



# MASTER CATALOG **2018**

VOLUME TWO | **ROTATING TOOLS**



HOLEMAKING | TAPPING | SOLID END MILLING | INDEXABLE MILLING

# ➤ New SGL Drills with Through Coolant for Stainless Steel



## Primary Application

The all-new B21\_SGL series solid carbide drills are designed specifically for stainless steel applications, offering high performance and long tool life in high-temperature alloys and regular steel, also.

By combining unique Kennametal features, such as the all-new SGL-point-geometry with patented gashing, a unique flute design, and a best-in-class coating into one tool, the B21\*SGL drill is the ultimate high-volume production tool.

## Features and Benefits

### New SGL Point Design

- Improved web thinning and patented gashing which migrates in a straight cutting edge, enables high cutting parameters (feeds).
- Creates controlled chips, which lead to a reliable performance.
- Improved centering capabilities for better positioning accuracy and improved hole quality.

### Unique Flute Design

- Large chip-flute cross-section and small web diameter improve the chip evacuation and the capability to drill deeper holes in difficult-to-machine materials.
- The highly-polished surface ensures superior chip evacuation, even when low-pressure coolant is applied.

### New KCMS15™ Beyond Grade

- A monolayer PVD AlTiN-coated fine-grain carbide with superior surface finish.
- First choice for stainless steel and high-temperature resistant materials for longer tool life.
- The coating offers high hardness and excellent abrasive and adhesive wear resistance, as well as enhanced high-temperature properties, increasing its applicability, also, to MQL machining of steel.

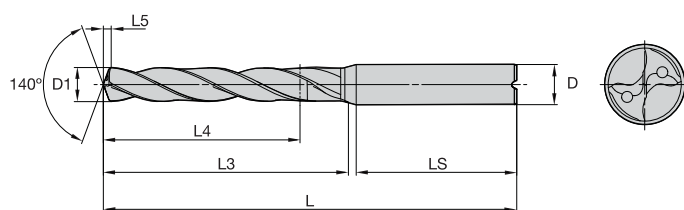
## Specifically for stainless steel applications.



### Customization

- Intermediate diameters available as semi-standards.
- Length variations and step drills available as custom solutions.
- High step diameter ratios and very complex step drill geometries are not recommended for austenitic stainless steel.
- Using Kennametal slim line hydraulic chucks is recommended if workpiece contours need to be bypassed.





For information on L, L3, and L4 max, see the Solid Carbide Drills foldout table.



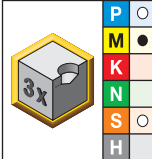
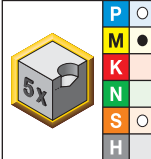
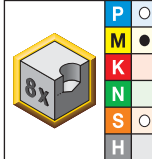
■ B210/B211/B212\_SGL • ~3 x D/~5 x D/~8 x D

