



**BASSETT™**



***Solid Carbide Cutting Tools***  
***End Mills, Drills, Thread Mills, Burs***



**GREENFIELD  
INDUSTRIES**

# **Metalcutting Safety** (read this before using Bassett/Putnam products)

Modern metalcutting operations involve high energy, high spindle or cutter speeds, and high temperatures and cutting forces. Hot, flying chips may be projected from the workpiece during metalcutting. Although advanced cutting tool materials are designed and manufactured to withstand the high cutting forces and temperatures that normally occur in these operations, they are susceptible to fragmenting in service, particularly if they are subjected to over-stress, severe impact or otherwise abused. Therefore, precautions should be taken to adequately protect workers, observers and equipment against hot, flying chips, fragmented cutting tools, broken workpieces or other similar projectiles. Machines should be fully guarded and personal protective equipment should be used at all times.

When grinding advanced cutting tool materials, a suitable means for collection and disposal of dust, mist or sludge should be provided. Overexposure to dust or mist containing metallic particles can be hazardous to health particularly if exposure continues over an extended period of time and may cause eye, skin and mucous membrane irritation and temporary or permanent respiratory disease. Certain existing pulmonary and skin conditions may be aggravated by exposure to dust or mist. Adequate ventilation, respiratory protection and eye protection should be provided when grinding and workers should avoid breathing of and prolonged skin contact with dust or mist. General In-

dustry Safety and Health Regulations, Part 1910. U.S. Department of Labor, published in Title 29 of the Code of Federal Regulations should be consulted. Obtain from Bassett/Putnam and read the applicable Material Safety Data Sheet before grinding.

Cutting tools are only one part of the worker-machine-tool system. Many variables exist in machining operations, including the metal removal rate; the workpiece size, shape, strength and rigidity; the chucking and fixturing; the load carrying capability of centers; the cutter and spindle speed and torque limitations; the holder and boring bar overhang; the available power; and the condition of the tooling and the machine. A safe metalcutting operation must take all of these variables, and others, into consideration.

Bassett/Putnam has no control over the end use of its products or the environment into which those products are placed. Bassett/Putnam urges that its customers adhere to the recommended standards of use of their metalcutting machines and tools, and that they follow procedures that ensure safe metalcutting operations. The information included throughout this catalog under the heading "Technical Data" and other recommendations on machining practices referred to herein are only advisory in nature and do not constitute representations or warranties and are not necessarily appropriate for any particular work environment or application.



**BASSETT**™

Bassett has manufactured the highest quality carbide cutting tools for six decades. Today, we serve clients throughout North America and the world from our modern, high-tech manufacturing facilities in Seneca, South Carolina, and world-wide. Our mission: to invest in the resources, technology, and people that enable us to provide world-class solid carbide round cutting tools for your most demanding applications.

A good tool begins with a good foundation. With Bassett, quality begins with a tradition of excellence. As part of the TDC Group, a vertically integrated company, Bassett has access to the finest raw materials from our own mines, which are refined in our own mills, and made into the blanks used in the manufacture of Bassett solid carbide cutting tools. All Bassett products conform to the strictest quality standards for your satisfaction.

***Bassett Solid Carbide Cutting Tools***

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**BASSETT™**



***Solid Carbide End Mills***



| Style No.   | Flutes       | Description                    | Finish              | Page No. |
|---|--------------|--------------------------------|---------------------|----------|
| <b>High-Performance Variable Index End Mills</b>                |              |                                |                     |          |
| Operating Parameters  |              |                                |                     | 2        |
| MSE-V-4R  | .4-flute     | .corner radius                 | bright, TiAlN       | 3        |
| MSE-V-4B  | .4-flute     | .ball nose                     | bright, TiAlN       | 4        |
| MSE-V2-5R   | .5-flute     | .corner radius                 | bright, TiAlN       | 5        |
| <b>High-Performance End Mills for Steel and Stainless Steel</b> |              |                                |                     |          |
| Operating Parameters  |              |                                |                     | 6        |
| HPDEM-5   | .5-flute     | .square end, double end        | TiCN                | 7        |
| HPEM-3  | .3-flute     | .square end                    | TiCN                | 8        |
| HPEM-5  | .5-flute     | .square end                    | TiCN                | 9        |
| <b>High-Performance End Mills for Aluminum</b>                  |              |                                |                     |          |
| Operating Parameters  |              |                                |                     | 10       |
| HPAM-2  | .2-flute     | .square end                    | bright, TiCN        | 11       |
| HPAM-3  | .3-flute     | .square end                    | bright, TiCN        | 12       |
| <b>High-Performance Roughing End Mills</b>                      |              |                                |                     |          |
| Operating Parameters  |              |                                |                     | 13       |
| MRS   | .multi-flute | .square end . . . for steel    | bright, TiCN, TiAlN | 13       |
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| <b>General-Purpose End Mills</b>                                |              |                                |                     |          |
| Operating Parameters  |              |                                |                     | 15       |
| <b>Double End</b>   |              |                                |                     |          |
| MDE-2   | .2-flute     | .square end                    | bright, TiCN        | 16       |
| MDE-2B  | .2-flute     | .ball nose                     | bright, TiCN        | 16       |
| MDE-4   | .4-flute     | .square end                    | bright, TiCN        | 17       |
| MDE-4B  | .4-flute     | .ball nose                     | bright, TiCN        | 17       |
| <b>Single End</b>   |              |                                |                     |          |
| MSE-2   | .2-flute     | .square end                    | bright, TiCN        | 18-19    |
| MSE-2B  | .2-flute     | .ball nose                     | bright, TiCN        | 20-21    |
| MSE-3   | .3-flute     | .square end                    | bright, TiCN        | 22       |
| MSE-4   | .4-flute     | .square nose                   | bright, TiCN        | 23-24    |
| MSE-4B  | .4-flute     | .ball nose                     | bright, TiCN        | 25-26    |
| <b>Straight Flute</b>   |              |                                |                     |          |
| MSEST-2   | .2-flute     | .square end                    | bright              | 27       |
| <b>Engraving Tool</b>   |              |                                |                     |          |
| MEG-2   | .2-flute     | .ball nose                     | TiCN                | 27       |
| <b>Chamfer Tools</b>  |              |                                |                     |          |
| MCH-2R  | .2-flute     | .single end                    | bright              | 28       |
| MCH-2D  | .2-flute     | .double end                    | bright              | 28       |
| MCH-4R  | .4-flute     | .single end                    | bright              | 28       |
| MCH-4D  | .4-flute     | .double end                    | bright              | 28       |

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## Variable Index End Mills

### Operating Parameters for Series MSE-V-\* Variable Index End Mills

#### regular and stub length

side milling axial 1.5 x D • side milling radial .5 x D • slotting axial 1 x D

| INCH SIZES                               | Speed |        | feed per tooth (inches) |        |        |        |        |        |        |        |
|--|-------|--------|-------------------------|--------|--------|--------|--------|--------|--------|--------|
|  | sfm   | 5/32   | 3/16                    | 1/4    | 5/16   | 3/8    | 1/2    | 5/8    | 3/4    | 1      |
| easy to cut stainless steel (304)        | 280   | 0.0010 | 0.0012                  | 0.0016 | 0.0020 | 0.0024 | 0.0026 | 0.0028 | 0.0028 | 0.0030 |
| moderately difficult to cut stainless    | 240   | 0.0008 | 0.0010                  | 0.0014 | 0.0018 | 0.0020 | 0.0022 | 0.0024 | 0.0026 | 0.0028 |
| difficult to cut stainless steels (315L) | 200   | 0.0006 | 0.0010                  | 0.0012 | 0.0016 | 0.0018 | 0.0020 | 0.0022 | 0.0024 | 0.0024 |
| soft steels (1020)                       | 500   | 0.0010 | 0.0012                  | 0.0016 | 0.0024 | 0.0024 | 0.0028 | 0.0030 | 0.0031 | 0.0039 |
| titanium alpha beta alloys (Ti6Al4V)     | 170   | 0.0005 | 0.0006                  | 0.0008 | 0.0012 | 0.0012 | 0.0016 | 0.0018 | 0.0020 | 0.0028 |
| gray cast iron (GG)                      | 500   | 0.0010 | 0.0012                  | 0.0016 | 0.0024 | 0.0024 | 0.0028 | 0.0030 | 0.0031 | 0.0039 |

#### long length

side milling axial 1-3 x D • side milling radial .2 - .3 x D • slotting axial .3 - .5 x D

| INCH SIZES                              | Speed |        | feed per tooth (inches) |        |        |        |        |        |        |        |
|---|-------|--------|-------------------------|--------|--------|--------|--------|--------|--------|--------|
|   | sfm   | 5/32   | 3/16                    | 1/4    | 5/16   | 3/8    | 1/2    | 5/8    | 3/4    | 1      |
| easy to cut stainless steel (304)       | 280   | 0.0009 | 0.0011                  | 0.0014 | 0.0018 | 0.0022 | 0.0023 | 0.0025 | 0.0025 | 0.0027 |
| moderately difficult to cut stainless   | 240   | 0.0007 | 0.0009                  | 0.0013 | 0.0016 | 0.0018 | 0.0020 | 0.0022 | 0.0023 | 0.0025 |
| difficult to cut stainless steel (315L) | 200   | 0.0005 | 0.0009                  | 0.0011 | 0.0014 | 0.0016 | 0.0018 | 0.0020 | 0.0022 | 0.0022 |
| soft steels (1020)                      | 500   | 0.0009 | 0.0011                  | 0.0014 | 0.0022 | 0.0022 | 0.0025 | 0.0027 | 0.0028 | 0.0035 |
| titanium alpha beta alloys (Ti6Al4V)    | 170   | 0.0005 | 0.0005                  | 0.0007 | 0.0011 | 0.0011 | 0.0014 | 0.0016 | 0.0018 | 0.0025 |
| gray cast iron (GG)                     | 500   | 0.0009 | 0.0011                  | 0.0014 | 0.0022 | 0.0022 | 0.0025 | 0.0027 | 0.0028 | 0.0035 |

### Operating Parameters for Series MSE-V2-\* Variable Index End Mills



side milling axial 1.5 x D • side milling radial 0.5 x D • slotting axial 1 x D

| INCH SIZES<br>material                                | speed   |        | chip load per tooth (inches) |        |        |        |        |        |        |
|---|---------|--------|------------------------------|--------|--------|--------|--------|--------|--------|
|   | sfm     | 3/16   | 1/4                          | 5/16   | 3/8    | 1/2    | 5/8    | 3/4    | 1      |
| medium and high carbon steels<br>>0.3% C              | 520-650 | 0.0015 | 0.0021                       | 0.0023 | 0.0026 | 0.0030 | 0.0031 | 0.0038 | 0.0044 |
| alloy steels and tool steels<br><330HB, <35HRc        | 520-590 | 0.0011 | 0.0017                       | 0.0020 | 0.0023 | 0.0029 | 0.0029 | 0.0034 | 0.0040 |
| alloy steels and tool steels<br>340-450 HB, 36-48 HRc | 460-520 | 0.0010 | 0.0015                       | 0.0016 | 0.0020 | 0.0026 | 0.0027 | 0.0030 | 0.0038 |
| austenitic stainless steel<br>302, 303, 304           | 290-370 | 0.0011 | 0.0017                       | 0.0020 | 0.0023 | 0.0027 | 0.0029 | 0.0032 | 0.0040 |
| austenitic stainless steel<br>316, 316L               | 190-260 | 0.0009 | 0.0013                       | 0.0016 | 0.0019 | 0.0025 | 0.0025 | 0.0028 | 0.0032 |
| austenitic stainless steel<br>duplex                  | 190-230 | 0.0008 | 0.0010                       | 0.0014 | 0.0015 | 0.0019 | 0.0020 | 0.0023 | 0.0028 |
| cast iron, gray<br>GG                                 | 430-550 | 0.0014 | 0.0022                       | 0.0025 | 0.0030 | 0.0035 | 0.0040 | 0.0045 | 0.0050 |
| ductile and maleable cast iron<br>CGI < 80 KSI        | 360-430 | 0.0009 | 0.0013                       | 0.0018 | 0.0019 | 0.0025 | 0.0027 | 0.0030 | 0.0040 |
| nickel-based heat-resistant<br>alloys                 | 80-130  | 0.0004 | 0.0007                       | 0.0011 | 0.0015 | 0.0016 | 0.0019 | 0.0023 | 0.0028 |
| alpha-beta titanium alloys<br>Ti6Al4V                 | 160-200 | 0.0008 | 0.0010                       | 0.0014 | 0.0015 | 0.0021 | 0.0023 | 0.0028 | 0.0036 |

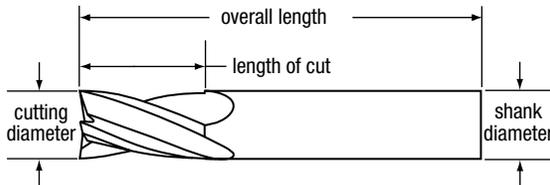
# Variable Index End Mills for Ferrous Materials

## Series MSE-V-4R

### Applications |



### Features |



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | corner radius #1 | EDP Number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|------------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               |                  | bright     | TiAIN  |
| 1/8              | .1250   | 3.18   | 1/8            | 1/4           | 1-1/2          | 4             | 0.010            | B40140     | B60140 |
| 1/8              | .1250   | 3.18   | 1/8            | 3/8           | 1-1/2          | 4             | 0.010            | B40141     | B60141 |
| 3/16             | .1875   | 4.76   | 3/16           | 3/8           | 2              | 4             | 0.010            | B40142     | B60142 |
| 3/16             | .1875   | 4.76   | 3/16           | 7/16          | 2              | 4             | 0.010            | B40143     | B60143 |
| 1/4              | .2500   | 6.35   | 1/4            | 1/2           | 2              | 4             | 0.020            | B40144     | B60144 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2-1/2          | 4             | 0.020            | B40145     | B60145 |
| 1/4              | .2500   | 6.35   | 1/4            | 1-1/8         | 3              | 4             | 0.020            | B40146     | B60146 |
| 5/16             | .3125   | 7.94   | 5/16           | 1/2           | 2              | 4             | 0.020            | B40147     | B60147 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2-1/2          | 4             | 0.020            | B40148     | B60148 |
| 3/8              | .3750   | 9.53   | 3/8            | 5/8           | 2              | 4             | 0.020            | B40149     | B60149 |
| 3/8              | .3750   | 9.53   | 3/8            | 7/8           | 2-1/2          | 4             | 0.020            | B40150     | B60150 |
| 3/8              | .3750   | 9.53   | 3/8            | 1-1/8         | 3              | 4             | 0.020            | B40151     | B60151 |
| 7/16             | .4375   | 11.11  | 7/16           | 5/8           | 2-1/2          | 4             | 0.020            | B40152     | B60152 |
| 7/16             | .4375   | 11.11  | 7/16           | 1             | 3              | 4             | 0.020            | B40153     | B60153 |
| 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 2-1/2          | 4             | 0.030            | B40154     | B60154 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 4             | 0.030            | B40155     | B60155 |
| 1/2              | .5000   | 12.70  | 1/2            | 2             | 4              | 4             | 0.030            | B40156     | B60156 |
| 5/8              | .6250   | 15.88  | 5/8            | 3/4           | 3              | 4             | 0.030            | B40157     | B60157 |
| 5/8              | .6250   | 15.88  | 5/8            | 1-1/4         | 3-1/2          | 4             | 0.030            | B40158     | B60158 |
| 5/8              | .6250   | 15.88  | 5/8            | 2-1/4         | 5              | 4             | 0.030            | B40159     | B60159 |
| 3/4              | .7500   | 19.05  | 3/4            | 1             | 3              | 4             | 0.030            | B40160     | B60160 |
| 3/4              | .7500   | 19.05  | 3/4            | 1-1/2         | 4              | 4             | 0.030            | B40161     | B60161 |
| 3/4              | .7500   | 19.05  | 3/4            | 2-1/4         | 5              | 4             | 0.030            | B40162     | B60162 |
| 1                | 1.0000  | 25.40  | 1              | 1-1/2         | 4              | 4             | 0.030            | B40163     | B60163 |
| 1                | 1.0000  | 25.40  | 1              | 2-1/4         | 5              | 4             | 0.030            | B40164     | B60164 |

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# Variable Index End Mills for Ferrous Materials

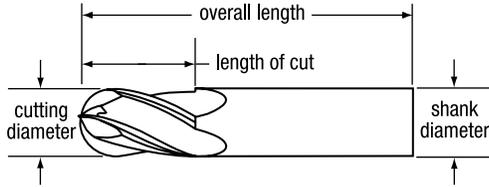
**BASSETT™**

Series **MSE-V-4B**

**Applications**



**Features**



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | EDP Number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               | bright     | TiAlN  |
| 1/8              | .1250   | 3.18   | 1/8            | 3/8           | 1-1/2          | 4             | B40308     | B60308 |
| 3/16             | .1875   | 4.76   | 3/16           | 7/16          | 2              | 4             | B40309     | B60309 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2-1/2          | 4             | B40310     | B60310 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2-1/2          | 4             | B40311     | B60311 |
| 3/8              | .3750   | 9.53   | 3/8            | 7/8           | 2-1/2          | 4             | B40312     | B60312 |
| 7/16             | .4375   | 11.11  | 7/16           | 1             | 3              | 4             | B40313     | B60313 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 4             | B40314     | B60314 |
| 5/8              | .6250   | 15.88  | 5/8            | 1-1/4         | 3-1/2          | 4             | B40315     | B60315 |
| 3/4              | .7500   | 19.05  | 3/4            | 1-1/2         | 4              | 4             | B40316     | B60316 |
| 1                | 1.0000  | 25.40  | 1              | 2-1/4         | 5              | 4             | B40317     | B60317 |

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# V2 Variable Index End Mills for Ferrous Materials

Series **MSE-V2-5R**

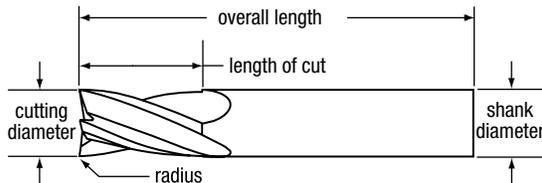
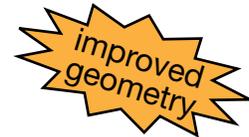
**Applications |**

- STAINLESS STEEL
- HARDENED STEEL
- HI-TEMP ALLOYS

**Features |**

- SOLID CARBIDE
- BRIGHT
- TiAlN
- VARIABLE INDEX
- CORNER RADIUS
- 5 FLUTE CC

- for slotting up to 1 x D
- minimized chatter from unequal flute spacing
- use one tool for roughing and finishing operations



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | corner radius | EDP Number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               |               | bright     | TiAlN  |
| 3/16             | .1875   | 4.76   | 3/16           | 3/8           | 2              | 5             | .010          | B40411     | B60411 |
| 3/16             | .1875   | 4.76   | 3/16           | 7/16          | 2              | 5             | .010          | B40412     | B60412 |
| 1/4              | .2500   | 6.35   | 1/4            | 1/2           | 2              | 5             | .020          | B40413     | B60413 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2-1/2          | 5             | .020          | B40414     | B60414 |
| 1/4              | .2500   | 6.35   | 1/4            | 1-1/8         | 3              | 5             | .020          | B40415     | B60415 |
| 5/16             | .3125   | 7.94   | 5/16           | 1/2           | 2              | 5             | .020          | B40416     | B60416 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2-1/2          | 5             | .020          | B40417     | B60417 |
| 3/8              | .3750   | 9.53   | 3/8            | 5/8           | 2              | 5             | .020          | B40418     | B60418 |
| 3/8              | .3750   | 9.53   | 3/8            | 7/8           | 2-1/2          | 5             | .020          | B40419     | B60419 |
| 3/8              | .3750   | 9.53   | 3/8            | 1-1/8         | 3              | 5             | .020          | B40420     | B60420 |
| 7/16             | .4375   | 11.11  | 7/16           | 5/8           | 2-1/2          | 5             | .020          | B40421     | B60421 |
| 7/16             | .4375   | 11.11  | 7/16           | 1             | 3              | 5             | .020          | B40422     | B60422 |
| 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 2-1/2          | 5             | .030          | B40423     | B60423 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 5             | .030          | B40424     | B60424 |
| 1/2              | .5000   | 12.70  | 1/2            | 2             | 4              | 5             | .030          | B40425     | B60425 |
| 5/8              | .6250   | 15.88  | 5/8            | 3/4           | 3              | 5             | .030          | B40426     | B60426 |
| 5/8              | .6250   | 15.88  | 5/8            | 1-1/4         | 3-1/2          | 5             | .030          | B40427     | B60427 |
| 5/8              | .6250   | 15.88  | 5/8            | 2-1/4         | 5              | 5             | .030          | B40428     | B60428 |
| 3/4              | .7500   | 19.05  | 3/4            | 1             | 3              | 5             | .030          | B40429     | B60429 |
| 3/4              | .7500   | 19.05  | 3/4            | 1-1/2         | 4              | 5             | .030          | B40430     | B60430 |
| 3/4              | .7500   | 19.05  | 3/4            | 2-1/4         | 5              | 5             | .030          | B40431     | B60431 |
| 1                | 1.0000  | 25.40  | 1              | 1-1/2         | 4              | 5             | .030          | B40432     | B60432 |
| 1                | 1.0000  | 25.40  | 1              | 2-1/4         | 5              | 5             | .030          | B40433     | B60433 |

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# High-Performance End Mills for Steel

## Operating Parameters: HPEM High-Performance End Mills for Steel

| Material   | Hardness |        | Surface Feet per Minute |      | Chip Load per Tooth |             |           |
|--|----------|--------|-------------------------|------|---------------------|-------------|-----------|
|  | Brinell  | HRC    | Speed Range             | SFM  | 1/32" - 1/4"        | 1/4" - 1/2" | 1/2" - 1" |
| low alloy steels   | <220 HB  | <19    | Low                     | 300  | .0005               | .0010       | .0020     |
|  |          |        | High                    | 360  | .0010               | .0020       | .0030     |
| medium alloy steels<br>O1 to O7, W1 to W3, M1 to M3, T1 to T5,<br>A2 to A3, S1 to S7, P2 to P3 | 225-286  | 20-30  | Low                     | 250  | .0003               | .0005       | .001      |
|  |          |        | High                    | 350  | .0005               | .0010       | .0015     |
| high alloy steels<br>M4 to M7, T6 to T15, D2 to D7, A4 to A7, P4                               | 294-371  | 31-40  | Low                     | 120  | .0003               | .0005       | .0008     |
|  |          |        | High                    | 250  | .0005               | .0010       | .0015     |
| stainless steels 200/300 series  | 135-275  | <28    | Low                     | 100  | .0005               | .0010       | .0020     |
|  |          |        | High                    | 200  | .0010               | .0020       | .0030     |
| stainless steels 400/500 series  | 135-330  | <35    | Low                     | 100  | .0003               | .0008       | .0010     |
|  |          |        | High                    | 200  | .0005               | .0010       | .0015     |
| nickel-based alloys  | 140-475  | <32-50 | Low                     | 90   | .0005               | .0010       | .0015     |
|  |          |        | High                    | 180  | .0010               | .0015       | .0040     |
| titanium alloys  | 110-450  | <48    | Low                     | 80   | .0005               | .0010       | .0025     |
|  |          |        | High                    | 100  | .0010               | .0030       | .0050     |
| inconel  | 140-475  | <48    | Low                     | 30   | .0005               | .0010       | .0015     |
|  |          |        | High                    | 50   | .0010               | .0015       | .0030     |
| aluminum, low silicon  | —        | —      | Low                     | 800  | .0030               | .0040       | .0060     |
|  |          |        | High                    | 1600 | .0040               | .0060       | .0080     |

Higher values for surface speed should be used for radial depths of cut less than 25% of the diameter. Lower values for surface speed should be used for radial depths of cut greater than 25% of the diameter. The above recommendations are for axial lengths of cut not to exceed 1 times the cutter diameter for profiling and .5 times the diameter for slotting. Recommended speeds above are for uncoated tools only and should be adjusted when using coated

tools. Generally, speeds can be increased by the following factors: TiCN-coated tools – 20-25% increase; TiAlN-coated tools – 40-50% increase. The above speeds are a recommended starting point only. If the tool is working well, without vibrations or significant noise, increase the SFM in 5-10% increments. Ultimate speeds will depend upon setup conditions. Higher or lower parameters may be required to achieve optimum conditions.

## Series HPEM for stainless steels and exotic materials

### Features and Benefits of HPEM End Mills

- Maximized strength due to increased cross-sectional area in the core and flute body.
- Combination of micrograin carbide substrate with high-performance coatings.
- Achieve 50% greater chip loads and 20% to 40% higher speeds than conventional end mills.

### Applications for HPEM End Mills

- Designed for cutting applications involving excessive mechanical stress.
- Ideally suited for use in stainless steel and exotics such as hastalloy, waspalloy, and inconel.
- 3-flute square end for pocketing, slotting, or roughing.
- 3-flute ball nose gives enhanced surface finish in contour cutting and rapid chip removal in plunge cutting.
- 5-flute design for profiling and finishing applications.

