M	3	16	6	60	20428	20425	–
SA-52M	4	12,7	3	38	20703	20700	–
SA-13M	4	16	6	50	20453	20450	–
SA-53M	5	12,7	3	38	20728	20725	–
SA-14M	5	16	6	50	20478	20475	–
SA-1M	6	16	6	50	20003	20000	–
SA-1MNF	6	19	6	50	–	–	29000
SA-1ML	6	25	6	50	20028	20025	–
SA-1ML6	6	12,7	6	162	26178	26175	–
SA-51M	6,3	12,7	3	50	20678	20675	–
SA-2M	8	19	6	63	20053	20050	–
SA-3M	9,5	19	6	63	20078	20075	–
SA-3MNF	9,5	19	6	63	–	–	29002
SA-3ML	9,5	25	6	69	20103	20100	–
SA-3ML6	9,5	19	6	169	26203	26200	–
SA-3MZ	10	20	6	60	29101	29100	–
SA-4M	11	25	6	69	20153	20150	–
SA-5MZ	12	25	6	65	29105	29104	–
SA-5M	12,7	25	6	69	20178	20175	–
SA-5MNF	12,7	25	6	69	–	–	29004
SA-5ML6	12,7	25	6	175	26228	26225	–
*SA-6M	16	25	6	69	20203	20200	–
*SA-6MNF	16	25	6	69	–	–	29006
*SA-7M	19	25	6	69	20253	20250	–
*SA-7MNF	19	25	6	69	–	–	29008
SA-7MNF	19	25	8	69	–	–	29010
*SA-9M	25	25	6	69	20353	20350	–

Burs – Cylinder Shape – End Cut

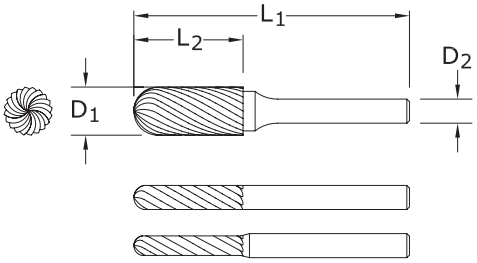




Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.	Nonferrous Cut EDP No.
SB-41M	1,5	6	3	38	21453	21450	–
SB-41ML2	1,5	6	3	50	27253	27250	–
SB-41ML3	1,5	6	3	75	27278	27275	–
SB-42M	2,5	11	3	38	21478	21475	–
SB-42ML2	2,5	11	3	50	27303	27300	–
SB-42ML3	2,5	11	3	75	27328	27325	–
SB-ECOM	3	–	3	38	–	21525	–
SB-43M	3	14	3	38	21503	21500	–
SB-43ML2	3	14	3	50	27353	27350	–
SB-43ML3	3	14	3	75	27378	27375	–
SB-11M	3	12	6	56	21253	21250	–
SB-12M	3	16	6	60	21278	21275	–
SB-13M	4	16	6	50	21303	21300	–
SB-14M	5	16	6	50	21328	21325	–
SB-1M	6	16	6	50	20853	20850	–
SB-1MNF	6	19	6	50	–	–	29012
SB-1ML	6	25	6	50	20873	20875	–
SB-51M	6,3	4,7	3	43	21553	21550	–
SB-2M	8	19	6	63	20903	20900	–
SB-3M	9,5	19	6	63	20928	20925	–
SB-3MNF	9,5	19	6	63	–	–	29014
SB-3ML	9,5	25	6	69	20953	20950	–
SB-3MZ	10	20	6	60	29109	29108	–
SB-4M	11	25	6	69	21003	21000	–
SB-5MZ	12	25	6	65	29113	29112	–
SB-5M	12,7	25	6	69	21028	21025	–
SB-5MNF	12,7	25	6	69	–	–	29016
*SB-6M	16	25	6	69	21053	21050	–
*SB-6MNF	16	25	6	69	–	–	29018
*SB-7M	19	25	6	69	21103	21100	–
*SB-7MNF	19	25	6	69	–	–	29020
SB-7MNF	19	25	8	69	–	–	29022
*SB-9M	25	25	6	69	21203	21200	–



Burs – Cylinder Shape – Radius End



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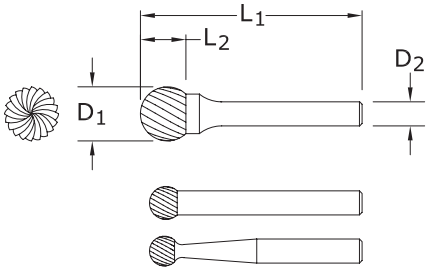
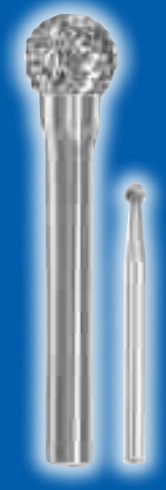
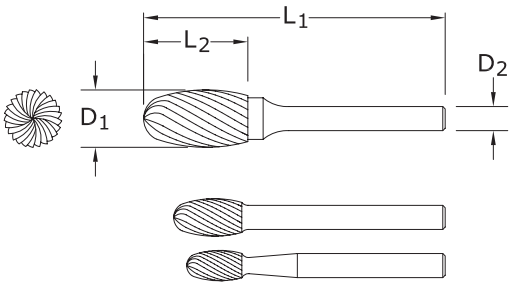
Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.	Nonferrous Cut EDP No.
SC-41M	2,5	11	3	38	22253	22250	–
SC-42M	3	14	3	38	22278	22275	–
SC-42ML2	3	14	3	50	27453	27450	–
SC-42ML3	3	14	3	75	27478	27475	–
SC-11M	3	12	6	56	22053	22050	–
SC-12M	3	16	6	60	22078	22075	–
SC-52M	4	12,7	3	38	22328	22325	–
SC-13M	4	16	6	50	22103	22100	–
SC-53M	5	12,7	3	38	22353	22350	–
SC-14M	5	16	6	50	22128	22125	–
SC-1M	6	16	6	50	21703	21700	–
SC-1MNF	6	19	6	50	–	–	29024
SC-1ML	6	25	6	50	21728	21725	–
SC-1ML6	6	12,7	6	162	26328	26325	–
SC-51M	6,3	12,7	3	50	22303	22300	–
SC-2M	8	19	6	63	21753	21750	–
SC-3M	9,5	19	6	63	21778	21775	–
SC-3MNF	9,5	19	6	63	–	–	29026
SC-3ML	9,5	25	6	69	21803	21800	–
SC-3ML6	9,5	19	6	169	26353	26350	–
SC-3MZ	10	20	6	60	29117	29116	–
SC-4M	11	25	6	69	21853	21850	–
SC-5MZ	12	25	6	65	29121	29120	–
SC-5M	12,7	25	6	69	21878	21875	–
SC-5ML6	12,7	25	6	175	26378	26375	–
SC-5MNF	12,7	25	6	69	–	–	29028
*SC-6M	16	25	6	69	21903	21900	–
*SC-7M	19	25	6	69	21953	21950	–
*SC-7MNF	19	25	6	69	–	–	29032
SC-7MNF	19	25	8	69	–	–	29034
*SC-9M	25	25	6	69	22003	22000	–



Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.	Nonferrous Cut EDP No.
SD-41M	2,5	2,3	3	38	22778	22775	–
SD-42M	3	2,8	3	38	22803	22800	–
SD-42ML2	3	2,8	3	50	27553	27550	–
SD-42ML3	3	2,8	3	75	27578	27575	–
SD-11M	3	2,8	6	50	22728	22725	–
SD-52M	4	3,4	3	38	22840	22837	–
SD-53M	5	4,7	3	38	22853	22850	–
SD-14M	5	4	6	50	22753	22750	–
SD-1M	6	5	6	50	22453	22450	–
SD-1ML6	6	5	6	155	26403	26400	–
SD-1MNF	6	5	6	50	–	–	29036
SD-51M	6,3	5	3	44	22828	22825	–
SD-2M	8	6,4	6	50	22478	22475	–
SD-3M	9,5	8	6	52	22503	22500	–
SD-3MNF	9,5	8	6	52	–	–	29038
SD-3ML6	9,5	8	6	158	26428	26425	–
SD-3MZ	10	9	6	49	29125	29124	–
SD-4M	11	9,5	6	54	22528	22525	–
SD-5MZ	12	10,8	6	51	29129	29128	–
SD-5M	12,7	11	6	55	22553	22550	–
SD-5MNF	12,7	11	6	55	–	–	29040
SD-5ML6	12,7	11	6	161	26453	26450	–
*SD-6M	16	14	6	58	22578	22575	–
*SD-6MNF	16	14	6	58	–	–	29042
*SD-7M	19	16	6	62	22628	22625	–
*SD-7MNF	19	16	6	62	–	–	29044
SD-7MNF	19	16	8	62	–	–	29046
*SD-9M	25	21	6	72	22678	22675	–





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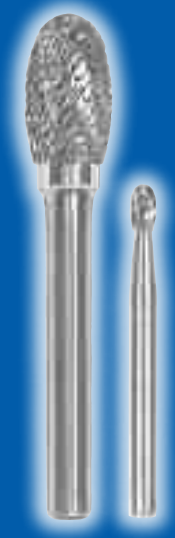
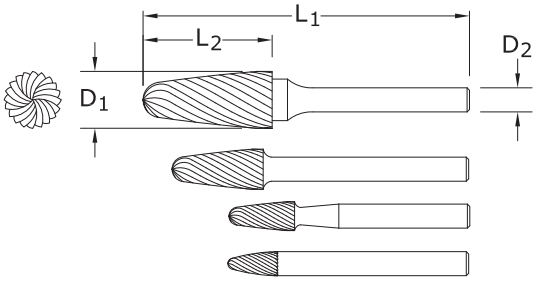
Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.	Nonferrous Cut EDP No.
SE-41M	3	5,5	3	38	23153	23150	–
SE-41ML2	3	5,5	3	50	27603	27600	–
SE-41ML3	3	5,5	3	75	27628	27625	–
SE-53M	5	7,1	3	38	23203	23200	–
SE-1M	6	9,5	6	50	22953	22950	–
SE-1ML6	6	9,5	6	160	26478	26475	–
SE-51M	6,3	9,5	3	47	23178	23175	–
SE-3M	9,5	16	6	60	22978	22975	–
SE-3ML6	9,5	16	6	166	26503	26500	–
SE-3MNF	9,5	16	6	60	–	–	29048
SE-5M	12,7	22	6	66	23003	23000	–
SE-5ML6	12,7	22	6	172	26528	26525	–
SE-5MNF	12,7	22	6	66	–	–	29050
*SE-6M	16	25	6	69	23028	23025	–
*SE-6MNF	16	25	6	69	–	–	29052
*SE-7M	19	25	6	69	23078	23075	–
*SE-7MNF	19	25	6	69	–	–	29054
SE-7MNF	19	25	8	69	–	–	29056





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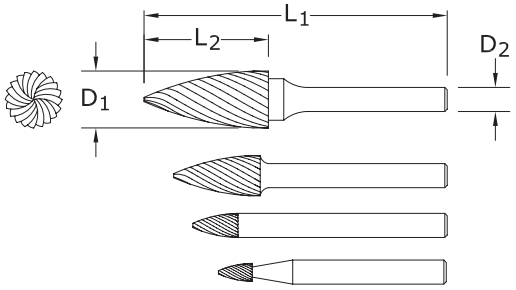
Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.	Nonferrous Cut EDP No.
SF-41M	3	6	3	38	23678	23675	–
SF-42M	3	12,7	3	38	23703	23700	–
SF-11M	3	12,7	6	56	23503	23500	–
SF-42ML2	3	12,7	3	50	27653	27650	–
SF-42ML3	3	12,7	3	75	27678	27675	–
SF-53M	5	12,7	3	38	23753	23750	–
SF-1M	6	16	6	50	23303	23300	–
SF-1ML6	6	12,7	6	163	26553	26550	–
SF-1MNF	6	19	6	50	–	–	29058
SF-51M	6,3	12,7	3	56	23728	23725	–
SF-3M	9,5	19	6	63	23328	23325	–
SF-3ML6	9,5	19	6	169	26578	26575	–
SF-3MNF	9,5	19	6	63	–	–	29060
SF-4M	11	25	6	69	23353	23350	–
SF-5MZ	12	25	6	65	23522	23520	–
SF-13M	12,7	19	6	63	23528	23525	–
SF-5M	12,7	25	6	69	23378	23375	–
SF-5ML6	12,7	25	6	175	26603	26600	–
SF-5MNF	12,7	25	6	69	–	–	29062
*SF-6M	16	25	6	69	23403	23400	–
*SF-6MNF	16	25	6	69	–	–	29064
*SF-7M	19	25	6	69	23453	23450	–
*SF-14M	19	32	6	76	23578	23575	–
*SF-14MNF	19	32	6	76	–	–	29066
SF-14MNF	19	32	8	76	–	–	29068
*SF-15M	19	38	6	82	23628	23625	–

Burs – Tree Shape – Pointed End



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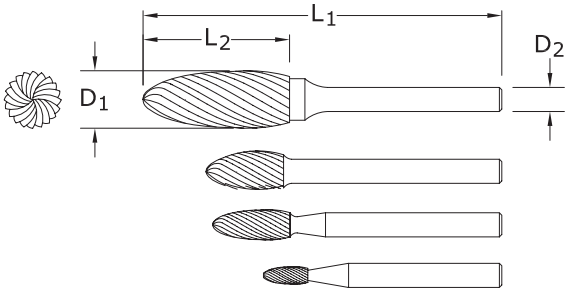
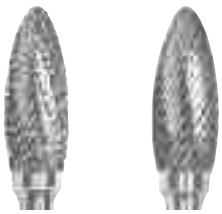
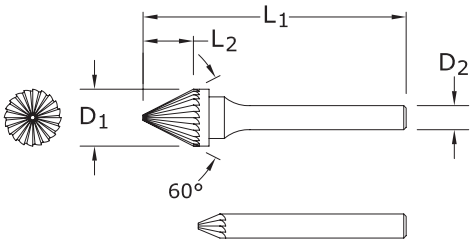
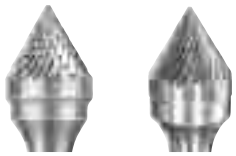
Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.
SG-41M	3	6	3	38	24153	24150
SG-43M	3	9,5	3	38	24203	24200
SG-44M	3	12,7	3	38	24228	24225
SG-44ML2	3	12,7	3	50	27853	27850
SG-44ML3	3	12,7	3	75	27878	27875
SG-53M	5	12,7	3	38	24278	24275
SG-1M	6	16	6	50	23853	23850
SG-1ML6	6	12,7	6	163	26628	26625
SG-51M	6,3	12,7	3	50	24253	24250
SG-2M	8	19	6	63	23878	23875
SG-3M	9,5	19	6	63	23903	23900
SG-3ML6	9,5	19	6	169	26653	26650
SG-3MZ	10	20	6	60	24042	24040
SG-5MZ	12	25	6	65	24046	24045
SG-13M	12,7	19	6	63	24053	24050
SG-5M	12,7	25	6	69	23928	23925
SG-5ML6	12,7	25	6	175	26678	26675
*SG-6M	16	25	6	69	23953	23950
*SG-7M	19	25	6	69	24003	24000
*SG-15M	19	38	6	82	24103	24100





