

## Cut Styles



### Single Cut :

High stock removal & excellent surface finish on relatively hard materials.



### Double Cut :

Permits faster penetration & material removal rates, due to the chisel edge. Reduced pull improves control & reduces operator fatigue.



### Aluma Cut :

Wide flute design for rapid stock removal in soft or nonferrous materials: aluminum, magnesium, brass, zinc alloys, lead, hard rubber & most plastics.

## Suggested Speeds

Diameter		RPM
Fraction	Metric	
1 / 16	1.5	55,000-85,000
3/32	2.5	50,000-60,000
8/16	3.0	35,000-65,000
3/16	4.7	30,000-55,000
1/4	6.3	25,000-50,000
5/16	8.0	18,000-38,000
3/8	9.5	17,000-38,000
7/16	11.0	13,000-37,000
1/2	12.7	14,000-36,000
5/8	16.0	11,000-23,000
3/4	19.0	8,000-19,000
1	25.4	7,000-18,000

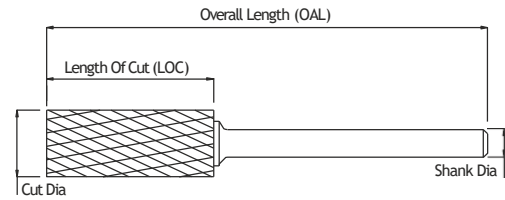
- Increase speeds for softer materials
- Decrease speeds for harder materials

## Carbide Burrs - Usage

- Most deburring operations are done by hand. To maintain maximum spindle speed, the operator must limit the amount of pressure on the work piece.
- Keep the burr moving at all times so that it will not dig into the work piece.
- Do not allow the steel shank on the burr to engage the work piece. This could cause the tool to overheat and weaken the braze joint.
- Generally, higher speeds will reduce stock removal but will improve surface finish while slower speeds will increase stock removal but lower finish.

# Shape A - Fraction

Cylindrical Without End Cut



1/8" Shank Diameter

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SA-41	1/16	1/4	1/8	A	10007	10011
SA-42	3/32	7/16	1/8	A	10015	10019
SA-43	1/8	9/16	1/8	A	10031	10035
SA-43L2	1/8	9/16	1/8	A	10040	10041
SA-43L3	1/8	9/16	1/8	A	10044	10045
SA-51	1/4	1/2	1/8	C	10063	10067
SA-50	1/4	3/16	1/8	C	10057	10059
SA-53	3/16	1/2	1/8	C	10039	10043



Regular Length

Tool #	DESCRIPTION				EDP #		
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SA-11	1/8	1/2	1/4	A	10023	10027	-
SA-14	3/16	5/8	1/4	A	10047	10051	-
SA-1	1/4	5/8	1/4	A	10071	10075	10167
SA-1A	1/4	1	1/4	A	10079	10083	-
SA-2	5/16	3/4	1/4	C	10087	10091	-
SA-3	3/8	3/4	1/4	C	10095	10099	10171
SA-3A	3/8	1	1/4	C	10103	10107	-
SA-4	7/16	1	1/4	C	10111	10115	-
SA-5	1/2	1	1/4	C	10119	10123	10175
SA-6	5/8	1	1/4	C	10127	10131	10179
SA-15	3/4	1/2	1/4	C	10135	10139	-
SA-16	3/4	3/4	1/4	C	10143	10147	-
SA-7	3/4	1	1/4	C	10151	10155	10183
SA-9	1	1	1/4	C	10159	10163	-

Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SA-1L6	1/4	5/8	1/4	A	10187	10191
SA-3L6	3/8	3/4	1/4	C	10195	10199
SA-5L6	1/2	1	1/4	C	10203	10207

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 2" OAL

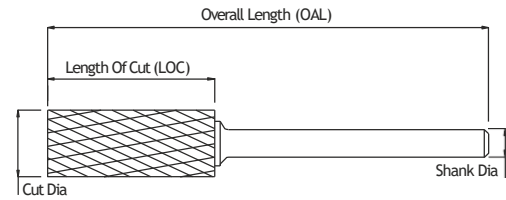
L3 is 3" OAL

L4 is 4" OAL

L6 is 6" Long Shank and available up to 1"

# Shape A - Metric

## Cylindrical Without End Cut



### Regular Length

Tool #	DESCRIPTION				EDP #		
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SA-41M	1.5	6	3	A	10012	10013	-
SA-63M	2.4	13	3	A	10016	10017	-
SA-42M	2.5	11	3	A	10020	10021	-
SA-43M	3	14	3	A	10036	10037	-
SA-11M	3	12.7	6	A	10028	10029	-
SA-52M	4	12.7	3	A	10068	10069	-
SA-53M	4.7	12.7	3	A	10072	10073	-
SA-14M	4.7	16	6	A	10054	10055	-
SA-51M	6	12.7	3	C	10064	10065	-
SA-1M	6	16	6	A	10077	10078	10169
SA-2M	8	19	6	C	10092	10093	-
SA-3M	9.5	19	6	C	10100	10101	10173
SA-4M	11	25	6	C	10116	10117	-
SA-5M	12	25	6	C	10124	10125	10177
SA-6M	16	25	6	C	10132	10133	10181
SA-7M	19	25	6	C	10152	10153	10185
SA-9M	25.4	25	6	C	10160	10161	-



BURRS

### Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SA-43ML2	3	14	3	A	10048	10049
SA-43ML3	3	14	6	A	10052	10053
SA-1ML4	6	12.7	6	A	10080	10081
SA-3ML4	9.5	19	6	C	10104	10105
SA-5ML4	12	25	6	C	10126	10128

### Extra Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SA-1ML6	6	12.7	6	A	10084	10085
SA-3ML6	9.5	19	6	C	10108	10109
SA-5ML6	12	25	6	C	10129	10130

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 50mm OAL

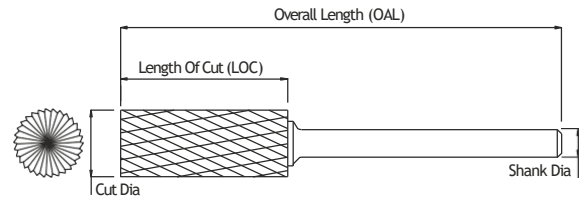
L3 is 76mm OAL

L4 is 100mm OAL

L6 is 153mm OAL

# Shape B - Fraction

Cylindrical With End Cut



1/8" Shank Diameter

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SB-41	1/16	1/4	1/8	A	10209	10210
SB-42ECO	3/32	-	1/8	A	10204	-
SB-42	3/32	7/16	1/8	A	10218	10215
SB-43	1/8	9/16	1/8	A	10219	10223
SB-43ECO	1/8	-	1/8	A	10227	-
SB-51	1/4	1/2	1/8	C	10259	10263



