# GUHRING


# RT 100 VA

## The easy and safe stainless steels drill!

## Top performance in

- wear
- tool life
- rigidity

VADZA
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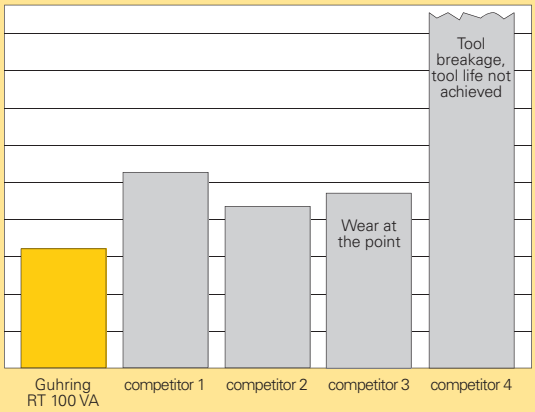
## Selected machining results RT 100 VA

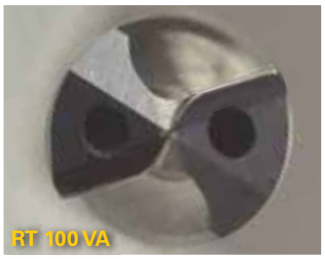
| Guhring no. | 8510 | 8511 | 8511 | 8611 |
|---|---|---|---|---|
| Diameter | 10.6 | 8.0 | 15.0 | 6.8 |
| Coating | TiAlN nanoA | TiAlN nanoA | TiAlN nanoA | TiAlN nanoA |
| | | | | |
| Material group | stainless steel | stainless steel | stainless steel | stainless steel |
| Material description | X10CrNiS18-9<br>1.4305 | X5CrNi18 10<br>1.4301 | X6CrNiMoTi17-12-2<br>1.4571 | X6CrNiTi1810<br>1.4541 |
| Drilling depth [mm] | 9 | 34 | 58 | 28 |
| Hole type | blind hole | through hole | blind hole | blind hole |
| | | | | |
| Cooling | internal | internal | internal | internal |
| Lubricant | oil | soluble oil | soluble oil | soluble oil |
| Machine type | rotary transfer machine | machining centre | machining centre | machining centre |
| | | | | |
| $v_c$ [mm/min] | 40 | 50 | 90 | 60 |
| f [mm/rev.] | 0.16 | 0.2 | 0.14 | 0.1 |
| | | | | |
| Tool life [m] | 1800 | 190 | 63 | 150 |

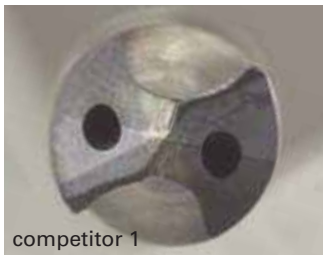
### Wear development

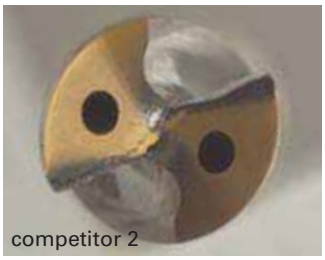
The RT 100 VA has demonstrated low wear in various applications against competitor tools. The graphic below shows the development of the wear land following 100 m tool life for the machining of a heat exchanger plate in stainless steel X6CrNiMoTi17-12-2 (1.4571). While Guhring's RT 100 VA shows the lowest corner wear and no wear at the point, the wear values of the competitor tools were considerably higher. In addition, they showed considerable wear at the point. A further competitor tool didn't achieve the required tool life, it failed through premature tool breakage.

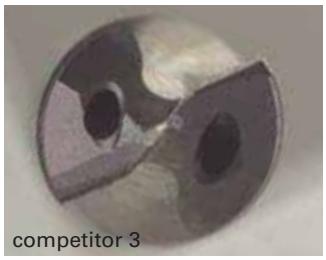
**Development wear land following 100 m tool life**



# RT 100 VA

For the production of accurate holes in stainless steels with highest cutting rates and long tool life, Guhring has developed the new RT 100 VA. The RT 100 VA achieves its extraordinary efficiency thanks to

- carbide developed for the machining of stainless steels
- the TiAlN nanoA wear resistant coating
- tool geometry perfected for the machining of stainless steels

In addition, the high feed rates achievable with the RT 100 VA are thanks to the optimal heat dissipation via the chips. Additionally the highly effective coolant supply via the internal coolant ducts, having maximum cross section, supports the heat dissipation as well as chip evacuation and also counteracts the risk of localised hardening.

## The program

The RT 100 VA is available in four designs as part of the standard program:

| Standard | Type | Shank form | Cooling | Cutting direction | Drilling depth | Tole-rance | Tool description | Tool material | Surface finish | Diameter | Guhring no. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| DIN 6537 K | RT 100 VA | HA | | R | 3xD | m7 |  | Solid carbide | TiAlN nanoA | 3,00 - 20,00 | 8510 |
| DIN 6537 K | RT 100 VA | HE | | R | 3xD | m7 |  | Solid carbide | TiAlN nanoA | 3,00 - 20,00 | 8610 |
| DIN 6537 L | RT 100 VA | HA | | R | 5xD | m7 |  | Solid carbide | TiAlN nanoA | 3,00 - 20,00 | 8511 |
| DIN 6537 L | RT 100 VA | HE | | R | 5xD | m7 |  | Solid carbide | TiAlN nanoA | 3,00 - 20,00 | 8611 |

## Special solutions

Furthermore, we supply intermediate sizes or step drills as special tools for your specific application tasks on request. Designs are also possible for drilling depths in excess of 5xD. Complete the form on page 16 or contact us!

## Notes regarding application

A cutting speed should be chosen out of the Navigator and can greatly depend on the material composition. Machining tests are paramount for selecting the optimal cutting speed.
Due to the high cutting load particular attention must be paid to maximum rigidity of the machine as well as the workpiece and tool clamping. Always select the shortest possible tool for your machining task.

