



Vollhartmetall-Bohrerprogramm

SuperV

 **STOCK**

Span – um Span – Spitze

Suppe



rw



Hochleistungsbohrer für jede Anwendung

- Durchmesserbereich 0,1 bis 25,0 mm
- Bohrtiefen 3xD bis 40xD
- mit und ohne Innenkühlung
- aus anwendungsoptimierten Hartmetallsorten
- blank und mit TiN-, TiAlN nano-, TiAlSiN-, AlTiN+-, AlTiN- oder AlTiN nano-Beschichtung



ISO-CODES

| | |
|----------|--|
| P | Stahl, hochlegierter Stahl |
| M | Rostfreier Stahl |
| K | Grauguss, Sphäroguss und Temperguss |
| N | Aluminium und andere Nichteisenmetalle |
| S | Sonder-, Super- und Titanlegierungen |
| H | Gehärteter Stahl und Hartguss |

Auf den Produktseiten finden Sie zu jedem Werkzeug Empfehlungen zur Eignung für die Anwendungsgruppen:

- optimal geeignet
- bedingt geeignet

PIKTOGRAMME



| | | | | | | | | | | | | | | | |
|-----------------|----------------|---------------------|----------------------|---------------------|----------|-----------|----------|----------|----------|-----------|-----------|---------------|--------------|--------------|--|
| SCHNEIDSTOFF | VHM | | | | | | | | | | | | | | |
| | Vollhartmetall | | | | | | | | | | | | | | |
| BESCHICHTUNG | blank | TiAlN nano | AlTiN nano | TiN | Al-TiN | Al-TiN+ | TiAl-SiN | | | | | | | | |
| TOLERANZ | h6 | h7 | h8 | m7 | | | | | | | | | | | |
| BOHRTIEFE | 3xD | ~3xD | 4xD | 5xD | ~5xD | 7xD | 8xD | 10xD | 12xD | 15xD | 20xD | 25xD | 30xD | 40xD | |
| SCHNEIDRICHTUNG | rechts | | | | | | | | | | | | | | |
| SCHAFTFORM | Cyl | HA | HB | HE | | | | | | | | | | | |
| SPITZENWINKEL | 120° | 130° | 135° | 140° | | | | | | | | | | | |
| NORM | DIN 6537K | DIN 6537L | DIN 6539 | WN | | | | | | | | | | | |
| | Stock | | | | | | | | | | | | | | |
| TYP | SuperV-F | SuperV- IK-F | SuperV- IK-NX | SuperV- IK-U | SuperV-M | SuperV-NX | SuperV-S | SuperV-T | SuperV-U | SuperV-UX | SuperV-VA | SuperV-83-GAL | SuperV-95-GG | SuperV-95-GN | |

UNSERE GRUPPEN

DIE UNIVERSELLEN

zur Bearbeitung verschiedenster Werkstoffe,
Stähle bis 1400 N/mm², Stahlguss, Guss,
Aluminiumlegierungen mit einem hohen Si-Gehalt

Produktübersicht Seite 6-7
Produktinformationen ab Seite 18

DIE UNIVERSELLEN KLEINEN

von Durchmesser 0,1 bis 3,0 mm,
zur Bearbeitung verschiedenster Stähle, rostfreier Materialien,
Sonderlegierungen oder Aluminium bis 15xD

Produktübersicht Seite 8-9
Produktinformationen ab Seite 41

DIE UNIVERSELLEN LANGEN

ab Durchmesser 3,0 mm,
zur Bearbeitung verschiedenster Werkstoffe wie Stähle,
rostfreier Materialien, Titan- und Sonderlegierungen oder Aluminium

Produktübersicht Seite 10-11
Produktinformationen ab Seite 47

DIE SPEZIELLEN

zur Bearbeitung verschiedenster Werkstoffe wie Stähle,
rostfreier Materialien, Titan- und Sonderlegierungen oder
gehärtete Stähle bis max. 62 HRC

Produktübersicht Seite 12-13
Produktinformationen ab Seite 53

DIE ROSTFREIEN

zur Bearbeitung rostfreier Stähle

Produktübersicht Seite 14-15
Produktinformationen ab Seite 72

DIE LEICHTEN

zur Bearbeitung von Aluminium, NE-Metallen und Guss,
für unterbrochene Schnitte/Bohrungen

Produktübersicht Seite 16-17
Produktinformationen ab Seite 80

ARBEITSRICHTWERTE

ab Seite 87

SuperV

DIE UNIVERSELLEN

zur Bearbeitung verschiedenster Werkstoffe, Stähle bis 1400 N/mm²,
Stahlguss, Guss, Aluminiumlegierungen mit einem hohen Si-Gehalt

SPITZENWINKEL

135° / 140°

HARTMETALL

universelles Ultrafeinstkorn Hartmetall
aus eigener Produktion

BOHRTIEFE

3xD, 5xD, 7xD, 12xD

MIT UND OHNE INNENKÜHLUNG

zur Erhöhung der Standzeiten, sowie zur
verbesserten Spanabfuhr und optimalen Kühlung
sind die SuperV-Bohrer z.T. auch mit
innenliegenden Kühlkanälen erhältlich

GEOMETRIE

universelle Geometrie für breites Materialspektrum

BESCHICHTUNG

universelle TiAlN-nano

TOLERANZEN

m7/h7,
speziell abgestimmte Fertigungstoleranzen
ermöglichen den Einsatz als Pilotierwerkzeug für
nachfolgendes Tiefbohrwerkzeug

DURCHMESSER-BEREICH

3,0 – 20,0mm

SCHAFTFORM

HA, HE, HB,
für die marktüblichen Spannsysteme



| P | M | K | N | S | H | Typ | Schaftform | Bohrtiefe | Schneidstoff | Oberfläche | Norm | d1/mm | Katalog-Nr. | Progr. Seite |
|---|---|---|---|---|---|-----|------------|-----------|--------------|------------|------|-------|-------------|--------------|
|---|---|---|---|---|---|-----|------------|-----------|--------------|------------|------|-------|-------------|--------------|

SuperV-Bohrer ohne Innenkühlung

| | | | | | | | | | | | | | | |
|---|--|---|---|---|---|----------|----|-----|-----|------------|-----------|----------------|-------|----|
| | | | | | | | | | | | | | | |
| • | | • | ○ | ○ | ○ | SuperV-U | HA | 3xD | VHM | TiAlN nano | DIN 6537K | 3,000 - 20,000 | 51873 | 18 |
| | | | | | | | | | | | | | | |
| • | | • | ○ | ○ | ○ | SuperV-U | HE | 3xD | VHM | TiAlN nano | DIN 6537K | 3,000 - 20,000 | 51871 | 20 |
| | | | | | | | | | | | | | | |
| • | | • | ○ | ○ | ○ | SuperV-U | HA | 5xD | VHM | TiAlN nano | DIN 6537L | 3,000 - 20,000 | 51787 | 22 |
| | | | | | | | | | | | | | | |
| • | | • | ○ | ○ | ○ | SuperV-U | HE | 5xD | VHM | TiAlN nano | DIN 6537L | 3,000 - 20,000 | 51887 | 24 |
| | | | | | | | | | | | | | | |
| • | | • | ○ | ○ | ○ | SuperV-U | HB | 5xD | VHM | TiAlN nano | DIN 6537L | 3,000 - 20,000 | 51687 | 26 |

SuperV-Bohrer mit Innenkühlung

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|-------------|----|------|-----|------------|-----------|----------------|-------|----|
| | | | | | | | | | | | | | | |
| • | ○ | • | ○ | ○ | ○ | SuperV-IK-U | HA | 3xD | VHM | TiAlN nano | DIN 6537K | 3,000 - 20,000 | 51776 | 28 |
| | | | | | | | | | | | | | | |
| • | ○ | • | ○ | ○ | ○ | SuperV-IK-U | HE | 3xD | VHM | TiAlN nano | DIN 6537K | 3,000 - 20,000 | 51876 | 30 |
| | | | | | | | | | | | | | | |
| • | ○ | • | ○ | ○ | ○ | SuperV-IK-U | HA | 5xD | VHM | TiAlN nano | DIN 6537L | 3,000 - 20,000 | 51781 | 32 |
| | | | | | | | | | | | | | | |
| • | ○ | • | ○ | ○ | ○ | SuperV-IK-U | HE | 5xD | VHM | TiAlN nano | DIN 6537L | 3,000 - 20,000 | 51881 | 34 |
| | | | | | | | | | | | | | | |
| • | ○ | • | ○ | ○ | ○ | SuperV-IK-U | HB | 5xD | VHM | TiAlN nano | DIN 6537L | 3,000 - 20,000 | 51681 | 36 |
| | | | | | | | | | | | | | | |
| • | ○ | • | ○ | ○ | ○ | SuperV-IK-U | HA | 7xD | VHM | TiAlN nano | Werksnorm | 3,000 - 20,000 | 51789 | 38 |
| | | | | | | | | | | | | | | |
| • | ○ | • | ○ | ○ | ○ | SuperV-IK-U | HE | 7xD | VHM | TiAlN nano | Werksnorm | 3,000 - 20,000 | 51889 | 39 |
| | | | | | | | | | | | | | | |
| • | ○ | • | ○ | ○ | ○ | SuperV-IK-U | HA | 12xD | VHM | TiAlN nano | Werksnorm | 3,000 - 20,000 | 51893 | 40 |

SuperV

DIE UNIVERSELLEN KLEINEN

von Durchmesser 0,1 bis 3,0 mm,
zur Bearbeitung verschiedenster Stähle, rostfreier Materialien,
Sonderlegierungen oder Aluminium bis 15xD

SPITZENWINKEL

135°/140°

GEOMETRIE

SuperV-NX verfügen über eine spezielle
Kleinstbohrergeometrie für exzellente
Spanabfuhr auch in großen Bohrtiefen

TOLERANZ

m7/h7,
speziell abgestimmte Fertigungstoleranzen
ermöglichen den Einsatz als Pilotierwerkzeug

BESCHICHTUNG

TiAlN, AlTiN+,
Vollbeschichtung bzw. Kopfbeschichtung

BOHRTIEFE

4xD, 5xD, 7xD, 8xD, 15xD

MIT UND OHNE INNENKÜHLUNG

zur Erhöhung der Standzeiten, sowie zur
verbesserten Spanabfuhr und optimalen Kühlung sind
die SuperV-Bohrer z.T. auch mit
innenliegenden Kühlkanälen erhältlich

SCHAFTFORM

HA



| P | M | K | N | S | H | Typ | Schaft- form | Bohrtiefe | Schneidstoff | Oberfläche | Norm | d1/mm | Katalog-Nr. | Progr. Seite |
|---|---|---|---|---|---|-----|-----------------|-----------|--------------|------------|------|-------|-------------|-----------------|
|---|---|---|---|---|---|-----|-----------------|-----------|--------------|------------|------|-------|-------------|-----------------|

SuperV-M Universal-Kleinstbohrer



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|---|---|---|---|---|---|----------|----|--|------------|-------|-----------|---------------|--------------|----|
| • | ○ | • | ○ | ○ | ○ | SuperV-M | HA | | VHM | AlTiN | Werksnorm | 0,100 - 3,000 | 51720 | 41 |
|---|---|---|---|---|---|----------|----|--|------------|-------|-----------|---------------|--------------|----|

SuperV-NX Hochleistungs-Kleinstbohrer ohne Innenkühlung



| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|-----------|----|-----|------------|--------|-----------|---------------|--------------|----|
| • | ○ | • | ○ | ○ | ○ | SuperV-NX | HA | 4xD | VHM | AlTiN+ | Werksnorm | 0,500 - 3,000 | 71998 | 42 |
|---|---|---|---|---|---|-----------|----|-----|------------|--------|-----------|---------------|--------------|----|



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|---|---|---|---|---|---|-----------|----|-----|------------|--------|-----------|---------------|--------------|----|
| • | ○ | • | ○ | ○ | ○ | SuperV-NX | HA | 7xD | VHM | AlTiN+ | Werksnorm | 0,500 - 3,000 | 71999 | 43 |
|---|---|---|---|---|---|-----------|----|-----|------------|--------|-----------|---------------|--------------|----|

SuperV-NX Hochleistungs-Kleinstbohrer mit Innenkühlung



| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|------------------|----|-----|------------|-------|-----------|---------------|--------------|----|
| • | • | • | ○ | ○ | ○ | SuperV-IK- NX | HA | 5xD | VHM | AlTiN | Werksnorm | 1,400 - 3,000 | 51997 | 44 |
|---|---|---|---|---|---|------------------|----|-----|------------|-------|-----------|---------------|--------------|----|



| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|------------------|----|-----|------------|-------|-----------|---------------|--------------|----|
| • | • | • | ○ | ○ | ○ | SuperV-IK- NX | HA | 8xD | VHM | AlTiN | Werksnorm | 1,400 - 3,000 | 51998 | 45 |
|---|---|---|---|---|---|------------------|----|-----|------------|-------|-----------|---------------|--------------|----|



| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|------------------|----|------|------------|-------|-----------|---------------|--------------|----|
| • | • | • | ○ | ○ | ○ | SuperV-IK- NX | HA | 15xD | VHM | AlTiN | Werksnorm | 1,400 - 3,000 | 51999 | 46 |
|---|---|---|---|---|---|------------------|----|------|------------|-------|-----------|---------------|--------------|----|

SuperV

DIE UNIVERSELLEN LANGEN

ab Durchmesser 3,0 mm,
zur Bearbeitung verschiedenster Werkstoffe wie Stähle,
rostfreie Materialien, Titan- und Sonderlegierungen oder Aluminium

SPITZENWINKEL

135°

TOLERANZ

h7

BOHRTIEFE

15xD, 20xD, 25xD, 30xD, 40xD

GEOMETRIE

universelle Geometrie für breites Materialspektrum

BESCHICHTUNG

AlTiN-Kopfbeschichtung
für perfekte Spanabfuhr bei Bohrtiefen ab 15xD

BESONDERHEIT

erweiterte und polierte Spannuten
mit auslaufender 4. Fase

SCHAFTFORM

HA



| P | M | K | N | S | H | Typ | Schaft- form | Bohrtiefe | Schneidstoff | Oberfläche | Norm | d1/mm | Katalog-Nr. | Progr. Seite |
|---|---|---|---|---|---|-----|-----------------|-----------|--------------|------------|------|-------|-------------|-----------------|
|---|---|---|---|---|---|-----|-----------------|-----------|--------------|------------|------|-------|-------------|-----------------|

SuperV-Bohrer mit Innenkühlung

| | | | | | | | | | | | | | | |
|--|---|---|---|---|---|----------|----|------|-----|-------|-----------|----------------|-------|----|
| | • | • | • | ○ | ○ | SuperV-T | HA | 15xD | VHM | AlTiN | Werksnorm | 3,000 - 16,000 | 51764 | 47 |
| | • | • | • | ○ | ○ | SuperV-T | HA | 20xD | VHM | AlTiN | Werksnorm | 3,000 - 16,000 | 51765 | 48 |
| | • | • | • | ○ | ○ | SuperV-T | HA | 25xD | VHM | AlTiN | Werksnorm | 3,000 - 16,000 | 51766 | 49 |
| | • | • | • | ○ | ○ | SuperV-T | HA | 30xD | VHM | AlTiN | Werksnorm | 3,000 - 14,000 | 51767 | 50 |
| | • | • | • | ○ | ○ | SuperV-T | HA | 40xD | VHM | AlTiN | Werksnorm | 3,000 - 10,000 | 51768 | 51 |

SuperV

DIE SPEZIELLEN

zur Bearbeitung verschiedenster Werkstoffe wie Stähle, rostfreie Materialien, Titan- und Sonderlegierungen oder gehärtete Stähle bis max. 62 HRC

MIKROGEOMETRIE

extrem glatte und stabile Schneidkanten, höchste Oberflächengüte an Schneiden und Nuten, Kegelmantel- und Flächenanschliff

GEOMETRIE

Auslegung für höchste Schnittwerte, sehr gutes Eigenzentrierverhalten, Erzeugung kurzer Späne

BOHRTIEFE

3xD, 5xD, 7xD, 8xD

MIT UND OHNE INNENKÜHLUNG

zur Erhöhung der Standzeiten, sowie zur verbesserten Spanabfuhr und optimalen Kühlung sind die SuperV-Bohrer z.T. auch mit innenliegenden Kühlkanälen erhältlich

BESCHICHTUNG

TiN, TiAlSiN oder TiAlN-nano, Kopfbeschichtung

TOLERANZ

m7

DURCHMESSER-BEREICH

3,0–25,0mm

SCHAFTFORM

zylindrisch, HA, HE



| STAHL-SPEZIALIST SuperV-UX | SONDERLEGIERUNGEN / HARTE WERKSTOFFE SuperV-S | FÜR ZÄHE WERKSTOFFE SuperV-F |
|-------------------------------|---|---------------------------------|
| 51785 | 51750 | 61888 |
| 51790 | 51752 | 61880 |
| | 51753 | |
| | 51754 | |
| | 51755 | |
| | 51756 | |

| P | M | K | N | S | H | Typ | Schaftform | Bohrtiefe | Schneidstoff | Oberfläche | Norm | d1/mm | Katalog-Nr. | Progr. Seite |
|---|---|---|---|---|---|-----|------------|-----------|--------------|------------|------|-------|-------------|--------------|
|---|---|---|---|---|---|-----|------------|-----------|--------------|------------|------|-------|-------------|--------------|

SuperV-Bohrer ohne Innenkühlung

| | | | | | | | | | | | | | | |
|--|--|--|--|--|--|----------|------|-----|-----|---------|-----------|----------------|-------|----|
| | | | | | | SuperV-S | HA | 3xD | VHM | TiAlSiN | DIN 6537K | 3,000 - 20,000 | 51750 | 53 |
| | | | | | | SuperV-F | zyl. | 3xD | VHM | TiN | DIN 6539 | 3,000 - 12,000 | 61888 | 55 |

SuperV-Bohrer mit Innenkühlung

| | | | | | | | | | | | | | | |
|--|--|--|--|--|--|-------------|----|-----|-----|------------|-----------|----------------|-------|----|
| | | | | | | SuperV-UX | HA | 5xD | VHM | TiAlN nano | DIN 6537L | 3,000 - 20,000 | 51785 | 57 |
| | | | | | | SuperV-UX | HA | 8xD | VHM | TiAlN nano | Werksnorm | 3,000 - 20,000 | 51790 | 59 |
| | | | | | | SuperV-S | HA | 3xD | VHM | TiAlSiN | DIN 6537K | 3,000 - 20,000 | 51752 | 61 |
| | | | | | | SuperV-S | HE | 3xD | VHM | TiAlSiN | DIN 6537K | 3,000 - 20,000 | 51753 | 63 |
| | | | | | | SuperV-S | HA | 5xD | VHM | TiAlSiN | DIN 6537L | 3,000 - 20,000 | 51754 | 65 |
| | | | | | | SuperV-S | HE | 5xD | VHM | TiAlSiN | DIN 6537L | 3,000 - 20,000 | 51755 | 67 |
| | | | | | | SuperV-S | HA | 7xD | VHM | TiAlSiN | Werksnorm | 3,000 - 16,000 | 51756 | 69 |
| | | | | | | SuperV-IK-F | HE | 5xD | VHM | TiN | DIN 6537L | 4,000 - 25,000 | 61880 | 70 |

SuperV

DIE ROSTFREIEN

zur Bearbeitung rostfreier Stähle

SPITZENWINKEL

140°

BOHRTIEFE

3xD, 5xD

DURCHMESSER-BEREICH

3,0–20,0mm

SCHAFTFORM

HA, HE

GEOMETRIE

angepasstes Nutprofil für rostfreie Materialien









BESCHICHTUNG

AlTiN nano



| P | M | K | N | S | H | Typ | Schaftform | Bohrtiefe | Schneidstoff | Oberfläche | Norm | d1/mm | Katalog-Nr. | Progr. Seite |
|---|---|---|---|---|---|-----|------------|-----------|--------------|------------|------|-------|-------------|--------------|
|---|---|---|---|---|---|-----|------------|-----------|--------------|------------|------|-------|-------------|--------------|

SuperV-Bohrer mit Innenkühlung

| | | | | | | | | | | | | | | |
|---|---|--|--|---|--|-----------|----|-----|-----|------------|-----------|----------------|-------|---|
|  | | | | | | | | | | | | | |  |
| | • | | | ○ | | SuperV-VA | HA | 3xD | VHM | AlTiN nano | DIN 6537K | 3,000 - 20,000 | 51770 | 72 |
|  | | | | | | | | | | | | | |  |
| | • | | | ○ | | SuperV-VA | HE | 3xD | VHM | AlTiN nano | DIN 6537K | 3,000 - 20,000 | 51771 | 74 |
|  | | | | | | | | | | | | | |  |
| | • | | | ○ | | SuperV-VA | HA | 5xD | VHM | AlTiN nano | DIN 6537L | 3,000 - 20,000 | 51772 | 76 |
|  | | | | | | | | | | | | | |  |
| | • | | | ○ | | SuperV-VA | HE | 5xD | VHM | AlTiN nano | DIN 6537L | 3,000 - 20,000 | 51773 | 78 |

SuperV

DIE LEICHTEN

zur Bearbeitung von Aluminium, NE-Metallen und Guss,
für unterbrochene Schnitte/Bohrungen



| P | M | K | N | S | H | Typ | Schaftform | Bohrtiefe | Schneidstoff | Oberfläche | Norm | d1/mm | Katalog-Nr. | Progr. Seite |
|---|---|---|---|---|---|-----|------------|-----------|--------------|------------|------|-------|-------------|--------------|
|---|---|---|---|---|---|-----|------------|-----------|--------------|------------|------|-------|-------------|--------------|

SuperV-Bohrer, 3-schneidig



| | | | | | | | | | | | | | | |
|--|--|---|---|--|--|--------------|----|-----|-----|-------|-----------|----------------|-------|----|
| | | • | • | | | SuperV83-GAL | HA | 5xD | VHM | blank | DIN 6537L | 3,000 - 20,000 | 71862 | 80 |
|--|--|---|---|--|--|--------------|----|-----|-----|-------|-----------|----------------|-------|----|

SuperV-Bohrer mit Innenkühlung



| | | | | | | | | | | | | | | |
|--|--|---|---|--|--|-------------|----|-----|-----|-------|-----------|----------------|-------|----|
| | | • | ○ | | | SuperV95-GG | HA | 4xD | VHM | blank | Werksnorm | 3,000 - 21,500 | 71995 | 81 |
|--|--|---|---|--|--|-------------|----|-----|-----|-------|-----------|----------------|-------|----|



| | | | | | | | | | | | | | | |
|--|--|---|---|--|--|-------------|----|-----|-----|-------|-----------|----------------|-------|----|
| | | • | ○ | | | SuperV95-GG | HA | 7xD | VHM | blank | Werksnorm | 3,000 - 20,000 | 71994 | 83 |
|--|--|---|---|--|--|-------------|----|-----|-----|-------|-----------|----------------|-------|----|



| | | | | | | | | | | | | | | |
|--|--|---|---|--|--|-------------|----|------|-----|-------|-----------|----------------|-------|----|
| | | • | ○ | | | SuperV95-GG | HA | 10xD | VHM | blank | Werksnorm | 3,000 - 20,000 | 71996 | 84 |
|--|--|---|---|--|--|-------------|----|------|-----|-------|-----------|----------------|-------|----|



| | | | | | | | | | | | | | | |
|--|--|---|---|--|--|-------------|----|------|-----|-------|-----------|----------------|-------|----|
| | | • | ○ | | | SuperV95-GN | HA | 15xD | VHM | blank | Werksnorm | 5,000 - 14,000 | 71997 | 85 |
|--|--|---|---|--|--|-------------|----|------|-----|-------|-----------|----------------|-------|----|

SuperV-Bohrer

SuperV-Bohrer ohne Innenkühlung



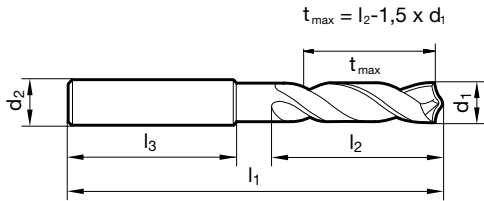
Katalog-Nr. 51873



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

 Arbeitsrichtwerte
Seite 91

- Ausspitzung $\geq \varnothing 3,000$
- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie



| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|
| 3,000 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,100 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,200 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,300 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,400 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,500 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,600 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,700 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,800 | 6,000 | 66,000 | 24,000 | 36,000 |
| 3,900 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,000 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,100 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,200 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,300 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,400 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,500 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,600 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,650 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,700 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,800 | 6,000 | 66,000 | 28,000 | 36,000 |
| 4,900 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,000 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,100 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,200 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,300 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,400 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,500 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,550 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,600 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,700 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,800 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,900 | 6,000 | 66,000 | 28,000 | 36,000 |
| 6,000 | 6,000 | 66,000 | 28,000 | 36,000 |
| 6,100 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,200 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,300 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,400 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,500 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,600 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,700 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,800 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,900 | 8,000 | 79,000 | 34,000 | 36,000 |
| 7,000 | 8,000 | 79,000 | 34,000 | 36,000 |
| 7,100 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,200 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,300 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,400 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,500 | 8,000 | 79,000 | 41,000 | 36,000 |

| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|
| 7,600 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,700 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,800 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,900 | 8,000 | 79,000 | 41,000 | 36,000 |
| 8,000 | 8,000 | 79,000 | 41,000 | 36,000 |
| 8,100 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,200 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,300 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,400 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,500 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,600 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,700 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,800 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,900 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,000 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,100 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,200 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,250 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,300 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,400 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,500 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,600 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,700 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,800 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,900 | 10,000 | 89,000 | 47,000 | 40,000 |
| 10,000 | 10,000 | 89,000 | 47,000 | 40,000 |
| 10,100 | 12,000 | 102,000 | 55,000 | 45,000 |
| 10,200 | 12,000 | 102,000 | 55,000 | 45,000 |
| 10,300 | 12,000 | 102,000 | 55,000 | 45,000 |
| 10,400 | 12,000 | 102,000 | 55,000 | 45,000 |
| 10,500 | 12,000 | 102,000 | 55,000 | 45,000 |
| 10,600 | 12,000 | 102,000 | 55,000 | 45,000 |
| 10,700 | 12,000 | 102,000 | 55,000 | 45,000 |
| 10,800 | 12,000 | 102,000 | 55,000 | 45,000 |
| 10,900 | 12,000 | 102,000 | 55,000 | 45,000 |
| 11,000 | 12,000 | 102,000 | 55,000 | 45,000 |
| 11,100 | 12,000 | 102,000 | 55,000 | 45,000 |
| 11,200 | 12,000 | 102,000 | 55,000 | 45,000 |
| 11,300 | 12,000 | 102,000 | 55,000 | 45,000 |
| 11,400 | 12,000 | 102,000 | 55,000 | 45,000 |
| 11,500 | 12,000 | 102,000 | 55,000 | 45,000 |
| 11,600 | 12,000 | 102,000 | 55,000 | 45,000 |
| 11,700 | 12,000 | 102,000 | 55,000 | 45,000 |
| 11,800 | 12,000 | 102,000 | 55,000 | 45,000 |
| 11,900 | 12,000 | 102,000 | 55,000 | 45,000 |
| 12,000 | 12,000 | 102,000 | 55,000 | 45,000 |
| 12,200 | 14,000 | 107,000 | 60,000 | 45,000 |
| 12,500 | 14,000 | 107,000 | 60,000 | 45,000 |

| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|---------------|----------|----------|----------|----------|---------------|----------|----------|----------|----------|
| 12,700 | 14,000 | 107,000 | 60,000 | 45,000 | 16,000 | 16,000 | 115,000 | 65,000 | 48,000 |
| 13,000 | 14,000 | 107,000 | 60,000 | 45,000 | 16,500 | 18,000 | 123,000 | 73,000 | 48,000 |
| 13,500 | 14,000 | 107,000 | 60,000 | 45,000 | 17,000 | 18,000 | 123,000 | 73,000 | 48,000 |
| 13,700 | 14,000 | 107,000 | 60,000 | 45,000 | 17,500 | 18,000 | 123,000 | 73,000 | 48,000 |
| 14,000 | 14,000 | 107,000 | 60,000 | 45,000 | 18,000 | 18,000 | 123,000 | 73,000 | 48,000 |
| 14,200 | 16,000 | 115,000 | 65,000 | 48,000 | 18,500 | 20,000 | 131,000 | 79,000 | 50,000 |
| 14,500 | 16,000 | 115,000 | 65,000 | 48,000 | 19,000 | 20,000 | 131,000 | 79,000 | 50,000 |
| 14,700 | 16,000 | 115,000 | 65,000 | 48,000 | 19,500 | 20,000 | 131,000 | 79,000 | 50,000 |
| 15,000 | 16,000 | 115,000 | 65,000 | 48,000 | 20,000 | 20,000 | 131,000 | 79,000 | 50,000 |
| 15,200 | 16,000 | 115,000 | 65,000 | 48,000 | | | | | |
| 15,500 | 16,000 | 115,000 | 65,000 | 48,000 | | | | | |
| 15,700 | 16,000 | 115,000 | 65,000 | 48,000 | | | | | |

