



# **Snabbstål**

**HSS 5% Kobolt**

**Brotschar**  
**Försänkare**  
**Tappförsänkare**



## Att välja brotsch

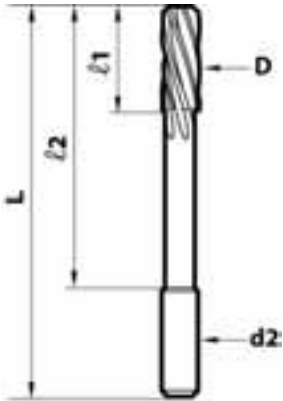
| Tolerans               | Ø 2  | Ø 3  | Ø 4  | Ø 5  | Ø 6  | Ø 8  | Ø 10  | Ø 12  | Ø 14  |
|------------------------|------|------|------|------|------|------|-------|-------|-------|
| <b>D10</b>             | 2,04 | 3,04 | 4,05 | 5,06 | 6,06 | 8,07 | 10,08 | 12,10 | 14,10 |
| <b>E8</b>              | 2,02 | 3,02 | 4,03 | 5,03 | 6,03 | 8,03 | 10,03 | 12,04 | 14,04 |
| <b>E9</b>              | 2,03 | 3,03 | 4,04 | 5,04 | 6,04 | 8,05 | 10,05 | 12,06 | 14,06 |
| <b>F7</b>              | 2,01 | 3,01 | 4,01 | 5,01 | 6,01 | 8,02 | 10,02 | 12,02 | 14,02 |
| <b>F8</b>              | 2,01 | 3,01 | 4,02 | 5,02 | 6,02 | 8,02 | 10,02 | 12,03 | 14,03 |
| <b>G7</b>              | X    | X    | X    | X    | X    | 8,01 | 10,01 | 12,01 | 14,01 |
| <b>H6</b>              | 2,00 | 3,00 | 4,00 | 5,00 | 6,00 | 8,00 | 10,00 | 12,00 | 14,00 |
| <b>H7</b>              | X    | X    | X    | X    | X    | X    | X     | X     | X     |
| <b>H8</b>              | X    | X    | 4,01 | 5,01 | 6,01 | 8,01 | 10,01 | 12,01 | 14,01 |
| <b>H9</b>              | 2,01 | 3,01 | 4,02 | 5,02 | 6,02 | 8,02 | 10,02 | 12,03 | 14,03 |
| <b>M7</b>              | 1,99 | 2,99 | 3,99 | 4,99 | 5,99 | 7,99 | 9,99  | 11,99 | 13,99 |
| <b>N7</b>              | 1,99 | 2,99 | 3,99 | 4,99 | 5,99 | 7,98 | 9,98  | 11,98 | 13,98 |
| <b>P7</b>              | 1,99 | 2,99 | 3,98 | 4,98 | 5,98 | 7,98 | 9,98  | 11,97 | 13,97 |
| <b>R7</b>              | 1,98 | 2,98 | 3,98 | 4,98 | 5,98 | 7,98 | 9,98  | 11,97 | 13,97 |
| <b>X = Tolerans H7</b> |      |      |      |      |      |      |       |       |       |



## Skärdata, brotschar

| Material                         | Vc obelagda  | Matning f mm/varv |      |      |      |      |
|----------------------------------|--------------|-------------------|------|------|------|------|
|                                  | m/min        | Ø 2               | Ø 6  | Ø 10 | Ø 15 | Ø 20 |
| <b>Olegerat stål &lt; Hb 250</b> | <b>15-22</b> | 0,15              | 0,15 | 0,25 | 0,25 | 0,30 |
| <b>Olegerat stål &gt; Hb 250</b> | <b>12-17</b> | 0,10              | 0,12 | 0,18 | 0,18 | 0,25 |
| <b>Legerat stål &lt; Hb 350</b>  | <b>7-10</b>  | 0,08              | 0,10 | 0,18 | 0,15 | 0,22 |
| <b>Legerat stål &gt; Hb 350</b>  | <b>5-7</b>   | 0,08              | 0,09 | 0,15 | 0,20 | 0,25 |
| <b>Rostfritt stål</b>            | <b>3-5</b>   | 0,07              | 0,10 | 0,12 | 0,15 | 0,20 |
| <b>Inconel, Titan, Waspaloy</b>  | <b>2-3</b>   | 0,07              | 0,10 | 0,12 | 0,15 | 0,20 |
| <b>Gjutjärn &lt; 180 Hb</b>      | <b>6-15</b>  | 0,10              | 0,12 | 0,20 | 0,20 | 0,25 |
| <b>Gjutjärn &gt; 180 Hb</b>      | <b>4-5</b>   | 0,07              | 0,10 | 0,15 | 0,18 | 0,20 |
| <b>Koppar</b>                    | <b>12-20</b> | 0,12              | 0,18 | 0,20 | 0,25 | 0,30 |
| <b>Mässing</b>                   | <b>20-30</b> | 0,20              | 0,22 | 0,30 | 0,35 | 0,40 |
| <b>Brons</b>                     | <b>12-17</b> | 0,15              | 0,18 | 0,22 | 0,35 | 0,37 |
| <b>Aluminium</b>                 | <b>25-35</b> | 0,15              | 0,18 | 0,25 | 0,30 | 0,35 |
| <b>Borr diameter</b>             |              | 1,85              | 5,8  | 9,7  | 14,6 | 19,6 |
|                                  |              | 1,90              | 5,85 | 9,8  | 14,7 | 19,7 |

| Typ                           | Sida    | magafor   |
|-------------------------------|---------|---|
| Brotschar 1/100 mm            | 4       |     |
| Brotschar H7                  | 5       |     |
| Brotschar H7 Långa            | 6       |     |
| Brotschar H7 Extra långa      | 7       |     |
| Handbrotschar H7              | 8       |     |
| Koniska brotschar 1:50        | 9       |     |
| Koniska brotschar 1:20 & 1:10 | 10      |     |
| Brotschsatser                 | 11      | <b>Brotschsatser</b>  |
| Försänkare, med hål           | 12 - 13 |   |
| Försänkare, 1-skär            | 14 - 15 |   |
| Försänkare, 3-skär            | 16 -    |   |
|                               | 17      |   |
| Handförsänkare & satser       | 18      |   |
| Skärdata försänkare           | 19      | <b>Skärdata försänkare</b>  |
| Tappförsänkare 180°           | 20      |   |
| Tappförsänkare 90°            | 21      |   |
| Specialbrotschar              | 22      |  |



| D<br>0,01 mm | L   | l1 | l2  | d2  |
|--------------|-----|----|-----|-----|
| 0,70-0,79    | 33  | 7  | 10  | D   |
| 0,80-1,05    | 38  | 12 | 14  | D   |
| 1,06-1,44    | 40  | 15 | 24  | D   |
| 1,45-1,79    | 43  | 18 | 26  | D   |
| 1,80-2,36    | 49  | 19 | 31  | D   |
| 2,37-3,75    | 57  | 20 | 38  | D   |
| 3,76-4,25    | 75  | 24 | 51  | 4   |
| 4,26-4,75    | 80  | 25 | 55  | 4,5 |
| 4,76-5,30    | 86  | 26 | 60  | 5   |
| 5,31-5,80    | 93  | 27 | 66  | 5,5 |
| 5,81-6,70    | 101 | 28 | 73  | 6   |
| 6,71-7,55    | 109 | 31 | 80  | 7   |
| 7,56-8,55    | 117 | 33 | 86  | 8   |
| 8,56-9,55    | 125 | 36 | 91  | 9   |
| 9,56-11,30   | 133 | 38 | 99  | 10  |
| 11,31-13,20  | 151 | 44 | 106 | 12  |

