


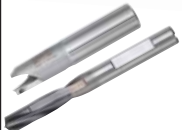



# Combination Tools

|  |                 |
|--|-----------------|
| <b>Tool Selection Guide</b> .....              | <b>.I2-I3</b>   |
| <b>BF Combination Drilling System</b> .....    | <b>.I5-I17</b>  |
| B343_HPG drill for BF .....                    | .I6-I8          |
| KenTIP for BF .....                            | .I9-I11         |
| BF Bodies .....                                | .I12            |
| BF Inserts .....                               | .I13-I14        |
| <b>SEFAS Combination Drilling System</b> ..... | <b>.I18-I23</b> |
| SEFAS Bodies .....                             | .I20-I22        |
| SEFAS Hardware .....                           | .I22            |
| SEFAS Chamfering Inserts .....                 | .I23            |



Combination Tools

|   | standard   | ● first choice<br>○ alternate choice | P M K N S H<br>hole tolerance | standard range         |  | customised solution range |                |
|---|--|--------------------------------------|-------------------------------|------------------------|--|---------------------------|----------------|
|   |  |                                      |                               | diameter range         | drilling depth L/D1                          | diameter range            | drilling depth |
|   |  |                                      |                               | D1 mm min - max        |  | D1 mm min - max           |                |
|  | <b>BF with Solid Carbide Drill</b><br>Combination Tool | ● ● ●                                | IT7-11                        | 3,4–18<br>(B343 drill) | approx.<br>3 x D                             | 3,4–22,5                  | .1–5 x D       |
|  | <b>BF with KenTIP™</b><br>Combination Tool             | ● ● ●                                | IT7-11                        | 8–18,99                | 3 x D<br>4 x D<br>5 x D                      | 8–25,99                   | 3–5 x D        |
|  | <b>SEFAS™</b><br>Combination Tool                      | ● ● ● ● ●                            | IT7-11                        | 4–20                   | approx.<br>3 x D<br>5 x D<br>8 x D<br>12 x D | 3,4–25                    | 1–5 x D        |

In regard to insert and drill coatings, anything is possible. If a specific insert or drill is not suitable for your workpiece material, please contact our Engineered Solutions Department for an offer about special coatings and edge preparations.

\*Except for L/D 5 x D.

<sup>1)</sup> Other shank styles available as customised solution.

|         |  | ■ standard capabilities <sup>1)</sup> |  |   | ■ standard and □ customised solution capabilities |  |  |  |   |  |   |   |  |   |         |         |
|---------|--|---------------------------------------|--|---|---|--|--|--|---|--|---|---|--|---|---------|---------|
| coolant |  |                                       |  |   |   |  |  |  |   |  |   |   |  |   |         | page(s) |
|         |  |                                       |  |   |   |  |  |  |   |  |   |   |  |   |         |         |
| ■       |  | ■                                     |  |   | ■   |  |  |  | □ |  | ■ | □ |  | ■ | 16-18   |         |
| ■       |  | ■                                     |  |   | ■   |  |  |  | □ |  | ■ | □ |  | ■ | 19-117  |         |
| ■       |  | ■                                     |  | ■ | ■   |  |  |  | □ |  | ■ |   |  | ■ | 120-123 |         |

Combination Tools

## Combination Tools

Combination Drilling Tools are customisable using standard components and combine centring, drilling, and countersinking into a single operation, increasing productivity by reducing cycle time and tool changes.

Both the BF and SEFAS™ combination systems provide high flexibility to adapt the tool to varying hole geometries and provide full through-coolant capabilities.

### BF Combination Drilling System

- Drilling, chamfering, and countersinking in one tool.
- Uses solid carbide and modular KenTIP™ drills.
- Covered drill diameter range 3,4–18mm.
- A specific range of drill diameters can be applied for each drill body based upon drill shank size.
- Highly flexible system:
  - Chamfer insert with different angles.
  - Insert design enables for special geometrical shapes.
  - Inserts can be easily interchanged.

### SEFAS™ Combination Drilling System

- High-performance, self-centring drill and chamfer in one tool.
- Drill diameter range 4–18mm.
- Uses standard solid carbide drills in HP and TX styles as well as modular KenTIP drills.
- 90° and 82° angles available for chamfer inserts.
- Various shanks can be used with metric and inch diameter drills.

NOTE: TF drills may be used with one insert in limited applications.  
Consult your Kennametal Sales Representative for more information.



# BF Combination Drilling System

## Primary Application

Combines centring, drilling, and countersinking into a single operation, increasing productivity by reducing cycle time and number of tool changes. The modular design provides flexibility to adapt the tool to varying hole geometries in small- and medium-lot-size manufacturing.

With its slim design and full-through-coolant capabilities, the BF combination system can be used even for deeper holes, critical materials, and with restricted workspace.

## Features and Benefits

### Productivity

- Reduce the number of tool changes and your cycle time by combining drilling and countersinking into one operation.
- Use high-performance solid carbide drills and KenTIP™ drill bodies to achieve high speeds and feeds.
- Avoid the need for reconditioning by using KenTIP blades.

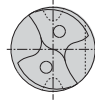
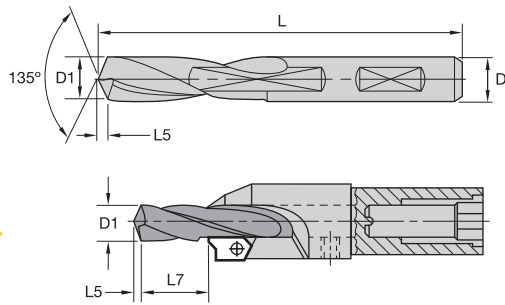
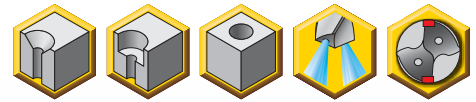
### Versatility

- Choose between solid carbide drills and KenTIP drill bodies.
- Various grades and insert styles.
- Benefit from the modular system when adjusting the drill length or insert style to manufacture different geometries.

### Customisation

- Length variations available as engineered solutions.
- TX drills for aluminium are available as engineered solutions.
- BF inserts can be customised to almost any required geometry.





Combination Tools

■ B343\_HPG



● first choice  
○ alternate choice

| KC7315        | D1   | D    | L    | L7 min | L7 max | L5  |
|---------------|------|------|------|--------|--------|-----|
| B343S03175HPG | 3,18 | 4,00 | 55,0 | 1,0    | 10,0   | 0,6 |
| B343S03400HPG | 3,40 | 4,00 | 55,0 | 1,0    | 10,0   | 0,6 |
| B343S03500HPG | 3,50 | 4,00 | 55,0 | 1,6    | 10,6   | 0,6 |
| B343S03797HPG | 3,80 | 4,00 | 55,0 | 3,3    | 12,3   | 0,7 |
| B343S03800HPG | 3,80 | 4,00 | 55,0 | 3,3    | 12,3   | 0,7 |
| B343S03970HPG | 3,97 | 4,00 | 55,0 | 4,2    | 13,2   | 0,7 |
| B343S04000HPG | 4,00 | 4,00 | 55,0 | 4,4    | 13,4   | 0,7 |
| B343S04100HPG | 4,10 | 5,00 | 62,0 | 3,7    | 13,7   | 0,8 |
| B343S04200HPG | 4,20 | 5,00 | 62,0 | 4,2    | 14,2   | 0,8 |
| B343S04300HPG | 4,30 | 5,00 | 62,0 | 4,7    | 14,7   | 0,8 |
| B343S04500HPG | 4,50 | 5,00 | 62,0 | 5,6    | 15,6   | 0,8 |
| B343S04600HPG | 4,60 | 5,00 | 62,0 | 5,8    | 15,8   | 0,8 |
| B343S04623HPG | 4,62 | 5,00 | 62,0 | 5,9    | 15,9   | 0,9 |
| B343S04763HPG | 4,76 | 5,00 | 62,0 | 6,6    | 16,6   | 0,9 |
| B343S04900HPG | 4,90 | 5,00 | 62,0 | 7,2    | 17,2   | 0,9 |
| B343S05000HPG | 5,00 | 5,00 | 62,0 | 7,6    | 17,6   | 0,9 |
| B343S05100HPG | 5,10 | 6,00 | 66,0 | 6,8    | 17,8   | 0,9 |
| B343S05200HPG | 5,20 | 6,00 | 66,0 | 7,2    | 18,2   | 1,0 |
| B343S05300HPG | 5,30 | 6,00 | 66,0 | 7,6    | 18,6   | 1,0 |
| B343S05400HPG | 5,40 | 6,00 | 66,0 | 8,0    | 19,0   | 1,0 |
| B343S05410HPG | 5,41 | 6,00 | 66,0 | 8,0    | 19,0   | 1,0 |
| B343S05500HPG | 5,50 | 6,00 | 66,0 | 8,4    | 19,4   | 1,0 |
| B343S05550HPG | 5,55 | 6,00 | 66,0 | 8,3    | 19,3   | 1,0 |
| B343S05558HPG | 5,56 | 6,00 | 66,0 | 8,4    | 19,4   | 1,0 |
| B343S05600HPG | 5,60 | 6,00 | 66,0 | 8,5    | 19,5   | 1,0 |
| B343S05800HPG | 5,80 | 6,00 | 66,0 | 9,3    | 20,3   | 1,1 |
| B343S06000HPG | 6,00 | 6,00 | 66,0 | 10,0   | 21,0   | 1,1 |
| B343S06100HPG | 6,10 | 7,00 | 74,0 | 9,1    | 21,1   | 1,1 |
| B343S06200HPG | 6,20 | 7,00 | 74,0 | 9,5    | 21,5   | 1,1 |
| B343S06300HPG | 6,30 | 7,00 | 74,0 | 9,8    | 21,8   | 1,2 |
| B343S06350HPG | 6,35 | 7,00 | 74,0 | 10,0   | 22,0   | 1,2 |
| B343S06400HPG | 6,40 | 7,00 | 74,0 | 10,2   | 22,2   | 1,2 |
| B343S06500HPG | 6,50 | 7,00 | 74,0 | 10,5   | 22,5   | 1,2 |
| B343S06528HPG | 6,53 | 7,00 | 74,0 | 10,6   | 22,6   | 1,2 |
| B343S06600HPG | 6,60 | 7,00 | 74,0 | 10,9   | 22,9   | 1,2 |
| B343S06700HPG | 6,70 | 7,00 | 74,0 | 11,2   | 23,2   | 1,2 |

(continued)