SuperV-Bohrer

SuperV-Bohrer ohne Innenkühlung



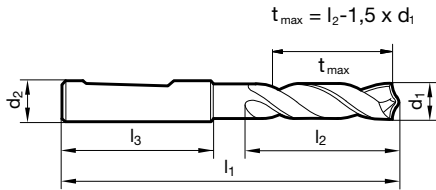
Katalog-Nr. 51871



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|---|---|---|---|---|---|
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 Arbeitsrichtwerte
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- Ausspitzung $\geq \varnothing 3,000$
- Flächenanschliff
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- optimierte Schneidengeometrie



| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|
| 3,000 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,100 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,170 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,200 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,300 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,400 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,500 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,570 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,600 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,700 | 6,000 | 62,000 | 20,000 | 36,000 |
| 3,800 | 6,000 | 66,000 | 24,000 | 36,000 |
| 3,900 | 6,000 | 66,000 | 24,000 | 36,000 |
| 3,970 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,000 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,100 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,200 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,300 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,370 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,400 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,500 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,600 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,700 | 6,000 | 66,000 | 24,000 | 36,000 |
| 4,760 | 6,000 | 66,000 | 28,000 | 36,000 |
| 4,800 | 6,000 | 66,000 | 28,000 | 36,000 |
| 4,900 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,000 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,100 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,160 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,200 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,300 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,400 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,500 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,550 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,560 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,600 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,700 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,800 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,900 | 6,000 | 66,000 | 28,000 | 36,000 |
| 5,950 | 6,000 | 66,000 | 28,000 | 36,000 |
| 6,000 | 6,000 | 66,000 | 28,000 | 36,000 |
| 6,100 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,200 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,300 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,350 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,400 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,500 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,600 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,700 | 8,000 | 79,000 | 34,000 | 36,000 |

| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|
| 6,750 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,800 | 8,000 | 79,000 | 34,000 | 36,000 |
| 6,900 | 8,000 | 79,000 | 34,000 | 36,000 |
| 7,000 | 8,000 | 79,000 | 34,000 | 36,000 |
| 7,100 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,140 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,200 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,300 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,400 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,500 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,540 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,600 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,700 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,800 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,900 | 8,000 | 79,000 | 41,000 | 36,000 |
| 7,940 | 8,000 | 79,000 | 41,000 | 36,000 |
| 8,000 | 8,000 | 79,000 | 41,000 | 36,000 |
| 8,100 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,200 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,300 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,330 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,400 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,500 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,600 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,700 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,730 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,800 | 10,000 | 89,000 | 47,000 | 40,000 |
| 8,900 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,000 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,100 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,130 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,200 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,250 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,300 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,400 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,500 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,520 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,600 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,700 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,800 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,900 | 10,000 | 89,000 | 47,000 | 40,000 |
| 9,920 | 10,000 | 89,000 | 47,000 | 40,000 |
| 10,000 | 10,000 | 89,000 | 47,000 | 40,000 |
| 10,100 | 12,000 | 102,000 | 55,000 | 45,000 |
| 10,200 | 12,000 | 102,000 | 55,000 | 45,000 |
| 10,300 | 12,000 | 102,000 | 55,000 | 45,000 |
| 10,400 | 12,000 | 102,000 | 55,000 | 45,000 |
| 10,500 | 12,000 | 102,000 | 55,000 | 45,000 |

| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 10,600 | 12,000 | 102,000 | 55,000 | 45,000 | 14,200 | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,700 | 12,000 | 102,000 | 55,000 | 45,000 | 14,300 | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,800 | 12,000 | 102,000 | 55,000 | 45,000 | 14,400 | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,900 | 12,000 | 102,000 | 55,000 | 45,000 | 14,500 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,000 | 12,000 | 102,000 | 55,000 | 45,000 | 14,700 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,100 | 12,000 | 102,000 | 55,000 | 45,000 | 15,000 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,200 | 12,000 | 102,000 | 55,000 | 45,000 | 15,200 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,300 | 12,000 | 102,000 | 55,000 | 45,000 | 15,500 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,400 | 12,000 | 102,000 | 55,000 | 45,000 | 15,600 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,500 | 12,000 | 102,000 | 55,000 | 45,000 | 15,700 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,600 | 12,000 | 102,000 | 55,000 | 45,000 | 15,800 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,700 | 12,000 | 102,000 | 55,000 | 45,000 | 16,000 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,800 | 12,000 | 102,000 | 55,000 | 45,000 | 16,100 | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,900 | 12,000 | 102,000 | 55,000 | 45,000 | 16,200 | 18,000 | 123,000 | 73,000 | 48,000 |
| 12,000 | 12,000 | 102,000 | 55,000 | 45,000 | 16,300 | 18,000 | 123,000 | 73,000 | 48,000 |
| 12,100 | 14,000 | 107,000 | 60,000 | 45,000 | 16,500 | 18,000 | 123,000 | 73,000 | 48,000 |
| 12,200 | 14,000 | 107,000 | 60,000 | 45,000 | 17,000 | 18,000 | 123,000 | 73,000 | 48,000 |
| 12,300 | 14,000 | 107,000 | 60,000 | 45,000 | 17,500 | 18,000 | 123,000 | 73,000 | 48,000 |
| 12,400 | 14,000 | 107,000 | 60,000 | 45,000 | 18,000 | 18,000 | 123,000 | 73,000 | 48,000 |
| 12,500 | 14,000 | 107,000 | 60,000 | 45,000 | 18,300 | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,600 | 14,000 | 107,000 | 60,000 | 45,000 | 18,500 | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,700 | 14,000 | 107,000 | 60,000 | 45,000 | 19,000 | 20,000 | 131,000 | 79,000 | 50,000 |
| 13,000 | 14,000 | 107,000 | 60,000 | 45,000 | 19,500 | 20,000 | 131,000 | 79,000 | 50,000 |
| 13,200 | 14,000 | 107,000 | 60,000 | 45,000 | 20,000 | 20,000 | 131,000 | 79,000 | 50,000 |
| 13,300 | 14,000 | 107,000 | 60,000 | 45,000 | | | | | |
| 13,500 | 14,000 | 107,000 | 60,000 | 45,000 | | | | | |
| 13,700 | 14,000 | 107,000 | 60,000 | 45,000 | | | | | |
| 13,800 | 14,000 | 107,000 | 60,000 | 45,000 | | | | | |
| 14,000 | 14,000 | 107,000 | 60,000 | 45,000 | | | | | |
| 14,100 | 16,000 | 115,000 | 65,000 | 48,000 | | | | | |

SuperV-Bohrer

SuperV-Bohrer ohne Innenkühlung



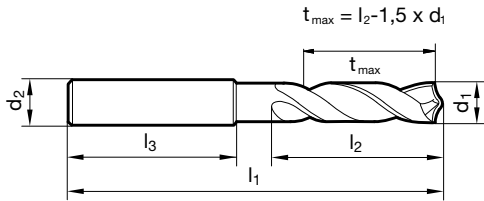
Katalog-Nr. 51787



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| P | M | K | N | S | H |
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- Ausspitzung $\geq \varnothing 3,000$
- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie



| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 3,000 | 6,000 | 66,000 | 28,000 | 36,000 | 7,600 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,100 | 6,000 | 66,000 | 28,000 | 36,000 | 7,700 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,200 | 6,000 | 66,000 | 28,000 | 36,000 | 7,800 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,300 | 6,000 | 66,000 | 28,000 | 36,000 | 7,900 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,400 | 6,000 | 66,000 | 28,000 | 36,000 | 8,000 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,500 | 6,000 | 66,000 | 28,000 | 36,000 | 8,100 | 10,000 | 103,000 | 61,000 | 40,000 |
| 3,600 | 6,000 | 66,000 | 28,000 | 36,000 | 8,200 | 10,000 | 103,000 | 61,000 | 40,000 |
| 3,700 | 6,000 | 66,000 | 28,000 | 36,000 | 8,300 | 10,000 | 103,000 | 61,000 | 40,000 |
| 3,800 | 6,000 | 74,000 | 36,000 | 36,000 | 8,400 | 10,000 | 103,000 | 61,000 | 40,000 |
| 3,900 | 6,000 | 74,000 | 36,000 | 36,000 | 8,500 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,000 | 6,000 | 74,000 | 36,000 | 36,000 | 8,600 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,100 | 6,000 | 74,000 | 36,000 | 36,000 | 8,700 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,200 | 6,000 | 74,000 | 36,000 | 36,000 | 8,800 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,300 | 6,000 | 74,000 | 36,000 | 36,000 | 8,900 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,400 | 6,000 | 74,000 | 36,000 | 36,000 | 9,000 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,500 | 6,000 | 74,000 | 36,000 | 36,000 | 9,100 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,600 | 6,000 | 74,000 | 36,000 | 36,000 | 9,200 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,700 | 6,000 | 74,000 | 36,000 | 36,000 | 9,300 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,760 | 6,000 | 82,000 | 44,000 | 36,000 | 9,400 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,800 | 6,000 | 82,000 | 44,000 | 36,000 | 9,500 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,900 | 6,000 | 82,000 | 44,000 | 36,000 | 9,600 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,000 | 6,000 | 82,000 | 44,000 | 36,000 | 9,700 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,100 | 6,000 | 82,000 | 44,000 | 36,000 | 9,800 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,200 | 6,000 | 82,000 | 44,000 | 36,000 | 9,900 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,300 | 6,000 | 82,000 | 44,000 | 36,000 | 10,000 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,400 | 6,000 | 82,000 | 44,000 | 36,000 | 10,100 | 12,000 | 118,000 | 71,000 | 45,000 |
| 5,500 | 6,000 | 82,000 | 44,000 | 36,000 | 10,200 | 12,000 | 118,000 | 71,000 | 45,000 |
| 5,600 | 6,000 | 82,000 | 44,000 | 36,000 | 10,300 | 12,000 | 118,000 | 71,000 | 45,000 |
| 5,700 | 6,000 | 82,000 | 44,000 | 36,000 | 10,400 | 12,000 | 118,000 | 71,000 | 45,000 |
| 5,800 | 6,000 | 82,000 | 44,000 | 36,000 | 10,500 | 12,000 | 118,000 | 71,000 | 45,000 |
| 5,900 | 6,000 | 82,000 | 44,000 | 36,000 | 10,600 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,000 | 6,000 | 82,000 | 44,000 | 36,000 | 10,700 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,100 | 8,000 | 91,000 | 53,000 | 36,000 | 10,800 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,200 | 8,000 | 91,000 | 53,000 | 36,000 | 10,900 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,300 | 8,000 | 91,000 | 53,000 | 36,000 | 11,000 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,350 | 8,000 | 91,000 | 53,000 | 36,000 | 11,100 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,400 | 8,000 | 91,000 | 53,000 | 36,000 | 11,200 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,500 | 8,000 | 91,000 | 53,000 | 36,000 | 11,300 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,600 | 8,000 | 91,000 | 53,000 | 36,000 | 11,400 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,700 | 8,000 | 91,000 | 53,000 | 36,000 | 11,500 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,800 | 8,000 | 91,000 | 53,000 | 36,000 | 11,600 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,900 | 8,000 | 91,000 | 53,000 | 36,000 | 11,700 | 12,000 | 118,000 | 71,000 | 45,000 |
| 7,000 | 8,000 | 91,000 | 53,000 | 36,000 | 11,800 | 12,000 | 118,000 | 71,000 | 45,000 |
| 7,100 | 8,000 | 91,000 | 53,000 | 36,000 | 11,900 | 12,000 | 118,000 | 71,000 | 45,000 |
| 7,200 | 8,000 | 91,000 | 53,000 | 36,000 | 12,000 | 12,000 | 118,000 | 71,000 | 45,000 |
| 7,300 | 8,000 | 91,000 | 53,000 | 36,000 | 12,200 | 14,000 | 124,000 | 77,000 | 45,000 |
| 7,400 | 8,000 | 91,000 | 53,000 | 36,000 | 12,500 | 14,000 | 124,000 | 77,000 | 45,000 |
| 7,500 | 8,000 | 91,000 | 53,000 | 36,000 | 12,700 | 14,000 | 124,000 | 77,000 | 45,000 |

| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 13,000 | 14,000 | 124,000 | 77,000 | 45,000 | 16,500 | 18,000 | 143,000 | 93,000 | 48,000 |
| 13,500 | 14,000 | 124,000 | 77,000 | 45,000 | 17,000 | 18,000 | 143,000 | 93,000 | 48,000 |
| 13,700 | 14,000 | 124,000 | 77,000 | 45,000 | 17,500 | 18,000 | 143,000 | 93,000 | 48,000 |
| 14,000 | 14,000 | 124,000 | 77,000 | 45,000 | 18,000 | 18,000 | 143,000 | 93,000 | 48,000 |
| 14,200 | 16,000 | 133,000 | 83,000 | 48,000 | 18,500 | 20,000 | 153,000 | 101,000 | 50,000 |
| 14,500 | 16,000 | 133,000 | 83,000 | 48,000 | 19,000 | 20,000 | 153,000 | 101,000 | 50,000 |
| 14,700 | 16,000 | 133,000 | 83,000 | 48,000 | 19,500 | 20,000 | 153,000 | 101,000 | 50,000 |
| 15,000 | 16,000 | 133,000 | 83,000 | 48,000 | 20,000 | 20,000 | 153,000 | 101,000 | 50,000 |
| 15,200 | 16,000 | 133,000 | 83,000 | 48,000 | | | | | |
| 15,500 | 16,000 | 133,000 | 83,000 | 48,000 | | | | | |
| 15,700 | 16,000 | 133,000 | 83,000 | 48,000 | | | | | |
| 16,000 | 16,000 | 133,000 | 83,000 | 48,000 | | | | | |

SuperV-Bohrer

SuperV-Bohrer ohne Innenkühlung



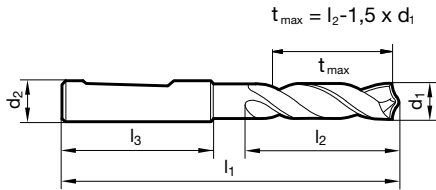
Katalog-Nr. 51887



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

 Arbeitsrichtwerte
Seite 93

- Ausspitzung $\geq \varnothing 3,000$
- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie



| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|
| 3,000 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,100 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,170 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,200 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,300 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,400 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,500 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,570 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,600 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,700 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,800 | 6,000 | 74,000 | 36,000 | 36,000 |
| 3,900 | 6,000 | 74,000 | 36,000 | 36,000 |
| 3,970 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,000 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,100 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,200 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,300 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,370 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,400 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,500 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,600 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,700 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,760 | 6,000 | 82,000 | 44,000 | 36,000 |
| 4,800 | 6,000 | 82,000 | 44,000 | 36,000 |
| 4,900 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,000 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,100 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,160 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,200 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,300 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,400 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,500 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,560 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,600 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,700 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,800 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,900 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,950 | 6,000 | 82,000 | 44,000 | 36,000 |
| 6,000 | 6,000 | 82,000 | 44,000 | 36,000 |
| 6,100 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,200 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,300 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,350 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,400 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,500 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,600 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,700 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,750 | 8,000 | 91,000 | 53,000 | 36,000 |

| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|
| 6,800 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,900 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,000 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,100 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,140 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,200 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,300 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,400 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,500 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,540 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,600 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,700 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,800 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,900 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,940 | 8,000 | 91,000 | 53,000 | 36,000 |
| 8,000 | 8,000 | 91,000 | 53,000 | 36,000 |
| 8,100 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,200 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,300 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,330 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,400 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,500 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,600 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,700 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,730 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,800 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,900 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,000 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,100 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,130 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,200 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,300 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,400 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,500 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,520 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,600 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,700 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,800 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,900 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,920 | 10,000 | 103,000 | 61,000 | 40,000 |
| 10,000 | 10,000 | 103,000 | 61,000 | 40,000 |
| 10,100 | 12,000 | 118,000 | 71,000 | 45,000 |
| 10,200 | 12,000 | 118,000 | 71,000 | 45,000 |
| 10,300 | 12,000 | 118,000 | 71,000 | 45,000 |
| 10,400 | 12,000 | 118,000 | 71,000 | 45,000 |
| 10,500 | 12,000 | 118,000 | 71,000 | 45,000 |
| 10,600 | 12,000 | 118,000 | 71,000 | 45,000 |
| 10,700 | 12,000 | 118,000 | 71,000 | 45,000 |

| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 10,800 | 12,000 | 118,000 | 71,000 | 45,000 | 14,700 | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,900 | 12,000 | 118,000 | 71,000 | 45,000 | 15,000 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,000 | 12,000 | 118,000 | 71,000 | 45,000 | 15,200 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,100 | 12,000 | 118,000 | 71,000 | 45,000 | 15,500 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,200 | 12,000 | 118,000 | 71,000 | 45,000 | 15,700 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,300 | 12,000 | 118,000 | 71,000 | 45,000 | 16,000 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,400 | 12,000 | 118,000 | 71,000 | 45,000 | 16,500 | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,500 | 12,000 | 118,000 | 71,000 | 45,000 | 17,000 | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,600 | 12,000 | 118,000 | 71,000 | 45,000 | 17,500 | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,700 | 12,000 | 118,000 | 71,000 | 45,000 | 18,000 | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,800 | 12,000 | 118,000 | 71,000 | 45,000 | 18,500 | 20,000 | 153,000 | 101,000 | 50,000 |
| 11,900 | 12,000 | 118,000 | 71,000 | 45,000 | 19,000 | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,000 | 12,000 | 118,000 | 71,000 | 45,000 | 19,500 | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,100 | 14,000 | 124,000 | 77,000 | 45,000 | 20,000 | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,200 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | |
| 12,500 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | |
| 12,700 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | |
| 13,000 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | |
| 13,500 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | |
| 13,700 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | |
| 14,000 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | |
| 14,100 | 16,000 | 133,000 | 83,000 | 48,000 | | | | | |
| 14,200 | 16,000 | 133,000 | 83,000 | 48,000 | | | | | |
| 14,500 | 16,000 | 133,000 | 83,000 | 48,000 | | | | | |

Die Universellen

SuperV-Bohrer

SuperV-Bohrer ohne Innenkühlung



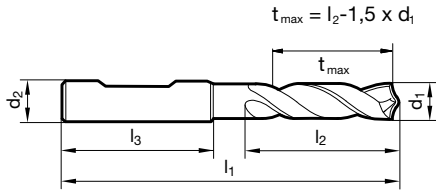
Katalog-Nr. 51687



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

 Arbeitsrichtwerte
Seite 93

- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie



| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|
| 3,000 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,100 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,170 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,200 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,250 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,300 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,400 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,500 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,570 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,600 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,700 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,800 | 6,000 | 74,000 | 36,000 | 36,000 |
| 3,900 | 6,000 | 74,000 | 36,000 | 36,000 |
| 3,970 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,000 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,100 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,200 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,300 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,370 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,400 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,500 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,600 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,650 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,700 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,760 | 6,000 | 82,000 | 44,000 | 36,000 |
| 4,800 | 6,000 | 82,000 | 44,000 | 36,000 |
| 4,900 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,000 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,100 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,160 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,200 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,300 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,400 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,500 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,550 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,560 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,600 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,700 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,800 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,900 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,950 | 6,000 | 82,000 | 44,000 | 36,000 |
| 6,000 | 6,000 | 82,000 | 44,000 | 36,000 |
| 6,100 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,200 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,300 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,350 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,400 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,500 | 8,000 | 91,000 | 53,000 | 36,000 |

| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|
| 6,600 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,700 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,750 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,800 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,900 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,000 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,100 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,140 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,200 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,300 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,400 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,500 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,540 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,600 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,700 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,800 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,900 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,940 | 8,000 | 91,000 | 53,000 | 36,000 |
| 8,000 | 8,000 | 91,000 | 53,000 | 36,000 |
| 8,100 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,200 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,300 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,330 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,400 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,500 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,600 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,700 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,730 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,800 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,900 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,000 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,100 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,130 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,200 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,250 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,300 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,400 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,500 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,520 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,600 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,700 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,800 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,900 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,920 | 10,000 | 103,000 | 61,000 | 40,000 |
| 10,000 | 10,000 | 103,000 | 61,000 | 40,000 |
| 10,100 | 12,000 | 118,000 | 71,000 | 45,000 |
| 10,200 | 12,000 | 118,000 | 71,000 | 45,000 |
| 10,300 | 12,000 | 118,000 | 71,000 | 45,000 |

| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 10,320 | 12,000 | 118,000 | 71,000 | 45,000 | 13,500 | 14,000 | 124,000 | 77,000 | 45,000 |
| 10,400 | 12,000 | 118,000 | 71,000 | 45,000 | 13,700 | 14,000 | 124,000 | 77,000 | 45,000 |
| 10,500 | 12,000 | 118,000 | 71,000 | 45,000 | 14,000 | 14,000 | 124,000 | 77,000 | 45,000 |
| 10,600 | 12,000 | 118,000 | 71,000 | 45,000 | 14,200 | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,700 | 12,000 | 118,000 | 71,000 | 45,000 | 14,290 | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,800 | 12,000 | 118,000 | 71,000 | 45,000 | 14,500 | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,900 | 12,000 | 118,000 | 71,000 | 45,000 | 14,700 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,000 | 12,000 | 118,000 | 71,000 | 45,000 | 15,000 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,100 | 12,000 | 118,000 | 71,000 | 45,000 | 15,200 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,110 | 12,000 | 118,000 | 71,000 | 45,000 | 15,500 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,200 | 12,000 | 118,000 | 71,000 | 45,000 | 15,700 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,300 | 12,000 | 118,000 | 71,000 | 45,000 | 16,000 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,400 | 12,000 | 118,000 | 71,000 | 45,000 | 16,500 | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,500 | 12,000 | 118,000 | 71,000 | 45,000 | 17,000 | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,600 | 12,000 | 118,000 | 71,000 | 45,000 | 17,500 | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,700 | 12,000 | 118,000 | 71,000 | 45,000 | 18,000 | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,800 | 12,000 | 118,000 | 71,000 | 45,000 | 18,500 | 20,000 | 153,000 | 101,000 | 50,000 |
| 11,900 | 12,000 | 118,000 | 71,000 | 45,000 | 19,000 | 20,000 | 153,000 | 101,000 | 50,000 |
| 11,910 | 12,000 | 118,000 | 71,000 | 45,000 | 19,500 | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,000 | 12,000 | 118,000 | 71,000 | 45,000 | 20,000 | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,200 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | |
| 12,500 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | |
| 12,700 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | |
| 13,000 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung



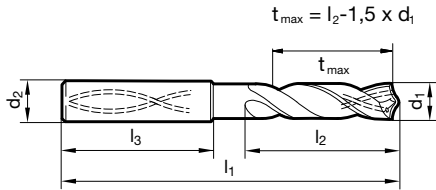
Katalog-Nr. 51776



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

Arbeitsrichtwerte
Seite 91

- Ausspitzung $\geq \varnothing 3,000$
- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie



| d1 | | d2 | l1 | l2 | l3 | d1 | | d2 | l1 | l2 | l3 |
|-------|------|-------|--------|--------|--------|--------|------|--------|---------|--------|--------|
| mm | inch | mm | mm | mm | mm | mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,500 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,100 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,600 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,200 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,700 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,300 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,800 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,400 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,900 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,500 | | 6,000 | 62,000 | 20,000 | 36,000 | 8,000 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,600 | | 6,000 | 62,000 | 20,000 | 36,000 | 8,100 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 3,700 | | 6,000 | 62,000 | 20,000 | 36,000 | 8,200 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 3,800 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,300 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 3,900 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,400 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,000 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,500 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,100 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,600 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,200 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,700 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,300 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,800 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,400 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,900 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,500 | | 6,000 | 66,000 | 24,000 | 36,000 | 9,000 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,600 | | 6,000 | 66,000 | 24,000 | 36,000 | 9,100 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,650 | | 6,000 | 66,000 | 24,000 | 36,000 | 9,200 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,700 | | 6,000 | 66,000 | 24,000 | 36,000 | 9,250 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,800 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,300 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,900 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,400 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,500 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,600 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,700 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,800 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,900 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 10,000 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,550 | | 6,000 | 66,000 | 28,000 | 36,000 | 10,100 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 5,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 10,200 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 5,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 10,300 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 5,800 | | 6,000 | 66,000 | 28,000 | 36,000 | 10,400 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 5,900 | | 6,000 | 66,000 | 28,000 | 36,000 | 10,500 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 10,600 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,100 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,700 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,200 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,800 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,300 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,900 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,350 | 1/4 | 8,000 | 79,000 | 34,000 | 36,000 | 11,000 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,400 | | 8,000 | 79,000 | 34,000 | 36,000 | 11,100 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,500 | | 8,000 | 79,000 | 34,000 | 36,000 | 11,200 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,600 | | 8,000 | 79,000 | 34,000 | 36,000 | 11,300 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,700 | | 8,000 | 79,000 | 34,000 | 36,000 | 11,400 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,800 | | 8,000 | 79,000 | 34,000 | 36,000 | 11,500 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,900 | | 8,000 | 79,000 | 34,000 | 36,000 | 11,600 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 7,000 | | 8,000 | 79,000 | 34,000 | 36,000 | 11,700 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 7,100 | | 8,000 | 79,000 | 41,000 | 36,000 | 11,800 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 7,200 | | 8,000 | 79,000 | 41,000 | 36,000 | 11,900 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 7,300 | | 8,000 | 79,000 | 41,000 | 36,000 | 12,000 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 7,400 | | 8,000 | 79,000 | 41,000 | 36,000 | 12,200 | | 14,000 | 107,000 | 60,000 | 45,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 12,500 | | 14,000 | 107,000 | 60,000 | 45,000 | 18,000 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 12,700 | 1/2 | 14,000 | 107,000 | 60,000 | 45,000 | 18,500 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 13,000 | | 14,000 | 107,000 | 60,000 | 45,000 | 18,700 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 13,500 | | 14,000 | 107,000 | 60,000 | 45,000 | 19,000 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 13,700 | | 14,000 | 107,000 | 60,000 | 45,000 | 19,500 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 14,000 | | 14,000 | 107,000 | 60,000 | 45,000 | 19,700 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 14,200 | | 16,000 | 115,000 | 65,000 | 48,000 | 20,000 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 14,500 | | 16,000 | 115,000 | 65,000 | 48,000 | | | | | | |
| 14,700 | | 16,000 | 115,000 | 65,000 | 48,000 | | | | | | |
| 15,000 | | 16,000 | 115,000 | 65,000 | 48,000 | | | | | | |
| 15,200 | | 16,000 | 115,000 | 65,000 | 48,000 | | | | | | |
| 15,500 | | 16,000 | 115,000 | 65,000 | 48,000 | | | | | | |
| 15,700 | | 16,000 | 115,000 | 65,000 | 48,000 | | | | | | |
| 16,000 | | 16,000 | 115,000 | 65,000 | 48,000 | | | | | | |
| 16,500 | | 18,000 | 123,000 | 73,000 | 48,000 | | | | | | |
| 16,700 | | 18,000 | 123,000 | 73,000 | 48,000 | | | | | | |
| 17,000 | | 18,000 | 123,000 | 73,000 | 48,000 | | | | | | |
| 17,500 | | 18,000 | 123,000 | 73,000 | 48,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