### Tolerances for Solid Carbide End Mills

Cutting Diameter:

1/32" through 1/4" +.000 –.002

17/64" through 1" +.000 –.003

Shank Diameter:

+.0000 –.0005

# High-Performance End Mills For Steel

## Series HPDEM-5 • Double End

### Applications |

HARDENED  
STEEL

STAINLESS  
STEEL

### Features |

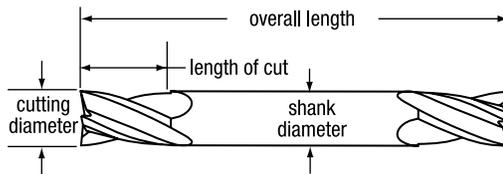
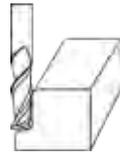
SOLID  
CARBIDE

BRIGHT

TiCN

5 FLUTE  
DC

47°



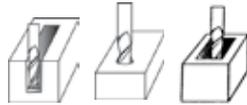
| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | EDP Number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               | bright     | TiCN   |
| 1/8              | .1250   | 3.18   | 1/8            | 1/4           | 1 1/2          | 5             | B05100     | B05605 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/16          | 2              | 5             | B05101     | B05609 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/8           | 2 1/2          | 5             | B05103     | B05613 |
| 5/16             | .3125   | 7.94   | 5/16           | 7/16          | 2 1/2          | 5             | B05104     | B05617 |
| 3/8              | .3750   | 9.53   | 3/8            | 1/2           | 2 1/2          | 5             | B05106     | B05621 |
| 7/16             | .4375   | 11.11  | 7/16           | 9/16          | 3              | 5             | B05108     | B05625 |
| 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 3              | 5             | B05110     | B05629 |



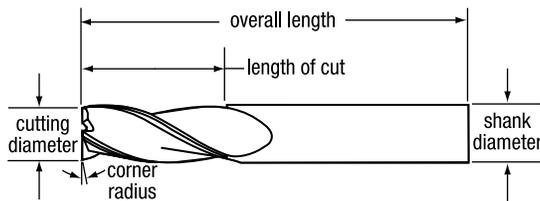
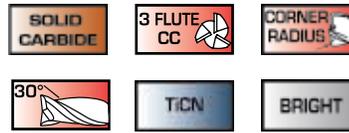
# High-Performance End Mills For Steel

## Series HPEM-3

### Applications |



### Features |



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | corner radius | EDP Number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               |               | bright     | TiCN   |
| 1/8              | .1250   | 3.18   | 1/8            | 1/4           | 1 1/2          | 3             | .010          | B05105     | B05005 |
| 1/8              | .1250   | 3.18   | 1/8            | 1/2           | 1 1/2          | 3             | .010          | B05140     | B05040 |
| 5/32             | .1562   | 3.97   | 3/16           | 5/16          | 2              | 3             | .010          | B05107     | B05007 |
| 5/32             | .1562   | 3.97   | 3/16           | 9/16          | 2              | 3             | .010          | B05142     | B05042 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/16          | 2              | 3             | .010          | B05109     | B05009 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/8           | 2              | 3             | .010          | B05144     | B05044 |
| 7/32             | .2188   | 5.56   | 1/4            | 1/2           | 2              | 3             | .020          | B05111     | B05011 |
| 7/32             | .2188   | 5.56   | 1/4            | 3/4           | 2 1/2          | 3             | .020          | B05146     | B05046 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/8           | 2              | 3             | .020          | B05113     | B05013 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 3             | .020          | B05148     | B05048 |
| 9/32             | .2812   | 7.14   | 5/16           | 7/16          | 2              | 3             | .020          | B05115     | B05015 |
| 9/32             | .2812   | 7.14   | 5/16           | 13/16         | 2 1/2          | 3             | .020          | B05150     | B05050 |
| 5/16             | .3125   | 7.94   | 5/16           | 1/2           | 2              | 3             | .020          | B05117     | B05017 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 3             | .020          | B05152     | B05052 |
| 11/32            | .3438   | 8.73   | 3/8            | 1/2           | 2              | 3             | .020          | B05119     | B05019 |
| 11/32            | .3438   | 8.73   | 3/8            | 7/8           | 2 1/2          | 3             | .020          | B05154     | B05054 |
| 3/8              | .3750   | 9.53   | 3/8            | 1/2           | 2              | 3             | .020          | B05121     | B05021 |
| 3/8              | .3750   | 9.53   | 3/8            | 7/8           | 2 1/2          | 3             | .020          | B05156     | B05056 |
| 13/32            | .4062   | 10.32  | 7/16           | 9/16          | 2 1/2          | 3             | .020          | B05123     | B05023 |
| 13/32            | .4062   | 10.32  | 7/16           | 1             | 2 1/2          | 3             | .020          | B05158     | B05058 |
| 7/16             | .4375   | 11.11  | 7/16           | 9/16          | 2 1/2          | 3             | .020          | B05125     | B05025 |
| 7/16             | .4375   | 11.11  | 7/16           | 1             | 2 1/2          | 3             | .020          | B05160     | B05060 |
| 15/32            | .4688   | 11.91  | 1/2            | 1/2           | 2 1/2          | 3             | .020          | B05127     | B05027 |
| 15/32            | .4688   | 11.91  | 1/2            | 1 1/4         | 3              | 3             | .020          | B05162     | B05062 |
| 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 2 1/2          | 3             | .030          | B05129     | B05029 |
| 1/2              | .5000   | 12.70  | 1/2            | 1 1/4         | 3              | 3             | .030          | B05164     | B05064 |
| 5/8              | .6250   | 15.88  | 5/8            | 5/8           | 3              | 3             | .030          | B05131     | B05031 |
| 5/8              | .6250   | 15.88  | 5/8            | 1 5/8         | 3 1/2          | 3             | .030          | B05166     | B05066 |
| 3/4              | .7500   | 19.05  | 3/4            | 7/8           | 3              | 3             | .030          | B05133     | B05032 |
| 3/4              | .7500   | 19.05  | 3/4            | 1 5/8         | 4              | 3             | .030          | B05168     | B05067 |
| 1                | 1.0000  | 25.40  | 1              | 1 1/8         | 3              | 3             | .030          | B05135     | B05034 |
| 1                | 1.0000  | 25.40  | 1              | 2             | 4              | 3             | .030          | B05170     | B05069 |

CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

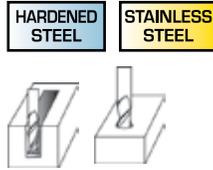
CARBIDE BURS

INDEX

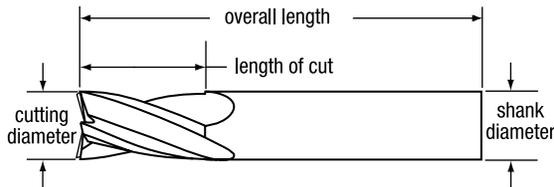
# High-Performance End Mills For Steel

## Series HPEM-5

### Applications |



### Features |



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | EDP Number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               | bright     | TiCN   |
| 1/8              | .1250   | 3.18   | 1/8            | 1/4           | 1 1/2          | 5             | B05112     | B05405 |
| 1/8              | .1250   | 3.18   | 1/8            | 1/2           | 1 1/2          | 5             | B05141     | B05440 |
| 5/32             | .1562   | 3.97   | 3/16           | 5/16          | 2              | 5             | B05114     | B05407 |
| 5/32             | .1562   | 3.97   | 3/16           | 9/16          | 2              | 5             | B05143     | B05442 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/16          | 2              | 5             | B05116     | B05409 |
| 3/16             | .1875   | 4.76   | 3/16           | 9/16          | 2              | 5             | B05145     | B05444 |
| 7/32             | .2188   | 5.56   | 1/4            | 3/8           | 2              | 5             | B05118     | B05411 |
| 7/32             | .2188   | 5.56   | 1/4            | 3/4           | 2 1/2          | 5             | B05147     | B05446 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/8           | 2              | 5             | B05120     | B05413 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 5             | B05149     | B05448 |
| 1/4              | .2500   | 6.35   | 1/4            | 1 1/4         | 4              | 5             | B05171     | B05513 |
| 9/32             | .2812   | 7.14   | 5/16           | 7/16          | 2              | 5             | B05122     | B05415 |
| 9/32             | .2812   | 7.14   | 5/16           | 13/16         | 2 1/2          | 5             | B05151     | B05450 |
| 5/16             | .3125   | 7.94   | 5/16           | 7/16          | 2              | 5             | B05124     | B05417 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 5             | B05153     | B05452 |
| 5/16             | .3125   | 7.94   | 5/16           | 1 1/4         | 4              | 5             | B05173     | B05517 |
| 3/8              | .3750   | 9.53   | 3/8            | 1/2           | 2              | 5             | B05126     | B05421 |
| 3/8              | .3750   | 9.53   | 3/8            | 7/8           | 2 1/2          | 5             | B05155     | B05456 |
| 3/8              | .3750   | 9.53   | 3/8            | 1 1/2         | 4              | 5             | B05175     | B05521 |
| 7/16             | .4375   | 11.11  | 7/16           | 9/16          | 2 1/2          | 5             | B05128     | B05425 |
| 7/16             | .4375   | 11.11  | 7/16           | 1             | 2 1/2          | 5             | B05157     | B05460 |
| 7/16             | .4375   | 11.11  | 7/16           | 2             | 4              | 5             | B05177     | B05525 |
| 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 2 1/2          | 5             | B05130     | B05429 |
| 1/2              | .5000   | 12.70  | 1/2            | 1 1/4         | 3              | 5             | B05159     | B05464 |
| 1/2              | .5000   | 12.70  | 1/2            | 2             | 4              | 5             | B05179     | B05529 |
| 9/16             | .5625   | 14.29  | 9/16           | 1 1/2         | 3 1/2          | 5             | B05161     | B05465 |
| 5/8              | .6250   | 15.88  | 5/8            | 3/4           | 3              | 5             | B05132     | B05431 |
| 5/8              | .6250   | 15.88  | 5/8            | 1 5/8         | 3 1/2          | 5             | B05163     | B05466 |
| 5/8              | .6250   | 15.88  | 5/8            | 2 1/2         | 5              | 5             | B05181     | B05531 |
| 3/4              | .7500   | 19.05  | 3/4            | 7/8           | 3              | 5             | B05134     | B05432 |
| 3/4              | .7500   | 19.05  | 3/4            | 1 5/8         | 4              | 5             | B05165     | B05467 |
| 3/4              | .7500   | 19.05  | 3/4            | 3 1/4         | 6              | 5             | B05183     | B05532 |
| 7/8              | .8750   | 22.23  | 7/8            | 2             | 4              | 5             | B05167     | B05468 |
| 1                | 1.0000  | 25.40  | 1              | 1 1/8         | 3              | 5             | B05136     | B05434 |
| 1                | 1.0000  | 25.40  | 1              | 2             | 4              | 5             | B05169     | B05469 |
| 1                | 1.0000  | 25.40  | 1              | 3 1/4         | 6              | 5             | B05185     | B05533 |



# High-Performance End Mills for Aluminum

**BASSETT™**

## Operating Parameters: HPAM High-Performance End Mills for Aluminum

| Type of Cut                      | Aluminum Alloys<br>6061-T6, 7075-T6,<br>440, 356, 380, C61300 | Depth of Cut<br>% of tool<br>diameter | SFM<br>(speed) | End Mill Diameter Chip Load per Tooth |        |       |        |        |       |
|----------------------------------|---|---------------------------------------|----------------|---------------------------------------|--------|-------|--------|--------|-------|
|                                  |   |                                       |                | 1/4"                                  | 3/8"   | 1/2"  | 5/8"   | 3/4"   | 1"    |
| shallow slotting                 | < 32 HRC  | < 50%                                 | 1200 +         | .0045                                 | .0071  | .0100 | .0123  | .0149  | .0200 |
|                                  | > 32 HRC  |                                       | 600 +          | .0036                                 | .0057  | .0080 | .0098  | .0119  | .0160 |
| deep slotting                    | < 32 HRC  | 75-100%                               | 1200 +         | .0036                                 | .0057  | .0080 | .0098  | .0119  | .0160 |
|                                  | > 32 HRC  |                                       | 600 +          | .0027                                 | .0043  | .0060 | .0074  | .0089  | .0120 |
| medium radial<br>1.0 x dia depth | < 32 HRC  | 30% x dia.<br>radial                  | 1200 +         | .0045                                 | .0071  | .0100 | .0123  | .0149  | .0200 |
|                                  | > 32 HRC  |                                       | 600 +          | .0036                                 | .0057  | .0080 | .0098  | .0119  | .0160 |
| heavy radial<br>1.0 x dia depth  | < 32 HRC  | 50% x dia.<br>radial                  | 1200 +         | .0036                                 | .0057  | .0080 | .0098  | .0119  | .016  |
| medium radial<br>2.0 x dia depth | < 32 HRC  | 30% x dia.<br>radial                  | 1200 +         | .0045                                 | .0071  | .0100 | .0123  | .0149  | .0200 |
|                                  | > 32 HRC  |                                       | 600 +          | .0036                                 | .0057  | .0080 | .0098  | .0119  | .0160 |
| heavy radial<br>2.0 x dia depth  | < 32 HRC  | 50% x dia.<br>radial                  | 1200 +         | .0036                                 | .0057  | .0080 | .0098  | .0119  | .0160 |
| finishing<br>medium radial       | < 32 HRC  | < 25% of dia.                         | 1200 +         | .0045                                 | .0071  | .0100 | .0123  | .0149  | .0200 |
|                                  | > 32 HRC  |                                       | 600 +          | .0036                                 | .0057  | .0080 | .0098  | .0119  | .0160 |
| finishing<br>light radial        | < 32HRC   | < 10% of dia.                         | 1200 +         | .0045                                 | .00713 | .0100 | .01225 | .01485 | .0200 |
| finishing                        | < 32 HRC  | < .010 radial<br>depth                | 1200 +         | .0054                                 | .0086  | .0120 | .0147  | .0178  | .0240 |
|                                  | > 32 HRC  |                                       | 600 +          | .0045                                 | .0071  | .0100 | .0123  | .0149  | .0200 |

This chart represents starting points based on a coated tool. Reduce rates up to 50% when using an uncoated tool.

These speed and feed rates are suggested as general guidelines. Machine type, horsepower, spindle speed limitations, toolholding and workholding devices all may impact a cutting tool's ability to perform properly. Greenfield Industries is not responsible for tool failure, part damage, or injury that may be caused by following these general recommendations..

### Formulae

$$RPM = (SFM \times 3.82) / \text{tool diameter}$$

$$IPM = \text{number of flutes} \times RPM \times \text{chip load per tooth}$$

## Series HPAM for aluminum and nonferrous materials

### Features and Benefits of HPAM End Mills

- Delivers superior performance, providing increased tool life and improved part finish.
- Concentric margins stabilize the tool in the cut and reduce chatter at elevated speeds.
- Greater resistance to chipping with increased feed and speed rates over conventional carbide tools.
- Design incorporates rake enhancements in the flute for improved chip flow and higher feed rates at high and low spindle speeds.
- Tool design eliminates excess pressure that causes chip packing.

### Applications for HPAM End Mills

- 2-flute square end offers excellent performance in roughing and finishing, in ramp cutting and in plunging.
- 2-flute ball nose designed for contouring aluminum, copper, and other non-ferrous materials.
- 3-flute square end gives superior surface finishes without sacrificing metal removal rates in high-speed slotting, profiling, and ramping.

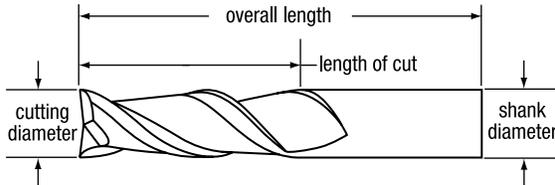
# High-Performance End Mills for Aluminum

Series **HPAM-2** • square end

**Applications |**



**Features |**



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | EDP number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               | bright     | TiCN   |
| 1/8              | .1250   | 3.18   | 1/8            | 1/4           | 1 1/2          | 2             | B04440     | B06440 |
| 1/8              | .1250   | 3.18   | 1/8            | 3/8           | 1 1/2          | 2             | B04405     | B06405 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/16          | 2              | 2             | B04444     | B06444 |
| 3/16             | .1875   | 4.76   | 3/16           | 9/16          | 2              | 2             | B04409     | B06409 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/8           | 2 1/2          | 2             | B04448     | B06448 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 2             | B04413     | B06413 |
| 1/4              | .2500   | 6.35   | 1/4            | 1 1/4         | 3              | 2             | B04548     | B06548 |
| 5/16             | .3125   | 7.94   | 5/16           | 7/16          | 2 1/2          | 2             | B04452     | B06452 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 2             | B04417     | B06417 |
| 5/16             | .3125   | 7.94   | 5/16           | 1 1/4         | 3 1/2          | 2             | B04552     | B06552 |
| 5/16             | .3125   | 7.94   | 5/16           | 2 1/8         | 4              | 2             | B04617     | B06617 |
| 3/8              | .3750   | 9.53   | 3/8            | 1/2           | 2 1/2          | 2             | B04456     | B06456 |
| 3/8              | .3750   | 9.53   | 3/8            | 1             | 2 1/2          | 2             | B04421     | B06421 |
| 3/8              | .3750   | 9.53   | 3/8            | 1 1/2         | 4              | 2             | B04556     | B06556 |
| 3/8              | .3750   | 9.53   | 3/8            | 2 1/2         | 6              | 2             | B04621     | B06621 |
| 7/16             | .4375   | 11.11  | 7/16           | 9/16          | 2 1/2          | 2             | B04460     | B06460 |
| 7/16             | .4375   | 11.11  | 7/16           | 1             | 2 1/2          | 2             | B04425     | B06425 |
| 7/16             | .4375   | 11.11  | 7/16           | 2             | 4              | 2             | B04560     | B06560 |
| 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 3              | 2             | B04464     | B06464 |
| 1/2              | .5000   | 12.70  | 1/2            | 1 1/4         | 3              | 2             | B04429     | B06429 |
| 1/2              | .5000   | 12.70  | 1/2            | 2             | 4              | 2             | B04564     | B06564 |
| 1/2              | .5000   | 12.70  | 1/2            | 3 1/8         | 6              | 2             | B04629     | B06629 |
| 5/8              | .6250   | 15.88  | 5/8            | 3/4           | 3 1/2          | 2             | B04466     | B06466 |
| 5/8              | .6250   | 15.88  | 5/8            | 1 5/8         | 4              | 2             | B04431     | B06431 |
| 5/8              | .6250   | 15.88  | 5/8            | 2 1/2         | 5              | 2             | B04566     | B06566 |
| 5/8              | .6250   | 15.88  | 5/8            | 3 3/4         | 6              | 2             | B04631     | B06631 |
| 3/4              | .7500   | 19.05  | 3/4            | 1             | 4              | 2             | B04467     | B06467 |
| 3/4              | .7500   | 19.05  | 3/4            | 1 5/8         | 4              | 2             | B04432     | B06432 |
| 3/4              | .7500   | 19.05  | 3/4            | 3 1/4         | 6              | 2             | B04567     | B06567 |
| 3/4              | .7500   | 19.05  | 3/4            | 4             | 6 1/2          | 2             | B04632     | B06632 |
| 1                | 1.0000  | 25.40  | 1              | 1 1/4         | 5              | 2             | B04469     | B06469 |
| 1                | 1.0000  | 25.40  | 1              | 2             | 5              | 2             | B04434     | B06434 |
| 1                | 1.0000  | 25.40  | 1              | 3 1/4         | 6              | 2             | B04569     | B06569 |
| 1                | 1.0000  | 25.40  | 1              | 4 1/8         | 7              | 2             | B04634     | B06634 |



# High-Performance End Mills for Aluminum

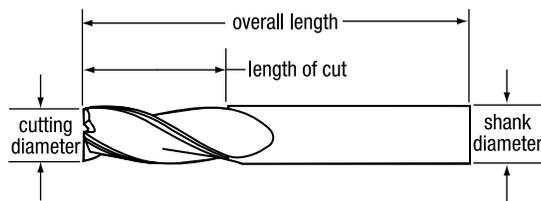
**BASSETT™**

Series **HPAM-3** • square end

Applications |



Features |



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | bright | EDP number |  |
|------------------|---------|--------|----------------|---------------|----------------|---------------|--------|------------|--|
| fractional       | decimal | metric |                |               |                |               |        | TiCN       |  |
| 1/8              | .1250   | 3.18   | 1/8            | 1/4           | 1 1/2          | 3             | B04005 | B06005     |  |
| 1/8              | .1250   | 3.18   | 1/8            | 3/8           | 1 1/2          | 3             | B04040 | B06040     |  |
| 3/16             | .1875   | 4.76   | 3/16           | 5/16          | 2              | 3             | B04009 | B06009     |  |
| 3/16             | .1875   | 4.76   | 3/16           | 9/16          | 2              | 3             | B04044 | B06044     |  |
| 1/4              | .2500   | 6.35   | 1/4            | 3/8           | 2              | 3             | B04013 | B06013     |  |
| 1/4              | .2500   | 6.35   | 1/4            | 5/8           | 2 1/2          | 3             | B04048 | B06048     |  |
| 1/4              | .2500   | 6.35   | 1/4            | 1 1/4         | 3              | 3             | B04148 | B06148     |  |
| 5/16             | .3125   | 7.94   | 5/16           | 7/16          | 2              | 3             | B04017 | B06017     |  |
| 5/16             | .3125   | 7.94   | 5/16           | 5/8           | 2 1/2          | 3             | B04052 | B06052     |  |
| 5/16             | .3125   | 7.94   | 5/16           | 1 1/4         | 3 1/2          | 3             | B04152 | B06152     |  |
| 5/16             | .3125   | 7.94   | 5/16           | 2 1/8         | 4              | 3             | B04217 | B06217     |  |
| 3/8              | .3750   | 9.53   | 3/8            | 1/2           | 2              | 3             | B04021 | B06021     |  |
| 3/8              | .3750   | 9.53   | 3/8            | 1             | 2 1/2          | 3             | B04056 | B06056     |  |
| 3/8              | .3750   | 9.53   | 3/8            | 1 1/2         | 3 1/2          | 3             | B04156 | B06156     |  |
| 3/8              | .3750   | 9.53   | 3/8            | 2 1/2         | 6              | 3             | B04221 | B06221     |  |
| 7/16             | .4375   | 11.11  | 7/16           | 9/16          | 2 1/2          | 3             | B04025 | B06025     |  |
| 7/16             | .4375   | 11.11  | 7/16           | 1 1/4         | 2 1/2          | 3             | B04060 | B06060     |  |
| 7/16             | .4375   | 11.11  | 7/16           | 2             | 4              | 3             | B04160 | B06160     |  |
| 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 2 1/2          | 3             | B04029 | B06029     |  |
| 1/2              | .5000   | 12.70  | 1/2            | 1 1/4         | 3              | 3             | B04064 | B06064     |  |
| 1/2              | .5000   | 12.70  | 1/2            | 2             | 4              | 3             | B04164 | B06164     |  |
| 1/2              | .5000   | 12.70  | 1/2            | 3 1/8         | 6              | 3             | B04229 | B06229     |  |
| 5/8              | .6250   | 15.88  | 5/8            | 3/4           | 3              | 3             | B04031 | B06031     |  |
| 5/8              | .6250   | 15.88  | 5/8            | 1 5/8         | 4              | 3             | B04066 | B06066     |  |
| 5/8              | .6250   | 15.88  | 5/8            | 2 1/2         | 5              | 3             | B04166 | B06166     |  |
| 5/8              | .6250   | 15.88  | 5/8            | 3 3/4         | 6              | 3             | B04231 | B06231     |  |
| 3/4              | .7500   | 19.05  | 3/4            | 1             | 3              | 3             | B04032 | B06032     |  |
| 3/4              | .7500   | 19.05  | 3/4            | 1 5/8         | 4              | 3             | B04067 | B06067     |  |
| 3/4              | .7500   | 19.05  | 3/4            | 3 1/4         | 6              | 3             | B04167 | B06167     |  |
| 1                | 1.0000  | 25.40  | 1              | 1 1/4         | 4              | 3             | B04034 | B06034     |  |
| 1                | 1.0000  | 25.40  | 1              | 2             | 5              | 3             | B04069 | B06069     |  |
| 1                | 1.0000  | 25.40  | 1              | 3 1/4         | 6              | 3             | B04169 | B06169     |  |

# High-Performance Roughers

## Operating Parameters for High-Performance Roughers

| Material  | Hardness  |         | Surface Feet per Minute |             |           | Chip Load per Tooth |               |
|---|-----------|---------|-------------------------|-------------|-----------|---------------------|---------------|
|   | Brinell   | HRC     | Uncoated                | TiCN        | TiAlN     | 1/4" to 1/2"        | 1/2" - 1"     |
| low and plain carbon, alloy, and tool steels                  | <220 HB   | <19     | -                       | 325 - 500   | 430 - 575 | .0015 - .0030       | .0030 - .0045 |
| plain carbon, alloy and tool steels                           | 225 - 286 | 20 - 30 | -                       | 215 - 375   | 350 - 430 | .0015 - .0030       | .0030 - .0045 |
|   | 294 - 371 | 31 - 40 | -                       | 180 - 280   | 210 - 320 | .0011 - .0021       | .0021 - .0032 |
| austenitic stainless steels 200 and 300 series                | 135 - 275 | <28     | -                       | 215 - 440   | 250 - 500 | .0010 - .0025       | .0025 - .0040 |
| ferritic, martensitic, 400/500 series and PH stainless steels | 135 - 330 | <35     | -                       | 190 - 375   | 225 - 430 | .0015 - .0030       | .0030 - .0045 |
| aluminum, low silicon and other non-ferrous alloys            | 50 -150   | 600     | 2000                    | 2400 - 2500 | -         | .0020 - .0038       | .0038 - .0077 |
| aluminum, high silicon  |           |         | 600 - 2000              | 720 - 2500  | -         | .0018 - .0035       | .0035 - .0071 |

Series **MRS** Rougher • multi-flute • center cutting • square end

Applications |

HARDENED STEEL

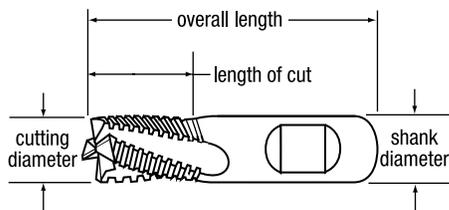


Features |

SOLID CARBIDE

BRIGHT

TiCN



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | EDP number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               | bright     | TiCN   |
| 1/4              | .2500   | 6.35   | 1/4            | 3/8           | 2              | 3             | B03416     | B03816 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 3             | B03216     | B03316 |
| 3/8              | .3750   | 9.53   | 3/8            | 1/2           | 2              | 4             | B03424     | B03824 |
| 3/8              | .3750   | 9.53   | 3/8            | 7/8           | 2 1/2          | 4             | B03224     | B03324 |
| 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 2 1/2          | 4             | B03432     | B03832 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 4             | B03232     | B03332 |
| 5/8              | .6250   | 15.88  | 5/8            | 3/4           | 3              | 4             | B03440     | B03840 |
| 5/8              | .6250   | 15.88  | 5/8            | 1-1/4         | 3 1/2          | 4             | B03240     | B03340 |
| 3/4              | .7500   | 19.05  | 3/4            | 7/8           | 3 1/2          | 4             | B03448     | B03848 |
| 3/4              | .7500   | 19.05  | 3/4            | 1-1/2         | 4              | 4             | B03248     | B03348 |
| 1                | 1.0000  | 25.40  | 1              | 1             | 3 1/2          | 5             | B03464     | B03864 |
| 1                | 1.0000  | 25.40  | 1              | 1-1/2         | 4              | 5             | B03264     | B03364 |



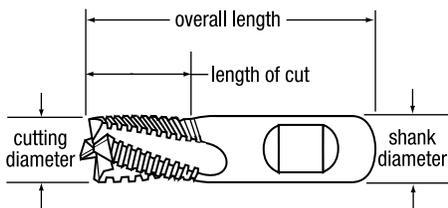
# High-Performance Roughers

Series **MRA** Rougher • square end

**Applications**



**Features**



|  | cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | bright | EDP number |        |
|--|------------------|---------|--------|----------------|---------------|----------------|---------------|--------|------------|--------|
|  | fractional       | decimal | metric |                |               |                |               |        | TiCN       |        |
|  | 1/4              | .2500   | 6.35   | 1/4            | 3/8           | 2              | 3             | B10117 |            | B03117 |
|  | 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 3             | B03016 |            | B03116 |
|  | 3/8              | .3750   | 9.53   | 3/8            | 1/2           | 2              | 3             | B10118 |            | B03118 |
|  | 3/8              | .3750   | 9.53   | 3/8            | 7/8           | 2 1/2          | 3             | B03024 |            | B03124 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 2 1/2          | 3             | B10119 |            | B03119 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 3             | B03032 |            | B03132 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 2             | 4 1/2          | 3             | B03532 |            | B03632 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 3/4           | 3              | 3             | B10120 |            | B03120 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 3             | B03040 |            | B03140 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 2 1/4         | 5              | 3             | B03540 |            | B03640 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 1             | 3 1/2          | 3             | B10121 |            | B03121 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 3             | B03048 |            | B03148 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 2 1/4         | 5              | 3             | B03548 |            | B03648 |
|  | 1                | 1.0000  | 25.40  | 1              | 1 1/8         | 3 1/2          | 3             | B10122 |            | B03122 |
|  | 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 3             | B03064 |            | B03164 |
|  | 1                | 1.0000  | 25.40  | 1              | 2 1/4         | 5              | 3             | B03564 |            | B03664 |

CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

CARBIDE BURS

INDEX

## General-Purpose End Mills

### Features and Benefits of General-Purpose End Mills

- 10% cobalt submicron grain carbide substrate.
- 30° right-hand spiral, right-hand cut helix designed for maximum chip clearance.
- 2-, 3-, and 4-flute configurations available.
- Square end and ball nose end geometries available.
- Multiple lengths in select styles and sizes.
- TiCN-coated tools available in most styles.

