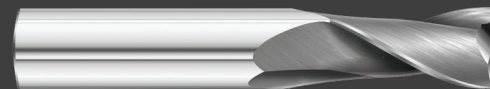


3215, 2002 JIT GENERAL PURPOSE - IMPERIAL



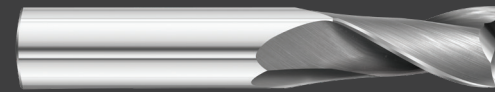
3215 Series 2-Flute End Mill is offered in an extensive variety of configurations.

Not Recommended for High Si Aluminum (>10%), Composites, Plastics, Graphite, or Hardened Steels > 48RC. The parameters listed for tool series that are stocked uncoated are based on running an uncoated tool. If a coating is applied to the tools, the SFM can be increased by approximately 25%. All speed and feed recommendations should be considered only as a starting point. Start with conservative speeds and feeds while analyzing the rigidity of the process. Then cautiously progress incrementally to achieve optimum performance.

FULLERTON
SPEEDS / FEEDS

| | Low Si Aluminum (<10%) (1100-1500) SFM (ft/min) | | | | | Brass & Copper (400-600) SFM (ft/min) | | | | | Cast Iron (250-400) SFM (ft/min) | | | | |
|--------------|--|-------------|---------------|-------------|-----------|--|-------------|---------------|-------------|-----------|---|-------------|---------------|-------------|-----------|
| | Slotting | Plunge Ramp | Rough Profile | HEM | Finish | Slotting | Plunge Ramp | Rough Profile | HEM | Finish | Slotting | Plunge Ramp | Rough Profile | HEM | Finish |
| Axial Depth | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) |
| Radial Width | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD |
| 1/8" | .0039 | .0051 | .0039 | .0051 | .0039 | .0004 | .0006 | .0004 | .0006 | .0004 | .0004 | .0008 | .0004 | .0008 | .0004 |
| 1/4" | .0042 | .0059 | .0042 | .0059 | .0042 | .0008 | .0012 | .0008 | .0012 | .0008 | .0008 | .0020 | .0008 | .0020 | .0008 |
| 3/8" | .0046 | .0068 | .0046 | .0068 | .0046 | .0020 | .0025 | .0020 | .0025 | .0020 | .0018 | .0036 | .0018 | .0036 | .0018 |
| 1/2" | .0050 | .0077 | .0050 | .0077 | .0050 | .0033 | .0036 | .0033 | .0036 | .0033 | .0025 | .0049 | .0025 | .0049 | .0025 |
| 3/4" | .0055 | .0088 | .0055 | .0088 | .0055 | .0045 | .0049 | .0045 | .0049 | .0045 | .0033 | .0060 | .0033 | .0060 | .0033 |
| 1" | .0059 | .0098 | .0059 | .0098 | .0059 | .0059 | .0062 | .0059 | .0062 | .0059 | .0039 | .0071 | .0039 | .0071 | .0039 |
| | Steels (230-350) SFM (ft/min) | | | | | Stainless Steels (130-260) SFM (ft/min) | | | | | Super Alloys (Nickel Based, Inconel) (80-120) SFM (ft/min) | | | | |
| | Slotting | Plunge Ramp | Rough Profile | HEM | Finish | Slotting | Plunge Ramp | Rough Profile | HEM | Finish | Slotting | Plunge Ramp | Rough Profile | HEM | Finish |
| Axial Depth | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) |
| Radial Width | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD |
| 1/8" | .0004 | .0006 | .0004 | .0006 | .0004 | .0002 | .0004 | .0002 | .0004 | .0002 | .0002 | .0004 | .0002 | .0004 | .0002 |
| 1/4" | .0012 | .0017 | .0012 | .0018 | .0012 | .0006 | .0008 | .0006 | .0008 | .0006 | .0004 | .0008 | .0004 | .0008 | .0004 |
| 3/8" | .0022 | .0030 | .0022 | .0030 | .0022 | .0010 | .0012 | .0010 | .0012 | .0010 | .0006 | .0011 | .0006 | .0011 | .0006 |
| 1/2" | .0030 | .0045 | .0030 | .0045 | .0030 | .0014 | .0018 | .0014 | .0018 | .0014 | .0008 | .0015 | .0008 | .0015 | .0008 |
| 3/4" | .0039 | .0060 | .0039 | .0060 | .0039 | .0017 | .0024 | .0017 | .0024 | .0017 | .0010 | .0018 | .0010 | .0018 | .0010 |
| 1" | .0047 | .0071 | .0047 | .0071 | .0047 | .0020 | .0031 | .0020 | .0031 | .0020 | .0012 | .0020 | .0012 | .0020 | .0012 |
| | Titanium (120-200) SFM (ft/min) | | | | | | | | | | | | | | |
| | Slotting | Plunge Ramp | Rough Profile | HEM | Finish | | | | | | | | | | |
| Axial Depth | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) | | | | | | | | | | |
| Radial Width | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD | | | | | | | | | | |
| 1/8" | .0002 | .0004 | .0002 | .0004 | .0002 | | | | | | | | | | |
| 1/4" | .0006 | .0010 | .0006 | .0010 | .0006 | | | | | | | | | | |
| 3/8" | .0010 | .0016 | .0010 | .0016 | .0010 | | | | | | | | | | |
| 1/2" | .0014 | .0022 | .0014 | .0022 | .0014 | | | | | | | | | | |
| 3/4" | .0017 | .0026 | .0017 | .0026 | .0017 | | | | | | | | | | |
| 1" | .0020 | .0031 | .0020 | .0031 | .0020 | | | | | | | | | | |

3215, 2002 JIT GENERAL PURPOSE - METRIC



3215 Series 2-Flute End Mill is offered in an extensive variety of configurations.

Not Recommended for High Si Aluminum (>10%), Composites, Plastics, Graphite, or Hardened Steels > 48RC. The parameters listed for tool series that are stocked uncoated are based on running an uncoated tool. If a coating is applied to the tools, the SFM can be increased by approximately 25%. All speed and feed recommendations should be considered only as a starting point. Start with conservative speeds and feeds while analyzing the rigidity of the process. Then cautiously progress incrementally to achieve optimum performance.