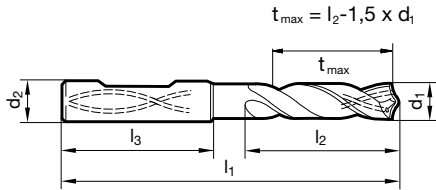


Katalog-Nr. 51876



| P | M | K | N | S | H | Arbeitsrichtwerte Seite 91 |
|---|---|---|---|---|---|-------------------------------|
| ● | ○ | ● | ○ | ○ | ○ | |

- Ausspitzung $\geq \varnothing 3,000$
- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie



| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|-------|----------|----------|----------|----------|
| 3,000 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,100 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,100 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,140 | 9/32 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,200 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,200 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,300 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,300 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,400 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,400 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,500 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,500 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,600 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,540 | 19/64 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,700 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,600 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,800 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,700 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,900 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,800 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,000 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,900 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,100 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,940 | 5/16 | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,200 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,000 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,300 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,100 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,370 | 11/64 | 6,000 | 66,000 | 24,000 | 36,000 | 8,200 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,400 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,300 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,500 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,330 | 21/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,600 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,400 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,700 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,500 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,760 | 3/16 | 6,000 | 66,000 | 28,000 | 36,000 | 8,600 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,800 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,700 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,900 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,730 | 11/32 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,800 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,900 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 66,000 | 28,000 | 36,000 | 9,000 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,100 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,130 | 23/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,200 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,300 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 66,000 | 28,000 | 36,000 | 9,400 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,500 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,520 | 3/8 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,800 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,600 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,900 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,700 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 66,000 | 28,000 | 36,000 | 9,800 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,900 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,100 | | 8,000 | 79,000 | 34,000 | 36,000 | 9,920 | 25/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,200 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,000 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,300 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,100 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,350 | 1/4 | 8,000 | 79,000 | 34,000 | 36,000 | 10,200 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,400 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,300 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,500 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,320 | 13/32 | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,600 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,400 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,700 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,500 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,750 | 17/64 | 8,000 | 79,000 | 34,000 | 36,000 | 10,600 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,800 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,700 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,900 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,800 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 7,000 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,900 | | 12,000 | 102,000 | 55,000 | 45,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 11,000 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,100 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,100 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,200 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 102,000 | 55,000 | 45,000 | 14,290 | 9/16 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,200 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,300 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,300 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,500 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,400 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,700 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,500 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,900 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,600 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,000 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,700 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,200 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,800 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,500 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,900 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,600 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,910 | 15/32 | 12,000 | 102,000 | 55,000 | 45,000 | 15,700 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 12,000 | | 12,000 | 102,000 | 55,000 | 45,000 | 16,000 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 12,100 | | 14,000 | 107,000 | 60,000 | 45,000 | 16,100 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 12,200 | | 14,000 | 107,000 | 60,000 | 45,000 | 16,200 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 12,300 | 31/64 | 14,000 | 107,000 | 60,000 | 45,000 | 16,500 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 12,400 | | 14,000 | 107,000 | 60,000 | 45,000 | 17,000 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 12,500 | | 14,000 | 107,000 | 60,000 | 45,000 | 17,500 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 12,700 | 1/2 | 14,000 | 107,000 | 60,000 | 45,000 | 17,700 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 13,000 | | 14,000 | 107,000 | 60,000 | 45,000 | 18,000 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 13,200 | | 14,000 | 107,000 | 60,000 | 45,000 | 18,500 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 13,500 | | 14,000 | 107,000 | 60,000 | 45,000 | 19,000 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 13,700 | | 14,000 | 107,000 | 60,000 | 45,000 | 19,500 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 14,000 | | 14,000 | 107,000 | 60,000 | 45,000 | 20,000 | | 20,000 | 131,000 | 79,000 | 50,000 |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

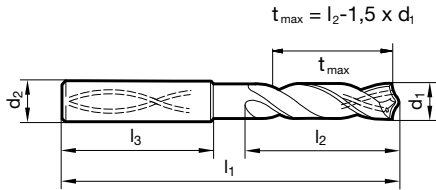


Katalog-Nr. 51781



| P | M | K | N | S | H | Arbeitsrichtwerte Seite 95 |
|---|---|---|---|---|---|-------------------------------|
| ● | ○ | ● | ○ | ○ | ○ | |

- Ausspitzung $\geq \varnothing 3,000$
- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie



| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|-------|----------|----------|----------|----------|
| 3,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,100 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,140 | 9/32 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,200 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,300 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,400 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,500 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,800 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,540 | 19/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,900 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,000 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,100 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,200 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,300 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,940 | 5/16 | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 74,000 | 36,000 | 36,000 | 8,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,400 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,500 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,600 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,650 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,330 | 21/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,700 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,760 | 3/16 | 6,000 | 82,000 | 44,000 | 36,000 | 8,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,730 | 11/32 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,100 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 82,000 | 44,000 | 36,000 | 8,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,200 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,300 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,400 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,130 | 23/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,500 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,550 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,250 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 82,000 | 44,000 | 36,000 | 9,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,600 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,700 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,520 | 3/8 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 82,000 | 44,000 | 36,000 | 9,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,100 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,200 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,920 | 25/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,300 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,350 | 1/4 | 8,000 | 91,000 | 53,000 | 36,000 | 10,100 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,400 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,200 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,500 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,300 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,600 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,320 | 13/32 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,700 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,400 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,750 | 17/64 | 8,000 | 91,000 | 53,000 | 36,000 | 10,500 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,800 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,600 | | 12,000 | 118,000 | 71,000 | 45,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 10,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,000 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 10,720 | 27/64 | 12,000 | 118,000 | 71,000 | 45,000 | 14,100 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,290 | 9/16 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,100 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 118,000 | 71,000 | 45,000 | 15,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,200 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,300 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,600 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,800 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,700 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,910 | 15/32 | 12,000 | 118,000 | 71,000 | 45,000 | 17,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,100 | | 14,000 | 124,000 | 77,000 | 45,000 | 17,700 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,200 | | 14,000 | 124,000 | 77,000 | 45,000 | 18,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,300 | 31/64 | 14,000 | 124,000 | 77,000 | 45,000 | 18,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,400 | | 14,000 | 124,000 | 77,000 | 45,000 | 18,700 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,500 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,700 | 1/2 | 14,000 | 124,000 | 77,000 | 45,000 | 19,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,000 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,700 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,200 | | 14,000 | 124,000 | 77,000 | 45,000 | 20,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,500 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,600 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,700 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,800 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,900 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung



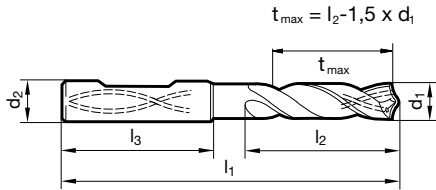
Katalog-Nr. 51881



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| d1 | | d2 | l1 | l2 | l3 | d1 | | d2 | l1 | l2 | l3 |
|-------|-------|-------|--------|--------|--------|--------|-------|--------|---------|--------|--------|
| mm | inch | mm | mm | mm | mm | mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,100 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,140 | 9/32 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,200 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,300 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,400 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,500 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,540 | 19/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,800 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,900 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,000 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,100 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,940 | 5/16 | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,200 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,300 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,370 | 11/64 | 6,000 | 74,000 | 36,000 | 36,000 | 8,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,400 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,500 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,330 | 21/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,600 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,700 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,760 | 3/16 | 6,000 | 82,000 | 44,000 | 36,000 | 8,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,730 | 11/32 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,100 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 82,000 | 44,000 | 36,000 | 9,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,200 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,300 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,130 | 23/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,400 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,500 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 82,000 | 44,000 | 36,000 | 9,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,600 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,700 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,520 | 3/8 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 82,000 | 44,000 | 36,000 | 9,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,100 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,920 | 25/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,200 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,300 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,100 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,350 | 1/4 | 8,000 | 91,000 | 53,000 | 36,000 | 10,200 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,400 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,300 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,500 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,320 | 13/32 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,600 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,400 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,700 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,500 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,750 | 17/64 | 8,000 | 91,000 | 53,000 | 36,000 | 10,600 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,800 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,700 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,900 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,800 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 7,000 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,900 | | 12,000 | 118,000 | 71,000 | 45,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 11,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,000 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 11,100 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,100 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 118,000 | 71,000 | 45,000 | 14,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,200 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,290 | 9/16 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,300 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,800 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,910 | 15/32 | 12,000 | 118,000 | 71,000 | 45,000 | 16,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 12,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,100 | | 14,000 | 124,000 | 77,000 | 45,000 | 17,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,200 | | 14,000 | 124,000 | 77,000 | 45,000 | 17,300 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,300 | 31/64 | 14,000 | 124,000 | 77,000 | 45,000 | 17,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,400 | | 14,000 | 124,000 | 77,000 | 45,000 | 18,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,500 | | 14,000 | 124,000 | 77,000 | 45,000 | 18,200 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,700 | 1/2 | 14,000 | 124,000 | 77,000 | 45,000 | 18,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,000 | | 14,000 | 124,000 | 77,000 | 45,000 | 18,600 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,500 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,700 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,800 | | 14,000 | 124,000 | 77,000 | 45,000 | 20,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,900 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

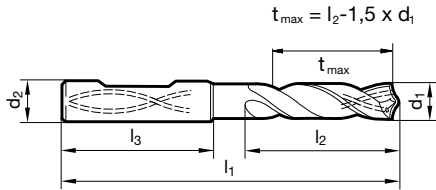


Katalog-Nr. 51681



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| P | M | K | N | S | H | Arbeitsrichtwerte Seite 95 |
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| d1 | | d2 | l1 | l2 | l3 | d1 | | d2 | l1 | l2 | l3 |
|-------|-------|-------|--------|--------|--------|--------|-------|--------|---------|--------|--------|
| mm | inch | mm | mm | mm | mm | mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,750 | 17/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 66,000 | 28,000 | 36,000 | 6,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,250 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,100 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,140 | 9/32 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,200 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 66,000 | 28,000 | 36,000 | 7,300 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,400 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,500 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,800 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,540 | 19/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,900 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 74,000 | 36,000 | 36,000 | 7,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,000 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,100 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,200 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,940 | 5/16 | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,300 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 74,000 | 36,000 | 36,000 | 8,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,400 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,500 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,600 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,330 | 21/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,650 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,700 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,760 | 3/16 | 6,000 | 82,000 | 44,000 | 36,000 | 8,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,730 | 11/32 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,100 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 82,000 | 44,000 | 36,000 | 9,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,200 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,300 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,130 | 23/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,400 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,500 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,250 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 82,000 | 44,000 | 36,000 | 9,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,600 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,700 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,520 | 3/8 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 82,000 | 44,000 | 36,000 | 9,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,100 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,200 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,920 | 25/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,300 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,350 | 1/4 | 8,000 | 91,000 | 53,000 | 36,000 | 10,100 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,400 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,200 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,500 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,300 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,600 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,320 | 13/32 | 12,000 | 118,000 | 71,000 | 45,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 10,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 13,700 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 10,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,000 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 10,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,290 | 9/16 | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,100 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 118,000 | 71,000 | 45,000 | 15,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,200 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,300 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 18,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 18,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 11,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 19,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 11,910 | 15/32 | 12,000 | 118,000 | 71,000 | 45,000 | 19,050 | 3/4 | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 19,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,200 | | 14,000 | 124,000 | 77,000 | 45,000 | 20,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,500 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 12,700 | 1/2 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,000 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,500 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung



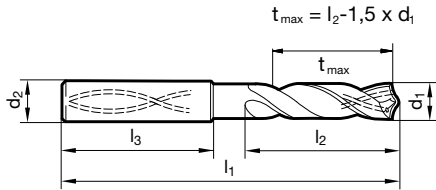
Katalog-Nr. 51789



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

 Arbeitsrichtwerte
Seite 97

- Ausspitzung $\geq \varnothing 3,000$
- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie
- vier Führungsfasen



| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|------|----------|----------|----------|----------|
| 3,000 | | 6,000 | 70,000 | 30,000 | 36,000 |
| 3,100 | | 6,000 | 70,000 | 30,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 70,000 | 30,000 | 36,000 |
| 3,200 | | 6,000 | 70,000 | 30,000 | 36,000 |
| 3,250 | | 6,000 | 70,000 | 30,000 | 36,000 |
| 3,300 | | 6,000 | 70,000 | 30,000 | 36,000 |
| 3,400 | | 6,000 | 75,000 | 35,500 | 36,000 |
| 3,500 | | 6,000 | 75,000 | 35,500 | 36,000 |
| 3,570 | 9/64 | 6,000 | 75,000 | 35,500 | 36,000 |
| 3,600 | | 6,000 | 75,000 | 35,500 | 36,000 |
| 3,700 | | 6,000 | 75,000 | 35,500 | 36,000 |
| 3,800 | | 6,000 | 75,000 | 37,500 | 36,000 |
| 3,900 | | 6,000 | 75,000 | 37,500 | 36,000 |
| 3,970 | 5/32 | 6,000 | 75,000 | 37,500 | 36,000 |
| 4,000 | | 6,000 | 75,000 | 37,500 | 36,000 |
| 4,100 | | 6,000 | 75,000 | 37,500 | 36,000 |
| 4,200 | | 6,000 | 75,000 | 37,500 | 36,000 |
| 4,300 | | 6,000 | 85,000 | 45,000 | 36,000 |
| 4,400 | | 6,000 | 85,000 | 45,000 | 36,000 |
| 4,500 | | 6,000 | 85,000 | 45,000 | 36,000 |
| 4,600 | | 6,000 | 85,000 | 45,000 | 36,000 |
| 4,700 | | 6,000 | 85,000 | 45,000 | 36,000 |
| 4,800 | | 6,000 | 90,000 | 50,000 | 36,000 |
| 4,900 | | 6,000 | 90,000 | 50,000 | 36,000 |
| 5,000 | | 6,000 | 90,000 | 50,000 | 36,000 |
| 5,100 | | 6,000 | 90,000 | 50,000 | 36,000 |
| 5,200 | | 6,000 | 90,000 | 50,000 | 36,000 |
| 5,300 | | 6,000 | 90,000 | 50,000 | 36,000 |
| 5,400 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 5,500 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 5,700 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 5,800 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 5,900 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 6,000 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 6,200 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 6,300 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 6,500 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 6,600 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 6,700 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 6,800 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 6,900 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,000 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,100 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,200 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,500 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,600 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,700 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,800 | | 8,000 | 116,000 | 76,000 | 36,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|------|----------|----------|----------|----------|
| 8,000 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 8,100 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 8,200 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 8,400 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 8,500 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 8,600 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 8,700 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 8,800 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 9,000 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 9,100 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 9,200 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 9,300 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 9,400 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 9,500 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 9,700 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 9,800 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 9,900 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 10,000 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 10,200 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 10,500 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 10,800 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 11,000 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 11,200 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 11,500 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 11,800 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 12,000 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 12,200 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 12,500 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 12,700 | 1/2 | 14,000 | 182,000 | 133,000 | 45,000 |
| 13,000 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 13,500 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 14,000 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 14,200 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 14,500 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 15,000 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 15,500 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 16,000 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 16,500 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 17,000 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 17,500 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 18,000 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 18,500 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 19,000 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 19,500 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 20,000 | | 20,000 | 244,000 | 190,000 | 50,000 |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung



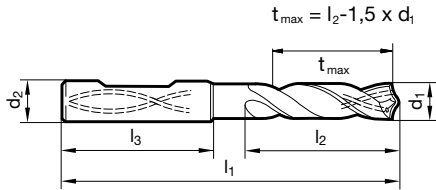
Katalog-Nr. 51889



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

Arbeitsrichtwerte
Seite 97

- Ausspitzung $\geq \varnothing 3,000$
- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie
- vier Führungsfasen



| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 3,000 | | 6,000 | 70,000 | 30,000 | 36,000 | 8,000 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 3,100 | | 6,000 | 70,000 | 30,000 | 36,000 | 8,100 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 3,170 | 1/8 | 6,000 | 70,000 | 30,000 | 36,000 | 8,200 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 3,200 | | 6,000 | 70,000 | 30,000 | 36,000 | 8,400 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 3,250 | | 6,000 | 70,000 | 30,000 | 36,000 | 8,500 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 3,300 | | 6,000 | 70,000 | 30,000 | 36,000 | 8,600 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 3,400 | | 6,000 | 75,000 | 35,500 | 36,000 | 8,700 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 3,500 | | 6,000 | 75,000 | 35,500 | 36,000 | 8,800 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 3,570 | 9/64 | 6,000 | 75,000 | 35,500 | 36,000 | 9,000 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 3,600 | | 6,000 | 75,000 | 35,500 | 36,000 | 9,100 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 3,700 | | 6,000 | 75,000 | 35,500 | 36,000 | 9,200 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 3,800 | | 6,000 | 75,000 | 37,500 | 36,000 | 9,300 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 3,900 | | 6,000 | 75,000 | 37,500 | 36,000 | 9,400 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 3,970 | 5/32 | 6,000 | 75,000 | 37,500 | 36,000 | 9,500 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 4,000 | | 6,000 | 75,000 | 37,500 | 36,000 | 9,700 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 4,100 | | 6,000 | 75,000 | 37,500 | 36,000 | 9,800 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 4,200 | | 6,000 | 75,000 | 37,500 | 36,000 | 9,900 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 4,300 | | 6,000 | 85,000 | 45,000 | 36,000 | 10,000 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 4,400 | | 6,000 | 85,000 | 45,000 | 36,000 | 10,200 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 4,500 | | 6,000 | 85,000 | 45,000 | 36,000 | 10,300 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 4,600 | | 6,000 | 85,000 | 45,000 | 36,000 | 10,500 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 4,700 | | 6,000 | 85,000 | 45,000 | 36,000 | 10,800 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 4,800 | | 6,000 | 90,000 | 50,000 | 36,000 | 11,000 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 4,900 | | 6,000 | 90,000 | 50,000 | 36,000 | 11,200 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 5,000 | | 6,000 | 90,000 | 50,000 | 36,000 | 11,500 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 5,100 | | 6,000 | 90,000 | 50,000 | 36,000 | 11,800 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 5,200 | | 6,000 | 90,000 | 50,000 | 36,000 | 12,000 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 5,300 | | 6,000 | 90,000 | 50,000 | 36,000 | 12,100 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 5,400 | | 6,000 | 97,000 | 57,000 | 36,000 | 12,200 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 5,500 | | 6,000 | 97,000 | 57,000 | 36,000 | 12,500 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 5,700 | | 6,000 | 97,000 | 57,000 | 36,000 | 12,700 | 1/2 | 14,000 | 182,000 | 133,000 | 45,000 |
| 5,800 | | 6,000 | 97,000 | 57,000 | 36,000 | 13,000 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 5,900 | | 6,000 | 97,000 | 57,000 | 36,000 | 13,500 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 6,000 | | 6,000 | 97,000 | 57,000 | 36,000 | 14,000 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 6,200 | | 8,000 | 106,000 | 66,000 | 36,000 | 14,100 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 6,300 | | 8,000 | 106,000 | 66,000 | 36,000 | 14,200 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 6,500 | | 8,000 | 106,000 | 66,000 | 36,000 | 14,500 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 6,600 | | 8,000 | 106,000 | 66,000 | 36,000 | 15,000 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 6,700 | | 8,000 | 106,000 | 66,000 | 36,000 | 15,500 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 6,800 | | 8,000 | 106,000 | 66,000 | 36,000 | 16,000 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 6,900 | | 8,000 | 116,000 | 76,000 | 36,000 | 16,500 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 7,000 | | 8,000 | 116,000 | 76,000 | 36,000 | 17,000 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 7,100 | | 8,000 | 116,000 | 76,000 | 36,000 | 17,500 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 7,200 | | 8,000 | 116,000 | 76,000 | 36,000 | 18,000 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 7,500 | | 8,000 | 116,000 | 76,000 | 36,000 | 18,500 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 7,600 | | 8,000 | 116,000 | 76,000 | 36,000 | 19,000 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 7,700 | | 8,000 | 116,000 | 76,000 | 36,000 | 19,500 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 7,800 | | 8,000 | 116,000 | 76,000 | 36,000 | 20,000 | | 20,000 | 244,000 | 190,000 | 50,000 |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

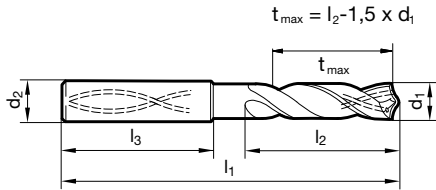


Katalog-Nr. 51893



| | | | | | | |
|---|---|---|---|---|---|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 99 |
| ● | ○ | ● | ○ | ○ | | |

- Ausspitzung $\geq \varnothing 3,000$
- Flächenanschliff
- Kopfbeschichtung
- Hauptschneidenform gerade
- optimierte Schneidengeometrie
- vier Führungsfasen



| d1 | inch | d2 | l1 | l2 | l3 | d1 | inch | d2 | l1 | l2 | l3 |
|-------|------|-------|---------|---------|--------|--------|------|--------|---------|---------|--------|
| mm | | mm | mm | mm | mm | mm | | mm | mm | mm | mm |
| 3,000 | | 6,000 | 90,000 | 50,000 | 36,000 | 7,800 | | 8,000 | 146,000 | 108,000 | 36,000 |
| 3,100 | | 6,000 | 90,000 | 50,000 | 36,000 | 7,900 | | 8,000 | 146,000 | 108,000 | 36,000 |
| 3,200 | | 6,000 | 90,000 | 50,000 | 36,000 | 8,000 | | 8,000 | 146,000 | 108,000 | 36,000 |
| 3,300 | | 6,000 | 90,000 | 50,000 | 36,000 | 8,100 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 3,400 | | 6,000 | 90,000 | 50,000 | 36,000 | 8,200 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 3,500 | | 6,000 | 90,000 | 50,000 | 36,000 | 8,300 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 3,600 | | 6,000 | 90,000 | 50,000 | 36,000 | 8,400 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 3,700 | | 6,000 | 90,000 | 50,000 | 36,000 | 8,500 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 3,800 | | 6,000 | 102,000 | 64,000 | 36,000 | 8,600 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 3,900 | | 6,000 | 102,000 | 64,000 | 36,000 | 8,700 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 4,000 | | 6,000 | 102,000 | 64,000 | 36,000 | 8,800 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 4,100 | | 6,000 | 102,000 | 64,000 | 36,000 | 8,900 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 4,200 | | 6,000 | 102,000 | 64,000 | 36,000 | 9,000 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 4,300 | | 6,000 | 102,000 | 64,000 | 36,000 | 9,100 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 4,400 | | 6,000 | 102,000 | 64,000 | 36,000 | 9,200 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 4,500 | | 6,000 | 102,000 | 64,000 | 36,000 | 9,300 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 4,600 | | 6,000 | 102,000 | 64,000 | 36,000 | 9,400 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 4,700 | | 6,000 | 102,000 | 64,000 | 36,000 | 9,500 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 4,800 | | 6,000 | 116,000 | 78,000 | 36,000 | 9,600 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 4,900 | | 6,000 | 116,000 | 78,000 | 36,000 | 9,700 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 5,000 | | 6,000 | 116,000 | 78,000 | 36,000 | 9,800 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 5,100 | | 6,000 | 116,000 | 78,000 | 36,000 | 9,900 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 5,200 | | 6,000 | 116,000 | 78,000 | 36,000 | 10,000 | | 10,000 | 162,000 | 120,000 | 40,000 |
| 5,300 | | 6,000 | 116,000 | 78,000 | 36,000 | 10,200 | | 12,000 | 204,000 | 156,000 | 45,000 |
| 5,400 | | 6,000 | 116,000 | 78,000 | 36,000 | 10,500 | | 12,000 | 204,000 | 156,000 | 45,000 |
| 5,500 | | 6,000 | 116,000 | 78,000 | 36,000 | 11,000 | | 12,000 | 204,000 | 156,000 | 45,000 |
| 5,600 | | 6,000 | 116,000 | 78,000 | 36,000 | 11,500 | | 12,000 | 204,000 | 156,000 | 45,000 |
| 5,700 | | 6,000 | 116,000 | 78,000 | 36,000 | 12,000 | | 12,000 | 204,000 | 156,000 | 45,000 |
| 5,800 | | 6,000 | 116,000 | 78,000 | 36,000 | 12,500 | | 14,000 | 230,000 | 182,000 | 45,000 |
| 5,900 | | 6,000 | 116,000 | 78,000 | 36,000 | 12,700 | 1/2 | 14,000 | 230,000 | 182,000 | 45,000 |
| 6,000 | | 6,000 | 116,000 | 78,000 | 36,000 | 13,000 | | 14,000 | 230,000 | 182,000 | 45,000 |
| 6,100 | | 8,000 | 146,000 | 108,000 | 36,000 | 13,500 | | 14,000 | 230,000 | 182,000 | 45,000 |
| 6,200 | | 8,000 | 146,000 | 108,000 | 36,000 | 14,000 | | 14,000 | 230,000 | 182,000 | 45,000 |
| 6,300 | | 8,000 | 146,000 | 108,000 | 36,000 | 14,500 | | 16,000 | 260,000 | 208,000 | 48,000 |
| 6,400 | | 8,000 | 146,000 | 108,000 | 36,000 | 15,000 | | 16,000 | 260,000 | 208,000 | 48,000 |
| 6,500 | | 8,000 | 146,000 | 108,000 | 36,000 | 15,500 | | 16,000 | 260,000 | 208,000 | 48,000 |
| 6,600 | | 8,000 | 146,000 | 108,000 | 36,000 | 16,000 | | 16,000 | 260,000 | 208,000 | 48,000 |
| 6,700 | | 8,000 | 146,000 | 108,000 | 36,000 | 16,500 | | 18,000 | 285,000 | 234,000 | 48,000 |
| 6,800 | | 8,000 | 146,000 | 108,000 | 36,000 | 17,000 | | 18,000 | 285,000 | 234,000 | 48,000 |
| 6,900 | | 8,000 | 146,000 | 108,000 | 36,000 | 17,500 | | 18,000 | 285,000 | 234,000 | 48,000 |
| 7,000 | | 8,000 | 146,000 | 108,000 | 36,000 | 18,000 | | 18,000 | 285,000 | 234,000 | 48,000 |
| 7,100 | | 8,000 | 146,000 | 108,000 | 36,000 | 18,500 | | 20,000 | 310,000 | 258,000 | 50,000 |
| 7,200 | | 8,000 | 146,000 | 108,000 | 36,000 | 19,000 | | 20,000 | 310,000 | 258,000 | 50,000 |
| 7,300 | | 8,000 | 146,000 | 108,000 | 36,000 | 19,500 | | 20,000 | 310,000 | 258,000 | 50,000 |
| 7,400 | | 8,000 | 146,000 | 108,000 | 36,000 | 20,000 | | 20,000 | 310,000 | 258,000 | 50,000 |
| 7,500 | | 8,000 | 146,000 | 108,000 | 36,000 | | | | | | |
| 7,600 | | 8,000 | 146,000 | 108,000 | 36,000 | | | | | | |
| 7,700 | | 8,000 | 146,000 | 108,000 | 36,000 | | | | | | |