### Applications for General-Purpose End Mills

- Use in general milling applications in medium- to low-carbon steels, cast iron, non-ferrous light metals, and plastics.
- Double-end end mills economically increase productivity.
- 2-flute end mills are generally used for plunging, slotting, and heavy peripheral cuts.
- 3-flute end mills provide a compromise between the chip clearance of a 2-flute tool and the rigidity and wear resistance of a 4-flute tool; especially useful for many slotting operations.
- 4-flute end mills are most commonly used in profiling and in harder materials; stiffer construction results in minimal deflection. They also provide good surface finishes and wear-resistant characteristics for excellent size control.

### Cutting Data for General-Purpose Solid Carbide End Mills

| Material  | Hardness |       | Surface Feet per Minute | Chip Load per Tooth |       |       |       |       |       |       |       |       |       |       |
|---|----------|-------|-------------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|   | Brinell  | HRc   |                         | 1/16"               | 1/8"  | 3/16" | 1/4"  | 5/16" | 3/8"  | 1/2"  | 5/8"  | 3/4"  | 1"    |       |
| low and plain carbon, alloy and tool steels     | <220 HB  | <19   | Low<br>High             | 270<br>360          | .0004 | .0006 | .0010 | .0015 | .0020 | .0025 | .0030 | .0035 | .0040 | .0045 |
| plain carbon, alloy, and tool steels            | 225-286  | 20-30 | Low<br>High             | 180<br>270          | .0004 | .0006 | .0010 | .0015 | .0020 | .0025 | .0030 | .0035 | .0040 | .0045 |
|   | 294-371  | 31-40 | Low<br>High             | 135<br>180          | .0003 | .0004 | .0007 | .0011 | .0014 | .0018 | .0021 | .0025 | .0028 | .0032 |
| austenitic stainless steels 200 and 300 series  | 135-275  | <28   | Low<br>High             | 180<br>315          | .0002 | .0004 | .0006 | .0010 | .0015 | .0020 | .0025 | .0030 | .0035 | .0040 |
| ductile and malleable cast iron                 | 120-320  | <35   | Low<br>High             | 160<br>270          | .0003 | .0004 | .0007 | .0011 | .0014 | .0018 | .0021 | .0025 | .0028 | .0032 |
| cast iron (gray)                                | 120-220  | <18   | Low<br>High             | 315<br>450          | .0008 | .0012 | .0020 | .0030 | .0040 | .0050 | .0060 | .0070 | .0080 | .0090 |
|   | 220-320  | 19-34 | Low<br>High             | 225<br>315          | .0005 | .0007 | .0012 | .0018 | .0024 | .0030 | .0036 | .0042 | .0048 | .0055 |
| low-silicon aluminum & other non-ferrous alloys | 50-150   | —     | Low<br>High             | 720<br>900          | .0006 | .0010 | .0016 | .0024 | .0032 | .0040 | .0048 | .0560 | .0064 | .0072 |
| cobalt-based high-temperature alloys            | 150-425  | <45   | Low<br>High             | 30<br>45            | .0004 | .0006 | .0010 | .0015 | .0020 | .0025 | .0030 | .0035 | .0040 | .0045 |
| nickel-based high-temperature alloys            | 140-300  | <32   | Low<br>High             | 45<br>90            | .0002 | .0004 | .0006 | .0009 | .0012 | .0015 | .0018 | .0021 | .0024 | .0027 |
|   | 300-475  | 32-50 | Low<br>High             | 40<br>70            | .0002 | .0004 | .0006 | .0009 | .0012 | .0015 | .0018 | .0021 | .0024 | .0027 |

Higher values for surface speed should be used for radial depths of cut less than 25% of the diameter. Lower values for surface speed should be used for radial depths of cut greater than 25% of the diameter. The above recommendations are for axial lengths of cut not to exceed 1 times the cutter diameter for profiling and .5 times the diameter for slotting.

Recommended speeds above are for uncoated tools only and should be adjusted when using coated tools. Generally, speeds can be increased by the following factors:

- TiCN-coated tools – 20-25% increase
- TiAlN-coated tools – 40-50% increase

The above speeds are a recommended starting point only. If the tool is working well, without vibrations or significant noise, increase the SFM in 5-10% increments. Ultimate speeds will depend upon setup conditions. Higher or lower parameters may be required to achieve optimum conditions.



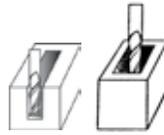
# Double End General-Purpose

**BASSETT™**

## Series MDE-2

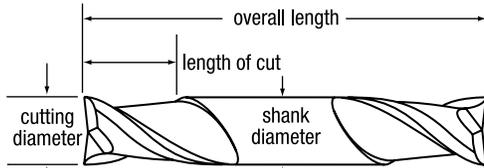
### Applications |

STAINLESS STEEL
CAST IRON
NON-FERROUS MATERIALS



### Features |

SOLID CARBIDE
BRIGHT  
2 FLUTE CC
TiCN



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | EDP number |         |
|------------------|---------|--------|----------------|---------------|----------------|---------------|------------|---------|
| fractional       | decimal | metric |                |               |                |               | bright     | TiCN    |
| 1/16             | .0625   | 1.59   | 1/8            | 1/8           | 1 1/2          | 2             | B52801     | B01681  |
| 3/32             | .0938   | 2.38   | 1/8            | 3/16          | 1 1/2          | 2             | B52803     | B01682  |
| 1/8              | .1250   | 3.18   | 1/8            | 1/4           | 1 1/2          | 2             | B52805W    | B01683W |
| 1/8              | .1250   | 3.18   | 3/8            | 3/8           | 3              | 2             | B52401     | B01577  |
| 5/32             | .1562   | 3.97   | 3/8            | 5/16          | 3 1/8          | 2             | B52807     | B01684  |
| 5/32             | .1562   | 3.97   | 3/8            | 7/16          | 3 1/8          | 2             | B52403     | B01578  |
| 3/16             | .1875   | 4.76   | 3/16           | 3/8           | 2              | 2             | B52809     | B01685  |
| 3/16             | .1875   | 4.76   | 3/8            | 1/2           | 3 1/4          | 2             | B52405     | B01579  |
| 7/32             | .2188   | 5.56   | 3/8            | 9/16          | 3 1/2          | 2             | B52407     | B01580  |
| 1/4              | .2500   | 6.35   | 1/4            | 1/2           | 2 1/2          | 2             | B52814     | B01687  |
| 1/4              | .2500   | 6.35   | 3/8            | 5/8           | 3 1/2          | 2             | B52410     | B01581  |
| 9/32             | .2812   | 7.14   | 3/8            | 11/16         | 3 1/2          | 2             | B52412     | B01582  |
| 5/16             | .3125   | 7.94   | 3/8            | 3/4           | 3 1/2          | 2             | B52414     | B01583  |
| 3/8              | .3750   | 9.53   | 3/8            | 9/16          | 2 1/2          | 2             | B52818     | B01689  |
| 3/8              | .3750   | 9.53   | 3/8            | 3/4           | 3 1/2          | 2             | B52418     | B01585  |
| 7/16             | .4375   | 11.11  | 1/2            | 7/8           | 4              | 2             | B52420     | B01586  |
| 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 3              | 2             | B52823     | B01691  |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 4              | 2             | B52423     | B01587  |

## Series MDE-2-B

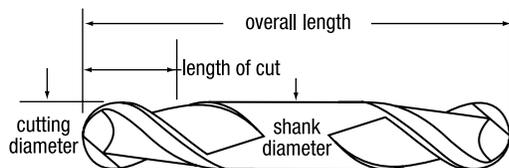
### Applications |

CAST IRON
STEEL
NON-FERROUS MATERIALS



### Features |

SOLID CARBIDE
2 FLUTE BALL CC  
BRIGHT
TiCN



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | EDP number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               | bright     | TiCN   |
| 1/16             | .0625   | 1.59   | 1/8            | 1/8           | 1 1/2          | 2             | B52881     | B01703 |
| 3/32             | .0938   | 2.38   | 1/8            | 3/16          | 1 1/2          | 2             | B52883     | B01704 |
| 1/8              | .1250   | 3.18   | 3/8            | 3/8           | 3              | 2             | B52481     | B01599 |
| 5/32             | .1562   | 3.97   | 3/8            | 7/16          | 3 1/8          | 2             | B52483     | B01600 |
| 3/16             | .1875   | 4.76   | 3/8            | 1/2           | 3 1/4          | 2             | B52485     | B01601 |
| 7/32             | .2188   | 5.56   | 3/8            | 9/16          | 3 1/2          | 2             | B52487     | B01602 |
| 1/4              | .2500   | 6.35   | 3/8            | 5/8           | 3 1/2          | 2             | B52490     | B01603 |
| 9/32             | .2812   | 7.14   | 3/8            | 11/16         | 3 1/2          | 2             | B52492     | B01604 |
| 5/16             | .3125   | 7.94   | 3/8            | 3/4           | 3 1/2          | 2             | B52494     | B01605 |
| 3/8              | .3750   | 9.53   | 3/8            | 3/4           | 3 1/2          | 2             | B52498     | B01607 |
| 7/16             | .4375   | 11.11  | 1/2            | 7/8           | 4              | 2             | B52500     | B01608 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 4              | 2             | B52503     | B01609 |

CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

CARBIDE BURS

INDEX

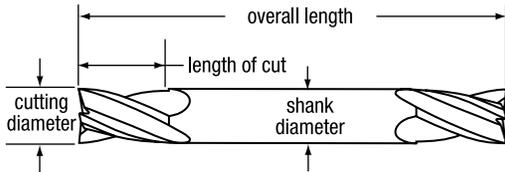
# Double End General-Purpose

## Series MDE-4

### Applications |



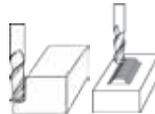
### Features |



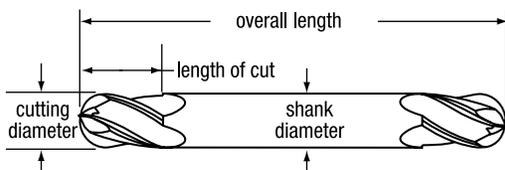
| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | EDP number |         |
|------------------|---------|--------|----------------|---------------|----------------|---------------|------------|---------|
| fractional       | decimal | metric |                |               |                |               | bright     | TiCN    |
| 1/16             | .0625   | 1.59   | 1/8            | 1/8           | 1 1/2          | 4             | B52841     | B01692  |
| 3/32             | .0938   | 2.38   | 1/8            | 3/16          | 1 1/2          | 4             | B52843     | B01693  |
| 1/8              | .1250   | 3.18   | 1/8            | 1/4           | 1 1/2          | 4             | B52845W    | B01694W |
| 1/8              | .1250   | 3.18   | 3/16           | 1/4           | 2              | 4             | B52845     | B01694  |
| 1/8              | .1250   | 3.18   | 3/8            | 3/8           | 3              | 4             | B52441     | B01588  |
| 5/32             | .1562   | 3.97   | 3/16           | 5/16          | 2              | 4             | B52847     | B01695  |
| 5/32             | .1562   | 3.97   | 3/8            | 7/16          | 3 1/8          | 4             | B52443     | B01589  |
| 3/16             | .1875   | 4.76   | 3/16           | 3/8           | 2              | 4             | B52849     | B01696  |
| 3/16             | .1875   | 4.76   | 3/8            | 1/2           | 3 1/4          | 4             | B52445     | B01590  |
| 7/32             | .2188   | 5.56   | 3/8            | 9/16          | 3 1/2          | 4             | B52447     | B01591  |
| 1/4              | .2500   | 6.35   | 1/4            | 1/2           | 2 1/2          | 4             | B52854     | B01698  |
| 1/4              | .2500   | 6.35   | 3/8            | 5/8           | 3 1/2          | 4             | B52450     | B01592  |
| 9/32             | .2812   | 7.14   | 3/8            | 11/16         | 3 1/2          | 4             | B52452     | B01593  |
| 5/16             | .3125   | 7.94   | 5/16           | 1/2           | 2 1/2          | 4             | B52856     | B01699  |
| 5/16             | .3125   | 7.94   | 3/8            | 3/4           | 3 1/2          | 4             | B52454     | B01594  |
| 3/8              | .3750   | 9.53   | 3/8            | 9/16          | 2 1/2          | 4             | B52858     | B01700  |
| 3/8              | .3750   | 9.53   | 3/8            | 3/4           | 3 1/2          | 4             | B52458     | B01596  |
| 7/16             | .4375   | 11.11  | 1/2            | 7/8           | 4              | 4             | B52460     | B01597  |
| 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 3              | 4             | B52863     | B01702  |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 4              | 4             | B52463     | B01598  |

## Series MDE-4B

### Applications |



### Features |



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | EDP number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               | bright     | TiCN   |
| 1/16             | .0625   | 1.59   | 1/8            | 1/8           | 1 1/2          | 4             | B52921     | B01714 |
| 3/32             | .0938   | 2.38   | 1/8            | 3/16          | 1 1/2          | 4             | B52923     | B01715 |
| 1/8              | .1250   | 3.18   | 3/8            | 3/8           | 3              | 4             | B52521     | B01610 |
| 5/32             | .1562   | 3.97   | 3/8            | 7/16          | 3 1/8          | 4             | B52523     | B01611 |
| 3/16             | .1875   | 4.76   | 3/8            | 1/2           | 3 1/4          | 4             | B52525     | B01612 |
| 7/32             | .2188   | 5.56   | 3/8            | 9/16          | 3 1/2          | 4             | B52527     | B01613 |
| 1/4              | .2500   | 6.35   | 3/8            | 5/8           | 3 1/2          | 4             | B52530     | B01614 |
| 9/32             | .2812   | 7.14   | 3/8            | 11/16         | 3 1/2          | 4             | B52532     | B01615 |
| 5/16             | .3125   | 7.94   | 3/8            | 3/4           | 3 1/2          | 4             | B52534     | B01616 |
| 3/8              | .3750   | 9.53   | 3/8            | 3/4           | 3 1/2          | 4             | B52538     | B01618 |
| 7/16             | .4375   | 11.11  | 1/2            | 7/8           | 4              | 4             | B52540     | B01619 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 4              | 4             | B52543     | B01620 |



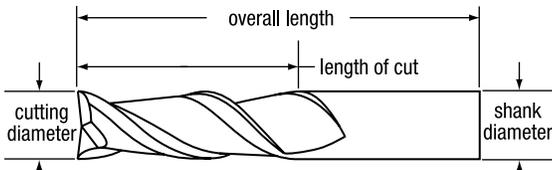
# Single End General-Purpose

Series MSE-2

**Applications |**



**Features |**



|  | cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | corner radius | EDP number |        |
|--|------------------|---------|--------|----------------|---------------|----------------|---------------|---------------|------------|--------|
|  | fractional       | decimal | metric |                |               |                |               |               | bright     | TiCN   |
|  | 1/32             | .0312   | 0.79   | 1/8            | 1/8           | 1 1/2          | 2             |               | B52601     | B01621 |
|  | 3/64             | .0469   | 1.19   | 1/8            | 1/8           | 1 1/2          | 2             |               | B52602     | B01622 |
|  | 1/16             | .0625   | 1.59   | 1/8            | 1/8           | 1 1/2          | 2             |               | B52604     | B01623 |
|  | 1/16             | .0625   | 1.59   | 1/8            | 3/16          | 1 1/2          | 2             |               | B52001     | B01441 |
|  | 5/64             | .0781   | 1.98   | 1/8            | 3/16          | 1 1/2          | 2             |               | B52002     | B01442 |
|  | 3/32             | .0938   | 2.38   | 1/8            | 3/16          | 1 1/2          | 2             |               | B52606     | B01624 |
|  | 3/32             | .0938   | 2.38   | 1/8            | 3/8           | 1 1/2          | 2             |               | B52004     | B01443 |
|  | 7/64             | .1094   | 2.78   | 1/8            | 3/8           | 1 1/2          | 2             |               | B52005     | B01444 |
|  | 1/8              | .1250   | 3.18   | 1/8            | 1/4           | 1 1/2          | 2             |               | B52608     | B01625 |
|  | 1/8              | .1250   | 3.18   | 1/8            | 1/2           | 1 1/2          | 2             |               | B52007     | B01445 |
|  | 1/8              | .1250   | 3.18   | 1/8            | 1/2           | 1 1/2          | 2             | 0.010         | B52060     | B06800 |
|  | 1/8              | .1250   | 3.18   | 1/8            | 3/4           | 2 1/4          | 2             |               | B51200     | B01329 |
|  | 1/8              | .1250   | 3.18   | 1/8            | 1             | 3              | 2             |               | B51400     | B01318 |
|  | 9/64             | .1406   | 3.57   | 3/16           | 9/16          | 2              | 2             |               | B52008     | B01446 |
|  | 5/32             | .1562   | 3.97   | 3/16           | 9/16          | 2              | 2             |               | B52010     | B01447 |
|  | 11/64            | .1719   | 4.37   | 3/16           | 5/8           | 2              | 2             |               | B52011     | B01448 |
|  | 3/16             | .1875   | 4.76   | 3/16           | 5/16          | 2              | 2             |               | B52612     | B01627 |
|  | 3/16             | .1875   | 4.76   | 3/16           | 5/8           | 2              | 2             |               | B52013     | B01449 |
|  | 3/16             | .1875   | 4.76   | 3/16           | 5/8           | 2              | 2             | 0.010         | B52061     | B06801 |
|  | 3/16             | .1875   | 4.76   | 3/16           | 3/4           | 2 1/2          | 2             |               | B51202     | B01330 |
|  | 3/16             | .1875   | 4.76   | 3/16           | 1 1/8         | 3              | 2             |               | B51402     | B01386 |
|  | 13/64            | .2031   | 5.16   | 1/4            | 5/8           | 2 1/2          | 2             |               | B52014     | B01450 |
|  | 7/32             | .2188   | 5.56   | 1/4            | 5/8           | 2 1/2          | 2             |               | B52016     | B01451 |
|  | 15/64            | .2344   | 5.95   | 1/4            | 3/4           | 2 1/2          | 2             |               | B52017     | B01452 |
|  | 1/4              | .2500   | 6.35   | 1/4            | 1/2           | 2              | 2             |               | B52617     | B01629 |
|  | 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 2             |               | B52020     | B01453 |
|  | 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 2             | 0.020         | B52062     | B06802 |
|  | 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 2             | 0.030         | B52063     | B06803 |
|  | 1/4              | .2500   | 6.35   | 1/4            | 1 1/8         | 3              | 2             |               | B51204     | B01331 |
|  | 1/4              | .2500   | 6.35   | 1/4            | 1 1/2         | 4              | 2             |               | B51404     | B01319 |
|  | 1/4              | .2500   | 6.35   | 1/4            | 1 1/2         | 6              | 2             |               | B51405     | B01388 |
|  | 17/64            | .2656   | 6.75   | 5/16           | 3/4           | 2 1/2          | 2             |               | B52021     | B01454 |
|  | 9/32             | .2812   | 7.14   | 5/16           | 3/4           | 2 1/2          | 2             |               | B52023     | B01455 |
|  | 5/16             | .3125   | 7.94   | 5/16           | 1/2           | 2              | 2             |               | B52619     | B01630 |
|  | 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 2             |               | B52026     | B01457 |
|  | 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 2             | 0.020         | B52065     | B06805 |
|  | 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 2             | 0.030         | B52066     | B06806 |
|  | 5/16             | .3125   | 7.94   | 5/16           | 1 1/8         | 3              | 2             |               | B51206     | B01333 |
|  | 5/16             | .3125   | 7.94   | 5/16           | 1 5/8         | 4              | 2             |               | B51406     | B01389 |

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# Single End General-Purpose

Series MSE-2 (continued)

**Applications |**



**Features |**



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | corner radius | EDP number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               |               | bright     | TiCN   |
| 3/8              | .3750   | 9.53   | 3/8            | 5/8           | 2              | 2             |               | B52621     | B01631 |
| 3/8              | .3750   | 9.53   | 3/8            | 1             | 2 1/2          | 2             |               | B52032     | B01461 |
| 3/8              | .3750   | 9.53   | 3/8            | 1             | 2 1/2          | 2             | 0.020         | B52068     | B06808 |
| 3/8              | .3750   | 9.53   | 3/8            | 1             | 2 1/2          | 2             | 0.030         | B52069     | B06809 |
| 3/8              | .3750   | 9.53   | 3/8            | 1             | 2 1/2          | 2             | 0.040         | B52070     | B06810 |
| 3/8              | .3750   | 9.53   | 3/8            | 1 1/8         | 3              | 2             |               | B51208     | B01334 |
| 3/8              | .3750   | 9.53   | 3/8            | 1 3/4         | 4              | 2             |               | B51408     | B01320 |
| 3/8              | .3750   | 9.53   | 3/8            | 1 1/2         | 6              | 2             |               | B51409     | B01391 |
| 7/16             | .4375   | 11.11  | 7/16           | 5/8           | 2 1/2          | 2             |               | B52623     | B01632 |
| 7/16             | .4375   | 11.11  | 7/16           | 7/8           | 2 1/2          | 2             |               | B52038     | B01465 |
| 7/16             | .4375   | 11.11  | 7/16           | 2             | 4              | 2             |               | B51210     | B01321 |
| 7/16             | .4375   | 11.11  | 7/16           | 3             | 6              | 2             |               | B51410     | B01322 |
| 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 2 1/2          | 2             |               | B52626     | B01633 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 2             |               | B52045     | B01469 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 2             | 0.030         | B52072     | B06812 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 2             | 0.050         | B52073     | B06813 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 2             | 0.070         | B52074     | B06814 |
| 1/2              | .5000   | 12.70  | 1/2            | 2             | 4              | 2             |               | B51212     | B01338 |
| 1/2              | .5000   | 12.70  | 1/2            | 1 1/2         | 6              | 2             |               | B51411     | B01323 |
| 1/2              | .5000   | 12.70  | 1/2            | 3             | 6              | 2             |               | B51412     | B01394 |
| 9/16             | .5625   | 14.29  | 9/16           | 1 1/4         | 3              | 2             |               | B52047     | B01470 |
| 5/8              | .6250   | 15.88  | 5/8            | 3/4           | 3              | 2             |               | B52628     | B01634 |
| 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 2             |               | B52049     | B01471 |
| 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 2             | 0.030         | B52076     | B06816 |
| 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 2             | 0.050         | B52077     | B06817 |
| 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 2             | 0.070         | B52078     | B06818 |
| 5/8              | .6250   | 15.88  | 5/8            | 2 1/4         | 5              | 2             |               | B51214     | B01324 |
| 5/8              | .6250   | 15.88  | 5/8            | 3             | 6              | 2             |               | B51414     | B01395 |
| 3/4              | .7500   | 19.05  | 3/4            | 1             | 3              | 2             |               | B52631     | B01635 |
| 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 2             |               | B52051     | B01472 |
| 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 2             | 0.030         | B52080     | B06820 |
| 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 2             | 0.060         | B52081     | B06821 |
| 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 2             | 0.090         | B52082     | B06822 |
| 3/4              | .7500   | 19.05  | 3/4            | 2 1/4         | 5              | 2             |               | B51216     | B61216 |
| 3/4              | .7500   | 19.05  | 3/4            | 3             | 6              | 2             |               | B51416     | B01396 |
| 7/8              | .8750   | 22.23  | 7/8            | 1 1/2         | 4              | 2             |               | B52053     | B01473 |
| 7/8              | .8750   | 22.23  | 7/8            | 2 1/4         | 5              | 2             |               | B51218     | B01325 |
| 7/8              | .8750   | 22.23  | 7/8            | 3             | 6              | 2             |               | B51418     | B01326 |
| 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 2             |               | B52057     | B01474 |
| 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 2             | 0.030         | B52084     | B06824 |
| 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 2             | 0.060         | B52085     | B06825 |
| 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 2             | 0.090         | B52086     | B06826 |
| 1                | 1.0000  | 25.40  | 1              | 2 1/4         | 5              | 2             |               | B51220     | B01327 |
| 1                | 1.0000  | 25.40  | 1              | 3             | 6              | 2             |               | B51420     | B01398 |

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# Single End General-Purpose

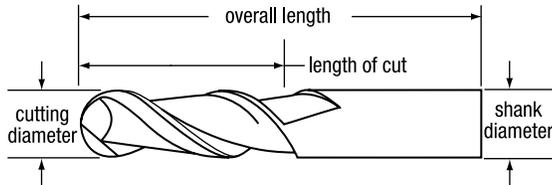
**BASSETT™**

## Series MSE-2B

### Applications |



### Features |



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | EDP number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               | bright     | TiCN   |
| 1/32             | .0312   | 0.79   | 1/8            | 1/8           | 1 1/2          | 2             | B52681     | B01651 |
| 3/64             | .0469   | 1.19   | 1/8            | 1/8           | 1 1/2          | 2             | B52682     | B01652 |
| 1/16             | .0625   | 1.59   | 1/8            | 1/8           | 1 1/2          | 2             | B52684     | B01653 |
| 1/16             | .0625   | 1.59   | 1/8            | 3/16          | 1 1/2          | 2             | B52201     | B01509 |
| 5/64             | .0781   | 1.98   | 1/8            | 3/16          | 1 1/2          | 2             | B52202     | B01564 |
| 3/32             | .0938   | 2.38   | 1/8            | 3/8           | 1 1/2          | 2             | B52204     | B01511 |
| 7/64             | .1094   | 2.78   | 1/8            | 3/8           | 1 1/2          | 2             | B52205     | B01512 |
| 1/8              | .1250   | 3.18   | 1/8            | 1/4           | 1 1/2          | 2             | B52688     | B01655 |
| 1/8              | .1250   | 3.18   | 1/8            | 1/2           | 1 1/2          | 2             | B52207     | B01513 |
| 1/8              | .1250   | 3.18   | 1/8            | 3/4           | 2 1/4          | 2             | B51300     | B01360 |
| 1/8              | .1250   | 3.18   | 1/8            | 1             | 3              | 2             | B51500     | B01414 |
| 9/64             | .1406   | 3.57   | 3/16           | 9/16          | 2              | 2             | B52208     | B01566 |
| 5/32             | .1562   | 3.97   | 3/16           | 9/16          | 2              | 2             | B52210     | B01515 |
| 11/64            | .1719   | 4.37   | 3/16           | 5/8           | 2              | 2             | B52211     | B01516 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/16          | 2              | 2             | B52612     | B01657 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/8           | 2              | 2             | B52213     | B01517 |
| 3/16             | .1875   | 4.76   | 3/16           | 3/4           | 2 1/2          | 2             | B51302     | B01363 |
| 3/16             | .1875   | 4.76   | 3/16           | 1 1/8         | 3              | 2             | B51502     | B01415 |
| 13/64            | .2031   | 5.16   | 1/4            | 5/8           | 2 1/2          | 2             | B52214     | B01364 |
| 7/32             | .2188   | 5.56   | 1/4            | 5/8           | 2 1/2          | 2             | B52216     | B01568 |
| 15/64            | .2344   | 5.95   | 1/4            | 3/4           | 2 1/2          | 2             | B52217     | B01570 |
| 1/4              | .2500   | 6.35   | 1/4            | 1/2           | 2              | 2             | B52697     | B01659 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 2             | B52220     | B01521 |
| 1/4              | .2500   | 6.35   | 1/4            | 1 1/8         | 3              | 2             | B51304     | B01359 |
| 1/4              | .2500   | 6.35   | 1/4            | 1 1/2         | 4              | 2             | B51504     | B01427 |
| 1/4              | .2500   | 6.35   | 1/4            | 1 1/2         | 6              | 2             | B51505     | B01416 |
| 17/64            | .2656   | 6.75   | 5/16           | 3/4           | 2 1/2          | 2             | B52221     | B01572 |
| 9/32             | .2812   | 7.14   | 5/16           | 3/4           | 2 1/2          | 2             | B52223     | B01575 |
| 5/16             | .3125   | 7.94   | 5/16           | 1/2           | 2              | 2             | B52699     | B01660 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 2             | B52226     | B01525 |
| 5/16             | .3125   | 7.94   | 5/16           | 1 1/8         | 3              | 2             | B51306     | B01361 |
| 5/16             | .3125   | 7.94   | 5/16           | 1 5/8         | 4              | 2             | B51506     | B01417 |
| 3/8              | .3750   | 9.53   | 3/8            | 5/8           | 2              | 2             | B52701     | B01661 |
| 3/8              | .3750   | 9.53   | 3/8            | 1             | 2 1/2          | 2             | B52232     | B01529 |
| 3/8              | .3750   | 9.53   | 3/8            | 1 1/8         | 3              | 2             | B51308     | B01362 |
| 3/8              | .3750   | 9.53   | 3/8            | 1 3/4         | 4              | 2             | B51508     | B01418 |
| 3/8              | .3750   | 9.53   | 3/8            | 1 1/2         | 6              | 2             | B51509     | B01419 |