(B43\_HPG continued)



| KC7315        | D1    | D     | L    | L7 min | L7 max | L5  |
|---------------|-------|-------|------|--------|--------|-----|
| B343S06746HPG | 6,75  | 7,00  | 74,0 | 11,4   | 23,4   | 1,2 |
| B343S06800HPG | 6,80  | 7,00  | 74,0 | 11,5   | 23,5   | 1,3 |
| B343S06900HPG | 6,90  | 7,00  | 74,0 | 11,9   | 23,9   | 1,3 |
| B343S06909HPG | 6,91  | 7,00  | 74,0 | 11,9   | 23,9   | 1,3 |
| B343S07000HPG | 7,00  | 7,00  | 74,0 | 12,2   | 24,2   | 1,3 |
| B343S07145HPG | 7,14  | 8,00  | 79,0 | 11,1   | 24,1   | 1,3 |
| B343S07300HPG | 7,30  | 8,00  | 79,0 | 11,6   | 24,6   | 1,3 |
| B343S07400HPG | 7,40  | 8,00  | 79,0 | 11,9   | 24,9   | 1,4 |
| B343S07500HPG | 7,50  | 8,00  | 79,0 | 12,3   | 25,3   | 1,4 |
| B343S07541HPG | 7,54  | 8,00  | 79,0 | 12,4   | 25,4   | 1,4 |
| B343S07700HPG | 7,70  | 8,00  | 79,0 | 12,9   | 25,9   | 1,4 |
| B343S07800HPG | 7,80  | 8,00  | 79,0 | 13,2   | 26,2   | 1,4 |
| B343S07900HPG | 7,90  | 8,00  | 79,0 | 13,5   | 26,5   | 1,5 |
| B343S07938HPG | 7,94  | 8,00  | 79,0 | 13,6   | 26,6   | 1,5 |
| B343S08000HPG | 8,00  | 8,00  | 79,0 | 13,8   | 26,8   | 1,5 |
| B343S08100HPG | 8,10  | 9,00  | 84,0 | 12,6   | 26,6   | 1,5 |
| B343S08200HPG | 8,20  | 9,00  | 84,0 | 12,8   | 26,8   | 1,5 |
| B343S08300HPG | 8,30  | 9,00  | 84,0 | 13,1   | 27,1   | 1,5 |
| B343S08334HPG | 8,33  | 9,00  | 84,0 | 13,2   | 27,2   | 1,5 |
| B343S08400HPG | 8,40  | 9,00  | 84,0 | 13,4   | 27,4   | 1,6 |
| B343S08433HPG | 8,43  | 9,00  | 84,0 | 13,5   | 27,5   | 1,6 |
| B343S08500HPG | 8,50  | 9,00  | 84,0 | 13,7   | 27,7   | 1,6 |
| B343S08600HPG | 8,60  | 9,00  | 84,0 | 14,0   | 28,0   | 1,6 |
| B343S08700HPG | 8,70  | 9,00  | 84,0 | 14,3   | 28,3   | 1,6 |
| B343S08733HPG | 8,73  | 9,00  | 84,0 | 14,4   | 28,4   | 1,6 |
| B343S08800HPG | 8,80  | 9,00  | 84,0 | 14,5   | 28,5   | 1,6 |
| B343S08900HPG | 8,90  | 9,00  | 84,0 | 14,8   | 28,8   | 1,6 |
| B343S09000HPG | 9,00  | 9,00  | 84,0 | 15,1   | 29,1   | 1,7 |
| B343S09100HPG | 9,10  | 10,00 | 89,0 | 14,3   | 28,8   | 1,7 |
| B343S09129HPG | 9,13  | 10,00 | 89,0 | 14,4   | 28,9   | 1,7 |
| B343S09347HPG | 9,35  | 10,00 | 89,0 | 15,0   | 29,5   | 1,7 |
| B343S09400HPG | 9,40  | 10,00 | 89,0 | 15,1   | 29,6   | 1,7 |
| B343S09500HPG | 9,50  | 10,00 | 89,0 | 15,4   | 29,9   | 1,8 |
| B343S09525HPG | 9,53  | 10,00 | 89,0 | 15,4   | 29,9   | 1,8 |
| B343S09600HPG | 9,60  | 10,00 | 89,0 | 15,6   | 30,1   | 1,8 |
| B343S09700HPG | 9,70  | 10,00 | 89,0 | 15,9   | 30,4   | 1,8 |
| B343S09800HPG | 9,80  | 10,00 | 89,0 | 16,2   | 30,7   | 1,8 |
| B343S09921HPG | 9,92  | 10,00 | 89,0 | 16,5   | 31,0   | 1,8 |
| B343S10000HPG | 10,00 | 10,00 | 89,0 | 16,7   | 31,2   | 1,8 |
| B343S10100HPG | 10,10 | 11,00 | 95,0 | 15,9   | 30,9   | 1,9 |
| B343S10200HPG | 10,20 | 11,00 | 95,0 | 16,2   | 31,2   | 1,9 |
| B343S10300HPG | 10,30 | 11,00 | 95,0 | 16,4   | 31,4   | 1,9 |
| B343S10320HPG | 10,32 | 11,00 | 95,0 | 16,5   | 31,5   | 1,9 |
| B343S10400HPG | 10,40 | 11,00 | 95,0 | 16,7   | 31,7   | 1,9 |
| B343S10500HPG | 10,50 | 11,00 | 95,0 | 16,9   | 31,9   | 1,9 |
| B343S10600HPG | 10,60 | 11,00 | 95,0 | 17,2   | 32,2   | 2,0 |
| B343S10700HPG | 10,70 | 11,00 | 95,0 | 17,4   | 32,4   | 2,0 |
| B343S10710HPG | 10,71 | 11,00 | 95,0 | 17,4   | 32,4   | 2,0 |
| B343S10800HPG | 10,80 | 11,00 | 95,0 | 17,7   | 32,7   | 2,0 |
| B343S11000HPG | 11,00 | 11,00 | 95,0 | 18,1   | 33,1   | 2,0 |

Combination Tools

(continued)



(B43\_HPG continued)



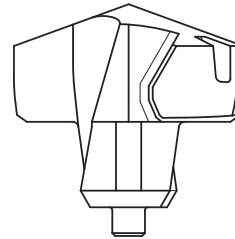
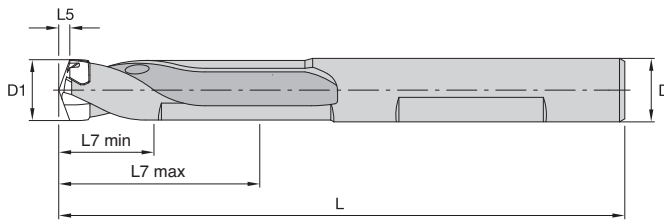
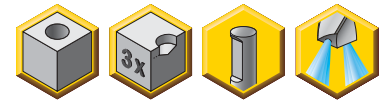
Combination Tools

| KC7315        | D1    | D     | L     | L7 min | L7 max | L5  |
|---------------|-------|-------|-------|--------|--------|-----|
| B343S11100HPG | 11,10 | 12,00 | 102,0 | 17,4   | 32,9   | 2,0 |
| B343S11110HPG | 11,11 | 12,00 | 102,0 | 17,4   | 32,9   | 2,1 |
| B343S11200HPG | 11,20 | 12,00 | 102,0 | 17,6   | 33,1   | 2,1 |
| B343S11300HPG | 11,30 | 12,00 | 102,0 | 17,9   | 33,4   | 2,1 |
| B343S11500HPG | 11,50 | 12,00 | 102,0 | 18,3   | 33,8   | 2,1 |
| B343S11508HPG | 11,51 | 12,00 | 102,0 | 18,3   | 33,8   | 2,1 |
| B343S11700HPG | 11,70 | 12,00 | 102,0 | 18,8   | 34,3   | 2,2 |
| B343S11800HPG | 11,80 | 12,00 | 102,0 | 19,0   | 34,5   | 2,2 |
| B343S11900HPG | 11,90 | 12,00 | 102,0 | 19,3   | 34,8   | 2,2 |
| B343S12000HPG | 12,00 | 12,00 | 102,0 | 19,5   | 35,0   | 2,2 |
| B343S12200HPG | 12,20 | 13,00 | 102,0 | 18,9   | 34,9   | 2,3 |
| B343S12300HPG | 12,30 | 13,00 | 102,0 | 19,2   | 35,3   | 2,3 |
| B343S12500HPG | 12,50 | 13,00 | 102,0 | 19,6   | 35,6   | 2,3 |
| B343S12700HPG | 12,70 | 13,00 | 102,0 | 20,1   | 36,1   | 2,3 |
| B343S12800HPG | 12,80 | 13,00 | 102,0 | 20,3   | 36,3   | 2,4 |
| B343S13000HPG | 13,00 | 13,00 | 102,0 | 20,7   | 36,7   | 2,4 |
| B343S13096HPG | 13,10 | 14,00 | 107,0 | 20,2   | 36,7   | 2,4 |
| B343S13100HPG | 13,10 | 14,00 | 107,0 | 20,2   | 36,7   | 2,4 |
| B343S13200HPG | 13,20 | 14,00 | 107,0 | 20,4   | 36,9   | 2,4 |
| B343S13500HPG | 13,50 | 14,00 | 107,0 | 21,1   | 37,6   | 2,5 |
| B343S14000HPG | 14,00 | 14,00 | 107,0 | 22,1   | 38,6   | 2,6 |
| B343S14100HPG | 14,10 | 15,00 | 111,0 | 21,3   | 38,3   | 2,6 |
| B343S14200HPG | 14,20 | 15,00 | 111,0 | 21,5   | 38,5   | 2,6 |
| B343S14280HPG | 14,28 | 15,00 | 111,0 | 21,7   | 38,7   | 2,6 |
| B343S15000HPG | 15,00 | 15,00 | 111,0 | 23,2   | 40,2   | 2,8 |
| B343S15500HPG | 15,50 | 16,00 | 115,0 | 23,2   | 40,7   | 2,9 |
| B343S15870HPG | 15,87 | 16,00 | 115,0 | 23,9   | 41,4   | 2,9 |
| B343S16000HPG | 16,00 | 16,00 | 115,0 | 24,2   | 41,7   | 3,0 |
| B343S16500HPG | 16,50 | 17,00 | 115,0 | 24,2   | 42,2   | 3,0 |
| B343S16670HPG | 16,67 | 17,00 | 115,0 | 24,5   | 42,5   | 3,1 |
| B343S17000HPG | 17,00 | 17,00 | 115,0 | 25,1   | 43,1   | 3,1 |
| B343S17460HPG | 17,46 | 18,00 | 117,0 | 25,0   | 43,5   | 3,2 |
| B343S17500HPG | 17,50 | 18,00 | 117,0 | 25,1   | 43,6   | 3,2 |
| B343S17700HPG | 17,70 | 18,00 | 117,0 | 25,5   | 44,0   | 3,3 |
| B343S18000HPG | 18,00 | 18,00 | 117,0 | 26,0   | 44,5   | 3,3 |

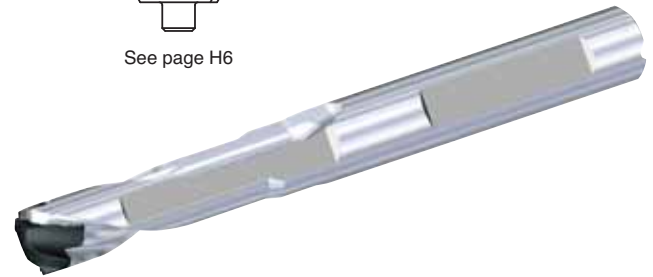
Tolerance • Metric

| D1     | tolerance h7 | D     | tolerance h6 |
|--------|--------------|-------|--------------|
| >3-6   | 0,000/-0,012 | 6     | 0,000/-0,008 |
| >6-10  | 0,000/-0,016 | 8-10  | 0,000/-0,009 |
| >10-18 | 0,000/-0,018 | 12-18 | 0,000/-0,011 |

- Tool body with insert wrench included.
- Order KenTIP blades separately.