SuperV-Bohrer

SuperV-M Universal-Kleinstbohrer



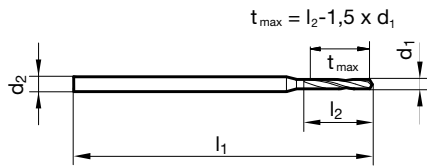
Katalog-Nr. 51720



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

Arbeitsrichtwerte
Seite 101

- Ausspitzung $\geq \varnothing 0,800$
- Flächenanschliff
- Hauptschneidenform gerade



| d1 mm | inch | d2 mm | l1 mm | l2 mm |
|----------|------|----------|----------|----------|
| 0,100 | | 3,000 | 38,000 | 1,200 |
| 0,200 | | 3,000 | 38,000 | 2,500 |
| 0,300 | | 3,000 | 38,000 | 5,000 |
| 0,400 | | 3,000 | 38,000 | 7,000 |
| 0,500 | | 3,000 | 38,000 | 7,000 |
| 0,600 | | 3,000 | 38,000 | 7,000 |
| 0,700 | | 3,000 | 38,000 | 8,000 |
| 0,800 | | 3,000 | 38,000 | 10,000 |
| 0,900 | | 3,000 | 38,000 | 10,000 |
| 1,000 | | 3,000 | 38,000 | 10,000 |
| 1,100 | | 3,000 | 38,000 | 10,000 |
| 1,200 | | 3,000 | 38,000 | 10,000 |

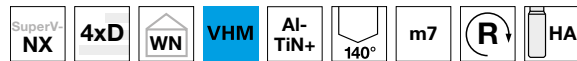
| d1 mm | inch | d2 mm | l1 mm | l2 mm |
|----------|------|----------|----------|----------|
| 1,400 | | 3,000 | 38,000 | 10,000 |
| 1,500 | | 3,000 | 38,000 | 10,000 |
| 1,600 | | 3,000 | 38,000 | 12,000 |
| 1,700 | | 3,000 | 38,000 | 12,000 |
| 1,800 | | 3,000 | 38,000 | 12,000 |
| 1,900 | | 3,000 | 38,000 | 12,000 |
| 2,000 | | 3,000 | 38,000 | 12,000 |
| 2,100 | | 3,000 | 38,000 | 12,000 |
| 2,400 | | 3,000 | 38,000 | 12,000 |
| 2,500 | | 3,000 | 38,000 | 12,000 |
| 2,600 | | 3,000 | 38,000 | 12,000 |
| 3,000 | | 3,000 | 38,000 | 12,000 |

SuperV-Bohrer

SuperV-NX Hochleistungs-Kleinstbohrer ohne Innenkühlung



Katalog-Nr. 71998

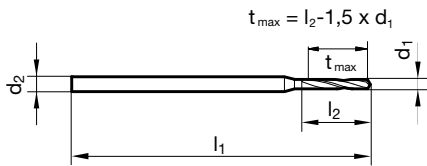


| | | | | | |
|---|---|---|---|---|---|
| P | M | K | N | S | H |
| ● | ○ | ● | ○ | ○ | |

Arbeitsrichtwerte
Seite 101

- Ausspitzung $\geq \varnothing 0,500$
- Flächenanschliff
- Hauptschneidenform gerade
- geschliffener Schneidenabzug

Die Universellen
Kleinen



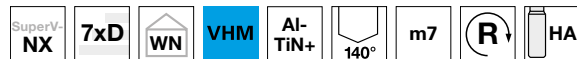
| d1 | inch | d2 | l1 | l2 | d1 | inch | d2 | l1 | l2 |
|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
| mm | | mm | mm | mm | mm | | mm | mm | mm |
| 0,500 | | 3,000 | 47,000 | 3,000 | 1,950 | | 3,000 | 52,000 | 11,700 |
| 0,550 | | 3,000 | 47,000 | 3,300 | 1,980 | 5/64 | 4,000 | 59,000 | 12,000 |
| 0,600 | | 3,000 | 47,000 | 3,600 | 2,000 | | 4,000 | 59,000 | 12,000 |
| 0,650 | | 3,000 | 47,000 | 3,900 | 2,050 | | 4,000 | 59,000 | 12,300 |
| 0,700 | | 3,000 | 47,000 | 4,200 | 2,100 | | 4,000 | 59,000 | 12,600 |
| 0,750 | | 3,000 | 47,000 | 4,500 | 2,150 | | 4,000 | 59,000 | 12,900 |
| 0,800 | | 3,000 | 47,000 | 4,800 | 2,200 | | 4,000 | 59,000 | 13,200 |
| 0,850 | | 3,000 | 47,000 | 5,100 | 2,250 | | 4,000 | 59,000 | 13,500 |
| 0,900 | | 3,000 | 47,000 | 5,400 | 2,300 | | 4,000 | 59,000 | 13,800 |
| 0,950 | | 3,000 | 47,000 | 5,700 | 2,350 | | 4,000 | 59,000 | 14,100 |
| 1,000 | | 3,000 | 47,000 | 6,000 | 2,380 | 3/32 | 4,000 | 59,000 | 14,400 |
| 1,050 | | 3,000 | 47,000 | 6,300 | 2,400 | | 4,000 | 59,000 | 14,400 |
| 1,100 | | 3,000 | 47,000 | 6,600 | 2,450 | | 4,000 | 59,000 | 14,700 |
| 1,150 | | 3,000 | 47,000 | 6,900 | 2,500 | | 4,000 | 59,000 | 15,000 |
| 1,200 | | 3,000 | 47,000 | 7,200 | 2,550 | | 4,000 | 59,000 | 15,300 |
| 1,250 | | 3,000 | 47,000 | 7,500 | 2,600 | | 4,000 | 59,000 | 15,600 |
| 1,300 | | 3,000 | 47,000 | 7,800 | 2,650 | | 4,000 | 59,000 | 15,900 |
| 1,350 | | 3,000 | 47,000 | 8,100 | 2,700 | | 4,000 | 59,000 | 16,200 |
| 1,400 | | 3,000 | 47,000 | 8,400 | 2,750 | | 4,000 | 59,000 | 16,500 |
| 1,450 | | 3,000 | 47,000 | 8,700 | 2,780 | 7/64 | 4,000 | 59,000 | 16,800 |
| 1,500 | | 3,000 | 47,000 | 9,000 | 2,800 | | 4,000 | 59,000 | 16,800 |
| 1,550 | | 3,000 | 47,000 | 9,300 | 2,850 | | 4,000 | 59,000 | 17,100 |
| 1,590 | 1/16 | 3,000 | 47,000 | 9,600 | 2,900 | | 4,000 | 59,000 | 17,400 |
| 1,600 | | 3,000 | 47,000 | 9,600 | 2,950 | | 4,000 | 59,000 | 17,700 |
| 1,650 | | 3,000 | 47,000 | 9,900 | 3,000 | | 4,000 | 59,000 | 18,000 |
| 1,700 | | 3,000 | 47,000 | 10,200 | | | | | |
| 1,750 | | 3,000 | 47,000 | 10,500 | | | | | |
| 1,800 | | 3,000 | 52,000 | 10,800 | | | | | |
| 1,850 | | 3,000 | 52,000 | 11,100 | | | | | |
| 1,900 | | 3,000 | 52,000 | 11,400 | | | | | |

SuperV-Bohrer

SuperV-NX Hochleistungs-Kleinstbohrer ohne Innenkühlung



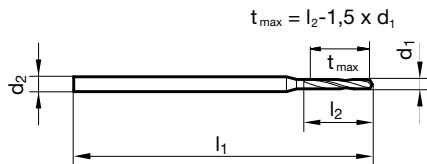
Katalog-Nr. 71999



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

Arbeitsrichtwerte
Seite 101

- Ausspitzung $\geq \varnothing 0,500$
- Flächenanschliff
- Hauptschneidenform gerade
- geschliffener Schneidenabzug



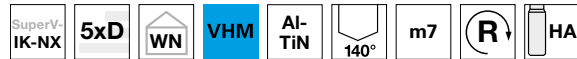
| d1 | inch | d2 | l1 | l2 | d1 | inch | d2 | l1 | l2 |
|-------|------|-------|--------|--------|-------|------|-------|--------|--------|
| mm | | mm | mm | mm | mm | | mm | mm | mm |
| 0,500 | | 3,000 | 47,000 | 4,000 | 1,950 | | 3,000 | 52,000 | 17,600 |
| 0,550 | | 3,000 | 47,000 | 4,400 | 1,980 | 5/64 | 4,000 | 63,000 | 18,000 |
| 0,600 | | 3,000 | 47,000 | 4,800 | 2,000 | | 4,000 | 63,000 | 18,000 |
| 0,650 | | 3,000 | 47,000 | 5,200 | 2,050 | | 4,000 | 63,000 | 18,500 |
| 0,700 | | 3,000 | 47,000 | 5,600 | 2,100 | | 4,000 | 63,000 | 18,900 |
| 0,750 | | 3,000 | 47,000 | 6,000 | 2,150 | | 4,000 | 63,000 | 19,400 |
| 0,800 | | 3,000 | 47,000 | 6,400 | 2,200 | | 4,000 | 63,000 | 19,800 |
| 0,850 | | 3,000 | 47,000 | 6,800 | 2,250 | | 4,000 | 63,000 | 20,300 |
| 0,900 | | 3,000 | 47,000 | 7,200 | 2,300 | | 4,000 | 63,000 | 20,700 |
| 0,950 | | 3,000 | 47,000 | 7,600 | 2,350 | | 4,000 | 63,000 | 21,200 |
| 1,000 | | 3,000 | 47,000 | 8,000 | 2,380 | 3/32 | 4,000 | 63,000 | 21,600 |
| 1,050 | | 3,000 | 47,000 | 8,400 | 2,400 | | 4,000 | 63,000 | 21,600 |
| 1,100 | | 3,000 | 47,000 | 8,800 | 2,450 | | 4,000 | 63,000 | 22,100 |
| 1,150 | | 3,000 | 47,000 | 9,200 | 2,500 | | 4,000 | 63,000 | 22,500 |
| 1,200 | | 3,000 | 52,000 | 10,800 | 2,550 | | 4,000 | 63,000 | 23,000 |
| 1,250 | | 3,000 | 52,000 | 11,300 | 2,600 | | 4,000 | 67,000 | 23,400 |
| 1,300 | | 3,000 | 52,000 | 11,700 | 2,650 | | 4,000 | 67,000 | 23,900 |
| 1,350 | | 3,000 | 52,000 | 12,200 | 2,700 | | 4,000 | 67,000 | 24,300 |
| 1,400 | | 3,000 | 52,000 | 12,600 | 2,750 | | 4,000 | 67,000 | 24,800 |
| 1,450 | | 3,000 | 52,000 | 13,100 | 2,780 | 7/64 | 4,000 | 67,000 | 25,200 |
| 1,500 | | 3,000 | 52,000 | 13,500 | 2,800 | | 4,000 | 67,000 | 25,200 |
| 1,550 | | 3,000 | 52,000 | 14,000 | 2,850 | | 4,000 | 67,000 | 25,700 |
| 1,590 | 1/16 | 3,000 | 52,000 | 14,400 | 2,900 | | 4,000 | 67,000 | 26,100 |
| 1,600 | | 3,000 | 52,000 | 14,400 | 2,950 | | 4,000 | 67,000 | 26,600 |
| 1,650 | | 3,000 | 52,000 | 14,900 | 3,000 | | 4,000 | 67,000 | 27,000 |
| 1,700 | | 3,000 | 52,000 | 15,300 | | | | | |
| 1,750 | | 3,000 | 52,000 | 15,800 | | | | | |
| 1,800 | | 3,000 | 52,000 | 16,200 | | | | | |
| 1,850 | | 3,000 | 52,000 | 16,700 | | | | | |
| 1,900 | | 3,000 | 52,000 | 17,100 | | | | | |

SuperV-Bohrer

SuperV-NX Hochleistungs-Kleinstbohrer mit Innenkühlung



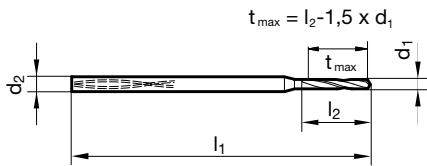
Katalog-Nr. 51997



| | | | | | | |
|----------|----------|----------|----------|----------|----------|--------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 101 |
| ● | ● | ● | ○ | ○ | | |

- Ausspitzung $\geq \varnothing 1,400$
- Flächenanschliff
- Hauptschneidenform gerade
- geschliffener Schneidenabzug
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittlempfehlungen“)

Die Universellen
Kleinen



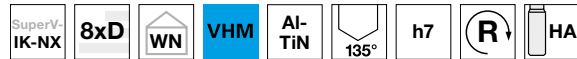
| d1 mm | inch | d2 mm | l1 mm | l2 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm |
|----------|------|----------|----------|----------|----------|------|----------|----------|----------|
| 1,400 | | 4,000 | 52,000 | 11,000 | 2,450 | | 4,000 | 62,000 | 20,000 |
| 1,450 | | 4,000 | 52,000 | 12,000 | 2,500 | | 4,000 | 62,000 | 20,000 |
| 1,500 | | 4,000 | 52,000 | 12,000 | 2,550 | | 4,000 | 62,000 | 20,000 |
| 1,550 | | 4,000 | 52,000 | 12,000 | 2,600 | | 4,000 | 66,000 | 21,000 |
| 1,590 | 1/16 | 4,000 | 52,000 | 13,000 | 2,650 | | 4,000 | 66,000 | 21,000 |
| 1,600 | | 4,000 | 52,000 | 13,000 | 2,700 | | 4,000 | 66,000 | 22,000 |
| 1,650 | | 4,000 | 52,000 | 13,000 | 2,750 | | 4,000 | 66,000 | 22,000 |
| 1,700 | | 4,000 | 56,000 | 14,000 | 2,780 | 7/64 | 4,000 | 66,000 | 22,000 |
| 1,750 | | 4,000 | 56,000 | 14,000 | 2,800 | | 4,000 | 66,000 | 22,000 |
| 1,800 | | 4,000 | 56,000 | 14,000 | 2,850 | | 4,000 | 66,000 | 23,000 |
| 1,850 | | 4,000 | 56,000 | 15,000 | 2,900 | | 4,000 | 66,000 | 23,000 |
| 1,900 | | 4,000 | 56,000 | 15,000 | 2,950 | | 4,000 | 66,000 | 24,000 |
| 1,950 | | 4,000 | 56,000 | 16,000 | 3,000 | | 4,000 | 66,000 | 24,000 |
| 1,980 | 5/64 | 4,000 | 56,000 | 16,000 | | | | | |
| 2,000 | | 4,000 | 56,000 | 16,000 | | | | | |
| 2,050 | | 4,000 | 56,000 | 16,000 | | | | | |
| 2,100 | | 4,000 | 62,000 | 17,000 | | | | | |
| 2,150 | | 4,000 | 62,000 | 17,000 | | | | | |
| 2,200 | | 4,000 | 62,000 | 18,000 | | | | | |
| 2,250 | | 4,000 | 62,000 | 18,000 | | | | | |
| 2,300 | | 4,000 | 62,000 | 18,000 | | | | | |
| 2,350 | | 4,000 | 62,000 | 19,000 | | | | | |
| 2,380 | 3/32 | 4,000 | 62,000 | 19,000 | | | | | |
| 2,400 | | 4,000 | 62,000 | 19,000 | | | | | |

SuperV-Bohrer

SuperV-NX Hochleistungs-Kleinstbohrer mit Innenkühlung

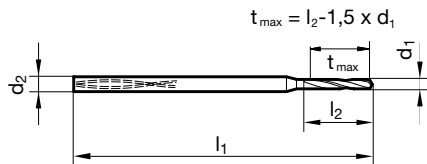


Katalog-Nr. 51998



| | | | | | | |
|---|---|---|---|---|---|--------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 101 |
| ● | ● | ● | ○ | ○ | | |

- Ausspitzung $\geq \varnothing 1,400$
- Flächenanschliff
- Hauptschneidenform gerade
- geschliffener Schneidenabzug
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittlempfehlungen“)



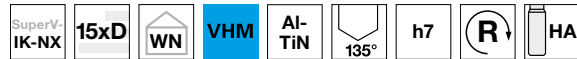
| d1 mm | inch | d2 mm | l1 mm | l2 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm |
|----------|------|----------|----------|----------|----------|------|----------|----------|----------|
| 1,400 | | 4,000 | 52,000 | 15,000 | 2,450 | | 4,000 | 62,000 | 27,000 |
| 1,450 | | 4,000 | 52,000 | 16,000 | 2,500 | | 4,000 | 62,000 | 28,000 |
| 1,500 | | 4,000 | 52,000 | 17,000 | 2,550 | | 4,000 | 62,000 | 28,000 |
| 1,550 | | 4,000 | 52,000 | 17,000 | 2,600 | | 4,000 | 66,000 | 29,000 |
| 1,590 | 1/16 | 4,000 | 52,000 | 18,000 | 2,650 | | 4,000 | 66,000 | 29,000 |
| 1,600 | | 4,000 | 52,000 | 18,000 | 2,700 | | 4,000 | 66,000 | 30,000 |
| 1,650 | | 4,000 | 52,000 | 18,000 | 2,750 | | 4,000 | 66,000 | 30,000 |
| 1,700 | | 4,000 | 56,000 | 19,000 | 2,780 | 7/64 | 4,000 | 66,000 | 31,000 |
| 1,750 | | 4,000 | 56,000 | 19,000 | 2,800 | | 4,000 | 66,000 | 31,000 |
| 1,800 | | 4,000 | 56,000 | 20,000 | 2,850 | | 4,000 | 66,000 | 31,000 |
| 1,850 | | 4,000 | 56,000 | 20,000 | 2,900 | | 4,000 | 66,000 | 32,000 |
| 1,900 | | 4,000 | 56,000 | 21,000 | 2,950 | | 4,000 | 66,000 | 32,000 |
| 1,950 | | 4,000 | 56,000 | 21,000 | 3,000 | | 4,000 | 66,000 | 33,000 |
| 1,980 | 5/64 | 4,000 | 56,000 | 22,000 | | | | | |
| 2,000 | | 4,000 | 56,000 | 22,000 | | | | | |
| 2,050 | | 4,000 | 56,000 | 23,000 | | | | | |
| 2,100 | | 4,000 | 62,000 | 23,000 | | | | | |
| 2,150 | | 4,000 | 62,000 | 24,000 | | | | | |
| 2,200 | | 4,000 | 62,000 | 24,000 | | | | | |
| 2,250 | | 4,000 | 62,000 | 25,000 | | | | | |
| 2,300 | | 4,000 | 62,000 | 25,000 | | | | | |
| 2,350 | | 4,000 | 62,000 | 26,000 | | | | | |
| 2,380 | 3/32 | 4,000 | 62,000 | 26,000 | | | | | |
| 2,400 | | 4,000 | 62,000 | 26,000 | | | | | |

SuperV-Bohrer

SuperV-NX Hochleistungs-Kleinstbohrer mit Innenkühlung



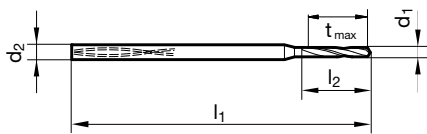
Katalog-Nr. 51999



| | | | | | | |
|----------|----------|----------|----------|----------|----------|--------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 101 |
| ● | ● | ● | ○ | ○ | | |

- Ausspitzung $\geq \varnothing 1,400$
- Flächenanschliff
- Kopfbeschichtung
- Hauptschneidenform gerade
- geschliffener Schneidenabzug
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittlempfehlungen“)

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



| d1 mm | inch | d2 mm | l1 mm | l2 mm |
|----------|------|----------|----------|----------|
| 1,400 | | 4,000 | 62,000 | 25,000 |
| 1,500 | | 4,000 | 62,000 | 27,000 |
| 1,590 | 1/16 | 4,000 | 62,000 | 29,000 |
| 1,600 | | 4,000 | 62,000 | 29,000 |
| 1,700 | | 4,000 | 70,000 | 31,000 |
| 1,800 | | 4,000 | 70,000 | 32,000 |
| 1,900 | | 4,000 | 70,000 | 34,000 |
| 1,980 | 5/64 | 4,000 | 70,000 | 36,000 |
| 2,000 | | 4,000 | 70,000 | 36,000 |
| 2,100 | | 4,000 | 78,000 | 38,000 |
| 2,200 | | 4,000 | 78,000 | 40,000 |
| 2,300 | | 4,000 | 78,000 | 42,000 |

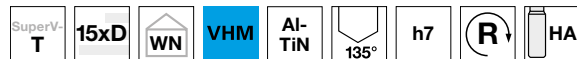
| d1 mm | inch | d2 mm | l1 mm | l2 mm |
|----------|------|----------|----------|----------|
| 2,380 | 3/32 | 4,000 | 78,000 | 44,000 |
| 2,400 | | 4,000 | 78,000 | 44,000 |
| 2,500 | | 4,000 | 78,000 | 45,000 |
| 2,600 | | 4,000 | 87,000 | 47,000 |
| 2,700 | | 4,000 | 87,000 | 48,000 |
| 2,780 | 7/64 | 4,000 | 87,000 | 50,000 |
| 2,800 | | 4,000 | 87,000 | 50,000 |
| 2,900 | | 4,000 | 87,000 | 52,000 |
| 3,000 | | 4,000 | 87,000 | 54,000 |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

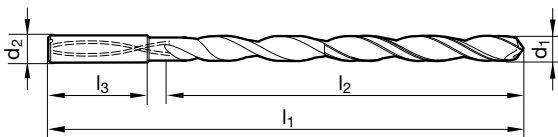


Katalog-Nr. 51764



| | | | | | | |
|----------|----------|----------|----------|----------|----------|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 99 |
| ● | ● | ● | ○ | ○ | | |

- Ausspitzung $\geq \varnothing 3,000$
- Kopfbeschichtung
- Kegelmantelschliff
- Hauptschneidenform konkav
- optimierter Nutquerschnitt
- maximaler Kühlkanalquerschnitt
- Einsatz im Hydraulik-Dehnspannfutter
- vier Führungsfasen
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittlempfehlungen“)



| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|
| 3,000 | | 6,000 | 95,000 | 55,000 | 36,000 |
| 3,100 | | 6,000 | 106,000 | 67,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 106,000 | 67,000 | 36,000 |
| 3,200 | | 6,000 | 106,000 | 67,000 | 36,000 |
| 3,300 | | 6,000 | 106,000 | 67,000 | 36,000 |
| 3,500 | | 6,000 | 116,000 | 76,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 116,000 | 76,000 | 36,000 |
| 3,700 | | 6,000 | 116,000 | 76,000 | 36,000 |
| 3,800 | | 6,000 | 116,000 | 76,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 116,000 | 76,000 | 36,000 |
| 4,000 | | 6,000 | 116,000 | 76,000 | 36,000 |
| 4,200 | | 6,000 | 133,000 | 93,000 | 36,000 |
| 4,300 | | 6,000 | 133,000 | 93,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 133,000 | 93,000 | 36,000 |
| 4,500 | | 6,000 | 133,000 | 93,000 | 36,000 |
| 4,600 | | 6,000 | 133,000 | 93,000 | 36,000 |
| 4,760 | 3/16 | 6,000 | 133,000 | 93,000 | 36,000 |
| 4,800 | | 6,000 | 133,000 | 93,000 | 36,000 |
| 5,000 | | 6,000 | 133,000 | 93,000 | 36,000 |
| 5,100 | | 6,000 | 150,000 | 110,000 | 36,000 |
| 5,160 | 13/64 | 6,000 | 150,000 | 110,000 | 36,000 |
| 5,410 | | 6,000 | 150,000 | 110,000 | 36,000 |
| 5,500 | | 6,000 | 150,000 | 110,000 | 36,000 |
| 5,560 | 7/32 | 6,000 | 150,000 | 110,000 | 36,000 |
| 5,800 | | 6,000 | 150,000 | 110,000 | 36,000 |
| 5,950 | 15/64 | 6,000 | 150,000 | 110,000 | 36,000 |
| 6,000 | | 6,000 | 150,000 | 110,000 | 36,000 |
| 6,300 | | 8,000 | 167,000 | 127,000 | 36,000 |
| 6,350 | 1/4 | 8,000 | 167,000 | 127,000 | 36,000 |
| 6,500 | | 8,000 | 167,000 | 127,000 | 36,000 |
| 6,750 | 17/64 | 8,000 | 167,000 | 127,000 | 36,000 |
| 6,800 | | 8,000 | 167,000 | 127,000 | 36,000 |
| 7,000 | | 8,000 | 167,000 | 127,000 | 36,000 |
| 7,140 | 9/32 | 8,000 | 183,000 | 143,000 | 36,000 |
| 7,500 | | 8,000 | 183,000 | 143,000 | 36,000 |
| 7,540 | 19/64 | 8,000 | 183,000 | 143,000 | 36,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|
| 7,800 | | 8,000 | 183,000 | 143,000 | 36,000 |
| 7,940 | 5/16 | 8,000 | 183,000 | 143,000 | 36,000 |
| 8,000 | | 8,000 | 183,000 | 143,000 | 36,000 |
| 8,330 | 21/64 | 10,000 | 204,000 | 160,000 | 40,000 |
| 8,500 | | 10,000 | 204,000 | 160,000 | 40,000 |
| 8,730 | 11/32 | 10,000 | 204,000 | 160,000 | 40,000 |
| 8,800 | | 10,000 | 204,000 | 160,000 | 40,000 |
| 9,000 | | 10,000 | 204,000 | 160,000 | 40,000 |
| 9,130 | 23/64 | 10,000 | 221,000 | 177,000 | 40,000 |
| 9,520 | 3/8 | 10,000 | 221,000 | 177,000 | 40,000 |
| 9,800 | | 10,000 | 221,000 | 177,000 | 40,000 |
| 9,920 | 25/64 | 10,000 | 221,000 | 177,000 | 40,000 |
| 10,000 | | 10,000 | 221,000 | 177,000 | 40,000 |
| 10,320 | 13/32 | 12,000 | 247,000 | 198,000 | 45,000 |
| 10,500 | | 12,000 | 247,000 | 198,000 | 45,000 |
| 10,720 | 27/64 | 12,000 | 247,000 | 198,000 | 45,000 |
| 11,000 | | 12,000 | 247,000 | 198,000 | 45,000 |
| 11,110 | 7/16 | 12,000 | 263,000 | 214,000 | 45,000 |
| 11,510 | 29/64 | 12,000 | 263,000 | 214,000 | 45,000 |
| 11,800 | | 12,000 | 263,000 | 214,000 | 45,000 |
| 11,910 | 15/32 | 12,000 | 263,000 | 214,000 | 45,000 |
| 12,000 | | 12,000 | 263,000 | 214,000 | 45,000 |
| 12,300 | 31/64 | 14,000 | 297,000 | 248,000 | 45,000 |
| 12,500 | | 14,000 | 297,000 | 248,000 | 45,000 |
| 12,700 | 1/2 | 14,000 | 297,000 | 248,000 | 45,000 |
| 13,000 | | 14,000 | 297,000 | 248,000 | 45,000 |
| 13,100 | 33/64 | 14,000 | 297,000 | 248,000 | 45,000 |
| 13,490 | 17/32 | 14,000 | 297,000 | 248,000 | 45,000 |
| 13,890 | 35/64 | 14,000 | 297,000 | 248,000 | 45,000 |
| 14,000 | | 14,000 | 297,000 | 248,000 | 45,000 |
| 14,290 | 9/16 | 16,000 | 333,000 | 281,000 | 48,000 |
| 15,000 | | 16,000 | 333,000 | 281,000 | 48,000 |
| 15,870 | 5/8 | 16,000 | 333,000 | 281,000 | 48,000 |
| 16,000 | | 16,000 | 333,000 | 281,000 | 48,000 |