| Toleranser           |    |    |    |
|----------------------|----|----|----|
| D                    | d2 | l1 | L  |
| 0,60-3,00 : 0+0,003  | h8 | +1 | ±1 |
| 3,01-6,00 : 0+0,004  |    |    |    |
| 6,01-20,20 : 0+0,005 |    |    |    |

| Anta skär |           |
|-----------|-----------|
| Z         | Ø         |
| 4         | 1,0       |
| 6         | 1,5-12,5  |
| 8         | 12,7-20,0 |

| D<br>0,01 mm | L   | l1 | l2  | d2 |
|--------------|-----|----|-----|----|
| 13,97-14,05  | 160 | 47 | 110 | 14 |
| 14,10-14,20* | 162 | 50 | 112 | 14 |
| 14,97-15,05  | 162 | 50 | 112 | 14 |
| 15,10-15,20* | 170 | 52 | 117 | 16 |
| 15,97-16,05  | 170 | 52 | 117 | 16 |
| 16,10-16,20* | 175 | 54 | 122 | 16 |
| 16,97-17,05  | 175 | 54 | 122 | 16 |
| 17,97-18,05  | 182 | 56 | 129 | 16 |
| 18,10-18,20* | 189 | 58 | 136 | 16 |
| 18,97-19,05  | 189 | 58 | 136 | 16 |
| 19,97-20,05  | 195 | 60 | 142 | 16 |
| 20,10-20,20* | 195 | 60 | 142 | 16 |

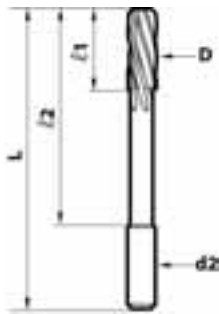
**Brotsch nr 600  
finns i solid hårdmetall (8600),  
från Ø 0,60 till Ø 13,99**

\* Endast 2 dimensioner



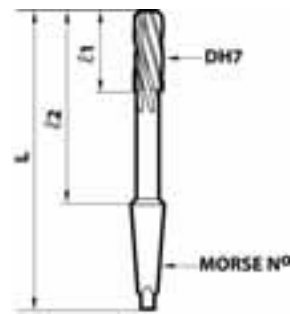
# Brotsch nr 650 & 660

**H7  
HSS-E  
5% Co  
10° spiral**



| Toleranser |    |    |    |
|------------|----|----|----|
| D          | d2 | l1 | L  |
| m5         | h8 | +1 | ±1 |

| Antal skär |          |
|------------|----------|
| Z          | Ø        |
| 4          | 1,0      |
| 6          | 1,5-12,5 |
| 8          | 12,7-20  |



| Toleranser |    |    |
|------------|----|----|
| D          | l1 | L  |
| m5         | +1 | ±1 |

| Antal skär |           |
|------------|-----------|
| Z          | Ø         |
| 6          | 4,0-12,5  |
| 8          | 12,7-25,0 |
| 10         | 25,4-38,1 |
| 12         | 39,0-50,0 |

| Nr 650    | DIN 212-B | NFE 66014 |     |         |
|-----------|-----------|-----------|-----|---------|
| D H7 mm   | L         | l1        | l2  | d2      |
| 1,0       | 38        | 12        | 15  | 1,0     |
| 1,5       | 43        | 18        | 26  | 1,5     |
| 2,0       | 49        | 19        | 31  | 2,0     |
| 2,5-3,0   | 57        | 20        | 38  | 2,5-3,0 |
| 3,5       | 57        | 20        | 38  | 3,5     |
| 4,0       | 75        | 24        | 51  | 4,0     |
| 4,5       | 80        | 25        | 55  | 4,5     |
| 5,0       | 86        | 26        | 60  | 5,0     |
| 5,5       | 93        | 27        | 66  | 5,5     |
| 6,0-6,5   | 101       | 28        | 73  | 6,0     |
| 7,0-7,5   | 109       | 31        | 80  | 7,0     |
| 8,0-8,5   | 117       | 33        | 86  | 8,0     |
| 9,0-9,5   | 125       | 36        | 91  | 9,0     |
| 10,0      | 133       | 38        | 99  | 10,0    |
| 10,5-11,0 | 133       | 38        | 99  | 10,0    |
| 11,5-12,0 | 151       | 44        | 106 | 12,0    |
| 12,5-13,0 | 151       | 44        | 106 | 12,0    |
| 13,5-14,0 | 160       | 47        | 110 | 14,0    |
| 14,5-15,0 | 162       | 50        | 112 | 14,0    |
| 15,5-16,0 | 170       | 52        | 117 | 16,0    |
| 16,5-17,0 | 175       | 54        | 122 | 16,0    |
| 17,5-18,0 | 182       | 56        | 129 | 16,0    |
| 18,5-19,0 | 189       | 58        | 136 | 16,0    |
| 19,5-20,0 | 195       | 60        | 142 | 16,0    |

| Nr 660   |             | DIN 208-B NFE 66015 |    |     |    |
|----------|-------------|---------------------|----|-----|----|
| D H7 Tum | D H7 mm     | L                   | l1 | l2  | Mk |
|          | 4,0-4,5     | 120                 | 24 | 54  | 1  |
|          | 5,0-5,5     | 125                 | 26 | 59  | 1  |
|          | 6,0         | 138                 | 28 | 72  | 1  |
|          | 6,5-7,0-7,5 | 150                 | 28 | 84  | 1  |
|          | 8,0         | 156                 | 33 | 90  | 1  |
|          | 8,5-9,0     | 162                 | 36 | 96  | 1  |
|          | 9,5-10,0    | 168                 | 38 | 102 | 1  |
|          | 10,5-11,0   | 175                 | 41 | 109 | 1  |
|          | 11,5        | 175                 | 41 | 109 | 1  |
|          | 12,0        | 182                 | 44 | 116 | 1  |
| 1/2"     | 12,5-13,0   | 182                 | 44 | 116 | 1  |
|          | 13,5-14,0   | 189                 | 47 | 123 | 1  |
|          | 14,5-15,0   | 204                 | 50 | 124 | 2  |
| 5/8"     | 15,5-16,0   | 210                 | 52 | 130 | 2  |
|          | 16,5-17,0   | 214                 | 54 | 134 | 2  |
|          | 17,5-18,0   | 219                 | 56 | 139 | 2  |
| 3/4"     | 18,5-19,0   | 223                 | 58 | 143 | 2  |
|          | 19,5-20,0   | 228                 | 60 | 148 | 2  |
|          | 20,5-21,0   | 232                 | 62 | 152 | 2  |
|          | 21,5-22,0   | 237                 | 64 | 157 | 2  |
|          | 22,5-23,0   | 241                 | 66 | 161 | 2  |
|          | 24-25       | 268                 | 68 | 168 | 3  |
| 1"       | 26          | 273                 | 70 | 173 | 3  |
|          | 27-28       | 277                 | 71 | 177 | 3  |
|          | 29-30       | 281                 | 73 | 181 | 3  |
|          | 31-32-33    | 317                 | 77 | 193 | 4  |
|          | 34-35       | 321                 | 78 | 197 | 4  |
|          | 36-37       | 325                 | 79 | 199 | 4  |
|          | 38-39-40    | 329                 | 81 | 205 | 4  |
|          | 41-42       | 333                 | 82 | 209 | 4  |
|          | 43-44-45    | 336                 | 83 | 212 | 4  |
|          | 46-47       | 340                 | 84 | 216 | 4  |
|          | 48-49-50    | 344                 | 86 | 220 | 4  |