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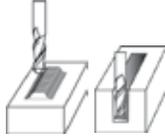
# Single End General-Purpose

Series **MSE-2B** (continued)

**Applications** |



**Features** |



| fractional | cutting diameter |        | shank diameter | length of cut | overall length | no. of flutes | EDP number |        |
|------------|------------------|--------|----------------|---------------|----------------|---------------|------------|--------|
|            | decimal          | metric |                |               |                |               | bright     | TiCN   |
| 7/16       | .4375            | 11.11  | 7/16           | 5/8           | 2 1/2          | 2             | B52703     | B01662 |
| 7/16       | .4375            | 11.11  | 7/16           | 7/8           | 2 1/2          | 2             | B52238     | B01584 |
| 7/16       | .4375            | 11.11  | 7/16           | 2             | 4              | 2             | B51310     | B01365 |
| 7/16       | .4375            | 11.11  | 7/16           | 3             | 6              | 2             | B51510     | B01420 |
| 1/2        | .5000            | 12.70  | 1/2            | 5/8           | 2 1/2          | 2             | B52706     | B01663 |
| 1/2        | .5000            | 12.70  | 1/2            | 1             | 3              | 2             | B52245     | B01537 |
| 1/2        | .5000            | 12.70  | 1/2            | 2             | 4              | 2             | B51312     | B01367 |
| 1/2        | .5000            | 12.70  | 1/2            | 3             | 6              | 2             | B51512     | B01422 |
| 1/2        | .5000            | 12.70  | 1/2            | 1 1/2         | 6              | 2             | B51511     | B01366 |
| 9/16       | .5625            | 14.29  | 9/16           | 1 1/4         | 3              | 2             | B52247     | B01617 |
| 5/8        | .6250            | 15.88  | 5/8            | 3/4           | 3              | 2             | B52708     | B01664 |
| 5/8        | .6250            | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 2             | B52249     | B01539 |
| 5/8        | .6250            | 15.88  | 5/8            | 2 1/4         | 5              | 2             | B51314     | B01368 |
| 5/8        | .6250            | 15.88  | 5/8            | 3             | 6              | 2             | B51514     | B01423 |
| 3/4        | .7500            | 19.05  | 3/4            | 1             | 3              | 2             | B52711     | B01665 |
| 3/4        | .7500            | 19.05  | 3/4            | 1 1/2         | 4              | 2             | B52251     | B01540 |
| 3/4        | .7500            | 19.05  | 3/4            | 2 1/4         | 5              | 2             | B51316     | B01369 |
| 3/4        | .7500            | 19.05  | 3/4            | 3             | 6              | 2             | B51516     | B01424 |
| 7/8        | .8750            | 22.23  | 7/8            | 1 1/2         | 4              | 2             | B52253     | B01595 |
| 7/8        | .8750            | 22.23  | 7/8            | 2 1/4         | 5              | 2             | B51318     | B01370 |
| 7/8        | .8750            | 22.23  | 7/8            | 3             | 6              | 2             | B51518     | B01425 |
| 1          | 1.0000           | 25.40  | 1              | 1 1/2         | 4              | 2             | B52257     | B01542 |
| 1          | 1.0000           | 25.40  | 1              | 2 1/4         | 5              | 2             | B51320     | B01371 |
| 1          | 1.0000           | 25.40  | 1              | 3             | 6              | 2             | B51520     | B01426 |

CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

CARBIDE BURS

INDEX

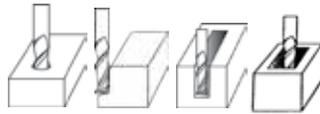


# Single End General-Purpose

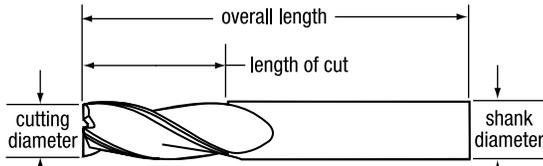
**BASSETT™**

## Series MSE-3

### Applications



### Features



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | corner radius | EDP number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               |               | bright     | TiCN   |
| 1/16             | .0625   | 1.59   | 1/8            | 3/16          | 1 1/2          | 3             |               | B27104     | B37104 |
| 5/64             | .0781   | 1.98   | 1/8            | 3/16          | 1 1/2          | 3             |               | B27105     | B37105 |
| 3/32             | .0938   | 2.38   | 1/8            | 3/8           | 1 1/2          | 3             |               | B27106     | B37106 |
| 7/64             | .1094   | 2.78   | 1/8            | 3/8           | 1 1/2          | 3             |               | B27107     | B37107 |
| 1/8              | .1250   | 3.18   | 1/8            | 1/2           | 1 1/2          | 3             |               | B27108     | B37108 |
| 1/8              | .1250   | 3.18   | 1/8            | 1/2           | 1 1/2          | 3             | 0.010         | B27200     | B37200 |
| 9/64             | .1406   | 3.57   | 3/16           | 9/16          | 2              | 3             |               | B27109     | B37109 |
| 5/32             | .1562   | 3.97   | 3/16           | 9/16          | 2              | 3             |               | B27110     | B37110 |
| 11/64            | .1719   | 4.37   | 3/16           | 5/8           | 2              | 3             |               | B27111     | B37111 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/8           | 2              | 3             |               | B27112     | B37112 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/8           | 2              | 3             | 0.010         | B27201     | B37201 |
| 13/64            | .2031   | 5.16   | 1/4            | 5/8           | 2 1/2          | 3             |               | B27113     | B37113 |
| 7/32             | .2188   | 5.56   | 1/4            | 5/8           | 2 1/2          | 3             |               | B27114     | B37114 |
| 15/64            | .2344   | 5.95   | 1/4            | 3/4           | 2 1/2          | 3             |               | B27115     | B37115 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 3             |               | B27116     | B11971 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 3             | 0.020         | B27202     | B37202 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 3             | 0.030         | B27203     | B37203 |
| 17/64            | .2656   | 6.75   | 5/16           | 3/4           | 2 1/2          | 3             |               | B27117     | B37117 |
| 9/32             | .2812   | 7.14   | 5/16           | 3/4           | 2 1/2          | 3             |               | B27118     | B37118 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 3             |               | B27120     | B11972 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 3             | 0.020         | B27205     | B37205 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 3             | 0.030         | B27206     | B37206 |
| 3/8              | .3750   | 9.53   | 3/8            | 7/8           | 2 1/2          | 3             |               | B27124     | B11973 |
| 3/8              | .3750   | 9.53   | 3/8            | 7/8           | 2 1/2          | 3             | 0.020         | B27208     | B37208 |
| 3/8              | .3750   | 9.53   | 3/8            | 7/8           | 2 1/2          | 3             | 0.030         | B27209     | B37209 |
| 3/8              | .3750   | 9.53   | 3/8            | 7/8           | 2 1/2          | 3             | 0.040         | B27210     | B37210 |
| 7/16             | .4375   | 11.11  | 7/16           | 7/8           | 2 1/2          | 3             |               | B27128     | B11974 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 3             |               | B27132     | B11975 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 3             | 0.030         | B27212     | B37212 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 3             | 0.060         | B27213     | B37213 |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 3             | 0.090         | B27214     | B37214 |
| 9/16             | .5625   | 14.29  | 9/16           | 1 1/4         | 3              | 3             |               | B27136     | B37136 |
| 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 3             |               | B27140     | B11976 |
| 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 3             | 0.030         | B27216     | B37216 |
| 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 3             | 0.060         | B27217     | B37217 |
| 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 3             | 0.090         | B27218     | B37218 |
| 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 3             |               | B27148     | B11977 |
| 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 3             | 0.030         | B27220     | B37220 |
| 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 3             | 0.060         | B27221     | B37221 |
| 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 3             | 0.090         | B27222     | B37222 |
| 7/8              | .8750   | 22.23  | 7/8            | 1 1/2         | 4              | 3             |               | B27156     | B11986 |
| 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 3             |               | B27164     | B11978 |
| 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 3             | 0.030         | B27224     | B37224 |
| 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 3             | 0.060         | B27225     | B37225 |
| 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 3             | 0.090         | B27226     | B37226 |

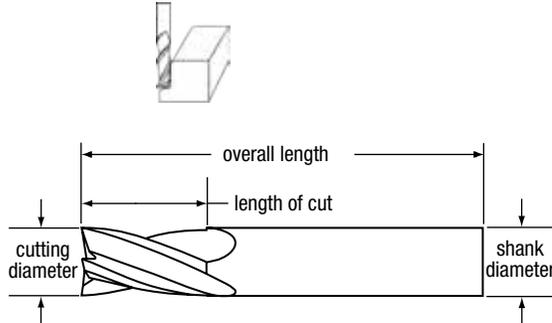
# Single End General-Purpose

Series MSE-4

Applications |



Features |



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | corner radius | EDP number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               |               | bright     | TiCN   |
| 1/32             | .0312   | 0.79   | 1/8            | 1/8           | 1 1/2          | 4             |               | B52641     | B01636 |
| 3/64             | .0469   | 1.19   | 1/8            | 1/8           | 1 1/2          | 4             |               | B52642     | B01637 |
| 1/16             | .0625   | 1.59   | 1/8            | 1/8           | 1 1/2          | 4             |               | B52644     | B01638 |
| 1/16             | .0625   | 1.59   | 1/8            | 3/16          | 1 1/2          | 4             |               | B52101     | B01475 |
| 5/64             | .0781   | 1.98   | 1/8            | 3/16          | 1 1/2          | 4             |               | B52102     | B01476 |
| 3/32             | .0938   | 2.38   | 3/16           | 3/16          | 1 1/2          | 4             |               | B52646     | B01639 |
| 3/32             | .0938   | 2.38   | 1/8            | 3/8           | 1 1/2          | 4             |               | B52104     | B01477 |
| 7/64             | .1094   | 2.78   | 1/8            | 3/8           | 1 1/2          | 4             |               | B52105     | B01478 |
| 1/8              | .1250   | 3.18   | 1/8            | 1/4           | 1 1/2          | 4             |               | B52648     | B01640 |
| 1/8              | .1250   | 3.18   | 1/8            | 1/2           | 1 1/2          | 4             |               | B52107     | B01479 |
| 1/8              | .1250   | 3.18   | 1/8            | 1/2           | 1 1/2          | 4             | 0.010         | B52160     | B01750 |
| 1/8              | .1250   | 3.18   | 1/8            | 3/4           | 2 1/4          | 4             |               | B51250     | B01343 |
| 1/8              | .1250   | 3.18   | 1/8            | 1             | 3              | 4             |               | B51450     | B01399 |
| 9/64             | .1406   | 3.57   | 3/16           | 9/16          | 2              | 4             |               | B52108     | B01480 |
| 5/32             | .1562   | 3.97   | 3/16           | 5/16          | 2              | 4             |               | B52650     | B01641 |
| 5/32             | .1562   | 3.97   | 3/16           | 9/16          | 2              | 4             |               | B52110     | B01481 |
| 11/64            | .1719   | 4.37   | 3/16           | 5/8           | 2              | 4             |               | B52111     | B01482 |
| 3/16             | .1875   | 4.76   | 3/16           | 3/4           | 2 1/2          | 4             |               | B51252     | B01344 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/8           | 2              | 4             |               | B52113     | B01483 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/8           | 2              | 4             | 0.010         | B52162     | B01751 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/16          | 2              | 4             |               | B52652     | B01642 |
| 3/16             | .1875   | 4.76   | 3/16           | 1 1/8         | 3              | 4             |               | B51452     | B01400 |
| 13/64            | .2031   | 5.16   | 1/4            | 5/8           | 2 1/2          | 4             |               | B52114     | B01484 |
| 7/32             | .2188   | 5.56   | 1/4            | 5/8           | 2 1/2          | 4             |               | B52116     | B01485 |
| 15/64            | .2344   | 5.95   | 1/4            | 3/4           | 2 1/2          | 4             |               | B52117     | B01486 |
| 1/4              | .2500   | 6.35   | 1/4            | 1/2           | 2              | 4             |               | B52657     | B01644 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 4             |               | B52120     | B01487 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 4             | 0.020         | B52164     | B01752 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 4             | 0.030         | B52165     | B01753 |
| 1/4              | .2500   | 6.35   | 1/4            | 1 1/8         | 3              | 4             |               | B51254     | B01340 |
| 1/4              | .2500   | 6.35   | 1/4            | 1 1/2         | 4              | 4             |               | B51454     | B01732 |
| 1/4              | .2500   | 6.35   | 1/4            | 1 1/2         | 6              | 4             |               | B51455     | B01402 |
| 17/64            | .2656   | 6.75   | 5/16           | 3/4           | 2 1/2          | 4             |               | B52121     | B01730 |
| 9/32             | .2812   | 7.14   | 5/16           | 3/4           | 2 1/2          | 4             |               | B52123     | B01489 |
| 5/16             | .3125   | 7.94   | 5/16           | 1/2           | 2              | 4             |               | B52659     | B01645 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 4             |               | B52126     | B01491 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 4             | 0.020         | B52167     | B01755 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 4             | 0.030         | B52168     | B01756 |

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# Single End General-Purpose

Series **MSE-4** (continued)

**Applications**



**Features**



|  | cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | corner radius | EDP number |        |
|--|------------------|---------|--------|----------------|---------------|----------------|---------------|---------------|------------|--------|
|  | fractional       | decimal | metric |                |               |                |               |               | bright     | TiCN   |
|  | 5/16             | .3125   | 7.94   | 5/16           | 1 1/8         | 3              | 4             |               | B51256     | B01347 |
|  | 5/16             | .3125   | 7.94   | 5/16           | 1 5/8         | 4              | 4             |               | B51456     | B01403 |
|  | 3/8              | .3750   | 9.53   | 3/8            | 5/8           | 2              | 4             |               | B52661     | B01646 |
|  | 3/8              | .3750   | 9.53   | 3/8            | 1             | 2 1/2          | 4             |               | B52132     | B01495 |
|  | 3/8              | .3750   | 9.53   | 3/8            | 1             | 2 1/2          | 4             | 0.020         | B52170     | B01758 |
|  | 3/8              | .3750   | 9.53   | 3/8            | 1             | 2 1/2          | 4             | 0.030         | B52171     | B01759 |
|  | 3/8              | .3750   | 9.53   | 3/8            | 1             | 2 1/2          | 4             | 0.040         | B52172     | B01760 |
|  | 3/8              | .3750   | 9.53   | 3/8            | 1 1/8         | 3              | 4             |               | B51258     | B01348 |
|  | 3/8              | .3750   | 9.53   | 3/8            | 1 3/4         | 4              | 4             |               | B51458     | B01733 |
|  | 3/8              | .3750   | 9.53   | 3/8            | 1 1/2         | 6              | 4             |               | B51459     | B01405 |
|  | 7/16             | .4375   | 11.11  | 7/16           | 5/8           | 2 1/2          | 4             |               | B52663     | B01647 |
|  | 7/16             | .4375   | 11.11  | 7/16           | 1             | 2 1/2          | 4             |               | B52138     | B01499 |
|  | 7/16             | .4375   | 11.11  | 7/16           | 2             | 4              | 4             |               | B51260     | B01341 |
|  | 7/16             | .4375   | 11.11  | 7/16           | 3             | 6              | 4             |               | B51460     | B01734 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 2 1/2          | 4             |               | B52666     | B01648 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 4             |               | B52145     | B01503 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 4             | 0.030         | B52173     | B01762 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 4             | 0.060         | B52174     | B01763 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 4             | 0.090         | B52175     | B01764 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 2             | 4              | 4             |               | B51262     | B01352 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 3             | 6              | 4             |               | B51462     | B01408 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 1 1/2         | 6              | 4             |               | B51461     | B01407 |
|  | 9/16             | .5625   | 14.29  | 9/16           | 1 1/4         | 3              | 4             |               | B52147     | B01765 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 3/4           | 3              | 4             |               | B52668     | B01649 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 4             |               | B52149     | B01505 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 4             | 0.030         | B52176     | B01766 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 4             | 0.060         | B52177     | B01767 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 4             | 0.090         | B52178     | B01768 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 2 1/4         | 5              | 4             |               | B51264     | B01342 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 3             | 6              | 4             |               | B51464     | B01409 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 1             | 3              | 4             |               | B52671     | B01650 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 4             |               | B52151     | B01506 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 4             | 0.030         | B52179     | B01770 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 4             | 0.060         | B52180     | B01771 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 4             | 0.090         | B52181     | B01772 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 2 1/4         | 5              | 4             |               | B51266     | B01351 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 3             | 6              | 4             |               | B51466     | B01410 |
|  | 7/8              | .8750   | 22.23  | 7/8            | 1 1/2         | 4              | 4             |               | B52153     | B01507 |
|  | 7/8              | .8750   | 22.23  | 7/8            | 2 1/4         | 5              | 4             |               | B51268     | B01355 |
|  | 7/8              | .8750   | 22.23  | 7/8            | 3             | 6              | 4             |               | B51468     | B01735 |
|  | 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 4             |               | B52157     | B01508 |
|  | 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 4             | 0.030         | B52182     | B01774 |
|  | 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 4             | 0.060         | B52183     | B01775 |
|  | 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 4             | 0.090         | B52184     | B01776 |
|  | 1                | 1.0000  | 25.40  | 1              | 2 1/4         | 5              | 4             |               | B51270     | B01356 |
|  | 1                | 1.0000  | 25.40  | 1              | 3             | 6              | 4             |               | B51470     | B01412 |

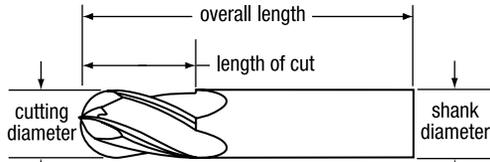
# Single End General-Purpose

## Series MSE-4B

### Applications |



### Features |



| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | EDP number |        |
|------------------|---------|--------|----------------|---------------|----------------|---------------|------------|--------|
| fractional       | decimal | metric |                |               |                |               | bright     | TiCN   |
| 1/32             | .0312   | 0.79   | 1/8            | 1/8           | 1 1/2          | 4             | B52721     | B01434 |
| 3/64             | .0469   | 1.19   | 1/8            | 1/8           | 1 1/2          | 4             | B52722     | B01435 |
| 1/16             | .0625   | 1.59   | 1/8            | 1/8           | 1 1/2          | 4             | B52724     | B01668 |
| 1/16             | .0625   | 1.59   | 1/8            | 3/16          | 1 1/2          | 4             | B52301     | B01901 |
| 5/64             | .0781   | 1.98   | 1/8            | 3/16          | 1 1/2          | 4             | B52302     | B01902 |
| 3/32             | .0938   | 2.38   | 1/8            | 3/8           | 1 1/2          | 4             | B52304     | B01904 |
| 7/64             | .1094   | 2.78   | 1/8            | 3/8           | 1 1/2          | 4             | B52305     | B01905 |
| 1/8              | .1250   | 3.18   | 1/8            | 1/4           | 1 1/2          | 4             | B52728     | B01670 |
| 1/8              | .1250   | 3.18   | 1/8            | 1/2           | 1 1/2          | 4             | B52307     | B01547 |
| 1/8              | .1250   | 3.18   | 1/8            | 3/4           | 2 1/4          | 4             | B51350     | B01374 |
| 1/8              | .1250   | 3.18   | 1/8            | 1             | 3              | 4             | B51550     | B01850 |
| 9/64             | .1406   | 3.57   | 3/16           | 9/16          | 2              | 4             | B52308     | B01908 |
| 5/32             | .1562   | 3.97   | 3/16           | 9/16          | 2              | 4             | B52310     | B01549 |
| 11/64            | .1719   | 4.37   | 3/16           | 5/8           | 2              | 4             | B52311     | B01911 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/16          | 2              | 4             | B52732     | B01672 |
| 3/16             | .1875   | 4.76   | 3/16           | 5/8           | 2              | 4             | B52313     | B01551 |
| 3/16             | .1875   | 4.76   | 3/16           | 3/4           | 2 1/2          | 4             | B51352     | B01377 |
| 3/16             | .1875   | 4.76   | 3/16           | 1 1/8         | 3              | 4             | B51552     | B01852 |
| 13/64            | .2031   | 5.16   | 1/4            | 5/8           | 2 1/2          | 4             | B52314     | B01914 |
| 7/32             | .2188   | 5.56   | 1/4            | 5/8           | 2 1/2          | 4             | B52316     | B01553 |
| 15/64            | .2344   | 5.95   | 1/4            | 3/4           | 2 1/2          | 4             | B52317     | B01917 |
| 1/4              | .2500   | 6.35   | 1/4            | 1/2           | 2              | 4             | B52737     | B01674 |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 4             | B52320     | B01555 |
| 1/4              | .2500   | 6.35   | 1/4            | 1 1/8         | 3              | 4             | B51354     | B01373 |
| 1/4              | .2500   | 6.35   | 1/4            | 1 1/2         | 4              | 4             | B51554     | B01854 |
| 1/4              | .2500   | 6.35   | 1/4            | 1 1/2         | 6              | 4             | B51555     | B01430 |
| 17/64            | .2656   | 6.75   | 5/16           | 3/4           | 2 1/2          | 4             | B52321     | B01921 |
| 9/32             | .2812   | 7.14   | 5/16           | 3/4           | 2 1/2          | 4             | B52323     | B01557 |
| 5/16             | .3125   | 7.94   | 5/16           | 1/2           | 2              | 4             | B52739     | B01675 |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 4             | B52326     | B01559 |
| 5/16             | .3125   | 7.94   | 5/16           | 1 1/8         | 3              | 4             | B51356     | B01375 |
| 5/16             | .3125   | 7.94   | 5/16           | 1 5/8         | 4              | 4             | B51556     | B01856 |
| 3/8              | .3750   | 9.53   | 3/8            | 5/8           | 2              | 4             | B52741     | B01676 |
| 3/8              | .3750   | 9.53   | 3/8            | 1             | 2 1/2          | 4             | B52332     | B01563 |
| 3/8              | .3750   | 9.53   | 3/8            | 1 1/8         | 3              | 4             | B51358     | B01376 |
| 3/8              | .3750   | 9.53   | 3/8            | 1 1/2         | 6              | 4             | B51559     | B01433 |
| 3/8              | .3750   | 9.53   | 3/8            | 1 3/4         | 4              | 4             | B51558     | B01858 |

continued on next page



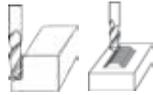
# Single End General-Purpose

Series **MSE-4B** (continued)

**Applications |**



**Features |**



|  | cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | EDP number |        |
|--|------------------|---------|--------|----------------|---------------|----------------|---------------|------------|--------|
|  | fractional       | decimal | metric |                |               |                |               | bright     | TiCN   |
|  | 7/16             | .4375   | 11.11  | 7/16           | 5/8           | 2 1/2          | 4             | B52743     | B01439 |
|  | 7/16             | .4375   | 11.11  | 7/16           | 1             | 2 1/2          | 4             | B52338     | B01567 |
|  | 7/16             | .4375   | 11.11  | 7/16           | 2             | 4              | 4             | B51360     | B01378 |
|  | 7/16             | .4375   | 11.11  | 7/16           | 3             | 6              | 4             | B51560     | B01860 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 5/8           | 2 1/2          | 4             | B52746     | B01678 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 4             | B52345     | B01571 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 2             | 4              | 4             | B51362     | B01380 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 1 1/2         | 6              | 4             | B51561     | B01431 |
|  | 1/2              | .5000   | 12.70  | 1/2            | 3             | 6              | 4             | B51562     | B01436 |
|  | 9/16             | .5625   | 14.29  | 9/16           | 1 1/4         | 3              | 4             | B52347     | B01947 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 3/4           | 3              | 4             | B52748     | B01679 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 1 1/4         | 3 1/2          | 4             | B52349     | B01573 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 2 1/4         | 5              | 4             | B51364     | B01379 |
|  | 5/8              | .6250   | 15.88  | 5/8            | 3             | 6              | 4             | B51564     | B01437 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 1             | 3              | 4             | B52751     | B01680 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 1 1/2         | 4              | 4             | B52351     | B01574 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 2 1/4         | 5              | 4             | B51366     | B01381 |
|  | 3/4              | .7500   | 19.05  | 3/4            | 3             | 6              | 4             | B51566     | B01438 |
|  | 7/8              | .8750   | 22.23  | 7/8            | 1 1/2         | 4              | 4             | B52353     | B01953 |
|  | 7/8              | .8750   | 22.23  | 7/8            | 2 1/4         | 5              | 4             | B51368     | B01382 |
|  | 7/8              | .8750   | 22.23  | 7/8            | 3             | 6              | 4             | B51568     | B01868 |
|  | 1                | 1.0000  | 25.40  | 1              | 1 1/2         | 4              | 4             | B52357     | B01576 |
|  | 1                | 1.0000  | 25.40  | 1              | 2 1/4         | 5              | 4             | B51370     | B01383 |
|  | 1                | 1.0000  | 25.40  | 1              | 3             | 6              | 4             | B51570     | B01440 |

CARBIDE END MILLS

CARBIDE DRILLS

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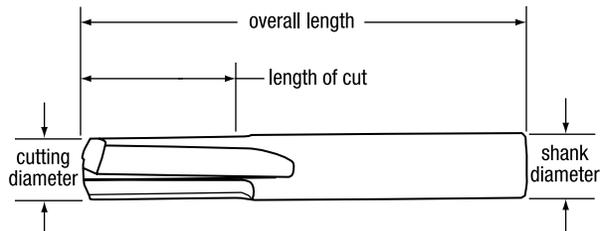
# Single End General-Purpose

Series **MSEST-2** • straight flutes

Applications | **CAST IRON** **NON-FERROUS MATERIALS** **STEEL**



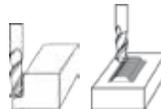
Features | **SOLID CARBIDE** **2 FLUTE CC** **BRIGHT**



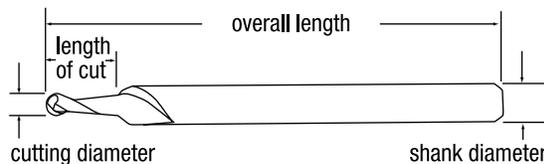
| cutting diameter |         |        | shank diameter | length of cut | overall length | no. of flutes | EDP number bright |
|------------------|---------|--------|----------------|---------------|----------------|---------------|-------------------|
| fractional       | decimal | metric |                |               |                |               |                   |
| 1/16             | .0625   | 1.59   | 1/8            | 3/16          | 1 1/2          | 2             | B53201            |
| 1/8              | .1250   | 3.18   | 1/8            | 1/2           | 1 1/2          | 2             | B53203            |
| 3/16             | .1875   | 4.76   | 3/16           | 5/8           | 2              | 2             | B53205            |
| 1/4              | .2500   | 6.35   | 1/4            | 3/4           | 2 1/2          | 2             | B53207            |
| 5/16             | .3125   | 7.94   | 5/16           | 13/16         | 2 1/2          | 2             | B53210            |
| 3/8              | .3750   | 9.53   | 3/8            | 7/8           | 2 1/2          | 2             | B53212            |
| 1/2              | .5000   | 12.70  | 1/2            | 1             | 3              | 2             | B53215            |