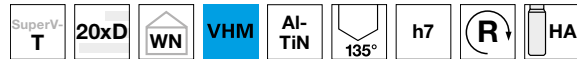
Die Universellen
Langen

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

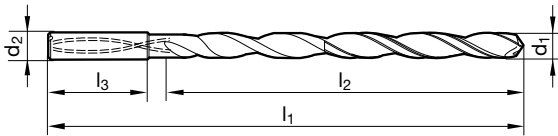


Katalog-Nr. 51765



| | | | | | | |
|----------|----------|----------|----------|----------|----------|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 99 |
| ● | ● | ● | ○ | ○ | | |

- Ausspitzung $\geq \varnothing 3,000$
- Kegelmantelschliff
- Kopfbeschichtung
- Hauptschneidenform konkav
- optimierter Nutquerschnitt
- maximaler Kühlkanalquerschnitt
- Einsatz im Hydraulik-Dehnspannfutter
- vier Führungsfasen
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittlempfehlungen“)



Die Universellen
Langen

| d1 | | d2 | l1 | l2 | l3 |
|-------|-------|-------|---------|---------|--------|
| mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 110,000 | 70,000 | 36,000 |
| 3,100 | | 6,000 | 123,000 | 83,000 | 36,000 |
| 3,200 | | 6,000 | 123,000 | 83,000 | 36,000 |
| 3,300 | | 6,000 | 123,000 | 83,000 | 36,000 |
| 3,500 | | 6,000 | 136,000 | 96,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 136,000 | 96,000 | 36,000 |
| 3,700 | | 6,000 | 136,000 | 96,000 | 36,000 |
| 3,800 | | 6,000 | 136,000 | 96,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 136,000 | 96,000 | 36,000 |
| 4,000 | | 6,000 | 136,000 | 96,000 | 36,000 |
| 4,200 | | 6,000 | 158,000 | 118,000 | 36,000 |
| 4,300 | | 6,000 | 158,000 | 118,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 158,000 | 118,000 | 36,000 |
| 4,500 | | 6,000 | 158,000 | 118,000 | 36,000 |
| 4,600 | | 6,000 | 158,000 | 118,000 | 36,000 |
| 4,760 | 3/16 | 6,000 | 158,000 | 118,000 | 36,000 |
| 4,800 | | 6,000 | 158,000 | 118,000 | 36,000 |
| 5,000 | | 6,000 | 158,000 | 118,000 | 36,000 |
| 5,100 | | 6,000 | 180,000 | 140,000 | 36,000 |
| 5,160 | 13/64 | 6,000 | 180,000 | 140,000 | 36,000 |
| 5,410 | | 6,000 | 180,000 | 140,000 | 36,000 |
| 5,500 | | 6,000 | 180,000 | 140,000 | 36,000 |
| 5,560 | 7/32 | 6,000 | 180,000 | 140,000 | 36,000 |
| 5,800 | | 6,000 | 180,000 | 140,000 | 36,000 |
| 5,950 | 15/64 | 6,000 | 180,000 | 140,000 | 36,000 |
| 6,000 | | 6,000 | 180,000 | 140,000 | 36,000 |
| 6,350 | 1/4 | 8,000 | 202,000 | 162,000 | 36,000 |
| 6,500 | | 8,000 | 202,000 | 162,000 | 36,000 |
| 6,750 | 17/64 | 8,000 | 202,000 | 162,000 | 36,000 |
| 6,800 | | 8,000 | 202,000 | 162,000 | 36,000 |
| 7,000 | | 8,000 | 202,000 | 162,000 | 36,000 |
| 7,140 | 9/32 | 8,000 | 223,000 | 183,000 | 36,000 |
| 7,500 | | 8,000 | 223,000 | 183,000 | 36,000 |
| 7,540 | 19/64 | 8,000 | 223,000 | 183,000 | 36,000 |
| 7,800 | | 8,000 | 223,000 | 183,000 | 36,000 |
| 7,940 | 5/16 | 8,000 | 223,000 | 183,000 | 36,000 |

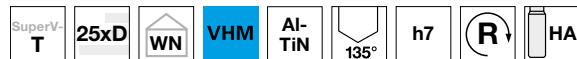
| d1 | | d2 | l1 | l2 | l3 |
|--------|-------|--------|---------|---------|--------|
| mm | inch | mm | mm | mm | mm |
| 8,000 | | 8,000 | 223,000 | 183,000 | 36,000 |
| 8,330 | 21/64 | 10,000 | 249,000 | 205,000 | 40,000 |
| 8,500 | | 10,000 | 249,000 | 205,000 | 40,000 |
| 8,730 | 11/32 | 10,000 | 249,000 | 205,000 | 40,000 |
| 8,800 | | 10,000 | 249,000 | 205,000 | 40,000 |
| 9,000 | | 10,000 | 249,000 | 205,000 | 40,000 |
| 9,130 | 23/64 | 10,000 | 271,000 | 227,000 | 40,000 |
| 9,520 | 3/8 | 10,000 | 271,000 | 227,000 | 40,000 |
| 10,000 | | 10,000 | 271,000 | 227,000 | 40,000 |
| 10,200 | | 12,000 | 302,000 | 253,000 | 45,000 |
| 10,320 | 13/32 | 12,000 | 302,000 | 253,000 | 45,000 |
| 10,500 | | 12,000 | 302,000 | 253,000 | 45,000 |
| 10,720 | 27/64 | 12,000 | 302,000 | 253,000 | 45,000 |
| 11,000 | | 12,000 | 302,000 | 253,000 | 45,000 |
| 11,110 | 7/16 | 12,000 | 323,000 | 274,000 | 45,000 |
| 11,510 | 29/64 | 12,000 | 323,000 | 274,000 | 45,000 |
| 11,800 | | 12,000 | 323,000 | 274,000 | 45,000 |
| 11,910 | 15/32 | 12,000 | 323,000 | 274,000 | 45,000 |
| 12,000 | | 12,000 | 323,000 | 274,000 | 45,000 |
| 12,500 | | 14,000 | 367,000 | 318,000 | 45,000 |
| 12,700 | 1/2 | 14,000 | 367,000 | 318,000 | 45,000 |
| 13,000 | | 14,000 | 367,000 | 318,000 | 45,000 |
| 13,490 | 17/32 | 14,000 | 367,000 | 318,000 | 45,000 |
| 14,000 | | 14,000 | 367,000 | 318,000 | 45,000 |
| 14,290 | 9/16 | 16,000 | 413,000 | 361,000 | 48,000 |
| 15,000 | | 16,000 | 413,000 | 361,000 | 48,000 |
| 15,870 | 5/8 | 16,000 | 413,000 | 361,000 | 48,000 |
| 16,000 | | 16,000 | 413,000 | 361,000 | 48,000 |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

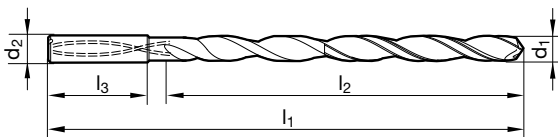


Katalog-Nr. 51766



| | | | | | | |
|----------|----------|----------|----------|----------|----------|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 99 |
| ● | ● | ● | ○ | ○ | | |

- Ausspitzung $\geq \varnothing 3,000$
- Kegelmantelschliff
- Kopfbeschichtung
- Hauptschneidenform konkav
- optimierter Nutquerschnitt
- maximaler Kühlkanalquerschnitt
- Einsatz im Hydraulik-Dehnspannfutter
- vier Führungsfasen
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittlempfehlungen“)



| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|
| 3,000 | | 6,000 | 125,000 | 85,000 | 36,000 |
| 3,100 | | 6,000 | 141,000 | 101,000 | 36,000 |
| 3,200 | | 6,000 | 141,000 | 101,000 | 36,000 |
| 3,300 | | 6,000 | 141,000 | 101,000 | 36,000 |
| 3,500 | | 6,000 | 156,000 | 116,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 156,000 | 116,000 | 36,000 |
| 3,700 | | 6,000 | 156,000 | 116,000 | 36,000 |
| 3,800 | | 6,000 | 156,000 | 116,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 156,000 | 116,000 | 36,000 |
| 4,000 | | 6,000 | 156,000 | 116,000 | 36,000 |
| 4,200 | | 6,000 | 183,000 | 143,000 | 36,000 |
| 4,300 | | 6,000 | 183,000 | 143,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 183,000 | 143,000 | 36,000 |
| 4,500 | | 6,000 | 183,000 | 143,000 | 36,000 |
| 4,600 | | 6,000 | 183,000 | 143,000 | 36,000 |
| 4,760 | 3/16 | 6,000 | 183,000 | 143,000 | 36,000 |
| 4,800 | | 6,000 | 183,000 | 143,000 | 36,000 |
| 5,000 | | 6,000 | 183,000 | 143,000 | 36,000 |
| 5,100 | | 6,000 | 210,000 | 170,000 | 36,000 |
| 5,160 | 13/64 | 6,000 | 210,000 | 170,000 | 36,000 |
| 5,410 | | 6,000 | 210,000 | 170,000 | 36,000 |
| 5,500 | | 6,000 | 210,000 | 170,000 | 36,000 |
| 5,560 | 7/32 | 6,000 | 210,000 | 170,000 | 36,000 |
| 5,800 | | 6,000 | 210,000 | 170,000 | 36,000 |
| 5,950 | 15/64 | 6,000 | 210,000 | 170,000 | 36,000 |
| 6,000 | | 6,000 | 210,000 | 170,000 | 36,000 |
| 6,300 | | 8,000 | 237,000 | 197,000 | 36,000 |
| 6,350 | 1/4 | 8,000 | 237,000 | 197,000 | 36,000 |
| 6,500 | | 8,000 | 237,000 | 197,000 | 36,000 |
| 6,750 | 17/64 | 8,000 | 237,000 | 197,000 | 36,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|
| 6,800 | | 8,000 | 237,000 | 197,000 | 36,000 |
| 7,000 | | 8,000 | 237,000 | 197,000 | 36,000 |
| 7,140 | 9/32 | 8,000 | 263,000 | 223,000 | 36,000 |
| 7,500 | | 8,000 | 263,000 | 223,000 | 36,000 |
| 7,540 | 19/64 | 8,000 | 263,000 | 223,000 | 36,000 |
| 7,940 | 5/16 | 8,000 | 263,000 | 223,000 | 36,000 |
| 8,000 | | 8,000 | 263,000 | 223,000 | 36,000 |
| 8,330 | 21/64 | 10,000 | 294,000 | 250,000 | 40,000 |
| 8,500 | | 10,000 | 294,000 | 250,000 | 40,000 |
| 8,730 | 11/32 | 10,000 | 294,000 | 250,000 | 40,000 |
| 8,800 | | 10,000 | 294,000 | 250,000 | 40,000 |
| 9,000 | | 10,000 | 294,000 | 250,000 | 40,000 |
| 9,130 | 23/64 | 10,000 | 321,000 | 277,000 | 40,000 |
| 9,520 | 3/8 | 10,000 | 321,000 | 277,000 | 40,000 |
| 10,000 | | 10,000 | 321,000 | 277,000 | 40,000 |
| 10,720 | 27/64 | 12,000 | 359,000 | 310,000 | 45,000 |
| 11,000 | | 12,000 | 359,000 | 310,000 | 45,000 |
| 11,110 | 7/16 | 12,000 | 386,000 | 337,000 | 45,000 |
| 12,000 | | 12,000 | 386,000 | 337,000 | 45,000 |
| 12,300 | 31/64 | 14,000 | 437,000 | 388,000 | 45,000 |
| 12,700 | 1/2 | 14,000 | 437,000 | 388,000 | 45,000 |
| 13,000 | | 14,000 | 437,000 | 388,000 | 45,000 |
| 13,100 | 33/64 | 14,000 | 437,000 | 388,000 | 45,000 |
| 13,490 | 17/32 | 14,000 | 437,000 | 388,000 | 45,000 |
| 13,890 | 35/64 | 14,000 | 437,000 | 388,000 | 45,000 |
| 14,000 | | 14,000 | 437,000 | 388,000 | 45,000 |
| 14,290 | 9/16 | 16,000 | 493,000 | 441,000 | 48,000 |
| 15,000 | | 16,000 | 493,000 | 441,000 | 48,000 |
| 15,870 | 5/8 | 16,000 | 493,000 | 441,000 | 48,000 |
| 16,000 | | 16,000 | 493,000 | 441,000 | 48,000 |

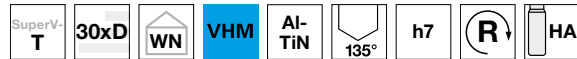
Die Universellen
Langen

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

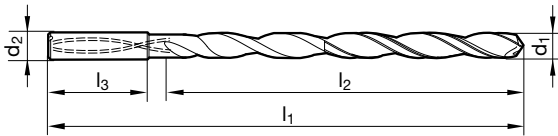


Katalog-Nr. 51767



| | | | | | | |
|----------|----------|----------|----------|----------|----------|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 99 |
| ● | ● | ● | ○ | ○ | | |

- Ausspitzung $\geq \varnothing 3,000$
- Kegelmantelanschliff
- Kopfbeschichtung
- Hauptschneidenform konkav
- optimierter Nutquerschnitt
- maximaler Kühlkanalquerschnitt
- Einsatz im Hydraulik-Dehnspannfutter
- vier Führungsfasen
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittlempfehlungen“)



Die Universellen
Langen

| d1 | | d2 | l1 | l2 | l3 |
|-------|-------|-------|---------|---------|--------|
| mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 140,000 | 100,000 | 36,000 |
| 3,100 | | 6,000 | 158,000 | 118,000 | 36,000 |
| 3,200 | | 6,000 | 158,000 | 118,000 | 36,000 |
| 3,300 | | 6,000 | 158,000 | 118,000 | 36,000 |
| 3,500 | | 6,000 | 176,000 | 136,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 176,000 | 136,000 | 36,000 |
| 3,700 | | 6,000 | 176,000 | 136,000 | 36,000 |
| 3,800 | | 6,000 | 176,000 | 136,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 176,000 | 136,000 | 36,000 |
| 4,000 | | 6,000 | 176,000 | 136,000 | 36,000 |
| 4,200 | | 6,000 | 208,000 | 168,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 208,000 | 168,000 | 36,000 |
| 4,500 | | 6,000 | 208,000 | 168,000 | 36,000 |
| 4,760 | 3/16 | 6,000 | 208,000 | 168,000 | 36,000 |
| 5,000 | | 6,000 | 208,000 | 168,000 | 36,000 |
| 5,100 | | 6,000 | 240,000 | 200,000 | 36,000 |
| 5,160 | 13/64 | 6,000 | 240,000 | 200,000 | 36,000 |
| 5,410 | | 6,000 | 240,000 | 200,000 | 36,000 |
| 5,500 | | 6,000 | 240,000 | 200,000 | 36,000 |
| 5,560 | 7/32 | 6,000 | 240,000 | 200,000 | 36,000 |
| 5,950 | 15/64 | 6,000 | 240,000 | 200,000 | 36,000 |
| 6,000 | | 6,000 | 240,000 | 200,000 | 36,000 |
| 6,300 | | 8,000 | 272,000 | 232,000 | 36,000 |
| 6,350 | 1/4 | 8,000 | 272,000 | 232,000 | 36,000 |
| 6,500 | | 8,000 | 272,000 | 232,000 | 36,000 |
| 6,750 | 17/64 | 8,000 | 272,000 | 232,000 | 36,000 |
| 6,800 | | 8,000 | 272,000 | 232,000 | 36,000 |
| 7,000 | | 8,000 | 272,000 | 232,000 | 36,000 |
| 7,140 | 9/32 | 8,000 | 303,000 | 263,000 | 36,000 |
| 7,500 | | 8,000 | 303,000 | 263,000 | 36,000 |

| d1 | | d2 | l1 | l2 | l3 |
|--------|-------|--------|---------|---------|--------|
| mm | inch | mm | mm | mm | mm |
| 7,540 | 19/64 | 8,000 | 303,000 | 263,000 | 36,000 |
| 7,940 | 5/16 | 8,000 | 303,000 | 263,000 | 36,000 |
| 8,000 | | 8,000 | 303,000 | 263,000 | 36,000 |
| 8,330 | 21/64 | 10,000 | 339,000 | 295,000 | 40,000 |
| 8,500 | | 10,000 | 339,000 | 295,000 | 40,000 |
| 8,730 | 11/32 | 10,000 | 339,000 | 295,000 | 40,000 |
| 8,800 | | 10,000 | 339,000 | 295,000 | 40,000 |
| 9,000 | | 10,000 | 339,000 | 295,000 | 40,000 |
| 9,130 | 23/64 | 10,000 | 371,000 | 327,000 | 40,000 |
| 9,520 | 3/8 | 10,000 | 371,000 | 327,000 | 40,000 |
| 10,000 | | 10,000 | 371,000 | 327,000 | 40,000 |
| 10,320 | 13/32 | 12,000 | 412,000 | 363,000 | 45,000 |
| 10,720 | 27/64 | 12,000 | 412,000 | 363,000 | 45,000 |
| 11,000 | | 12,000 | 412,000 | 363,000 | 45,000 |
| 11,110 | 7/16 | 12,000 | 443,000 | 394,000 | 45,000 |
| 11,510 | 29/64 | 12,000 | 443,000 | 394,000 | 45,000 |
| 11,910 | 15/32 | 12,000 | 443,000 | 394,000 | 45,000 |
| 12,000 | | 12,000 | 443,000 | 394,000 | 45,000 |
| 12,300 | 31/64 | 14,000 | 507,000 | 458,000 | 45,000 |
| 12,700 | 1/2 | 14,000 | 507,000 | 458,000 | 45,000 |
| 13,000 | | 14,000 | 507,000 | 458,000 | 45,000 |
| 13,100 | 33/64 | 14,000 | 507,000 | 458,000 | 45,000 |
| 13,490 | 17/32 | 14,000 | 507,000 | 458,000 | 45,000 |
| 13,890 | 35/64 | 14,000 | 507,000 | 458,000 | 45,000 |
| 14,000 | | 14,000 | 507,000 | 458,000 | 45,000 |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

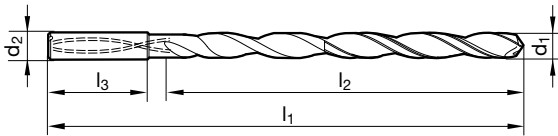


Katalog-Nr. 51768



| | | | | | | |
|----------|----------|----------|----------|----------|----------|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 99 |
| ● | ● | ● | ○ | ○ | | |

- Ausspitzung $\geq \varnothing 3,000$
- Kegelmantelschliff
- Kopfbeschichtung
- Hauptschneidenform konkav
- optimierter Nutquerschnitt
- maximaler Kühlkanalquerschnitt
- Einsatz im Hydraulik-Dehnspannfutter
- vier Führungsfasen
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittlempfehlungen“)



| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|------|----------|----------|----------|----------|
| 3,000 | | 6,000 | 170,000 | 130,000 | 36,000 |
| 3,100 | | 6,000 | 193,000 | 153,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 193,000 | 153,000 | 36,000 |
| 3,200 | | 6,000 | 193,000 | 153,000 | 36,000 |
| 3,300 | | 6,000 | 193,000 | 153,000 | 36,000 |
| 3,500 | | 6,000 | 193,000 | 153,000 | 36,000 |
| 3,800 | | 6,000 | 216,000 | 176,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 216,000 | 176,000 | 36,000 |
| 4,000 | | 6,000 | 216,000 | 176,000 | 36,000 |
| 4,200 | | 6,000 | 238,000 | 198,000 | 36,000 |
| 4,500 | | 6,000 | 238,000 | 198,000 | 36,000 |
| 4,760 | 3/16 | 6,000 | 258,000 | 218,000 | 36,000 |
| 5,000 | | 6,000 | 258,000 | 218,000 | 36,000 |
| 5,100 | | 6,000 | 280,000 | 240,000 | 36,000 |
| 5,500 | | 6,000 | 280,000 | 240,000 | 36,000 |
| 5,560 | 7/32 | 6,000 | 300,000 | 260,000 | 36,000 |
| 6,000 | | 6,000 | 300,000 | 260,000 | 36,000 |
| 6,300 | | 8,000 | 322,000 | 282,000 | 36,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|------|----------|----------|----------|----------|
| 6,350 | 1/4 | 8,000 | 322,000 | 282,000 | 36,000 |
| 6,500 | | 8,000 | 322,000 | 282,000 | 36,000 |
| 6,800 | | 8,000 | 342,000 | 302,000 | 36,000 |
| 7,000 | | 8,000 | 342,000 | 302,000 | 36,000 |
| 7,140 | 9/32 | 8,000 | 363,000 | 323,000 | 36,000 |
| 7,500 | | 8,000 | 363,000 | 323,000 | 36,000 |
| 8,000 | | 8,000 | 383,000 | 343,000 | 36,000 |
| 8,500 | | 10,000 | 409,000 | 365,000 | 40,000 |
| 9,000 | | 10,000 | 429,000 | 386,000 | 40,000 |
| 10,000 | | 10,000 | 471,000 | 427,000 | 40,000 |

Die Universellen
Langen



SuperV-S

- extrem stabiler Bohrer
- Kegelmantelanschliff
- Doppelfase
- hochharte TiAlSiN-Beschichtung
- zum Bohren hochfester Materialien

SuperV-Bohrer

SuperV-Bohrer ohne Innenkühlung

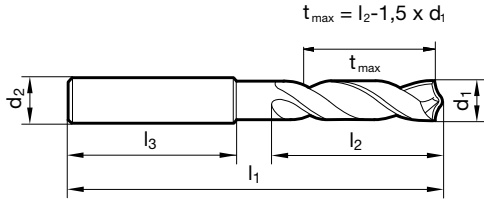


Katalog-Nr. 51750



| | | | | | | |
|----------|----------|----------|----------|----------|----------|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 91 |
| ● | | | | ● | ○ | |

- Ausspitzung $\geq \varnothing 3,000$
- Kegelmantelanschliff
- Hauptschneidenform konkav
- sehr harte Beschichtung
- vier Führungsfasen



| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|-------|----------|----------|----------|----------|
| 3,000 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,600 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,100 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,700 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 62,000 | 20,000 | 36,000 | 6,750 | 17/64 | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,200 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,800 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,250 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,900 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,300 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,000 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,400 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,100 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,500 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,140 | 9/32 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 62,000 | 20,000 | 36,000 | 7,200 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,600 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,300 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,700 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,400 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,800 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,500 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,900 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,540 | 19/64 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 66,000 | 24,000 | 36,000 | 7,600 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,000 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,700 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,100 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,800 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,200 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,900 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,300 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,940 | 5/16 | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 66,000 | 24,000 | 36,000 | 8,000 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,400 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,100 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,500 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,200 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,600 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,300 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,650 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,330 | 21/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,700 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,400 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,760 | 3/16 | 6,000 | 66,000 | 28,000 | 36,000 | 8,500 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,800 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,600 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,900 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,700 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,730 | 11/32 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,800 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 66,000 | 28,000 | 36,000 | 8,900 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,000 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,100 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,130 | 23/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,200 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,550 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,250 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 66,000 | 28,000 | 36,000 | 9,300 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,400 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,500 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,800 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,520 | 3/8 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,900 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,600 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 66,000 | 28,000 | 36,000 | 9,700 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,800 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,100 | | 8,000 | 79,000 | 34,000 | 36,000 | 9,900 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,200 | | 8,000 | 79,000 | 34,000 | 36,000 | 9,920 | 25/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,300 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,000 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,350 | 1/4 | 8,000 | 79,000 | 34,000 | 36,000 | 10,100 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,400 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,200 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,500 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,300 | | 12,000 | 102,000 | 55,000 | 45,000 |

Die Speziellen

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 10,320 | 13/32 | 12,000 | 102,000 | 55,000 | 45,000 | 14,290 | 9/16 | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,400 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,300 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,500 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,500 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,600 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,700 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,700 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,000 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,800 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,200 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,900 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,300 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,000 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,500 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,100 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,700 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 102,000 | 55,000 | 45,000 | 16,000 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,200 | | 12,000 | 102,000 | 55,000 | 45,000 | 16,300 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,300 | | 12,000 | 102,000 | 55,000 | 45,000 | 16,500 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,400 | | 12,000 | 102,000 | 55,000 | 45,000 | 16,900 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,500 | | 12,000 | 102,000 | 55,000 | 45,000 | 17,000 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,600 | | 12,000 | 102,000 | 55,000 | 45,000 | 17,300 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,700 | | 12,000 | 102,000 | 55,000 | 45,000 | 17,500 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,800 | | 12,000 | 102,000 | 55,000 | 45,000 | 18,000 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,900 | | 12,000 | 102,000 | 55,000 | 45,000 | 18,500 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 11,910 | 15/32 | 12,000 | 102,000 | 55,000 | 45,000 | 18,900 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,000 | | 12,000 | 102,000 | 55,000 | 45,000 | 19,000 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,200 | | 14,000 | 107,000 | 60,000 | 45,000 | 19,050 | 3/4 | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,500 | | 14,000 | 107,000 | 60,000 | 45,000 | 19,300 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,700 | 1/2 | 14,000 | 107,000 | 60,000 | 45,000 | 19,500 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,800 | | 14,000 | 107,000 | 60,000 | 45,000 | 20,000 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 13,000 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 13,300 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 13,500 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 13,700 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 14,000 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 14,200 | | 16,000 | 115,000 | 65,000 | 48,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer ohne Innenkühlung