See page H6

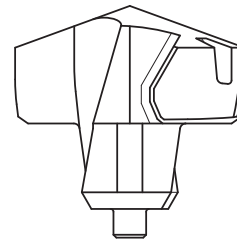
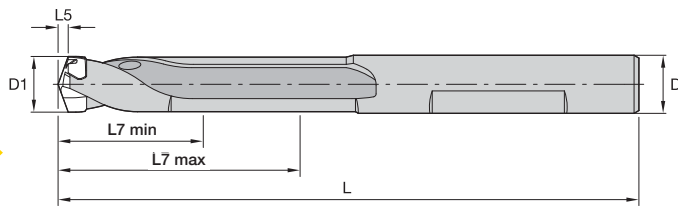
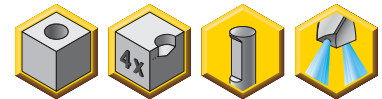


Combination Tools

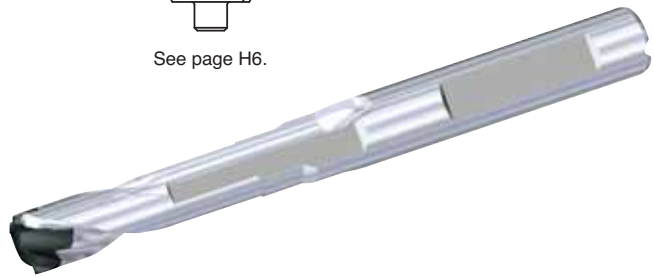
**KenTIP • 3 x D • Metric**

| catalogue number | D1<br>mm | D1 max<br>mm | D    | L     | L7 min | L7 max | L5  | insert blade<br>seat size |
|------------------|----------|--------------|------|-------|--------|--------|-----|---------------------------|
| KTIP080R3BF08M   | 7,94     | 8,49         | 8,0  | 80,0  | 11,5   | 25,5   | 1,4 | F                         |
| KTIP080R3BF09M   | 7,94     | 8,49         | 9,0  | 81,0  | 11,5   | 25,5   | 1,4 | F                         |
| KTIP085R3BF09M   | 8,50     | 8,99         | 9,0  | 82,0  | 12,5   | 27,0   | 1,5 | G                         |
| KTIP090R3BF09M   | 9,00     | 9,49         | 9,0  | 82,0  | 13,5   | 28,5   | 1,6 | H                         |
| KTIP090R3BF10M   | 9,00     | 9,49         | 10,0 | 91,0  | 13,5   | 28,5   | 1,6 | H                         |
| KTIP095R3BF10M   | 9,50     | 9,99         | 10,0 | 92,0  | 15,0   | 30,0   | 1,6 | I                         |
| KTIP100R3BF10M   | 10,00    | 10,49        | 10,0 | 93,0  | 16,0   | 31,5   | 1,7 | J                         |
| KTIP100R3BF11M   | 10,00    | 10,49        | 11,0 | 94,0  | 16,0   | 31,5   | 1,7 | J                         |
| KTIP105R3BF11M   | 10,50    | 10,99        | 11,0 | 94,0  | 17,0   | 33,0   | 1,8 | K                         |
| KTIP110R3BF11M   | 11,00    | 11,49        | 11,0 | 96,0  | 18,5   | 34,5   | 1,9 | L                         |
| KTIP110R3BF12M   | 11,00    | 11,49        | 12,0 | 106,0 | 18,5   | 34,5   | 1,9 | L                         |
| KTIP115R3BF12M   | 11,50    | 11,99        | 12,0 | 107,0 | 19,5   | 36,0   | 2,0 | M                         |
| KTIP120R3BF12M   | 12,00    | 12,49        | 12,0 | 108,0 | 20,5   | 37,5   | 2,1 | N                         |
| KTIP120R3BF13M   | 12,00    | 12,49        | 13,0 | 108,0 | 20,5   | 37,5   | 2,1 | N                         |
| KTIP125R3BF13M   | 12,50    | 12,99        | 13,0 | 110,0 | 22,0   | 39,0   | 2,2 | O                         |
| KTIP130R3BF13M   | 13,00    | 13,49        | 13,0 | 111,0 | 23,0   | 40,5   | 2,2 | P                         |
| KTIP130R3BF14M   | 13,00    | 13,49        | 14,0 | 111,0 | 23,0   | 40,5   | 2,2 | P                         |
| KTIP135R3BF14M   | 13,50    | 13,99        | 14,0 | 112,0 | 24,5   | 42,0   | 2,3 | Q                         |
| KTIP140R3BF14M   | 14,00    | 14,49        | 14,0 | 113,0 | 25,5   | 43,5   | 2,4 | R                         |
| KTIP140R3BF15M   | 14,00    | 14,49        | 15,0 | 118,0 | 25,5   | 43,5   | 2,4 | R                         |
| KTIP145R3BF15M   | 14,50    | 14,99        | 15,0 | 118,0 | 26,5   | 45,0   | 2,5 | S                         |
| KTIP150R3BF15M   | 15,00    | 15,99        | 15,0 | 121,0 | 29,0   | 48,0   | 2,6 | T                         |
| KTIP150R3BF16M   | 15,00    | 15,99        | 16,0 | 121,0 | 29,0   | 48,0   | 2,6 | T                         |
| KTIP160R3BF16M   | 16,00    | 16,99        | 16,0 | 123,0 | 31,5   | 51,0   | 2,8 | U                         |
| KTIP160R3BF17M   | 16,00    | 16,99        | 17,0 | 124,0 | 31,5   | 51,0   | 2,8 | U                         |
| KTIP170R3BF17M   | 17,00    | 17,99        | 17,5 | 127,0 | 34,0   | 54,0   | 2,9 | V                         |
| KTIP170R3BF18M   | 17,00    | 17,99        | 18,0 | 127,0 | 34,0   | 54,0   | 2,9 | V                         |
| KTIP180R3BF18M   | 18,00    | 18,99        | 18,0 | 130,0 | 36,5   | 57,0   | 3,1 | W                         |

- Tool body with insert wrench included.
- Order KenTIP blades separately.



See page H6.

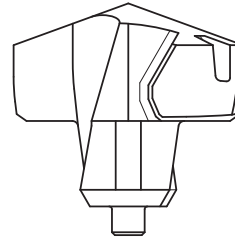
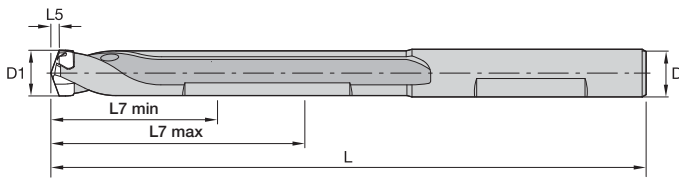
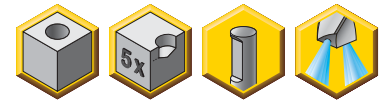


Combination Tools

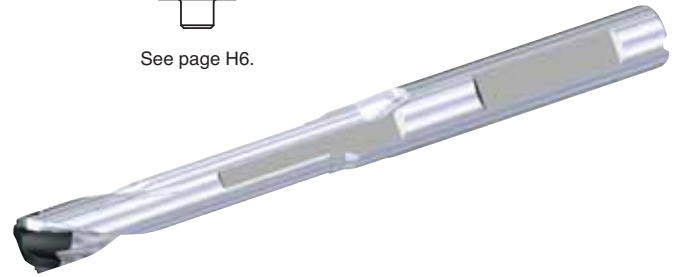
■ KenTIP • 4 x D • Metric

| catalogue number | D1<br>mm | D1 max<br>mm | D    | L     | L7 min | L7 max | L5  | insert blade<br>seat size |
|------------------|----------|--------------|------|-------|--------|--------|-----|---------------------------|
| KTIP080R4BF09M   | 8,00     | 8,49         | 12,0 | 89,5  | 20,0   | 34,0   | 1,4 | F                         |
| KTIP085R4BF09M   | 8,50     | 8,99         | 10,0 | 91,0  | 21,5   | 36,0   | 1,5 | G                         |
| KTIP090R4BF10M   | 9,00     | 9,49         | 10,0 | 100,5 | 23,0   | 38,0   | 1,6 | H                         |
| KTIP095R4BF10M   | 9,50     | 9,99         | 12,0 | 102,0 | 25,0   | 40,0   | 1,6 | I                         |
| KTIP100R4BF11M   | 10,00    | 10,49        | 12,0 | 104,5 | 26,5   | 42,0   | 1,7 | J                         |
| KTIP105R4BF11M   | 10,50    | 10,99        | 12,0 | 105,0 | 28,0   | 44,0   | 1,8 | K                         |
| KTIP110R4BF12M   | 11,00    | 11,49        | 12,0 | 117,5 | 30,0   | 46,0   | 1,9 | L                         |
| KTIP115R4BF12M   | 11,50    | 11,99        | 12,0 | 119,0 | 31,5   | 48,0   | 2,0 | M                         |
| KTIP120R4BF13M   | 12,00    | 12,49        | 13,0 | 120,5 | 33,0   | 50,0   | 2,1 | N                         |
| KTIP125R4BF13M   | 12,50    | 12,99        | 13,0 | 123,0 | 35,0   | 52,0   | 2,2 | O                         |
| KTIP130R4BF14M   | 13,00    | 13,49        | 14,0 | 124,5 | 36,5   | 54,0   | 2,2 | P                         |
| KTIP135R4BF14M   | 13,50    | 13,99        | 14,0 | 126,0 | 38,5   | 56,0   | 2,3 | Q                         |
| KTIP140R4BF15M   | 14,00    | 14,49        | 15,0 | 132,5 | 40,0   | 58,0   | 2,4 | R                         |
| KTIP145R4BF15M   | 14,50    | 14,99        | 15,0 | 133,0 | 41,5   | 60,0   | 2,5 | S                         |
| KTIP150R4BF16M   | 15,00    | 16,00        | 16,0 | 137,0 | 45,0   | 64,0   | 2,6 | T                         |
| KTIP160R4BF17M   | 16,00    | 16,99        | 17,0 | 141,0 | 48,5   | 68,0   | 2,8 | U                         |
| KTIP170R4BF18M   | 17,00    | 17,99        | 18,0 | 145,0 | 52,0   | 72,0   | 2,9 | V                         |
| KTIP180R4BF18M   | 18,00    | 18,99        | 18,0 | 149,0 | 55,5   | 76,0   | 3,1 | W                         |

- Tool body with insert wrench included.
- Order KenTIP blades separately.