## Application recommendations for Guhring RT 100 high-performance Ratio drills

Recommendations regarding tool suitability for the following application groups can be found on the following price and program pages:

● optimal suitability
○ limited suitability
not suitable

| Application group | Material examples |
|---|---|
| P | Steel, high-alloyed steel |
| M | Stainless steel |
| K | Grey cast iron, spheroidal and malleable cast iron |
| N | Aluminium and other non-ferrous metals |
| S | Special-, super- and Ti-alloys |
| H | Hardened steel and hard cast iron |

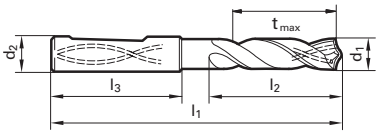
Pictograms see page 14

DIN 6537 K | RT 100 VA | 3xD | m7

Order no. = Guhring no. + code no.

| | HA | HE |
|---|---|---|
| Guhring no. | 8510 | 8610 |
| P | | |
| M | ● | ● |
| K | | |
| N | | |
| S | ● | ● |
| H | | |
| Surface finish | TiAlN nanoA | TiAlN nanoA |
| Discount group | 121 | 121 |

$t_{max} = l_2 - 1{,}5 \times d_1$




| Code no. | d1 mm | d1 inch | d2 mm | l1 mm | l2 mm | l3 mm | Availability | |
|---|---|---|---|---|---|---|---|---|
| 3,000 | 3.000 | | 6.000 | 62.000 | 20.000 | 36.000 | ● | ● |
| 3,100 | 3.100 | | 6.000 | 62.000 | 20.000 | 36.000 | ● | ● |
| 3,170 | 3.170 | 1/8 | 6.000 | 62.000 | 20.000 | 36.000 | ● | ● |
| 3,200 | 3.200 | | 6.000 | 62.000 | 20.000 | 36.000 | ● | ● |
| 3,250 | 3.250 | | 6.000 | 62.000 | 20.000 | 36.000 | ● | ● |
| 3,300 | 3.300 | | 6.000 | 62.000 | 20.000 | 36.000 | ● | ● |
| 3,400 | 3.400 | | 6.000 | 62.000 | 20.000 | 36.000 | ● | ● |
| 3,500 | 3.500 | | 6.000 | 62.000 | 20.000 | 36.000 | ● | ● |
| 3,570 | 3.570 | 9/64 | 6.000 | 62.000 | 20.000 | 36.000 | ● | ● |
| 3,600 | 3.600 | | 6.000 | 62.000 | 20.000 | 36.000 | ● | ● |
| 3,700 | 3.700 | | 6.000 | 62.000 | 20.000 | 36.000 | ● | ● |
| 3,800 | 3.800 | | 6.000 | 66.000 | 24.000 | 36.000 | ● | ● |
| 3,900 | 3.900 | | 6.000 | 66.000 | 24.000 | 36.000 | ● | ● |
| 3,970 | 3.970 | 5/32 | 6.000 | 66.000 | 24.000 | 36.000 | ● | ● |
| 4,000 | 4.000 | | 6.000 | 66.000 | 24.000 | 36.000 | ● | ● |
| 4,100 | 4.100 | | 6.000 | 66.000 | 24.000 | 36.000 | ● | ● |
| 4,200 | 4.200 | | 6.000 | 66.000 | 24.000 | 36.000 | ● | ● |
| 4,300 | 4.300 | | 6.000 | 66.000 | 24.000 | 36.000 | ● | ● |
| 4,370 | 4.370 | 11/64 | 6.000 | 66.000 | 24.000 | 36.000 | ● | ● |
| 4,400 | 4.400 | | 6.000 | 66.000 | 24.000 | 36.000 | ● | ● |
| 4,500 | 4.500 | | 6.000 | 66.000 | 24.000 | 36.000 | ● | ● |
| 4,600 | 4.600 | | 6.000 | 66.000 | 24.000 | 36.000 | ● | ● |
| 4,650 | 4.650 | | 6.000 | 66.000 | 24.000 | 36.000 | ● | ● |
| 4,700 | 4.700 | | 6.000 | 66.000 | 24.000 | 36.000 | ● | ● |
| 4,760 | 4.760 | 3/16 | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 4,800 | 4.800 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 4,900 | 4.900 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 5,000 | 5.000 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 5,100 | 5.100 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 5,160 | 5.160 | 13/64 | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 5,200 | 5.200 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 5,300 | 5.300 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 5,400 | 5.400 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 5,500 | 5.500 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 5,550 | 5.550 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 5,560 | 5.560 | 7/32 | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 5,600 | 5.600 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 5,700 | 5.700 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 5,800 | 5.800 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |

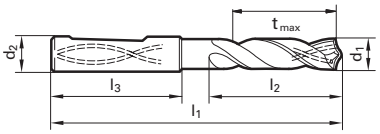
Pictograms see page 14

DIN 6537 K | RT 100 VA | 3xD | m7

Order no. = Guhring no. + code no.

| | HA | HE |
|---|---|---|
| Guhring no. | 8510 | 8610 |
| P | | |
| M | ● | ● |
| K | | |
| N | | |
| S | ● | ● |
| H | | |
| Surface finish | TiAlN nanoA | TiAlN nanoA |
| Discount group | 121 | 121 |