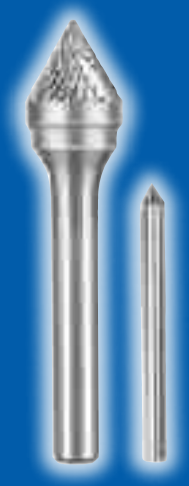
Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.
SH-41M	3	6,3	3	38	24553	24550
SH-41ML2	3	6,3	3	50	27903	27900
SH-41ML3	3	6,3	3	75	27928	27925
SH-53M	5	9,5	3	38	24603	24600
SH-2M	8	19	6	63	24403	24400
SH-2ML6	8	19	6	169	26703	26700
SH-5M	12,7	32	6	76	24428	24425
SH-5ML6	12,7	32	6	182	26728	26725
*SH-6M	16	36	6	80	24453	24450
*SH-7M	19	41	6	85	24503	24500

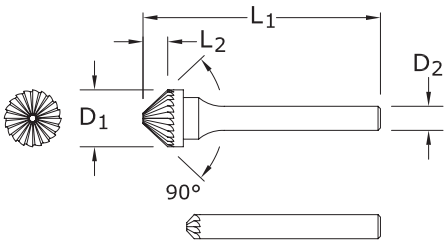




6 3

Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.
SJ-42M	3	2,5	3	38	24903	24900
SJ-1M	6	4	6	50	24678	24675
SJ-3M	9,5	8	6	55	24703	24700
SJ-5M	12,7	11	6	58	24728	24725
*SJ-6M	16	14,5	6	61	24753	24750
*SJ-7M	19	17,5	6	65	24803	24800
*SJ-9M	25	24,5	6	68	24853	24850





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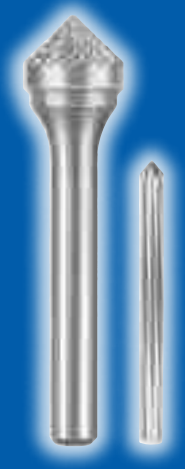
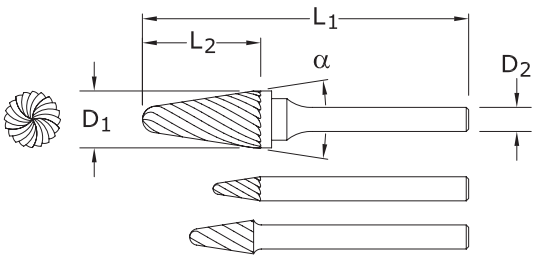
Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.
SK-42M	3	1,5	3	38	25153	25150
SK-1M	6	3	6	50	24928	24925
SK-3M	9,5	4,7	6	52	24953	24950
SK-5M	12,7	6,3	6	54	24978	24975
*SK-6M	16	8	6	57	25003	25000
*SK-7M	19	9,5	6	58	25053	25050
*SK-9M	25	12,7	6	60	25103	25100

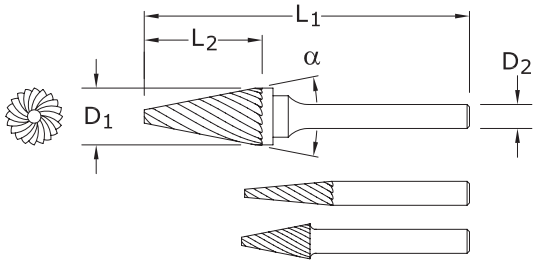


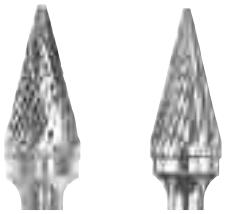
Burs – Taper Shape – Radius End



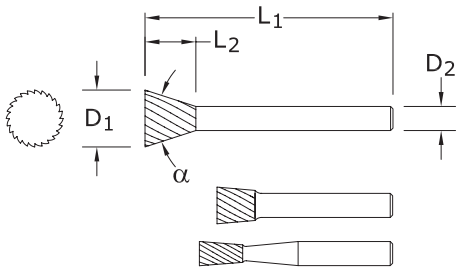
6 3 1

Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Angle a	Double Cut EDP No.	Single Cut EDP No.	Nonferrous Cut EDP No.
SL-41M	3	9,5	3	38	8°	25403	25400	–
SL-42M	3	12,7	3	38	8°	25428	25425	–
SL-42ML2	3	12,7	3	50	8°	27953	27950	–
SL-42ML3	3	12,7	3	75	8°	27978	27975	–
SL-53M	5	12,7	3	38	14°	25453	25450	–
SL-1M	6	16	6	50	14°	25178	25175	–
SL-1ML6	6	16	6	166	14°	26753	26750	–
SL-2M	8	22	6	69	14°	25203	25200	–
SL-3M	9,5	27	6	74	14°	25228	25225	–
SL-3MNF	9,5	27	6	74	14°	–	–	29070
SL-3ML6	9,5	27	6	177	14°	26778	26775	–
SL-4M	12,7	28	6	76	14°	25253	25250	–
SL-4MNF	12,7	28	6	76	14°	–	–	29072
SL-4ML6	12,7	28	6	178	14°	26803	26800	–
*SL-5M	16	30	6	77	14°	25278	25275	–
*SL-5MNF	16	30	6	77	14°	–	–	29074
*SL-7M	19	38	6	85	14°	25353	25350	–
*SL-7MNF	19	38	6	85	14°	–	–	29078
SL-7MNF	19	38	8	85	14°	–	–	29080





Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Angle a	Double Cut EDP No.	Single Cut EDP No.
SM-41M	3	8,9	3	38	12°	25678	25675
SM-42M	3	11	3	38	14°	25703	25700
SM-42ML2	3	11	3	50	14°	28053	28050
SM-42ML3	3	11	3	75	14°	28078	28075
SM-43M	3	16	3	38	7°	25728	25725
SM-53M	5	12,7	3	38	16°	25778	25775
SM-1M	6	12,7	6	50	22°	25503	25500
SM-2M	6	19	6	50	14°	25528	25525
SM-3M	6	25	6	50	10°	25553	25550
SM-51M	6,3	12,7	3	53	22°	25753	25750
SM-4M	9,5	16	6	63	28°	25578	25575
SM-5M	12,7	22	6	69	28°	25603	25600
*SM-6M	16	25	6	73	31°	25628	25625