Series **MEG-2 Engraving Tool**

Applications | **CAST IRON** **NON-FERROUS MATERIALS** **STEEL**



Features | **SOLID CARBIDE** **2 FLUTE BALL CC** **TiCN**



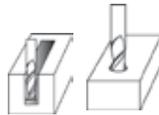
| cutting diameter |        | shank diameter | length of cut | overall length | no. of flutes | EDP number TiCN |
|------------------|--------|----------------|---------------|----------------|---------------|-----------------|
| decimal          | metric |                |               |                |               |                 |
| .021             | 0.53   | 1/8            | .040          | 1 1/2          | 2             | B10901          |
| .025             | 0.64   | 1/8            | .040          | 1 1/2          | 2             | B10903          |
| .030             | 0.76   | 1/8            | .040          | 1 1/2          | 2             | B10906          |



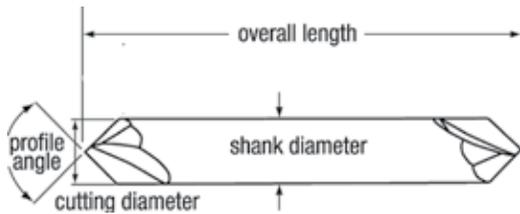
# Chamfer Tools

Series **MCH-2R Single End and MCH-2D Double End Chamfer Tool** • 60°, 82°, 90°, and 120° point

**Applications**



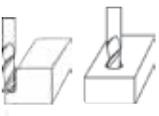
**Features**



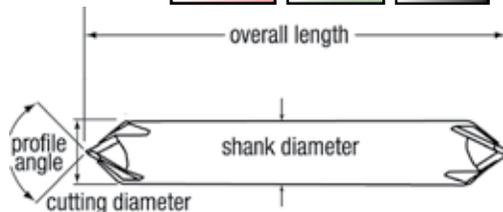
| cutting diameter |         |        | shank diameter | overall length | no. of flutes | profile angle (°) | EDP number |            |
|------------------|---------|--------|----------------|----------------|---------------|-------------------|------------|------------|
| fractional       | decimal | metric |                |                |               |                   | single end | double end |
| 1/8              | .1250   | 3.18   | 1/8            | 1 1/2          | 2             | 82                | B10013     |            |
| 1/8              | .1250   | 3.18   | 1/8            | 1 1/2          | 2             | 90                | B10014     | B10026     |
| 3/16             | .1875   | 4.76   | 3/16           | 2              | 2             | 90                | B10016     | B10027     |
| 1/4              | .2500   | 6.35   | 1/4            | 2 1/2          | 2             | 60                | B10017     |            |
| 1/4              | .2500   | 6.35   | 1/4            | 2 1/2          | 2             | 82                | B10018     |            |
| 1/4              | .2500   | 6.35   | 1/4            | 2 1/2          | 2             | 90                | B10019     | B10028     |
| 3/8              | .3750   | 9.53   | 3/8            | 2 1/2          | 2             | 60                | B10020     |            |
| 3/8              | .3750   | 9.53   | 3/8            | 2 1/2          | 2             | 82                | B10021     |            |
| 3/8              | .3750   | 9.53   | 3/8            | 2 1/2          | 2             | 90                | B10022     | B10029     |
| 1/2              | .5000   | 12.70  | 1/2            | 3              | 2             | 60                | B10023     |            |
| 1/2              | .5000   | 12.70  | 1/2            | 3              | 2             | 82                | B10024     |            |
| 1/2              | .5000   | 12.70  | 1/2            | 3              | 2             | 90                | B10025     | B10030     |
| 1/2              | .5000   | 12.70  | 1/2            | 3              | 2             | 120               | B10232     |            |
| 3/4              | .7500   | 19.05  | 3/4            | 4              | 2             | 90                | B10233     | B10231     |

Series **MCH-4R Single End and MCH-2D Double End Chamfer Tool** • 60°, 82°, 90°, and 120° point

**Applications**



**Features**



| cutting diameter |         |        | shank diameter | overall length | no. of flutes | profile angle (°) | EDP number |            |
|------------------|---------|--------|----------------|----------------|---------------|-------------------|------------|------------|
| fractional       | decimal | metric |                |                |               |                   | single end | double end |
| 1/4              | .2500   | 6.35   | 1/4            | 2 1/2          | 4             | 60                | B10219     |            |
| 1/4              | .2500   | 6.35   | 1/4            | 2 1/2          | 4             | 82                | B10220     |            |
| 1/4              | .2500   | 6.35   | 1/4            | 2 1/2          | 4             | 90                | B10221     | B10228     |
| 3/8              | .3750   | 9.53   | 3/8            | 2 1/2          | 4             | 60                | B10222     |            |
| 3/8              | .3750   | 9.53   | 3/8            | 2 1/2          | 4             | 82                | B10223     |            |
| 3/8              | .3750   | 9.53   | 3/8            | 2 1/2          | 4             | 90                | B10224     | B10229     |
| 1/2              | .5000   | 12.70  | 1/2            | 3              | 4             | 60                | B10225     |            |
| 1/2              | .5000   | 12.70  | 1/2            | 3              | 4             | 82                | B10226     |            |
| 1/2              | .5000   | 12.70  | 1/2            | 3              | 4             | 90                | B10227     | B10230     |
| 1/2              | .5000   | 12.70  | 1/2            | 3              | 4             | 120               | B10235     |            |
| 3/4              | .7500   | 19.05  | 3/4            | 4              | 4             | 90                | B10236     | B10234     |



**Carbide Drills**



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## Feeds and Speeds for Bassett General Purpose Solid Carbide Drills

| Material Group                    | Recommended Speed<br>(SFM) | Feed (IPR) |         |         |        |
|-----------------------------------|----------------------------|------------|---------|---------|--------|
|                                   |                            | 1/16-in.   | 1/8-in. | 1/4-in. | 1/2-in |
| Low Carbon Steels, Annealed       | 85-150                     | .0005      | .0010   | .0020   | .0040  |
| Medium Carbon Steels 275-425 BHn  | 65-120                     | .0005      | .0010   | .0020   | .0030  |
| Stainless Steel, Soft 135-275 BHn | 50-150                     | .0005      | .0005   | .0020   | .0040  |
| Stainless Steel, Hard 275-425 BHn | 30-90                      | .0005      | .0005   | .0010   | .0015  |
| Cast Iron, Soft 120-220 BHn       | 100-300                    | .0010      | .0020   | .0040   | .0050  |
| Cast Iron, Hard 220-320 BHn       | 60-200                     | .0015      | .0010   | .0020   | .0030  |
| Ductile Iron                      | 70-250                     | .0010      | .0020   | .0030   | .0050  |
| Malleable iron                    | 80-250                     | .0010      | .0020   | .0030   | .0050  |
| Aluminum / Aluminum Alloys        | 150-400                    | .0010      | .0020   | .0030   | .0050  |
| Brass / Bronze                    | 100-300                    | .0005      | .0010   | .0020   | .0040  |
| Copper / Copper Alloys            | 150-400                    | .0010      | .0030   | .0050   | .0060  |
| Magnesium / Magnesium Alloys      | 200-650                    | .0015      | .0030   | .0050   | .0080  |
| Plastics - Glass Filled           | 150-300                    | .0010      | .0020   | .0030   | .0050  |
| Plastics                          | 250-600                    | .0015      | .0030   | .0040   | .0060  |

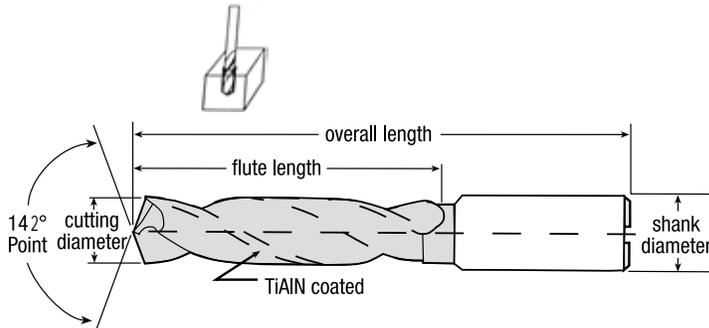
# High-Performance

## Series DHP-5 High-Performance Jobber Length Drill

### Applications



### Features



| fraction | cutting diameter |           |          | shank diameter |        | flute length |      | overall length |       | EDP number |
|----------|------------------|-----------|----------|----------------|--------|--------------|------|----------------|-------|------------|
|          | metric           | dec equiv | mm equiv | inch           | metric | inch         | mm   | inch           | mm    |            |
|          | 3.0              | .1181     |          | .118           | 3.0    | .94          | 24.0 | 2.48           | 63.0  | B56000     |
|          | 3.3              | .1299     |          | .157           | 4.0    | 1.26         | 32.0 | 2.72           | 69.0  | B56006     |
|          | 3.8              | .1496     |          | .157           | 4.0    | 1.26         | 32.0 | 2.72           | 69.0  | B56017     |
|          | 4.2              | .1654     |          | .197           | 5.0    | 1.50         | 38.0 | 3.15           | 80.0  | B56027     |
|          | 5.0              | .1969     |          | .197           | 5.0    | 1.50         | 38.0 | 3.15           | 80.0  | B56046     |
|          | 5.5              | .2165     |          | .236           | 6.0    | 1.57         | 40.0 | 3.23           | 82.0  | B56058     |
|          | 6.0              | .2362     |          | .236           | 6.0    | 1.57         | 40.0 | 3.23           | 82.0  | B56068     |
| 1/4      |                  | .2500     | 6.4      | .250           | 6.4    | 2.00         | 50.8 | 3.75           | 95.3  | B56075     |
|          | 6.5              | .2559     |          | .315           | 8.0    | 1.89         | 48.0 | 3.58           | 91.0  | B56077     |
|          | 6.8              | .2677     |          | .315           | 8.0    | 1.89         | 48.0 | 3.58           | 91.0  | B56084     |
|          | 7.0              | .2756     |          | .315           | 8.0    | 1.89         | 48.0 | 3.58           | 91.0  | B56087     |
| 9/32     |                  | .2813     | 7.1      | .438           | 11.1   | 2.00         | 50.8 | 3.75           | 95.3  | B56091     |
| 19/64    |                  | .2969     | 7.5      | .438           | 11.1   | 2.00         | 50.8 | 3.75           | 95.3  | B56098     |
| 5/16     |                  | .3125     | 7.9      | .438           | 11.1   | 2.00         | 50.8 | 3.75           | 95.3  | B56104     |
|          | 8.0              | .3150     |          | .315           | 8.0    | 1.89         | 48.0 | 3.58           | 91.0  | B56105     |
| 21/64    |                  | .3281     | 8.3      | .375           | 9.5    | 2.00         | 50.8 | 4.00           | 101.6 | B56111     |
|          | 8.5              | .3346     |          | .394           | 10.0   | 2.17         | 55.0 | 4.06           | 103.0 | B56115     |
|          | 9.0              | .3543     |          | .394           | 10.0   | 2.17         | 55.0 | 4.06           | 103.0 | B56123     |
| 23/64    |                  | .3594     | 9.1      | .375           | 9.5    | 2.00         | 50.8 | 4.00           | 101.6 | B56126     |
| 3/8      |                  | .3750     | 9.5      | .375           | 9.5    | 2.00         | 50.8 | 4.00           | 101.6 | B56132     |
| 25/64    |                  | .3906     | 9.9      | .375           | 9.5    | 2.00         | 50.8 | 4.00           | 101.6 | B56139     |
|          | 10.0             | .3937     |          | .394           | 10.0   | 2.17         | 55.0 | 4.06           | 103.0 | B56140     |
| 13/32    |                  | .4063     | 10.3     | .500           | 12.7   | 2.50         | 63.5 | 4.75           | 120.7 | B56144     |
|          | 10.5             | .4134     |          | .472           | 12.0   | 2.36         | 60.0 | 4.72           | 120.0 | B56146     |
|          | 11.0             | .4331     |          | .472           | 12.0   | 2.36         | 60.0 | 4.72           | 120.0 | B56149     |
| 7/16     |                  | .4375     | 11.1     | .500           | 12.7   | 2.50         | 63.5 | 4.75           | 120.7 | B56150     |
| 29/64    |                  | .4531     | 11.5     | .500           | 12.7   | 2.50         | 63.5 | 4.75           | 120.7 | B56153     |
| 15/32    |                  | .4688     | 11.9     | .500           | 12.7   | 2.50         | 63.5 | 4.75           | 120.7 | B56155     |
|          | 12.0             | .4724     |          | .472           | 12.0   | 2.60         | 66.0 | 4.72           | 120.0 | B56156     |
| 31/64    |                  | .4844     | 12.3     | .500           | 12.7   | 3.00         | 76.2 | 5.00           | 127.0 | B56158     |
|          | 12.5             | .4921     |          | .551           | 14.0   | 2.83         | 72.0 | 4.96           | 126.0 | B56159     |
| 1/2      |                  | .5000     | 12.7     | .500           | 12.7   | 3.00         | 76.2 | 5.00           | 127.0 | B56160     |

**TOLERANCE** - Drill Diameter: h6; Shank Diameter: h7



# High-Performance

**BASSETT™**

## Series DHPCF-5 High-Performance Coolant Fed Jobber Length Drill

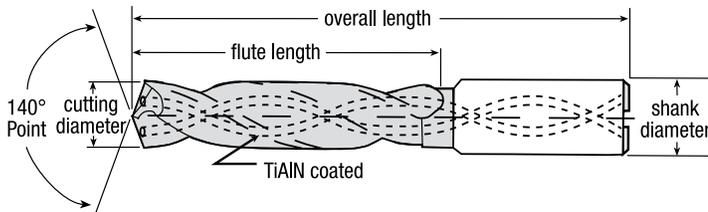
### Applications

- STAINLESS STEEL
- ALLOY-HARD STEEL
- CARBON STEEL
- HARDENED STEEL



### Features

- SUB-MICRON CARBIDE SUBSTRATE
- 140° POINT
- 5 X DIA DEPTH
- TiAlN
- h6 SHANK TOLERANCE
- h7 CUTTING TOLERANCE



|       | cutting diameter |        |           | shank diameter |      | flute length |       | overall length |       | EDP number |        |
|-------|------------------|--------|-----------|----------------|------|--------------|-------|----------------|-------|------------|--------|
|       | fraction         | metric | dec equiv | mm equiv       | inch | metric       | inch  | mm             | inch  |            | mm     |
|       |                  | 3.0    | .1181     |                | .236 | 6.0          | 1.102 | 28.0           | 2.598 | 66.0       | B54300 |
|       |                  | 3.3    | .1299     |                | .236 | 6.0          | 1.102 | 28.0           | 2.598 | 66.0       | B54306 |
|       |                  | 3.8    | .1496     |                | .236 | 6.0          | 1.417 | 36.0           | 2.913 | 74.0       | B54317 |
|       |                  | 4.2    | .1654     |                | .236 | 6.0          | 1.417 | 36.0           | 2.913 | 74.0       | B54327 |
|       |                  | 5.0    | .1969     |                | .236 | 6.0          | 1.732 | 44.0           | 3.228 | 82.0       | B54346 |
|       |                  | 5.5    | .2165     |                | .236 | 6.0          | 1.732 | 44.0           | 3.228 | 82.0       | B54358 |
|       |                  | 6.0    | .2362     |                | .236 | 6.0          | 1.732 | 44.0           | 3.228 | 82.0       | B54368 |
| 1/4   |                  | 6.4    | .2500     | 6.4            | .250 | 6.4          | 2.080 | 52.8           | 3.580 | 90.9       | B54375 |
|       |                  | 6.5    | .2559     |                | .315 | 8.0          | 2.087 | 53.0           | 3.583 | 91.0       | B54377 |
|       |                  | 6.8    | .2677     |                | .315 | 8.0          | 2.087 | 53.0           | 3.583 | 91.0       | B54384 |
|       |                  | 7.0    | .2756     |                | .315 | 8.0          | 2.087 | 53.0           | 3.583 | 91.0       | B54387 |
| 9/32  |                  | 7.1    | .2813     | 7.1            | .313 | 7.9          | 2.080 | 52.8           | 3.580 | 90.9       | B54391 |
| 19/64 |                  | 7.5    | .2969     | 7.5            | .313 | 7.9          | 2.080 | 52.8           | 3.580 | 90.9       | B54398 |
| 5/16  |                  | 7.9    | .3125     | 7.9            | .313 | 7.9          | 2.080 | 52.8           | 3.580 | 90.9       | B54404 |
|       |                  | 8.0    | .3150     |                | .315 | 8.0          | 2.087 | 53.0           | 3.583 | 91.0       | B54405 |
| 21/64 |                  | 8.3    | .3281     | 8.3            | .375 | 9.5          | 2.400 | 61.0           | 4.050 | 102.9      | B54412 |
|       |                  | 8.5    | .3346     |                | .394 | 10.0         | 2.402 | 61.0           | 4.055 | 103.0      | B54415 |
|       |                  | 8.8    | .3465     |                | .394 | 10.0         | 2.402 | 61.0           | 4.055 | 103.0      | B54420 |
|       |                  | 9.0    | .3543     |                | .394 | 10.0         | 2.402 | 61.0           | 4.055 | 103.0      | B54423 |
| 3/8   |                  | 9.5    | .3750     | 9.5            | .375 | 9.5          | 2.400 | 61.0           | 4.050 | 102.9      | B54432 |
|       |                  | 10     | .3937     |                | .394 | 10.0         | 2.402 | 61.0           | 4.055 | 103.0      | B54440 |
| 13/32 |                  | 10.3   | .4063     | 10.3           | .438 | 11.1         | 2.800 | 71.1           | 4.640 | 117.9      | B54444 |
|       |                  | 10.5   | .4134     |                | .472 | 12.0         | 2.795 | 71.0           | 4.646 | 118.0      | B54446 |
|       |                  | 10.8   | .4252     |                | .472 | 12.0         | 2.795 | 71.0           | 4.646 | 118.0      | B54448 |
|       |                  | 11.0   | .4331     |                | .472 | 12.0         | 2.795 | 71.0           | 4.646 | 118.0      | B54449 |
| 7/16  |                  | 11.1   | .4375     | 11.1           | .438 | 11.1         | 2.800 | 71.1           | 4.640 | 117.9      | B54450 |
| 29/64 |                  | 11.5   | .4531     | 11.5           | .500 | 12.7         | 3.030 | 77.0           | 4.875 | 123.8      | B54453 |
| 15/32 |                  | 11.9   | .4688     | 11.9           | .500 | 12.7         | 3.030 | 77.0           | 4.875 | 123.8      | B54455 |
|       |                  | 12.0   | .4724     |                | .472 | 12.0         | 2.795 | 71.0           | 4.646 | 118.0      | B54456 |
| 31/64 |                  | 12.3   | .4844     | 12.3           | .500 | 12.7         | 3.030 | 77.0           | 4.875 | 123.8      | B54458 |
|       |                  | 12.5   | .4921     |                | .551 | 14.0         | 3.031 | 77.0           | 4.882 | 124.0      | B54459 |
| 1/2   |                  | 12.7   | .5000     | 12.7           | .500 | 12.7         | 3.030 | 77.0           | 4.875 | 123.8      | B54460 |

**TOLERANCE** - Drill Diameter: h6; Shank Diameter: h7

CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

CARBIDE BURS

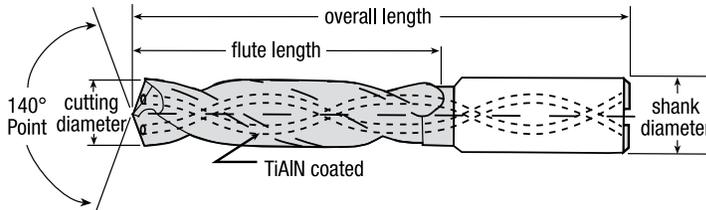
INDEX

# High-Performance

## Series DHPCF-8 High-Performance Coolant Fed Jobber Length Drill

### Applications

- STAINLESS STEEL
- ALLOY-HARD STEEL
- CARBON STEEL
- HARDENED STEEL



### Features

- SUB-MICRON CARBIDE SUBSTRATE
- 140°
- TiAlN
- 8 X DIA DEPTH
- h6 SHANK TOLERANCE
- h7 CUTTING TOLERANCE



|       | cutting diameter |        |           | shank diameter |      | flute length |      | overall length |      | EDP number |        |
|-------|------------------|--------|-----------|----------------|------|--------------|------|----------------|------|------------|--------|
|       | fraction         | metric | dec equiv | mm equiv       | inch | metric       | inch | mm             | inch |            | mm     |
|       |                  | 3.5    | .1378     |                | .236 | 6.0          | 1.34 | 34.0           | 2.83 | 72.0       | B54509 |
|       |                  | 3.8    | .1496     |                | .236 | 6.0          | 1.69 | 43.0           | 3.19 | 81.0       | B54517 |
|       |                  | 4.2    | .1654     |                | .236 | 6.0          | 1.69 | 43.0           | 3.19 | 81.0       | B54527 |
|       |                  | 4.5    | .1772     |                | .236 | 6.0          | 1.69 | 43.0           | 3.19 | 81.0       | B54535 |
|       |                  | 4.8    | .1890     |                | .236 | 6.0          | 2.24 | 57.0           | 3.74 | 95.0       | B54541 |
|       |                  | 5.0    | .1969     |                | .236 | 6.0          | 2.24 | 57.0           | 3.74 | 95.0       | B54546 |
|       |                  | 5.5    | .2165     |                | .236 | 6.0          | 2.24 | 57.0           | 3.74 | 95.0       | B54558 |
|       |                  | 6.0    | .2362     |                | .236 | 6.0          | 2.24 | 57.0           | 3.74 | 95.0       | B54568 |
| 1/4   |                  |        | .2500     | 6.4            | .250 | 6.4          | 3.00 | 76.2           | 4.50 | 114.3      | B54575 |
|       |                  | 6.5    | .2559     |                | .315 | 8.0          | 2.99 | 76.0           | 4.49 | 114.0      | B54577 |
|       |                  | 6.8    | .2677     |                | .315 | 8.0          | 2.99 | 76.0           | 4.49 | 114.0      | B54584 |
|       |                  | 7.0    | .2756     |                | .315 | 8.0          | 2.99 | 76.0           | 4.49 | 114.0      | B54587 |
| 9/32  |                  |        | .2813     | 7.1            | .313 | 7.9          | 3.00 | 76.2           | 4.50 | 114.3      | B54591 |
|       |                  | 7.5    | .2953     |                | .315 | 8.0          | 2.99 | 76.0           | 4.49 | 114.0      | B54597 |
| 19/64 |                  |        | .2969     | 7.5            | .313 | 7.9          | 3.00 | 76.2           | 4.50 | 114.3      | B54598 |
| 5/16  |                  |        | .3125     | 7.9            | .313 | 7.9          | 3.00 | 76.2           | 4.50 | 114.3      | B54604 |
|       |                  | 8.0    | .3150     |                | .315 | 8.0          | 2.99 | 76.0           | 4.49 | 114.0      | B54605 |
|       |                  | 8.5    | .3346     |                | .394 | 10.0         | 3.74 | 95.0           | 5.59 | 142.0      | B54615 |
|       |                  | 8.8    | .3465     |                | .394 | 10.0         | 3.74 | 95.0           | 5.59 | 142.0      | B54620 |
|       |                  | 9.0    | .3543     |                | .394 | 10.0         | 3.74 | 95.0           | 5.59 | 142.0      | B54623 |
|       |                  | 9.5    | .3740     |                | .394 | 10.0         | 3.74 | 95.0           | 5.59 | 142.0      | B54631 |
| 3/8   |                  |        | .3750     | 9.5            | .375 | 9.5          | 3.75 | 95.3           | 5.75 | 146.1      | B54632 |
|       |                  | 10.0   | .3937     |                | .394 | 10.0         | 3.74 | 95.0           | 5.59 | 142.0      | B54640 |
|       |                  | 10.2   | .4016     |                | .472 | 12.0         | 4.49 | 114.0          | 6.38 | 162.0      | B54642 |
|       |                  | 10.5   | .4134     |                | .472 | 12.0         | 4.49 | 114.0          | 6.38 | 162.0      | B54646 |
|       |                  | 10.8   | .4252     |                | .472 | 12.0         | 4.49 | 114.0          | 6.38 | 162.0      | B54648 |
|       |                  | 11.0   | .4331     |                | .472 | 12.0         | 4.49 | 114.0          | 6.38 | 162.0      | B54649 |
| 7/16  |                  |        | .4375     | 11.1           | .438 | 11.1         | 4.50 | 114.3          | 6.50 | 165.1      | B54650 |
|       |                  | 11.5   | .4528     |                | .472 | 12.0         | 4.49 | 114.0          | 6.38 | 162.0      | B54652 |
|       |                  | 12.0   | .4724     |                | .472 | 12.0         | 4.49 | 114.0          | 6.38 | 162.0      | B54656 |
|       |                  | 12.5   | .4921     |                | .551 | 14.0         | 5.24 | 133.0          | 7.01 | 178.0      | B54659 |
| 1/2   |                  |        | .5000     | 12.7           | .500 | 12.7         | 5.25 | 133.4          | 7.00 | 177.8      | B54660 |