|                                                                                            |                                                                                            |                                                                                            | D1 diameter    |               |                     |           |     |    |   |
|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------|---------------|---------------------|-----------|-----|----|---|
|                                                                                            |                                                                                            |                                                                                            | mm             | in            | fraction            | wire size | L5  | LS | D |
| <div> <div>P</div> <div>M</div> <div>K</div> <div>N</div> <div>S</div> <div>H</div> </div> | <div> <div>P</div> <div>M</div> <div>K</div> <div>N</div> <div>S</div> <div>H</div> </div> | <div> <div>P</div> <div>M</div> <div>K</div> <div>N</div> <div>S</div> <div>H</div> </div> | short • KCMS15 | long • KCMS15 | extra long • KCMS15 |           |     |    |   |
| B210Z02500SGL                                                                              | —                                                                                          | —                                                                                          | 2,500          | .0984         | —                   | —         | 0,4 | 28 | 3 |
| B210A03000SGL                                                                              | B211A03000SGL                                                                              | B212A03000SGL                                                                              | 3,000          | .1181         | —                   | —         | 0,4 | 36 | 6 |
| B210A03048SGL                                                                              | B211A03048SGL                                                                              | —                                                                                          | 3,048          | .1200         | —                   | 31        | 0,5 | 36 | 6 |
| —                                                                                          | B211A03100SGL                                                                              | —                                                                                          | 3,100          | .1220         | —                   | —         | 0,5 | 36 | 6 |
| B210A03175SGL                                                                              | B211A03175SGL                                                                              | B212A03175SGL                                                                              | 3,175          | .1250         | 1/8                 | —         | 0,5 | 36 | 6 |
| B210A03200SGL                                                                              | B211A03200SGL                                                                              | B212A03200SGL                                                                              | 3,200          | .1260         | —                   | —         | 0,5 | 36 | 6 |
| B210A03264SGL                                                                              | —                                                                                          | B212A03264SGL                                                                              | 3,264          | .1285         | —                   | 30        | 0,5 | 36 | 6 |
| B210A03300SGL                                                                              | B211A03300SGL                                                                              | B212A03300SGL                                                                              | 3,300          | .1299         | —                   | —         | 0,5 | 36 | 6 |
| B210A03400SGL                                                                              | B211A03400SGL                                                                              | —                                                                                          | 3,400          | .1339         | —                   | —         | 0,5 | 36 | 6 |
| B210A03455SGL                                                                              | B211A03455SGL                                                                              | B212A03455SGL                                                                              | 3,455          | .1360         | —                   | —         | 0,5 | 36 | 6 |
| B210A03500SGL                                                                              | B211A03500SGL                                                                              | B212A03500SGL                                                                              | 3,500          | .1378         | —                   | —         | 0,5 | 36 | 6 |
| —                                                                                          | B211A03571SGL                                                                              | B212A03571SGL                                                                              | 3,571          | .1406         | 9/64                | —         | 0,5 | 36 | 6 |
| —                                                                                          | B211A03600SGL                                                                              | —                                                                                          | 3,600          | .1417         | —                   | —         | 0,5 | 36 | 6 |
| —                                                                                          | B211A03658SGL                                                                              | B212A03658SGL                                                                              | 3,658          | .1440         | —                   | —         | 0,5 | 36 | 6 |
| —                                                                                          | B211A03700SGL                                                                              | B212A03700SGL                                                                              | 3,700          | .1457         | —                   | —         | 0,5 | 36 | 6 |
| B210A03700SGL                                                                              | —                                                                                          | —                                                                                          | 3,700          | .1457         | —                   | —         | 0,6 | 36 | 6 |
| —                                                                                          | B211A03734SGL                                                                              | —                                                                                          | 3,734          | .1470         | —                   | 26        | 0,6 | 36 | 6 |
| B210A03800SGL                                                                              | B211A03800SGL                                                                              | B212A03800SGL                                                                              | 3,800          | .1496         | —                   | —         | 0,6 | 36 | 6 |
| —                                                                                          | B211A03861SGL                                                                              | —                                                                                          | 3,861          | .1520         | —                   | 24        | 0,6 | 36 | 6 |
| —                                                                                          | B211A03900SGL                                                                              | —                                                                                          | 3,900          | .1535         | —                   | —         | 0,6 | 36 | 6 |
| B210A04000SGL                                                                              | B211A04000SGL                                                                              | B212A04000SGL                                                                              | 4,000          | .1575         | —                   | —         | 0,6 | 36 | 6 |
| —                                                                                          | B211A04039SGL                                                                              | B212A04039SGL                                                                              | 4,039          | .1590         | —                   | —         | 0,6 | 36 | 6 |
| B210A04100SGL                                                                              | B211A04100SGL                                                                              | B212A04100SGL                                                                              | 4,100          | .1614         | —                   | —         | 0,6 | 36 | 6 |
| B210A04200SGL                                                                              | B211A04200SGL                                                                              | B212A04200SGL                                                                              | 4,200          | .1654         | —                   | —         | 0,6 | 36 | 6 |
| —                                                                                          | B211A04217SGL                                                                              | —                                                                                          | 4,217          | .1660         | —                   | —         | 0,6 | 36 | 6 |
| B210A04300SGL                                                                              | B211A04300SGL                                                                              | B212A04300SGL                                                                              | 4,300          | .1693         | —                   | —         | 0,6 | 36 | 6 |
| —                                                                                          | B211A04366SGL                                                                              | B212A04366SGL                                                                              | 4,366          | .1719         | —                   | —         | 0,6 | 36 | 6 |
| B210A04366SGL                                                                              | —                                                                                          | —                                                                                          | 4,366          | .1719         | —                   | —         | 0,7 | 36 | 6 |
| —                                                                                          | B211A04400SGL                                                                              | —                                                                                          | 4,400          | .1732         | —                   | —         | 0,7 | 36 | 6 |
| B210A04500SGL                                                                              | B211A04500SGL                                                                              | B212A04500SGL                                                                              | 4,500          | .1772         | —                   | —         | 0,7 | 36 | 6 |
| —                                                                                          | B211A04600SGL                                                                              | —                                                                                          | 4,600          | .1811         | —                   | —         | 0,7 | 36 | 6 |
| B210A04700SGL                                                                              | B211A04700SGL                                                                              | B212A04700SGL                                                                              | 4,700          | .1850         | —                   | —         | 0,7 | 36 | 6 |

● first choice  
○ alternate choice

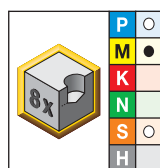
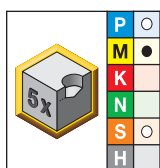
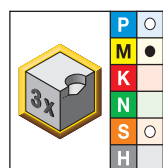
(continued)