See page H6.

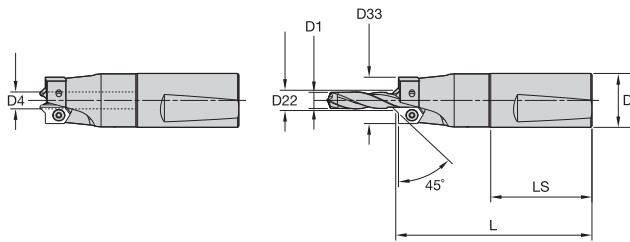


Combination Tools

**KenTIP • 5 x D • Metric**

| catalogue number | D1<br>mm | D1 max<br>mm | D    | L     | L7 min | L7 max | L5  | insert blade<br>seat size |
|------------------|----------|--------------|------|-------|--------|--------|-----|---------------------------|
| KTIP080R5BF09M   | 8,00     | 8,49         | 12,0 | 98,0  | 28,5   | 42,5   | 1,4 | F                         |
| KTIP085R5BF09M   | 8,50     | 8,99         | 9,0  | 100,0 | 30,5   | 45,0   | 1,5 | G                         |
| KTIP090R5BF10M   | 9,00     | 9,49         | 12,0 | 110,0 | 32,5   | 47,5   | 1,6 | H                         |
| KTIP095R5BF10M   | 9,50     | 9,99         | 12,0 | 112,0 | 35,0   | 50,0   | 1,6 | I                         |
| KTIP100R5BF11M   | 10,00    | 10,49        | 10,0 | 115,0 | 37,0   | 52,5   | 1,7 | J                         |
| KTIP105R5BF11M   | 10,50    | 10,99        | 12,0 | 116,0 | 39,0   | 55,0   | 1,8 | K                         |
| KTIP110R5BF12M   | 11,00    | 11,49        | 12,0 | 129,0 | 41,5   | 57,5   | 1,9 | L                         |
| KTIP115R5BF12M   | 11,50    | 11,99        | 12,0 | 131,0 | 43,5   | 60,0   | 2,0 | M                         |
| KTIP120R5BF13M   | 12,00    | 12,49        | 13,0 | 133,0 | 45,5   | 62,5   | 2,1 | N                         |
| KTIP125R5BF13M   | 12,50    | 12,99        | 13,0 | 136,0 | 48,0   | 65,0   | 2,2 | O                         |
| KTIP130R5BF14M   | 13,00    | 13,49        | 14,0 | 138,0 | 50,0   | 67,5   | 2,2 | P                         |
| KTIP135R5BF14M   | 13,50    | 13,99        | 14,0 | 140,0 | 52,5   | 70,0   | 2,3 | Q                         |
| KTIP140R5BF15M   | 14,00    | 14,49        | 15,0 | 147,0 | 54,5   | 72,5   | 2,4 | R                         |
| KTIP145R5BF15M   | 14,50    | 14,99        | 15,0 | 148,0 | 56,5   | 75,0   | 2,5 | S                         |
| KTIP150R5BF16M   | 15,00    | 16,00        | 16,0 | 153,0 | 61,0   | 80,0   | 2,6 | T                         |
| KTIP160R5BF17M   | 16,00    | 16,99        | 17,0 | 158,0 | 65,5   | 85,0   | 2,8 | U                         |
| KTIP170R5BF18M   | 17,00    | 17,99        | 18,0 | 163,0 | 70,0   | 90,0   | 2,9 | V                         |
| KTIP180R5BF18M   | 18,00    | 18,99        | 18,0 | 168,0 | 74,5   | 95,0   | 3,1 | W                         |

- Drill body shipped with all screws and wrenches.
- Order the inserts and drills separately.
- Drills with shanks up to and including 9,10mm use only one insert.



Combination Tools

### ■ Round Shank • 2° Whistle Notch™ Shank • Metric



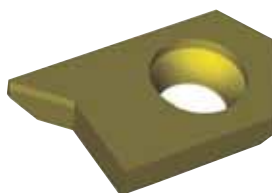
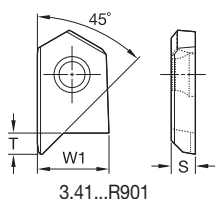
| DIN 1835 Form A | DIN 1835 Form E | D1    | D1 max | D4    | D    | D22  | D33  | L     | LS   | insert    |
|-----------------|-----------------|-------|--------|-------|------|------|------|-------|------|-----------|
| 3.37042R320     | 3.37042R820     | 3,40  | 4,000  | 4,00  | 20,0 | 9,0  | 14,9 | 85,0  | 50,0 | 3.41020.. |
| 3.37051R320     | 3.37051R820     | 4,10  | 4,500  | 5,00  | 20,0 | 9,5  | 15,4 | 85,0  | 50,0 | 3.41020.. |
| 3.37052R320     | 3.37052R820     | 4,60  | 5,000  | 5,00  | 20,0 | 10,0 | 15,9 | 85,0  | 50,0 | 3.41020.. |
| 3.37061R320     | 3.37061R820     | 5,10  | 5,500  | 6,00  | 20,0 | 10,5 | 16,4 | 85,0  | 50,0 | 3.41020.. |
| 3.37062R320     | 3.37062R820     | 5,55  | 6,000  | 6,00  | 20,0 | 11,0 | 16,9 | 85,0  | 50,0 | 3.41020.. |
| 3.37071R320     | 3.37071R820     | 6,10  | 7,000  | 7,00  | 20,0 | 11,5 | 17,4 | 95,0  | 50,0 | 3.41020.. |
| 3.37081R320     | 3.37081R820     | 7,30  | 8,000  | 8,00  | 20,0 | 12,6 | 18,4 | 95,0  | 50,0 | 3.41020.. |
| 3.37091R320     | 3.37091R820     | 8,10  | 9,000  | 9,00  | 20,0 | 13,6 | 19,4 | 95,0  | 50,0 | 3.41020.. |
| 3.37092R320     | 3.37092R820     | 8,10  | 9,000  | 9,00  | 20,0 | 13,7 | 19,4 | 97,3  | 50,0 | 3.41020.. |
| 3.37101R332     | 3.37101R832     | 9,10  | 10,000 | 10,00 | 32,0 | 14,7 | 27,9 | 115,0 | 60,0 | 3.41220.. |
| 3.37111R332     | 3.37111R832     | 10,10 | 11,000 | 11,00 | 32,0 | 15,7 | 28,9 | 115,0 | 60,0 | 3.41220.. |
| 3.37121R332     | 3.37121R832     | 11,10 | 12,000 | 12,00 | 32,0 | 16,7 | 29,9 | 125,0 | 60,0 | 3.41220.. |
| 3.37131R332     | 3.37131R832     | 12,20 | 13,000 | 13,00 | 32,0 | 17,7 | 31,0 | 125,0 | 60,0 | 3.41220.. |
| 3.37141R332     | 3.37141R832     | 13,10 | 14,000 | 14,00 | 32,0 | 18,2 | 31,5 | 125,0 | 60,0 | 3.41220.. |
| 3.37151R332     | 3.37151R832     | 14,10 | 15,000 | 15,00 | 32,0 | 19,3 | 32,5 | 125,0 | 60,0 | 3.41220.. |
| 3.37161R332     | 3.37161R832     | 15,50 | 16,000 | 16,00 | 32,0 | 20,3 | 33,5 | 125,0 | 60,0 | 3.41220.. |
| 3.37171R332     | 3.37171R832     | 16,50 | 17,000 | 17,00 | 32,0 | 21,3 | 34,5 | 125,0 | 60,0 | 3.41220.. |
| 3.37181R332     | 3.37181R832     | 17,50 | 18,000 | 18,00 | 32,0 | 22,3 | 35,5 | 125,0 | 60,0 | 3.41220.. |

### ■ Spare Parts

| D1    | back-up screw | drill clamp screw | hex wrench | insert screw | wrench  |
|-------|---------------|-------------------|------------|--------------|---------|
| 3,40  | 192.888       | 192.718           | 170.003    | 192.432      | 170.028 |
| 4,10  | 192.888       | 192.718           | 170.003    | 192.432      | 170.028 |
| 4,60  | 192.888       | 192.718           | 170.003    | 192.432      | 170.028 |
| 5,10  | 192.888       | 192.718           | 170.003    | 192.432      | 170.028 |
| 5,55  | 192.888       | 192.718           | 170.003    | 192.432      | 170.028 |
| 6,10  | 192.888       | 192.718           | 170.003    | 192.432      | 170.028 |
| 7,30  | 192.888       | 192.718           | 170.003    | 192.432      | 170.028 |
| 8,10  | 192.888       | 192.718           | 170.003    | 192.432      | 170.028 |
| 8,10  | 192.888       | 192.718           | 170.003    | 192.432      | 170.028 |
| 9,10  | 192.889       | 192.720           | 170.005    | 191.725      | 170.025 |
| 10,10 | 192.889       | 192.720           | 170.005    | 191.725      | 170.025 |
| 11,10 | 192.889       | 192.720           | 170.005    | 191.725      | 170.025 |
| 12,20 | 192.889       | 192.720           | 170.005    | 191.725      | 170.025 |
| 13,10 | 192.889       | 192.720           | 170.005    | 191.725      | 170.025 |
| 14,10 | 192.889       | 192.720           | 170.005    | 191.725      | 170.025 |
| 15,50 | 192.889       | 192.720           | 170.005    | 191.725      | 170.025 |
| 16,50 | 192.889       | 192.720           | 170.005    | 191.725      | 170.025 |
| 17,50 | 192.889       | 192.720           | 170.005    | 191.725      | 170.025 |

NOTE: Dimensions are factored with a 45° insert positioned in insert pocket.

- Standard steel drill bodies are designed for inserts with 41° and 45° chamfers.



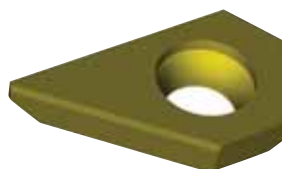
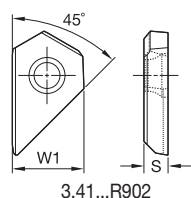
- first choice
- alternate choice

|   |   |   |
|---|---|---|
| P | ● | ● |
| M | ● | ● |
| K | ● | ● |
| N | ● | ● |
| S | ● | ● |
| H | ● | ● |

■ BF Insert R901 • 45° with Spot Face

| catalogue number | S mm | W1 mm | T mm | CS5 | KC7315 |
|------------------|------|-------|------|-----|--------|
| 3.41020R901      | 3,00 | 6,10  | 2,90 | ●   | ●      |
| 3.41220R901      | 3,50 | 10,10 | 3,05 | ●   | ●      |

Combination Tools



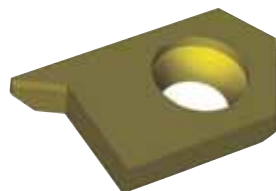
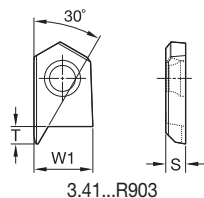
- first choice
- alternate choice

|   |   |   |
|---|---|---|
| P | ● | ● |
| M | ● | ● |
| K | ● | ● |
| N | ● | ● |
| S | ● | ● |
| H | ● | ● |

■ BF Insert R902 • 45°

| catalogue number | S mm | W1 mm | CS5 | KC7315 |
|------------------|------|-------|-----|--------|
| 3.41020R902      | 3,00 | 6,10  | ●   | ●      |
| 3.41220R902      | 3,50 | 10,10 | ●   | ●      |

- When using the 60° insert or special insert, the assembled tool should be inspected.
- These insert combinations require that the steel body be altered to provide insert coverage.