**Brotsch nr 650  
finns i solid hårdmetall (MS 402),  
på lager från ø 1,0 till ø 16,0**



# Brotsch nr 680 & 685

Lång

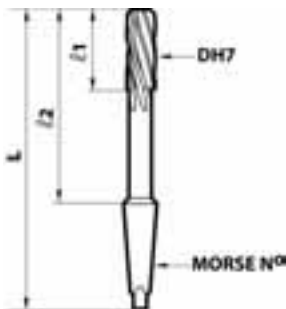
**H7**  
**HSS-E**  
**8% Co**  
**10° spiral**



| Nr 680  |     |    |     |     |
|---------|-----|----|-----|-----|
| D<br>H7 | L   | l1 | l2  | d2  |
| 1,5     | 55  | 12 | 35  | 1,5 |
| 2,0     | 65  | 14 | 45  | 2   |
| 2,5     | 75  | 14 | 55  | 2,5 |
| 3,0     | 90  | 14 | 70  | 3   |
| 3,5     | 90  | 14 | 70  | 3,5 |
| 4,0     | 105 | 16 | 80  | 4   |
| 4,5     | 105 | 16 | 80  | 4,5 |
| 5,0     | 115 | 16 | 90  | 5   |
| 5,5     | 115 | 16 | 90  | 5,5 |
| 6,0     | 130 | 16 | 100 | 6   |
| 6,5     | 130 | 16 | 100 | 6   |
| 7,0     | 140 | 18 | 110 | 7   |
| 7,5     | 140 | 18 | 110 | 7   |
| 8,0     | 160 | 18 | 130 | 8   |
| 8,5     | 160 | 18 | 130 | 8   |
| 9,0     | 175 | 18 | 140 | 9   |
| 9,5     | 175 | 18 | 140 | 9   |
| 10,0    | 190 | 20 | 150 | 10  |
| 11,0    | 200 | 20 | 160 | 10  |
| 12,0    | 210 | 20 | 160 | 12  |

| Toleranser |    |    |    |
|------------|----|----|----|
| D          | d2 | l1 | L  |
| m5         | h8 | +1 | ±1 |

| Antal skär |        |
|------------|--------|
| Z          | Ø      |
| 6          | 1,5-12 |
| 8          | 13-25  |
| 10         | 26-38  |
| 12         | 40-50  |



| Nr 685  |     |    |     |    |
|---------|-----|----|-----|----|
| D<br>H7 | L   | l1 | l2  | Mk |
| 13      | 245 | 22 | 180 | 1  |
| 14      | 245 | 22 | 180 | 1  |
| 15      | 260 | 22 | 180 | 2  |
| 16      | 260 | 25 | 180 | 2  |
| 18      | 260 | 25 | 180 | 2  |
| 20      | 270 | 28 | 190 | 2  |
| 22      | 280 | 28 | 200 | 2  |
| 24      | 300 | 32 | 200 | 3  |
| 25      | 320 | 32 | 220 | 3  |
| 26      | 330 | 32 | 230 | 3  |
| 28      | 340 | 32 | 240 | 3  |
| 30      | 350 | 36 | 250 | 3  |
| 32      | 375 | 36 | 250 | 4  |



# Brotsch nr 683 & 687

## Extra lång

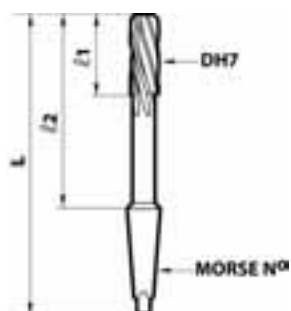
**H7**  
**HSS-E**  
**8% Co**  
**10° spiral**



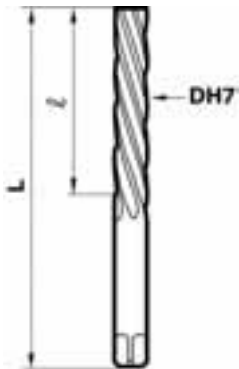
| Nr 683  |     |    |     |     |
|---------|-----|----|-----|-----|
| D<br>H7 | L   | l1 | l2  | d2  |
| 1,5     | 65  | 15 | 45  | 1,5 |
| 2,0     | 80  | 20 | 60  | 2   |
| 2,5     | 100 | 25 | 80  | 2,5 |
| 3,0     | 120 | 30 | 100 | 3   |
| 4,0     | 160 | 30 | 135 | 4   |
| 5,0     | 200 | 30 | 175 | 5   |
| 6,0     | 250 | 35 | 220 | 6   |
| 8,0     | 250 | 35 | 220 | 8   |
| 10,0    | 250 | 35 | 220 | 10  |

| Toleranser |    |    |    |
|------------|----|----|----|
| D          | d2 | l1 | L  |
| m5         | h8 | +1 | ±1 |

| Antal skär |       |
|------------|-------|
| Z          | Ø     |
| 6          | 2-12  |
| 8          | 14-25 |



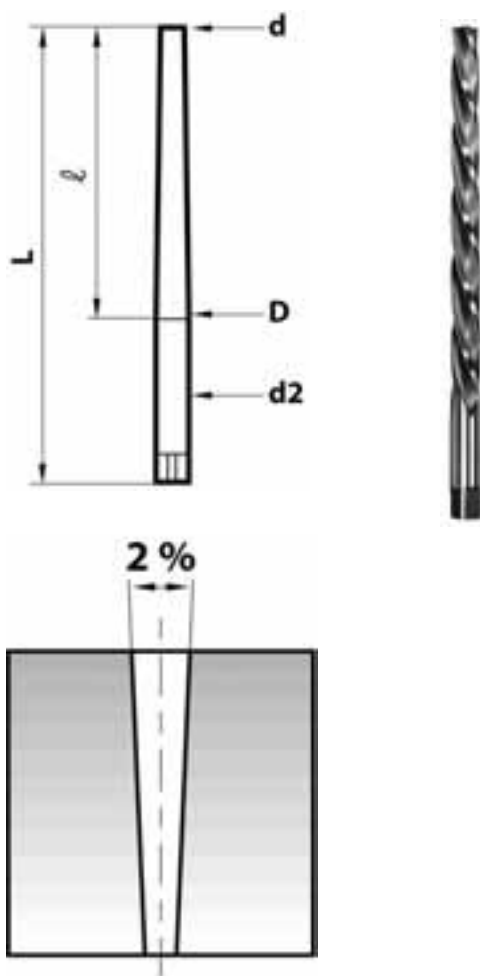
| Nr 687  |     |    |     |    |
|---------|-----|----|-----|----|
| D<br>H7 | L   | l1 | l2  | Mk |
| 12      | 315 | 40 | 250 | 1  |
| 14      | 315 | 40 | 250 | 1  |
| 16      | 350 | 45 | 270 | 2  |
| 18      | 350 | 45 | 270 | 2  |
| 20      | 350 | 45 | 270 | 2  |



| DIN 206-B NFE 66019 |     |     |
|---------------------|-----|-----|
| D<br>H7             | L   | l1  |
| 1,0*                | 38  | 14  |
| 1,5*                | 44  | 21  |
| 2,0                 | 50  | 25  |
| 2,5                 | 57  | 29  |
| 3,0                 | 57  | 31  |
| 3,5                 | 71  | 35  |
| 4,0                 | 76  | 38  |
| 4,5                 | 81  | 41  |
| 5,0                 | 87  | 44  |
| 5,5-6,0             | 93  | 47  |
| 6,5                 | 100 | 50  |
| 7,0-7,5             | 107 | 54  |
| 8,0-8,5             | 115 | 58  |
| 9,0-9,5             | 124 | 62  |
| 10,0-10,5           | 133 | 66  |
| 11,0-11,5           | 142 | 71  |
| 12,0                | 152 | 76  |
| 12,5-13,0           | 152 | 76  |
| 13,5-14             | 163 | 81  |
| 14,5-15             | 163 | 81  |
| 15,5-16             | 175 | 87  |
| 16,5-17             | 175 | 87  |
| 17,5-18             | 188 | 93  |
| 18,5-19             | 188 | 93  |
| 19,5-20             | 201 | 100 |
| * Utan fyrkant      |     |     |