$t_{max} = l_2 - 1{,}5 \times d_1$




| Code no. | d1 mm | d1 inch | d2 mm | l1 mm | l2 mm | l3 mm | Availability | |
|---|---|---|---|---|---|---|---|---|
| 5,900 | 5.900 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 5,950 | 5.950 | 15/64 | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 6,000 | 6.000 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 6,100 | 6.100 | | 8.000 | 79.000 | 34.000 | 36.000 | ● | ● |
| 6,200 | 6.200 | | 8.000 | 79.000 | 34.000 | 36.000 | ● | ● |
| 6,300 | 6.300 | | 8.000 | 79.000 | 34.000 | 36.000 | ● | ● |
| 6,350 | 6.350 | 1/4 | 8.000 | 79.000 | 34.000 | 36.000 | ● | ● |
| 6,400 | 6.400 | | 8.000 | 79.000 | 34.000 | 36.000 | ● | ● |
| 6,500 | 6.500 | | 8.000 | 79.000 | 34.000 | 36.000 | ● | ● |
| 6,600 | 6.600 | | 8.000 | 79.000 | 34.000 | 36.000 | ● | ● |
| 6,700 | 6.700 | | 8.000 | 79.000 | 34.000 | 36.000 | ● | ● |
| 6,750 | 6.750 | 17/64 | 8.000 | 79.000 | 34.000 | 36.000 | ● | ● |
| 6,800 | 6.800 | | 8.000 | 79.000 | 34.000 | 36.000 | ● | ● |
| 6,900 | 6.900 | | 8.000 | 79.000 | 34.000 | 36.000 | ● | ● |
| 7,000 | 7.000 | | 8.000 | 79.000 | 34.000 | 36.000 | ● | ● |
| 7,100 | 7.100 | | 8.000 | 79.000 | 41.000 | 36.000 | ● | ● |
| 7,140 | 7.140 | 9/32 | 8.000 | 79.000 | 41.000 | 36.000 | ● | ● |
| 7,200 | 7.200 | | 8.000 | 79.000 | 41.000 | 36.000 | ● | ● |
| 7,300 | 7.300 | | 8.000 | 79.000 | 41.000 | 36.000 | ● | ● |
| 7,400 | 7.400 | | 8.000 | 79.000 | 41.000 | 36.000 | ● | ● |
| 7,500 | 7.500 | | 8.000 | 79.000 | 41.000 | 36.000 | ● | ● |
| 7,540 | 7.540 | 19/64 | 8.000 | 79.000 | 41.000 | 36.000 | ● | ● |
| 7,600 | 7.600 | | 8.000 | 79.000 | 41.000 | 36.000 | ● | ● |
| 7,700 | 7.700 | | 8.000 | 79.000 | 41.000 | 36.000 | ● | ● |
| 7,800 | 7.800 | | 8.000 | 79.000 | 41.000 | 36.000 | ● | ● |
| 7,900 | 7.900 | | 8.000 | 79.000 | 41.000 | 36.000 | ● | ● |
| 7,940 | 7.940 | 5/16 | 8.000 | 79.000 | 41.000 | 36.000 | ● | ● |
| 8,000 | 8.000 | | 8.000 | 79.000 | 41.000 | 36.000 | ● | ● |
| 8,100 | 8.100 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 8,200 | 8.200 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 8,300 | 8.300 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 8,330 | 8.330 | 21/64 | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 8,400 | 8.400 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 8,500 | 8.500 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 8,600 | 8.600 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 8,700 | 8.700 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 8,730 | 8.730 | 11/32 | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 8,800 | 8.800 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 8,900 | 8.900 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |

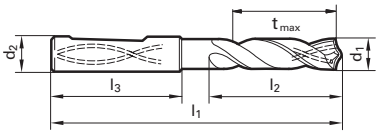
Pictograms see page 14

DIN 6537 K | RT 100 VA | 3xD | m7

Order no. = Guhring no. + code no.

| | HA | HE |
|---|---|---|
| Guhring no. | 8510 | 8610 |
| P | | |
| M | ● | ● |
| K | | |
| N | | |
| S | ● | ● |
| H | | |
| Surface finish | TiAlN nanoA | TiAlN nanoA |
| Discount group | 121 | 121 |

$t_{max} = l_2 - 1{,}5 \times d_1$




| Code no. | d1 mm | d1 inch | d2 mm | l1 mm | l2 mm | l3 mm | Availability | |
|---|---|---|---|---|---|---|---|---|
| 9,000 | 9.000 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 9,100 | 9.100 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 9,130 | 9.130 | 23/64 | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 9,200 | 9.200 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 9,250 | 9.250 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 9,300 | 9.300 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 9,400 | 9.400 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 9,500 | 9.500 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 9,520 | 9.520 | 3/8 | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 9,600 | 9.600 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 9,700 | 9.700 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 9,800 | 9.800 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 9,900 | 9.900 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 9,920 | 9.920 | 25/64 | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 10,000 | 10.000 | | 10.000 | 89.000 | 47.000 | 40.000 | ● | ● |
| 10,100 | 10.100 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 10,200 | 10.200 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 10,300 | 10.300 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 10,320 | 10.320 | 13/32 | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 10,400 | 10.400 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 10,500 | 10.500 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 10,600 | 10.600 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 10,700 | 10.700 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 10,800 | 10.800 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 10,900 | 10.900 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 11,000 | 11.000 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 11,100 | 11.100 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 11,110 | 11.110 | 7/16 | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 11,200 | 11.200 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 11,300 | 11.300 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 11,400 | 11.400 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 11,500 | 11.500 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 11,600 | 11.600 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 11,700 | 11.700 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 11,800 | 11.800 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 11,900 | 11.900 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 11,910 | 11.910 | 15/32 | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 12,000 | 12.000 | | 12.000 | 102.000 | 55.000 | 45.000 | ● | ● |
| 12,200 | 12.200 | | 14.000 | 107.000 | 60.000 | 45.000 | ● | ● |

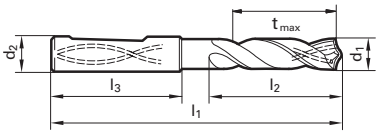
Pictograms see page 14

DIN 6537 K | RT 100 VA | 3xD | m7

Order no. = Guhring no. + code no.

| | HA | HE |
|---|---|---|
| Guhring no. | 8510 | 8610 |
| P | | |
| M | ● | ● |
| K | | |
| N | | |
| S | ● | ● |
| H | | |
| Surface finish | TiAlN nanoA | TiAlN nanoA |
| Discount group | 121 | 121 |