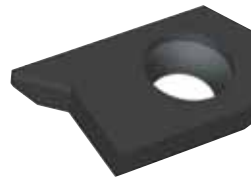
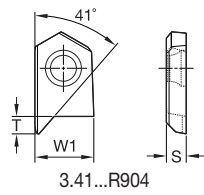
- first choice
- alternate choice

|   |   |   |
|---|---|---|
| P | ● | ● |
| M | ● | ● |
| K | ● | ● |
| N | ● | ● |
| S | ● | ● |
| H | ● | ● |

■ BF Insert R903 • 60° with Spot Face

| catalogue number | S mm | W1 mm | T mm | CS5 | KC7315 |
|------------------|------|-------|------|-----|--------|
| 3.41020R903      | 3,00 | 6,10  | 2,90 | ●   | ●      |
| 3.41220R903      | 3,50 | 10,10 | 3,05 | ●   | ●      |

• Standard steel drill bodies are designed for inserts with 41° and 45° chamfers.



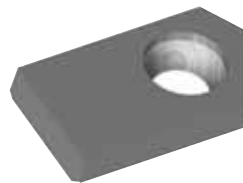
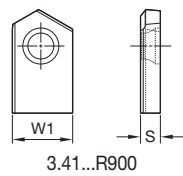
- first choice
- alternate choice

|   |   |
|---|---|
| P | ● |
| M | ● |
| K | ● |
| N | ● |
| S | ● |
| H | ● |

■ BF Insert R904 • 41° with Spot Face

| catalogue number | S mm | W1 mm | T mm |   |
|------------------|------|-------|------|---|
| 3.41020R904      | 3,00 | 6,10  | 2,90 | ● |
| 3.41220R904      | 3,50 | 10,10 | 3,05 | ● |

KCT315



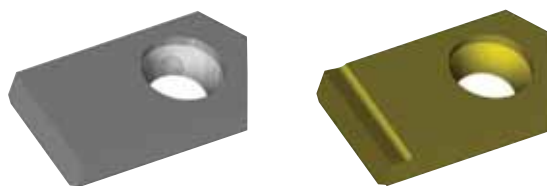
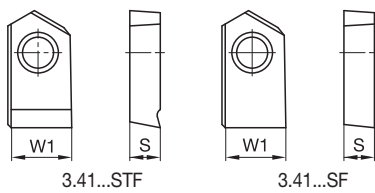
- first choice
- alternate choice

|   |   |
|---|---|
| P | ● |
| M | ● |
| K | ○ |
| N | ● |
| S | ● |
| H | ● |

■ BF Insert R900 • Semi-Finished

| catalogue number | S mm | W1 mm |   |
|------------------|------|-------|---|
| 3.41020R900      | 3,00 | 6,10  | ● |
| 3.41220R900      | 3,50 | 10,10 | ● |

KMF



- first choice
- alternate choice

|   |   |
|---|---|
| P | ● |
| M | ● |
| K | ○ |
| N | ● |
| S | ● |
| H | ● |

■ BF Insert R900 S(T)F • Semi-Finished

| catalogue number | S mm | W1 mm |   |
|------------------|------|-------|---|
| 3.41020R900STF   | 3,00 | 6,10  | ● |
| 3.41220R900SF    | 3,50 | 10,10 | ● |
| 3.41220R900STF   | 3,50 | 10,10 | ● |

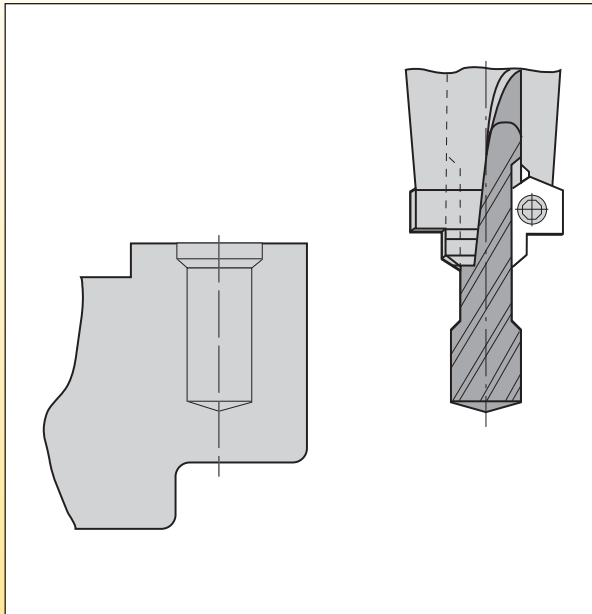
CS5 KMF

Combination Tools

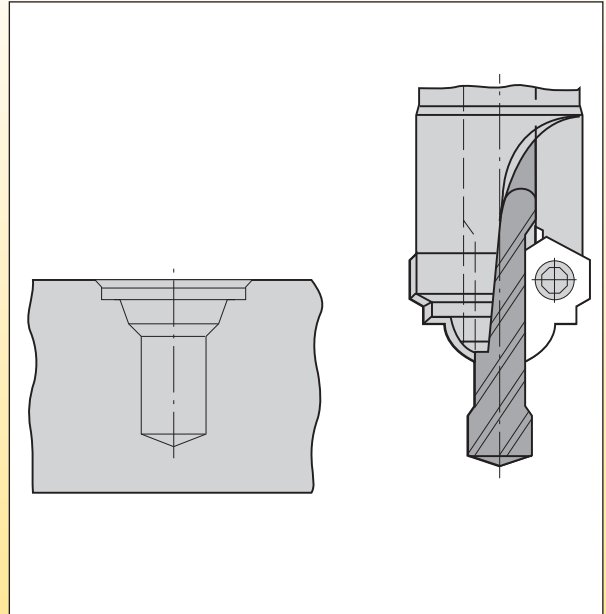
# Engineered Solutions Available!



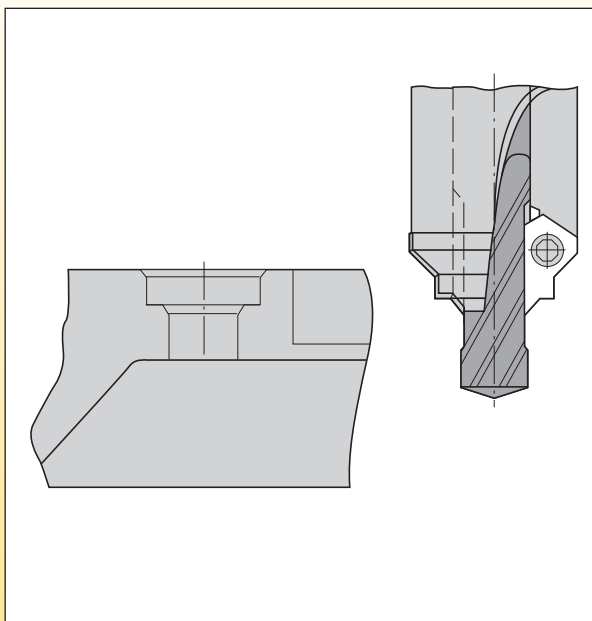
**Tapped Hole with Protection Countersinking**



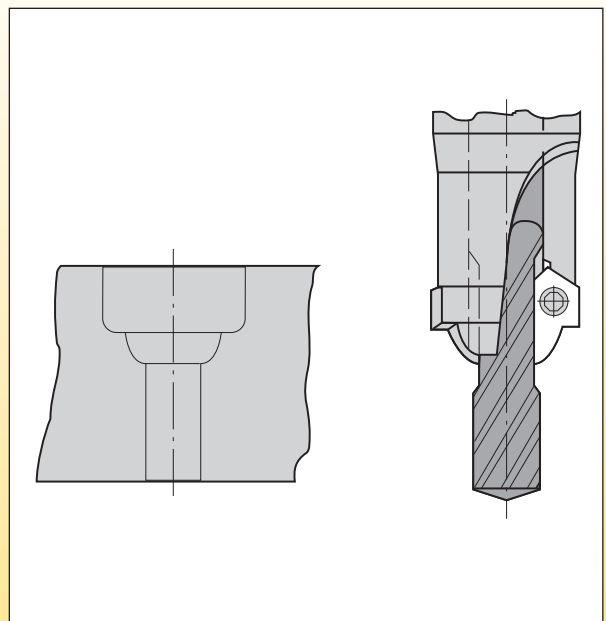
**Countersinking for Round Sealing Rings**