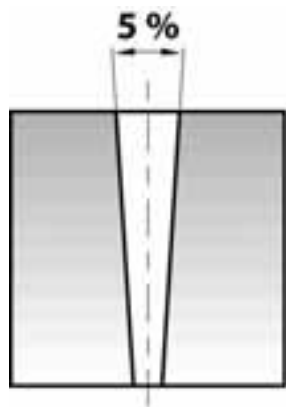
| Toleranser |    |    |
|------------|----|----|
| D          | l1 | L  |
| m5         | +1 | ±1 |

| Antal skär |           |
|------------|-----------|
| Z          | ∅         |
| 4          | 1,0-1,5   |
| 6          | 2,0-12,0  |
| 8          | 12,5-25,0 |

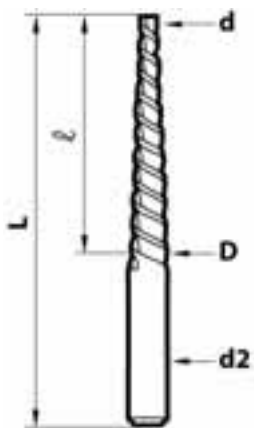


| DIN 9 NFE 66011 |      |      |     |     |      |
|-----------------|------|------|-----|-----|------|
| Ø Nominell      | d    | D    | L   | l   | d2   |
| 0,6             | 0,5  | 0,9  | 38  | 20  | 1,1  |
| 0,8             | 0,7  | 1,2  | 42  | 24  | 1,2  |
| 1,0             | 0,9  | 1,4  | 46  | 28  | 1,5  |
| 1,2             | 1,1  | 1,7  | 50  | 32  | 1,8  |
| 1,5             | 1,4  | 2,1  | 57  | 37  | 2,2  |
| 2,0             | 1,9  | 2,8  | 72  | 48  | 3,1  |
| 2,5             | 2,4  | 3,3  | 72  | 48  | 3,1  |
| 3               | 2,9  | 4,0  | 80  | 58  | 4    |
| 4               | 3,9  | 5,2  | 93  | 68  | 5    |
| 5               | 4,9  | 6,3  | 105 | 73  | 6,3  |
| 6               | 5,9  | 8,0  | 140 | 105 | 8    |
| 7               | 6,9  | 9,0  | 140 | 105 | 9    |
| 8               | 7,9  | 10,8 | 185 | 145 | 10   |
| 9               | 8,9  | 11,8 | 190 | 145 | 11,8 |
| 10              | 9,9  | 13,4 | 220 | 175 | 12,5 |
| 12              | 11,8 | 16,0 | 260 | 210 | 14   |
| 14              | 13,8 | 18,0 | 260 | 210 | 18   |
| 16              | 16,8 | 20,4 | 280 | 230 | 18   |
| 18              | 17,8 | 22,4 | 290 | 230 | 22,4 |
| 20              | 19,8 | 24,8 | 310 | 250 | 22,4 |
| 25              | 24,7 | 30,7 | 370 | 300 | 28   |

| Toleranser |        |        |     |     |
|------------|--------|--------|-----|-----|
| Konicitet  | D      | d      | L   | l   |
| ± 0,02%    | ± 0,05 | ± 0,05 | ± 1 | + 2 |

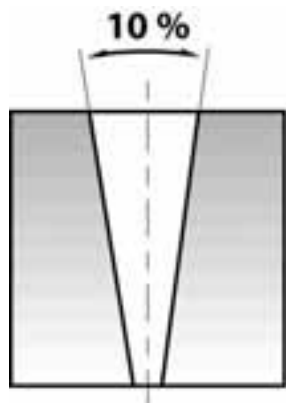


| Nr 740 | Konar 1:20 Konicitet 5% |     |     |    |
|--------|-------------------------|-----|-----|----|
| D      | d                       | L   | l   | d2 |
| 6      | 3                       | 110 | 60  | 6  |
| 8      | 4                       | 130 | 80  | 8  |
| 10     | 5                       | 155 | 100 | 10 |
| 12     | 6                       | 180 | 120 | 12 |
| 14     | 7                       | 200 | 140 | 14 |
| D      | d                       | L   | l   | Mk |
| 16     | 8                       | 260 | 160 | 2  |



| Toleranser |        |        |     |     |    |
|------------|--------|--------|-----|-----|----|
| Konicitet  | D      | d      | L   | l   | d2 |
| ± 0,02%    | ± 0,05 | ± 0,05 | ± 1 | + 2 | h8 |

| Antal skär |      |
|------------|------|
| Z          | Ø    |
| 2          | 3-14 |
| 3          | 15-  |



| Nr 760 | Konar 1:10 Konicitet 10% |     |     |    |
|--------|--------------------------|-----|-----|----|
| D      | d                        | L   | l   | d2 |
| 6      | 2                        | 90  | 40  | 6  |
| 8      | 3                        | 100 | 50  | 8  |
| 10     | 4                        | 115 | 60  | 10 |
| 12     | 5                        | 130 | 70  | 12 |
| 14     | 6                        | 140 | 80  | 14 |
| D      | d                        | L   | l   | Mk |
| 16     | 7                        | 190 | 90  | 2  |
| 18     | 8                        | 200 | 100 | 2  |



| <b>Sats nr 600/7</b>                                       |       |       |       |
|--|-------|-------|-------|
| 24 st dimensioner  |       |       |       |
| -0,02  | 0     | +0,01 | +0,02 |
| 2,98   | 3,00  | 3,01  | 3,02  |
| 3,98   | 4,00  | 4,01  | 4,02  |
| 4,98   | 5,00  | 5,01  | 5,02  |
| 5,98   | 6,00  | 6,01  | 6,02  |
| 7,98   | 8,00  | 8,01  | 8,02  |
| 9,98   | 10,00 | 10,01 | 10,02 |
| För tolerans<br>F7 - G7 - H6 - H7 - H8 - H9 - N7 - P7 - R7 |       |       |       |



| Sats nr      | Antal | Innehåller   |
|--------------|-------|--|
| <b>600/6</b> | 91 st | Från 1,0 - 10,0 mm, i steg om 0,1 mm.  |
| <b>600/8</b> | 96 st | I steg om 0,01 mm<br>0,97 - 1,02 / 1,47 - 1,52 / 1,97 - 2,02 / 2,47 - 2,52<br>2,97 - 3,02 / 3,47 - 3,52 / 3,97 - 4,02 / 4,47 - 4,52<br>4,97 - 5,02 / 5,47 - 5,52 / 5,97 - 6,02 / 6,47 - 6,52<br>6,97 - 7,02 / 7,97 - 8,02 / 8,97 - 9,02 / 9,97 - 10,02 |

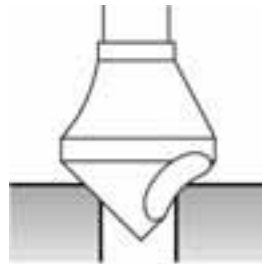
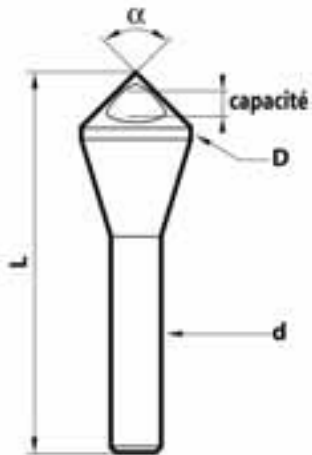