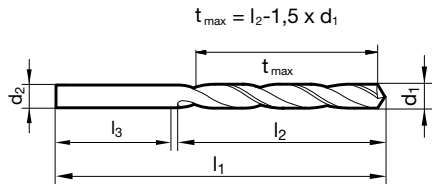
Katalog-Nr. 61888



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

Arbeitsrichtwerte
Seite 91

- Ausspitzung $\geq \varnothing 3,000$
- Kegelmantelschliff
- Hauptschneidenform konkav
- optimierte Schneidengeometrie
- scharfes Schnittverhalten



| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|
| 3,000 | 3,000 | 46,000 | 16,000 | 30,000 |
| 3,100 | 3,100 | 49,000 | 18,000 | 31,000 |
| 3,200 | 3,200 | 49,000 | 18,000 | 31,000 |
| 3,400 | 3,400 | 52,000 | 20,000 | 32,000 |
| 3,500 | 3,500 | 52,000 | 20,000 | 32,000 |
| 3,600 | 3,600 | 52,000 | 20,000 | 32,000 |
| 4,000 | 4,000 | 55,000 | 22,000 | 33,000 |
| 4,200 | 4,200 | 55,000 | 22,000 | 33,000 |
| 4,300 | 4,300 | 58,000 | 24,000 | 34,000 |
| 4,500 | 4,500 | 58,000 | 24,000 | 34,000 |
| 4,700 | 4,700 | 58,000 | 24,000 | 34,000 |
| 5,000 | 5,000 | 62,000 | 26,000 | 36,000 |
| 5,100 | 5,100 | 62,000 | 26,000 | 36,000 |
| 5,200 | 5,200 | 62,000 | 26,000 | 36,000 |
| 5,500 | 5,500 | 66,000 | 28,000 | 38,000 |
| 5,700 | 5,700 | 66,000 | 28,000 | 38,000 |
| 5,800 | 5,800 | 66,000 | 28,000 | 38,000 |
| 6,000 | 6,000 | 66,000 | 28,000 | 38,000 |
| 6,100 | 6,100 | 70,000 | 31,000 | 39,000 |
| 6,200 | 6,200 | 70,000 | 31,000 | 39,000 |
| 6,400 | 6,400 | 70,000 | 31,000 | 39,000 |
| 6,500 | 6,500 | 70,000 | 31,000 | 39,000 |
| 6,600 | 6,600 | 70,000 | 31,000 | 39,000 |
| 6,700 | 6,700 | 70,000 | 31,000 | 39,000 |

| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|
| 6,800 | 6,800 | 74,000 | 34,000 | 40,000 |
| 7,000 | 7,000 | 74,000 | 34,000 | 40,000 |
| 7,200 | 7,200 | 74,000 | 34,000 | 40,000 |
| 7,300 | 7,300 | 74,000 | 34,000 | 40,000 |
| 7,500 | 7,500 | 74,000 | 34,000 | 40,000 |
| 7,700 | 7,700 | 79,000 | 37,000 | 42,000 |
| 7,800 | 7,800 | 79,000 | 37,000 | 42,000 |
| 8,000 | 8,000 | 79,000 | 37,000 | 42,000 |
| 8,400 | 8,400 | 79,000 | 37,000 | 42,000 |
| 8,500 | 8,500 | 79,000 | 37,000 | 42,000 |
| 8,700 | 8,700 | 84,000 | 40,000 | 44,000 |
| 8,900 | 8,900 | 84,000 | 40,000 | 44,000 |
| 9,000 | 9,000 | 84,000 | 40,000 | 44,000 |
| 9,100 | 9,100 | 84,000 | 40,000 | 44,000 |
| 9,200 | 9,200 | 84,000 | 40,000 | 44,000 |
| 9,300 | 9,300 | 84,000 | 40,000 | 44,000 |
| 9,400 | 9,400 | 84,000 | 40,000 | 44,000 |
| 9,500 | 9,500 | 84,000 | 40,000 | 44,000 |
| 9,700 | 9,700 | 89,000 | 43,000 | 46,000 |
| 10,000 | 10,000 | 89,000 | 43,000 | 46,000 |
| 10,100 | 10,100 | 89,000 | 43,000 | 46,000 |
| 10,200 | 10,200 | 89,000 | 43,000 | 46,000 |
| 12,000 | 12,000 | 102,000 | 51,000 | 51,000 |

Die Speziellen



SuperV-UX

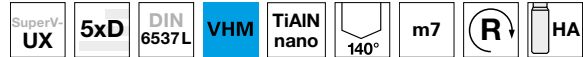
- für höchste Schnittwerte und Standzeiten
- optimierte Mikrogeometrie
- TiAlN-Kopfbeschichtung mit polierten Spannuten
- höchste Oberflächenqualität

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

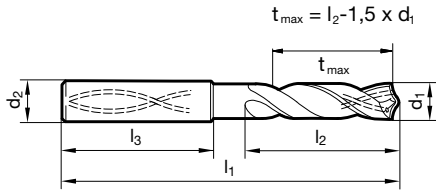


Katalog-Nr. 51785



| P | M | K | N | S | H | Arbeitsrichtwerte Seite 95 |
|---|---|---|---|---|---|-------------------------------|
| ● | ○ | ○ | ○ | ○ | ○ | |

- Ausspitzung $\geq \varnothing 3,000$
- spezielle Mikrogeometrie
- Flächenanschliff
- Hauptschneidenform gerade
- Kopfbeschichtung
- polierte Spanntuten
- hohe konstante Standzeiten
- hohe Schnittparameter möglich



| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|-------|----------|----------|----------|----------|
| 3,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,300 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,350 | 1/4 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 66,000 | 28,000 | 36,000 | 6,400 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,500 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,250 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,530 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,750 | 17/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 66,000 | 28,000 | 36,000 | 6,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,800 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,100 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,900 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,140 | 9/32 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 74,000 | 36,000 | 36,000 | 7,200 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,000 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,300 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,040 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,400 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,100 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,500 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,200 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,540 | 19/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,300 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,550 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 74,000 | 36,000 | 36,000 | 7,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,400 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,650 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,500 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,600 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,650 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,700 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,940 | 5/16 | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,760 | 3/16 | 6,000 | 82,000 | 44,000 | 36,000 | 8,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,100 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,330 | 21/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,110 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 82,000 | 44,000 | 36,000 | 8,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,200 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,300 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,400 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,730 | 11/32 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,410 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,500 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,550 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 82,000 | 44,000 | 36,000 | 9,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,600 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,130 | 23/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,650 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,700 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,250 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,340 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 82,000 | 44,000 | 36,000 | 9,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,100 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,520 | 3/8 | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,200 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,550 | | 10,000 | 103,000 | 61,000 | 40,000 |

Die Speziellen

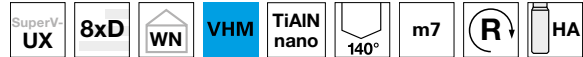
| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|-------|----------|----------|----------|----------|
| 9,600 | | 10,000 | 103,000 | 61,000 | 40,000 | 14,100 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 9,700 | | 10,000 | 103,000 | 61,000 | 40,000 | 14,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 9,800 | | 10,000 | 103,000 | 61,000 | 40,000 | 14,290 | 9/16 | 16,000 | 133,000 | 83,000 | 48,000 |
| 9,900 | | 10,000 | 103,000 | 61,000 | 40,000 | 14,400 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 9,920 | 25/64 | 10,000 | 103,000 | 61,000 | 40,000 | 14,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,000 | | 10,000 | 103,000 | 61,000 | 40,000 | 14,600 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,100 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,680 | 37/64 | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,200 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,300 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,800 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,320 | 13/32 | 12,000 | 118,000 | 71,000 | 45,000 | 14,900 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,080 | 19/32 | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,100 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,720 | 27/64 | 12,000 | 118,000 | 71,000 | 45,000 | 15,300 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,400 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,480 | 39/64 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,100 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,550 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 118,000 | 71,000 | 45,000 | 15,600 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,200 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,300 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,800 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,870 | 5/8 | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,900 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,510 | 29/64 | 12,000 | 118,000 | 71,000 | 45,000 | 16,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,550 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,270 | 41/64 | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,670 | 21/32 | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,700 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,900 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,910 | 15/32 | 12,000 | 118,000 | 71,000 | 45,000 | 17,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,070 | 43/64 | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,100 | | 14,000 | 124,000 | 77,000 | 45,000 | 17,460 | 11/16 | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,200 | | 14,000 | 124,000 | 77,000 | 45,000 | 17,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,300 | 31/64 | 14,000 | 124,000 | 77,000 | 45,000 | 17,550 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,400 | | 14,000 | 124,000 | 77,000 | 45,000 | 17,700 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,500 | | 14,000 | 124,000 | 77,000 | 45,000 | 17,860 | 45/64 | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,600 | | 14,000 | 124,000 | 77,000 | 45,000 | 18,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 12,700 | 1/2 | 14,000 | 124,000 | 77,000 | 45,000 | 18,260 | 23/32 | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,800 | | 14,000 | 124,000 | 77,000 | 45,000 | 18,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,900 | | 14,000 | 124,000 | 77,000 | 45,000 | 18,700 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,000 | | 14,000 | 124,000 | 77,000 | 45,000 | 18,900 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,100 | 33/64 | 14,000 | 124,000 | 77,000 | 45,000 | 19,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,200 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,050 | 3/4 | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,300 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,250 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,400 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,300 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,490 | 17/32 | 14,000 | 124,000 | 77,000 | 45,000 | 19,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,500 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,550 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,600 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,700 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,700 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,840 | 25/32 | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,800 | | 14,000 | 124,000 | 77,000 | 45,000 | 20,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,890 | 35/64 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,900 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 14,000 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

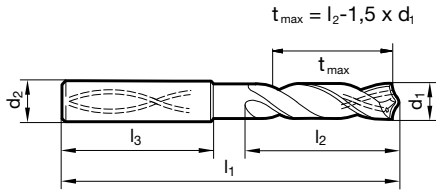


Katalog-Nr. 51790



| P | M | K | N | S | H | Arbeitsrichtwerte Seite 97 |
|---|---|---|---|---|---|-------------------------------|
| ● | ○ | ○ | ○ | ○ | ○ | |

- Ausspitzung $\geq \varnothing 3,000$
- spezielle Mikrogeometrie
- Flächenanschliff
- Hauptschneidenform gerade
- Kopfbeschichtung
- polierte Spanntuten
- hohe konstante Standzeiten
- hohe Schnittparameter möglich



| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|-------|----------|----------|----------|----------|
| 3,000 | | 6,000 | 70,000 | 30,000 | 36,000 | 6,400 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 70,000 | 30,000 | 36,000 | 6,500 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 3,200 | | 6,000 | 70,000 | 30,000 | 36,000 | 6,530 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 3,250 | | 6,000 | 70,000 | 30,000 | 36,000 | 6,600 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 3,300 | | 6,000 | 70,000 | 30,000 | 36,000 | 6,700 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 3,400 | | 6,000 | 75,000 | 35,500 | 36,000 | 6,750 | 17/64 | 8,000 | 106,000 | 66,000 | 36,000 |
| 3,500 | | 6,000 | 75,000 | 35,500 | 36,000 | 6,800 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 75,000 | 35,500 | 36,000 | 6,900 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 3,600 | | 6,000 | 75,000 | 35,500 | 36,000 | 7,000 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 3,700 | | 6,000 | 75,000 | 35,500 | 36,000 | 7,100 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 3,800 | | 6,000 | 75,000 | 37,500 | 36,000 | 7,140 | 9/32 | 8,000 | 116,000 | 76,000 | 36,000 |
| 3,900 | | 6,000 | 75,000 | 37,500 | 36,000 | 7,200 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 75,000 | 37,500 | 36,000 | 7,300 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 4,000 | | 6,000 | 75,000 | 37,500 | 36,000 | 7,400 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 4,040 | | 6,000 | 75,000 | 37,500 | 36,000 | 7,500 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 4,100 | | 6,000 | 75,000 | 37,500 | 36,000 | 7,540 | 19/64 | 8,000 | 116,000 | 76,000 | 36,000 |
| 4,200 | | 6,000 | 75,000 | 37,500 | 36,000 | 7,600 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 4,300 | | 6,000 | 85,000 | 45,000 | 36,000 | 7,700 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 85,000 | 45,000 | 36,000 | 7,800 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 4,400 | | 6,000 | 85,000 | 45,000 | 36,000 | 7,900 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 4,500 | | 6,000 | 85,000 | 45,000 | 36,000 | 7,940 | 5/16 | 8,000 | 116,000 | 76,000 | 36,000 |
| 4,600 | | 6,000 | 85,000 | 45,000 | 36,000 | 8,000 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 4,650 | | 6,000 | 85,000 | 45,000 | 36,000 | 8,100 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 4,700 | | 6,000 | 85,000 | 45,000 | 36,000 | 8,200 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 4,760 | 3/16 | 6,000 | 90,000 | 50,000 | 36,000 | 8,300 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 4,800 | | 6,000 | 90,000 | 50,000 | 36,000 | 8,330 | 21/64 | 10,000 | 131,000 | 87,000 | 40,000 |
| 4,900 | | 6,000 | 90,000 | 50,000 | 36,000 | 8,400 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 5,000 | | 6,000 | 90,000 | 50,000 | 36,000 | 8,500 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 5,100 | | 6,000 | 90,000 | 50,000 | 36,000 | 8,600 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 5,110 | | 6,000 | 90,000 | 50,000 | 36,000 | 8,700 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 90,000 | 50,000 | 36,000 | 8,730 | 11/32 | 10,000 | 131,000 | 87,000 | 40,000 |
| 5,200 | | 6,000 | 90,000 | 50,000 | 36,000 | 8,800 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 5,300 | | 6,000 | 90,000 | 50,000 | 36,000 | 8,900 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 5,400 | | 6,000 | 97,000 | 57,000 | 36,000 | 9,000 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 5,410 | | 6,000 | 97,000 | 57,000 | 36,000 | 9,100 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 5,500 | | 6,000 | 97,000 | 57,000 | 36,000 | 9,130 | 23/64 | 10,000 | 139,000 | 95,000 | 40,000 |
| 5,550 | | 6,000 | 97,000 | 57,000 | 36,000 | 9,200 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 97,000 | 57,000 | 36,000 | 9,250 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 5,600 | | 6,000 | 97,000 | 57,000 | 36,000 | 9,300 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 5,700 | | 6,000 | 97,000 | 57,000 | 36,000 | 9,340 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 5,800 | | 6,000 | 97,000 | 57,000 | 36,000 | 9,400 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 5,900 | | 6,000 | 97,000 | 57,000 | 36,000 | 9,500 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 97,000 | 57,000 | 36,000 | 9,520 | 3/8 | 10,000 | 139,000 | 95,000 | 40,000 |
| 6,000 | | 6,000 | 97,000 | 57,000 | 36,000 | 9,600 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 6,100 | | 8,000 | 106,000 | 66,000 | 36,000 | 9,700 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 6,200 | | 8,000 | 106,000 | 66,000 | 36,000 | 9,800 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 6,300 | | 8,000 | 106,000 | 66,000 | 36,000 | 9,900 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 6,350 | 1/4 | 8,000 | 106,000 | 66,000 | 36,000 | 9,920 | 25/64 | 10,000 | 139,000 | 95,000 | 40,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|-------|----------|----------|----------|----------|
| 10,000 | | 10,000 | 139,000 | 95,000 | 40,000 | 13,890 | 35/64 | 14,000 | 182,000 | 133,000 | 45,000 |
| 10,100 | | 12,000 | 155,000 | 106,000 | 45,000 | 14,000 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 10,200 | | 12,000 | 155,000 | 106,000 | 45,000 | 14,100 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 10,300 | | 12,000 | 155,000 | 106,000 | 45,000 | 14,200 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 10,320 | 13/32 | 12,000 | 155,000 | 106,000 | 45,000 | 14,290 | 9/16 | 16,000 | 204,000 | 152,000 | 48,000 |
| 10,400 | | 12,000 | 155,000 | 106,000 | 45,000 | 14,500 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 10,500 | | 12,000 | 155,000 | 106,000 | 45,000 | 14,700 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 10,600 | | 12,000 | 155,000 | 106,000 | 45,000 | 15,000 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 10,700 | | 12,000 | 155,000 | 106,000 | 45,000 | 15,100 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 10,720 | 27/64 | 12,000 | 155,000 | 106,000 | 45,000 | 15,480 | 39/64 | 16,000 | 204,000 | 152,000 | 48,000 |
| 10,800 | | 12,000 | 155,000 | 106,000 | 45,000 | 15,500 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 10,900 | | 12,000 | 155,000 | 106,000 | 45,000 | 15,700 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 11,000 | | 12,000 | 155,000 | 106,000 | 45,000 | 15,870 | 5/8 | 16,000 | 204,000 | 152,000 | 48,000 |
| 11,100 | | 12,000 | 163,000 | 114,000 | 45,000 | 16,000 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 163,000 | 114,000 | 45,000 | 16,500 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 11,200 | | 12,000 | 163,000 | 114,000 | 45,000 | 16,900 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 11,300 | | 12,000 | 163,000 | 114,000 | 45,000 | 17,000 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 11,400 | | 12,000 | 163,000 | 114,000 | 45,000 | 17,500 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 11,500 | | 12,000 | 163,000 | 114,000 | 45,000 | 17,700 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 11,510 | 29/64 | 12,000 | 163,000 | 114,000 | 45,000 | 18,000 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 11,600 | | 12,000 | 163,000 | 114,000 | 45,000 | 18,500 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 11,700 | | 12,000 | 163,000 | 114,000 | 45,000 | 18,900 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 11,800 | | 12,000 | 163,000 | 114,000 | 45,000 | 19,000 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 11,900 | | 12,000 | 163,000 | 114,000 | 45,000 | 19,050 | 3/4 | 20,000 | 244,000 | 190,000 | 50,000 |
| 11,910 | 15/32 | 12,000 | 163,000 | 114,000 | 45,000 | 19,500 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 12,000 | | 12,000 | 163,000 | 114,000 | 45,000 | 20,000 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 12,100 | | 14,000 | 182,000 | 133,000 | 45,000 | | | | | | |
| 12,200 | | 14,000 | 182,000 | 133,000 | 45,000 | | | | | | |
| 12,300 | 31/64 | 14,000 | 182,000 | 133,000 | 45,000 | | | | | | |
| 12,500 | | 14,000 | 182,000 | 133,000 | 45,000 | | | | | | |
| 12,700 | 1/2 | 14,000 | 182,000 | 133,000 | 45,000 | | | | | | |
| 13,000 | | 14,000 | 182,000 | 133,000 | 45,000 | | | | | | |
| 13,100 | 33/64 | 14,000 | 182,000 | 133,000 | 45,000 | | | | | | |
| 13,490 | 17/32 | 14,000 | 182,000 | 133,000 | 45,000 | | | | | | |
| 13,500 | | 14,000 | 182,000 | 133,000 | 45,000 | | | | | | |
| 13,700 | | 14,000 | 182,000 | 133,000 | 45,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung



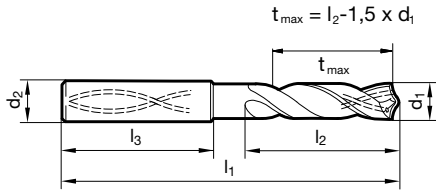
Katalog-Nr. 51752



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

Arbeitsrichtwerte
Seite 93

- Ausspitzung $\geq \text{Ø } 3,000$
- Kegelmantelanschliff
- Hauptschneidenform konkav
- sehr harte Beschichtung
- vier Führungsfasen



| d1 | | d2 | l1 | l2 | l3 | d1 | | d2 | l1 | l2 | l3 |
|-------|-------|-------|--------|--------|--------|--------|-------|--------|---------|--------|--------|
| mm | inch | mm | mm | mm | mm | mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,600 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,100 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,700 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 62,000 | 20,000 | 36,000 | 6,750 | 17/64 | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,200 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,800 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,250 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,900 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,300 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,000 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,400 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,100 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,500 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,140 | 9/32 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 62,000 | 20,000 | 36,000 | 7,200 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,600 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,300 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,700 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,400 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,800 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,500 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,900 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,540 | 19/64 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 66,000 | 24,000 | 36,000 | 7,600 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,000 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,700 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,100 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,800 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,200 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,900 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,300 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,940 | 5/16 | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 66,000 | 24,000 | 36,000 | 8,000 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,400 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,100 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,500 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,200 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,600 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,300 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,650 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,330 | 21/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,700 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,400 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,760 | 3/16 | 6,000 | 66,000 | 28,000 | 36,000 | 8,500 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,800 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,600 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,900 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,700 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,730 | 11/32 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,800 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 66,000 | 28,000 | 36,000 | 8,900 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,000 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,100 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,130 | 23/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,200 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,550 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,250 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 66,000 | 28,000 | 36,000 | 9,300 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,400 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,500 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,800 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,520 | 3/8 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,900 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,600 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 66,000 | 28,000 | 36,000 | 9,700 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,800 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,100 | | 8,000 | 79,000 | 34,000 | 36,000 | 9,900 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,200 | | 8,000 | 79,000 | 34,000 | 36,000 | 9,920 | 25/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,300 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,000 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,350 | 1/4 | 8,000 | 79,000 | 34,000 | 36,000 | 10,100 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,400 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,200 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,500 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,300 | | 12,000 | 102,000 | 55,000 | 45,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 10,320 | 13/32 | 12,000 | 102,000 | 55,000 | 45,000 | 14,290 | 9/16 | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,400 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,300 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,500 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,500 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,600 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,700 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,700 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,000 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,800 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,200 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,900 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,300 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,000 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,500 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,100 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,700 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 102,000 | 55,000 | 45,000 | 16,000 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,200 | | 12,000 | 102,000 | 55,000 | 45,000 | 16,300 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,300 | | 12,000 | 102,000 | 55,000 | 45,000 | 16,500 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,400 | | 12,000 | 102,000 | 55,000 | 45,000 | 16,900 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,500 | | 12,000 | 102,000 | 55,000 | 45,000 | 17,000 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,600 | | 12,000 | 102,000 | 55,000 | 45,000 | 17,300 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,700 | | 12,000 | 102,000 | 55,000 | 45,000 | 17,500 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,800 | | 12,000 | 102,000 | 55,000 | 45,000 | 18,000 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,900 | | 12,000 | 102,000 | 55,000 | 45,000 | 18,500 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 11,910 | 15/32 | 12,000 | 102,000 | 55,000 | 45,000 | 18,900 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,000 | | 12,000 | 102,000 | 55,000 | 45,000 | 19,000 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,200 | | 14,000 | 107,000 | 60,000 | 45,000 | 19,050 | 3/4 | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,500 | | 14,000 | 107,000 | 60,000 | 45,000 | 19,300 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,700 | 1/2 | 14,000 | 107,000 | 60,000 | 45,000 | 19,500 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,800 | | 14,000 | 107,000 | 60,000 | 45,000 | 20,000 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 13,000 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 13,300 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 13,500 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 13,700 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 14,000 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 14,200 | | 16,000 | 115,000 | 65,000 | 48,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

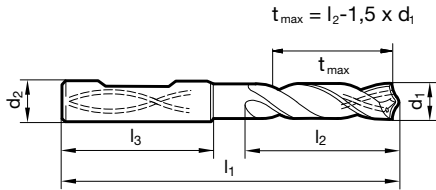


Katalog-Nr. 51753



| | | | | | | |
|---|---|---|---|---|---|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 93 |
| ● | | | | ● | ○ | |

- Ausspitzung $\geq \text{Ø } 3,000$
- Kegelmantelanschliff
- Hauptschneidenform konkav
- sehr harte Beschichtung
- vier Führungsfasen



| d1 | | d2 | l1 | l2 | l3 | d1 | | d2 | l1 | l2 | l3 |
|-------|-------|-------|--------|--------|--------|--------|-------|--------|---------|--------|--------|
| mm | inch | mm | mm | mm | mm | mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,600 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,100 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,700 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 62,000 | 20,000 | 36,000 | 6,750 | 17/64 | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,200 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,800 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,250 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,900 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,300 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,000 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,400 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,100 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,500 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,140 | 9/32 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 62,000 | 20,000 | 36,000 | 7,200 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,600 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,300 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,700 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,400 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,800 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,500 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,900 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,540 | 19/64 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 66,000 | 24,000 | 36,000 | 7,600 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,000 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,700 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,100 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,800 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,200 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,900 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,300 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,940 | 5/16 | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 66,000 | 24,000 | 36,000 | 8,000 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,400 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,100 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,500 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,200 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,600 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,300 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,650 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,330 | 21/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,700 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,400 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,760 | 3/16 | 6,000 | 66,000 | 28,000 | 36,000 | 8,500 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,800 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,600 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,900 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,700 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,730 | 11/32 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,800 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 66,000 | 28,000 | 36,000 | 8,900 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,000 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,100 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,130 | 23/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,200 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,550 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,250 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 66,000 | 28,000 | 36,000 | 9,300 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,400 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,500 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,800 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,520 | 3/8 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,900 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,600 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 66,000 | 28,000 | 36,000 | 9,700 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,800 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,100 | | 8,000 | 79,000 | 34,000 | 36,000 | 9,900 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,200 | | 8,000 | 79,000 | 34,000 | 36,000 | 9,920 | 25/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,300 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,000 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,350 | 1/4 | 8,000 | 79,000 | 34,000 | 36,000 | 10,100 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,400 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,200 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,500 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,300 | | 12,000 | 102,000 | 55,000 | 45,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 10,320 | 13/32 | 12,000 | 102,000 | 55,000 | 45,000 | 14,290 | 9/16 | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,400 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,300 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,500 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,500 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,600 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,700 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,700 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,000 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,800 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,200 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,900 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,300 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,000 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,500 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,100 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,700 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 102,000 | 55,000 | 45,000 | 16,000 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,200 | | 12,000 | 102,000 | 55,000 | 45,000 | 16,300 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,300 | | 12,000 | 102,000 | 55,000 | 45,000 | 16,500 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,400 | | 12,000 | 102,000 | 55,000 | 45,000 | 16,900 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,500 | | 12,000 | 102,000 | 55,000 | 45,000 | 17,000 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,600 | | 12,000 | 102,000 | 55,000 | 45,000 | 17,300 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,700 | | 12,000 | 102,000 | 55,000 | 45,000 | 17,500 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,800 | | 12,000 | 102,000 | 55,000 | 45,000 | 18,000 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,900 | | 12,000 | 102,000 | 55,000 | 45,000 | 18,500 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 11,910 | 15/32 | 12,000 | 102,000 | 55,000 | 45,000 | 18,900 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,000 | | 12,000 | 102,000 | 55,000 | 45,000 | 19,000 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,200 | | 14,000 | 107,000 | 60,000 | 45,000 | 19,050 | 3/4 | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,500 | | 14,000 | 107,000 | 60,000 | 45,000 | 19,300 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,700 | 1/2 | 14,000 | 107,000 | 60,000 | 45,000 | 19,500 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,800 | | 14,000 | 107,000 | 60,000 | 45,000 | 20,000 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 13,000 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 13,300 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 13,500 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 13,700 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 14,000 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 14,200 | | 16,000 | 115,000 | 65,000 | 48,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

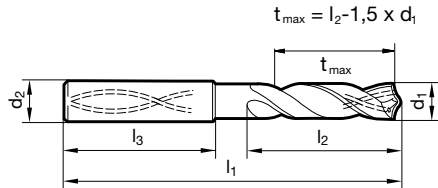


Katalog-Nr. 51754



| | | | | | | |
|---|---|---|---|---|---|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 95 |
| ● | | | | ● | ○ | |