$t_{max} = l_2 - 1{,}5 \times d_1$




| Code | d1 | d1 | d2 | l1 | l2 | l3 | Availability | |
|---|---|---|---|---|---|---|---|---|
| no. | mm | inch | mm | mm | mm | mm | | |
| 12,500 | 12.500 | | 14.000 | 107.000 | 60.000 | 45.000 | ● | ● |
| 12,700 | 12.700 | 1/2 | 14.000 | 107.000 | 60.000 | 45.000 | ● | ● |
| 12,800 | 12.800 | | 14.000 | 107.000 | 60.000 | 45.000 | ● | ● |
| 13,000 | 13.000 | | 14.000 | 107.000 | 60.000 | 45.000 | ● | ● |
| 13,300 | 13.300 | | 14.000 | 107.000 | 60.000 | 45.000 | ● | ● |
| 13,500 | 13.500 | | 14.000 | 107.000 | 60.000 | 45.000 | ● | ● |
| 13,700 | 13.700 | | 14.000 | 107.000 | 60.000 | 45.000 | ● | ● |
| 14,000 | 14.000 | | 14.000 | 107.000 | 60.000 | 45.000 | ● | ● |
| 14,200 | 14.200 | | 16.000 | 115.000 | 65.000 | 48.000 | ● | ● |
| 14,290 | 14.290 | 9/16 | 16.000 | 115.000 | 65.000 | 48.000 | ● | ● |
| 14,300 | 14.300 | | 16.000 | 115.000 | 65.000 | 48.000 | ● | ● |
| 14,500 | 14.500 | | 16.000 | 115.000 | 65.000 | 48.000 | ● | ● |
| 14,700 | 14.700 | | 16.000 | 115.000 | 65.000 | 48.000 | ● | ● |
| 15,000 | 15.000 | | 16.000 | 115.000 | 65.000 | 48.000 | ● | ● |
| 15,200 | 15.200 | | 16.000 | 115.000 | 65.000 | 48.000 | ● | ● |
| 15,300 | 15.300 | | 16.000 | 115.000 | 65.000 | 48.000 | ● | ● |
| 15,500 | 15.500 | | 16.000 | 115.000 | 65.000 | 48.000 | ● | ● |
| 15,700 | 15.700 | | 16.000 | 115.000 | 65.000 | 48.000 | ● | ● |
| 16,000 | 16.000 | | 16.000 | 115.000 | 65.000 | 48.000 | ● | ● |
| 16,300 | 16.300 | | 18.000 | 123.000 | 73.000 | 48.000 | ● | ● |
| 16,500 | 16.500 | | 18.000 | 123.000 | 73.000 | 48.000 | ● | ● |
| 16,900 | 16.900 | | 18.000 | 123.000 | 73.000 | 48.000 | ● | ● |
| 17,000 | 17.000 | | 18.000 | 123.000 | 73.000 | 48.000 | ● | ● |
| 17,300 | 17.300 | | 18.000 | 123.000 | 73.000 | 48.000 | ● | ● |
| 17,500 | 17.500 | | 18.000 | 123.000 | 73.000 | 48.000 | ● | ● |
| 18,000 | 18.000 | | 18.000 | 123.000 | 73.000 | 48.000 | ● | ● |
| 18,500 | 18.500 | | 20.000 | 131.000 | 79.000 | 50.000 | ● | ● |
| 18,900 | 18.900 | | 20.000 | 131.000 | 79.000 | 50.000 | ● | ● |
| 19,000 | 19.000 | | 20.000 | 131.000 | 79.000 | 50.000 | ● | ● |
| 19,050 | 19.050 | 3/4 | 20.000 | 131.000 | 79.000 | 50.000 | ● | ● |
| 19,300 | 19.300 | | 20.000 | 131.000 | 79.000 | 50.000 | ● | ● |
| 19,500 | 19.500 | | 20.000 | 131.000 | 79.000 | 50.000 | ● | ● |
| 20,000 | 20.000 | | 20.000 | 131.000 | 79.000 | 50.000 | ● | ● |

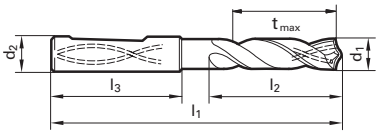
Pictograms see page 14

DIN 6537 L | RT 100 VA | 5xD | R | m7

Order no. = Guhring no. + code no.

| | HA | HE |
|---|---|---|
| Guhring no. | 8511 | 8611 |
| P | | |
| M | ● | ● |
| K | | |
| N | | |
| S | ● | ● |
| H | | |
| Surface finish | TiAlN nanoA | TiAlN nanoA |
| Discount group | 121 | 121 |

$t_{max} = l_2\text{-}1{,}5 \times d_1$




| Code no. | d1 mm | d1 inch | d2 mm | l1 mm | l2 mm | l3 mm | Availability HA | Availability HE |
|---|---|---|---|---|---|---|---|---|
| 3,000 | 3.000 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 3,100 | 3.100 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 3,170 | 3.170 | 1/8 | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 3,200 | 3.200 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 3,250 | 3.250 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 3,300 | 3.300 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 3,400 | 3.400 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 3,500 | 3.500 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 3,570 | 3.570 | 9/64 | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 3,600 | 3.600 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 3,700 | 3.700 | | 6.000 | 66.000 | 28.000 | 36.000 | ● | ● |
| 3,800 | 3.800 | | 6.000 | 74.000 | 36.000 | 36.000 | ● | ● |
| 3,900 | 3.900 | | 6.000 | 74.000 | 36.000 | 36.000 | ● | ● |
| 3,970 | 3.970 | 5/32 | 6.000 | 74.000 | 36.000 | 36.000 | ● | ● |
| 4,000 | 4.000 | | 6.000 | 74.000 | 36.000 | 36.000 | ● | ● |
| 4,100 | 4.100 | | 6.000 | 74.000 | 36.000 | 36.000 | ● | ● |
| 4,200 | 4.200 | | 6.000 | 74.000 | 36.000 | 36.000 | ● | ● |
| 4,300 | 4.300 | | 6.000 | 74.000 | 36.000 | 36.000 | ● | ● |
| 4,370 | 4.370 | 11/64 | 6.000 | 74.000 | 36.000 | 36.000 | ● | ● |
| 4,400 | 4.400 | | 6.000 | 74.000 | 36.000 | 36.000 | ● | ● |
| 4,500 | 4.500 | | 6.000 | 74.000 | 36.000 | 36.000 | ● | ● |
| 4,600 | 4.600 | | 6.000 | 74.000 | 36.000 | 36.000 | ● | ● |
| 4,650 | 4.650 | | 6.000 | 74.000 | 36.000 | 36.000 | ● | ● |
| 4,700 | 4.700 | | 6.000 | 74.000 | 36.000 | 36.000 | ● | ● |
| 4,760 | 4.760 | 3/16 | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 4,800 | 4.800 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 4,900 | 4.900 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 5,000 | 5.000 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 5,100 | 5.100 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 5,160 | 5.160 | 13/64 | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 5,200 | 5.200 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 5,300 | 5.300 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 5,400 | 5.400 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 5,500 | 5.500 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 5,550 | 5.550 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 5,560 | 5.560 | 7/32 | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 5,600 | 5.600 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 5,700 | 5.700 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 5,800 | 5.800 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |

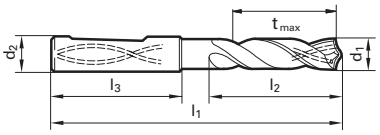
Pictograms see page 14

DIN 6537 L | RT 100 VA | 5xD | m7

Order no. = Guhring no. + code no.