(B210/B211/B212\_SGL • ~3 x D/~5 x D/~8 x D — continued)

|    |               |                     | D1 diameter |       |          |           | ● first choice<br>○ alternate choice |    |    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------|-------------|-------|----------|-----------|--------------------------------------|----|----|
| short • KCMS15                                                                                                                                                                                                                                        | long • KCMS15 | extra long • KCMS15 | mm          | in    | fraction | wire size | L5                                   | LS | D  |
| —                                                                                                                                                                                                                                                     | B211A04763SGL | —                   | 4,763       | .1875 | 3/16     | —         | 0,7                                  | 36 | 6  |
| B210A04800SGL                                                                                                                                                                                                                                         | B211A04800SGL | B212A04800SGL       | 4,800       | .1890 | —        | —         | 0,7                                  | 36 | 6  |
| —                                                                                                                                                                                                                                                     | B211A04852SGL | B212A04852SGL       | 4,852       | .1910 | —        | —         | 0,7                                  | 36 | 6  |
| B210A04900SGL                                                                                                                                                                                                                                         | B211A04900SGL | —                   | 4,900       | .1929 | —        | —         | 0,7                                  | 36 | 6  |
| B210A05000SGL                                                                                                                                                                                                                                         | B211A05000SGL | B212A05000SGL       | 5,000       | .1969 | —        | —         | 0,7                                  | 36 | 6  |
| B210A05100SGL                                                                                                                                                                                                                                         | B211A05100SGL | B212A05100SGL       | 5,100       | .2008 | —        | —         | 0,8                                  | 36 | 6  |
| B210A05106SGL                                                                                                                                                                                                                                         | B211A05106SGL | —                   | 5,106       | .2010 | —        | —         | 0,8                                  | 36 | 6  |
| B210A05159SGL                                                                                                                                                                                                                                         | B211A05159SGL | —                   | 5,159       | .2031 | —        | —         | 0,8                                  | 36 | 6  |
| B210A05200SGL                                                                                                                                                                                                                                         | B211A05200SGL | B212A05200SGL       | 5,200       | .2047 | —        | —         | 0,8                                  | 36 | 6  |
| B210A05300SGL                                                                                                                                                                                                                                         | B211A05300SGL | —                   | 5,300       | .2087 | —        | —         | 0,8                                  | 36 | 6  |
| B210A05400SGL                                                                                                                                                                                                                                         | B211A05400SGL | —                   | 5,400       | .2126 | —        | —         | 0,8                                  | 36 | 6  |
| B210A05500SGL                                                                                                                                                                                                                                         | B211A05500SGL | B212A05500SGL       | 5,500       | .2165 | —        | —         | 0,8                                  | 36 | 6  |
| —                                                                                                                                                                                                                                                     | B211A05558SGL | —                   | 5,558       | .2188 | —        | —         | 0,8                                  | 36 | 6  |
| —                                                                                                                                                                                                                                                     | B211A05600SGL | —                   | 5,600       | .2205 | —        | —         | 0,8                                  | 36 | 6  |
| B210A05616SGL                                                                                                                                                                                                                                         | —             | —                   | 5,616       | .2211 | —        | 2         | 0,8                                  | 36 | 6  |
| —                                                                                                                                                                                                                                                     | B211A05700SGL | —                   | 5,700       | .2244 | —        | —         | 0,8                                  | 36 | 6  |
| B210A05800SGL                                                                                                                                                                                                                                         | B211A05800SGL | B212A05800SGL       | 5,800       | .2283 | —        | —         | 0,9                                  | 36 | 6  |
| —                                                                                                                                                                                                                                                     | B211A05900SGL | —                   | 5,900       | .2323 | —        | —         | 0,9                                  | 36 | 6  |
| B210A05954SGL                                                                                                                                                                                                                                         | B211A05954SGL | —                   | 5,954       | .2344 | 15/64    | —         | 0,9                                  | 36 | 6  |
| B210A06000SGL                                                                                                                                                                                                                                         | B211A06000SGL | B212A06000SGL       | 6,000       | .2362 | —        | —         | 0,9                                  | 36 | 6  |
| B210A06100SGL                                                                                                                                                                                                                                         | B211A06100SGL | —                   | 6,100       | .2402 | —        | —         | 0,9                                  | 36 | 8  |
| B210A06200SGL                                                                                                                                                                                                                                         | B211A06200SGL | —                   | 6,200       | .2441 | —        | —         | 0,9                                  | 36 | 8  |
| B210A06300SGL                                                                                                                                                                                                                                         | B211A06300SGL | —                   | 6,300       | .2480 | —        | —         | 0,9                                  | 36 | 8  |
| B210A06350SGL                                                                                                                                                                                                                                         | B211A06350SGL | B212A06350SGL       | 6,350       | .2500 | 1/4      | —         | 0,9                                  | 36 | 8  |
| —                                                                                                                                                                                                                                                     | B211A06400SGL | —                   | 6,400       | .2520 | —        | —         | 0,9                                  | 36 | 8  |
