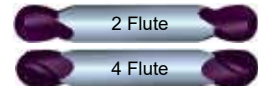
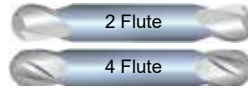
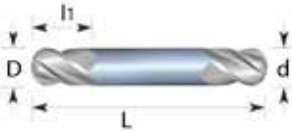


P	●	Steel
M	◐	Stainless Steel
K	●	Cast Iron
N	○	Non-Ferrous
S	○	High Temp. Alloys
H	○	Hardened Steel

● GOOD ◐ OK ○ NOT OPTIMAL

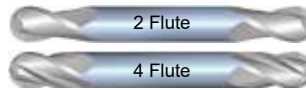
- General Purpose
- 30 deg Helix Carbide with honed edges
- 10% Micro Grain Carbide
- Diameter Tolerances: +0.0000"/-0.0020"

GENERAL PURPOSE



Ball Nose, Standard Carbide, Stub Length, Double End

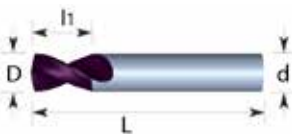
Cutter Diam. D	Shank Diam. d	Length Of Cut l1	O.A.L. L	Uncoated				TiAlN Coated			
				2 Flute Part#	3 Flute Part#	4 Flute Part#	Price	2 Flute Part#	3 Flute Part#	4 Flute Part#	Price
1/32	1/8	1/16	1-1/2	028-031-2	--	028-031-4	\$17.58	030-031-2	--	030-031-4	\$18.68
3/64	1/8	3/32	1-1/2	028-046-2	--	028-046-4	\$17.58	030-046-2	--	030-046-4	\$18.68
1/16	1/8	1/8	1-1/2	028-062-2	--	028-062-4	\$15.82	030-062-2	--	030-062-4	\$17.58
3/32	1/8	3/16	1-1/2	028-093-2	--	028-093-4	\$15.38	030-093-2	--	030-093-4	\$17.58
7/64	1/8	7/32	1-1/2	028-109-2	--	028-109-4	\$15.38	030-109-2	--	030-109-4	\$17.14
1/8	1/8	1/4	1-1/2	028-125-2	--	028-125-4	\$14.94	030-125-2	--	030-125-4	\$17.14
5/32	3/16	5/16	2	028-156-2	--	028-156-4	\$17.58	030-156-2	--	030-156-4	\$20.44
3/16	3/16	5/16	2	028-187-2	--	028-187-4	\$17.14	030-187-2	--	030-187-4	\$19.78
7/32	1/4	3/8	2-1/2	028-218-2	--	028-218-4	\$18.24	030-218-2	--	030-218-4	\$23.07
1/4	1/4	1/2	2-1/2	028-250-2	--	028-250-4	\$17.80	030-250-2	--	030-250-4	\$21.97
9/32	5/16	1/2	2-1/2	028-281-2	--	028-281-4	\$20.88	030-281-2	--	030-281-4	\$27.47
5/16	5/16	1/2	2-1/2	028-312-2	--	028-312-4	\$19.78	030-312-2	--	030-312-4	\$26.37
3/8	3/8	9/16	2-1/2	028-375-2	--	028-375-4	\$30.76	030-375-2	--	030-375-4	\$37.36
7/16	1/2	9/16	2-3/4	028-437-2	--	028-437-4	\$39.55	030-437-2	--	030-437-4	\$48.34
1/2	1/2	5/8	3	028-500-2	--	028-500-4	\$46.15	030-500-2	--	030-500-4	\$54.94
9/16	5/8	11/16	3-1/2	028-562-2	--	028-562-4	\$103.28	030-562-2	--	030-562-4	\$118.66
5/8	5/8	11/16	3-1/2	028-625-2	--	028-625-4	\$96.69	030-625-2	--	030-625-4	\$113.17
3/4	3/4	7/8	4	028-750-2	--	028-750-4	\$123.06	030-750-2	--	030-750-4	\$145.03



Ball Nose, Standard Carbide, Regular Length, Double End

Cutter Diam. D	Shank Diam. d	Length Of Cut l1	O.A.L. L	Uncoated				TiAlN Coated			
				2 Flute Part#	3 Flute Part#	4 Flute Part#	Price	2 Flute Part#	3 Flute Part#	4 Flute Part#	Price
3/32	1/8	5/16	3	033-093-2	--	033-093-4	\$39.55	034-093-2	--	034-093-4	\$43.95
1/8	1/8	3/8	3-1/16	033-125-2	--	033-125-4	\$37.36	034-125-2	--	034-125-4	\$41.75
5/32	3/16	7/16	3-1/8	033-156-2	--	033-156-4	\$37.36	034-156-2	--	034-156-4	\$42.30
3/16	3/16	1/2	3-1/4	033-187-2	--	033-187-4	\$36.26	034-187-2	--	034-187-4	\$41.20
7/32	1/4	9/16	3-1/2	033-218-2	--	033-218-4	\$36.26	034-218-2	--	034-218-4	\$41.20
1/4	1/4	5/8	3-1/2	033-250-2	--	033-250-4	\$36.26	034-250-2	--	034-250-4	\$41.20
5/16	5/16	3/4	3-1/2	033-312-2	--	033-312-4	\$41.75	034-312-2	--	034-312-4	\$46.92
3/8	3/8	3/4	3-1/2	033-375-2	--	033-375-4	\$41.75	034-375-2	--	034-375-4	\$46.92
7/16	1/2	7/8	4	033-437-2	--	033-437-4	\$61.53	034-437-2	--	034-437-4	\$67.24
1/2	1/2	1	4	033-500-2	--	033-500-4	\$59.33	034-500-2	--	034-500-4	\$67.02
5/8	5/8	1-1/2	6	033-625-2	--	033-625-4	\$127.45	034-625-2	--	034-625-4	\$137.34
3/4	3/4	1-1/2	6	033-750-2	--	033-750-4	\$171.40	034-750-2	--	034-750-4	\$182.39

* Double Ended tools under 1/4" Diameter have Round Shanks. 1/4" diameter & larger have Weldon Shanks.



NEW

- Allows High Performance drills to center properly without damaging their outside edge
- 145 Degree Point Carbide with honed edges
- 10% Micro Grain Carbide
- Diameter Tolerances: +0.0000"/-0.0004"



Spot Drills 145 Degree Point

Drill Diam. D	Shank Diam. d	Length Of Cut l1	O.A.L. L	TiAlN Coated	
				Part#	Price
1/4	1/4	1/2	3	110-250-2	\$26.92
3/8	3/8	3/4	3	110-375-2	\$28.92
1/2	1/2	1	4	110-500-2	\$50.77
5/8	5/8	1	4	110-625-2	\$83.08
3/4	3/4	1-1/8	4	110-750-2	\$110.77