**TOLERANCE** - Drill Diameter: h6; Shank Diameter: h7



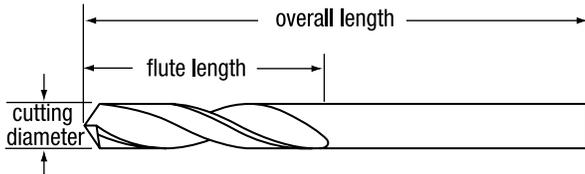
# Jobber Length

## Series DR Jobber Length Drill

### Applications



### Features



| cutting diameter |                  | flute length | overall length | EDP number |        |        |
|------------------|------------------|--------------|----------------|------------|--------|--------|
| frac             | wire/let decimal |              |                |            |        |        |
| 1/32             |                  | .0312        | 5/16           | 1 1/4      | B53509 |        |
|                  |                  | 60           | .0400          | 5/8        | 1 1/2  | B53511 |
|                  |                  | 59           | .0410          | 3/4        | 1 1/2  | B53512 |
|                  |                  | 58           | .0420          | 3/4        | 1 1/2  | B53514 |
|                  |                  | 57           | .0430          | 3/4        | 1 1/2  | B53515 |
|                  |                  | 56           | .0465          | 3/4        | 1 1/2  | B53518 |
| 3/64             |                  | .0469        | 3/4            | 1 1/2      | B53521 |        |
|                  |                  | 55           | .0520          | 3/4        | 1 1/2  | B53523 |
|                  |                  | 54           | .0550          | 3/4        | 1 1/2  | B53525 |
|                  |                  | 53           | .0595          | 3/4        | 1 1/2  | B53529 |
| 1/16             |                  | .0625        | 3/4            | 1 1/2      | B53531 |        |
|                  |                  | 52           | .0635          | 3/4        | 1 1/2  | B53533 |
|                  |                  | 51           | .0670          | 3/4        | 1 1/2  | B53536 |
|                  |                  | 50           | .0700          | 7/8        | 1 3/4  | B53538 |
|                  |                  | 49           | .0730          | 7/8        | 1 3/4  | B53541 |
|                  |                  | 48           | .0760          | 7/8        | 1 3/4  | B53543 |
| 5/64             |                  | .0781        | 7/8            | 1 3/4      | B53545 |        |
|                  |                  | 47           | .0785          | 7/8        | 1 3/4  | B53546 |
|                  |                  | 46           | .0810          | 7/8        | 1 3/4  | B53549 |
|                  |                  | 45           | .0820          | 7/8        | 1 3/4  | B53550 |
|                  |                  | 44           | .0860          | 1          | 2      | B53553 |
|                  |                  | 43           | .0890          | 1          | 2      | B53556 |
| 3/32             |                  | .0935        | 1              | 2          | B53559 |        |
|                  |                  | 42           | .0938          | 1          | 2      | B53560 |
|                  |                  | 41           | .0960          | 1          | 2      | B53562 |
|                  |                  | 40           | .0980          | 1          | 2      | B53564 |
|                  |                  | 39           | .0995          | 1 1/4      | 2 1/4  | B53566 |
|                  |                  | 38           | .1015          | 1 1/4      | 2 1/4  | B53567 |
| 7/64             |                  | .1040        | 1 1/4          | 2 1/4      | B53569 |        |
|                  |                  | 37           | .1040          | 1 1/4      | 2 1/4  | B53569 |
|                  |                  | 36           | .1065          | 1 1/4      | 2 1/4  | B53571 |
|                  |                  | 35           | .1094          | 1 1/4      | 2 1/4  | B53573 |
|                  |                  | 34           | .1100          | 1 1/4      | 2 1/4  | B53574 |
|                  |                  | 34           | .1110          | 1 1/4      | 2 1/4  | B53576 |
| 1/8              |                  | .1130        | 1 1/4          | 2 1/4      | B53577 |        |
|                  |                  | 32           | .1160          | 1 1/4      | 2 1/4  | B53579 |
|                  |                  | 31           | .1200          | 1 1/4      | 2 1/4  | B53581 |
|                  |                  | 30           | .1250          | 1 1/4      | 2 1/4  | B53583 |
|                  |                  | 30           | .1285          | 1 1/4      | 2 1/4  | B53586 |
|                  |                  | 29           | .1360          | 1 3/8      | 2 1/2  | B53589 |
| 9/64             |                  | .1405        | 1 3/8          | 2 1/2      | B53591 |        |
|                  |                  | 28           | .1405          | 1 3/8      | 2 1/2  | B53591 |
|                  |                  | 27           | .1406          | 1 3/8      | 2 1/2  | B53592 |
|                  | 27               | .1440        | 1 3/8          | 2 1/2      | B53594 |        |

| cutting diameter |                  | flute length | overall length | EDP number |        |        |
|------------------|------------------|--------------|----------------|------------|--------|--------|
| frac             | wire/let decimal |              |                |            |        |        |
| 5/32             |                  | .1470        | 1 3/8          | 2 1/2      | B53596 |        |
|                  |                  | 26           | .1470          | 1 3/8      | 2 1/2  | B53596 |
|                  |                  | 25           | .1495          | 1 3/8      | 2 1/2  | B53598 |
|                  |                  | 24           | .1520          | 1 3/8      | 2 1/2  | B53600 |
|                  |                  | 23           | .1540          | 1 3/8      | 2 1/2  | B53602 |
|                  |                  | 23           | .1540          | 1 3/8      | 2 1/2  | B53602 |
| 11/64            |                  | .1563        | 1 3/8          | 2 1/2      | B53603 |        |
|                  |                  | 22           | .1570          | 1 3/8      | 2 1/2  | B53604 |
|                  |                  | 21           | .1590          | 1 3/8      | 2 1/2  | B53606 |
|                  |                  | 20           | .1610          | 1 3/8      | 2 1/2  | B53607 |
|                  |                  | 19           | .1660          | 1 5/8      | 2 3/4  | B53610 |
|                  |                  | 18           | .1695          | 1 5/8      | 2 3/4  | B53613 |
| 3/16             |                  | .1719        | 1 5/8          | 2 3/4      | B53614 |        |
|                  |                  | 17           | .1730          | 1 5/8      | 2 3/4  | B53615 |
|                  |                  | 16           | .1770          | 1 5/8      | 2 3/4  | B53617 |
|                  |                  | 15           | .1800          | 1 5/8      | 2 3/4  | B53619 |
|                  |                  | 14           | .1820          | 1 5/8      | 2 3/4  | B53621 |
|                  |                  | 13           | .1850          | 1 5/8      | 2 3/4  | B53622 |
| 7/32             |                  | .1875        | 1 5/8          | 2 3/4      | B53625 |        |
|                  |                  | 12           | .1890          | 1 5/8      | 2 3/4  | B53626 |
|                  |                  | 11           | .1910          | 1 5/8      | 2 3/4  | B53628 |
|                  |                  | 10           | .1935          | 1 5/8      | 2 3/4  | B53630 |
|                  |                  | 9            | .1960          | 1 3/4      | 3      | B53631 |
|                  |                  | 8            | .1990          | 1 3/4      | 3      | B53633 |
| 13/64            |                  | .2010        | 1 3/4          | 3          | B53635 |        |
|                  |                  | 7            | .2010          | 1 3/4      | 3      | B53635 |
|                  |                  | 6            | .2031          | 1 3/4      | 3      | B53637 |
|                  |                  | 6            | .2040          | 1 3/4      | 3      | B53638 |
|                  |                  | 5            | .2055          | 1 3/4      | 3      | B53640 |
|                  |                  | 4            | .2090          | 1 3/4      | 3      | B53643 |
| 15/64            |                  | .2130        | 1 3/4          | 3          | B53645 |        |
|                  |                  | 3            | .2130          | 1 3/4      | 3      | B53645 |
|                  |                  | 2            | .2188          | 1 3/4      | 3      | B53647 |
|                  |                  | 2            | .2210          | 1 3/4      | 3      | B53649 |
|                  |                  | 1            | .2280          | 1 3/4      | 3      | B53652 |
|                  |                  | A            | .2340          | 2          | 3 1/4  | B53655 |
| 1/4              |                  | .2344        | 2              | 3 1/4      | B53657 |        |
|                  |                  | 15/64        | .2344          | 2          | 3 1/4  | B53657 |
|                  |                  | B            | .2380          | 2          | 3 1/4  | B53660 |
|                  |                  | C            | .2420          | 2          | 3 1/4  | B53662 |
|                  |                  | D            | .2460          | 2          | 3 1/4  | B53664 |
|                  |                  | E            | .2500          | 2          | 3 1/4  | B53666 |
| 17/64            |                  | .2570        | 2              | 3 1/4      | B53670 |        |
|                  |                  | F            | .2570          | 2          | 3 1/4  | B53670 |
|                  |                  | G            | .2610          | 2 1/8      | 3 1/2  | B53672 |
|                  |                  | 17/64        | .2656          | 2 1/8      | 3 1/2  | B53675 |
|                  |                  | H            | .2660          | 2 1/8      | 3 1/2  | B53677 |
|                  |                  | I            | .2720          | 2 1/8      | 3 1/2  | B53678 |

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CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

CARBIDE BURS

INDEX

# Jobber Length • Stub Length

## Series DR Jobber Length Drill (continued)

### Applications

NON-FERROUS MATERIALS

CAST IRON

STEEL



### Features

SOLID CARBIDE

118° 4-FACE

BRIGHT

| cutting diameter<br>frac | wire/let | decimal | flute length | overall length | EDP number |
|--------------------------|----------|---------|--------------|----------------|------------|
|                          | J        | .2770   | 2 1/8        | 3 1/2          | B53681     |
|                          | K        | .2810   | 2 1/8        | 3 1/2          | B53683     |
| 9/32                     |          | .2812   | 2 1/8        | 3 1/2          | B53685     |
|                          | L        | .2900   | 2 1/8        | 3 1/2          | B53688     |
|                          | M        | .2950   | 2 3/8        | 3 3/4          | B53689     |
| 19/64                    |          | .2969   | 2 3/8        | 3 3/4          | B53691     |
|                          | N        | .3020   | 2 3/8        | 3 3/4          | B53693     |
| 5/16                     |          | .3125   | 2 3/8        | 3 3/4          | B53694     |
|                          | O        | .3160   | 2 3/8        | 3 3/4          | B53696     |
|                          | P        | .3230   | 2 3/8        | 3 3/4          | B53698     |
| 21/64                    |          | .3281   | 2 1/2        | 4              | B53701     |
|                          | Q        | .3320   | 2 1/2        | 4              | B53704     |
| 11/32                    |          | .3438   | 2 1/2        | 4              | B53708     |
|                          | S        | .3480   | 2 1/2        | 4              | B53710     |
|                          | T        | .3580   | 2 1/2        | 4              | B53713     |
| 23/64                    |          | .3594   | 2 1/2        | 4              | B53715     |

| cutting diameter<br>frac | wire/let | decimal | flute length | overall length | EDP number |
|--------------------------|----------|---------|--------------|----------------|------------|
|                          | U        | .3680   | 2 3/4        | 4 1/4          | B53718     |
| 3/8                      |          | .3750   | 2 3/4        | 4 1/4          | B53720     |
|                          | V        | .3770   | 2 7/8        | 4 1/4          | B53722     |
|                          | W        | .3860   | 2 7/8        | 4 1/2          | B53724     |
| 25/64                    |          | .3906   | 2 7/8        | 4 1/2          | B53725     |
|                          | X        | .3970   | 2 7/8        | 4 1/2          | B53727     |
|                          | Y        | .4040   | 2 7/8        | 4 1/2          | B53729     |
| 13/32                    |          | .4062   | 2 7/8        | 4 1/2          | B53731     |
|                          | Z        | .4130   | 2 7/8        | 4 1/2          | B53732     |
| 27/64                    |          | .4219   | 2 7/8        | 4 1/2          | B53735     |
| 7/16                     |          | .4375   | 3            | 4 1/2          | B53737     |
| 29/64                    |          | .4531   | 3            | 4 3/4          | B53739     |
| 15/32                    |          | .4688   | 3            | 4 3/4          | B53741     |
| 31/64                    |          | .4844   | 3            | 4 3/4          | B53742     |
| 1/2                      |          | .5000   | 3            | 4 3/4          | B53744     |

## Series DRS Slow Spiral Stub Length Drill

### Applications

NON-FERROUS MATERIALS

CAST IRON

STEEL

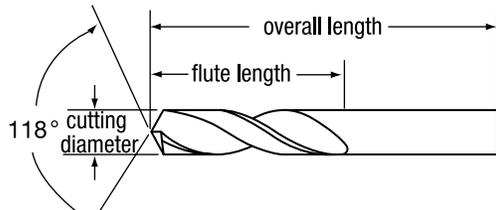


### Features

SOLID CARBIDE

118° 4-FACE

BRIGHT



| cutting diameter<br>frac | wire | decimal | flute length | overall length | EDP number |
|--------------------------|------|---------|--------------|----------------|------------|
|                          | 60   | .0400   | 3/8          | 1 1/2          | B36060     |
|                          | 59   | .0410   | 3/8          | 1 1/2          | B36059     |
|                          | 58   | .0420   | 3/8          | 1 1/2          | B36058     |
|                          | 57   | .0430   | 3/8          | 1 1/2          | B36057     |
|                          | 56   | .0465   | 3/8          | 1 1/2          | B36056     |
|                          | 55   | .0520   | 3/8          | 1 1/2          | B36055     |
|                          | 54   | .0550   | 3/8          | 1 1/2          | B36054     |
|                          | 53   | .0595   | 3/8          | 1 1/2          | B36053     |
| 1/16                     |      | .0625   | 3/8          | 1 1/2          | B36404     |
|                          | 52   | .0635   | 3/8          | 1 1/2          | B36052     |
|                          | 51   | .0670   | 3/8          | 1 1/2          | B36051     |
|                          | 50   | .0700   | 3/8          | 1 1/2          | B36050     |
|                          | 49   | .0730   | 3/8          | 1 1/2          | B36049     |
|                          | 48   | .0760   | 1/2          | 1 1/2          | B36048     |
| 5/64                     |      | .0781   | 1/2          | 1 1/2          | B36405     |
|                          | 47   | .0785   | 1/2          | 1 1/2          | B36047     |
|                          | 46   | .0810   | 1/2          | 1 1/2          | B36046     |
|                          | 45   | .0820   | 1/2          | 1 1/2          | B36045     |

| cutting diameter<br>frac | wire | decimal | flute length | overall length | EDP number |
|--------------------------|------|---------|--------------|----------------|------------|
|                          | 44   | .0860   | 1/2          | 2              | B36044     |
|                          | 43   | .0890   | 1/2          | 2              | B36043     |
| 3/32                     |      | .0935   | 1/2          | 2              | B36042     |
|                          | 42   | .0938   | 1/2          | 2              | B36406     |
|                          | 41   | .0960   | 1/2          | 2              | B36041     |
|                          | 40   | .0980   | 5/8          | 2              | B36040     |
|                          | 39   | .0995   | 5/8          | 2              | B36039     |
|                          | 38   | .1015   | 5/8          | 2              | B36038     |
|                          | 37   | .1040   | 5/8          | 2              | B36037     |
|                          | 36   | .1065   | 5/8          | 2              | B36036     |
| 7/64                     |      | .1094   | 5/8          | 2              | B36407     |
|                          | 35   | .1100   | 5/8          | 2              | B36035     |
|                          | 34   | .1110   | 5/8          | 2              | B36034     |
|                          | 33   | .1130   | 5/8          | 2              | B36033     |
|                          | 32   | .1160   | 5/8          | 2              | B36032     |
|                          | 31   | .1200   | 5/8          | 2              | B36031     |
| 1/8                      |      | .1250   | 5/8          | 2              | B36408     |
|                          | 30   | .1285   | 5/8          | 2              | B36030     |

continued on next page



# Stub Length

Series **DRS** Slow Spiral Stub Length Drill (continued)

## Applications



## Features



|       | cutting diameter |              | flute length | overall length | EDP number |
|-------|------------------|--------------|--------------|----------------|------------|
|       | frac             | wire decimal |              |                |            |
| 9/64  | 29               | .1360        | 5/8          | 2              | B36029     |
|       |                  | .1406        | 5/8          | 2              | B36409     |
|       | 27               | .1440        | 5/8          | 2              | B36027     |
|       | 26               | .1470        | 5/8          | 2              | B36026     |
|       | 25               | .1495        | 5/8          | 2              | B36025     |
| 5/32  | 24               | .1520        | 5/8          | 2              | B36024     |
|       | 23               | .1540        | 5/8          | 2              | B36023     |
|       |                  | .1563        | 3/4          | 2              | B36410     |
|       | 21               | .1590        | 3/4          | 2              | B36021     |
|       | 20               | .1610        | 3/4          | 2              | B36020     |
| 11/64 | 19               | .1660        | 3/4          | 2 1/8          | B36019     |
|       | 18               | .1695        | 3/4          | 2 1/8          | B36018     |
|       |                  | .1719        | 3/4          | 2 1/8          | B36411     |
|       | 17               | .1730        | 3/4          | 2 1/8          | B36017     |
|       |                  | .1770        | 3/4          | 2 1/8          | B36016     |
| 3/16  | 15               | .1800        | 3/4          | 2 3/16         | B36015     |
|       | 14               | .1820        | 3/4          | 2 3/16         | B36014     |
|       | 13               | .1850        | 3/4          | 2 3/16         | B36013     |
|       |                  | .1875        | 3/4          | 2 3/16         | B36412     |
|       | 12               | .1890        | 3/4          | 2 3/16         | B36012     |
| 13/64 | 11               | .1910        | 3/4          | 2 3/16         | B36011     |
|       | 10               | .1935        | 3/4          | 2 3/16         | B36010     |
|       | 9                | .1960        | 3/4          | 2 1/4          | B36009     |
|       | 8                | .1990        | 3/4          | 2 1/4          | B36008     |
|       | 7                | .2010        | 3/4          | 2 1/4          | B36007     |
|       | .2031            | 3/4          | 2 1/4        | B36413         |            |

|       | cutting diameter |                     | flute length | overall length | EDP number |
|-------|------------------|---------------------|--------------|----------------|------------|
|       | frac             | wire/letter decimal |              |                |            |
| 7/32  | 6                | .2040               | 3/4          | 2 1/4          | B36006     |
|       | 5                | .2055               | 3/4          | 2 1/4          | B36005     |
|       | 4                | .2090               | 3/4          | 2 1/4          | B36004     |
|       | 3                | .2130               | 1            | 2 1/2          | B36003     |
|       |                  | .2188               | 1            | 2 1/2          | B36414     |
| 15/64 | 2                | .2210               | 1            | 2 1/2          | B36002     |
|       | 1                | .2280               | 1            | 2 1/2          | B36001     |
|       |                  | .2344               | 1            | 2 1/2          | B36415     |
|       | 1/4              | .2500               | 1            | 2 1/2          | B36416     |
|       | 17/64            | .2656               | 1            | 2 1/2          | B36417     |
| 19/64 | 9/32             | .2813               | 1            | 2 1/2          | B36418     |
|       | 19/64            | .2969               | 1 1/4        | 2 1/2          | B36419     |
|       | 5/16             | .3125               | 1 1/4        | 2 1/2          | B36420     |
|       | 21/64            | .3281               | 1 1/4        | 2 1/2          | B36421     |
|       | 11/32            | .3438               | 1 1/4        | 2 1/2          | B36422     |
| 27/64 | 23/64            | .3594               | 1 1/4        | 2 1/2          | B36423     |
|       | 25/64            | .3906               | 1 1/4        | 2 3/4          | B36425     |
|       | 13/32            | .4063               | 1 1/4        | 2 3/4          | B36426     |
|       | 27/64            | .4219               | 1 1/4        | 2 3/4          | B36427     |
|       | 7/16             | .4375               | 1 1/4        | 2 3/4          | B36428     |
| 31/64 | 29/64            | .4531               | 1 1/4        | 3              | B36429     |
|       | 15/32            | .4688               | 1 1/4        | 3              | B36430     |
|       | 31/64            | .4844               | 1 1/4        | 3              | B36431     |
|       | 1/2              | .5000               | 1 1/4        | 3              | B36432     |

CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

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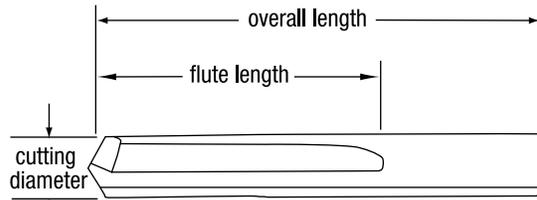
# Straight Flute

## Series DM Straight Flute Drill

### Applications



### Features



Tolerances for Series DM Drills  
 Cutting Diameter: +.000, -.0005  
 Shank Diameter: +.0000, -.0005

| cutting diameter      | flute length | overall length | EDP number     |
|-----------------------|--------------|----------------|----------------|
| frac wire /mm decimal | length       | length         |                |
| 1/32                  | .0313        | 1/2            | 1 1/2 B54100   |
|                       | .0400        | 1/2            | 1 1/2 B54101   |
|                       | .0410        | 1/2            | 1 1/2 B54102   |
|                       | .0420        | 1/2            | 1 1/2 B54104   |
|                       | .0430        | 1/2            | 1 1/2 B54105   |
|                       | .0465        | 1/2            | 1 1/2 B54108   |
| 3/64                  | .0469        | 1/2            | 1 1/2 B54112   |
|                       | .0520        | 1/2            | 1 1/2 B54113   |
|                       | .0550        | 1/2            | 1 1/2 B54115   |
|                       | .0595        | 1/2            | 1 1/2 B54119   |
| 1/16                  | .0625        | 5/8            | 1 5/8 B54121   |
|                       | .0635        | 11/16          | 1 11/16 B54123 |
|                       | .0670        | 11/16          | 1 11/16 B54126 |
|                       | .0700        | 11/16          | 1 11/16 B54128 |
|                       | .0730        | 11/16          | 1 11/16 B54131 |
|                       | .0760        | 11/16          | 1 11/16 B54133 |
| 5/64                  | .0781        | 11/16          | 1 11/16 B54135 |
|                       | .0785        | 3/4            | 1 3/4 B54136   |
|                       | .0810        | 3/4            | 1 3/4 B54139   |
|                       | .0820        | 3/4            | 1 3/4 B54140   |
|                       | .0860        | 3/4            | 1 3/4 B54143   |
|                       | .0890        | 3/4            | 1 3/4 B54146   |
|                       | .0935        | 3/4            | 1 3/4 B54149   |
| 3/32                  | .0938        | 3/4            | 1 3/4 B54150   |
|                       | .0960        | 13/16          | 1 13/16 B54152 |
|                       | .0980        | 13/16          | 1 13/16 B54154 |
|                       | .0995        | 13/16          | 1 13/16 B54156 |
|                       | .1015        | 13/16          | 1 13/16 B54157 |
|                       | .1040        | 13/16          | 1 13/16 B54159 |
|                       | .1065        | 13/16          | 1 13/16 B54161 |
| 7/64                  | .1094        | 13/16          | 1 13/16 B54163 |
|                       | .1100        | 7/8            | 1 7/8 B54164   |
|                       | .1110        | 7/8            | 1 7/8 B54166   |
|                       | .1130        | 7/8            | 1 7/8 B54167   |
|                       | .1160        | 7/8            | 1 7/8 B54169   |
|                       | .1200        | 7/8            | 1 7/8 B54171   |
| 1/8                   | .1250        | 7/8            | 1 7/8 B54173   |
|                       | .1285        | 15/16          | 1 15/16 B54176 |
|                       | .1360        | 15/16          | 1 15/16 B54179 |
|                       | .1405        | 15/16          | 1 15/16 B54181 |
| 9/64                  | .1406        | 15/16          | 1 15/16 B54182 |
|                       | .1440        | 1              | 2 1/16 B54184  |

| cutting diameter     | flute length | overall length | EDP number      |
|----------------------|--------------|----------------|-----------------|
| frac wire/mm decimal | length       | length         |                 |
|                      | 26           | .1470          | 1 2 1/16 B54186 |
|                      | 25           | .1495          | 1 2 1/16 B54188 |
|                      | 24           | .1520          | 1 2 1/16 B54190 |
|                      | 23           | .1540          | 1 2 1/16 B54192 |
| 5/32                 | .1563        | 1              | 2 1/16 B54193   |
|                      | .1570        | 1 1/16         | 2 1/8 B54194    |
|                      | .1590        | 1 1/16         | 2 1/8 B54196    |
|                      | .1610        | 1 1/16         | 2 1/8 B54197    |
|                      | .1660        | 1 1/16         | 2 1/8 B54200    |
|                      | .1695        | 1 1/16         | 2 1/8 B54203    |
| 11/64                | .1719        | 1 1/16         | 2 1/8 B54204    |
|                      | .1730        | 1 1/8          | 2 3/16 B54205   |
|                      | .1770        | 1 1/8          | 2 3/16 B54207   |
|                      | .1800        | 1 1/8          | 2 3/16 B54209   |
|                      | .1820        | 1 1/8          | 2 3/16 B54211   |
|                      | .1850        | 1 1/8          | 2 3/16 B54212   |
| 3/16                 | .1875        | 1 1/8          | 2 3/16 B54215   |
|                      | .1890        | 1 3/16         | 2 1/4 B54216    |
|                      | .1910        | 1 3/16         | 2 1/4 B54218    |
|                      | .1935        | 1 3/16         | 2 1/4 B54220    |
|                      | .1960        | 1 3/16         | 2 1/4 B54221    |
|                      | .1990        | 1 3/16         | 2 1/4 B54223    |
|                      | .2010        | 1 3/16         | 2 1/4 B54225    |
| 13/64                | .2031        | 1 3/16         | 2 1/4 B54227    |
|                      | .2040        | 1 1/4          | 2 3/8 B54228    |
|                      | .2055        | 1 1/4          | 2 3/8 B54230    |
|                      | .2090        | 1 1/4          | 2 3/8 B54233    |
|                      | .2130        | 1 1/4          | 2 3/8 B54235    |
| 7/32                 | .2188        | 1 1/4          | 2 3/8 B54237    |
|                      | .2210        | 1 5/16         | 2 7/16 B54239   |
|                      | .2280        | 1 5/16         | 2 7/16 B54245   |
| 15/64                | .2344        | 1 5/16         | 2 7/16 B54242   |
| 1/4                  | .2500        | 1 3/8          | 2 1/2 B54247    |
| 17/64                | .2656        | 1 7/16         | 2 5/8 B54248    |
| 9/32                 | .2813        | 1 1/2          | 2 11/16 B54250  |
| 19/64                | .2969        | 1 9/16         | 2 3/4 B54251    |
| 5/16                 | .3125        | 1 5/8          | 2 13/16 B54253  |
| 21/64                | .3281        | 1 11/16        | 2 15/16 B54254  |
| 11/32                | .3438        | 1 11/16        | 3 B54256        |
| 23/64                | .3594        | 1 3/4          | 3 1/16 B54257   |
| 3/8                  | .3750        | 1 13/16        | 3 1/8 B54259    |
| 25/64                | .3906        | 1 7/8          | 3 1/4 B54260    |

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CARBIDE END MILLS  
 CARBIDE DRILLS  
 CARBIDE THREAD MILLS  
 CARBIDE BURS  
 INDEX



# Straight Flute • Spade • Drill and Countersink

**BASSETT™**

## Series **DM** Straight Flute Drill (continued)

| cutting diameter |         | flute length | overall length | EDP number |
|------------------|---------|--------------|----------------|------------|
| frac             | decimal |              |                |            |
| 13/32            | .4063   | 1 15/16      | 3 5/16         | B54262     |
| 27/64            | .4219   | 2            | 3 3/8          | B54263     |
| 7/16             | .4375   | 2 1/16       | 3 7/16         | B54265     |
| 15/32            | .4688   | 2 1/8        | 3 5/8          | B54267     |
| 1/2              | .5000   | 2 1/4        | 3 3/4          | B54270     |

**Applications** | NON-FERROUS MATERIALS CAST IRON STEEL

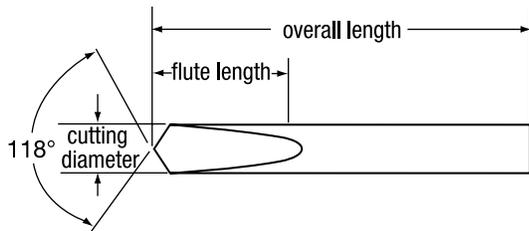
**Features** | SOLID CARBIDE 118° 4-FACE™ BRIGHT

## Series **DS** Spade Stub Length Drill

**Applications** | NON-FERROUS MATERIALS STAINLESS STEEL HARDENED STEEL



**Features** | SOLID CARBIDE 118° BRIGHT



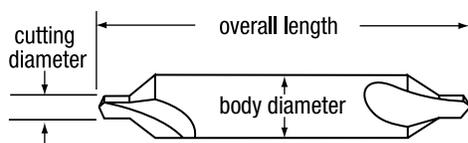
| cutting diameter |         | flute length | overall length | EDP number |
|------------------|---------|--------------|----------------|------------|
| fractional       | decimal |              |                |            |
| 1/32             | .0313   | 3/16         | 1 1/2          | B53451     |
| 1/16             | .0625   | 5/16         | 1 1/2          | B53454     |
| 3/32             | .0938   | 7/16         | 1 1/2          | B53456     |
| 1/8              | .1250   | 7/16         | 1 1/2          | B53458     |
| 5/32             | .1563   | 15/32        | 2              | B53460     |
| 3/16             | .1875   | 9/16         | 2              | B53462     |

| cutting diameter |         | flute length | overall length | EDP number |
|------------------|---------|--------------|----------------|------------|
| fractional       | decimal |              |                |            |
| 7/32             | .2188   | 19/32        | 2              | B53464     |
| 1/4              | .2500   | 11/16        | 2              | B53467     |
| 3/8              | .3750   | 1            | 2 1/2          | B53475     |
| 13/32            | .4063   | 1            | 2 1/2          | B53477     |