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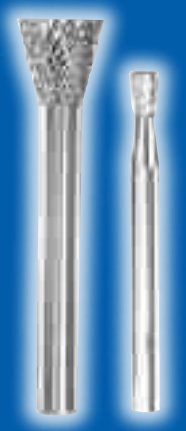
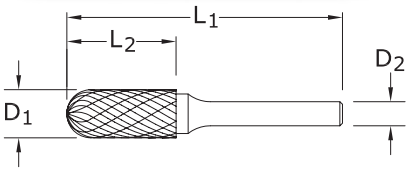
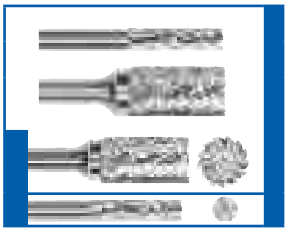
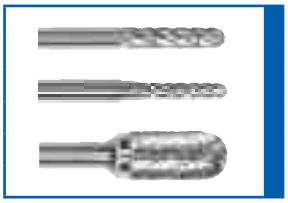
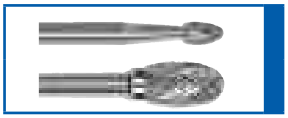
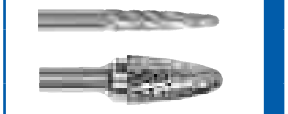
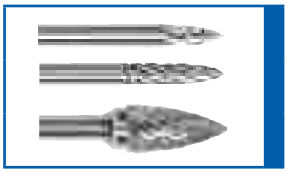
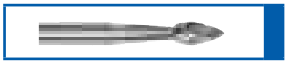
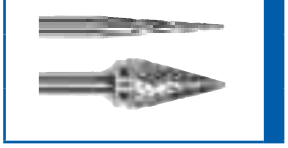
Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Angle a	Double Cut EDP No.	Single Cut EDP No.
SN-41M	2,5	3	3	38	10°	26028	26025
SN-42M	3	4	3	38	10°	26053	26050
SN-53M	5	6,3	3	38	10°	26103	26100
SN-1M	6	8	6	50	10°	25853	25850
SN-51M	6,3	6	3	44	10°	26078	26075
SN-2M	9,5	9,5	6	53	13°	25878	25875
SN-4M	12,7	12,7	6	57	28°	25903	25900
*SN-6M	16	19	6	63	18°	25928	25925
*SN-7M	19	16	6	60	30°	25978	25975





		Tool No.	Cutter Diameter d_1	Length of Cut l_2	Shank Diameter d_2	Overall Length l_1	Uncoated EDP No.
Cylinder Shape		SA-43MG D/C	3,0	14,0	3,0	38,0	29200
		SA-51MG D/C	6,3	12,7	3,0	45,0	29201
		SA-51MG D/C E/C	6,3	12,7	3,0	45,0	29202
Cylinder Shape with End Cut							
		SB-43MG D/C	3,0	14,0	3,0	38,0	29203
Cylinder Shape with Radius End		SC-41MG D/C	2,3	11,0	3,0	38,0	29204
		SC-41MGL2 D/C	2,3	11,0	3,0	50,0	29205
		SC-42MG D/C	3,0	14,0	3,0	38,0	29206
		SC-42MGL2 D/C	3,0	14,0	3,0	50,0	29207
		SC-42MGL3 D/C	3,0	14,0	3,0	75,0	29208
		SC-51MG D/C	6,3	12,7	3,0	45,0	29209
Ball Shape		SD-42MG D/C	3,0	2,8	3,0	38,0	29210
		SD-51MG D/C	6,3	5,0	3,0	38,0	29224
Oval Shape		SE-41MG D/C	3,0	5,5	3,0	38,0	29225
		SE-51MG D/C	6,3	9,5	3,0	41,0	29211
Tree Shape with Radius End		SF-42MG D/C	3,0	12,7	3,0	38,0	29212
		SF-42MGL2 D/C	3,0	12,7	3,0	50,0	29213
		SF-51MG D/C	6,3	12,7	3,0	45,0	29214
Tree Shape with Pointed End		SG-42MG D/C	3,0	8,0	3,0	38,0	29215
		SG-44MG D/C	3,0	12,7	3,0	38,0	29216
		SG-51MG D/C	6,3	12,7	3,0	45,0	29217
Flame Shape		SH-41MG D/C	3,0	6,3	3,0	38,0	29218
Cone Shape		SM-42MG D/C	3,0	11,0	3,0	38,0	29220
		SM-43MG D/C	3,0	16,0	3,0	38,0	29221
		SM-51MG D/C	6,3	12,7	3,0	48,0	29223

SET 6M

Solid Carbide Bur Set #6

6 mm steel shank diameter
Contains the following eight burs in a sturdy oak box:
SA-5M, SC-3M, SC-5M, SD-5M, SF-3M, SF-5M, SG-3M, SL-4M

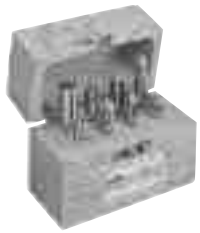
Juego de caja #6 de limas rotativas en carburo sólido

Mango de acero de diámetro 6 mm
Contiene las siguientes ocho rotativas en una caja de madera de roble:
SA-5M, SC-3M, SC-5M, SD-5M, SF-3M, SF-5M, SG-3M, SL-4M

Jeu de Fraises rotatives N°6 - carbure monobloc

Queue en acier, diamètre 6 mm
Contient les huit fraises rotatives dans un coffret en chêne robuste:
SA-5M, SC-3M, SC-5M, SD-5M, SF-3M, SF-5M, SG-3M, SL-4M

6	3
Double Cut EDP No.	Single Cut EDP No.
28211	28210



SET 1M

Solid Carbide Miniature Bur Set #1

3 mm shank diameter - 38 mm overall length
Contains the following twelve 3 mm Burs in a sturdy oak box: SA-42M, SA-43M, SC-41M, SC-42M, SD-42M, SE-41M, SF-42M, SG-43M, SH-41M, SL-42M, SM-42M, SN-42M

Juego de caja #1 de limas rotativas miniatura en carburo sólido

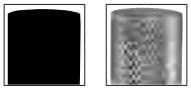
Mango de diámetro 3 mm - Longitud total 38 mm
Contiene las siguientes nueve rotativas de 3 mm en una caja de madera de roble:
SA-42M, SA-43M, SC-41M, SC-42M, SD-42M, SE-41M, SF-42M, SG-43M, SH-41M, SL-42M, SM-42M, SN-42M

Jeu de Mini-Fraises rotatives en carbure monobloc N°1

Diamètre de la queue 3 mm - Longueur totale 38 mm
Contient les douze fraises rotatives 3 mm suivantes dans un coffret en chêne robuste: SA-42M, SA-43M, SC-41M, SC-42M, SD-42M, SE-41M, SF-42M, SG-43M, SH-41M, SL-42M, SM-42M, SN-42M