| B210A06400SGL                                                                                                                                                                                                                                         | —             | —                   | 6,400       | .2520 | —        | —         | 1,0                                  | 36 | 8  |
| B210A06500SGL                                                                                                                                                                                                                                         | B211A06500SGL | B212A06500SGL       | 6,500       | .2559 | —        | —         | 1,0                                  | 36 | 8  |
| —                                                                                                                                                                                                                                                     | B211A06600SGL | —                   | 6,600       | .2598 | —        | —         | 1,0                                  | 36 | 8  |
| —                                                                                                                                                                                                                                                     | B211A06630SGL | B212A06630SGL       | 6,630       | .2610 | —        | —         | 1,0                                  | 36 | 8  |
| B210A06700SGL                                                                                                                                                                                                                                         | B211A06700SGL | —                   | 6,700       | .2638 | —        | —         | 1,0                                  | 36 | 8  |
| B210A06800SGL                                                                                                                                                                                                                                         | B211A06800SGL | B212A06800SGL       | 6,800       | .2677 | —        | —         | 1,0                                  | 36 | 8  |
| B210A06900SGL                                                                                                                                                                                                                                         | B211A06900SGL | —                   | 6,900       | .2717 | —        | —         | 1,0                                  | 36 | 8  |
| B210A07000SGL                                                                                                                                                                                                                                         | B211A07000SGL | B212A07000SGL       | 7,000       | .2756 | —        | —         | 1,0                                  | 36 | 8  |
| B210A07100SGL                                                                                                                                                                                                                                         | B211A07100SGL | —                   | 7,100       | .2795 | —        | —         | 1,1                                  | 36 | 8  |
| B210A07145SGL                                                                                                                                                                                                                                         | —             | —                   | 7,145       | .2813 | 9/32     | —         | 1,1                                  | 36 | 8  |
| —                                                                                                                                                                                                                                                     | B211A07200SGL | —                   | 7,200       | .2835 | —        | —         | 1,1                                  | 36 | 8  |
| —                                                                                                                                                                                                                                                     | B211A07300SGL | —                   | 7,300       | .2874 | —        | —         | 1,1                                  | 36 | 8  |
| B210A07400SGL                                                                                                                                                                                                                                         | B211A07400SGL | —                   | 7,400       | .2913 | —        | —         | 1,1                                  | 36 | 8  |
| B210A07500SGL                                                                                                                                                                                                                                         | B211A07500SGL | —                   | 7,500       | .2953 | —        | —         | 1,1                                  | 36 | 8  |
| —                                                                                                                                                                                                                                                     | —             | B212A07500SGL       | 7,500       | .2953 | —        | —         | 1,1                                  | 74 | 8  |
| —                                                                                                                                                                                                                                                     | B211A07600SGL | —                   | 7,600       | .2992 | —        | —         | 1,1                                  | 36 | 8  |
| —                                                                                                                                                                                                                                                     | B211A07700SGL | —                   | 7,700       | .3031 | —        | —         | 1,1                                  | 36 | 8  |
| B210A07800SGL                                                                                                                                                                                                                                         | B211A07800SGL | B212A07800SGL       | 7,800       | .3071 | —        | —         | 1,2                                  | 36 | 8  |
| —                                                                                                                                                                                                                                                     | B211A07900SGL | —                   | 7,900       | .3110 | —        | —         | 1,2                                  | 36 | 8  |
| B210A07938SGL                                                                                                                                                                                                                                         | B211A07938SGL | —                   | 7,938       | .3125 | 5/16     | —         | 1,2                                  | 36 | 8  |
| B210A08000SGL                                                                                                                                                                                                                                         | B211A08000SGL | B212A08000SGL       | 8,000       | .3150 | —        | —         | 1,2                                  | 36 | 8  |
| B210A08100SGL                                                                                                                                                                                                                                         | B211A08100SGL | —                   | 8,100       | .3189 | —        | —         | 1,2                                  | 40 | 10 |
| B210A08200SGL                                                                                                                                                                                                                                         | B211A08200SGL | —                   | 8,200       | .3228 | —        | —         | 1,2                                  | 40 | 10 |
| B210A08400SGL                                                                                                                                                                                                                                         | B211A08400SGL | B212A08400SGL       | 8,400       | .3307 | —        | —         | 1,2                                  | 40 | 10 |
| B210A08433SGL                                                                                                                                                                                                                                         | —             | —                   | 8,433       | .3320 | —        | —         | 1,3                                  | 40 | 10 |
| B210A08500SGL                                                                                                                                                                                                                                         | B211A08500SGL | B212A08500SGL       | 8,500       | .3346 | —        | —         | 1,3                                  | 40 | 10 |
| B210A08600SGL                                                                                                                                                                                                                                         | B211A08600SGL | —                   | 8,600       | .3386 | —        | —         | 1,3                                  | 40 | 10 |