Regular Length

Tool #	DESCRIPTION				EDP #		
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SB-61	3/32	3/8	3/32	A	10261	10271	-
SB-11	1/8	1/2	1/4	A	10239	10241	-
SB-81	3/16	5/8	3/16	A	10262	10272	-
SB-14	3/16	5/8	1/4	A	10243	10247	-
SB-1ECO	1/4	-	1/4	A	10250	-	-
SB-1	1/4	5/8	1/4	A	10275	10279	10276
SB-1A	1/4	1	1/4	A	10283	10287	-
SB-2	5/16	3/4	1/4	C	10291	10295	-
SB-3	3/8	3/4	1/4	C	10299	10303	10302
SB-3A	3/8	1	1/4	C	10307	10311	-
SB-4	7/16	1	1/4	C	10315	10319	-
SB-5	1/2	1	1/4	C	10323	10327	10326
SB-6	5/8	1	1/4	C	10331	10335	10334
SB-15	3/4	1/2	1/4	C	10339	10343	10345
SB-16	3/4	3/4	1/4	C	10347	10351	-
SB-7	3/4	1	1/4	C	10355	10359	-
SB-9	1	1	1/4	C	10371	10375	-

Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SB-43L2	1/8	9/16	1/8	A	10244	10245
SB-43L3	1/8	9/16	1/8	A	10228	10231
SB-1L6	1/4	5/8	1/4	C	10284	10282

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

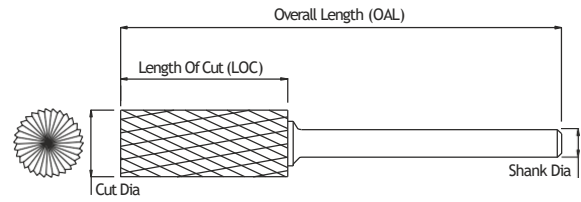
ECO - End Cut Only

L2 is 2" OAL      L4 is 4" OAL

L3 is 3" OAL      L6 is 6" Long Shank and available up to 1"

# Shape B - Metric

Cylindrical With End Cut



## Regular Length

Tool #	DESCRIPTION				EDP #		
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SB-41M	1.5	6	3	A	10211	10212	-
SB-63M	2.4	13	3	A	10213	10214	-
SB-42MECO	2.5	-	3	A	10216	-	-
SB-43M	3	14	3	A	10224	10225	-
SB-11M	3	12.7	6	A	10234	10235	-
SB-52M	4	12.7	3	A	10236	10237	-
SB-53M	4.7	12.7	3	A	10238	10242	-
SB-14M	4.7	16	6	A	10240	10246	-
SB-50M	6	5	3	C	10248	10249	-
SB-51M	6	12.7	3	C	10264	10265	-
SB-1MECO	6	-	6	A	10280	-	-
SB-2M	8	19	6	C	10296	10297	-
SB-3M	9.5	19	6	C	10304	10305	10376
SB-43ML3	3	14	3	A	10232	10233	-
SB-4M	11	25	6	C	10320	10321	-
SB-5M	12	25	6	C	10328	10329	10377
SB-6M	16	25	6	C	10336	10337	10378



BURRS

## Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SB-43ML2	3	14	3	A	10229	10230
SB-1ML4	6	12.7	6	A	10288	10289
SB-3ML4	9.5	19	6	C	10308	10309
SB-5ML4	12	25	6	C	10332	10333

## Extra Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SB-1ML6	6	12.7	6	A	10292	10293
SB-3ML6	9.5	19	6	C	10312	10313
SB-5ML6	12.7	25	6	C	10338	10340

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

ECO - End Cut Only

L2 is 50mm OAL

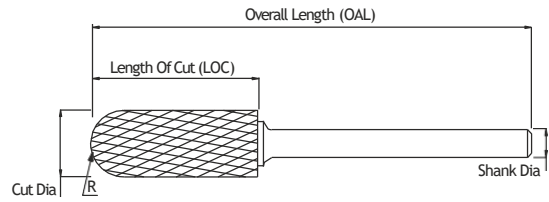
L3 is 76mm OAL

L4 is 100mm OAL

L6 is 153mm OAL

# Shape C - Fraction

Cylindrical With Radius End



1/8" Shank Diameter

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SC-41	3/32	7/16	1/8	A	10379	10383
SC-42	1/8	9/16	1/8	A	10395	10399
SC-42L2	1/8	9/16	1/8	A	10402	10403
SC-42L3	1/8	9/16	1/8	A	10404	10406
SC-51	1/4	1/2	1/8	C	10419	10423



Regular Length

Tool #	DESCRIPTION				EDP #		
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SC-11	1/8	1/2	1/4	A	10387	10391	-
SC-14	3/16	5/8	1/4	A	10411	10415	-
SC-1	1/4	5/8	1/4	A	10427	10431	10499
SC-1A	1/4	1	1/4	A	10435	10439	-
SC-2	5/16	3/4	1/4	C	10443	10447	-
SC-3	3/8	3/4	1/4	C	10451	10455	10503
SC-3A	3/8	1	1/4	C	10459	10463	-
SC-4	7/16	1	1/4	C	10467	10471	-
SC-5	1/2	1	1/4	C	10475	10479	10507
SC-6	5/8	1	1/4	C	10483	10487	10511
SC-7	3/4	1	1/4	C	10491	10495	10515
SC-9	1	1	1/4	C	10516	10517	-

Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SC-1L6	1/4	5/8	1/4	A	10519	10523
SC-3L6	3/8	3/4	1/4	C	10527	10531
SC-5L6	1/2	1	1/4	C	10535	10539

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 2" OAL

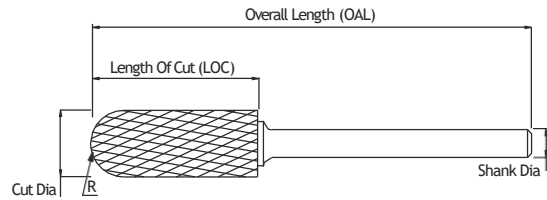
L3 is 3" OAL

L4 is 4" OAL

L6 is 6" Long Shank and available up to 1"