**Sats 650 H7**  
Innehåller 1 st av vardera  
Ø 3-4-5-6-8-10

**Sats 670 Handbrotsch H7**  
Innehåller 1 st av vardera  
Ø 3-4-5-6-8-10

**Satserna finns i  
solid hårdmetall (ej sats nr 670).**

**Special  
aluminium**

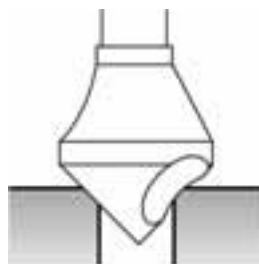


| Vinkel              | D  | Kapacitet mm | d  | L  |
|---------------------|----|--------------|----|----|
| <b>60°<br/>412</b>  | 10 | 5-9          | 6  | 49 |
|                     | 15 | 8-14         | 8  | 60 |
|                     | 20 | 10-18        | 10 | 72 |
|                     | 25 | 12-23        | 12 | 87 |
|                     | 30 | 15-28        | 12 | 93 |
| <b>82°<br/>414</b>  | 10 | 4-9          | 6  | 46 |
|                     | 15 | 6-14         | 8  | 56 |
|                     | 20 | 8-18         | 10 | 65 |
|                     | 25 | 10-23        | 12 | 78 |
|                     | 30 | 12-28        | 12 | 88 |
| <b>120°<br/>413</b> | 10 | 4-9          | 6  | 43 |
|                     | 15 | 5-14         | 8  | 52 |
|                     | 20 | 6-18         | 10 | 61 |



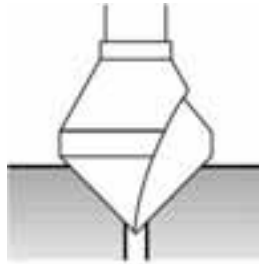
| Vinkel     | Sats nr  | Innehåller       |
|------------|----------|------------------|
| <b>60°</b> | 412      | Ø 10-15-20-25-30 |
| <b>82°</b> | 414      | Ø 10-15-20-25-30 |
| <b>90°</b> | 411      | Ø 10-15-20-25-30 |
|            | 4811 TiN | Ø 10-15-20-25-30 |
|            | 411/2    | Ø 10-15-20-28-35 |

**Special  
aluminium**

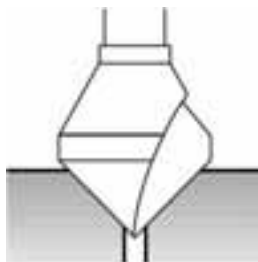


| Vinkel                                | D     | Kapacitet<br>mm | d    | L   | 4811<br>TiN |
|---------------------------------------|-------|-----------------|------|-----|-------------|
| <b>90°<br/>411<br/>(4811)<br/>TiN</b> | 6,35  | 2-5             | 6,35 | 45  |             |
|                                       | 10,0  | 2-5             | 6    | 45  |             |
|                                       | 10,0  | 4-9             | 6    | 45  | X           |
|                                       | 15,0  | 6-14            | 8    | 55  | X           |
|                                       | 20,0  | 8-18            | 10   | 65  | X           |
|                                       | 25,0  | 10-23           | 12   | 78  | X           |
|                                       | 28,0  | 11-26           | 12   | 86  |             |
|                                       | 30,0  | 12-28           | 12   | 88  |             |
|                                       | 35,0  | 14-33           | 16*  | 103 |             |
|                                       | 35    | 14-33           | Mk 2 | 125 |             |
|                                       | 40    | 16-38           | Mk 2 | 145 |             |
|                                       | 50    | 20-48           | Mk 3 | 168 |             |
| 63                                    | 26-60 | Mk 3            | 182  |     |             |

| Toleranser |        |    |    |
|------------|--------|----|----|
| D          | Vinkel | d  | L  |
| +0,3       | -1°    | h9 | ±1 |



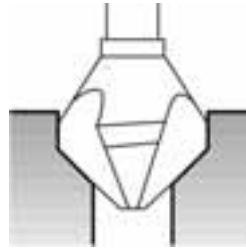
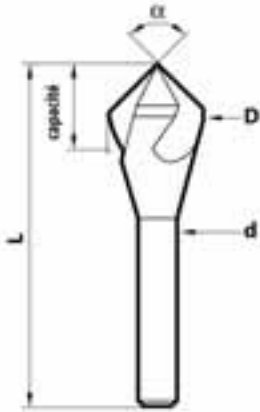
| Vinkel             | D     | Kapacitet mm | d    | L   |  |
|--------------------|-------|--------------|------|-----|--|
| <b>30°<br/>426</b> | 10    | 5,5-10       | 6    | 49  |  |
|                    | 15    | 8,5-15       | 8    | 61  |  |
|                    | 20    | 11,0-20      | 10   | 72  |  |
|                    | 25    | 13,5-25      | 12   | 87  |  |
| <b>45°<br/>427</b> | 6     | 2,0-6        | 6    | 43  |  |
|                    | 10    | 3,0-10       | 6    | 49  |  |
|                    | 15    | 4,5-15       | 8    | 61  |  |
|                    | 20    | 6,0-20       | 10   | 72  |  |
| <b>60°<br/>422</b> | 6     | 1-6          | 6    | 43  |  |
|                    | 10    | 1-10         | 6    | 49  |  |
|                    | 12    | 2-12         | 8    | 53  |  |
|                    | 15    | 2-15         | 8    | 60  |  |
|                    | 20    | 2-20         | 10   | 72  |  |
|                    | 25    | 3-25         | 12   | 87  |  |
|                    | 25    | 4-25         | Mk 1 | 106 |  |
|                    | 30    | 3-30         | 12   | 93  |  |
|                    | 30    | 5-30         | Mk 2 | 125 |  |
|                    | 35    | 5-35         | Mk 2 | 144 |  |
|                    | 40    | 8-40         | Mk 3 | 172 |  |
| 50                 | 10-50 | Mk 3         | 183  |     |  |
| 80                 | 10-80 | Mk 4         | 239  |     |  |
| <b>82°<br/>424</b> | 6     | 1-6          | 6    | 41  |  |
|                    | 10    | 1-10         | 6    | 46  |  |
|                    | 12    | 2-12         | 8    | 50  |  |
|                    | 15    | 2-15         | 8    | 56  |  |
|                    | 20    | 2-20         | 10   | 65  |  |
|                    | 25    | 3-25         | 12   | 78  |  |
|                    | 30    | 3-30         | 12   | 88  |  |



| Vinkel                   | D     | Kapacitet mm | d    | L   | 4821 TiN |
|--------------------------|-------|--------------|------|-----|----------|
| 90°<br>421<br>(4821) TiN | 4     | 1-4          | 4    | 40  |          |
|                          | 5     | 1-5          | 5    | 40  |          |
|                          | 6     | 1-6          | 6    | 40  |          |
|                          | 8     | 1-8          | 6    | 40  |          |
|                          | 10    | 1-10         | 6    | 45  | X        |
|                          | 12    | 2-12         | 8    | 50  |          |
|                          | 15    | 2-15         | 8    | 55  | X        |
|                          | 20    | 2-20         | 10   | 65  | X        |
|                          | 25    | 3-25         | 12   | 78  | X        |
|                          | 30    | 3-30         | 12   | 88  | X        |
|                          | 35    | 4-35         | 16*  | 103 |          |
|                          | 35    | 5-35         | Mk 2 | 133 |          |
|                          | 40    | 5-40         | 16*  | 118 |          |
|                          | 40    | 5-40         | Mk 2 | 145 |          |
|                          | 50    | 12-50        | 16*  | 126 |          |
|                          | 50    | 12-50        | Mk 3 | 168 |          |
| 63                       | 12-63 | Mk 3         | 182  |     |          |
| 80                       | 14-80 | Mk 4         | 229  |     |          |
| 100°<br>425              | 10    | 1-10         | 6    | 44  |          |
|                          | 12    | 2-12         | 8    | 48  |          |
| 120°<br>423              | 10    | 1-10         | 6    | 43  |          |
|                          | 12    | 2-12         | 8    | 46  |          |
|                          | 15    | 2-15         | 8    | 52  |          |
|                          | 20    | 2-20         | 10   | 61  |          |