(continued)

(B210/B211/B212\_SGL • ~3 x D/-5 x D/-8 x D — continued)

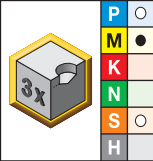
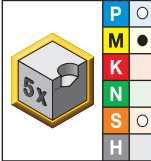
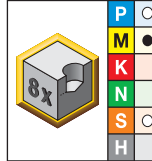


● first choice  
○ alternate choice

|                |               |                     | D1 diameter |       |          |           |     |    |    |
|----------------|---------------|---------------------|-------------|-------|----------|-----------|-----|----|----|
| short • KCMS15 | long • KCMS15 | extra long • KCMS15 | mm          | in    | fraction | wire size | L5  | LS | D  |
| B210A08700SGL  | B211A08700SGL | —                   | 8,700       | .3425 | —        | —         | 1,3 | 40 | 10 |
| B210A08800SGL  | B211A08800SGL | B212A08800SGL       | 8,800       | .3465 | —        | —         | 1,3 | 40 | 10 |
| —              | B211A08900SGL | —                   | 8,900       | .3504 | —        | —         | 1,3 | 40 | 10 |
| B210A09000SGL  | B211A09000SGL | B212A09000SGL       | 9,000       | .3543 | —        | —         | 1,3 | 40 | 10 |
| B210A09093SGL  | —             | —                   | 9,093       | .3580 | —        | —         | 1,4 | 40 | 10 |
| —              | B211A09100SGL | —                   | 9,100       | .3583 | —        | —         | 1,3 | 40 | 10 |
| —              | B211A09200SGL | —                   | 9,200       | .3622 | —        | —         | 1,4 | 40 | 10 |
| —              | B211A09300SGL | —                   | 9,300       | .3661 | —        | —         | 1,4 | 40 | 10 |
| —              | B211A09400SGL | —                   | 9,400       | .3701 | —        | —         | 1,4 | 40 | 10 |
| B210A09500SGL  | B211A09500SGL | B212A09500SGL       | 9,500       | .3740 | —        | —         | 1,4 | 40 | 10 |
| —              | B211A09525SGL | —                   | 9,525       | .3750 | 3/8      | —         | 1,4 | 40 | 10 |
| —              | B211A09600SGL | —                   | 9,600       | .3780 | —        | —         | 1,4 | 40 | 10 |
| B210A09700SGL  | B211A09700SGL | —                   | 9,700       | .3819 | —        | —         | 1,4 | 40 | 10 |
| B210A09800SGL  | B211A09800SGL | —                   | 9,800       | .3858 | —        | —         | 1,5 | 40 | 10 |
| —              | B211A09900SGL | —                   | 9,900       | .3898 | —        | —         | 1,5 | 40 | 10 |
| B210A09921SGL  | —             | —                   | 9,921       | .3906 | 25/64    | —         | 1,5 | 40 | 10 |
| B210A10000SGL  | B211A10000SGL | B212A10000SGL       | 10,000      | .3937 | —        | —         | 1,5 | 40 | 10 |
| —              | B211A10100SGL | —                   | 10,100      | .3976 | —        | —         | 1,5 | 45 | 12 |
| B210A10200SGL  | B211A10200SGL | B212A10200SGL       | 10,200      | .4016 | —        | —         | 1,5 | 45 | 12 |
| —              | B211A10300SGL | —                   | 10,300      | .4055 | —        | —         | 1,5 | 45 | 12 |
| B210A10400SGL  | B211A10400SGL | —                   | 10,400      | .4094 | —        | —         | 1,5 | 45 | 12 |
| B210A10500SGL  | B211A10500SGL | B212A10500SGL       | 10,500      | .4134 | —        | —         | 1,6 | 45 | 12 |
| —              | B211A10700SGL | —                   | 10,700      | .4213 | —        | —         | 1,6 | 45 | 12 |
| B210A10716SGL  | —             | —                   | 10,716      | .4219 | —        | —         | 1,6 | 45 | 12 |
| B210A10800SGL  | B211A10800SGL | —                   | 10,800      | .4252 | —        | —         | 1,6 | 45 | 12 |
| B210A11000SGL  | B211A11000SGL | B212A11000SGL       | 11,000      | .4331 | —        | —         | 1,6 | 45 | 12 |
| —              | B211A11100SGL | —                   | 11,100      | .4370 | —        | —         | 1,6 | 45 | 12 |
| —              | B211A11113SGL | —                   | 11,113      | .4375 | 7/16     | —         | 1,6 | 45 | 12 |
| B210A11200SGL  | B211A11200SGL | —                   | 11,200      | .4409 | —        | —         | 1,7 | 45 | 12 |
| —              | B211A11400SGL | —                   | 11,400      | .4488 | —        | —         | 1,7 | 45 | 12 |
| B210A11500SGL  | B211A11500SGL | —                   | 11,500      | .4528 | —        | —         | 1,7 | 45 | 12 |
| B210A11509SGL  | —             | —                   | 11,509      | .4531 | —        | —         | 1,7 | 45 | 12 |
| —              | B211A11700SGL | —                   | 11,700      | .4606 | —        | —         | 1,7 | 45 | 12 |
| —              | B211A11800SGL | B212A11800SGL       | 11,800      | .4646 | —        | —         | 1,7 | 45 | 12 |
| B210A12000SGL  | B211A12000SGL | B212A12000SGL       | 12,000      | .4724 | —        | —         | 1,8 | 45 | 12 |
| —              | B211A12100SGL | —                   | 12,100      | .4764 | —        | —         | 1,8 | 45 | 14 |
| B210A12200SGL  | B211A12200SGL | —                   | 12,200      | .4803 | —        | —         | 1,8 | 45 | 14 |
| —              | B211A12300SGL | —                   | 12,300      | .4843 | —        | —         | 1,8 | 45 | 14 |
| B210A12304SGL  | —             | —                   | 12,304      | .4844 | 31/64    | —         | 1,8 | 45 | 14 |
| B210A12500SGL  | B211A12500SGL | B212A12500SGL       | 12,500      | .4921 | —        | —         | 1,9 | 45 | 14 |
| B210A12700SGL  | B211A12700SGL | —                   | 12,700      | .5000 | 1/2      | —         | 1,9 | 45 | 14 |
| B210A12800SGL  | B211A12800SGL | —                   | 12,800      | .5039 | —        | —         | 1,9 | 45 | 14 |
| —              | B211A12900SGL | —                   | 12,900      | .5079 | —        | —         | 1,9 | 45 | 14 |
| B210A13000SGL  | B211A13000SGL | B212A13000SGL       | 13,000      | .5118 | —        | —         | 1,9 | 45 | 14 |
| —              | B211A13100SGL | —                   | 13,100      | .5157 | —        | —         | 1,9 | 45 | 14 |
| —              | B211A13200SGL | —                   | 13,200      | .5197 | —        | —         | 2,0 | 45 | 14 |
| —              | B211A13300SGL | —                   | 13,300      | .5236 | —        | —         | 2,0 | 45 | 14 |
| B210A13495SGL  | —             | —                   | 13,495      | .5313 | 17/32    | —         | 2,0 | 45 | 14 |
| B210A13500SGL  | B211A13500SGL | B212A13500SGL       | 13,500      | .5315 | —        | —         | 2,0 | 45 | 14 |
| —              | B211A13800SGL | —                   | 13,800      | .5433 | —        | —         | 2,0 | 45 | 14 |
| B210A14000SGL  | B211A14000SGL | B212A14000SGL       | 14,000      | .5512 | —        | —         | 2,1 | 45 | 14 |
| B210A14100SGL  | B211A14100SGL | —                   | 14,100      | .5551 | —        | —         | 2,1 | 48 | 16 |