# Shape C - Metric

## Cylindrical With Radius End



### Regular Length

Tool #	DESCRIPTION				EDP #		
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SC-41M	2.5	11	3	A	10384	10385	-
SC-42M	3	14	3	A	10400	10401	-
SC-11M	3	12.7	6	A	10392	10393	-
SC-52M	4	12.7	3	C	10388	10389	-
SC-53M	4.7	12.7	3	C	10396	10397	-
SC-14M	4.7	16	6	A	10416	10417	-
SC-51M	6	12.7	3	C	10424	10425	-
SC-1M	6	16	6	A	10432	10433	10656
SC-2M	8	19	6	C	10448	10449	-
SC-3M	9.5	19	6	C	10456	10457	10660
SC-4M	11	25	6	C	10472	10473	-
SC-5M	12	25	6	C	10480	10481	10664
SC-6M	16	25	6	C	10488	10489	10668
SC-7M	19	25	6	C	10644	10645	-



BURRS

### Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SC-43ML2	3	14	3	A	10409	10405
SC-1ML4	6	12.7	6	A	10440	10441
SC-3ML4	9.5	19	6	C	10564	10565
SC-5ML4	12	25	6	C	10484	10485

### Extra Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SC-43ML3	3	14	3	A	10410	10407
SC-1ML6	6	12.7	6	A	10524	10525
SC-3ML6	9.5	19	6	C	10533	10534
SC-5ML6	12	25	6	C	10536	10537

Note:

Shank Type A: Solid Carbide Shank, C: Braze Shank

L2 is 50mm OAL

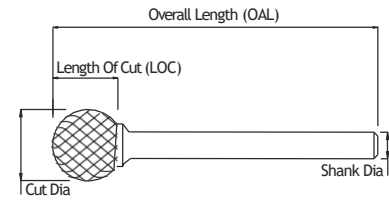
L3 is 76mm OAL

L4 is 100mm OAL

L6 is 153mm OAL

# Shape D - Fraction

Ball End



1/8" Shank Diameter

DESCRIPTION					EDP #	
Tool #	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SD-41	3/32	3/32	1/8	A	10541	10542
SD-52	5/32	5/32	1/8	C	10586	10588
SD-42	1/8	1/8	1/8	A	10543	10547
SD-42L2	1/8	1/8	1/8	A	10546	10566
SD-42L3	1/8	1/8	1/8	A	10554	10550
SD-51	1/4	7/32	1/8	C	10583	10587



Regular Length

DESCRIPTION					EDP #		
Tool #	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SD-61	3/32	3/32	3/32	A	10538	10540	-
SD-11	1/8	3/32	1/4	A	10551	10555	-
SD-14	3/16	1/8	1/4	A	10575	10579	-
SD-1	1/4	7/32	1/4	A	10591	10595	10655
SD-2	5/16	1/4	1/4	C	10599	10603	-
SD-3	3/8	5/16	1/4	C	10607	10611	10659
SD-4	7/16	3/8	1/4	C	10615	10619	-
SD-5	1/2	7/16	1/4	C	10623	10627	10663
SD-6	5/8	9/16	1/4	C	10631	10635	10667
SD-7	3/4	11/16	1/4	C	10639	10643	10671
SD-9	1	15/16	1/4	C	10647	10651	-
SD-81	3/16	5/32	3/16	C	10567	10571	-

Burrs

Long Length

DESCRIPTION					EDP #	
Tool #	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SD-1L6	1/4	7/32	1/4	A	10675	10679
SD-3L6	3/8	5/16	1/4	C	10683	10687
SD-5L6	1/2	7/16	1/4	C	10691	10695

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 2" OAL

L3 is 3" OAL

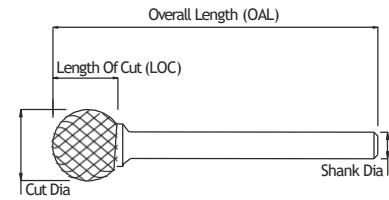
L4 is 4" OAL

L6 is 6" Long Shank and available up to 1"



# Shape D - Metric

Ball End



## Regular Length

Tool #	DESCRIPTION				EDP #		
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SD-41M	2.5	2.3	3	A	10544	10545	-
SD-42M	3	3	3	A	10548	10549	-
SD-11M	3	2.4	6	A	10556	10557	-
SD-53M	4.7	4.5	3	C	10560	10561	-
SD-14M	4.7	3	6	A	10562	10563	-
SD-51M	6	5.5	3	C	10580	10581	-
SD-1M	6	5.5	6	A	10596	10597	10657
SD-2M	8	6	6	C	10604	10605	-
SD-3M	9.5	8	6	C	10612	10613	10661
SD-4M	11	9.5	6	C	10620	10621	-
SD-5M	12	11	6	C	10628	10629	10665
SD-6M	16	14	6	C	10636	10637	10672
SD-7M	19	17.5	6	C	10646	10649	-
SD-9M	25.4	24	6	C	10652	10653	-



Burrs

## Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SD-42ML2	3	2.4	3	A	10552	10553
SD-1ML4	6	5.5	6	A	10600	10601
SD-3ML4	9.5	8	6	C	10616	10617
SD-5ML4	12	11	6	C	10632	10633

## Extra Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SD-42ML3	3	2.4	3	A	10558	10559
SD-1ML6	6	5.5	6	A	10680	10681
SD-3ML6	9.5	8	6	C	10688	10689
SD-5ML6	12	11	6	C	10696	10697

Note:

Shank Type A: Solid Carbide Shank, C: Braze Shank

L2 is 50mm OAL

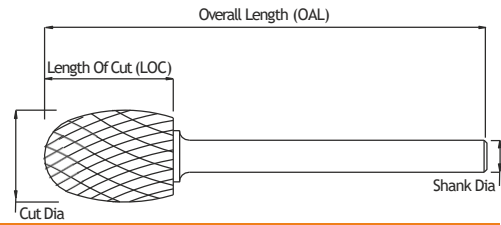
L3 is 76mm OAL

L4 is 100mm OAL

L6 is 153mm OAL

# Shape E - Fraction

Oval



1/8" Shank Diameter

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SE-41	1/8	7/32	1/8	A	10699	10703
SE-41L2	1/8	7/32	1/8	A	10700	10709
SE-41L3	1/8	7/32	1/8	A	10711	10713
SE-53	3/16	9/32	1/8	C	10718	10721
SE-51	1/4	3/8	1/8	C	10715	10719



Regular Length

Tool #	DESCRIPTION				EDP #		
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SE-11	3/16	5/16	1/4	A	10725	10726	-
SE-1	1/4	3/8	1/4	A	10723	10727	10763
SE-3	3/8	5/8	1/4	C	10731	10735	10764
SE-5	1/2	7/8	1/4	C	10739	10743	10767
SE-6	5/8	1	1/4	C	10747	10751	10771
SE-7	3/4	1	1/4	C	10755	10759	10775