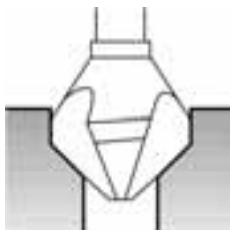
\* = 3 slipade plan på skftet

| Toleranser |        |    |    |
|------------|--------|----|----|
| D          | Vinkel | d  | L  |
| +0,3       | -1°    | h9 | ±1 |



| Vinkel              | D      | Kapacitet mm | d    | L   |
|---------------------|--------|--------------|------|-----|
| <b>30°<br/>439</b>  | 6,3    | 2-6,3        | 5    | 50  |
|                     | 12,4   | 3-12,4       | 8    | 65  |
|                     | 16,5   | 4-16,5       | 10   | 76  |
|                     | 25,0   | 6-12,5       | 10   | 90  |
| <b>60°<br/>432</b>  | 6,3    | 1,5-6,3      | 5    | 47  |
|                     | 8,3    | 2-8,3        | 6    | 52  |
|                     | 10,4   | 2,5-10,4     | 6    | 53  |
|                     | 12,4   | 3-12,4       | 8    | 60  |
|                     | 16,5   | 4-16,5       | 10   | 65  |
|                     | 20,5   | 4-20,5       | 10   | 69  |
|                     | 25,0   | 5-25,0       | 10   | 75  |
|                     | 31,0   | 6-31,0       | 12   | 81  |
|                     | 31     | 6-31         | Mk 2 | 141 |
|                     | 40     | 8-40         | Mk 3 | 172 |
|                     | 50     | 10-50        | Mk 3 | 183 |
| 63                  | 10-63  | Mk 3         | 201  |     |
| 80                  | 14-80  | Mk 4         | 253  |     |
| <b>82°<br/>434</b>  | 6,3    | 1,5-6,3      | 5    | 45  |
|                     | 8,3    | 2,5-8,3      | 6    | 50  |
|                     | 10,4   | 2,5-10,4     | 6    | 50  |
|                     | 12,4   | 3-12,4       | 8    | 56  |
|                     | 16,5   | 4-16,5       | 10   | 61  |
|                     | 20,5   | 4-20,5       | 10   | 64  |
|                     | 25,0   | 5-25,0       | 10   | 68  |
| 31                  | 6-31,0 | 12           | 73   |     |
| <b>100°<br/>435</b> | 10,4   | 2,5-10,4     | 6    | 49  |
|                     | 16,5   | 4-16,5       | 10   | 59  |
|                     | 20,5   | 4-20,5       | 10   | 62  |
|                     | 25,0   | 5-25,0       | 10   | 65  |
|                     | 31,0   | 6-31,0       | 12   | 68  |
| <b>120°<br/>433</b> | 10,4   | 2,5-10,4     | 6    | 48  |
|                     | 16,5   | 4-16,5       | 10   | 57  |
|                     | 20,5   | 4-20,5       | 10   | 59  |
|                     | 25,0   | 5-25,0       | 10   | 62  |
|                     | 31,0   | 6-31,0       | 12   | 65  |

| Toleranser |        |    |    |
|------------|--------|----|----|
| D          | Vinkel | d  | L  |
| ± 0,05     | -1°    | h9 | ±1 |



| Vinkel  | D                                    | Kapacitet mm | d    | L   | 4831 TiN        | 4936 Futura |
|---|--------------------------------------|--------------|------|-----|-----------------|-------------|
| <b>90°</b><br><b>431</b><br><br><b>(4831)</b><br><b>TiN</b><br><br><b>(4936)</b><br><b>Futura</b><br><b>8% Co</b> | 4,3                                  | 1,3-4,3      | 4    | 40  |                 |             |
|   | 5,0                                  | 1,5-5,0      | 4    | 40  | X               |             |
|   | 5,3                                  | 1,5-5,3      | 4    | 40  |                 |             |
|   | 6,3                                  | 1,5-6,3      | 5    | 45  | X               | X           |
|   | 7,3                                  | 1,8-7,3      | 6    | 50  |                 |             |
|   | 8,3                                  | 2,0-8,3      | 6    | 50  | X               | X           |
|   | 9,4                                  | 2,2-9,4      | 6    | 50  |                 |             |
|   | 10,4                                 | 2,5-10,4     | 6    | 50  | X               | X           |
|   | 12,4                                 | 2,8-12,4     | 8    | 56  | X               |             |
|   | 14,4                                 | 2,9-14,4     | 8    | 56  |                 |             |
|   | 16,5                                 | 3,2-16,5     | 10   | 60  | X               | X           |
|   | 20,5                                 | 3,5-20,5     | 10   | 63  | X               | X           |
|   | 20,5                                 | 4-20,5       | Mk 1 | 94  |                 |             |
|   | 25,0                                 | 3,8-25,0     | 10   | 67  | X               | X           |
|   | 25,0                                 | 6-25         | Mk 2 | 105 |                 |             |
|   | 31,0                                 | 4,2-31,0     | 12   | 71  | X               |             |
|   | 31,0                                 | 6-31         | Mk 2 | 131 |                 |             |
|   | 35                                   | 7-35         | Mk 2 | 133 |                 |             |
|   | 40                                   | 8-40         | Mk 3 | 160 |                 |             |
|   | 50                                   | 10-50        | Mk 3 | 168 |                 |             |
| 63  | 10-63                                | Mk 3         | 182  |     |                 |             |
| 80  | 14-80                                | Mk 4         | 229  |     |                 |             |
| 125   | 50-125                               | Mk 4         | 192  |     |                 |             |
| <b>90°</b><br><b>437</b><br><br><b>(4837)</b><br><b>TiN</b>   | <b>Med 3 slipade plan på skaftet</b> |              |      |     | <b>4837 TiN</b> |             |
|   | 10,4                                 | 2,5-10,4     | 6    | 50  |                 |             |
|   | 12,4                                 | 2,8-12,4     | 8    | 56  | X               |             |
|   | 16,5                                 | 3,2-16,5     | 10   | 60  | X               |             |
|   | 20,5                                 | 3,5-20,5     | 10   | 63  | X               |             |
|   | 25,0                                 | 3,8-25,0     | 10   | 67  | X               |             |
|   | 31,0                                 | 4,2-31,0     | 12   | 71  | X               |             |
|   | 35,0                                 | 7,0-35,0     | 16   | 103 | X               |             |
|   | 40,0                                 | 8,0-40,0     | 16   | 118 | X               |             |
|   | 50,0                                 | 10,0-50,0    | 16   | 126 | X               |             |