(continued)

(B210/B211/B212\_SGL • ~3 x D/~5 x D/~8 x D — continued)

|  |  |  | D1 diameter |       |          |           | <div>● first choice</div> <div>○ alternate choice</div> |    |    |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------|-------|----------|-----------|---------------------------------------------------------|----|----|
| short • KCMS15                                                                    | long • KCMS15                                                                     | extra long • KCMS15                                                               | mm          | in    | fraction | wire size | L5                                                      | LS | D  |
| B210A14200SGL                                                                     | —                                                                                 | —                                                                                 | 14,200      | .5591 | —        | —         | 2,1                                                     | 48 | 16 |
| —                                                                                 | B211A14300SGL                                                                     | —                                                                                 | 14,300      | .5630 | —        | —         | 2,1                                                     | 48 | 16 |
| —                                                                                 | B211A14400SGL                                                                     | —                                                                                 | 14,400      | .5669 | —        | —         | 2,1                                                     | 48 | 16 |
| —                                                                                 | B211A14500SGL                                                                     | —                                                                                 | 14,500      | .5709 | —        | —         | 2,1                                                     | 48 | 16 |
| B210A14500SGL                                                                     | —                                                                                 | —                                                                                 | 14,500      | .5709 | —        | —         | 2,2                                                     | 48 | 16 |
| —                                                                                 | B211A14600SGL                                                                     | —                                                                                 | 14,600      | .5748 | —        | —         | 2,2                                                     | 48 | 16 |
| —                                                                                 | B211A14800SGL                                                                     | —                                                                                 | 14,800      | .5827 | —        | —         | 2,2                                                     | 48 | 16 |
| B210A15000SGL                                                                     | B211A15000SGL                                                                     | —                                                                                 | 15,000      | .5906 | —        | —         | 2,2                                                     | 48 | 16 |
| —                                                                                 | B211A15100SGL                                                                     | —                                                                                 | 15,100      | .5945 | —        | —         | 2,2                                                     | 48 | 16 |
| —                                                                                 | B211A15300SGL                                                                     | —                                                                                 | 15,300      | .6024 | —        | —         | 2,3                                                     | 48 | 16 |
| B210A15500SGL                                                                     | B211A15500SGL                                                                     | —                                                                                 | 15,500      | .6102 | —        | —         | 2,3                                                     | 48 | 16 |
| —                                                                                 | B211A15700SGL                                                                     | —                                                                                 | 15,700      | .6181 | —        | —         | 2,3                                                     | 48 | 16 |
| B210A15875SGL                                                                     | B211A15875SGL                                                                     | —                                                                                 | 15,875      | .6250 | 5/8      | —         | 2,4                                                     | 48 | 16 |
| B210A16000SGL                                                                     | B211A16000SGL                                                                     | —                                                                                 | 16,000      | .6299 | —        | —         | 2,4                                                     | 48 | 16 |
| —                                                                                 | B211A16100SGL                                                                     | —                                                                                 | 16,100      | .6339 | —        | —         | 2,4                                                     | 48 | 18 |
| B210A16129SGL                                                                     | —                                                                                 | —                                                                                 | 16,129      | .6350 | —        | —         | 2,4                                                     | 48 | 18 |
| B210A16500SGL                                                                     | B211A16500SGL                                                                     | —                                                                                 | 16,500      | .6496 | —        | —         | 2,4                                                     | 48 | 18 |
| B210A16670SGL                                                                     | —                                                                                 | —                                                                                 | 16,670      | .6563 | 21/32    | —         | 2,5                                                     | 48 | 18 |
| B210A17000SGL                                                                     | B211A17000SGL                                                                     | —                                                                                 | 17,000      | .6693 | —        | —         | 2,5                                                     | 48 | 18 |
| B210A17500SGL                                                                     | B211A17500SGL                                                                     | —                                                                                 | 17,500      | .6890 | —        | —         | 2,6                                                     | 48 | 18 |
| —                                                                                 | B211A17700SGL                                                                     | —                                                                                 | 17,700      | .6969 | —        | —         | 2,6                                                     | 48 | 18 |
| B210A18000SGL                                                                     | B211A18000SGL                                                                     | —                                                                                 | 18,000      | .7087 | —        | —         | 2,7                                                     | 48 | 18 |
| B210A18500SGL                                                                     | B211A18500SGL                                                                     | —                                                                                 | 18,500      | .7283 | —        | —         | 2,7                                                     | 50 | 20 |
| —                                                                                 | B211A19000SGL                                                                     | —                                                                                 | 19,000      | .7480 | —        | —         | 2,8                                                     | 50 | 20 |
| B210A19050SGL                                                                     | —                                                                                 | —                                                                                 | 19,050      | .7500 | 3/4      | —         | 2,8                                                     | 50 | 20 |
| —                                                                                 | B211A19159SGL                                                                     | —                                                                                 | 19,159      | .7543 | —        | —         | 2,8                                                     | 50 | 20 |
| —                                                                                 | B211A19300SGL                                                                     | —                                                                                 | 19,300      | .7598 | —        | —         | 2,9                                                     | 50 | 20 |
| B210A19500SGL                                                                     | —                                                                                 | —                                                                                 | 19,500      | .7677 | —        | —         | 2,9                                                     | 50 | 20 |
| B210A20000SGL                                                                     | —                                                                                 | —                                                                                 | 20,000      | .7874 | —        | —         | 3,0                                                     | 50 | 20 |
| —                                                                                 | B211A20500SGL                                                                     | —                                                                                 | 20,500      | .8071 | —        | —         | 3,0                                                     | 50 | 20 |