Burrs

Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SE-1L6	1/4	3/8	1/4	A	10779	10783
SE-3L6	3/8	5/8	1/4	C	10787	10791
SE-5L6	1/2	7/8	1/4	C	10795	10799

Note:

Shank Type A: Solid Carbide Shank, C: Braze Shank

L2 is 2" OAL

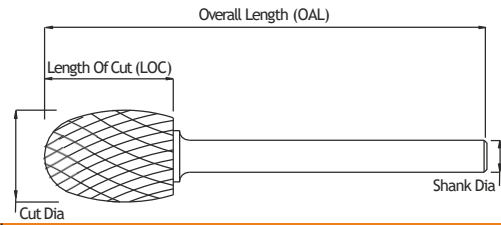
L3 is 3" OAL

L4 is 4" OAL

L6 is 6" Long Shank and available up to 1"

# Shape E - Metric

Oval



## Regular Length

Tool #	DESCRIPTION				EDP #		
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SE-41M	3	5.5	3	A	10704	10705	-
SE-53M	4.7	7.1	3	C	10710	10712	-
SE-51M	6	9.5	3	C	10716	10717	-
SE-1M	6	9.5	6	A	10724	10730	10765
SE-3M	9.5	16	6	C	10734	10736	10766
SE-5M	12	22	6	C	10740	10741	10768
SE-6M	16	25	6	C	10752	10753	10772
SE-7M	19	25	6	C	10760	10761	10776

## Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SE-41ML2	3	5.5	3	A	10706	10707
SE-1ML4	6	9.5	6	A	10720	10722
SE-3ML4	9.5	16	6	C	10732	10733
SE-5ML4	12	22	6	C	10744	10745

## Extra Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SE-41ML3	3	5.5	3	A	10708	10714
SE-1ML6	6	9.5	6	A	10784	10785
SE-3ML6	9.5	16	6	C	10792	10793
SE-5ML6	12	22	6	C	10800	10801

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 50mm OAL

L3 is 76mm OAL

L4 is 100mm OAL

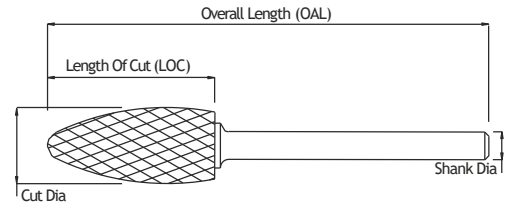
L6 is 153mm OAL



BURRS

# Shape F - Fraction

Tree Shape With Radius



1/8" Shank Diameter

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SF-53	3/16	1/2	1/8	C	10840	10841
SF-41	1/8	1/4	1/8	A	10803	10807
SF-42	1/8	1/2	1/8	A	10811	10815
SF-42L2	1/8	1/2	1/8	A	10834	10836
SF-42L3	1/8	1/2	1/8	A	10821	10822
SF-51	1/4	1/2	1/8	C	10835	10839



Regular Length

Tool #	DESCRIPTION				EDP #		
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SF-1	1/4	5/8	1/4	A	10843	10847	10915
SF-1A	1/4	1	1/4	A	10846	10850	-
SF-11	1/8	1/2	1/4	A	10819	10823	-
SF-3	3/8	3/4	1/4	C	10851	10855	10919
SF-4	7/16	1	1/4	C	10859	10863	-
SF-13	1/2	3/4	1/4	C	10867	10871	-
SF-5	1/2	1	1/4	C	10875	10879	10923
SF-6	5/8	1	1/4	C	10883	10887	10927
SF-7	3/4	1	1/4	C	10891	10895	10931
SF-14	3/4	1-1/4	1/4	C	10899	10903	-
SF-15	3/4	1-1/2	1/4	C	10907	10911	-

Long Length

Tool #	DESCRIPTION				EDP #		
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SF-1L6	1/4	1/2	1/4	A	10935	10939	-
SF-3L6	3/8	3/4	1/4	C	10943	10947	-
SF-5L6	1/2	1	1/4	C	10949	10950	10925
SF-7L6	3/4	1	1/4	C	10890	10893	-

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 2" OAL

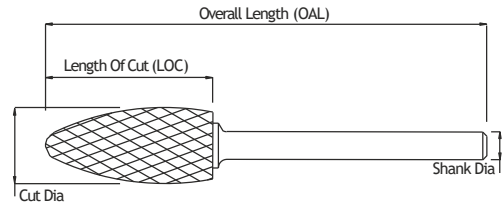
L3 is 3" OAL

L4 is 4" OAL

L6 is 6" Long Shank and available up to 1"

# Shape F - Metric

Tree Shape With Radius



## Regular Length

Tool #	DESCRIPTION				EDP #		
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SF-41M	3	6.3	3	A	10808	10809	-
SF-42M	3	12.7	3	A	10816	10817	-
SF-42ML3	3	12.7	3	A	10826	10827	-
SF-11M	3	12.7	6	A	10828	10829	-
SF-53M	4.7	12.7	3	C	10830	10831	-
SF-51M	6	12.7	3	C	10832	10833	-
SF-1M	6	16	6	A	10848	10849	10916
SF-3M	9.5	19	6	C	10856	10857	10920
SF-4M	11	25	6	C	10864	10865	-
SF-13M	12	19	6	C	10872	10873	-
SF-5M	12	25	6	C	10880	10881	10924
SF-6M	16	25	6	C	10888	10889	10928
SF-7M	19	25	6	C	10896	10897	10929
SF-14M	19	32	6	C	10904	10905	-
SF-15M	19	38	6	C	10912	10913	-



Burrs

## Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SF-42ML2	3	12.7	3	A	10824	10825
SF-1ML4	6	12.7	6	A	10852	10853
SF-3ML4	9.5	19	6	C	10860	10861
SF-5ML4	12	25	6	C	10884	10885

## Extra Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SF-1ML6	6	12	6	A	10932	10933
SF-3ML6	9.5	19	6	C	10936	10937
SF-5ML6	12.7	25	6	C	10940	10941