| Guhring no. | 8511 | 8611 |
|---|---|---|
| P | | |
| M | ● | ● |
| K | | |
| N | | |
| S | ● | ● |
| H | | |
| Surface finish | TiAlN nanoA | TiAlN nanoA |
| Discount group | 121 | 121 |

$t_{max} = l_2 - 1{,}5 \times d_1$




| Code no. | d1 mm | d1 inch | d2 mm | l1 mm | l2 mm | l3 mm | Availability | |
|---|---|---|---|---|---|---|---|---|
| 5,900 | 5.900 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 5,950 | 5.950 | 15/64 | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 6,000 | 6.000 | | 6.000 | 82.000 | 44.000 | 36.000 | ● | ● |
| 6,100 | 6.100 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 6,200 | 6.200 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 6,300 | 6.300 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 6,350 | 6.350 | 1/4 | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 6,400 | 6.400 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 6,500 | 6.500 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 6,600 | 6.600 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 6,700 | 6.700 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 6,750 | 6.750 | 17/64 | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 6,800 | 6.800 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 6,900 | 6.900 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 7,000 | 7.000 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 7,100 | 7.100 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 7,140 | 7.140 | 9/32 | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 7,200 | 7.200 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 7,300 | 7.300 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 7,400 | 7.400 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 7,500 | 7.500 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 7,540 | 7.540 | 19/64 | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 7,600 | 7.600 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 7,700 | 7.700 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 7,800 | 7.800 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 7,900 | 7.900 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 7,940 | 7.940 | 5/16 | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 8,000 | 8.000 | | 8.000 | 91.000 | 53.000 | 36.000 | ● | ● |
| 8,100 | 8.100 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 8,200 | 8.200 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 8,300 | 8.300 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 8,330 | 8.330 | 21/64 | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 8,400 | 8.400 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 8,500 | 8.500 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 8,600 | 8.600 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 8,700 | 8.700 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 8,730 | 8.730 | 11/32 | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 8,800 | 8.800 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 8,900 | 8.900 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |

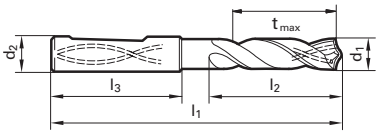
Pictograms see page 14

DIN 6537 L | RT 100 VA | 5xD | m7

Order no. = Guhring no. + code no.

| | HA | HE |
|---|---|---|
| Guhring no. | 8511 | 8611 |
| P | | |
| M | ● | ● |
| K | | |
| N | | |
| S | ● | ● |
| H | | |
| Surface finish | TiAlN nanoA | TiAlN nanoA |
| Discount group | 121 | 121 |

$t_{max} = l_2\text{-}1{,}5 \times d_1$




| Code | d1 | d1 | d2 | l1 | l2 | l3 | Availability | |
|---|---|---|---|---|---|---|---|---|
| no. | mm | inch | mm | mm | mm | mm | | |
| 9,000 | 9.000 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 9,100 | 9.100 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 9,130 | 9.130 | 23/64 | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 9,200 | 9.200 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 9,250 | 9.250 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 9,300 | 9.300 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 9,400 | 9.400 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 9,500 | 9.500 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 9,520 | 9.520 | 3/8 | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 9,600 | 9.600 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 9,700 | 9.700 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 9,800 | 9.800 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 9,900 | 9.900 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 9,920 | 9.920 | 25/64 | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 10,000 | 10.000 | | 10.000 | 103.000 | 61.000 | 40.000 | ● | ● |
| 10,100 | 10.100 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 10,200 | 10.200 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 10,300 | 10.300 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 10,320 | 10.320 | 13/32 | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 10,400 | 10.400 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 10,500 | 10.500 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 10,600 | 10.600 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 10,700 | 10.700 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 10,800 | 10.800 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 10,900 | 10.900 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 11,000 | 11.000 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 11,100 | 11.100 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 11,110 | 11.110 | 7/16 | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 11,200 | 11.200 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 11,300 | 11.300 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 11,400 | 11.400 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 11,500 | 11.500 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 11,600 | 11.600 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 11,700 | 11.700 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 11,800 | 11.800 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 11,900 | 11.900 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 11,910 | 11.910 | 15/32 | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 12,000 | 12.000 | | 12.000 | 118.000 | 71.000 | 45.000 | ● | ● |
| 12,200 | 12.200 | | 14.000 | 124.000 | 77.000 | 45.000 | ● | ● |

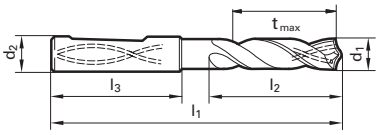
Pictograms see page 14

DIN 6537 L | RT 100 VA | 5xD | m7

Order no. = Guhring no. + code no.

| | HA | HE |
|---|---|---|
| Guhring no. | 8511 | 8611 |
| P | | |
| M | ● | ● |
| K | | |
| N | | |
| S | ● | ● |
| H | | |
| Surface finish | TiAlN nanoA | TiAlN nanoA |
| Discount group | 121 | 121 |