FULLERTON
SPEEDS / FEEDS

| | Low Si Aluminum (<10%) (335-457) SMM (m/min) | | | | | Brass & Copper (121-182) SMM (m/min) | | | | | Cast Iron (76-121)SMM (m/min) | | | | |
|--------------|---|-------------|---------------|-------------|-----------|---|-------------|---------------|-------------|-----------|---|-------------|---------------|-------------|-----------|
| | Slotting | Plunge Ramp | Rough Profile | HEM | Finish | Slotting | Plunge Ramp | Rough Profile | HEM | Finish | Slotting | Plunge Ramp | Rough Profile | HEM | Finish |
| Axial Depth | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) |
| Radial Width | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD |
| 3 | .0991 | .1295 | .0991 | .1295 | .0991 | .0102 | .0152 | .0102 | .0152 | .0102 | .0102 | .0203 | .0102 | .0203 | .0102 |
| 6 | .1067 | .1499 | .1067 | .1499 | .1067 | .0203 | .0305 | .0203 | .0305 | .0203 | .0203 | .0508 | .0203 | .0508 | .0203 |
| 10 | .1168 | .1727 | .1168 | .1727 | .1168 | .0508 | .0635 | .0508 | .0635 | .0508 | .0457 | .0914 | .0457 | .0914 | .0457 |
| 12 | .1270 | .1956 | .1270 | .1956 | .1270 | .0838 | .0914 | .0838 | .0914 | .0838 | .0635 | .1245 | .0635 | .1245 | .0635 |
| 20 | .1397 | .2235 | .1397 | .2235 | .1397 | .1143 | .1245 | .1143 | .1245 | .1143 | .0838 | .1524 | .0838 | .1524 | .0838 |
| 25 | .1499 | .2489 | .1499 | .2489 | .1499 | .1499 | .1575 | .1499 | .1575 | .1499 | .0991 | .1803 | .0991 | .1803 | .0991 |
| | Steels (70-106) SMM (m/min) | | | | | Stainless Steels (39-85) SMM (m/min) | | | | | Super Alloys (Nickel Based, Inconel) (24-36) SMM (m/min) | | | | |
| | Slotting | Plunge Ramp | Rough Profile | HEM | Finish | Slotting | Plunge Ramp | Rough Profile | HEM | Finish | Slotting | Plunge Ramp | Rough Profile | HEM | Finish |
| Axial Depth | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) |
| Radial Width | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD |
| 3 | .0102 | .0152 | .0102 | .0152 | .0102 | .0051 | .0102 | .0051 | .0102 | .0051 | .0051 | .0102 | .0051 | .0102 | .0051 |
| 6 | .0305 | .0432 | .0305 | .0457 | .0305 | .0152 | .0203 | .0152 | .0203 | .0152 | .0102 | .0203 | .0102 | .0203 | .0102 |
| 10 | .0559 | .0762 | .0559 | .0762 | .0559 | .0254 | .0305 | .0254 | .0305 | .0254 | .0152 | .0279 | .0152 | .0279 | .0152 |
| 12 | .0762 | .1143 | .0762 | .1143 | .0762 | .0356 | .0457 | .0356 | .0457 | .0356 | .0203 | .0381 | .0203 | .0381 | .0203 |
| 20 | .0991 | .1524 | .0991 | .1524 | .0991 | .0432 | .0610 | .0432 | .0610 | .0432 | .0254 | .0457 | .0254 | .0457 | .0254 |
| 25 | .1194 | .1803 | .1194 | .1803 | .1194 | .0508 | .0787 | .0508 | .0787 | .0508 | .0305 | .0508 | .0305 | .0508 | .0305 |
| | Titanium (36-60) SMM (m/min) | | | | | | | | | | | | | | |
| | Slotting | Plunge Ramp | Rough Profile | HEM | Finish | | | | | | | | | | |
| Axial Depth | < (1xD) | < (1xD) | 1.5xD | 1xD | < (1xD) | | | | | | | | | | |
| Radial Width | full | full | (.3-.5)xD | (.010-.015) | (.3-.5)xD | | | | | | | | | | |
| 3 | .0051 | .0102 | .0051 | .0102 | .0051 | | | | | | | | | | |
| 6 | .0152 | .0254 | .0152 | .0254 | .0152 | | | | | | | | | | |
| 10 | .0254 | .0406 | .0254 | .0406 | .0254 | | | | | | | | | | |
| 12 | .0356 | .0559 | .0356 | .0559 | .0356 | | | | | | | | | | |
| 20 | .0432 | .0660 | .0432 | .0660 | .0432 | | | | | | | | | | |
| 25 | .0508 | .0787 | .0508 | .0787 | .0508 | | | | | | | | | | |