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 50mm OAL

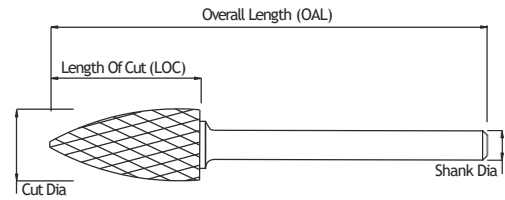
L3 is 76mm OAL

L4 is 100mm OAL

L6 is 153mm OAL

# Shape G - Fraction

Tree With Pointed End



1/8" Shank Diameter

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SG-41	1/8	1/4	1/8	A	10951	10955
SG-42	1/8	5/16	1/8	A	10988	10986
SG-43	1/8	3/8	1/8	A	10956	10957
SG-44	1/8	1/2	1/8	A	10954	10958
SG-44L2	1/8	1/2	1/8	A	11017	11018
SG-44L3	1/8	1/4	1/8	A	11024	11022
SG-51	1/4	1/2	1/8	C	10960	10961
SG-53	3/16	1/2	1/8	C	11042	11044



Burrs

Regular Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SG-1	1/4	5/8	1/4	A	10959	10963
SG-1A	1/4	1	1/4	A	10989	10966
SG-2	5/16	3/4	1/4	C	10967	10971
SG-3	3/8	3/4	1/4	C	10975	10979
SG-13	1/2	3/4	1/4	C	10983	10987
SG-5	1/2	1	1/4	C	10991	10995
SG-6	5/8	1	1/4	C	10999	11003
SG-7	3/4	1	1/4	C	11007	11011
SG-15	3/4	1-1/2	1/4	C	11015	11019

Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SG-1L6	1/4	5/8	1/4	A	11023	11027
SG-3L6	3/8	3/4	1/4	C	11031	11035
SG-5L6	1/2	1	1/4	C	11039	11043

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 2" OAL

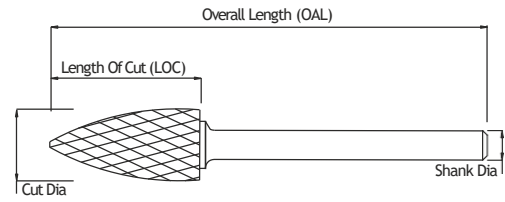
L3 is 3" OAL

L4 is 4" OAL

L6 is 6" Long Shank and available up to 1"

# Shape G - Metric

Tree With Pointed End



## Regular Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SG-41M	3	6.3	3	A	10942	10944
SG-43M	3	9.5	3	A	10945	10946
SG-44M	3	12.7	3	A	10952	10953
SG-53M	4.7	12.7	3	A	10968	10969
SG-51M	6	12.7	3	C	10970	10974
SG-1M	6	16	6	A	10964	10965
SG-2M	8	19	6	C	10972	10973
SG-3M	9.5	19	6	C	10976	10977
SG-5MZ	12	25	6	C	10996	10997
SG-13M	12	19	6	C	11004	11005
SG-5M	12	25	6	C	11012	11013
SG-6M	16	25	6	C	11020	11021
SG-7M	19	25	6	C	11008	11009
SG-15M	19	38	6	C	11016	11010



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## Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SG-44ML2	3	12.7	3	A	10992	10994
SG-1ML4	6	12.7	6	A	10978	10982
SG-3ML4	9.5	19	6	C	10984	10985
SG-5ML4	12.7	25	6	C	11000	11001

## Extra Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SG-44ML3	3	12.7	3	A	10993	10962
SG-1ML6	6	12.7	6	A	10990	11025
SG-3ML6	9.5	19	6	C	11032	11033
SG-5ML6	12	25	6	C	11036	11037

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 50mm OAL

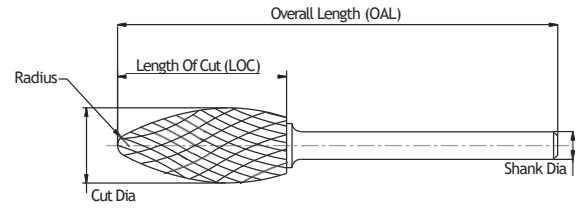
L3 is 76mm OAL

L4 is 100mm OAL

L6 is 153mm OAL

# Shape H - Fraction

Flame



## 1/8" Shank Diameter

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SH-41	1/8	1/4	1/8	A	11047	11051
SH-41L2	1/8	1/4	1/8	A	11092	11093
SH-41L3	1/8	1/4	1/8	A	11096	11097
SH-53	3/16	3/8	1/8	C	11053	11054



## Regular Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SH-1	1/4	5/8	1/4	A	11055	11059
SH-2	5/16	3/4	1/4	C	11063	11067
SH-5	1/2	1-1/4	1/4	C	11071	11075
SH-6	5/8	1-7/16	1/4	C	11079	11083
SH-7	3/4	1-5/8	1/4	C	11087	11091

## Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SH-2L6	5/16	3/4	1/4	C	11095	11099
SH-5L6	1/2	1-1/4	1/4	C	11103	11107

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 2" OAL

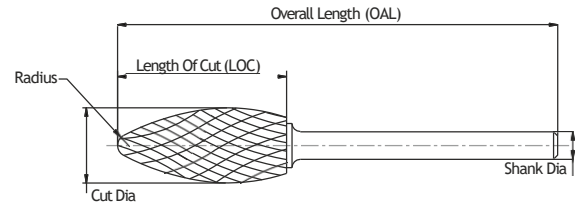
L3 is 3" OAL

L4 is 4" OAL

L6 is 6" Long Shank and available up to 1"



# Shape H - Metric Flame



## Regular Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SH-41M	3	6.3	3	A	11045	11046
SH-53M	4.7	9.5	3	A	11056	11057
SH-1M	6	16	6	A	11061	11062
SH-2M	8	19	6	C	11064	11065
SH-5M	12	31	6	C	11076	11077
SH-6M	16	36	6	C	11084	11085
SH-7M	19	41	6	C	11088	11089

## Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SH-41ML2	3	6.3	3	A	11048	11049
SH-2ML4	8	19	6	C	11073	11074
SH-5ML4	12	31	6	C	11080	11081

## Extra Long Length

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SH-41ML3	3	6.3	3	A	11050	11052
SH-2ML6	8	19	6	C	11098	11101
SH-5ML6	12	31	6	C	11104	11105

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 50mm OAL

L3 is 76mm OAL

L4 is 100mm OAL

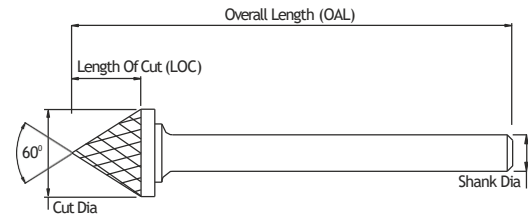
L6 is 153mm OAL



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# Shape J - Fraction and Metric

60° Cone Shape



## 1/8" Shank Diameter - Fraction

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SJ-42	1/8	3/32	1/8	A	11111	11115