## Series **DC** Combination Stub Length Drill and Countersink

**Applications** | NON-FERROUS MATERIALS CAST IRON STEEL

**Features** | SOLID CARBIDE 118° BRIGHT



| tool number | cutting diameter |         | body diameter | overall length | EDP number |
|-------------|------------------|---------|---------------|----------------|------------|
|             | fraction         | decimal |               |                |            |
| 1           | 3/64             | .125    | 1/8           | 1 1/2          | B53433     |
| 2           | 5/64             | .188    | 3/16          | 2              | B53433     |
| 3           | 7/64             | .250    | 1/4           | 2              | B53433     |
| 4           | 1/8              | .313    | 5/16          | 2 1/8          | B53434     |
| 5           | 3/16             | .438    | 7/16          | 2 3/4          | B53435     |
| 6           | 7/32             | .500    | 1/2           | 3              | B53436     |



## ***Thread Mills***



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## Features

- Helical flute design reduces thread chatter, improving product thread finish and quality
- Advanced TiAlN coating is standard for increasing speeds
- Ideal for internal and external threads
- Full range of sizes available
  - Internal threads #4 to 1" UNC and UNF
  - Pipe threads 1/16" to 1" NPT, NPTF and NPSM
  - Metric internal threads M4.5 x .75 through M20 x 3
- Specials program for nonstandard sizes and other coatings

## Benefits

- Thread milling is a superior process for threading most materials
- More economical than using taps:
  - One thread mill can produce several diameters of threaded holes of the same pitch
  - Same tool makes right or left-hand threads
  - Avoid chip packing in blind holes, a primary cause of tap breakage
  - One tool for through and blind holes
  - Pitch diameter can be controlled by CNC offset

## Applications

- Bassett thread mills are the ideal choice when:
- Machine tool has helical interpolation capabilities
  - Thread specification calls for full threads close to bottom of hole
  - Thread specification requires a special tap
  - Small lot size is to be threaded
  - Need to cut large diameter threads on low horsepower machines
  - Workpiece is thin walled which can be milled more easily than tapped
  - CNC machine has a slower RPM capability below what is recommended for carbide thread mills

## Calculating Thread Mill Feed Rate

**For internal threads:**  $(D1 - d1) / D1 \times \text{RPM} \times \text{ipr}$   
**For external threads:**  $(D1 + d1) / D1 \times \text{RPM} \times \text{ipr}$   
 where  
 D1 is the major diameter of the thread  
 d1 is the cutting diameter  
 RPM is the calculated speed rate =  $(3.82 \times \text{SFM}) / \text{Diameter}$   
 ipr is the calculated feed rate =  $\text{IPT (inches per tooth)} \times \text{number of flutes per cutter}$   
 Example: to cut an internal 7/8-14 thread using a four-flute, 1/2" diameter cutter in bronze, the programmed feed rate would be  $((.875 - .500) / .875) \times (3438 \text{ RPM} \times .016)$  or 23.6 ipm

## Operating Parameters for Helical Thread Mills

| material              | surface feet per minute (SFM) | cutter diameter (inches) |        |        |        |        |        |
|-----------------------|-------------------------------|--------------------------|--------|--------|--------|--------|--------|
|                       |                               | 0.125                    | 0.250  | 0.375  | 0.500  | 0.750  | 1.000  |
| Al-Si Alloys          | 600                           | 0.0010                   | 0.0020 | 0.0030 | 0.0040 | 0.0050 | 0.0060 |
| cast iron             | 600                           | 0.0008                   | 0.0015 | 0.0020 | 0.0030 | 0.0040 | 0.0050 |
| brass or bronze       | 450                           | 0.0010                   | 0.0020 | 0.0030 | 0.0040 | 0.0050 | 0.0060 |
| steel <200 Bhn        | 600                           | 0.0007                   | 0.0015 | 0.0020 | 0.0030 | 0.0040 | 0.0050 |
| steel <325 Bhn        | 575                           | 0.0005                   | 0.0010 | 0.0015 | 0.0020 | 0.0030 | 0.0040 |
| stainless steel       | 525                           | 0.0005                   | 0.0008 | 0.0015 | 0.0020 | 0.0030 | 0.0040 |
| tool steels, annealed | 125                           | 0.0005                   | 0.0008 | 0.0012 | 0.0015 | 0.0020 | 0.0030 |

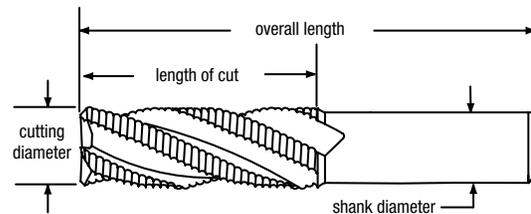
Series **TM Solid** and **TMC Coolant-Thru** Thread Mills for Internal Threads

Applications |

STEEL
STAINLESS STEEL
HI-TEMP ALLOYS
NON-FERROUS MATERIALS

Features |

SOLID CARBIDE
UNC
TiAIN



| thread size | shank diameter | cutting diameter | length of cut | overall length | number of flutes | EDP number  |              |
|-------------|----------------|------------------|---------------|----------------|------------------|-------------|--------------|
|             |                |                  |               |                |                  | non-coolant | coolant-thru |
| 6-32        | 1/8            | .095             | .218          | 2              | 3                | B71000      | —            |
| 8-32        | 1/8            | .115             | .250          | 2              | 3                | B71002      | —            |
| 8-36        | 1/8            | .115             | .250          | 2              | 3                | B71003      | —            |
| 10-24       | 3/16           | .120             | .312          | 2              | 3                | B71004      | —            |
| 10-32       | 3/16           | .120             | .312          | 2              | 3                | B71005      | —            |
| 1/4-20      | 3/16           | .180             | .500          | 2 1/2          | 3                | B71008      | B71508       |
| 1/4-28      | 3/16           | .180             | .500          | 2 1/2          | 3                | B71009      | B71509       |
| 5/16-18     | 1/4            | .240             | .625          | 2 1/2          | 3                | B71010      | B71510       |
| 5/16-24     | 1/4            | .240             | .625          | 2 1/2          | 3                | B71011      | B71511       |
| 3/8-16      | 5/16           | .290             | .750          | 3              | 4                | B71012      | B71512       |
| 3/8-24      | 5/16           | .290             | .750          | 3              | 4                | B71013      | B71513       |
| 7/16-14     | 3/8            | .340             | .875          | 3              | 4                | B71014      | B71514       |
| 7/16-20     | 3/8            | .340             | .875          | 3              | 4                | B71015      | B71515       |
| 1/2-13      | 3/8            | .350             | .875          | 3 1/2          | 4                | B71016      | B71516       |
| 1/2-20      | 3/8            | .350             | .875          | 3 1/2          | 4                | B71017      | —            |
| 9/16-12     | 1/2            | .370             | .875          | 3 1/2          | 4                | B71018      | B71518       |
| 9/16-18     | 1/2            | .370             | .875          | 3 1/2          | 4                | B71019      | B71519       |
| 5/8-11      | 1/2            | .470             | 1.250         | 3 1/2          | 5                | B71020      | B71520       |
| 5/8-18      | 1/2            | .470             | 1.250         | 3 1/2          | 5                | B71021      | B71521       |
| 3/4-10      | 1/2            | .495             | 1.250         | 3 1/2          | 5                | B71022      | B71522       |
| 3/4-12      | 1/2            | .495             | 1.250         | 3 1/2          | 5                | B71023      | B71523       |
| 3/4-16      | 1/2            | .495             | 1.250         | 3 1/2          | 5                | B71025      | B71525       |
| 7/8-9       | 1/2            | .495             | 1.250         | 3 1/2          | 5                | B71026      | B71526       |
| 7/8-14      | 1/2            | .495             | 1.250         | 3 1/2          | 5                | B71027      | B71527       |
| 1-8         | 3/4            | .620             | 1.375         | 4              | 5                | B71028      | B71528       |
| 1-12        | 3/4            | .620             | 1.375         | 4              | 5                | B71029      | B71529       |

CARBIDE END MILLS  
CARBIDE DRILLS  
CARBIDE THREAD MILLS  
CARBIDE BURS  
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**NPT • BSPP • BSPT**

**BASSETT™**

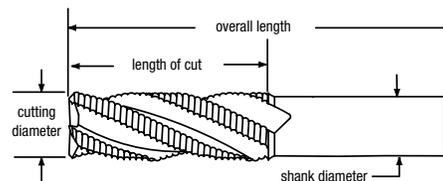
Series **TMNP Solid** and **TMNPC Coolant-Thru** Thread Mills for Internal Threads

**Applications**

NON-FERROUS MATERIALS
STEEL
STAINLESS STEEL
HITEMP ALLOYS

**Features**

NPT
SOLID CARBIDE
TiAIN



| thread size | shank diameter | cutting diameter | length of cut | overall length | number of flutes | EDP number  |              |
|-------------|----------------|------------------|---------------|----------------|------------------|-------------|--------------|
|             |                |                  |               |                |                  | non-coolant | coolant-thru |
| 1/16-27     | 1/4            | .245             | .437          | 2 1/2          | 3                | B71050      | B71550       |
| 1/8-27      | 5/16           | .310             | .437          | 2 1/2          | 4                | B71051      | B71551       |
| 1/4, 3/8-18 | 3/8            | .305             | .625          | 3              | 4                | B71052      | B71552       |
| 1/2, 3/4-14 | 1/2            | .495             | .875          | 3 1/2          | 4                | B71055      | B71555       |
| 1-11.5      | 3/4            | .620             | 1.125         | 4              | 5                | B71056      | B71556       |

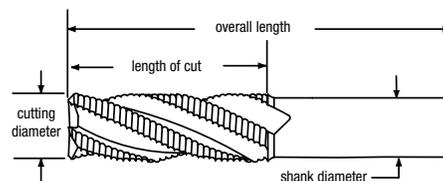
Series **TMBPS Solid** and **TMBPSC Coolant-Thru** Thread Mills for Internal Threads

**Applications**

NON-FERROUS MATERIALS
STEEL
STAINLESS STEEL
HITEMP ALLOYS

**Features**

BSPP
SOLID CARBIDE
TiAIN



| thread size  | shank diameter | cutting diameter | length of cut | overall length | number of flutes | EDP number  |              |
|--------------|----------------|------------------|---------------|----------------|------------------|-------------|--------------|
|              |                |                  |               |                |                  | non-coolant | coolant-thru |
| 1/16, 1/8-28 | 1/4            | .240             | .572          | 2 1/2          | 3                | B71100      | B71600       |
| 1/4-19       | 5/16           | .312             | .737          | 3              | 4                | B71101      | B71601       |
| 1/2-14       | 1/2            | .470             | 1.143         | 3 1/2          | 4                | B71102      | B71602       |
| 1-11         | 5/8            | .620             | 1.546         | 4              | 5                | B71104      | B71604       |

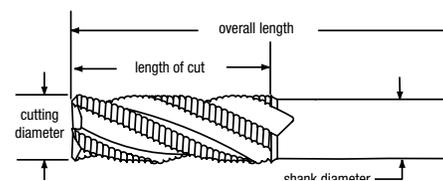
Series **TMBPT Solid** and **TMBPTC Coolant-Thru** Thread Mills for Internal Threads

**Applications**

NON-FERROUS MATERIALS
STEEL
STAINLESS STEEL
HITEMP ALLOYS

**Features**

BSPT
SOLID CARBIDE
TiAIN



| thread size  | shank diameter | cutting diameter | length of cut | overall length | number of flutes | EDP number  |              |
|--------------|----------------|------------------|---------------|----------------|------------------|-------------|--------------|
|              |                |                  |               |                |                  | non-coolant | coolant-thru |
| 1/16, 1/8-28 | 1/4            | .240             | .401          | 2 1/2          | 3                | B71120      | B71620       |
| 1/4-19       | 5/16           | .312             | .578          | 3              | 4                | B71121      | B71621       |
| 1/2-14       | 1/2            | .470             | .785          | 3 1/2          | 4                | B71122      | B71622       |
| 1-11         | 5/8            | .620             | 1.546         | 4              | 5                | B71123      | B71623       |

CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

CARBIDE BURS

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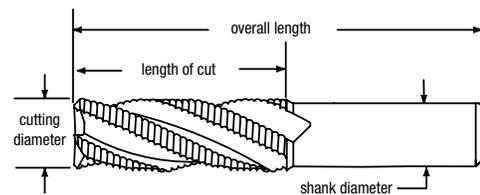
Series **TMM Solid** and **TMMC Coolant-Thru** Thread Mills for Internal Threads

Applications |

NON-FERROUS MATERIALS
STEEL
STAINLESS STEEL
HI-TEMP ALLOYS

Features |

SOLID CARBIDE
METRIC
TiAIN



| thread size | shank diameter | cutting diameter | length of cut | overall length | number of flutes | EDP number  |              |
|-------------|----------------|------------------|---------------|----------------|------------------|-------------|--------------|
|             |                |                  |               |                |                  | non-coolant | coolant-thru |
| M4 X 0.70   | 1/8            | .120             | .250          | 2              | 2                | B71070      | B71570       |
| M4.5 X 0.75 | 1/8            | .120             | .250          | 2              | 3                | B71071      | B71571       |
| M5 X 0.80   | 3/16           | .120             | .312          | 2              | 3                | B71072      | B71572       |
| M6 X 1.00   | 3/16           | .170             | .500          | 2 1/2          | 3                | B71073      | B71573       |
| M8 X 0.75   | 1/4            | .235             | .625          | 2 1/2          | 3                | B71074      | B71574       |
| M8 X 1.00   | 1/4            | .235             | .625          | 2 1/2          | 3                | B71075      | B71575       |
| M8 X 1.25   | 1/4            | .235             | .625          | 2 1/2          | 3                | B71076      | B71576       |
| M10 X 1.25  | 5/16           | .300             | .750          | 3              | 4                | B71077      | B71577       |
| M10 X 1.50  | 5/16           | .300             | .750          | 3              | 4                | B71078      | B71578       |
| M12 X 1.00  | 3/8            | .360             | .875          | 3 1/2          | 4                | B71079      | B71579       |
| M12 X 1.25  | 3/8            | .360             | .875          | 3 1/2          | 4                | B71080      | B71580       |
| M12 X 1.75  | 3/8            | .360             | .875          | 3 1/2          | 4                | B71081      | B71581       |
| M14 X 1.50  | 3/8            | .360             | .875          | 3 1/2          | 4                | B71082      | B71582       |
| M16 X 2.00  | 1/2            | .470             | 1.250         | 3 1/2          | 5                | B71083      | B71583       |
| M18 X 2.50  | 1/2            | .470             | 1.250         | 3 1/2          | 5                | B71084      | B71584       |
| M20 X 3.00  | 1/2            | .470             | 1.250         | 3 1/2          | 5                | B71085      | B71585       |



# Thread Mill Programming Request Form

Bassett offers free programming assistance to users of any Bassett thread milling product. If you are not familiar with thread milling, we highly recommend that you complete this program request form and fax it to 1-800-892-4290. The Technical Support department will return a suggested CNC program.

Enduser Company Name \_\_\_\_\_

Contact \_\_\_\_\_

Telephone Number \_\_\_\_\_

Email Address \_\_\_\_\_

Distributor Name \_\_\_\_\_

Distributor Telephone Number \_\_\_\_\_

Distributor or Enduser  
Purchase Order Number \_\_\_\_\_

## Thread Specifications:

Thread Type \_\_\_\_\_

RH/LH \_\_\_\_\_

Thread Diameter \_\_\_\_\_

TPI or Pitch (mm) \_\_\_\_\_

Class of Thread (1B, 2B, 3B) \_\_\_\_\_

Minimum Drilling Depth \_\_\_\_\_

Full Thread Length Min \_\_\_\_\_

Material \_\_\_\_\_

Material Hardness \_\_\_\_\_

## CNC Machine Info

Brand \_\_\_\_\_

Model \_\_\_\_\_

Lathe \_\_\_\_\_

Milling Machine \_\_\_\_\_

Is machine capable of helical interpolation?  
\_\_\_\_\_ yes \_\_\_\_\_ no

(if "no", machine cannot thread mill)

## Tool Specs

Description \_\_\_\_\_

EDP MNumber \_\_\_\_\_

Tool Diameter \_\_\_\_\_

Number of Flutes \_\_\_\_\_

**FAX TO**  
**1-800-892-4290**

CARBIDE END MILLS

CARBIDE DRILLS

CARBIDE THREAD MILLS

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**BASSETT™**



***Solid Carbide Burs***



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CARBIDE DRILLS

## Standard Shank Styles



Shank A — 1/8" solid carbide



Shank B — 1/8" hardened steel



Shank C — 1/4" hardened steel



Shank D — 1/4" solid carbide

CARBIDE THREAD MILLS

CARBIDE BURS

## Recommended Bur Speeds (RPM)

| Bur Dia. | Standard Cut               |                                      | Monarch Cut                |                                      |
|----------|----------------------------|--------------------------------------|----------------------------|--------------------------------------|
|          | stainless inconel titanium | all other materials in chart (right) | stainless inconel titanium | all other materials in chart (right) |
| 1/16     | 75,000                     | 50,000                               | 37,500                     | 25,000                               |
| 1/8      | 53,000                     | 35,000                               | 26,500                     | 17,500                               |
| 3/16     | 38,000                     | 26,000                               | 19,000                     | 13,000                               |
| 1/4      | 33,000                     | 22,000                               | 16,500                     | 11,000                               |
| 5/16     | 30,000                     | 20,000                               | 15,000                     | 10,000                               |
| 3/8      | 27,000                     | 18,000                               | 13,500                     | 9,000                                |
| 1/2      | 24,000                     | 16,000                               | 12,000                     | 8,000                                |
| 5/8      | 23,000                     | 15,300                               | 11,500                     | 7,650                                |
| 3/4      | 21,000                     | 14,000                               | 10,500                     | 7,000                                |
| 7/8      | 20,000                     | 13,000                               | 10,000                     | 6,500                                |
| 1        | 18,000                     | 12,000                               | 9,000                      | 6,000                                |

Run aluminum cut burs at approximately the same speed as end mills designed for aluminum when machine milling.

Shank

## Bur Selection

when selecting a bur for a particular application, several factors must be taken into consideration.

The first is the selection of an appropriate shape and diameter that will be most suitable to the part being deburred. If working inside a slot, be certain that the maximum diameter of the bur is smaller than the slot. Secondly, shank size must be selected. The correct shank will be determined by the size of the equipment being used and considering the diameter and length of the fluted portion of the bur.

The last decision is which cut, or flute pattern, to select. This is determined by the hardness of the material being removed and the finish required.

- Standard (right-hand spiral) cut is a general-purpose flute pattern which is designed for use in cast iron, steel, and other ferrous metals.
- Double cut, a general-purpose tooth pattern, gives better control than the standard cut in off-band grinding. It minimizes slivers while producing a better finish. It can be used with slower speed grinders than standard cut.
- Aluminum (end mill) cut can be used for deburring softer, non-ferrous metals and non-metallic materials. The wide clearance and end mill type geometry of the flutes promotes fast stock removal with minimum loading.



standard cut



double cut



aluminum cut

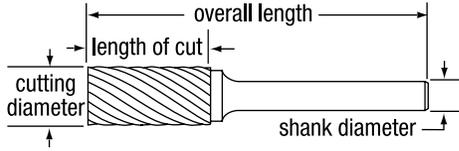
## Bur Selection by Material

| Workpiece Material | First Choice | Alternative  |
|--------------------|--------------|--------------|
| aluminum           | aluminum cut | -            |
| brass              | double cut   | standard cut |
| bronze             | double cut   | standard cut |
| cast iron          | double cut   | standard cut |
| copper             | aluminum cut | -            |
| fiberglass         | double cut   | standard cut |
| inconel            | double cut   | standard cut |
| malleable iron     | double cut   | standard cut |
| magnesium          | aluminum cut | -            |
| masonite           | double cut   | standard cut |
| plastic            | standard cut | -            |
| steel alloy        | double cut   | -            |
| carbon steel       | double cut   | -            |
| stainless steel    | double cut   | -            |
| titanium           | double cut   | -            |
| zinc               | aluminum cut | standard cut |

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# Cylindrical

## Series BA, Cylindrical Burs without End Cut



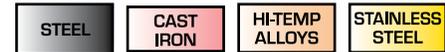
### Applications



### Features



### Applications

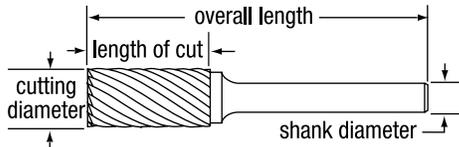


### Features



| SCTI reference | cutting diameter |         | length of cut | overall length | shank diameter | shank type | EDP number |        |
|----------------|------------------|---------|---------------|----------------|----------------|------------|------------|--------|
|                | inch             | decimal |               |                |                |            | standard   | double |
| SA-41          | 1/16             | .0625   | 1/4           | 1 1/2          | 1/8            | A          | B55600     | B55601 |
| SA-42          | 3/32             | .0938   | 7/16          | 1 1/2          | 1/8            | A          | B55608     | B55609 |
| SA-43          | 1/8              | .1250   | 9/16          | 1 1/2          | 1/8            | A          | B54801     | B54810 |
| SA-51          | 1/4              | .2500   | 1/2           | 1 3/4          | 1/8            | B          | B55700     | B55712 |
| SA-1           | 1/4              | .2500   | 5/8           | 2              | 1/4            | D          | B54802     | B54811 |
| SA-3           | 3/8              | .3750   | 3/4           | 2 1/2          | 1/4            | C          | B54803     | B54812 |
| SA-5           | 1/2              | .5000   | 1             | 2 3/4          | 1/4            | C          | B54804     | B54813 |
| SA-6           | 5/8              | .6250   | 1             | 2 3/4          | 1/4            | C          | B54805     | B54814 |
| SA-7           | 3/4              | .7500   | 1             | 2 3/4          | 1/4            | C          | B54806     | B54815 |
| SA-9           | 1                | 1.0000  | 1             | 2 3/4          | 1/4            | C          | B54807     | B54816 |

## Series BAE, Cylindrical Burs with End Cut



### Applications



### Features



### Applications



### Features



### Applications



### Features



| SCTI reference | cutting diameter |         | length of cut | overall length | shank diameter | shank type | EDP number |        |          |
|----------------|------------------|---------|---------------|----------------|----------------|------------|------------|--------|----------|
|                | inch             | decimal |               |                |                |            | standard   | double | aluminum |
| SB-41          | 1/16             | .0625   | 1/4           | 1 1/2          | 1/8            | A          | B55604     | -      | -        |
| SB-42          | 3/32             | .0938   | 7/16          | 1 1/2          | 1/8            | A          | B55612     | -      | -        |
| SB-43          | 1/8              | .1250   | 9/16          | 1 1/2          | 1/8            | A          | B54837     | -      | -        |
| SB-51          | 1/4              | .2500   | 1/2           | 1 3/4          | 1/8            | A          | B55701     | B55713 | -        |
| SB-1           | 1/4              | .2500   | 5/8           | 2              | 1/4            | D          | B54838     | B54847 | B55856   |
| SB-3           | 3/8              | .3750   | 3/4           | 2 1/2          | 1/4            | C          | B54839     | B54848 | B55857   |
| SB-5           | 1/2              | .5000   | 1             | 2 3/4          | 1/4            | C          | B54840     | B54849 | B55858   |
| SB-6           | 5/8              | .6250   | 1             | 2 3/4          | 1/4            | C          | -          | B54850 | B55859   |
| SB-7           | 3/4              | .7500   | 1             | 2 3/4          | 1/4            | C          | -          | B54851 | B55860   |
| SB-9           | 1                | 1.0000  | 1             | 2 3/4          | 1/4            | C          | B54843     | -      | -        |

Shank Type: A – 1/8" (3mm) solid carbide. B – 1/8" (3mm) hardened steel. C – 1/4" (6mm) hardened steel. D – 1/4" (6mm) solid carbide

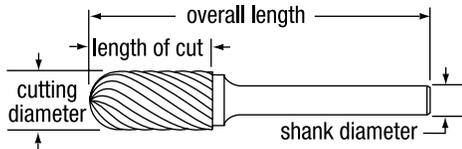


# Cylindrical • Ball

**BASSETT™**

Series **BC**, Cylindrical Burs with Ball Nose

CARBIDE END MILLS



**Applications**

- STEEL
- CAST IRON
- NON-FERROUS MATERIALS
- STAINLESS STEEL

**Features**

- SOLID CARBIDE
- STANDARD CUT
- BRIGHT



CARBIDE DRILLS

**Applications**

- NON-FERROUS MATERIALS

**Features**

- SOLID CARBIDE
- ALUMINUM CUT
- BRIGHT

**Applications**

- STEEL
- CAST IRON
- HI-TEMP ALLOYS
- STAINLESS STEEL

**Features**

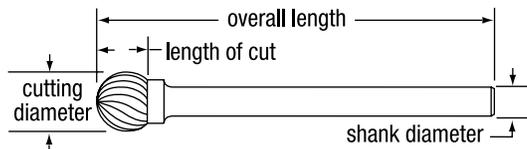
- SOLID CARBIDE
- DOUBLE CUT
- BRIGHT

CARBIDE THREAD MILLS

| SCTI reference | cutting diameter |         | length of cut | overall length | shank diameter | shank type | standard | EDP number |          |
|----------------|------------------|---------|---------------|----------------|----------------|------------|----------|------------|----------|
|                | inch             | decimal |               |                |                |            |          | double     | aluminum |
| SC-41          | 3/32             | .0938   | 7/16          | 1 1/2          | 1/8            | A          | B55620   | B55621     | -        |
| SC-42          | 1/8              | .1250   | 9/16          | 1 1/2          | 1/8            | A          | B54873   | B54882     | -        |
| SC-51          | 1/4              | .2500   | 1/2           | 1 3/4          | 1/8            | B          | B55704   | B55716     | -        |
| SC-1           | 1/4              | .2500   | 5/8           | 2              | 1/4            | A          | B54874   | B54883     | B55862   |
| SC-3           | 3/8              | .3750   | 3/4           | 2 1/2          | 1/4            | A          | B54875   | B54884     | B55863   |
| SC-5           | 1/2              | .5000   | 1             | 2 3/4          | 1/4            | A          | B54876   | B54885     | B55864   |
| SC-6           | 5/8              | .6250   | 1             | 2 3/4          | 1/4            | A          | B54877   | B54886     | -        |
| SC-7           | 3/4              | .7500   | 1             | 2 3/4          | 1/4            | C          | B54878   | B54887     | B55865   |

Series **BD**, Ball Shape

CARBIDE BURS



**Applications**

- STEEL
- CAST IRON
- NON-FERROUS MATERIALS
- STAINLESS STEEL

**Features**

- SOLID CARBIDE
- STANDARD CUT
- BRIGHT



**Applications**

- NON-FERROUS MATERIALS

**Features**

- SOLID CARBIDE
- ALUMINUM CUT
- BRIGHT

**Applications**

- STEEL
- CAST IRON
- HI-TEMP ALLOYS
- STAINLESS STEEL

**Features**

- SOLID CARBIDE
- DOUBLE CUT
- BRIGHT

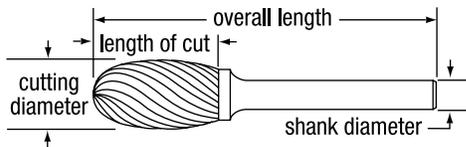
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| SCTI reference | cutting diameter |         | length of cut | overall length | shank diameter | shank type | standard | EDP number |          |
|----------------|------------------|---------|---------------|----------------|----------------|------------|----------|------------|----------|
|                | inch             | decimal |               |                |                |            |          | double     | aluminum |
| SD-41          | 3/32             | .0938   | 3/32          | 1 1/2          | 1/8            | A          | B55624   | B55625     | -        |
| SD-42          | 1/8              | .1250   | 1/8           | 1 1/2          | 1/8            | A          | B54909   | B54918     | -        |
| SD-51          | 1/4              | .2500   | 1/4           | 1 3/4          | 1/8            | B          | B55705   | B55717     | -        |
| SD-1           | 1/4              | .2500   | 1/4           | 2              | 1/4            | D          | B54910   | B54919     | B55867   |
| SD-3           | 3/8              | .3750   | 3/8           | 2 5/64         | 1/4            | C          | B54911   | B54920     | B55868   |
| SD-5           | 1/2              | .5000   | 1/2           | 2 13/64        | 1/4            | C          | B54912   | B54921     | B55869   |
| SD-6           | 5/8              | .6250   | 5/8           | 2 5/16         | 1/4            | C          | B54913   | B54922     | -        |
| SD-7           | 3/4              | .7500   | 3/4           | 2 7/16         | 1/4            | C          | B54914   | B54923     | -        |
| SD-9           | 1                | 1.0000  | 1             | 2 11/16        | 1/4            | C          | B54915   | B54924     | -        |