6	3
Double Cut EDP No.	Single Cut EDP No.
28201	28200

SET 8M



6	3
Double Cut EDP No.	Single Cut EDP No.
28215	28214

Extra Long Bur Set #8

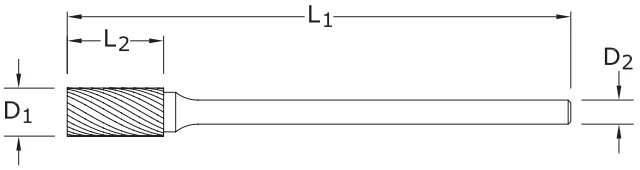
6 mm diameter - 152.4 mm long steel shank
Contains the following eight burs in a clear/blue acrylic case:
SA-1ML6, SA-5ML6, SC-1ML6, SC-5ML6, SD-1ML6, SF-1ML6, SG-1ML6, SL-1ML6

Juego de Caja #8 de rotativas extra-largas

Mango de diámetro 6 mm - mango largo de acero de 152,4 mm
Contiene las siguiente ocho rotativas en una caja de plástico transparente/azul:
SA-1ML6, SA-5ML6, SC-1ML6, SC-5ML6, SD-1ML6, SF-1ML6, SG-1ML6, SL-1ML6

Jeu de Fraises rotatives extra-longues N°8

Queue diamètre 6 mm - queue longue en acier 152,4 mm
Contient les huit fraises rotatives dans un étui en acrylique bleu clair:
SA-1ML6, SA-5ML6, SC-1ML6, SC-5ML6, SD-1ML6, SF-1ML6, SG-1ML6, SL-1ML6



Cylinder Shape
Forma cilíndrica
Forme cylindrique


6


3

Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.
SA-1ML6	6	12,7	6	162	26178	26175
SA-3ML6	9,5	19	6	169	26203	26200
SA-5ML6	12,7	25	6	175	26228	26225

Cylinder Shape Radius End
Forma cilíndrica Con radio
Forme cylindrique À bout hémisphérique


6


3

Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.
SC-1ML6	6	12,7	6	162	26328	26325
SC-3ML6	9,5	19	6	169	26353	26350
SC-5ML6	12,7	25	6	175	26378	26375

Ball Shape
Forma esférica
Forme sphérique


6


3

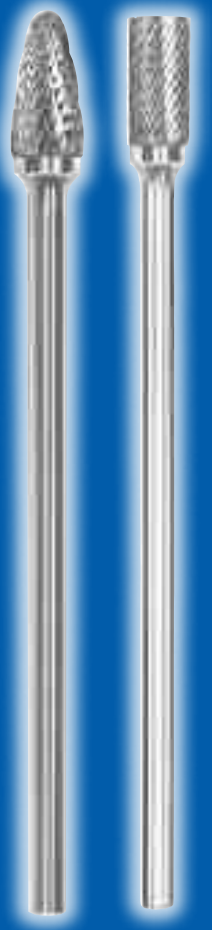
Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.
SD-1ML6	6	5	6	155	26403	26400
SD-3ML6	9,5	8	6	158	26428	26425
SD-5ML6	12,7	11	6	161	26453	26450

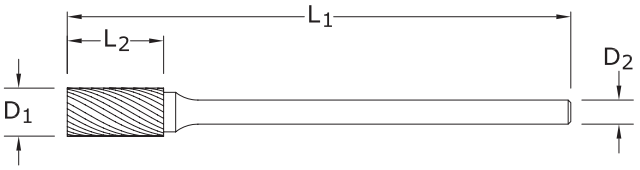
Oval Shape
Forma ovalada
Forme ovale


6


3

Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.
SE-1ML6	6	9,5	6	160	26478	26475
SE-3ML6	9,5	16	6	166	26503	26500
SE-5ML6	12,7	22	6	172	26528	26525





Tree Shape Radius End
Forma de árbol Con radio
Forme d'ogive Bout hémisphérique


6


3

Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.
SF-1ML6	6	12,7	6	163	26553	26550
SF-3ML6	9,5	19	6	169	26578	26575
SF-5ML6	12,7	25	6	175	26603	26600

Tree Shape Pointed End
Forma de árbol
Forme d'ogive À bout pointu


6


3

Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.
SG-1ML6	6	12,7	6	163	26628	26625
SG-3ML6	9,5	19	6	169	26653	26650
SG-5ML6	12,7	25	6	175	26678	26675

Flame Shape
Forma de llama
Forme en flamme


6


3

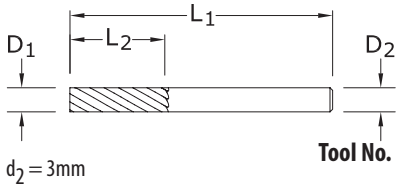
Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.
SH-2ML6	8	19	6	169	26703	26700
SH-5ML6	12,7	32	6	182	26728	26725

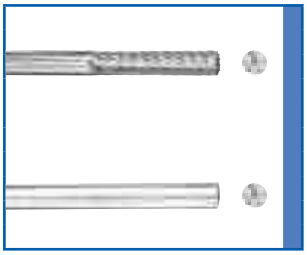
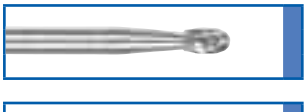
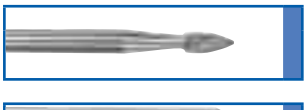
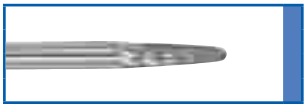
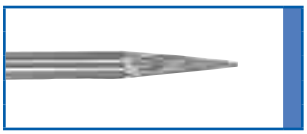
14° Taper Radius End
Forma cónica a 14° Con radio
Conique, 14° Bout hémisphérique

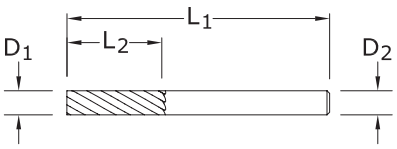

6


3

Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Double Cut EDP No.	Single Cut EDP No.
SL-1ML6	6	16	6	166	26753	26750
SL-3ML6	9,5	27	6	177	26778	26775
SL-4ML6	12,7	28	6	178	26803	26800



	Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Angle a	6 Double Cut EDP No.	3 Single Cut EDP No.
	SA-41M	1,5	6	3	38	–	20603	20600
	SA-41M L2	1,5	6	3	50	–	27103	27100
	SA-41ML3	1,5	6	3	75	–	27128	27125
	SA-42M	2,5	11	3	38	–	20628	20625
	SA-42ML2	2,5	11	3	50	–	27153	27150
	SA-42ML3	2,5	11	3	75	–	27178	27175
	SA-43M	3	14	3	38	–	20653	20650
	SA-43ML2	3	14	3	50	–	27203	27200
	SA-43ML3	3	14	3	75	–	27228	27225
	SB-41M	1,5	6	3	38	–	21453	21450
	SB-41ML2	1,5	6	3	50	–	27253	27250
	SB-41ML3	1,5	6	3	75	–	27278	27275
	SB-42M	2,5	11	3	38	–	21478	21475
	SB-42ML2	2,5	11	3	50	–	27303	27300
	SB-42ML3	2,5	11	3	75	–	27328	27325
	SB-ECOM	3	-	3	38	–		21525
	SB-43M	3	14	3	38	–	21503	21500
	SB-43ML2	3	14	3	50	–	27353	27350
	SB-43ML3	3	14	3	75	–	27378	27375
	SC-41M	2,5	11	3	38	–	22253	22250
	SC-42M	3	14	3	38	–	22278	22275
	SC-42ML2	3	14	3	50	–	27453	27450
	SC-42ML3	3	14	3	75	–	27478	27475
	SD-41M	2,5	2,3	3	38	–	22778	22775
	SD-42M	3	2,8	3	38	–	22803	22800
	SD-42ML2	3	2,8	3	50	–	27553	27550
	SD-42ML3	3	2,8	3	75	–	27578	27575
	SE-41M	3	5,5	3	38	–	23153	23150
	SE-41ML2	3	5,5	3	50	–	27603	27600
	SE-41ML3	3	5,5	3	75	–	27628	27625
	SF-41M	3	6	3	38	–	23678	23675
	SF-42M	3	12,7	3	38	–	23703	23700
	SF-42ML2	3	12,7	3	50	–	27653	27650
	SF-42ML3	3	12,7	3	75	–	27678	27675
	SG-41M	3	6	3	38	–	24153	24150
	SG-43M	3	9,5	3	38	–	24203	24200
	SG-44M	3	12,7	3	38	–	24228	24225
	SG-44ML2	3	12,7	3	50	–	27853	27850
	SG-44ML3	3	12,7	3	75	–	27878	27875
	SH-41M	3	6,3	3	38	–	24553	24550
	SH-41ML2	3	6,3	3	50	–	27903	27900
	SH-41ML3	3	6,3	3	75	–	27928	27925
	SJ-42M	3	2,5	3	38	–	24903	24900
	SK-42M	3	1,5	3	38	–	25153	25150
	SL-41M	3	9,5	3	38	8°	25403	25400
	SL-42M	3	12,7	3	38	8°	25428	25425
	SL-42ML2	3	12,7	3	50	8°	27953	27950
	SL-42ML3	3	12,7	3	75	8°	27978	27975
	SM-41M	3	8,9	3	38	12°	25678	25675
	SM-42M	3	11	3	38	14°	25703	25700
	SM-42ML2	3	11	3	50	14°	28053	28050
	SM-42ML3	3	11	3	75	14°	28078	28075
	SM-43M	3	16	3	38	7°	25728	25725
	SN-41M	2,5	3	3	38	10°	26028	26025
	SN-42M	3	4	3	38	10°	26053	26050



$d_2 = 3mm$

6,3 mm Head – 3 mm Shank

	Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Angle a	6 Double Cut EDP No.	3 Single Cut EDP No.
	SA-51M	6,3	12,7	3	50	–	20678	20675
	SB-51M	6,3	4,7	3	43	–	21553	21550
	SC-51M	6,3	12,7	3	50	–	22303	22300
	SD-51M	6,3	5	3	44	–	22828	22825
	SE-51M	6,3	9,5	3	47	–	23178	23175
	SF-51M	6,3	12,7	3	56	–	23728	23725
	SG-51M	6,3	12,7	3	50	–	24253	24250
	SM-51M	6,3	12,7	3	53	22°	25753	25750
	SN-51M	6,3	6	3	44	10°	26078	26075

Mold, Tool & Die Making Burs

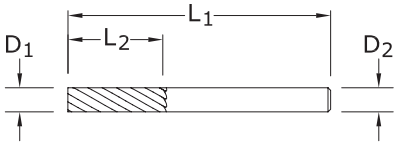
6.3 mm Head - 3 mm Shank - Brazed Construction
Complete Bur Regrind Service Available.

Limas rotativas para moldes, herramientas y matrices

Cabeza de 6,3 mm - Mango de 3 mm con construcción de soldadura de bronce
Disponemos de un servicio completo de reafilado de limas rotativas.

Fraises-limes pour mouliste, outils et matrices

Tête de 6,3 mm - Queue de 3 mm - Brasées
Service de réaffûtage complet de fraises rotatives disponible.



$d_2 = 3mm$

5 mm / 4 mm Head – 3 mm Shank

	Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Shank Diameter d_2 mm	Overall Length l_1 mm	Angle a	6 Double Cut EDP No.	3 Single Cut EDP No.
	SA-52M	4	12,7	3	38	–	20703	20700
	SA-53M	5	12,7	3	38	–	20728	20725
	SC-52M	4	12,7	3	38	–	22328	22325
	SC-53M	5	12,7	3	38	–	22353	22350
	SD-52M	4	3,4	3	38	–	22840	22837
	SD-53M	5	4,7	3	38	–	22853	22850
	SE-53M	5	7,1	3	38	–	23203	23200
	SF-53M	5	12,7	3	38	–	23753	23750
	SG-53M	5	12,7	3	38	–	24278	24275
	SH-53M	5	9,5	3	38	–	24603	24600
	SL-53M	5	12,7	3	38	14°	25453	25450
	SM-53M	5	12,7	3	38	16°	25778	25775
	SN-53M	5	6,3	3	38	10°	26103	26100

Mold, Tool & Die Making Burs

5 mm / 4 mm Head, 3 mm Shank – Solid Carbide
Complete Bur Regrind Service Available.

Limas rotativas para moldes, herramientas y matrices

Cabeza de 5 mm / 4 mm – Mango de 3 mm – Carburo sólido
Disponemos de un servicio completo de reafilado de limas rotativas.

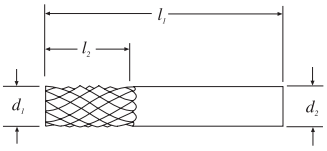
Fraises-limes pour mouliste, Soutils et matrices

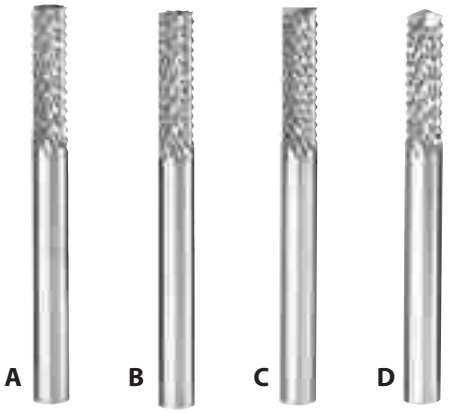
Tête de 5 mm / 4 mm – Queue de 3 mm – Carbure monobloc
Service de réaffûtage complet de fraises rotatives disponible.

Fiberglass Router – Single End

TOLERANCES

d_1 =1, 1-1=+0,00/–0,10
2-9=+0,00/–0,13
d_2=h6

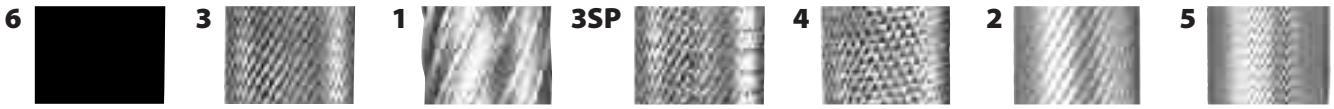




Tool No.	Cutting Diameter d_1 mm	Length of Cut l_2 mm	Overall Length l_1 mm	Shank Diameter d_2 mm	Uncoated EDP No.	Uncoated EDP No.	Uncoated EDP No.	Uncoated EDP No.
FGR-1M	1,6	5	38	3	83001	83015	83030	83045
FGR 1-1M	2,4	9,5	38	3	83002	83016	83031	83046
FGR-2M	3	12	38	3	83003	83017	83032	83047
FGR-3M	4	16	50	4	83004	83018	83033	83048
FGR-4M	4	16	50	6	83005	83019	83034	83049
FGR-5M	6	19	50	6	83006	83020	83035	83050
FGR-6M	6	19	63	6	83007	83021	83036	83051
FGR 6-1M	6	25	75	6	83008	83022	83037	83052
FGR-7M	8	25	63	8	83009	83023	83038	83053
FGR-8M	10	25	75	10	83010	83024	83039	83054
FGR-9M	12	25	75	12	83011	83025	83040	83055