## Regular Length - Fraction

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SJ-1	1/4	3/16	1/4	A	11119	11123
SJ-3	3/8	1/4	1/4	C	11127	11131
SJ-5	1/2	7/16	1/4	C	11135	11139
SJ-6	5/8	1/2	1/4	C	11143	11147
SJ-7	3/4	5/8	1/4	C	11151	11155
SJ-9	1	3/4	1/4	C	11159	11163



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## Regular Length - Metric

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SJ-42M	3	2.3	3	A	11108	11109
SJ-1M	6	5	6	A	11116	11117
SJ-3M	9.5	8	6	C	11124	11125
SJ-5M	12	11	6	C	11132	11133
SJ-6M	16	14	6	C	11140	11141
SJ-7M	19	16	6	C	11148	11149
SJ-9M	25.4	23	6	C	11156	11157

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 2" OAL

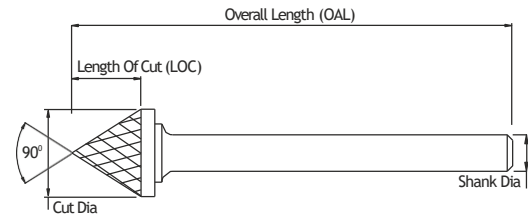
L3 is 3" OAL

L4 is 4" OAL

L6 is 6" Long Shank and available up to 1"

# Shape K - Fraction and Metric

90° Cone Shape



## 1/8" Shank Diameter - Fraction

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SK-42	1/8	1/16	1/8	A	11167	11171
SK-81	3/16	3/32	3/16	A	11175	11179

## Regular Length - Fraction

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SK-1	1/4	1/8	1/4	A	11183	11187
SK-3	3/8	3/16	1/4	C	11191	11195
SK-5	1/2	1/4	1/4	C	11199	11203
SK-6	5/8	5/16	1/4	C	11207	11211
SK-7	3/4	3/8	1/4	C	11215	11219
SK-9	1	1/2	1/4	C	11223	11227



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## Regular Length - Metric

Tool #	DESCRIPTION				EDP #	
	Cut Dia	LOC	Shank Dia	Shank Type	Single Cut	Double Cut
SK-42M	3	1.5	3	A	11164	11165
SK-1M	6	3	6	A	11180	11181
SK-3M	9.5	4.7	6	C	11188	11189
SK-5M	12	6.3	6	C	11196	11197
SK-6M	16	8	6	C	11204	11205
SK-7M	19	9	6	C	11212	11213
SK-9M	25.4	12.7	6	C	11220	11221

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 2" OAL

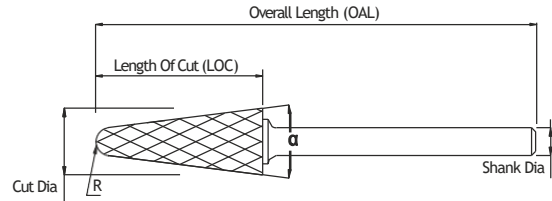
L3 is 3" OAL

L4 is 4" OAL

L6 is 6" Long Shank and available up to 1"

# Shape L - Fraction

Taper With Radius End



1/8" Shank Diameter

Tool #	DESCRIPTION					EDP #	
	Cut Dia	LOC	Shank Dia	Included Angle	Shank Type	Single Cut	Double Cut
SL-41	1/8	3/8	1/8	14°	A	11231	11235
SL-42	1/8	1/2	1/8	14°	A	11239	11243
SL-42L2	1/8	1/2	1/8	14°	A	11222	11257
SL-42L3	1/8	1/2	1/8	14°	A	11258	11251
SL-53	3/16	1/2	1/8	14°	C	11241	11250



Regular Length

Tool #	DESCRIPTION					EDP #		
	Cut Dia	LOC	Shank Dia	Included Angle	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SL-1	1/4	5/8	1/4	14°	A	11255	11259	11256
SL-2	5/16	7/8	1/4	14°	C	11263	11267	-
SL-3	3/8	1-1/16	1/4	14°	C	11271	11275	11303
SL-4	1/2	1-1/8	1/4	14°	C	11279	11283	11305
SL-5	5/8	1-3/16	1/4	14°	C	11287	11291	11307
SL-6	5/8	1-5/16	1/4	14°	C	11293	11298	11311
SL-7	3/4	1-1/2	1/4	14°	C	11295	11299	11314

Burrs

Long Length - 6" Long Steel Shank

Tool #	DESCRIPTION					EDP #	
	Cut Dia	LOC	Shank Dia	Included Angle	Shank Type	Single Cut	Double Cut
SL-1L6	1/4	5/8	1/4	14°	A	11315	11319
SL-3L6	3/8	1-1/16	1/4	14°	C	11323	11327
SL-4L6	1/2	1-1/8	1/4	14°	C	11331	11335

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 2" OAL

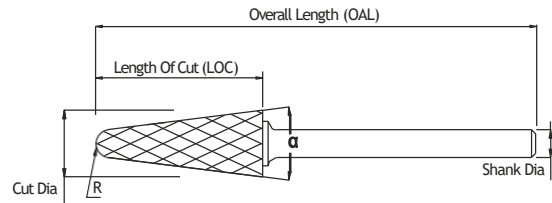
L3 is 3" OAL

L4 is 4" OAL

L6 is 6" Long Shank and available up to 1"

# Shape L - Metric

Taper With Radius End



## Regular Length

Tool #	Cut Dia	DESCRIPTION				EDP #		
		LOC	Shank Dia	Included Angle	Shank Type	Single Cut	Double Cut	Aluma Cut NF
SL-41M	3	9.5	3	14°	A	11228	11229	-
SL-42M	3	12.7	3	14°	A	11244	11246	-
SL-51M	6	13	3	14°	C	11253	11254	-
SL-53M	4	12.7	3	14°	C	11262	11252	-
SL-1M	6	16	6	14°	A	11260	11261	11300
SL-2M	8	22	6	14°	C	11268	11269	-
SL-3M	9.5	27	6	14°	C	11276	11277	11304
SL-4M	12	28	6	14°	C	11284	11285	11306
SL-4M	12	28	8	14°	C	11274	11294	-
SL-5M	16	33	6	14°	C	11278	11282	-
SL-6M	16	33	6	14°	C	11290	11292	11312
SL-7M	19	38	6	14°	C	11296	11297	11313



BURRS

## Long Length

Tool #	Cut Dia	DESCRIPTION				EDP #	
		LOC	Shank Dia	Included Angle	Shank Type	Single Cut	Double Cut
SL-42ML2	3	12.7	3	14°	A	11245	11247
SL-1ML4	6	16	6	14°	A	11264	11265
SL-3ML4	9.5	27	6	14°	C	11280	11281
SL-5ML4	12	28	6	14°	C	11288	11289