**Countersinking for Countersunk Head Screws**

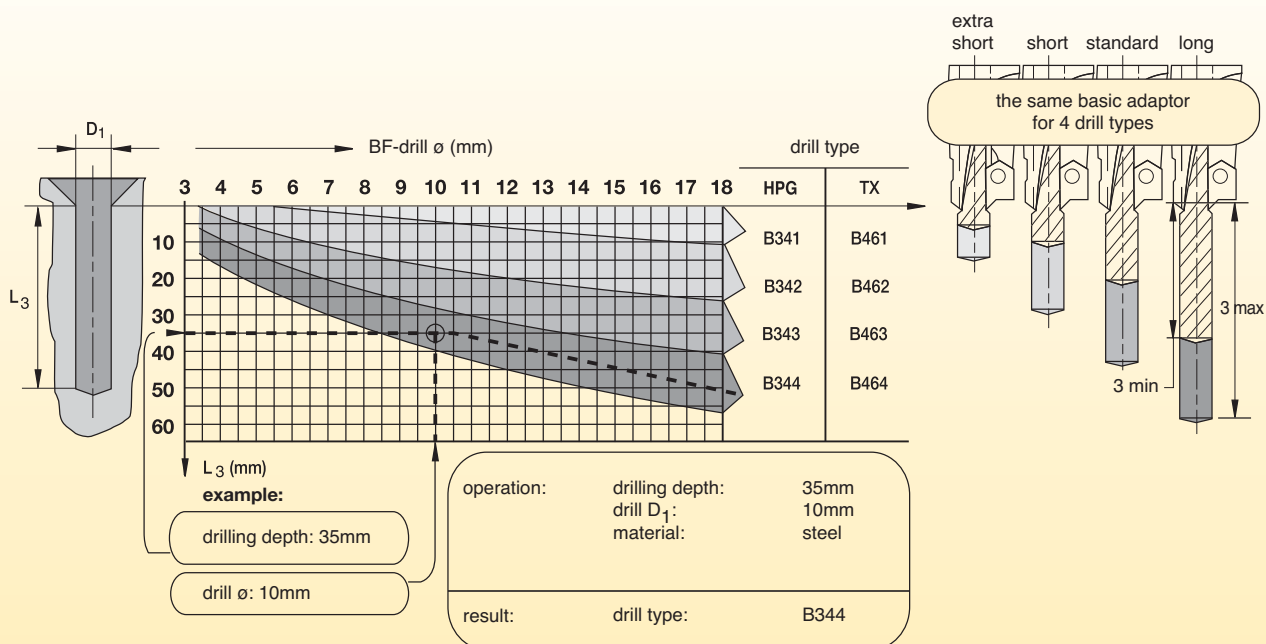


**Countersinking for Aluminium Rim**





### Possible Drilling Depths • Semi-Standard Series

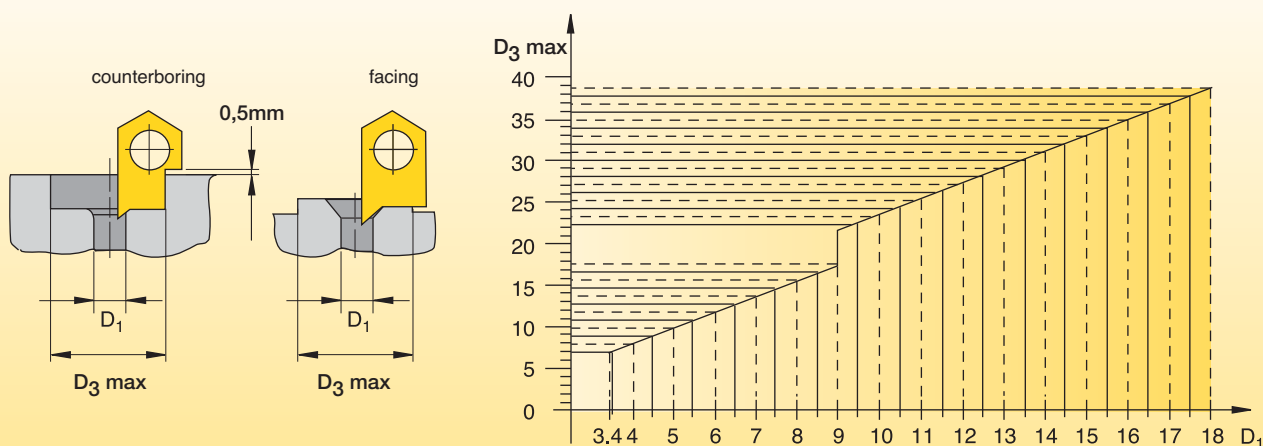


### Possible Facing and Counterboring Diameters

90° insert blanks are available to grind special geometry forms for other multiprofile applications. Contact your local Kennametal Representative for special insert profile designs and quoting.

Use the table below to determine the maximum facing or counterboring diameter for a given BF drill diameter. Reference your chosen drill diameter across the bottom axis of the table and then read up and across to the left axis to find the maximum facing or counterboring diameter.

### Possible Facing and Countersinking Diameter • Machining Steel



■ HP Drills • B343HPG Series • Grade KC7315™ • Through Coolant

|                |   | Cutting Speed – vc |                |     | Metric                                |             |             |             |             |             |             |             |             |
|----------------|---|--------------------|----------------|-----|---------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                |   | Range – m/min      |                |     | Recommended Feed Rate (f) by Diameter |             |             |             |             |             |             |             |             |
| Material Group |   | min                | Starting Value | max |                                       |             |             |             |             |             |             |             |             |
|                |   |                    |                |     |                                       | 3,0         | 4,0         | 6,0         | 8,0         | 10,0        | 12,0        | 16,0        | 18,0        |
| P              | 1 | 100                | 140            | 180 | mm/r                                  | 0,07 - 0,16 | 0,08 - 0,19 | 0,10 - 0,23 | 0,13 - 0,29 | 0,15 - 0,33 | 0,17 - 0,37 | 0,19 - 0,44 | 0,22 - 0,44 |
|                | 2 | 90                 | 115            | 140 | mm/r                                  | 0,07 - 0,13 | 0,08 - 0,17 | 0,10 - 0,19 | 0,13 - 0,23 | 0,15 - 0,27 | 0,17 - 0,30 | 0,19 - 0,35 | 0,22 - 0,39 |
|                | 3 | 80                 | 100            | 120 | mm/r                                  | 0,10 - 0,16 | 0,11 - 0,19 | 0,13 - 0,23 | 0,16 - 0,29 | 0,19 - 0,33 | 0,21 - 0,37 | 0,25 - 0,44 | 0,28 - 0,49 |
|                | 4 | 70                 | 90             | 110 | mm/r                                  | 0,08 - 0,16 | 0,10 - 0,19 | 0,11 - 0,22 | 0,12 - 0,25 | 0,14 - 0,29 | 0,16 - 0,32 | 0,21 - 0,41 | 0,24 - 0,46 |
|                | 5 | 70                 | 85             | 110 | mm/r                                  | 0,07 - 0,12 | 0,08 - 0,14 | 0,10 - 0,16 | 0,12 - 0,20 | 0,14 - 0,23 | 0,16 - 0,26 | 0,18 - 0,31 | 0,21 - 0,34 |
| K              | 1 | 100                | 120            | 140 | mm/r                                  | 0,09 - 0,17 | 0,10 - 0,21 | 0,12 - 0,25 | 0,15 - 0,31 | 0,17 - 0,35 | 0,20 - 0,39 | 0,23 - 0,46 | 0,26 - 0,52 |
|                | 2 | 80                 | 105            | 130 | mm/r                                  | 0,09 - 0,15 | 0,10 - 0,18 | 0,12 - 0,21 | 0,15 - 0,26 | 0,18 - 0,30 | 0,20 - 0,33 | 0,23 - 0,39 | 0,26 - 0,44 |
|                | 3 | 70                 | 85             | 100 | mm/r                                  | 0,08 - 0,13 | 0,10 - 0,15 | 0,11 - 0,19 | 0,14 - 0,23 | 0,16 - 0,26 | 0,18 - 0,30 | 0,21 - 0,35 | 0,23 - 0,39 |

NOTE: When using BF bodies with KTIP, please refer to the recommended cutting data for KTIP tools on page H11.  
Please be aware that the values mentioned are only guidelines.  
It is highly recommended to adjust cutting data according to your specific application in order to achieve best drilling results.

Combination Tools

# SEFAS™ Combination Drilling System

## Primary Application

Combines centring, drilling, and chamfering into a single operation, increasing productivity by reducing cycle time and number of tool changes.

These productivity gains can be achieved by still using standard solid carbide or KenTIP™ drills. The system provides full through coolant capabilities.

## Features and Benefits

### Productivity

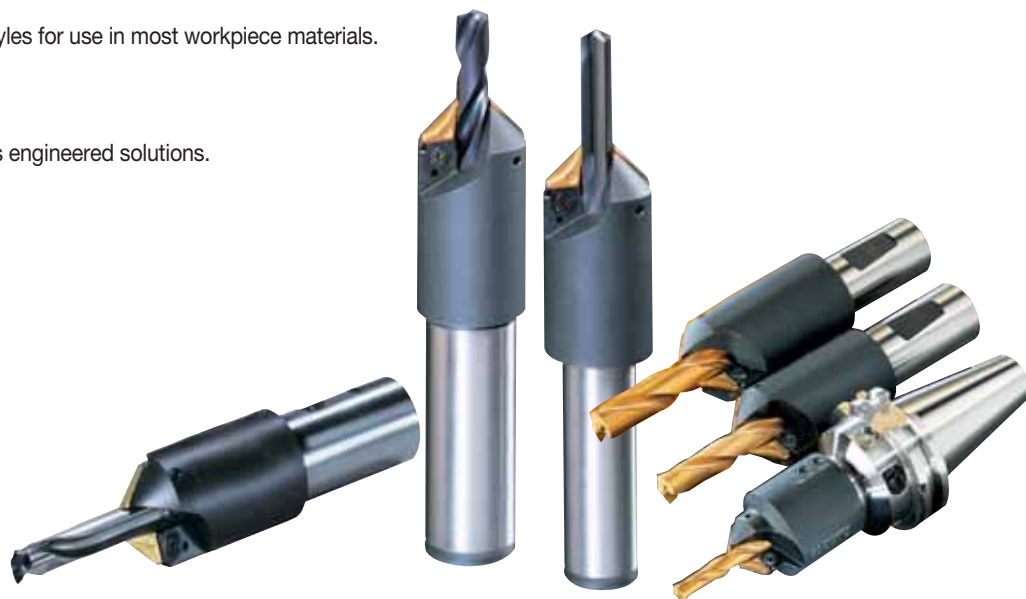
- Reduce the number of tool changes and your cycle time by combining drilling and countersinking into one operation.
- Achieve highest metal removal rates by applying a HP-style drill.
- Reduce your inventory and avoid reconditioning by using KenTIP blades.
- Easily change tool within the machine by applying KenTIP.

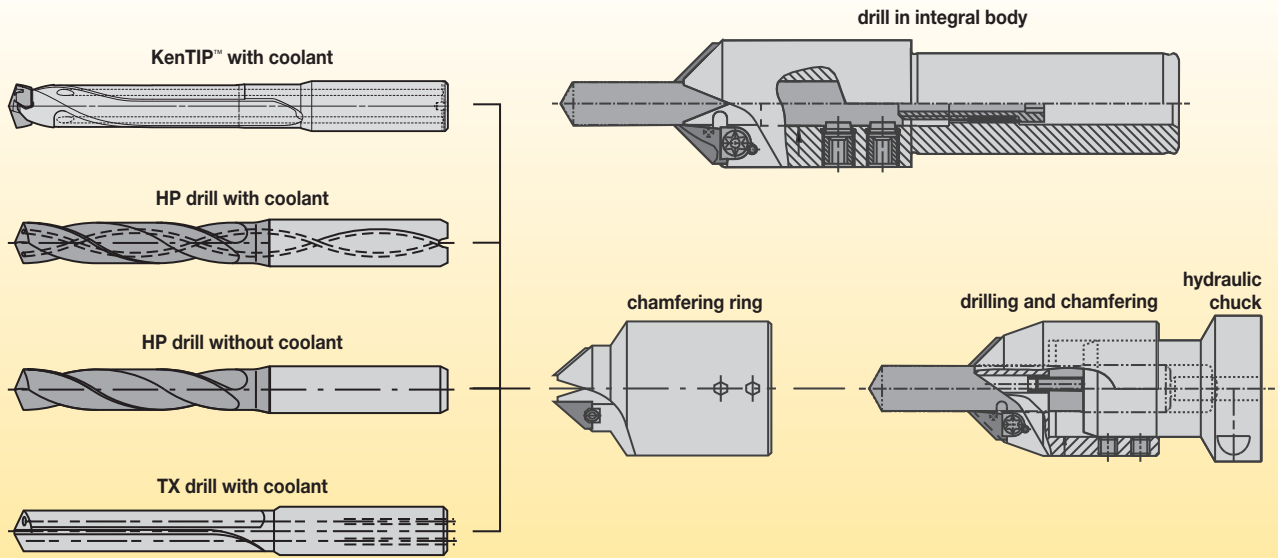
### Versatility

- Any style of standard HP drill can be used, achieving highest metal removal rates.
- Use TX drills to achieve excellent hole quality and tool life in non-ferrous materials.
- For increased accuracy and tool life, use the Kennametal hydraulic chuck recommended for cylindrical tool shanks.
- Benefit from various insert styles for use in most workpiece materials.

