

# GENERAL PURPOSE

Solid Carbide End Mills For Ferrous And Non-Ferrous Materials



INTRO

MILLING

SPECIALTY

HOLEMAKING

THREADING

INSERTS



FEATURES/DESCRIPTION	APPLICATION	FEATURES										
<b>3-Flute Ball Nose End Mills</b> <ul style="list-style-type: none"> <li>• Universal application</li> <li>• Sub-micron grade carbide substrate for wear resistance</li> <li>• Multiple coating options</li> <li>• Diameter Tol.: +0/-0.002"</li> <li>• Shank Tol.: +0/-0.0005"</li> </ul>		<table border="1"> <tr> <td>CARBIDE</td> <td>3FL</td> </tr> <tr> <td>BALL</td> <td>30°</td> </tr> <tr> <td>P199</td> <td>Bright</td> </tr> <tr> <td>TiN</td> <td>TiCN</td> </tr> <tr> <td>AlTiN</td> <td></td> </tr> </table>	CARBIDE	3FL	BALL	30°	P199	Bright	TiN	TiCN	AlTiN	
CARBIDE	3FL											
BALL	30°											
P199	Bright											
TiN	TiCN											
AlTiN												

STEEL			STAINLESS		CAST IRON		NON-FERROUS		HRSA		HARDENED STEEL	
P1	P2	P3	M1	M2	K1	K2	N1	N2	S1	S2	H1	H2
○	○	○			○	○	○	○			○	

● Best ○ Good

**Series 222** | 3FL | Regular Length | Ball Nose

Diameter(D <sub>1</sub> )	LOC(L <sub>1</sub> )	OAL(L)	Shank(D)	Bright	TiN	TiCN	AlTiN
1/32	1/8	1-1/2	1/8	222-001001	222-001002	222-001003	222-001004
3/64	1/8	1-1/2	1/8	222-001020	222-001021	222-001022	222-001023
1/16	1/4	1-1/2	1/8	222-001030	222-001031	222-001032	222-001033
5/64	1/4	1-1/2	1/8	222-001040	222-001041	222-001042	222-001043
3/32	3/8	1-1/2	1/8	222-001050	222-001051	222-001052	222-001053
7/64	3/8	1-1/2	1/8	222-001060	222-001061	222-001062	222-001063
1/8	1/2	1-1/2	1/8	222-001070	222-001071	222-001072	222-001073
5/32	9/16	2	3/16	222-001090	222-001091	222-001092	222-001093
3/16	5/8	2	3/16	222-001110	222-001111	222-001112	222-001113
13/64	5/8	2-1/2	1/4	222-001120	222-001121	222-001122	222-001123
7/32	5/8	2-1/2	1/4	222-001130	222-001131	222-001132	222-001133
15/64	3/4	2-1/2	1/4	222-001135	222-001136	222-001137	222-001138
1/4	3/4	2-1/2	1/4	222-001140	222-001141	222-001142	222-001143
17/64	3/4	2-1/2	5/16	222-001145	222-001146	222-001147	222-001148
9/32	3/4	2-1/2	5/16	222-001150	222-001151	222-001152	222-001153
19/64	13/16	2-1/2	5/16	222-001155	222-001156	222-001157	222-001158
5/16	13/16	2-1/2	5/16	222-001160	222-001161	222-001162	222-001163
21/64	1	2-1/2	3/8	222-001165	222-001166	222-001167	222-001168
11/32	1	2-1/2	3/8	222-001170	222-001171	222-001172	222-001173
23/64	1	2-1/2	3/8	222-001175	222-001176	222-001177	222-001178
3/8	1	2-1/2	3/8	222-001180	222-001181	222-001182	222-001183
13/32	1	2-3/4	7/16	222-001190	222-001191	222-001192	222-001193
7/16	1	2-3/4	7/16	222-001200	222-001201	222-001202	222-001203
1/2	1	3	1/2	222-001210	222-001211	222-001212	222-001213
9/16	1-1/4	3-1/2	9/16	222-001220	222-001221	222-001222	222-001223
5/8	1-1/4	3-1/2	5/8	222-001230	222-001231	222-001232	222-001233
11/16	1-1/2	4	3/4	222-001240	222-001241	222-001242	222-001243
3/4	1-1/2	4	3/4	222-001250	222-001251	222-001252	222-001253
7/8	1-1/2	4	7/8	222-001260	222-001261	222-001262	222-001263
1	1-1/2	4	1	222-001270	222-001271	222-001272	222-001273

\*bold numbers are EDPs for ordering