$t_{max} = l_2 - 1{,}5 \times d_1$




| Code no. | d1 mm | d1 inch | d2 mm | l1 mm | l2 mm | l3 mm | Availability HA | Availability HE |
|---|---|---|---|---|---|---|---|---|
| 12,500 | 12.500 | | 14.000 | 124.000 | 77.000 | 45.000 | ● | ● |
| 12,700 | 12.700 | 1/2 | 14.000 | 124.000 | 77.000 | 45.000 | ● | ● |
| 12,800 | 12.800 | | 14.000 | 124.000 | 77.000 | 45.000 | ● | ● |
| 13,000 | 13.000 | | 14.000 | 124.000 | 77.000 | 45.000 | ● | ● |
| 13,300 | 13.300 | | 14.000 | 124.000 | 77.000 | 45.000 | ● | ● |
| 13,500 | 13.500 | | 14.000 | 124.000 | 77.000 | 45.000 | ● | ● |
| 13,700 | 13.700 | | 14.000 | 124.000 | 77.000 | 45.000 | ● | ● |
| 14,000 | 14.000 | | 14.000 | 124.000 | 77.000 | 45.000 | ● | ● |
| 14,200 | 14.200 | | 16.000 | 133.000 | 83.000 | 48.000 | ● | ● |
| 14,290 | 14.290 | 9/16 | 16.000 | 133.000 | 83.000 | 48.000 | ● | ● |
| 14,300 | 14.300 | | 16.000 | 133.000 | 83.000 | 48.000 | ● | ● |
| 14,500 | 14.500 | | 16.000 | 133.000 | 83.000 | 48.000 | ● | ● |
| 14,700 | 14.700 | | 16.000 | 133.000 | 83.000 | 48.000 | ● | ● |
| 15,000 | 15.000 | | 16.000 | 133.000 | 83.000 | 48.000 | ● | ● |
| 15,200 | 15.200 | | 16.000 | 133.000 | 83.000 | 48.000 | ● | ● |
| 15,300 | 15.300 | | 16.000 | 133.000 | 83.000 | 48.000 | ● | ● |
| 15,500 | 15.500 | | 16.000 | 133.000 | 83.000 | 48.000 | ● | ● |
| 15,700 | 15.700 | | 16.000 | 133.000 | 83.000 | 48.000 | ● | ● |
| 16,000 | 16.000 | | 16.000 | 133.000 | 83.000 | 48.000 | ● | ● |
| 16,300 | 16.300 | | 18.000 | 143.000 | 93.000 | 48.000 | ● | ● |
| 16,500 | 16.500 | | 18.000 | 143.000 | 93.000 | 48.000 | ● | ● |
| 16,900 | 16.900 | | 18.000 | 143.000 | 93.000 | 48.000 | ● | ● |
| 17,000 | 17.000 | | 18.000 | 143.000 | 93.000 | 48.000 | ● | ● |
| 17,300 | 17.300 | | 18.000 | 143.000 | 93.000 | 48.000 | ● | ● |
| 17,500 | 17.500 | | 18.000 | 143.000 | 93.000 | 48.000 | ● | ● |
| 18,000 | 18.000 | | 18.000 | 143.000 | 93.000 | 48.000 | ● | ● |
| 18,500 | 18.500 | | 20.000 | 153.000 | 101.000 | 50.000 | ● | ● |
| 18,900 | 18.900 | | 20.000 | 153.000 | 101.000 | 50.000 | ● | ● |
| 19,000 | 19.000 | | 20.000 | 153.000 | 101.000 | 50.000 | ● | ● |
| 19,050 | 19.050 | 3/4 | 20.000 | 153.000 | 101.000 | 50.000 | ● | ● |
| 19,300 | 19.300 | | 20.000 | 153.000 | 101.000 | 50.000 | ● | ● |
| 19,500 | 19.500 | | 20.000 | 153.000 | 101.000 | 50.000 | ● | ● |
| 20,000 | 20.000 | | 20.000 | 153.000 | 101.000 | 50.000 | ● | ● |

Pictograms see page 14

**General hints**:
Powerful machines, no play in spindle bearings, alignment accurate tool holders. Max. concentricity error of clamped tools 0.02 mm, high coolant pressures. We recommend the application of hydraulic chucks or shrink fit chucks.

**Coolant hints:**
We recommend lubrication by soluble oil or neat oil.
Under special conditions cooling just by air is possible. But instead of air cooling we would always prefer minimal quantity lubrication, that the tools are especially suited for. With MQL we recommend the conical shank end and the Guhring MQL components. Please contact our technical service department for .

| drill-Ø mm | Feed column no. | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | f (mm/rev.) | | | | | | | | |
| **2.50** | 0.025 | 0.032 | 0.040 | 0.050 | 0.063 | 0.080 | 0.100 | 0.125 | 0.160 |
| **3.15** | 0.032 | 0.040 | 0.050 | 0.063 | 0.080 | 0.100 | 0.125 | 0.160 | 0.160 |
| **4.00** | 0.040 | 0.050 | 0.063 | 0.080 | 0.100 | 0.125 | 0.160 | 0.200 | 0.200 |
| **5.00** | 0.040 | 0.050 | 0.063 | 0.080 | 0.100 | 0.125 | 0.160 | 0.200 | 0.250 |
| **6.30** | 0.050 | 0.063 | 0.080 | 0.100 | 0.125 | 0.160 | 0.200 | 0.250 | 0.315 |
| **8.00** | 0.063 | 0.080 | 0.100 | 0.125 | 0.160 | 0.200 | 0.250 | 0.315 | 0.315 |
| **10.00** | 0.080 | 0.100 | 0.125 | 0.160 | 0.200 | 0.250 | 0.315 | 0.400 | 0.400 |
| **12.50** | 0.080 | 0.100 | 0.125 | 0.160 | 0.200 | 0.250 | 0.315 | 0.400 | 0.500 |
| **16.00** | 0.100 | 0.125 | 0.160 | 0.200 | 0.250 | 0.315 | 0.400 | 0.500 | 0.630 |
| **20.00** | 0.125 | 0.160 | 0.200 | 0.250 | 0.315 | 0.400 | 0.500 | 0.630 | 0.630 |
| **25.00** | 0.160 | 0.200 | 0.250 | 0.315 | 0.400 | 0.500 | 0.630 | 0.800 | 0.800 |