- Ausspitzung $\geq \text{Ø } 3,000$
- Kegelmantelanschliff
- Hauptschneidenform konkav
- sehr harte Beschichtung
- vier Führungsfasen



| d1 | | d2 | l1 | l2 | l3 | d1 | | d2 | l1 | l2 | l3 |
|-------|-------|-------|--------|--------|--------|--------|-------|--------|---------|--------|--------|
| mm | inch | mm | mm | mm | mm | mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 66,000 | 28,000 | 36,000 | 6,750 | 17/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,250 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,100 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,140 | 9/32 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 66,000 | 28,000 | 36,000 | 7,200 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,300 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,400 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,800 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,500 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,900 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,540 | 19/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 74,000 | 36,000 | 36,000 | 7,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,000 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,100 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,200 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,300 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,940 | 5/16 | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 74,000 | 36,000 | 36,000 | 8,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,400 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,500 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,600 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,650 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,330 | 21/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,700 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,760 | 3/16 | 6,000 | 82,000 | 44,000 | 36,000 | 8,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,730 | 11/32 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,100 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 82,000 | 44,000 | 36,000 | 8,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,200 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,300 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,400 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,130 | 23/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,500 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,550 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,250 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 82,000 | 44,000 | 36,000 | 9,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,600 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,700 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,520 | 3/8 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 82,000 | 44,000 | 36,000 | 9,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,100 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,200 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,920 | 25/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,300 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,350 | 1/4 | 8,000 | 91,000 | 53,000 | 36,000 | 10,100 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,400 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,200 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,500 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,300 | | 12,000 | 118,000 | 71,000 | 45,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 10,320 | 13/32 | 12,000 | 118,000 | 71,000 | 45,000 | 14,290 | 9/16 | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,300 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,300 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,100 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 118,000 | 71,000 | 45,000 | 16,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,200 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,300 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,300 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,900 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,300 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 18,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 18,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 11,910 | 15/32 | 12,000 | 118,000 | 71,000 | 45,000 | 18,900 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 19,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,200 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,050 | 3/4 | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,500 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,300 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,700 | 1/2 | 14,000 | 124,000 | 77,000 | 45,000 | 19,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,800 | | 14,000 | 124,000 | 77,000 | 45,000 | 20,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,000 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,300 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,500 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,700 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 14,000 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 14,200 | | 16,000 | 133,000 | 83,000 | 48,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

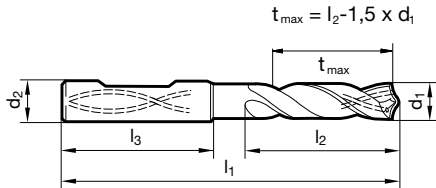


Katalog-Nr. 51755



| | | | | | | |
|----------|----------|----------|----------|----------|----------|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 95 |
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- Ausspitzung $\geq \varnothing 3,000$
- Kegelmantelanschliff
- Hauptschneidenform konkav
- sehr harte Beschichtung
- vier Führungsfasen



| d1 | | d2 | l1 | l2 | l3 | d1 | | d2 | l1 | l2 | l3 |
|-------|-------|-------|--------|--------|--------|--------|-------|--------|---------|--------|--------|
| mm | inch | mm | mm | mm | mm | mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 66,000 | 28,000 | 36,000 | 6,750 | 17/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,250 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,100 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,140 | 9/32 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 66,000 | 28,000 | 36,000 | 7,200 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,300 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,400 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,800 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,500 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,900 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,540 | 19/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 74,000 | 36,000 | 36,000 | 7,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,000 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,100 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,200 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,300 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,940 | 5/16 | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 74,000 | 36,000 | 36,000 | 8,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,400 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,500 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,600 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,650 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,330 | 21/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,700 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,760 | 3/16 | 6,000 | 82,000 | 44,000 | 36,000 | 8,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,730 | 11/32 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,100 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 82,000 | 44,000 | 36,000 | 8,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,200 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,300 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,400 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,130 | 23/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,500 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,550 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,250 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 82,000 | 44,000 | 36,000 | 9,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,600 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,700 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,520 | 3/8 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 82,000 | 44,000 | 36,000 | 9,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,100 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,200 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,920 | 25/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,300 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,350 | 1/4 | 8,000 | 91,000 | 53,000 | 36,000 | 10,100 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,400 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,200 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,500 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,300 | | 12,000 | 118,000 | 71,000 | 45,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 10,320 | 13/32 | 12,000 | 118,000 | 71,000 | 45,000 | 14,290 | 9/16 | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,300 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,300 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,100 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 118,000 | 71,000 | 45,000 | 16,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,200 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,300 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,300 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,900 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,300 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 18,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 18,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 11,910 | 15/32 | 12,000 | 118,000 | 71,000 | 45,000 | 18,900 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 19,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,200 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,050 | 3/4 | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,500 | | 14,000 | 124,000 | 77,000 | 45,000 | 19,300 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,700 | 1/2 | 14,000 | 124,000 | 77,000 | 45,000 | 19,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,800 | | 14,000 | 124,000 | 77,000 | 45,000 | 20,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,000 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,300 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,500 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,700 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 14,000 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 14,200 | | 16,000 | 133,000 | 83,000 | 48,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung



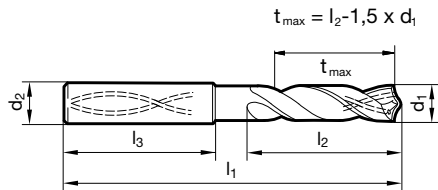
Katalog-Nr. 51756



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|---|---|---|---|---|---|
| P | M | K | N | S | H |
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Arbeitsrichtwerte
Seite 97

- Ausspitzung $\geq \varnothing 3,000$
- Kegelmantelschliff
- Hauptschneidenform konkav
- sehr harte Beschichtung
- vier Führungsfasen



| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|
| 3,000 | | 6,000 | 70,000 | 30,000 | 36,000 |
| 3,250 | | 6,000 | 70,000 | 30,000 | 36,000 |
| 3,300 | | 6,000 | 70,000 | 30,000 | 36,000 |
| 3,400 | | 6,000 | 75,000 | 35,500 | 36,000 |
| 3,500 | | 6,000 | 75,000 | 35,500 | 36,000 |
| 3,700 | | 6,000 | 75,000 | 35,500 | 36,000 |
| 4,000 | | 6,000 | 75,000 | 37,500 | 36,000 |
| 4,200 | | 6,000 | 75,000 | 37,500 | 36,000 |
| 4,300 | | 6,000 | 85,000 | 45,000 | 36,000 |
| 4,500 | | 6,000 | 85,000 | 45,000 | 36,000 |
| 4,650 | | 6,000 | 85,000 | 45,000 | 36,000 |
| 5,000 | | 6,000 | 90,000 | 50,000 | 36,000 |
| 5,100 | | 6,000 | 90,000 | 50,000 | 36,000 |
| 5,200 | | 6,000 | 90,000 | 50,000 | 36,000 |
| 5,500 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 5,550 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 6,000 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 6,500 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 6,750 | 17/64 | 8,000 | 106,000 | 66,000 | 36,000 |
| 6,800 | | 8,000 | 106,000 | 66,000 | 36,000 |
| 6,900 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,000 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,400 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,500 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,800 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 8,000 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 8,500 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 8,600 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 8,800 | | 10,000 | 131,000 | 87,000 | 40,000 |
| 9,000 | | 10,000 | 131,000 | 87,000 | 40,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|
| 9,250 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 9,400 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 9,500 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 10,000 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 10,200 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 10,400 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 10,500 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 10,800 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 11,000 | | 12,000 | 155,000 | 106,000 | 45,000 |
| 11,300 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 11,400 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 11,500 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 12,000 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 12,500 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 13,000 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 13,100 | 33/64 | 14,000 | 182,000 | 133,000 | 45,000 |
| 13,500 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 14,000 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 14,500 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 15,000 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 15,100 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 15,500 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 16,000 | | 16,000 | 204,000 | 152,000 | 48,000 |

Die Speziellen

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung



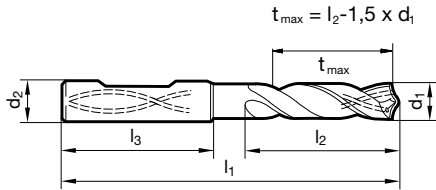
Katalog-Nr. 61880



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

Arbeitsrichtwerte
Seite 93

- Ausspitzung $\geq \varnothing 4,000$
- Kegelmantelschliff
- Hauptschneidenform konkav
- optimierte Schneidengeometrie
- scharfes Schnittverhalten



| d1 | inch | d2 | l1 | l2 | l3 | d1 | inch | d2 | l1 | l2 | l3 |
|--------|-------|--------|---------|--------|--------|--------|-------|--------|---------|---------|--------|
| mm | | mm | mm | mm | mm | mm | | mm | mm | mm | mm |
| 4,000 | | 6,000 | 74,000 | 36,000 | 36,000 | 11,000 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 4,100 | | 6,000 | 74,000 | 36,000 | 36,000 | 11,400 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 4,200 | | 6,000 | 74,000 | 36,000 | 36,000 | 11,500 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 4,300 | | 6,000 | 74,000 | 36,000 | 36,000 | 11,600 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 4,500 | | 6,000 | 74,000 | 36,000 | 36,000 | 11,700 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 4,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 11,800 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 4,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 12,000 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 5,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 12,100 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 5,100 | | 6,000 | 82,000 | 44,000 | 36,000 | 12,200 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 5,200 | | 6,000 | 82,000 | 44,000 | 36,000 | 12,500 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 5,400 | | 6,000 | 82,000 | 44,000 | 36,000 | 12,800 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 5,500 | | 6,000 | 82,000 | 44,000 | 36,000 | 12,900 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 5,700 | | 6,000 | 82,000 | 44,000 | 36,000 | 13,000 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 5,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 13,200 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 5,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 13,500 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 6,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 13,800 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 6,100 | | 8,000 | 91,000 | 53,000 | 36,000 | 14,000 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 6,200 | | 8,000 | 91,000 | 53,000 | 36,000 | 14,100 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 6,500 | | 8,000 | 91,000 | 53,000 | 36,000 | 14,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 6,600 | | 8,000 | 91,000 | 53,000 | 36,000 | 14,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 6,750 | 17/64 | 8,000 | 91,000 | 53,000 | 36,000 | 15,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 6,800 | | 8,000 | 91,000 | 53,000 | 36,000 | 15,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 6,900 | | 8,000 | 91,000 | 53,000 | 36,000 | 15,800 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 7,000 | | 8,000 | 91,000 | 53,000 | 36,000 | 16,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 7,140 | 9/32 | 8,000 | 91,000 | 53,000 | 36,000 | 16,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 7,200 | | 8,000 | 91,000 | 53,000 | 36,000 | 17,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 7,500 | | 8,000 | 91,000 | 53,000 | 36,000 | 17,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 7,600 | | 8,000 | 91,000 | 53,000 | 36,000 | 18,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 7,700 | | 8,000 | 91,000 | 53,000 | 36,000 | 18,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 7,800 | | 8,000 | 91,000 | 53,000 | 36,000 | 19,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 7,900 | | 8,000 | 91,000 | 53,000 | 36,000 | 20,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 8,000 | | 8,000 | 91,000 | 53,000 | 36,000 | 21,000 | | 25,000 | 165,000 | 105,000 | 56,000 |
| 8,100 | | 10,000 | 103,000 | 61,000 | 40,000 | 22,000 | | 25,000 | 165,000 | 105,000 | 56,000 |
| 8,200 | | 10,000 | 103,000 | 61,000 | 40,000 | 23,500 | | 25,000 | 180,000 | 117,000 | 56,000 |
| 8,300 | | 10,000 | 103,000 | 61,000 | 40,000 | 24,000 | | 25,000 | 180,000 | 117,000 | 56,000 |
| 8,500 | | 10,000 | 103,000 | 61,000 | 40,000 | 24,500 | | 25,000 | 180,000 | 117,000 | 56,000 |
| 8,600 | | 10,000 | 103,000 | 61,000 | 40,000 | 25,000 | 63/64 | 25,000 | 180,000 | 117,000 | 56,000 |
| 8,700 | | 10,000 | 103,000 | 61,000 | 40,000 | | | | | | |
| 8,800 | | 10,000 | 103,000 | 61,000 | 40,000 | | | | | | |
| 9,000 | | 10,000 | 103,000 | 61,000 | 40,000 | | | | | | |
| 9,100 | | 10,000 | 103,000 | 61,000 | 40,000 | | | | | | |
| 9,300 | | 10,000 | 103,000 | 61,000 | 40,000 | | | | | | |
| 9,500 | | 10,000 | 103,000 | 61,000 | 40,000 | | | | | | |
| 9,700 | | 10,000 | 103,000 | 61,000 | 40,000 | | | | | | |
| 10,000 | | 10,000 | 103,000 | 61,000 | 40,000 | | | | | | |
| 10,200 | | 12,000 | 118,000 | 71,000 | 45,000 | | | | | | |
| 10,500 | | 12,000 | 118,000 | 71,000 | 45,000 | | | | | | |
| 10,800 | | 12,000 | 118,000 | 71,000 | 45,000 | | | | | | |

Die Spezialien



SuperV70-NX

- weite offene Nuten
- 40° Spiralwinkel für geringere Schnittkräfte und besseren Spantransport
- TiSiN Beschichtung speziell für langspanende Materialien und hohe Standzeiten

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung



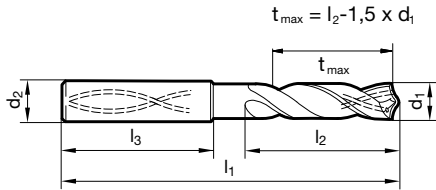
Katalog-Nr. 51770



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

Arbeitsrichtwerte
Seite 93

- Ausspitzung $\geq \text{Ø } 3,000$
- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie
- besonders geeignet für rostfreie Stähle



| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 3,000 | 6,000 | 62,000 | 20,000 | 36,000 | 6,600 | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,100 | 6,000 | 62,000 | 20,000 | 36,000 | 6,700 | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,170 | 6,000 | 62,000 | 20,000 | 36,000 | 6,750 | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,200 | 6,000 | 62,000 | 20,000 | 36,000 | 6,800 | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,250 | 6,000 | 62,000 | 20,000 | 36,000 | 6,900 | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,300 | 6,000 | 62,000 | 20,000 | 36,000 | 7,000 | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,400 | 6,000 | 62,000 | 20,000 | 36,000 | 7,100 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,500 | 6,000 | 62,000 | 20,000 | 36,000 | 7,140 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,570 | 6,000 | 62,000 | 20,000 | 36,000 | 7,200 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,600 | 6,000 | 62,000 | 20,000 | 36,000 | 7,300 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,700 | 6,000 | 62,000 | 20,000 | 36,000 | 7,400 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,800 | 6,000 | 66,000 | 24,000 | 36,000 | 7,500 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,900 | 6,000 | 66,000 | 24,000 | 36,000 | 7,540 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,970 | 6,000 | 66,000 | 24,000 | 36,000 | 7,600 | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,000 | 6,000 | 66,000 | 24,000 | 36,000 | 7,700 | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,100 | 6,000 | 66,000 | 24,000 | 36,000 | 7,800 | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,200 | 6,000 | 66,000 | 24,000 | 36,000 | 7,900 | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,300 | 6,000 | 66,000 | 24,000 | 36,000 | 7,940 | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,370 | 6,000 | 66,000 | 24,000 | 36,000 | 8,000 | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,400 | 6,000 | 66,000 | 24,000 | 36,000 | 8,100 | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,500 | 6,000 | 66,000 | 24,000 | 36,000 | 8,200 | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,600 | 6,000 | 66,000 | 24,000 | 36,000 | 8,300 | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,650 | 6,000 | 66,000 | 24,000 | 36,000 | 8,330 | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,700 | 6,000 | 66,000 | 24,000 | 36,000 | 8,400 | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,760 | 6,000 | 66,000 | 28,000 | 36,000 | 8,500 | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,800 | 6,000 | 66,000 | 28,000 | 36,000 | 8,600 | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,900 | 6,000 | 66,000 | 28,000 | 36,000 | 8,700 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,000 | 6,000 | 66,000 | 28,000 | 36,000 | 8,730 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,100 | 6,000 | 66,000 | 28,000 | 36,000 | 8,800 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,160 | 6,000 | 66,000 | 28,000 | 36,000 | 8,900 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,200 | 6,000 | 66,000 | 28,000 | 36,000 | 9,000 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,300 | 6,000 | 66,000 | 28,000 | 36,000 | 9,100 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,400 | 6,000 | 66,000 | 28,000 | 36,000 | 9,130 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,500 | 6,000 | 66,000 | 28,000 | 36,000 | 9,200 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,550 | 6,000 | 66,000 | 28,000 | 36,000 | 9,250 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,560 | 6,000 | 66,000 | 28,000 | 36,000 | 9,300 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,600 | 6,000 | 66,000 | 28,000 | 36,000 | 9,400 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,700 | 6,000 | 66,000 | 28,000 | 36,000 | 9,500 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,800 | 6,000 | 66,000 | 28,000 | 36,000 | 9,520 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,900 | 6,000 | 66,000 | 28,000 | 36,000 | 9,600 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,950 | 6,000 | 66,000 | 28,000 | 36,000 | 9,700 | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,000 | 6,000 | 66,000 | 28,000 | 36,000 | 9,800 | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,100 | 8,000 | 79,000 | 34,000 | 36,000 | 9,900 | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,200 | 8,000 | 79,000 | 34,000 | 36,000 | 9,920 | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,300 | 8,000 | 79,000 | 34,000 | 36,000 | 10,000 | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,350 | 8,000 | 79,000 | 34,000 | 36,000 | 10,100 | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,400 | 8,000 | 79,000 | 34,000 | 36,000 | 10,200 | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,500 | 8,000 | 79,000 | 34,000 | 36,000 | 10,300 | 12,000 | 102,000 | 55,000 | 45,000 |

Die Roststreifen

| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 10,320 | 12,000 | 102,000 | 55,000 | 45,000 | 13,500 | 14,000 | 107,000 | 60,000 | 45,000 |
| 10,400 | 12,000 | 102,000 | 55,000 | 45,000 | 13,700 | 14,000 | 107,000 | 60,000 | 45,000 |
| 10,500 | 12,000 | 102,000 | 55,000 | 45,000 | 14,000 | 14,000 | 107,000 | 60,000 | 45,000 |
| 10,600 | 12,000 | 102,000 | 55,000 | 45,000 | 14,200 | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,700 | 12,000 | 102,000 | 55,000 | 45,000 | 14,290 | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,800 | 12,000 | 102,000 | 55,000 | 45,000 | 14,500 | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,900 | 12,000 | 102,000 | 55,000 | 45,000 | 14,700 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,000 | 12,000 | 102,000 | 55,000 | 45,000 | 15,000 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,100 | 12,000 | 102,000 | 55,000 | 45,000 | 15,200 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,110 | 12,000 | 102,000 | 55,000 | 45,000 | 15,500 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,200 | 12,000 | 102,000 | 55,000 | 45,000 | 15,700 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,300 | 12,000 | 102,000 | 55,000 | 45,000 | 16,000 | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,400 | 12,000 | 102,000 | 55,000 | 45,000 | 16,500 | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,500 | 12,000 | 102,000 | 55,000 | 45,000 | 17,000 | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,600 | 12,000 | 102,000 | 55,000 | 45,000 | 17,500 | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,700 | 12,000 | 102,000 | 55,000 | 45,000 | 18,000 | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,800 | 12,000 | 102,000 | 55,000 | 45,000 | 18,500 | 20,000 | 131,000 | 79,000 | 50,000 |
| 11,900 | 12,000 | 102,000 | 55,000 | 45,000 | 19,000 | 20,000 | 131,000 | 79,000 | 50,000 |
| 11,910 | 12,000 | 102,000 | 55,000 | 45,000 | 19,500 | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,000 | 12,000 | 102,000 | 55,000 | 45,000 | 20,000 | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,200 | 14,000 | 107,000 | 60,000 | 45,000 | | | | | |
| 12,500 | 14,000 | 107,000 | 60,000 | 45,000 | | | | | |
| 12,700 | 14,000 | 107,000 | 60,000 | 45,000 | | | | | |
| 13,000 | 14,000 | 107,000 | 60,000 | 45,000 | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

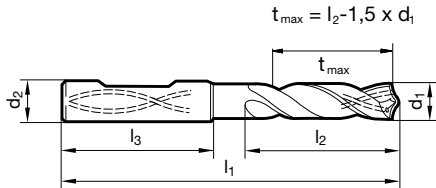


Katalog-Nr. 51771



| | | | | | | |
|---|---|---|---|---|---|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 93 |
| | ● | | | ○ | | |

- Ausspitzung $\geq \varnothing 3,000$
- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie
- besonders geeignet für rostfreie Stähle



| d1 | | d2 | l1 | l2 | l3 | d1 | | d2 | l1 | l2 | l3 |
|-------|-------|-------|--------|--------|--------|--------|-------|--------|---------|--------|--------|
| mm | inch | mm | mm | mm | mm | mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,600 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,100 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,700 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 62,000 | 20,000 | 36,000 | 6,750 | 17/64 | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,200 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,800 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,250 | | 6,000 | 62,000 | 20,000 | 36,000 | 6,900 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,300 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,000 | | 8,000 | 79,000 | 34,000 | 36,000 |
| 3,400 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,100 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,500 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,140 | 9/32 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 62,000 | 20,000 | 36,000 | 7,200 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,600 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,300 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,700 | | 6,000 | 62,000 | 20,000 | 36,000 | 7,400 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,800 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,500 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,900 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,540 | 19/64 | 8,000 | 79,000 | 41,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 66,000 | 24,000 | 36,000 | 7,600 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,000 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,700 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,100 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,800 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,200 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,900 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,300 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,940 | 5/16 | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 66,000 | 24,000 | 36,000 | 8,000 | | 8,000 | 79,000 | 41,000 | 36,000 |
| 4,400 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,100 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,500 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,200 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,600 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,300 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,650 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,330 | 21/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,700 | | 6,000 | 66,000 | 24,000 | 36,000 | 8,400 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,760 | 3/16 | 6,000 | 66,000 | 28,000 | 36,000 | 8,500 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,800 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,600 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 4,900 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,700 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,730 | 11/32 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 8,800 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 66,000 | 28,000 | 36,000 | 8,900 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,000 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,100 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,130 | 23/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,200 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,550 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,250 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 66,000 | 28,000 | 36,000 | 9,300 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,400 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,500 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,800 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,520 | 3/8 | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,900 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,600 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 66,000 | 28,000 | 36,000 | 9,700 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 9,800 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,100 | | 8,000 | 79,000 | 34,000 | 36,000 | 9,900 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,200 | | 8,000 | 79,000 | 34,000 | 36,000 | 9,920 | 25/64 | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,300 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,000 | | 10,000 | 89,000 | 47,000 | 40,000 |
| 6,350 | 1/4 | 8,000 | 79,000 | 34,000 | 36,000 | 10,100 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,400 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,200 | | 12,000 | 102,000 | 55,000 | 45,000 |
| 6,500 | | 8,000 | 79,000 | 34,000 | 36,000 | 10,300 | | 12,000 | 102,000 | 55,000 | 45,000 |

Die Rostfreien

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 10,320 | 13/32 | 12,000 | 102,000 | 55,000 | 45,000 | 13,500 | | 14,000 | 107,000 | 60,000 | 45,000 |
| 10,400 | | 12,000 | 102,000 | 55,000 | 45,000 | 13,700 | | 14,000 | 107,000 | 60,000 | 45,000 |
| 10,500 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,000 | | 14,000 | 107,000 | 60,000 | 45,000 |
| 10,600 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,200 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,700 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,290 | 9/16 | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,800 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,500 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 10,900 | | 12,000 | 102,000 | 55,000 | 45,000 | 14,700 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,000 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,000 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,100 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,200 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 102,000 | 55,000 | 45,000 | 15,500 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,200 | | 12,000 | 102,000 | 55,000 | 45,000 | 15,700 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,300 | | 12,000 | 102,000 | 55,000 | 45,000 | 16,000 | | 16,000 | 115,000 | 65,000 | 48,000 |
| 11,400 | | 12,000 | 102,000 | 55,000 | 45,000 | 16,500 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,500 | | 12,000 | 102,000 | 55,000 | 45,000 | 17,000 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,600 | | 12,000 | 102,000 | 55,000 | 45,000 | 17,500 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,700 | | 12,000 | 102,000 | 55,000 | 45,000 | 18,000 | | 18,000 | 123,000 | 73,000 | 48,000 |
| 11,800 | | 12,000 | 102,000 | 55,000 | 45,000 | 18,500 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 11,900 | | 12,000 | 102,000 | 55,000 | 45,000 | 19,000 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 11,910 | 15/32 | 12,000 | 102,000 | 55,000 | 45,000 | 19,500 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,000 | | 12,000 | 102,000 | 55,000 | 45,000 | 20,000 | | 20,000 | 131,000 | 79,000 | 50,000 |
| 12,200 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 12,500 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 12,700 | 1/2 | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |
| 13,000 | | 14,000 | 107,000 | 60,000 | 45,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

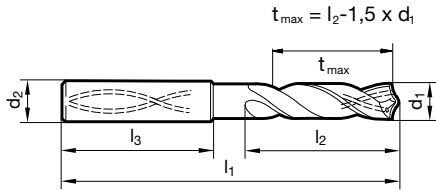


Katalog-Nr. 51772



| | | | | | | |
|---|---|---|---|---|---|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 95 |
| | • | | | ○ | | |

- Ausspitzung $\geq \varnothing 3,000$
- Flächenanschliff
- Hauptschneidenform gerade
- optimierte Schneidengeometrie
- besonders geeignet für rostfreie Stähle



| d1 | | d2 | l1 | l2 | l3 | d1 | | d2 | l1 | l2 | l3 |
|-------|-------|-------|--------|--------|--------|--------|-------|--------|---------|--------|--------|
| mm | inch | mm | mm | mm | mm | mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 66,000 | 28,000 | 36,000 | 6,750 | 17/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,250 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,100 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,140 | 9/32 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 66,000 | 28,000 | 36,000 | 7,200 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,300 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,400 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,800 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,500 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,900 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,540 | 19/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 74,000 | 36,000 | 36,000 | 7,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,000 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,100 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,200 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,300 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,940 | 5/16 | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 74,000 | 36,000 | 36,000 | 8,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,400 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,500 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,600 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,650 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,330 | 21/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,700 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,760 | 3/16 | 6,000 | 82,000 | 44,000 | 36,000 | 8,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,730 | 11/32 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,100 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 82,000 | 44,000 | 36,000 | 8,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,200 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,300 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,400 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,130 | 23/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,500 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,550 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,250 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 82,000 | 44,000 | 36,000 | 9,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,600 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,700 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,520 | 3/8 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 82,000 | 44,000 | 36,000 | 9,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,100 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,200 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,920 | 25/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,300 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,350 | 1/4 | 8,000 | 91,000 | 53,000 | 36,000 | 10,100 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,400 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,200 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,500 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,300 | | 12,000 | 118,000 | 71,000 | 45,000 |

Die Rostfreien

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 10,320 | 13/32 | 12,000 | 118,000 | 71,000 | 45,000 | 13,500 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 10,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 13,700 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 10,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,000 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 10,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,290 | 9/16 | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,100 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 118,000 | 71,000 | 45,000 | 15,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,200 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,300 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 18,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 18,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 11,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 19,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 11,910 | 15/32 | 12,000 | 118,000 | 71,000 | 45,000 | 19,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 20,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,200 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 12,500 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 12,700 | 1/2 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,000 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