Application and Speed Recommendations – Carbide Burs – Metric

Recomendaciones para aplicación y velocidad *Limas Rotativas de Carburo*
Recommandations sur l'application et la vitesse *Fraises-limes en carbure*



Basic Fluting Styles for Carbide Burs

- 6 Double Cut: Efficient stock removal, smaller chips, good finish, excellent control.
- 3 Single Cut: General purpose design, longer chips.
- 1 Nonferrous: Aggressive stock removal.
- 3SP Chip Breaker: Improved stock removal and control over single cut style.
- 4 Diamond Cut: Excellent control, good stock removal, smallest chips.
- 2 Coarse Cut: Improved chip clearance for softer materials, good stock removal.
- 5 Fine Cut: Hard materials, fine finishing where light stock removal is required.

Determining the Proper Cut Style and Speed

- Select your material type along the left side of Chart A.
- Move right to find the recommended cut style(s) and speed range in M/MIN.
- Select your tool diameter and M/MIN range on Chart B to determine operating RPM.

Estilos básicos de filos en las limas rotativos de carburo sólido

- 6 Doble Corte: Eliminación eficiente de materiales, virutas más cortas, buen acabado, Excelente controle.
- 3 Único corte: Para el uso general, virutas mas largas.
- 1 Materiales no ferosos: Eliminacion de materiales mas agresiva.
- 3SP Rompe virutas: Mejora de la eliminación de material y un mejor control a través de un corte simple, virutas mas cortas.
- 4 Corte Diamante: Excelente control, bueno volumen de material mecanizado, virutas mas cortas.
- 2 Durante el corte: La depuración de chips mejorada para materiales blandos y extraer materiales de buena.
- 5 Dientes finas: Para los materiales duros,para el accabado cuando es necessario.

Determinar el tipo adecuado corte y la velocidad

- Seleccione el tipo de material en el lado izquierdo de la tabla A.
- Muévase a la derecha para encontrar el tipo de corte recomendado y el rango de velocidad en M/MIN.
- Elija el diámetro de la herramienta y la amplitud de la rotación en el cuadro B para determinar la rotación en rpm.

Types de dentures de base pour les fraises-limes

- 6 Double Coupe: enlèvement de matière efficace, copeaux plus courts, bonne finition, excellent contrôle.
- 3 Simple coupe: Utilisation d'usage général, copeaux plus longs.
- 1 Non ferreux: Enlèvement matière agressif.
- 3SP Brise copeaux: Amélioration de l'enlèvement de matière et contrôle grâce a la simple coupe, copeaux plus courts .
- 4 Coupe Diamant: Excellent contrôle, bon debit matières usinée, copeaux plus couts.
- 2 Cours de coupe: meilleur dégagement de carte à puce pour les matériaux tendres, enlèvement de matière de bonnes.
- 5 Denture fine: Pour les matériaux durs, pour la finition quand la matière enlevée est nécessaire.

Déterminer le type coupe adéquate et de la vitesse

- Sélectionnez votre type de matériau sur le côté gauche du tableau A.
- Déplacer vers la droite pour trouver le type de coupe recommandé et la plage de vitesse en M/MIN.
- Choisissez votre diamètre de l'outil et gamme de rotation sur le tableau B pour déterminer la rotation en rpm.

Chart A

	Recommended Cut Style and Speed Range (M/MIN)						
	250	300	365	450	520	600	915
Carbon Steel <45 HRc				6 - 3 - 3SP			
Hardened Steel >45 HRc	6 - 3 - 3SP - 5						
Heat Resisting Alloys		6 - 3 - 3SP					
Stainless Steel	6 - 4 - 3SP						
Aluminum Alloys						1	
Brass-Copper-Zinc						6 - 3SP - 2	
Cast Iron <250 Bhn				6 - 3 - 3SP			
Cast Iron >250 Bhn		6 - 3 - 3SP					
Plastics					1 - 2		
Hard Rubber					2		
Fiberglass					4		
Carbon Fiber				6 - 4			

Chart B

	M/MIN						
	250	300	365	450	520	600	915
Diameter	RPM						
1,5	49,000	61,000	73,000	92,000	104,000	122,000	183,000
2,5	33,000	41,000	49,000	61,000	69,000	81,000	122,000
3	24,000	31,000	37,000	46,000	52,000	61,000	92,000
5	16,000	20,000	24,000	31,000	35,000	41,000	61,000
6	12,000	15,000	18,000	23,000	26,000	31,000	46,000
8	10,000	12,000	15,000	18,000	21,000	24,000	37,000
10	8,000	10,000	12,000	15,000	17,000	20,000	31,000
12	6,000	8,000	9,000	11,000	13,000	15,000	23,000
16	5,000	6,000	7,000	9,000	10,000	12,000	18,000
19	4,000	5,000	6,000	8,000	9,000	10,000	15,000
25	3,000	4,000	5,000	6,000	7,000	8,000	11,000

Safety

- The use of eye, face, and ear protection is strongly recommended.
- Burs with shanks longer than 1-3/4 (inch) should be used at 50% of the normal speed.
- Extended shank burs are only recommended for use in well maintained handheld grinders.
- Stabilize extended shank burs by lightly contacting the workpiece prior to starting the grinder.
- Blue discoloring of steel shanks indicates excessive heat due to overuse. Continued use could cause injury.

Application Tips

- Use lubricant or wax to prevent flute loading in soft materials.
- Using the recommended speed prevents premature wear and/or insufficient material removal rates.
- Maintain grinder concentricity to optimize material removal rates and extend bur life.
- Reduce flutes and increase speed in softer materials. Increase flutes and reduce speed in hardened materials.
- Cross cut styles (6, 3SP, 4) generally improve stock removal, control, and reduce chip size.

Seguridad

- La protección de los ojos, cara y orejas es muy recomendable.
- Las frasas más larga (1-3/4) deben ser utilizadas al 50% de la velocidad normal.
- El mango largo se recomienda su uso en buen estado en parte inaccesibles.
- Estabilizar la fresa larga con un ligero contacto con la pieza antes de empezar a moler.
- La coloración azulada de los vástagos de acero, indica el recalentamiento debido a la sobreexplotación. Puede dar lugar a fracturas y lesiones.

Sugerencias de aplicación

- Utilice un lubricante o cera para evitar que se pegue el material en la fresa.
- Usando la velocidad recomendada, se evita el desgaste prematuro y/o tasas de fracaso de la remoción de material.
- Mantener la concentricidad de la máquina de moler para optimizar el volumen de remoción de material y prolongar la vida de las fresas.
- Reducir el número de dientes y aumentar la velocidad en materiales blandos. Aumentar del número de dientes y reducir la velocidad en materiales duros.
- Los tipos de corte transversale (6, 3SP, 4) mejoran en general la eliminación de los materiales, el control y el reducimiento del tamaño de las virutas.