| Material | Material examples, new description (further in brackets)<br>*Figures in bold = material no. to DIN EN* | Tens. strength Hardness<br>MPa (N/mm²) | Coolant |
|---|---|---|---|
| Common structural steels | **1.0035** S185(St33),**1.0486** P275N(StE285),**1.0345** P235GH(H1),**1.0425** P265GH(H2)<br>**1.0050** E295 (St50-2), **1.0070** E360 (St70-2), **1.8937** P500NH (WStE500) | ≤500<br>>500-850 | ● |
| Free-cutting steels | **1.0718** 11SMnPb30 (9SMnPb28), **1.0736** 11SMn37 (9SMn36)<br>**1.0727** 46S20 (45S20), **1.0728** (60S20), **1.0757** 46SPb20 (45SPb20) | ≤850<br>850-1000 | ● |
| Unalloyed heat-treatable steels | **1.0402** C22, **1.1178** C30E (Ck30)<br>**1.0503** C45, **1.1191** C45E (Ck45)<br>**1.0601** C60, **1.1221** C60E (Ck60) | ≤ 700<br>700-850<br>850-1000 | ●<br>●<br>● |
| Alloyed heat-treatable steels | **1.5131** 50MnSi4, **1.7003** 38Cr2, **1.7030** 28Cr4<br>**1.5710** 36NiCr6, **1.7035** 41Cr4, **1.7225** 42CrMo4 | 850-≤1000<br>1000-1200 | ●<br>● |
| Unalloyed case hardened steels | **1.0301** (C10), **1.1121** C10E (Ck10) | ≤750 | ● |
| Alloyed case hardened steels | **1.7043** 38Cr4<br>**1.5752** 15NiCr13 (15NiCr13), **1.7131** 16MnCr5, **1.7264** 20CrMo5 | 850-≤1000<br>1000-1200 | ●<br>● |
| Nitriding steels | **1.8504** 34CrAl6<br>**1.8519** 31CrMoV9, **1.8550** 34CrAlNi7 | ≥850-≤1000<br>>1000-1200 | ●<br>● |
| Tool steels | **1.1750** C75W, **1.2067** 102Cr6, **1.2307** 29CrMoV9<br>**1.2080** X210Cr12, **1.2083** X42Cr13, **1.2419** 105WCr6, **1.2767** X45NiCrMo4 | ≤850<br>>850-1000 | ●<br>● |
| High speed steels | **1.3243** S 6-5-2-5, **1.3343** S 6-5-2, **1.3344** S 6-5-3 | ≥650-1000 | ● |
| Spring steels | **1.5026** 55Si7, **1.7176** 55Cr3, **1.8159** 51CrV4 (51CrV4) | ≤330 HB | ● |
| Stainless steels, sulphured<br>austenitic<br>martensitic | **1.4005** X12CrS13, **1.4104** X14CrMoS17, **1.4105** X6CrMoS17, **1.4305** X8CrNiS18-9<br>**1.4301** X5CrNi18-10 (V2A), **1.4541** X6CrNiTi18-10, **1.4571** X6CrNiMoTi 17-12-2 (V4A)<br>**1.4057** X20CrNi 17 2 (X17CrNi16-2), **1.4122** X39CrMo17-1, **1.4521** X2CrMoTi18-2 | ≤850<br>≤850<br>≤850 | ●<br>●<br>● |
| Hardened steels | – | ≤40-48 HRC<br>>48-60 HRC | ●<br>● |
| Special alloys | Nimonic, Inconel, Monel, Hastelloy | ≤1200 | ● |
| Cast iron | **0.6010** EN-GJL-100(GG10), **0.6020** EN-GJL-200(GG20)<br>**0.6025** EN-GJL-250(GG25), **0.6035** EN-GJL-350(GG35) | ≤240 HB<br><300 HB | ○ ○<br>○ ○ |
| New cast materials CGI | **EN-GJV250 (GGV25)**, **EN-GJV350** (GGV35)<br>**EN-GJV400** (GGV40), **EN-GJV500** (GGV50), SiMo 6 | ≤220 HB<br><300 HB | ○ ○<br>○ ○ |
| New cast materials ADI | **EN-GJS-800-8** (ADI800), **EN-GJS-1000-5** (ADI1000)<br>**EN-GJS-1200-2** (ADI1200), **EN-GJS-1400-1** (ADI1400) | 800-1000<br>1200-1400 | ○ ○<br>○ ○ |
| Spheroidal graphite and malleable cast iron | **0.7050** EN-GJS-500-7(GGG50), **0.8035** EN-GJMW-350-4(GTW35)<br>**0.7070** EN-GJS-700-2(GGG70), **0.8170** EN-GJMB-700-2(GTS70) | ≤240 HB<br><300 HB | ●<br>● |
| Chilled cast iron | – | ≤350 HB | ● |
| Ti and Ti-alloys | **3.7024** Ti99,5, **3.7114** TiAl5Sn2,5, **3.7124** TiCu2<br>**3.7154** TiAl6Zr5, **3.7165** TiAl6V4, **3.7184** TiAl4Mo4Sn2,5, - TiAl8Mo1V1 | ≤850<br>>850-1200 | ●<br>● |
| Aluminium and Al-alloys | **3.0255** Al99,5, **3.2315** AlMgSi1, **3.3515** AlMg1 | ≤400 | ● |
| Al wrought alloys | **3.0615** AlMgSiPb, **3.1325** AlCuMg1, **3.3245** AlMg3Si, **3.4365** AlZnMgCu1,5 | ≤450 | ● |
| Al cast iron ≤ 10 % Si<br>> 10 % Si | **3.2131** G-AlSi5Cu1, **3.2153** G-AlSi7Cu3, **3.2573** G-AlSi9<br>**3.2581** G-AlSi12, **3.2583** G-AlSi12Cu, - G-AlSi12CuNiMg | ≤600<br>≤600 | ●<br>● |
| Magnesium alloys | **3.5200** MgMn2, **3.5812.05** G-MgAl8Zn1, **3.5612.05** G-MgAl6Zn1 | ≤450 | ○ |
| Copper, low-alloyed | **2.0070** SE-Cu, **2.1020** CuSn6, **2.1096** G-CuSn5ZnPb | ≤400 | ● |
| Brass, short-chipping<br>long-chipping | **2.0380** CuZn39Pb2, **2.0401** CuZn39Pb3, **2.0410** CuZn43Pb2<br>**2.0250** CuZn20, **2.0280** CuZn33, **2.0332** CuZn37Pb0,5 | ≤600<br>≤600 | ●<br>● |
| Bronze, short-chipping | **2.1090** CuSn7ZnPb, **2.1170** CuPb5Sn5, **2.1176** CuPb10Sn<br>**2.0790** CuNi18Zn19Pb | ≤600<br>>600-850 | ● ●<br>● |
| Bronze, long-chipping | **2.0916** CuAl5, **2.0960** CuAl9Mn, **2.1050** CuSn10<br>**2.0980** CuAl11Ni, **2.1247** CuBe2 | ≤850<br>>850-1000 | ●<br>● |

## ≤3×D Drilling depth

| | | | | |
|---|---|---|---|---|
| Tool material | | Solid carbide | Solid carbide | |
| Carbide grade | | K | K | |
| Type | | RT 100 VA | RT 100 VA | |
| Surface finish | | TiAlN nanoA | TiAlN nanoA | |
| Cooling | | ■ | ■ | |
| No. | DIN HA R | **8510** | **8510** | |
| | 6537 HE R | **8610** | **8610** | |
| for dia. range | | d1 ≤ 10 mm | d1 > 10 mm | |

| $v_c$ m/min | Feed column no. | $v_c$ m/min | Feed column no. |
|---|---|---|---|
| 80 | 5 | 80 | 5 |
| 60 | 3 | 90 | 2 |
| 80 | 5 | 80 | 5 |
| 30 | 2 | 30 | 2 |
| 35 | 2 | 35 | 2 |