Försänkare 3-skär finns även i solid hårdmetall



# Handförsänkare, 3-skär & satser

**HSS-E  
5% Co**



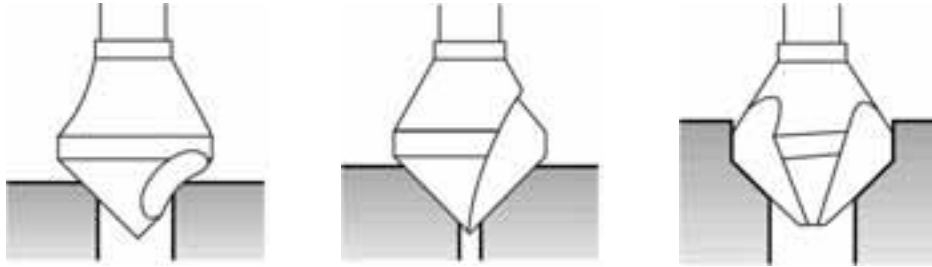
| Handförsänkare     |      |              |
|--------------------|------|--------------|
| Vinkel             | D    | Kapacitet mm |
| <b>90°<br/>430</b> | 12,4 | 3-12,4       |
|                    | 16,5 | 4-16,5       |
|                    | 20,5 | 4-20,5       |
|                    | 25,0 | 5-25,0       |

| Satser med försänkare 1-skär |            |                   |
|------------------------------|------------|-------------------|
| Vinkel                       | Sats nr    | Innehåller        |
| <b>45°</b>                   | 427        | Ø 10-15-20-25-30  |
| <b>60°</b>                   | 422        |                   |
| <b>82°</b>                   | 424        |                   |
|                              | 424 Femset | Ø 6-10-15-20-25   |
| <b>90°</b>                   | 421 Femset |                   |
|                              | 421/2      | Ø 6-8-10-12-15-20 |
|                              | 421        | Ø 10-15-20-25-30  |



| Satser med försänkare 3-skär        |   |                                  |
|-------------------------------------|---|----------------------------------|
| Vinkel                              | Sats nr                                     | Innehåller                       |
| <b>60°</b>                          | 432 Femset                                  | Ø 6,3-10,4-16,5-20,5-25          |
|                                     | 432   |                                  |
| <b>82°</b>                          | 434   | Ø 10,4-16,5-20,5-25-31           |
| <b>90°</b>                          | 431   |                                  |
|                                     | 4831 TiN                                    |                                  |
|                                     | 431 Femset                                  | Ø 6,3-10,4-16,5-20,5-25          |
|                                     | 431/2                                       | Ø 6,3-8,3-10,4-12,4-16,5-20,5    |
|                                     | 4831/2 TiN                                  |                                  |
|                                     | 4936/2 Futura                               |                                  |
|                                     | 431/3*                                      | Ø 6,3-8,3-10,4-12,4-16,5-20,5-25 |
| 431/4*                              | Ø 4,3-5,3-6,3-8,3-10,4-12,4-16,5-20,5-25-31 |                                  |
| * I sats ingår även handtag Nr 4001 |   |                                  |
|                                     | 4001  | Handtag med chuck 1-13mm         |

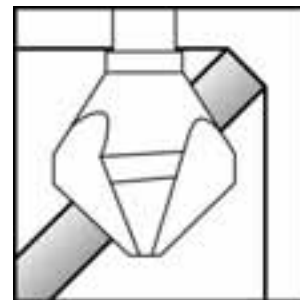
Vc = m/min  
 Vf = matning-  
 mm/min  
 n = varv / min



| Material              | Vc     | Vf<br>n | Ø            | Ø           | Ø           | Vc     | Vf<br>n | Ø            | Ø           | Ø           | Vc    | Vf<br>n | Ø           | Ø          | Ø          | 1a<br>val   | 2a<br>val    | 3e<br>val   |
|-----------------------|--------|---------|--------------|-------------|-------------|--------|---------|--------------|-------------|-------------|-------|---------|-------------|------------|------------|-------------|--------------|-------------|
|                       |        |         | 10           | 20          | 30          |        |         | 10           | 20          | 30          |       |         | 10          | 20         | 30         |             |              |             |
| Stål <180 Hb          | 35-45  | Vf<br>n | 275<br>1250  | 138<br>625  | 90<br>430   | 35-45  | Vf<br>n | 275<br>1250  | 138<br>625  | 90<br>420   | 17-22 | Vf<br>n | 210<br>620  | 100<br>310 | 75<br>210  | 421         | 411          | 431         |
| Stål < 250 Hb         | 20-30  | Vf<br>n | 136<br>800   | 68<br>400   | 45<br>560   | 20-30  | Vf<br>n | 136<br>800   | 68<br>400   | 45<br>260   | 10-15 | Vf<br>n | 150<br>480  | 76<br>240  | 50<br>160  | 411-421-431 |              |             |
| Stål < 300 Hb         | 15-20  | Vf<br>n | 68<br>520    | 34<br>260   | 23<br>180   | 15-20  | Vf<br>n | 68<br>520    | 34<br>260   | 23<br>180   | 8-12  | Vf<br>n | 100<br>380  | 50<br>190  | 36<br>130  | 431<br>4831 | 411<br>4811  | 421<br>4821 |
| Rostfritt             | 12-15  | Vf<br>n | 45<br>380    | 25<br>200   | 17<br>140   | 12-15  | Vf<br>n | 45<br>380    | 25<br>200   | 17<br>140   | 6-8   | Vf<br>n | 32<br>320   | 16<br>160  | 11<br>110  | 4936        | 4811<br>4821 | 4831        |
| Inconel,<br>Nimonic   |        |         |              |             |             |        |         |              |             |             | 4-6   | Vf<br>n | 15<br>180   | 8<br>90    | 5<br>65    | 4936        | 431          |             |
| Gjutjärn              |        |         |              |             |             | 20-40  | Vf<br>n | 150<br>1200  | 130<br>550  | 100<br>430  | 15-25 | Vf<br>n | 80<br>630   | 60<br>320  | 50<br>210  | 421         | 431          |             |
| Aluminium             | 50-60  | Vf<br>n | 400<br>1600  | 200<br>800  | 150<br>600  | 50-60  | Vf<br>n | 400<br>1600  | 200<br>800  | 150<br>600  | 35-45 | Vf<br>n | 375<br>1250 | 190<br>625 | 130<br>430 | 4811<br>411 | 4821<br>421  |             |
| Mässing, Brons        |        |         |              |             |             | 30-40  | Vf<br>n | 300<br>1200  | 150<br>600  | 90<br>370   | 20-30 | Vf<br>n | 240<br>800  | 120<br>400 | 80<br>260  | 421         |              |             |
| Koppar                | 20-30  | Vf<br>n | 200<br>800   | 100<br>400  | 65<br>260   | 20-30  | Vf<br>n | 200<br>800   | 100<br>400  | 65<br>260   |       |         |             |            |            | 411         | 421          |             |
| Laminat               |        |         |              |             |             | 50-100 | Vf<br>n | 1600<br>3200 | 800<br>1600 | 500<br>1000 | 35-70 | Vf<br>n | 720<br>1600 | 360<br>800 | 240<br>530 | 4821        |              |             |
| Nylon, PVC<br>- Plast | 50-100 | Vf<br>n | 1600<br>3200 | 800<br>1600 | 500<br>1000 | 50-100 | Vf<br>n | 1600<br>3200 | 800<br>1600 | 500<br>1000 | 35-70 | Vf<br>n | 720<br>1600 | 360<br>800 | 240<br>530 | 411         | 421          |             |

| Material            | Vc    | Vf<br>n | Ø<br>10    | Ø<br>20    | Ø<br>30   | 1a val       |
|---------------------|-------|---------|------------|------------|-----------|--------------|
| Stål <180 Hb        | 17-22 | Vf<br>n | 210<br>620 | 100<br>310 | 75<br>210 | 431          |
| Stål < 250 Hb       | 10-15 | Vf<br>n | 150<br>480 | 76<br>240  | 50<br>160 | 431<br>4831  |
| Stål < 300 Hb       | 8-12  | Vf<br>n | 100<br>380 | 50<br>190  | 36<br>130 | 4831<br>4936 |
| Rostfritt           | 6-8   | Vf<br>n | 32<br>320  | 16<br>160  | 11<br>110 | 4936         |
| Inconel,<br>Nimonic | 4-6   | Vf<br>n | 15<br>180  | 8<br>90    | 5<br>65   | 4936         |
| Gjutjärn            | 15-25 | Vf<br>n | 80<br>630  | 60<br>320  | 50<br>210 | 431          |
| Aluminium           | 25-30 | Vf<br>n | 255<br>850 | 127<br>420 | 85<br>280 | 431          |
| Mässing, Brons      | 12-20 | Vf<br>n | 137<br>550 | 56<br>225  | 45<br>180 | 431          |
| Koppar              | 10-15 | Vf<br>n | 95<br>380  | 50<br>190  | 35<br>130 | 431          |