Shank Type: A — 1/8" (3mm) solid carbide. B — 1/8" (3mm) hardened steel. C — 1/4" (6mm) hardened steel. D — 1/4" (6mm) solid carbide

# Egg • Round Nose Tree

## Series BE, Egg Shape



**Applications** | NON-FERROUS MATERIALS

**Features** | SOLID CARBIDE ALUMINUM CUT BRIGHT



**Applications** | STEEL CAST IRON NON-FERROUS MATERIALS STAINLESS STEEL

**Features** | SOLID CARBIDE STANDARD CUT BRIGHT

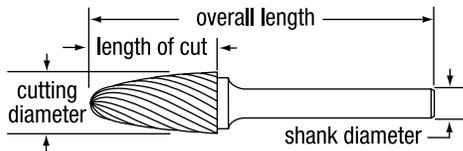


**Applications** | STEEL CAST IRON HI-TEMP ALLOYS STAINLESS STEEL

**Features** | SOLID CARBIDE DOUBLE CUT BRIGHT

| SCTI reference | cutting diameter |         | length of cut | overall length | shank diameter | shank type | EDP number |        |          |
|----------------|------------------|---------|---------------|----------------|----------------|------------|------------|--------|----------|
|                | inch             | decimal |               |                |                |            | standard   | double | aluminum |
| SE-41          | 1/8              | .1250   | 7/32          | 1 1/2          | 1/8            | A          | B54945     | B54954 | -        |
| SE-51          | 1/4              | .2500   | 3/8           | 1 5/8          | 1/8            | B          | -          | B55718 | -        |
| SE-1           | 1/4              | .2500   | 3/8           | 2              | 1/4            | D          | B54946     | B54955 | -        |
| SE-3           | 3/8              | .3750   | 5/8           | 2 3/8          | 1/4            | C          | B54947     | B54956 | B55873   |
| SE-5           | 1/2              | .5000   | 7/8           | 2 5/8          | 1/4            | C          | B54948     | B54957 | B55874   |
| SE-6           | 5/8              | .6250   | 1             | 2 3/4          | 1/4            | C          | -          | -      | B55875   |
| SE-7           | 3/4              | .7500   | 1             | 2 3/4          | 1/4            | C          | B54950     | B54959 | -        |

## Series BF, Round Nose Tree Shape



**Applications** | NON-FERROUS MATERIALS

**Features** | SOLID CARBIDE ALUMINUM CUT BRIGHT



**Applications** | STEEL CAST IRON NON-FERROUS MATERIALS STAINLESS STEEL

**Features** | SOLID CARBIDE STANDARD CUT BRIGHT



**Applications** | STEEL CAST IRON HI-TEMP ALLOYS STAINLESS STEEL

**Features** | SOLID CARBIDE DOUBLE CUT BRIGHT

| SCTI reference | cutting diameter |         | length of cut | overall length | shank diameter | shank type | EDP number |        |          |
|----------------|------------------|---------|---------------|----------------|----------------|------------|------------|--------|----------|
|                | inch             | decimal |               |                |                |            | standard   | double | aluminum |
| SF-41          | 1/8              | .1250   | 1/4           | 1 1/2          | 1/8            | A          | B55628     | B55629 | -        |
| SF-42          | 1/8              | .1250   | 1/2           | 1 1/2          | 1/8            | A          | B54981     | B54990 | -        |
| SF-51          | 1/4              | .2500   | 1/2           | 1 3/4          | 1/8            | B          | B55707     | B55719 | -        |
| SF-1           | 1/4              | .2500   | 5/8           | 2              | 1/4            | D          | B54982     | B54991 | B55878   |
| SF-3           | 3/8              | .3750   | 3/4           | 2 1/2          | 1/4            | C          | B54983     | B54992 | B55879   |
| SF-5           | 1/2              | .5000   | 1             | 2 3/4          | 1/4            | C          | B54984     | B54993 | B55880   |
| SF-6           | 5/8              | .6250   | 1             | 2 3/4          | 1/4            | C          | B54985     | B54994 | B55881   |
| SF-7           | 3/4              | .7500   | 1             | 2 3/4          | 1/4            | C          | B54986     | B54995 | -        |

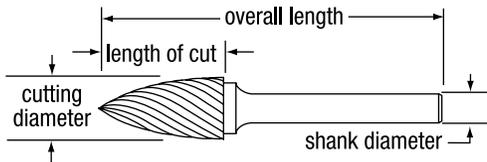
Shank Type: A – 1/8" (3mm) solid carbide. B – 1/8" (3mm) hardened steel. C – 1/4" (6mm) hardened steel. D – 1/4" (6mm) solid carbide



# Pointed Tree • Flame Shape

Series **BG**, Pointed Tree Shape

CARBIDE END MILLS



**Applications** | **STEEL** | **CAST IRON** | **NON-FERROUS MATERIALS** | **STAINLESS STEEL**

**Features** | **SOLID CARBIDE** | **STANDARD CUT** | **BRIGHT**



CARBIDE DRILLS

**Applications** | **STEEL** | **CAST IRON** | **HI-TEMP ALLOYS** | **STAINLESS STEEL**

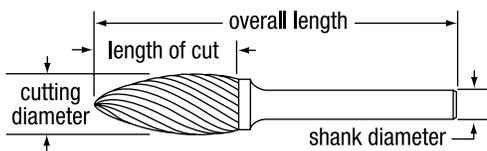
**Features** | **SOLID CARBIDE** | **DOUBLE CUT** | **BRIGHT**

| SCTI reference | cutting diameter |         | length of cut | overall length | shank diameter | shank type | EDP number |        |
|----------------|------------------|---------|---------------|----------------|----------------|------------|------------|--------|
|                | inch             | decimal |               |                |                |            | standard   | double |
| SG-42          | 1/8              | .1250   | 5/16          | 1 1/2          | 1/8            | A          | B55636     | B55637 |
| SG-43          | 1/8              | .1250   | 3/8           | 1 1/2          | 1/8            | A          | B55017     | B55026 |
| SG-41          | 1/8              | .1250   | 1/4           | 1 1/2          | 1/8            | A          | B55632     | B55633 |
| SG-51          | 1/4              | .2500   | 1/2           | 1 3/4          | 1/8            | B          | -          | B55720 |
| SG-1           | 1/4              | .2500   | 5/8           | 2              | 1/4            | D          | B55018     | B55027 |
| SG-3           | 3/8              | .3750   | 3/4           | 2 1/2          | 1/4            | C          | B55019     | B55028 |
| SG-5           | 1/2              | .5000   | 1             | 2 3/4          | 1/4            | C          | B55020     | B55029 |
| SG-6           | 5/8              | .6250   | 1             | 2 3/4          | 1/4            | C          | B55021     | B55030 |

CARBIDE THREAD MILLS

Series **BH**, Flame Shape

CARBIDE BURS



**Applications** | **STEEL** | **CAST IRON** | **NON-FERROUS MATERIALS** | **STAINLESS STEEL**

**Features** | **SOLID CARBIDE** | **STANDARD CUT** | **BRIGHT**



**Applications** | **STEEL** | **CAST IRON** | **HI-TEMP ALLOYS** | **STAINLESS STEEL**

**Features** | **SOLID CARBIDE** | **DOUBLE CUT** | **BRIGHT**

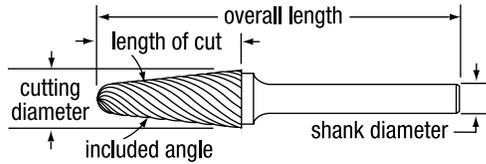
| SCTI reference | cutting diameter |         | length of cut | overall length | shank diameter | shank type | EDP number |        |
|----------------|------------------|---------|---------------|----------------|----------------|------------|------------|--------|
|                | inch             | decimal |               |                |                |            | standard   | double |
| SH-41          | 1/8              | .1250   | 1/4           | 1 1/2          | 1/8            | A          | B55053     | B55060 |
| SH-2           | 5/16             | .3125   | 3/4           | 2 1/2          | 1/4            | C          | B55054     | B55061 |
| SH-5           | 1/2              | .5000   | 1 1/4         | 3              | 1/4            | C          | B55055     | B55062 |

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Shank Type: A — 1/8" (3mm) solid carbide. B — 1/8" (3mm) hardened steel. C — 1/4" (6mm) hardened steel. D — 1/4" (6mm) solid carbide

# 14° Included Cone, Radius • Pointed Cone

Series **BL**, 14° Included Cone Radius Shape



- Applications** | STEEL CAST IRON NON-FERROUS MATERIALS STAINLESS STEEL
- Features** | SOLID CARBIDE STANDARD CUT BRIGHT



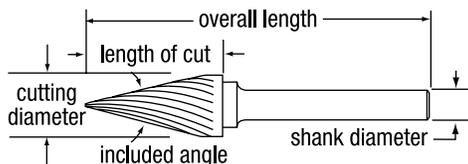
- Applications** | NON-FERROUS MATERIALS
- Features** | SOLID CARBIDE ALUMINUM CUT BRIGHT



- Applications** | STEEL CAST IRON HI-TEMP ALLOYS STAINLESS STEEL
- Features** | SOLID CARBIDE DOUBLE CUT BRIGHT

| SCTI reference | cutting diameter |         | length of cut | overall length | shank diameter | shank type | standard | EDP number |          |  |
|----------------|------------------|---------|---------------|----------------|----------------|------------|----------|------------|----------|--|
|                | inch             | decimal |               |                |                |            |          | double     | aluminum |  |
| SL-41          | 1/8              | .1250   | 3/8           | 1 1/2          | 1/8            | A          | B55640   | B55641     | -        |  |
| SL-42          | 1/8              | .1250   | 1/2           | 1 1/2          | 1/8            | A          | B55145   | B55154     | -        |  |
| SL-1           | 1/4              | .2500   | 5/8           | 2              | 1/4            | D          | B55146   | B55155     | -        |  |
| SL-3           | 3/8              | .3750   | 1 1/16        | 2 15/16        | 1/4            | C          | B55147   | B55156     | -        |  |
| SL-4           | 1/2              | .5000   | 1 1/8         | 3              | 1/4            | C          | B55148   | B55157     | B55884   |  |
| SL-6           | 5/8              | .6250   | 1 5/16        | 3 3/16         | 1/4            | C          | B55149   | B55158     | B55885   |  |

Series **BM**, Pointed Cone Shape



- Applications** | STEEL CAST IRON NON-FERROUS MATERIALS STAINLESS STEEL
- Features** | SOLID CARBIDE STANDARD CUT BRIGHT



- Applications** | STEEL CAST IRON HI-TEMP ALLOYS STAINLESS STEEL
- Features** | SOLID CARBIDE DOUBLE CUT BRIGHT

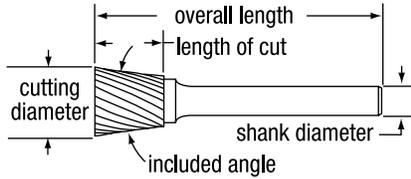
| SCTI reference | included angle | cutting diameter |         | length of cut | overall length | shank diameter | shank type | EDP number |        |
|----------------|----------------|------------------|---------|---------------|----------------|----------------|------------|------------|--------|
|                |                | inch             | decimal |               |                |                |            | standard   | double |
| SM-41          | 12°            | 1/8              | .1250   | 3/8           | 1 1/2          | 1/8            | A          | B55644     | B55645 |
| SM-42          | 14°            | 1/8              | .1250   | 7/16          | 1 1/2          | 1/8            | A          | B55181     | B55190 |
| SM-43          | 7°             | 1/8              | .1250   | 5/8           | 1 1/2          | 1/8            | A          | B55648     | B55649 |
| SM-51          | 22°            | 1/4              | .2500   | 1/2           | 1 7/8          | 1/8            | B          | B55709     | B55721 |
| SM-1           | 22°            | 1/4              | .2500   | 1/2           | 2              | 1/4            | D          | B55182     | B55191 |
| SM-3           | 10°            | 1/4              | .2500   | 1             | 2              | 1/4            | C          | B55183     | B55192 |
| SM-4           | 28°            | 3/8              | .3750   | 5/8           | 2 1/2          | 1/4            | C          | B55184     | B55193 |
| SM-5           | 28°            | 1/2              | .5000   | 7/8           | 2 3/4          | 1/4            | C          | B55185     | B55194 |

Shank Type: A – 1/8" (3mm) solid carbide. B – 1/8" (3mm) hardened steel. C – 1/4" (6mm) hardened steel. D – 1/4" (6mm) solid carbide



# Inverted Taper

Series **BN**, Inverted Taper Shape



**Applications** |

- STEEL
- CAST IRON
- NON-FERROUS MATERIALS
- STAINLESS STEEL

**Features** |

- SOLID CARBIDE
- STANDARD CUT
- BRIGHT



**Applications** |

- STEEL
- CAST IRON
- H-TEMP ALLOYS
- STAINLESS STEEL

**Features** |

- SOLID CARBIDE
- DOUBLE CUT
- BRIGHT

| SCTI reference | included angle | cutting diameter |         | length of cut | overall length | shank diameter | shank type | EDP number |        |
|----------------|----------------|------------------|---------|---------------|----------------|----------------|------------|------------|--------|
|                |                | inch             | decimal |               |                |                |            | standard   | double |
| SN-41          | –              | 3/32             | .0938   | 3/16          | 1 1/2          | 1/8            | A          | B55652     | –      |
| SN-51          | 10°            | 1/4              | .2500   | 1/4           | 1 1/2          | 1/8            | A          | B55710     | B55722 |

Shank Type: A – 1/8" (3mm) solid carbide. B – 1/8" (3mm) hardened steel. C – 1/4" (6mm) hardened steel. D – 1/4" (6mm) solid carbide



**BASSETT™**



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| B01661     | MSE-2B-TC    | 20          | B01776     | MSE-4-TC     | 26          | B03664     | MRA-TC       | 14          | B04560     | HPAM-2       | 11          |
| B01662     | MSE-2B-TC    | 21          | B01850     | MSE-4B-TC    | 25          | B03816     | MRS-TC       | 13          | B04564     | HPAM-2       | 11          |
| B01663     | MSE-2B-TC    | 21          | B01852     | MSE-4B-TC    | 25          | B03824     | MRS-TC       | 13          | B04566     | HPAM-2       | 11          |
| B01664     | MSE-2B-TC    | 21          | B01854     | MSE-4B-TC    | 25          | B03832     | MRS-TC       | 13          | B04567     | HPAM-2       | 11          |
| B01665     | MSE-2B-TC    | 21          | B01856     | MSE-4B-TC    | 25          | B03840     | MRS-TC       | 13          | B04569     | HPAM-2       | 11          |
| B01668     | MSE-4B-TC    | 25          | B01858     | MSE-4B-TC    | 25          | B03848     | MRS-TC       | 13          | B04617     | HPAM-2       | 11          |
| B01670     | MSE-4B-TC    | 25          | B01860     | MSE-4B-TC    | 26          | B03864     | MRS-TC       | 13          | B04621     | HPAM-2       | 11          |
| B01672     | MSE-4B-TC    | 25          | B01868     | MSE-4B-TC    | 26          | B04005     | HPAM-3       | 12          | B04629     | HPAM-2       | 11          |
| B01674     | MSE-4B-TC    | 25          | B01901     | MSE-4B-TC    | 25          | B04009     | HPAM-3       | 12          | B04631     | HPAM-2       | 11          |
| B01675     | MSE-4B-TC    | 25          | B01902     | MSE-4B-TC    | 25          | B04013     | HPAM-3       | 12          | B04632     | HPAM-2       | 11          |
| B01676     | MSE-4B-TC    | 25          | B01904     | MSE-4B-TC    | 25          | B04017     | HPAM-3       | 12          | B04634     | HPAM-2       | 11          |
| B01678     | MSE-4B-TC    | 26          | B01905     | MSE-4B-TC    | 25          | B04021     | HPAM-3       | 12          | B05005     | HPEM-3-TC    | 8           |
| B01679     | MSE-4B-TC    | 26          | B01908     | MSE-4B-TC    | 25          | B04025     | HPAM-3       | 12          | B05007     | HPEM-3-TC    | 8           |
| B01680     | MSE-4B-TC    | 26          | B01911     | MSE-4B-TC    | 25          | B04029     | HPAM-3       | 12          | B05009     | HPEM-3-TC    | 8           |
| B01681     | MDE-2-TC     | 16          | B01914     | MSE-4B-TC    | 25          | B04031     | HPAM-3       | 12          | B05011     | HPEM-3-TC    | 8           |
| B01682     | MDE-2-TC     | 16          | B01917     | MSE-4B-TC    | 25          | B04032     | HPAM-3       | 12          | B05013     | HPEM-3-TC    | 8           |
| B01683W    | MDE-2-TC     | 16          | B01921     | MSE-4B-TC    | 25          | B04034     | HPAM-3       | 12          | B05015     | HPEM-3-TC    | 8           |
| B01684     | MDE-2-TC     | 16          | B01947     | MSE-4B-TC    | 26          | B04040     | HPAM-3       | 12          | B05017     | HPEM-3-TC    | 8           |
| B01685     | MDE-2-TC     | 16          | B01953     | MSE-4B-TC    | 26          | B04044     | HPAM-3       | 12          | B05019     | HPEM-3-TC    | 8           |
| B01687     | MDE-2-TC     | 16          | B03016     | MRA          | 14          | B04048     | HPAM-3       | 12          | B05021     | HPEM-3-TC    | 8           |
| B01689     | MDE-2-TC     | 16          | B03024     | MRA          | 14          | B04052     | HPAM-3       | 12          | B05023     | HPEM-3-TC    | 8           |
| B01691     | MDE-2-TC     | 16          | B03032     | MRA          | 14          | B04056     | HPAM-3       | 12          | B05025     | HPEM-3-TC    | 8           |
| B01692     | MDE-4-TC     | 17          | B03040     | MRA          | 14          | B04060     | HPAM-3       | 12          | B05027     | HPEM-3-TC    | 8           |
| B01693     | MDE-4-TC     | 17          | B03048     | MRA          | 14          | B04064     | HPAM-3       | 12          | B05029     | HPEM-3-TC    | 8           |
| B01694     | MDE-4-TC     | 17          | B03064     | MRA          | 14          | B04066     | HPAM-3       | 12          | B05031     | HPEM-3-TC    | 8           |
| B01695     | MDE-4-TC     | 17          | B03116     | MRA-TC       | 14          | B04067     | HPAM-3       | 12          | B05032     | HPEM-3-TC    | 8           |
| B01696     | MDE-4-TC     | 17          | B03117     | MRA-TC       | 14          | B04069     | HPAM-3       | 12          | B05034     | HPEM-3-TC    | 8           |
| B01698     | MDE-4-TC     | 17          | B03118     | MRA-TC       | 14          | B04148     | HPAM-3       | 12          | B05040     | HPEM-3-TC    | 8           |
| B01699     | MDE-4-TC     | 17          | B03119     | MRA-TC       | 14          | B04152     | HPAM-3       | 12          | B05042     | HPEM-3-TC    | 8           |
| B01700     | MDE-4-TC     | 17          | B03120     | MRA-TC       | 14          | B04156     | HPAM-3       | 12          | B05044     | HPEM-3-TC    | 8           |
| B01702     | MDE-4-TC     | 17          | B03121     | MRA-TC       | 14          | B04160     | HPAM-3       | 12          | B05046     | HPEM-3-TC    | 8           |
| B01703     | MDE-2B-TC    | 16          | B03122     | MRA-TC       | 14          | B04164     | HPAM-3       | 12          | B05048     | HPEM-3-TC    | 8           |
| B01704     | MDE-2B-TC    | 16          | B03124     | MRA-TC       | 14          | B04166     | HPAM-3       | 12          | B05050     | HPEM-3-TC    | 8           |
| B01714     | MDE-4B-TC    | 17          | B03132     | MRA-TC       | 14          | B04167     | HPAM-3       | 12          | B05052     | HPEM-3-TC    | 8           |
| B01715     | MDE-4B-TC    | 17          | B03140     | MRA-TC       | 14          | B04169     | HPAM-3       | 12          | B05054     | HPEM-3-TC    | 8           |
| B01730     | MSE-4-TC     | 25          | B03148     | MRA-TC       | 14          | B04217     | HPAM-3       | 12          | B05056     | HPEM-3-TC    | 8           |
| B01732     | MSE-4-TC     | 25          | B03164     | MRA-TC       | 14          | B04221     | HPAM-3       | 12          | B05058     | HPEM-3-TC    | 8           |
| B01733     | MSE-4-TC     | 26          | B03216     | MRS          | 13          | B04229     | HPAM-3       | 12          | B05060     | HPEM-3-TC    | 8           |
| B01734     | MSE-4-TC     | 26          | B03224     | MRS          | 13          | B04231     | HPAM-3       | 12          | B05062     | HPEM-3-TC    | 8           |
| B01735     | MSE-4-TC     | 26          | B03232     | MRS          | 13          | B04405     | HPAM-2       | 11          | B05064     | HPEM-3-TC    | 8           |
| B01750     | MSE-4-TC     | 25          | B03240     | MRS          | 13          | B04409     | HPAM-2       | 11          | B05066     | HPEM-3-TC    | 8           |
| B01751     | MSE-4-TC     | 25          | B03248     | MRS          | 13          | B04413     | HPAM-2       | 11          | B05067     | HPEM-3-TC    | 8           |
| B01752     | MSE-4-TC     | 25          | B03264     | MRS          | 13          | B04417     | HPAM-2       | 11          | B05069     | HPEM-3-TC    | 8           |
| B01753     | MSE-4-TC     | 25          | B03316     | MRS-TC       | 13          | B04421     | HPAM-2       | 11          | B05100     | HP-DEM-5     | 7           |
| B01755     | MSE-4-TC     | 25          | B03324     | MRS-TC       | 13          | B04425     | HPAM-2       | 11          | B05101     | HP-DEM-5     | 7           |
| B01756     | MSE-4-TC     | 25          | B03332     | MRS-TC       | 13          | B04429     | HPAM-2       | 11          | B05103     | HP-DEM-5     | 7           |
| B01758     | MSE-4-TC     | 26          | B03340     | MRS-TC       | 13          | B04431     | HPAM-2       | 11          | B05104     | HP-DEM-5     | 7           |
| B01759     | MSE-4-TC     | 26          | B03348     | MRS-TC       | 13          | B04432     | HPAM-2       | 11          | B05105     | HPEM-3       | 8           |
| B01760     | MSE-4-TC     | 26          | B03364     | MRS-TC       | 13          | B04434     | HPAM-2       | 11          | B05107     | HPEM-3       | 8           |
| B01762     | MSE-4-TC     | 26          | B03416     | MRS          | 13          | B04440     | HPAM-2       | 11          | B05108     | HP-DEM-5     | 7           |
| B01763     | MSE-4-TC     | 26          | B03424     | MRS          | 13          | B04444     | HPAM-2       | 11          | B05109     | HPEM-3       | 8           |
| B01764     | MSE-4-TC     | 26          | B03432     | MRS          | 13          | B04448     | HPAM-2       | 11          | B05110     | HP-DEM-5     | 7           |
| B01765     | MSE-4-TC     | 26          | B03440     | MRS          | 13          | B04452     | HPAM-2       | 11          | B05111     | HPEM-3       | 8           |
| B01766     | MSE-4-TC     | 26          | B03448     | MRS          | 13          | B04456     | HPAM-2       | 11          | B05112     | HPEM-5       | 9           |
| B01767     | MSE-4-TC     | 26          | B03464     | MRS          | 13          | B04460     | HPAM-2       | 11          | B05113     | HPEM-3       | 8           |
| B01768     | MSE-4-TC     | 26          | B03532     | MRA          | 14          | B04464     | HPAM-2       | 11          | B05114     | HPEM-5       | 9           |
| B01770     | MSE-4-TC     | 26          | B03540     | MRA          | 14          | B04466     | HPAM-2       | 11          | B05115     | HPEM-3       | 8           |
| B01771     | MSE-4-TC     | 26          | B03548     | MRA          | 14          | B04467     | HPAM-2       | 11          | B05116     | HPEM-5       | 9           |
| B01772     | MSE-4-TC     | 26          | B03564     | MRA          | 14          | B04469     | HPAM-2       | 11          | B05117     | HPEM-3       | 8           |
| B01774     | MSE-4-TC     | 26          | B03632     | MRA-TC       | 14          | B04548     | HPAM-2       | 11          | B05118     | HPEM-5       | 9           |
| B01775     | MSE-4-TC     | 26          | B03640     | MRA-TC       | 14          | B04552     | HPAM-2       | 11          | B05119     | HPEM-3       | 8           |
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## Metalcutting Safety

(read this before using Bassettproducts)

Modern metalcutting operations involve high energy, high spindle or cutter speeds, and high temperatures and cutting forces. Hot, flying chips may be projected from the workpiece during metalcutting. Although advanced cutting tool materials are designed and manufactured to withstand the high cutting forces and temperatures that normally occur in these operations, they are susceptible to fragmenting in service, particularly if they are subjected to over-stress, severe impact or otherwise abused. Therefore, precautions should be taken to adequately protect workers, observers and equipment against hot, flying chips, fragmented cutting tools, broken workpieces or other similar projectiles. Machines should be fully guarded and personal protective equipment should be used at all times.

When grinding advanced cutting tool materials, a suitable means for collection and disposal of dust, mist or sludge should be provided. Overexposure to dust or mist containing metallic particles can be hazardous to health particularly if exposure continues over an extended period of time and may cause eye, skin and mucous membrane irritation and temporary or permanent respiratory disease. Certain existing pulmonary and skin conditions may be aggravated by exposure to dust or mist. Adequate ventilation, respiratory protection and eye protection should be provided when grinding and workers should avoid breathing of and prolonged skin contact with dust or mist. General Industry Safety and Health

Regulations, Part 1910. U.S. Department of Labor, published in Title 29 of the Code of Federal Regulations should be consulted. Obtain from Bassett/Putnam and read the applicable Material Safety Data Sheet before grinding.

Cutting tools are only one part of the worker-machine-tool system. Many variables exist in machining operations, including the metal removal rate; the workpiece size, shape, strength and rigidity; the chucking and fixturing; the load carrying capability of centers; the cutter and spindle speed and torque limitations; the holder and boring bar overhang; the available power; and the condition of the tooling and the machine. A safe metalcutting operation must take all of these variables, and others, into consideration.

Bassett/Putnam has no control over the end use of its products or the environment into which those products are placed. Bassett/Putnam urges that its customers adhere to the recommended standards of use of their metalcutting machines and tools, and that they follow procedures that ensure safe metalcutting operations. The information included throughout this catalog under the heading "Technical Data" and other recommendations on machining practices referred to herein are only advisory in nature and do not constitute representations or warranties and are not necessarily appropriate for any particular work environment or application.



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