## ≤5×D Drilling depth

| | | | | |
|---|---|---|---|---|
| Tool material | | Solid carbide | Solid carbide | |
| Carbide grade | | K | K | |
| Type | | RT 100 VA | RT 100 VA | |
| Surface finish | | TiAlN nanoA | TiAlN nanoA | |
| Cooling | | ■ | ■ | |
| No. | DIN HA R | **8511** | **8511** | |
| | 6537 HE R | **8611** | **8611** | |
| for dia. range | | d1 ≤ 10 mm | d1 > 10 mm | |

| $v_c$ m/min | Feed column no. | $v_c$ m/min | Feed column no. |
|---|---|---|---|
| 80 | 5 | 80 | 5 |
| 60 | 3 | 90 | 2 |
| 80 | 5 | 80 | 5 |
| 30 | 2 | 30 | 2 |
| 35 | 2 | 35 | 2 |

## Pictograms

| | |
|---|---|
| **Tool material** | Solid carbide |
| | Solid carbide finest grain (carbide-UF) |
| **Standard** | DIN 6537 K DIN 6537 L |
| | to DIN |
| **Type** | RT 100 VA |
| | |
| **Cooling** |  |
| | with internal cooling |
| **Cutting direction** |  |
| | right-hand cutting |
| **Drilling depth** | 3xD 5xD |
| | maximum drilling depth, based on the nominal diameter |
| **Tolerance** | m7 |
| | Hole tolerance |
| **Shank form** |   |
| | to DIN 6535 |

☐ **Order** ☐ **Inquiry**

Contact for questions

Name/customer no. if available | New customer

Order no.

Street no.

Town/post code

Telephone

Fax

Date

Signature

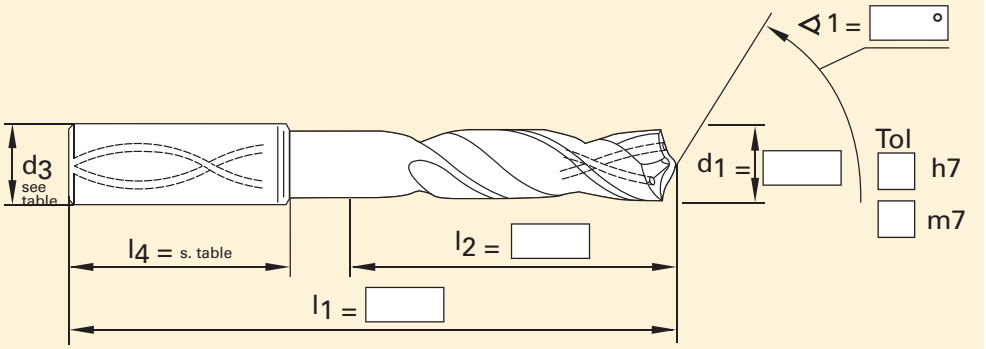
**Quantity**

**Tool type**

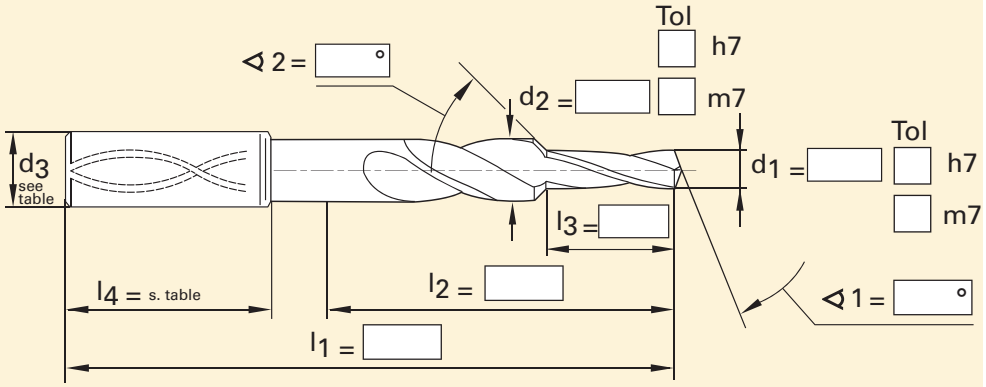
☐ 

RT 100 VA (spiral-fluted)

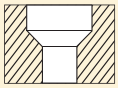
**Dimensions**



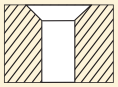

**Step version**




**Machining**

☐ 

Drill and counterbore

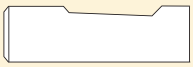
☐ 

Drill and chamfer

**Shank form**

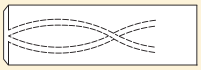
☐ 

HA

☐ 

HE

**Internal cooling**

☐ 

Yes

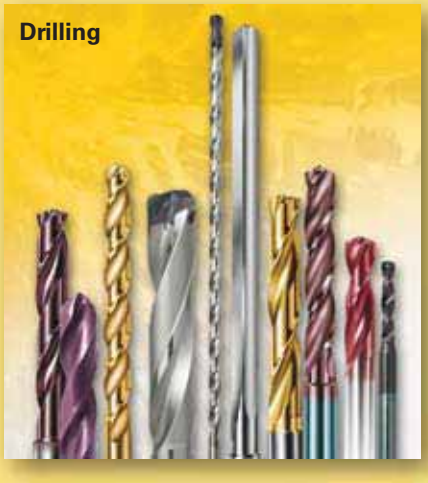
☐ 

No

**Coating**

☐ nanoA ☐ bright

Drilling

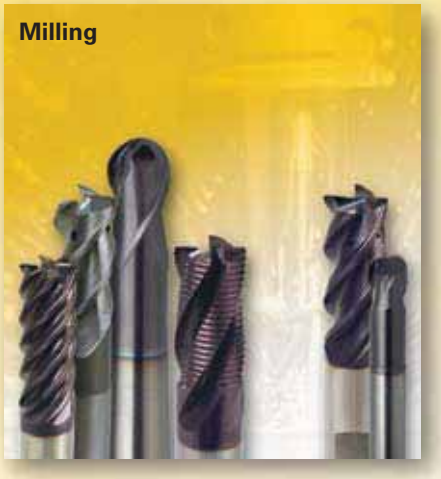


Tapping/thread milling/fluteless tapping

Reaming

Countersinking/de-burring

Milling



PCD/PCB

Modular tooling systems

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# GUHRING

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