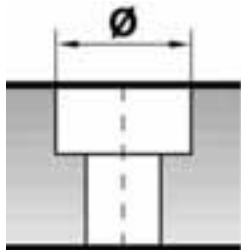
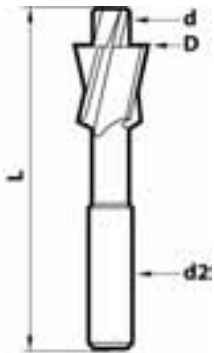
## Skärdata, fasning





# Tappförsänkare Nr 31 & 33

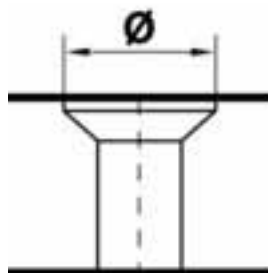
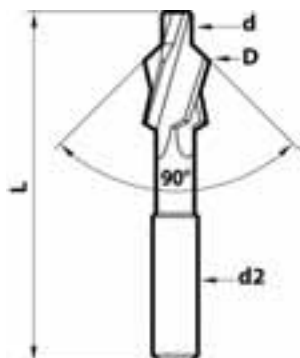
**180°  
HSS-E  
5% Co**



| Toleranser |    |    |        |
|------------|----|----|--------|
| D          | d  | L  | Vinkel |
| z9         | e8 | ±1 | ±1°    |



| Tapp försänkare | För Skruv Ø | Mkt fin   | Fin      | Medium    | Före gänga | För skruv | L     | d2   |
|-----------------|-------------|-----------|----------|-----------|------------|-----------|-------|------|
| <b>31</b>       | M 1,5-M 1,6 | 3,2x1,5   |          |           |            |           | 45-56 | D    |
|                 | M 2,0       | 4,2x2,0   | 4,3x2,2  | 4,3x2,4   |            |           | 56    | D    |
|                 | M 2,3       |           | 5,0x2,7  | 5,0x2,9   |            |           | 56    | D    |
|                 | M 2,5-M 2,6 | 5,2x2,5   |          | 5,5x3,0   |            |           | 56-71 | D    |
|                 | M 3,0       | 5,7x3     | 6,0x3,2  |           |            |           | 71    | D    |
|                 | M 3,0       | 6,2x3     |          | 6,5x3,4   |            | 6,2x3,0   | 71    | D    |
|                 | M 3,5       |           | 6,5x3,7  | 6,5x3,9   |            |           | 71    | D    |
|                 |             |           |          |           |            | 7,2x3,5   | 71    | D    |
|                 | M 4,0       | 7,2x4     | 7,4x4,3  |           |            |           | 71    | D    |
|                 | M 4,0       |           | 8,0x4,3  | 8,0x4,5   |            | 8,2x4,0   | 71    | D    |
|                 |             |           | 8,2x5    |           |            | 9,2x4,5   | 71    | D    |
|                 | M 5,0       | 8,7x5     | 9,4x5,3  |           |            |           | 71-80 | D    |
|                 | M 5,0       | 9,2x5     | 10,0x5,3 | 10,0x5,5  |            | 10,2x5,0  | 80    | D    |
|                 | M 6,0       | 10,2x6    | 10,4x6,4 |           |            |           | 80    | D    |
|                 | M 6,0       |           | 11,0x6,4 | 11,0x6,6  | 11,0x5,0   | 12,2x6,0  | 80    | D    |
|                 |             |           | 10,2x7   |           |            |           | 80    | D    |
|                 |             |           | 12,2x7   |           |            |           | 80    | D    |
|                 | M 8,0       | 13,2x8    | 13,5x8,4 |           |            |           | 100   | 12,5 |
|                 | M 8,0       | 14,2x8    | 15,0x8,4 | 15,0x9,0  | 15,0x6,8   | 16,2x8,0  | 100   | 12,5 |
|                 |             |           |          |           |            |           | 100   | 12,5 |
| M 10,0          | 16,2x10     | 16,5x10,5 |          |           |            | 100       | 12,5  |      |
| M 10,0          | 17,2x10     | 18,0x10,5 | 18,0x11  | 18,0x8,5  | 20,2x10,0  | 100       | 12,5  |      |
|                 |             | 18,2x10   |          |           |            | 100       | 12,5  |      |
| M 12,0          | 18,2x12     | 19,0x13   |          |           |            | 100       | 12,5  |      |
| M 12,0          | 19,2x12     | 20,0x13   | 20,0x14  | 20,0x10,2 |            | 100       | 12,5  |      |
| <b>33</b>       | M 10        |           |          | 18x11     |            |           | 150   | Mk 2 |
|                 | M 12        | 21,2x12   | 20x13    | 20x14     |            |           | 150   | Mk 2 |
|                 |             |           | 22,2x14  |           | 22,2x16    |           | 160   | Mk 2 |
|                 | M 14        |           | 24x15    | 24x16     |            |           | 160   | Mk 2 |
|                 | M 16        |           | 26x17    | 26x18     |            |           | 190   | Mk 3 |
|                 |             |           |          | 28x19     |            |           | 190   | Mk 3 |
|                 | M 20        |           | 33x21    |           |            |           | 190   | Mk 3 |



| Tapp försänkare | För skruv Ø | Mkt fin | Fin       | L   | d2   |
|-----------------|-------------|---------|-----------|-----|------|
| <b>32</b>       | M 1,4       | 3,2x1,5 | 2,8x1,5   | 45  | D    |
|                 | M 3,0       | 6,2x3,0 |           | 71  | D    |
|                 | M 3,0       |         |           | 71  | D    |
|                 | M 4,0       |         | 8,0x4,3   | 71  | D    |
|                 | M 5,0       |         | 10,0x5,3  | 80  | D    |
|                 | M 6,0       |         | 11,5x6,4  | 80  | D    |
|                 | M 8,0       |         | 15,0x8,4  | 100 | 12,5 |
|                 | M 10,0      |         | 19,0x10,5 | 100 | 12,5 |



| Vinkel      | Sats Nr | Innehåller 1 st av vardera                       |
|-------------|---------|--|
| <b>180°</b> | 310/1   | 6x3,2-8x4,3-10x5,3-11x6,4-15x8,4-18x10,5         |
|             | 310/2   | 6x3,4-8x4,5-10x5,5-11x6,6-15x9-18x11             |
| <b>90°</b>  | 320/2   | 6,5x3,4-8,6x4,5-10,4x5,5-12,4x6,6-16,4x9-20,4x11 |

Special brotsch ? Ex.  $\varnothing$  22 F9

Extra lång brotsch ? Ex.  $\varnothing$  25 H7 450 mm lång

Slipas från fabrik. Leveranstid 7 - 10 dagar.



Företag:

Namn:

Adress:

## Vänligen fyll i nödvändig information

|                          |   |
|--------------------------|---|
| <input type="checkbox"/> | Bottenhål                                       |
| <input type="checkbox"/> | Genomgående hål                                 |
|                          | Antal hål <span style="float: right;">st</span> |
| <input type="checkbox"/> | Handbrotsch                                     |
| <input type="checkbox"/> | Maskinbrotsch                                   |
|                          | Skaft cylindriskt $\varnothing$ mm              |
|                          | Skaft Morsekona Mk                              |
|                          | Material att bearbeta                           |
|                          | Materialhårdhet                                 |
|                          | Borr $\varnothing$                              |