## Extra Long Length

Tool #	Cut Dia	DESCRIPTION				EDP #	
		LOC	Shank Dia	Included Angle	Shank Type	Single Cut	Double Cut
SL-42ML3	3	12.7	3	14°	A	11248	11249
SL-1ML6	6	16	6	14°	A	11316	11317
SL-3ML6	9.5	27	6	14°	C	11320	11321
SL-5ML6	12	28	6	14°	C	11336	11337

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 50mm OAL

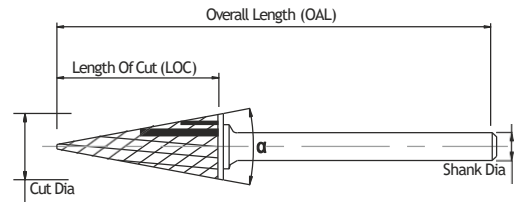
L3 is 76mm OAL

L4 is 100mm OAL

L6 is 153mm OAL

# Shape M - Fraction

Cone Shape



1/8" Shank Diameter

Tool #	DESCRIPTION					EDP #	
	Cut Dia	LOC	Shank Dia	Included Angle	Shank Type	Single Cut	Double Cut
SM-41	1/8	3/8	1/8	12°	A	11339	11343
SM-42	1/8	7/16	1/8	14°	A	11347	11351
SM-42L2	1/8	7/16	1/8	14°	A	11348	11349
SM-42L3	1/8	7/16	1/8	14°	A	11358	11362
SM-43	1/8	5/8	1/8	7°	A	11355	11359
SM-53	3/16	1/2	1/8	16°	C	11370	11380
SM-51	1/4	1/2	1/8	10°	C	11371	11375



Regular Length

Tool #	DESCRIPTION					EDP #	
	Cut Dia	LOC	Shank Dia	Included Angle	Shank Type	Single Cut	Double Cut
SM-1	1/4	1/2	1/4	22°	A	11387	11391
SM-2	1/4	3/4	1/4	14°	A	11395	11399
SM-3	1/4	1	1/4	10°	A	11403	11407
SM-4	3/8	5/8	1/4	28°	C	11411	11415
SM-5	1/2	7/8	1/4	28°	C	11419	11423
SM-6	5/8	1	1/4	31°	C	11427	11431

Long Length - 6" Long Steel Shank

Tool #	DESCRIPTION					EDP #	
	Cut Dia	LOC	Shank Dia	Included Angle	Shank Type	Single Cut	Double Cut
SM-1L6	1/4	1/2	1/4	22°	A	11426	11430
SM-3L6	1/4	1	1/4	10°	A	11434	11438
SM-4L6	3/8	5/8	1/4	28°	C	11436	11442
SM5L6	1/2	7/8	1/4	28°	C	11444	11452

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank

L2 is 2" OAL

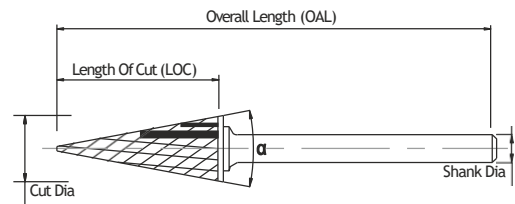
L3 is 3" OAL

L4 is 4" OAL

L6 is 6" Long Shank and available up to 1"

# Shape M - Metric

Cone Shape



Regular Length

Tool #	DESCRIPTION					EDP #	
	Cut Dia	LOC	Shank Dia	Included Angle	Shank Type	Single Cut	Double Cut
<b>SM-41M</b>	3	8.7	3	12°	A	11340	11341
<b>SM-42M</b>	3	11	3	14°	A	11352	11353
<b>SM-43M</b>	3	16	3	7°	A	11356	11357
<b>SM-53M</b>	4.7	12.7	3	16°	C	11376	11377
<b>SM-1M</b>	6	12.7	6	22°	A	11392	11393
<b>SM-2M</b>	6	19	6	14°	A	11400	11401
<b>SM-3M</b>	6	25	6	10°	A	11408	11409
<b>SM-51M</b>	6	12.7	3	22°	C	11360	11361
<b>SM-4M</b>	9.5	16	6	28°	C	11416	11417
<b>SM-5M</b>	12	22	6	28°	C	11424	11425
<b>SM-6M</b>	16	25	6	31°	C	11428	11429

Note:

Shank Type A: Solid Carbide Shank, C: Braze Shank

L2 is 50mm OAL

L3 is 76mm OAL

L4 is 100mm OAL

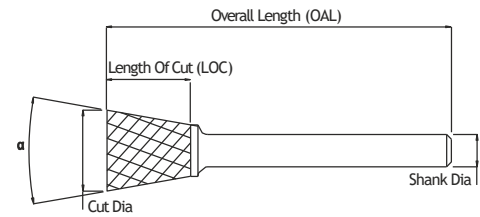
L6 is 153mm OAL



BURRS

# Shape N - Fraction and Metric

Inverted Cone Shape



## 1/8" Shank Diameter - Fraction

Tool #	DESCRIPTION					EDP #	
	Cut Dia	LOC	Shank Dia	Included Angle	Shank Type	Single Cut	Double Cut
SN-41	3/32	1/8	1/8	10°	A	11435	11439
SN-42	1/8	3/16	1/8	10°	A	11443	11447
SN-51	1/4	1/4	1/8	10°	C	11459	11463



## Regular Length - Fraction

Tool #	DESCRIPTION					EDP #	
	Cut Dia	LOC	Shank Dia	Included Angle	Shank Type	Single Cut	Double Cut
SN-1	1/4	5/16	1/4	10°	A	11467	11471
SN-2	3/8	3/8	1/4	13°	C	11472	11473
SN-4	1/2	1/2	1/4	28°	C	11483	11487
SN-6	5/8	3/4	1/4	18°	C	11491	11495
SN-7	3/4	1	1/4	30°	C	11499	11503

## Regular Length - Metric

Tool #	DESCRIPTION					EDP #	
	Cut Dia	LOC	Shank Dia	Included Angle	Shank Type	Single Cut	Double Cut
SN-41M	2.5	3	3	10°	A	11432	11433
SN-42M	3	4.7	3	10°	A	11440	11441
SN-53M	4.7	6.3	3	10°	C	11448	11449
SN-51M	6.3	6.3	3	10°	C	11450	11451
SN-1M	6	8	6	10°	A	11464	11465
SN-2M	9.5	9.5	6	13°	C	11468	11469
SN-3M	12	12.7	6	16°	C	11476	11477
SN-4M	12	12.7	6	28°	C	11480	11481
SN-5M	16	16	6	19°	C	11488	11489
SN-6M	16	19	6	18°	C	11492	11493
SN-8M	19	19	6	21°	C	11504	11505