■ HP Drills • B21\_SGL Series • Grade KCMS15 • Through Coolant

Solid Carbide Drills

|                |   |                                                                                   |                |     |                                                                                    |           |           |           |           |           |           |           |           |
|----------------|---|-----------------------------------------------------------------------------------|----------------|-----|------------------------------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
|                |   |  |                |     |  |           |           |           |           |           |           |           |           |
|                |   | Cutting Speed – vc                                                                |                |     | Metric                                                                             |           |           |           |           |           |           |           |           |
|                |   | Range – m/min                                                                     |                |     | Recommended Feed Rate per Rev                                                      |           |           |           |           |           |           |           |           |
| Material Group |   | min                                                                               | Starting Value | max |                                                                                    | 3,0       | 4,0       | 6,0       | 8,0       | 10,0      | 12,0      | 16,0      | 20,0      |
| P              | 1 | 110                                                                               | 160            | 210 | mm/r                                                                               | 0,05–0,13 | 0,08–0,19 | 0,11–0,24 | 0,14–0,30 | 0,16–0,35 | 0,18–0,39 | 0,20–0,46 | 0,23–0,51 |
|                | 2 | 130                                                                               | 170            | 210 | mm/r                                                                               | 0,05–0,13 | 0,08–0,17 | 0,11–0,20 | 0,14–0,24 | 0,16–0,28 | 0,18–0,32 | 0,20–0,37 | 0,23–0,41 |
|                | 3 | 110                                                                               | 150            | 190 | mm/r                                                                               | 0,08–0,13 | 0,12–0,19 | 0,14–0,24 | 0,17–0,30 | 0,20–0,35 | 0,22–0,39 | 0,26–0,46 | 0,29–0,51 |
|                | 4 | 80                                                                                | 120            | 150 | mm/r                                                                               | 0,08–0,12 | 0,11–0,18 | 0,12–0,23 | 0,15–0,28 | 0,17–0,33 | 0,19–0,37 | 0,22–0,43 | 0,25–0,48 |
|                | 5 | 60                                                                                | 80             | 90  | mm/r                                                                               | 0,03–0,11 | 0,04–0,11 | 0,05–0,11 | 0,05–0,14 | 0,08–0,18 | 0,11–0,21 | 0,14–0,24 | 0,16–0,26 |
|                | 6 | 70                                                                                | 120            | 170 | mm/r                                                                               | 0,05–0,11 | 0,08–0,14 | 0,11–0,17 | 0,13–0,21 | 0,15–0,24 | 0,17–0,27 | 0,19–0,33 | 0,22–0,36 |
| M              | 1 | 60                                                                                | 80             | 90  | mm/r                                                                               | 0,05–0,14 | 0,06–0,15 | 0,08–0,17 | 0,10–0,19 | 0,12–0,21 | 0,13–0,22 | 0,16–0,25 | 0,18–0,27 |
|                | 2 | 50                                                                                | 70             | 90  | mm/r                                                                               | 0,05–0,14 | 0,06–0,15 | 0,08–0,17 | 0,10–0,19 | 0,12–0,21 | 0,13–0,22 | 0,16–0,25 | 0,18–0,27 |
|                | 3 | 50                                                                                | 60             | 80  | mm/r                                                                               | 0,05–0,14 | 0,06–0,15 | 0,08–0,17 | 0,10–0,19 | 0,12–0,21 | 0,13–0,22 | 0,16–0,25 | 0,18–0,27 |
| S              | 1 | 10                                                                                | 20             | 30  | mm/r                                                                               | 0,03–0,08 | 0,04–0,09 | 0,05–0,11 | 0,05–0,11 | 0,08–0,14 | 0,11–0,16 | 0,14–0,19 | 0,16–0,21 |
|                | 2 | 10                                                                                | 20             | 30  | mm/r                                                                               | 0,03–0,11 | 0,04–0,11 | 0,05–0,11 | 0,05–0,11 | 0,08–0,14 | 0,11–0,16 | 0,14–0,19 | 0,16–0,21 |
|                | 3 | 20                                                                                | 30             | 40  | mm/r                                                                               | 0,03–0,11 | 0,04–0,11 | 0,05–0,11 | 0,05–0,11 | 0,08–0,14 | 0,11–0,16 | 0,14–0,19 | 0,16–0,21 |