### Customisation

- Length variations available as engineered solutions.





The SEFAS combination drilling system may be used in most workpiece materials. The design and flexibility of the system can be used with a wide variety of solid carbide drills.

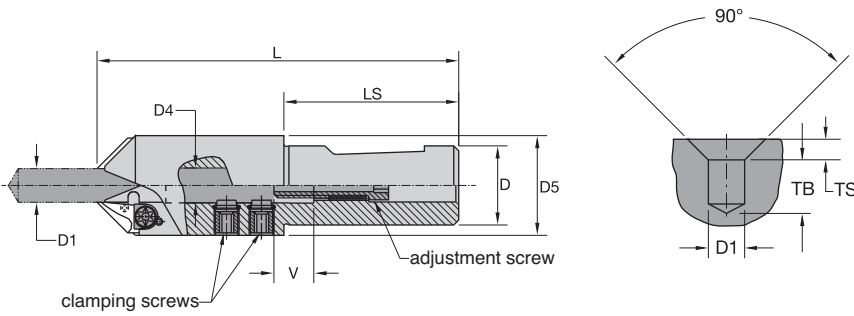
Three types of SEFAS chamfering tools are offered: (1) integral bodies with a compact design that provides additional workpiece and work-holding clearance; (2) chamfering rings that may be mounted to Kennametal hydraulic chucks for optimal drill performance and increased productivity; and (3) high-performance HSK bodies for new machine spindles and high-output applications.



- Drill body shipped with all screws, clamps, and wrenches.
- Order the inserts and drills separately.
- Two chamfer inserts required per body.



Combination Tools

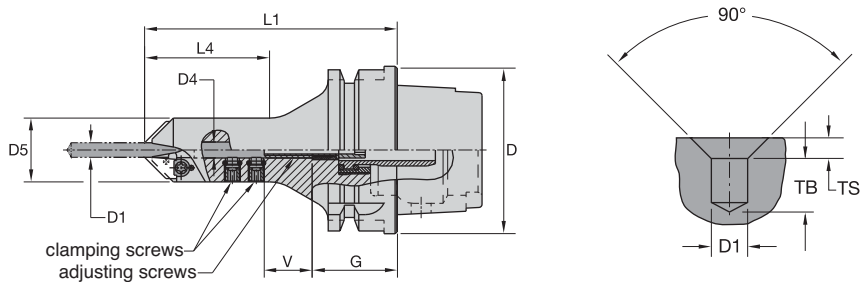


### ■ 2° Whistle Notch™ (WN) Shank • For Use with Metric Drills • Metric



| catalogue number | D1      | D1 max | D    | D4   | D5   | L     | LS   | V    | gage insert | insert clamp | Torx wrench | drill clamp screw | adjusting screw |
|------------------|---------|--------|------|------|------|-------|------|------|-------------|--------------|-------------|-------------------|-----------------|
| 3.37060R720      | 4,000   | 6,0    | 20,0 | 6,0  | 24,0 | 102,0 | 52,0 | 18,0 | 3.42805..   | 360.550      | 170.024     | 360.630           | 360.510         |
| 3.37080R720      | >6,000  | 8,0    | 20,0 | 8,0  | 26,0 | 108,0 | 52,0 | 18,0 | 3.42805..   | 360.550      | 170.024     | 360.634           | 360.510         |
| 3.37100R720      | >8,000  | 10,0   | 20,0 | 10,0 | 29,0 | 122,0 | 52,0 | 17,0 | 3.42805..   | 360.550      | 170.024     | 360.631           | 360.510         |
| 3.37120R732      | >10,000 | 12,0   | 32,0 | 12,0 | 38,0 | 133,0 | 62,0 | 21,0 | 3.42807..   | 360.551      | 170.025     | 360.635           | 360.513         |
| 3.37140R732      | >12,000 | 14,0   | 32,0 | 14,0 | 40,0 | 137,0 | 62,0 | 16,0 | 3.42807..   | 360.551      | 170.025     | 360.636           | 360.511         |
| 3.37160R732      | >14,000 | 16,0   | 32,0 | 16,0 | 41,5 | 141,0 | 62,0 | 19,0 | 3.42807..   | 360.551      | 170.025     | 360.632           | 360.511         |
| 3.37180R732      | >16,000 | 18,0   | 32,0 | 18,0 | 47,0 | 144,0 | 62,0 | 15,0 | 3.42807..   | 360.551      | 170.025     | 360.633           | 360.511         |

- Drill body shipped with all screws, clamps, and wrenches
- Order the inserts and drills separately.
- Two chamfer inserts required per body.

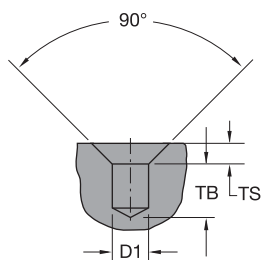
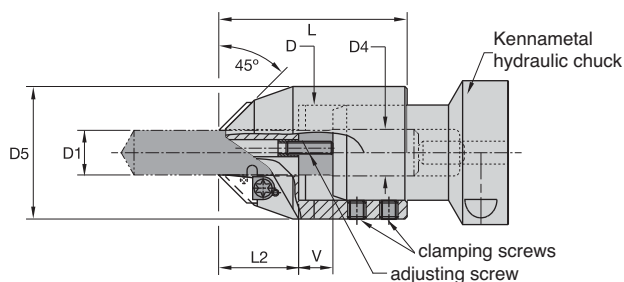


### ■ HSK Shank • For Use with Metric Drills • Metric



| catalogue number  | D1      | D1 max | D    | D4   | D5   | L1    | L4 max | V    | gage insert | insert clamp | Torx wrench | drill clamp screw | adjusting screw |
|-------------------|---------|--------|------|------|------|-------|--------|------|-------------|--------------|-------------|-------------------|-----------------|
| SEF040060RHSK63AM | 4,000   | 6,00   | 63,0 | 6,0  | 24,0 | 95,0  | 51,0   | 18,0 | 3.42805..   | 360.550      | 170.024     | 360.630           | 360.510         |
| SEF060080RHSK63AM | >6,000  | 8,00   | 63,0 | 8,0  | 26,0 | 102,0 | 57,0   | 18,0 | 3.42805..   | 360.550      | 170.024     | 360.634           | 360.510         |
| SEF080100RHSK63AM | >8,000  | 10,00  | 63,0 | 10,0 | 29,0 | 111,0 | 68,0   | 17,0 | 3.42805..   | 360.550      | 170.024     | 360.631           | 360.510         |
| SEF100120RHSK63AM | >10,000 | 12,00  | 63,0 | 12,0 | 38,0 | 122,0 | 89,0   | 21,0 | 3.42807..   | 360.551      | 170.025     | 360.635           | 360.517         |
| SEF120140RHSK63AM | >12,000 | 14,00  | 63,0 | 14,0 | 40,0 | 126,0 | 94,0   | 16,0 | 3.42807..   | 360.551      | 170.025     | 360.636           | 360.517         |
| SEF140160RHSK63AM | >14,000 | 16,00  | 63,0 | 16,0 | 42,0 | 130,0 | 99,0   | 19,0 | 3.42807..   | 360.551      | 170.025     | 360.632           | 360.517         |

- Drill body shipped with all screws, clamps, and wrenches.
- Order the inserts and drills separately.
- Use only with hydraulic chucks.



■ **Chamfer Rings • For Use with Metric Kennametal Hydraulic Chucks • For Use with Inch or Metric Drills**



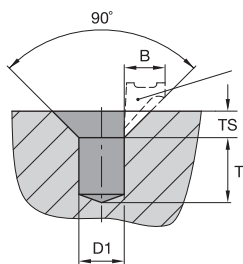
| catalogue number | D1      | D1 max | D    | D4   | D5   | L    | LS   | V    | gage insert | insert clamp | Torx wrench | drill clamp screw | adjusting screw |
|------------------|---------|--------|------|------|------|------|------|------|-------------|--------------|-------------|-------------------|-----------------|
| 3.37526R006      | 4,000   | 6,0    | 25,7 | 6,0  | 38,0 | 49,5 | 21,0 | 5,0  | 3.42805..   | 360.550      | 170.024     | 190.195           | 192.057         |
| 3.37528R008      | >6,000  | 8,0    | 27,7 | 8,0  | 40,0 | 50,0 | 21,0 | 6,0  | 3.42805..   | 360.550      | 170.024     | 190.195           | 190.371         |
| 3.37530R010      | >8,000  | 10,0   | 29,7 | 10,0 | 41,5 | 56,5 | 22,0 | 8,0  | 3.42805..   | 360.550      | 170.024     | 190.195           | 193.113         |
| 3.37532R012      | >10,000 | 12,0   | 31,6 | 12,0 | 48,0 | 68,0 | 29,0 | 12,0 | 3.42807..   | 360.551      | 170.025     | 190.076           | 193.114         |
| 3.37534R014      | >12,000 | 14,0   | 33,6 | 14,0 | 50,0 | 70,5 | 29,0 | 12,0 | 3.42807..   | 360.551      | 170.025     | 190.076           | 193.114         |
| 3.37538R016      | >14,000 | 16,0   | 37,6 | 16,0 | 54,0 | 78,0 | 32,0 | 12,0 | 3.42807..   | 360.551      | 170.025     | 190.076           | 193.115         |
| 3.37540R018      | >16,000 | 18,0   | 39,6 | 18,0 | 56,0 | 80,5 | 34,0 | 15,0 | 3.42807..   | 360.551      | 170.025     | 190.076           | 193.116         |
| 3.37542R020      | >18,000 | 20,0   | 41,6 | 20,0 | 58,0 | 82,5 | 35,0 | 15,0 | 3.42807..   | 360.551      | 170.025     | 190.076           | 193.116         |