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank



# Burrs - Sets

1/8", 1/4" and 1/4" Burrs Set

## 1/8" Shank Diameter - Fraction

DESCRIPTION		
Tool Dia	LOC	Shank Dia
SA-43	9/16	1/8
SC-42	9/16	1/8
SD-42	1/8	1/8
SJ-42	3/32	1/8
SL-41	3/8	1/8
SN-42	3/16	1/8
SH-41	1/4	1/8
SL-42	1/2	1/8
S M - 4 2		7 / 1 6 1 / 8
SG-43	3/8	1/8

Solid Carbide Burrs  
10 Piece set in plastic case  
Double Cut Order # 00050  
Single Cut Order # 00051

DESCRIPTION		
Tool Dia	LOC	Shank Dia
SA-43	9/16	1/8
SC-42	9/16	1/8
SD-42	1/8	1/8
S E - 4 1		7 / 3 2 1 / 8
SF-42	1/2	1/8
SG-41	1/4	1/8
SH-41	1/4	1/8
SL-41	3/8	1/8
S M - 4 2		7 / 1 6 1 / 8
SN-41	1/8	1/8

Solid Carbide Burrs  
10 Piece set in plastic case  
Double Cut Order # 10000  
Single Cut Order # 10001



## 1/4" Shank Diameter - Fraction

DESCRIPTION		
Tool Dia	LOC	Shank Dia
SA-1	5/8	1/4
SB-1	5/8	1/4
SC-1	5/8	1/4
S E - 1	3 / 8	1 / 4
SF-1	5/8	1/4
SG-1	5/8	1/4
SL-1	5/8	1/4
S M - 1	1 / 2	1 / 4

Solid Carbide Burrs  
8 Piece set in plastic case  
Double Cut Order # 10003  
Single Cut Order # 10004

## 1/2" Shank Diameter - Fraction

DESCRIPTION		
Tool Dia	LOC	Shank Dia
S A - 5 1		1/2
S C - 5 1		1/2
S D - 5 7 / 1 6		1 / 2
S E - 5 7 / 8		1 / 2
S G - 5 1		1/2
S H - 5 1 - 1 / 4		1 / 2
S K - 5 1 / 4		1 / 2
S M - 5 7 / 8		1 / 2

Solid Carbide Burrs  
8 Piece set in plastic case  
Double Cut Order # 10002



Burrs

Note:

Shank Type A: Solid Carbide Shank, C: Brazed Shank  
L2 is 2" OAL L4 is 4" OAL  
L3 is 3" OAL L6 is 6" Long Shank and available up to 1"

## General Tolerances

Dia. Range mm	For shafts				For Holes				Dia. Range mm	For shafts				For Holes			
	h <sub>s</sub>	h <sub>e</sub>	h <sub>s</sub>	h <sub>11</sub>	H <sub>e</sub>	H <sub>7</sub>	H <sub>8</sub>	H <sub>11</sub>		h <sub>s</sub>	h <sub>e</sub>	h <sub>s</sub>	h <sub>11</sub>	H <sub>e</sub>	H <sub>7</sub>	H <sub>8</sub>	H <sub>11</sub>
<3	0	0	0	0	+6	+10	+14	+60	>80 to 120	0	0	0	0	+22	+35	+54	+220
	-4	-6	-25	-60	0	0	0	0		-15	-22	-87	-220	0	0	0	0
>3 to 6	0	0	0	0	+8	+12	+18	+75	>120 to 180	0	0	0	0	+25	+40	+63	+250
	-5	-8	-30	-75	0	0	0	0		-18	-25	-100	-250	0	0	0	0
>6 to 10	0	0	0	0	+9	+15	+22	+90	>180 to 250	0	0	0	0	+29	+46	+72	+290
	-6	-9	-36	-90	0	0	0	0		-20	-29	-115	-290	0	0	0	0
>10 to 18	0	0	0	0	+11	+18	+27	+110	>250 to 315	0	0	0	0	+32	+52	+81	+320
	-8	-11	-43	-110	0	0	0	0		-23	-32	-130	-320	0	0	0	0
>18 to 30	0	0	0	0	+13	+21	+33	+130	>315 to 400	0	0	0	0	+36	+57	+89	+360
	-9	-13	-52	-130	0	0	0	0		-25	-36	-140	-360	0	0	0	0
>30 to 50	0	0	0	0	+16	+25	+39	+160	>400 to 500	0	0	0	0	+40	+63	+97	+400
	-11	-16	-62	-160	0	0	0	0		-27	-40	-155	-400	0	0	0	0
>50 to 80	0	0	0	0	+19	+30	+46	+190									
	-13	-19	-74	-190	0	0	0	0									

Values Specified are in mm

## Tap Chart- Metric Threads

Tap Size	mm per thread	Drill size (mm)	Drill size (inch)	Tap Size	mm per thread	Drill size (mm)	Drill size (inch)
M1.6 X 0.35	0.35	1.25	#55	M14 x 2	2	12	15/32"
M2 X 0.4	0.4	1.6	#52	M14 x 1.5	1.5	12.5	1/2"
M2.5 X 0.45	0.45	2.05	#46	M16 x 2	2	14	35/64"
M3 X 0.5	0.5	2.5	#39	M16 x 1.5	1.5	14.5	37/64"
M3.5 X 0.6	0.6	2.9	#32	M18 x 2.5	2.5	15.5	39/64"
M4 X 0.7	0.7	3.3	#30	M18 x 1.5	1.5	16.5	21/32"
M5 X 0.8	0.8	4.2	#19	M20 x 2.5	2.5	17.5	11/16"
M6 X 1	1	5	#8	M20 x 1.5	1.5	18.5	47/64"
M8 X 1.25	1.25	6.8	H	M22 x 2.5	2.5	19.5	49/64"
M8 X 1	1	7	J	M22 x 1.5	1.5	20.5	13/16"
M10 X 1.5	1.5	8.5	R	M24 x 3	3	21	53/64"
M10 X 1.25	1.25	8.8	11/32	M24 x 2	2	22	7/8"
M12 X 1.75	1.75	10.2	13/32	M27 x 3	3	24	15/16"
M12 x 1.25	1.25	10.8	27/64	M27 x 2	2	25	1"