|                | 4 | 30                                                                                | 40             | 50  | mm/r                                                                               | 0,03–0,04 | 0,04–0,05 | 0,06–0,08 | 0,08–0,10 | 0,11–0,13 | 0,13–0,15 | 0,14–0,18 | 0,16–0,20 |
|                |   | Cutting Speed – vc                                                                |                |     | Inch                                                                               |           |           |           |           |           |           |           |           |
|                |   | Range – SFM                                                                       |                |     | Recommended Feed Rate per Rev                                                      |           |           |           |           |           |           |           |           |
| Material Group |   | min                                                                               | Starting Value | max |                                                                                    | 1/8 .125  | 3/16 .188 | 1/4 .250  | 5/16 .313 | 3/8 .375  | 1/2 .500  | 5/8 .625  | 3/4 .750  |
| P              | 1 | 360                                                                               | 520            | 690 | IPR                                                                                | .002–.005 | .003–.008 | .004–.009 | .006–.012 | .006–.014 | .007–.015 | .008–.018 | .009–.020 |
|                | 2 | 430                                                                               | 560            | 690 | IPR                                                                                | .002–.005 | .003–.007 | .004–.008 | .006–.009 | .006–.011 | .007–.013 | .008–.015 | .009–.016 |
|                | 3 | 360                                                                               | 490            | 620 | IPR                                                                                | .003–.005 | .005–.008 | .006–.009 | .007–.012 | .008–.014 | .009–.015 | .010–.018 | .011–.020 |
|                | 4 | 260                                                                               | 390            | 490 | IPR                                                                                | .003–.005 | .004–.007 | .005–.009 | .006–.011 | .007–.013 | .008–.015 | .009–.017 | .010–.019 |
|                | 5 | 200                                                                               | 260            | 300 | IPR                                                                                | .001–.004 | .002–.004 | .002–.004 | .002–.006 | .003–.007 | .004–.008 | .006–.009 | .006–.010 |
|                | 6 | 230                                                                               | 390            | 560 | IPR                                                                                | .002–.004 | .003–.006 | .004–.007 | .005–.008 | .006–.009 | .007–.011 | .008–.013 | .009–.014 |
| M              | 1 | 200                                                                               | 260            | 300 | IPR                                                                                | .002–.006 | .002–.006 | .003–.007 | .004–.008 | .005–.008 | .005–.009 | .006–.010 | .007–.011 |
|                | 2 | 160                                                                               | 230            | 300 | IPR                                                                                | .002–.006 | .002–.006 | .003–.007 | .004–.008 | .005–.008 | .005–.009 | .006–.010 | .007–.011 |
|                | 3 | 160                                                                               | 200            | 260 | IPR                                                                                | .002–.006 | .002–.006 | .003–.007 | .004–.008 | .005–.008 | .005–.009 | .006–.010 | .007–.011 |
| S              | 1 | 30                                                                                | 70             | 100 | IPR                                                                                | .001–.003 | .002–.004 | .002–.004 | .002–.004 | .003–.006 | .004–.006 | .006–.008 | .006–.008 |
|                | 2 | 30                                                                                | 70             | 100 | IPR                                                                                | .001–.004 | .002–.004 | .002–.004 | .002–.004 | .003–.006 | .004–.006 | .006–.008 | .006–.008 |
|                | 3 | 70                                                                                | 100            | 130 | IPR                                                                                | .001–.004 | .002–.004 | .002–.004 | .002–.004 | .003–.006 | .004–.006 | .006–.008 | .006–.008 |
|                | 4 | 100                                                                               | 130            | 160 | IPR                                                                                | .001–.002 | .002–.002 | .002–.003 | .003–.004 | .004–.005 | .005–.006 | .006–.007 | .006–.008 |