■ **Achievable Drilling (TB) and Sink Depths (TS)**



| drill diameter D1 | B210, B221, B224, B254, B284, B291, B707, B966, B976 |                   | B211, B222, B225, B285, B292, B411, B708, B977 |                   | B212, B256, B709, B978 |                   | B269              |                   | unalloyed and low-alloy steel; unalloyed and alloy steel and cast iron; high-alloy steel and stainless steel |                  |                   |
|-------------------|--|-------------------|--|-------------------|------------------------|-------------------|-------------------|-------------------|--|------------------|-------------------|
|                   | TB <sub>min</sub>                                    | TB <sub>max</sub> | TB <sub>min</sub>                              | TB <sub>max</sub> | TB <sub>min</sub>      | TB <sub>max</sub> | TB <sub>min</sub> | TB <sub>max</sub> | TS <sub>100</sub>  | TS <sub>80</sub> | TS <sub>max</sub> |
| 4,0-4,7           | 4  | 17                | 12   | 29                | 20                     | 36                | 45                | 62                | 1,2  | 1,8              | 2,5               |
| >4,7-6,0          | 4  | 20                | 20   | 35                | 27                     | 43                | 63                | 80                | 1,5  | 2,2              | 3,0               |
| >6,0-7,0          | 11   | 24                | 23   | 40                | 32                     | 49                | 71                | 88                | 2  | 3,0              | 4,0               |
| >7,0-8,0          | 11   | 28                | 23   | 40                | 42                     | 59                | 85                | 102               | 2,5  | 4,0              | 5,0               |
| >8,0-10,0         | 13   | 29                | 27   | 43                | 46                     | 62                | 109               | 125               | 2,5  | 4,0              | 5,0               |
| >10,0-12,0        | 15   | 35                | 31   | 51                | 54                     | 74                | 131               | 151               | 3,5  | 5,0              | 7,0               |
| >12,0-14,0        | 21   | 36                | 38   | 53                | 69                     | 84                | 160               | 175               | 4,0  | 6,0              | 8,0               |
| >14,0-16,0        | 22   | 40                | 40   | 58                | 78                     | 96                | 184               | 202               | 4,0  | 6,0              | 8,0               |
| >16,0-18,0        | 31   | 45                | 51   | 65                | 93                     | 107               | 213               | 227               | 4,0  | 6,0              | 8,0               |
| >18,0-20,0        | 34   | 50                | 56   | 72                | 103                    | 119               | 237               | 253               | 4,0  | 6,0              | 8,0               |

NOTE: TS<sub>100</sub>: maximum sink depths at which the full feed values can be maintained during chamfering and sinking.  
 TS<sub>80</sub>: maximum sink depths that can be achieved without chipbreak cycles and at a 20% feed reduction.  
 TS<sub>max</sub>: maximum sink depths that can be achieved without chipbreak cycles and at a 50% feed reduction.  
 When using SEFAS with GOdrill™, please contact your Kennametal representative for application support.



## Achievable Drilling (T) and Sink Depths (TS) with KenTIP Tool Bodies

Combination Tools

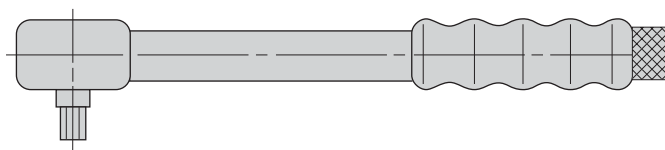
drilling depths (T) with SEFAS compact tools

drilling depths (T) with SEFAS chamfer rings

sink depths (TS)

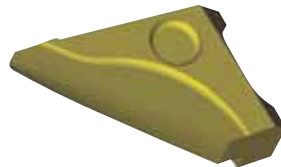
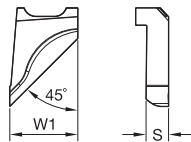


| D1<br>mm    | 3x |                  | 5x |                  | 8x  |                  | 3x |                  | 5x |                  | 8x  |                  | TS <sub>100</sub> | TS <sub>80</sub> | TS <sub>max</sub> |
|-------------|----|------------------|----|------------------|-----|------------------|----|------------------|----|------------------|-----|------------------|-------------------|------------------|-------------------|
|             | T  | T <sub>max</sub> | T  | T <sub>max</sub> | T   | T <sub>max</sub> | T  | T <sub>max</sub> | T  | T <sub>max</sub> | T   | T <sub>max</sub> |                   |                  |                   |
| 8,00-8,49   | 11 | 19               | 21 | 37               | 47  | 63               | 11 | 22               | 22 | 40               | 48  | 66               | 2,5               | 4,0              | 5,0               |
| 8,50-8,99   | 12 | 21               | 24 | 40               | 51  | 67               | 12 | 24               | 25 | 43               | 52  | 70               | 2,5               | 4,0              | 5,0               |
| 9,00-9,49   | 12 | 23               | 27 | 43               | 56  | 72               | 12 | 26               | 28 | 46               | 57  | 75               | 2,5               | 4,0              | 5,0               |
| 9,50-9,99   | 13 | 25               | 31 | 47               | 61  | 77               | 13 | 28               | 32 | 50               | 62  | 80               | 2,5               | 4,0              | 5,0               |
| 10,00-10,49 | 13 | 26               | 28 | 49               | 60  | 81               | 13 | 28               | 29 | 51               | 61  | 83               | 3,5               | 5,0              | 7,0               |
| 10,50-10,99 | 14 | 28               | 31 | 52               | 64  | 85               | 14 | 30               | 32 | 54               | 65  | 87               | 3,5               | 5,0              | 7,0               |
| 11,00-11,49 | 14 | 30               | 34 | 55               | 69  | 90               | 14 | 32               | 35 | 57               | 70  | 92               | 3,5               | 5,0              | 7,0               |
| 11,50-11,99 | 15 | 32               | 37 | 58               | 73  | 94               | 15 | 34               | 38 | 60               | 74  | 96               | 3,5               | 5,0              | 7,0               |
| 12,00-12,49 | 15 | 30               | 41 | 56               | 79  | 94               | 15 | 32               | 36 | 58               | 74  | 96               | 4,0               | 6,0              | 8,0               |
| 12,50-12,99 | 17 | 32               | 44 | 59               | 83  | 98               | 16 | 34               | 39 | 61               | 78  | 100              | 4,0               | 6,0              | 8,0               |
| 13,00-13,49 | 19 | 34               | 47 | 62               | 88  | 103              | 16 | 36               | 42 | 64               | 83  | 105              | 4,0               | 6,0              | 8,0               |
| 13,50-13,99 | 21 | 36               | 51 | 66               | 93  | 108              | 17 | 38               | 46 | 68               | 88  | 110              | 4,0               | 6,0              | 8,0               |
| 14,00-14,49 | 19 | 37               | 50 | 68               | 94  | 112              | 18 | 40               | 49 | 71               | 93  | 115              | 4,0               | 6,0              | 8,0               |
| 14,50-14,99 | 21 | 39               | 53 | 71               | 98  | 116              | 20 | 42               | 52 | 74               | 97  | 119              | 4,0               | 6,0              | 8,0               |
| 15,00-15,99 | 25 | 43               | 59 | 77               | 107 | 125              | 24 | 46               | 58 | 80               | 106 | 128              | 4,0               | 6,0              | 8,0               |
| 16,00-16,99 | 29 | 47               | 65 | 83               | 117 | 135              | 28 | 50               | 64 | 85               | 115 | 136              | 4,0               | 6,0              | 8,0               |
| 17,00-17,99 | 35 | 49               | 73 | 87               | 127 | 141              | 30 | 54               | 68 | 92               | 122 | 146              | 4,0               | 6,0              | 8,0               |
| 18,00-18,99 | 36 | 52               | 76 | 92               | 133 | 149              | 33 | 57               | 73 | 97               | 130 | 154              | 4,0               | 6,0              | 8,0               |
| 19,00-19,99 | 40 | 56               | 82 | 98               | 142 | 158              | 37 | 61               | 79 | 103              | 139 | 163              | 4,0               | 6,0              | 8,0               |



## Torque Wrench • Metric

| drill diameter D1 | torque wrench | tightening torque Nm | SW | drill clamp screw | wrench adaptor |
|-------------------|---------------|----------------------|----|-------------------|----------------|
| 4,0-6,0           | 170.190       | 7                    | 3  | 360.630           | 170.240        |
| >6,0-8,0          | 170.190       | 8                    | 3  | 360.635           | 170.240        |
| >8,0-10,0         | 170.190       | 10                   | 4  | 360.631           | 170.232        |
| >10,0-12,0        | 170.190       | 15                   | 4  | 360.635           | 170.232        |
| >12,0-14,0        | 170.190       | 20                   | 5  | 360.636           | 170.233        |
| >14,0-16,0        | 170.190       | 30                   | 5  | 360.632           | 170.233        |
| >16,0-18,0        | 170.190       | 45                   | 6  | 360.633           | 170.234        |
| >18,0-20,0        | 170.190       | 45                   | 6  | 360.637           | 170.234        |

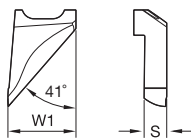


● first choice  
○ alternate choice

|   |   |   |   |
|---|---|---|---|
| P | ● |   |   |
| M | ● |   |   |
| K | ● | ● | ● |
| N | ● |   | ● |
| S | ● |   | ● |
| H |   |   |   |

■ SEFAS Chamfering Inserts for Solid Carbide Drills • 45°

| catalogue number | angle | S mm | W1 mm | CS5 | KC7215 | KMF |
|------------------|-------|------|-------|-----|--------|-----|
| 3.42805R001      | 45    | 2,83 | 8,00  | ●   | ●      | ●   |
| 3.42807R001      | 45    | 3,98 | 12,00 | ●   | ●      | ●   |

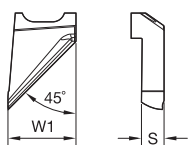


● first choice  
○ alternate choice

|   |   |   |   |
|---|---|---|---|
| P | ● |   |   |
| M | ● |   |   |
| K | ● | ● | ● |
| N | ● |   | ● |
| S | ● |   | ● |
| H |   |   |   |

■ SEFAS Chamfering Inserts for Solid Carbide Drills • 41°

| catalogue number | angle | S mm | W1 mm | KC7215 |
|------------------|-------|------|-------|--------|
| 3.42805R081      | 41    | 2,83 | 8,00  | ●      |
| 3.42807R081      | 41    | 3,98 | 12,00 | ●      |



● first choice  
○ alternate choice

|   |   |   |   |
|---|---|---|---|
| P | ● |   |   |
| M | ● |   |   |
| K | ● | ● | ● |
| N | ● |   | ● |
| S | ● |   | ● |
| H |   |   |   |

■ SEFAS Chamfering Inserts for KenTIP™ and KSEM™ Drills • 45°

| catalogue number | angle | S mm | W1 mm | KC7015 | KC7315 | KMF |
|------------------|-------|------|-------|--------|--------|-----|
| 3.42805R021      | 45    | 2,83 | 8,00  | ●      | ●      | ●   |
| 3.42807R021      | 45    | 3,98 | 12,00 | ●      | ●      | ●   |