Sécurité

- La protection des yeux, du visage et des oreilles est fortement recommandée.
- Fraises à queue plus longue (1-3/4 pouces) doivent être utilisées à 50% de la vitesse normale.
- Les fraises à queue longue ne sont recommandées pour une utilisation bien maintenues dans partie difficilement accessibles.
- Stabiliser les fraises à queue longue par un léger contact avec la pièce avant de démarrer le meulage.
- La décoloration bleue des queues en acier, indique une chaleur excessive due à la surexploitation. Elle pourrait entraîner des ruptures et des blessures.

Conseils d'application

- Utiliser un lubrifiant ou de la cire pour empêcher le collage de la matière dans les matériaux tendres.
- En utilisant la vitesse recommandée, cela évite l'usure prématurée et/ou l'insuffisance des taux d'enlèvement de matière.
- Maintenir la concentricité de la meuleuse permet d'optimiser les taux d'enlèvement de matière et de prolonger la durée de vie des fraises.
- Réduire le nombre de dents et augmenter la vitesse dans les matériaux tendres. Augmenter nombre de dents et réduire la vitesse dans les matériaux durs.
- les types de dentures croisées (6, 3SP, 4) améliorent de façon générale l'enlèvement de matière, contrôlent et de réduisent la taille des copeaux.

Speed and Feed Recommendations – Series FGR – Fractional and Metric

FGR	Diameter	Spindle Speed rpm	Feed Rate ipm
	1/16	40,000 - 45,000	40 - 60
	3/32	25,000 - 30,000	45 - 70
	1/8	20,000 - 25,000	45 - 70
	3/16	20,000 - 24,000	35 - 65
	1/4	20,000 - 24,000	35 - 65
	3/8	15,000 - 20,000	30 - 60
	1/2	10,000 - 15,000	20 - 50

FGR-M	Diameter mm	Spindle Speed rpm	Feed Rate cm/min
	1.6	40,000 - 45,000	100 - 150
	2.4	25,000 - 30,000	115 - 180
	3	20,000 - 25,000	115 - 180
	4	20,000 - 24,000	90 - 165
	6	20,000 - 24,000	90 - 165
	10	15,000 - 20,000	75 - 150
	12	10,000 - 15,000	50 - 125

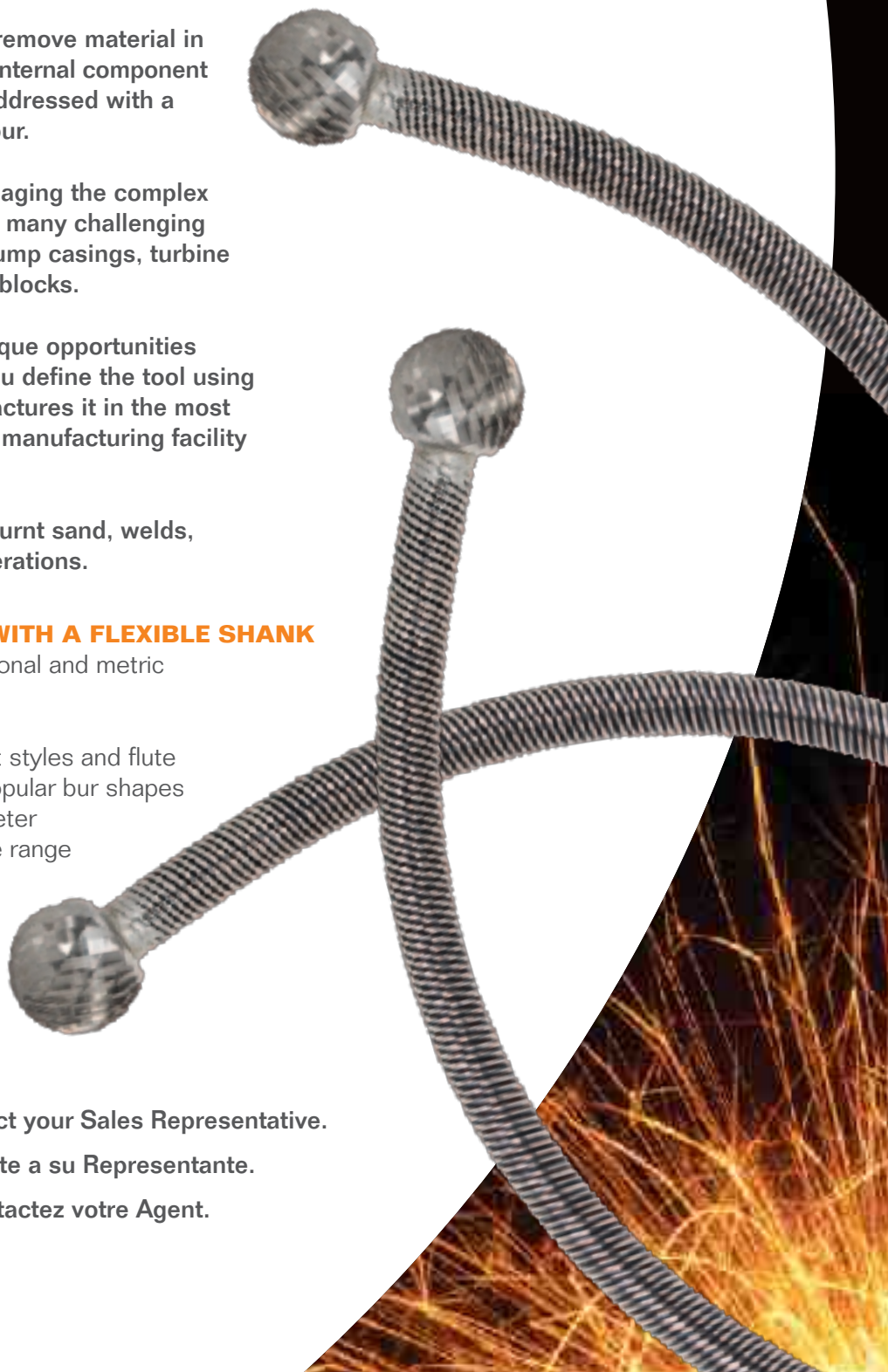
FLEXBUR

The FLEXBUR is designed to remove material in difficult to reach external and internal component features that just cannot be addressed with a rigid standard or long shank bur.

The FLEXBUR is ideal for managing the complex deburring operations found in many challenging castings such as impellers, pump casings, turbine blade assemblies and engine blocks.

Due to the wide variety of unique opportunities the FLEXBUR can address, you define the tool using this brochure and ATA manufactures it in the most technologically advanced bur manufacturing facility in the world.

Excellent for the cleaning of burnt sand, welds, fins, and various blending operations.



REACH AROUND BENDS WITH A FLEXIBLE SHANK

- Available in a variety of fractional and metric shank diameters
- Shanks up to 6" in length
- Available with a variety of cut styles and flute configurations in the most popular bur shapes up to ½" or 12.7mm in diameter
- Able to accommodate a wide range of angles and can be used in conjunction with a rigid sleeve during operation
- Tools may be sent back for reconditioning

For further information, contact your Sales Representative.

Para más información, contacte a su Representante.

Pour plus d'informations, contactez votre Agent.

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