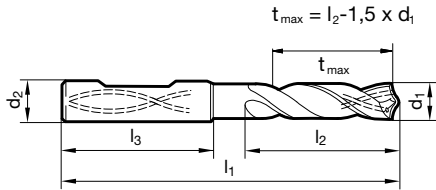


Katalog-Nr. 51773



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| P | M | K | N | S | H | Arbeitsrichtwerte Seite 95 |
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- Ausspitzung $\geq \varnothing 3,000$
- Flächenanschliff
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| d1 | | d2 | l1 | l2 | l3 | d1 | | d2 | l1 | l2 | l3 |
|-------|-------|-------|--------|--------|--------|--------|-------|--------|---------|--------|--------|
| mm | inch | mm | mm | mm | mm | mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,100 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,170 | 1/8 | 6,000 | 66,000 | 28,000 | 36,000 | 6,750 | 17/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,200 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,250 | | 6,000 | 66,000 | 28,000 | 36,000 | 6,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,300 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,400 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,100 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,500 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,140 | 9/32 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,570 | 9/64 | 6,000 | 66,000 | 28,000 | 36,000 | 7,200 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,600 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,300 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,700 | | 6,000 | 66,000 | 28,000 | 36,000 | 7,400 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,800 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,500 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,900 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,540 | 19/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,970 | 5/32 | 6,000 | 74,000 | 36,000 | 36,000 | 7,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,000 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,100 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,200 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,300 | | 6,000 | 74,000 | 36,000 | 36,000 | 7,940 | 5/16 | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,370 | 11/64 | 6,000 | 74,000 | 36,000 | 36,000 | 8,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,400 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,500 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,600 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,650 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,330 | 21/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,700 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,760 | 3/16 | 6,000 | 82,000 | 44,000 | 36,000 | 8,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,730 | 11/32 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,100 | | 6,000 | 82,000 | 44,000 | 36,000 | 8,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 82,000 | 44,000 | 36,000 | 8,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,200 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,300 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,400 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,130 | 23/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,500 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,550 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,250 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 82,000 | 44,000 | 36,000 | 9,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,600 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,700 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,800 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,520 | 3/8 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,900 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 82,000 | 44,000 | 36,000 | 9,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,000 | | 6,000 | 82,000 | 44,000 | 36,000 | 9,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,100 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,200 | | 8,000 | 91,000 | 53,000 | 36,000 | 9,920 | 25/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,300 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,350 | 1/4 | 8,000 | 91,000 | 53,000 | 36,000 | 10,100 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,400 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,200 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,500 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,300 | | 12,000 | 118,000 | 71,000 | 45,000 |

Die Roststreifen

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|-------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 10,320 | 13/32 | 12,000 | 118,000 | 71,000 | 45,000 | 13,500 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 10,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 13,700 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 10,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,000 | | 14,000 | 124,000 | 77,000 | 45,000 |
| 10,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,290 | 9/16 | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 10,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 14,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,100 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,200 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,110 | 7/16 | 12,000 | 118,000 | 71,000 | 45,000 | 15,500 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,200 | | 12,000 | 118,000 | 71,000 | 45,000 | 15,700 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,300 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,000 | | 16,000 | 133,000 | 83,000 | 48,000 |
| 11,400 | | 12,000 | 118,000 | 71,000 | 45,000 | 16,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,500 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,600 | | 12,000 | 118,000 | 71,000 | 45,000 | 17,500 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,700 | | 12,000 | 118,000 | 71,000 | 45,000 | 18,000 | | 18,000 | 143,000 | 93,000 | 48,000 |
| 11,800 | | 12,000 | 118,000 | 71,000 | 45,000 | 18,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 11,900 | | 12,000 | 118,000 | 71,000 | 45,000 | 19,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 11,910 | 15/32 | 12,000 | 118,000 | 71,000 | 45,000 | 19,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,000 | | 12,000 | 118,000 | 71,000 | 45,000 | 20,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 12,200 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 12,500 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 12,700 | 1/2 | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |
| 13,000 | | 14,000 | 124,000 | 77,000 | 45,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer, 3-schneidig



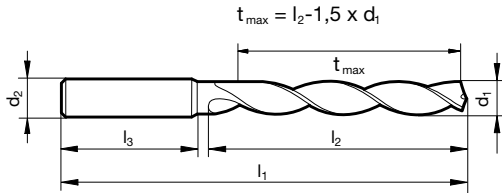
Katalog-Nr. 71862



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

Arbeitsrichtwerte
Seite 95

- Ausspitzung $\geq \varnothing 3,000$
- Spiropointanschiff
- weite Spannuten
- optimales Zentrieren
- für unterbrochenen Schnitt geeignet



| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|
| 3,000 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,100 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,200 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,300 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,500 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,700 | 6,000 | 66,000 | 28,000 | 36,000 |
| 3,800 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,000 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,100 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,200 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,500 | 6,000 | 74,000 | 36,000 | 36,000 |
| 4,800 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,000 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,100 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,200 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,300 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,500 | 6,000 | 82,000 | 44,000 | 36,000 |
| 5,800 | 6,000 | 82,000 | 44,000 | 36,000 |
| 6,000 | 6,000 | 82,000 | 44,000 | 36,000 |
| 6,100 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,200 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,400 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,500 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,700 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,800 | 8,000 | 91,000 | 53,000 | 36,000 |
| 6,900 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,000 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,100 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,400 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,500 | 8,000 | 91,000 | 53,000 | 36,000 |
| 7,800 | 8,000 | 91,000 | 53,000 | 36,000 |
| 8,000 | 8,000 | 91,000 | 53,000 | 36,000 |
| 8,100 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,200 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,400 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,500 | 10,000 | 103,000 | 61,000 | 40,000 |

| d1 mm | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|----------|----------|----------|----------|
| 8,600 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,700 | 10,000 | 103,000 | 61,000 | 40,000 |
| 8,800 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,000 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,100 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,500 | 10,000 | 103,000 | 61,000 | 40,000 |
| 9,800 | 10,000 | 103,000 | 61,000 | 40,000 |
| 10,000 | 10,000 | 103,000 | 61,000 | 40,000 |
| 10,100 | 12,000 | 118,000 | 71,000 | 45,000 |
| 10,200 | 12,000 | 118,000 | 71,000 | 45,000 |
| 10,300 | 12,000 | 118,000 | 71,000 | 45,000 |
| 10,500 | 12,000 | 118,000 | 71,000 | 45,000 |
| 11,000 | 12,000 | 118,000 | 71,000 | 45,000 |
| 11,200 | 12,000 | 118,000 | 71,000 | 45,000 |
| 11,500 | 12,000 | 118,000 | 71,000 | 45,000 |
| 11,800 | 12,000 | 118,000 | 71,000 | 45,000 |
| 12,000 | 12,000 | 118,000 | 71,000 | 45,000 |
| 12,100 | 14,000 | 124,000 | 77,000 | 45,000 |
| 12,500 | 14,000 | 124,000 | 77,000 | 45,000 |
| 13,000 | 14,000 | 124,000 | 77,000 | 45,000 |
| 13,500 | 14,000 | 124,000 | 77,000 | 45,000 |
| 14,000 | 14,000 | 124,000 | 77,000 | 45,000 |
| 14,100 | 16,000 | 133,000 | 83,000 | 48,000 |
| 14,500 | 16,000 | 133,000 | 83,000 | 48,000 |
| 15,000 | 16,000 | 133,000 | 83,000 | 48,000 |
| 15,500 | 16,000 | 133,000 | 83,000 | 48,000 |
| 16,000 | 16,000 | 133,000 | 83,000 | 48,000 |
| 16,500 | 18,000 | 143,000 | 93,000 | 48,000 |
| 17,000 | 18,000 | 143,000 | 93,000 | 48,000 |
| 17,500 | 18,000 | 143,000 | 93,000 | 48,000 |
| 18,000 | 18,000 | 143,000 | 93,000 | 48,000 |
| 18,500 | 20,000 | 153,000 | 101,000 | 50,000 |
| 19,000 | 20,000 | 153,000 | 101,000 | 50,000 |
| 19,500 | 20,000 | 153,000 | 101,000 | 50,000 |
| 20,000 | 20,000 | 153,000 | 101,000 | 50,000 |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

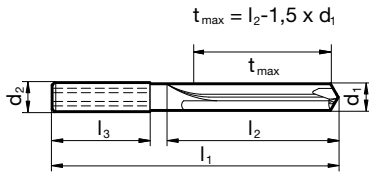


Katalog-Nr. 71995



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|---|---|---|---|---|---|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 93 |
| | | ● | ○ | | | |

- Ausspitzung $\geq \varnothing 3,000$
- Kegelmantelschliff
- enge Durchmessertoleranzen
- sehr gute Bohrschuldenoberflächen
- Kühlmittel druck beachten (s. Diagramm „Kühlmitteltempfehlungen“)



| d1 | | d2 | l1 | l2 | l3 | d1 | | d2 | l1 | l2 | l3 |
|-------|-------|-------|--------|--------|--------|--------|-------|--------|---------|--------|--------|
| mm | inch | mm | mm | mm | mm | mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,200 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,100 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,300 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,200 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,400 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,300 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,500 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,400 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,540 | 19/64 | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,500 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,600 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,600 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,700 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,700 | | 6,000 | 66,000 | 24,000 | 36,000 | 7,800 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,800 | | 6,000 | 74,000 | 30,000 | 36,000 | 7,900 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 3,900 | | 6,000 | 74,000 | 30,000 | 36,000 | 7,940 | 5/16 | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,000 | | 6,000 | 74,000 | 30,000 | 36,000 | 8,000 | | 8,000 | 91,000 | 53,000 | 36,000 |
| 4,100 | | 6,000 | 74,000 | 30,000 | 36,000 | 8,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,200 | | 6,000 | 74,000 | 30,000 | 36,000 | 8,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,300 | | 6,000 | 74,000 | 30,000 | 36,000 | 8,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,400 | | 6,000 | 74,000 | 30,000 | 36,000 | 8,330 | 21/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,500 | | 6,000 | 74,000 | 30,000 | 36,000 | 8,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,600 | | 6,000 | 74,000 | 30,000 | 36,000 | 8,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,700 | | 6,000 | 74,000 | 30,000 | 36,000 | 8,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,800 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,730 | 11/32 | 10,000 | 103,000 | 61,000 | 40,000 |
| 4,900 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,000 | | 6,000 | 74,000 | 36,000 | 36,000 | 8,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,100 | | 6,000 | 74,000 | 36,000 | 36,000 | 9,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,160 | 13/64 | 6,000 | 74,000 | 36,000 | 36,000 | 9,100 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,200 | | 6,000 | 74,000 | 36,000 | 36,000 | 9,130 | 23/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,300 | | 6,000 | 74,000 | 36,000 | 36,000 | 9,200 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,400 | | 6,000 | 74,000 | 36,000 | 36,000 | 9,300 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,500 | | 6,000 | 74,000 | 36,000 | 36,000 | 9,400 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,560 | 7/32 | 6,000 | 74,000 | 36,000 | 36,000 | 9,500 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,600 | | 6,000 | 74,000 | 36,000 | 36,000 | 9,520 | 3/8 | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,700 | | 6,000 | 74,000 | 36,000 | 36,000 | 9,600 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,800 | | 6,000 | 74,000 | 36,000 | 36,000 | 9,700 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,900 | | 6,000 | 74,000 | 36,000 | 36,000 | 9,800 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 5,950 | 15/64 | 6,000 | 74,000 | 36,000 | 36,000 | 9,900 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,000 | | 6,000 | 74,000 | 36,000 | 36,000 | 9,920 | 25/64 | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,100 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,000 | | 10,000 | 103,000 | 61,000 | 40,000 |
| 6,200 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,200 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,300 | | 8,000 | 91,000 | 53,000 | 36,000 | 10,500 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,350 | 1/4 | 8,000 | 91,000 | 53,000 | 36,000 | 10,720 | 27/64 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,400 | | 8,000 | 91,000 | 53,000 | 36,000 | 11,000 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,500 | | 8,000 | 91,000 | 53,000 | 36,000 | 11,110 | 7/16 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,600 | | 8,000 | 91,000 | 53,000 | 36,000 | 11,200 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,700 | | 8,000 | 91,000 | 53,000 | 36,000 | 11,500 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,750 | 17/64 | 8,000 | 91,000 | 53,000 | 36,000 | 11,510 | 29/64 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,800 | | 8,000 | 91,000 | 53,000 | 36,000 | 11,910 | 15/32 | 12,000 | 118,000 | 71,000 | 45,000 |
| 6,900 | | 8,000 | 91,000 | 53,000 | 36,000 | 12,000 | | 12,000 | 118,000 | 71,000 | 45,000 |
| 7,000 | | 8,000 | 91,000 | 53,000 | 36,000 | 12,300 | 31/64 | 14,000 | 124,000 | 74,000 | 45,000 |
| 7,100 | | 8,000 | 91,000 | 53,000 | 36,000 | 12,500 | | 14,000 | 124,000 | 74,000 | 45,000 |
| 7,140 | 9/32 | 8,000 | 91,000 | 53,000 | 36,000 | 12,700 | 1/2 | 14,000 | 124,000 | 74,000 | 45,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm | d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|------|----------|----------|----------|----------|----------|------|----------|----------|----------|----------|
| 13,000 | | 14,000 | 124,000 | 74,000 | 45,000 | 19,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 13,500 | | 14,000 | 124,000 | 74,000 | 45,000 | 19,500 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 14,000 | | 14,000 | 124,000 | 74,000 | 45,000 | 20,000 | | 20,000 | 153,000 | 101,000 | 50,000 |
| 14,500 | | 16,000 | 133,000 | 83,000 | 48,000 | 21,500 | | 25,000 | 168,000 | 110,000 | 56,000 |
| 15,000 | | 16,000 | 133,000 | 83,000 | 48,000 | | | | | | |
| 15,500 | | 16,000 | 133,000 | 83,000 | 48,000 | | | | | | |
| 16,000 | | 16,000 | 133,000 | 83,000 | 48,000 | | | | | | |
| 16,500 | | 18,000 | 143,000 | 93,000 | 48,000 | | | | | | |
| 17,000 | | 18,000 | 143,000 | 93,000 | 48,000 | | | | | | |
| 17,500 | | 18,000 | 143,000 | 93,000 | 48,000 | | | | | | |
| 18,000 | | 18,000 | 143,000 | 93,000 | 48,000 | | | | | | |
| 18,500 | | 20,000 | 153,000 | 101,000 | 50,000 | | | | | | |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

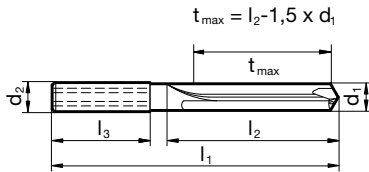


Katalog-Nr. 71994



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|---|---|---|---|---|---|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 97 |
| | | ● | ○ | | | |

- Ausspitzung $\geq \varnothing 3,000$
- Kegelmantelschliff
- enge Durchmessertoleranzen
- sehr gute Bohrschuldenoberflächen
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittlempfehlungen“)



| d1 | inch | d2 | l1 | l2 | l3 |
|-------|------|--------|---------|--------|--------|
| mm | | mm | mm | mm | mm |
| 3,000 | | 6,000 | 74,000 | 32,000 | 36,000 |
| 3,100 | | 6,000 | 74,000 | 32,000 | 36,000 |
| 3,200 | | 6,000 | 74,000 | 32,000 | 36,000 |
| 3,300 | | 6,000 | 74,000 | 32,000 | 36,000 |
| 3,500 | | 6,000 | 74,000 | 34,000 | 36,000 |
| 3,600 | | 6,000 | 74,000 | 34,000 | 36,000 |
| 3,700 | | 6,000 | 74,000 | 34,000 | 36,000 |
| 3,800 | | 6,000 | 97,000 | 45,000 | 36,000 |
| 3,900 | | 6,000 | 97,000 | 45,000 | 36,000 |
| 4,000 | | 6,000 | 97,000 | 45,000 | 36,000 |
| 4,100 | | 6,000 | 97,000 | 45,000 | 36,000 |
| 4,200 | | 6,000 | 97,000 | 45,000 | 36,000 |
| 4,300 | | 6,000 | 97,000 | 45,000 | 36,000 |
| 4,400 | | 6,000 | 97,000 | 45,000 | 36,000 |
| 4,500 | | 6,000 | 97,000 | 45,000 | 36,000 |
| 4,700 | | 6,000 | 97,000 | 45,000 | 36,000 |
| 4,800 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 4,900 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 5,000 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 5,500 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 6,000 | | 6,000 | 97,000 | 57,000 | 36,000 |
| 6,500 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 6,800 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,000 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,500 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 7,800 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 8,000 | | 8,000 | 116,000 | 76,000 | 36,000 |
| 8,500 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 9,000 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 9,500 | | 10,000 | 139,000 | 95,000 | 40,000 |

| d1 | inch | d2 | l1 | l2 | l3 |
|--------|-------|--------|---------|---------|--------|
| mm | | mm | mm | mm | mm |
| 10,000 | | 10,000 | 139,000 | 95,000 | 40,000 |
| 10,200 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 10,500 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 11,000 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 11,500 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 12,000 | | 12,000 | 163,000 | 114,000 | 45,000 |
| 12,300 | 31/64 | 14,000 | 182,000 | 133,000 | 45,000 |
| 12,500 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 12,700 | 1/2 | 14,000 | 182,000 | 133,000 | 45,000 |
| 13,000 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 13,500 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 14,000 | | 14,000 | 182,000 | 133,000 | 45,000 |
| 14,500 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 15,000 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 15,500 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 16,000 | | 16,000 | 204,000 | 152,000 | 48,000 |
| 16,500 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 17,000 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 17,500 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 18,000 | | 18,000 | 223,000 | 171,000 | 48,000 |
| 18,500 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 19,000 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 19,500 | | 20,000 | 244,000 | 190,000 | 50,000 |
| 20,000 | | 20,000 | 244,000 | 190,000 | 50,000 |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

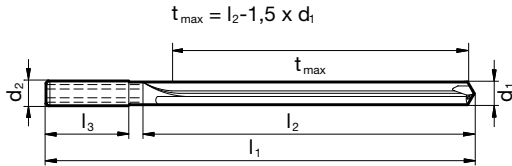


Katalog-Nr. 71996



| | | | | | | |
|---|---|---|---|---|---|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 97 |
| | | ● | ○ | | | |

- Ausspitzung $\geq \varnothing 3,000$
- Kegelmantelanschliff
- enge Durchmessertoleranzen
- sehr gute Bohrungsoberflächen
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittlempfehlungen“)



| d1 | | d2 | l1 | l2 | l3 |
|--------|------|--------|---------|---------|--------|
| mm | inch | mm | mm | mm | mm |
| 3,000 | | 6,000 | 91,000 | 42,000 | 36,000 |
| 3,300 | | 6,000 | 91,000 | 42,000 | 36,000 |
| 3,500 | | 6,000 | 91,000 | 48,000 | 36,000 |
| 3,800 | | 6,000 | 121,000 | 77,000 | 36,000 |
| 4,000 | | 6,000 | 121,000 | 77,000 | 36,000 |
| 4,200 | | 6,000 | 121,000 | 77,000 | 36,000 |
| 4,500 | | 6,000 | 121,000 | 77,000 | 36,000 |
| 4,700 | | 6,000 | 121,000 | 77,000 | 36,000 |
| 4,800 | | 6,000 | 121,000 | 82,000 | 36,000 |
| 5,000 | | 6,000 | 121,000 | 82,000 | 36,000 |
| 5,500 | | 6,000 | 121,000 | 82,000 | 36,000 |
| 6,000 | | 6,000 | 121,000 | 82,000 | 36,000 |
| 6,350 | 1/4 | 8,000 | 146,000 | 106,000 | 36,000 |
| 6,500 | | 8,000 | 146,000 | 106,000 | 36,000 |
| 6,800 | | 8,000 | 146,000 | 106,000 | 36,000 |
| 7,000 | | 8,000 | 146,000 | 106,000 | 36,000 |
| 7,500 | | 8,000 | 146,000 | 106,000 | 36,000 |
| 7,800 | | 8,000 | 146,000 | 106,000 | 36,000 |
| 8,000 | | 8,000 | 146,000 | 106,000 | 36,000 |
| 8,500 | | 10,000 | 175,000 | 130,000 | 40,000 |
| 9,000 | | 10,000 | 175,000 | 130,000 | 40,000 |
| 9,500 | | 10,000 | 175,000 | 130,000 | 40,000 |
| 10,000 | | 10,000 | 175,000 | 130,000 | 40,000 |
| 10,200 | | 12,000 | 209,000 | 159,000 | 45,000 |

| d1 | | d2 | l1 | l2 | l3 |
|--------|------|--------|---------|---------|--------|
| mm | inch | mm | mm | mm | mm |
| 10,500 | | 12,000 | 209,000 | 159,000 | 45,000 |
| 11,000 | | 12,000 | 209,000 | 159,000 | 45,000 |
| 11,500 | | 12,000 | 209,000 | 159,000 | 45,000 |
| 12,000 | | 12,000 | 209,000 | 159,000 | 45,000 |
| 12,500 | | 14,000 | 233,000 | 183,000 | 45,000 |
| 12,700 | 1/2 | 14,000 | 233,000 | 183,000 | 45,000 |
| 13,000 | | 14,000 | 233,000 | 183,000 | 45,000 |
| 13,500 | | 14,000 | 233,000 | 183,000 | 45,000 |
| 14,000 | | 14,000 | 233,000 | 183,000 | 45,000 |
| 14,500 | | 16,000 | 260,000 | 207,000 | 48,000 |
| 15,000 | | 16,000 | 260,000 | 207,000 | 48,000 |
| 15,500 | | 16,000 | 260,000 | 207,000 | 48,000 |
| 16,000 | | 16,000 | 260,000 | 207,000 | 48,000 |
| 16,500 | | 18,000 | 284,000 | 231,000 | 48,000 |
| 17,000 | | 18,000 | 284,000 | 231,000 | 48,000 |
| 17,500 | | 18,000 | 284,000 | 231,000 | 48,000 |
| 18,000 | | 18,000 | 284,000 | 231,000 | 48,000 |
| 18,500 | | 20,000 | 308,000 | 255,000 | 50,000 |
| 19,000 | | 20,000 | 308,000 | 255,000 | 50,000 |
| 19,500 | | 20,000 | 308,000 | 255,000 | 50,000 |
| 20,000 | | 20,000 | 308,000 | 255,000 | 50,000 |

SuperV-Bohrer

SuperV-Bohrer mit Innenkühlung

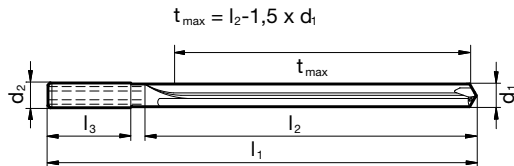


Katalog-Nr. 71997



| | | | | | | |
|---|---|---|---|---|---|-------------------------------|
| P | M | K | N | S | H | Arbeitsrichtwerte Seite 99 |
| | | • | ○ | | | |

- Ausspitzung $\geq \varnothing 5,000$
- Kegelmantelschliff
- negative Steigung
- für sehr maßhaltige Bohrungen
- sehr gute Bohrungsflächen
- Kühlmitteldruck beachten (s. Diagramm „Kühlmittlempfehlungen“)



| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|------|----------|----------|----------|----------|
| 5,000 | | 6,000 | 145,000 | 105,000 | 36,000 |
| 6,000 | | 6,000 | 145,000 | 105,000 | 36,000 |
| 8,000 | | 8,000 | 180,000 | 137,000 | 36,000 |
| 9,000 | | 10,000 | 217,000 | 170,000 | 40,000 |
| 10,000 | | 10,000 | 217,000 | 170,000 | 40,000 |
| 11,000 | | 12,000 | 258,000 | 205,000 | 45,000 |

| d1 mm | inch | d2 mm | l1 mm | l2 mm | l3 mm |
|----------|------|----------|----------|----------|----------|
| 12,000 | | 12,000 | 258,000 | 205,000 | 45,000 |
| 14,000 | | 14,000 | 290,000 | 236,000 | 45,000 |

Weitere Bohrwerkzeuge
finden Sie im Hauptkatalog

SuperV-AP
SuperT



STOCK



ANWENDUNGSHINWEISE +

ARBEITSRICHTWERTE

Anwendung

Zuordnung nach Werkstoffen

| | Typ | Katalog-Nr. | | Nichteisenmetalle, Aluminium | Stähle | GG, GGG | rost- und säurebest. Stähle | Nickel, Ti- Legierungen | Gehärtete Stähle |
|-----------------------------|--------------|-------------|---------|---------------------------------|--------------------------|--------------|--------------------------------|----------------------------|---------------------|
| | | ohne IK | mit IK | | | | | | |
| Die Universellen | SuperV-U | 51873 | 51776 | | optimal | | | | |
| | | 51871 | 51876 | | optimal | | | | |
| | | 51787 | 51781 | | optimal | | | | |
| | | 51887 | 51881 | | optimal | | | | |
| | | 51687 | 51789 | | optimal | | | | |
| | | | 51889 | | optimal | | | | |
| | | | 51893 | | optimal | | | | |
| | | | 51681 | | optimal | | | | |
| Die Universellen Kleinen | SuperV-NX | 71998 | 51997 | | optimal | | | | |
| | | 71999 | 51998 | | optimal | | | | |
| | | | 51999 | | optimal | | | | |
| | SuperV-M | 51720 | | | optimal | | | | |
| Die Universellen Langen | SuperV-T | | 51764 | | optimal | | gut geeignet | | |
| | | | 51765 | | optimal | | gut geeignet | | |
| | | | 51766 | | optimal | | gut geeignet | | |
| | | | 51767 | | optimal | | gut geeignet | | |
| | | | 51768 | | optimal | | gut geeignet | | |
| Die Speziellen | SuperV-UX | | 51785 | | verbesserte Schnittwerte | | | | |
| | | | 51790 | | verbesserte Schnittwerte | | | | |
| | SuperV70-NX | 51783 | 51784 | | optimal | | gut geeignet | | |
| | SuperV-S | 51750 | 51752 | | optimal | | gut geeignet | optimal | |
| | | | 51753 | | optimal | | gut geeignet | optimal | |
| | | | 51754 | | optimal | | gut geeignet | optimal | |
| | | | 51755 | | optimal | | gut geeignet | optimal | |
| | 51756 | | optimal | | gut geeignet | optimal | | | |
| SuperV-F | 61888 | 61880 | | optimal | | gut geeignet | | | |
| Die Rostfreien | SuperV-VA | | 51770 | | optimal | | gut geeignet | gut geeignet | |
| | | | 51771 | | optimal | | gut geeignet | gut geeignet | |
| | | | 51772 | | optimal | | gut geeignet | gut geeignet | |
| | | | 51773 | | optimal | | gut geeignet | gut geeignet | |
| Die Leichten | SuperV95-GG | | 71995 | | optimal | optimal | | | |
| | | | 71994 | | optimal | optimal | | | |
| | | | 71996 | | optimal | optimal | | | |
| | SuperV95-GN | | 71997 | | optimal | optimal | | | |
| | SuperV83-GAL | 71862 | | | optimal | optimal | | | |

■ optimal
 ■ gut geeignet

SuperV-Bohrer

Arbeitsrichtwerte

| Vorschubreihen | | | | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Code-Buchstabe | A | B | C | D | E | F | G | H | I | |
| Werkzeug-Ø mm | 0,50 | 0,004 | 0,006 | 0,007 | 0,008 | 0,010 | 0,012 | 0,014 | 0,016 | 0,019 |
| | 1,00 | 0,006 | 0,008 | 0,012 | 0,014 | 0,016 | 0,018 | 0,020 | 0,023 | 0,025 |
| | 2,00 | 0,020 | 0,025 | 0,032 | 0,040 | 0,050 | 0,063 | 0,080 | 0,100 | 0,125 |
| | 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 |
| | 31,50 | 0,160 | 0,200 | 0,250 | 0,315 | 0,400 | 0,500 | 0,630 | 0,800 | 1,000 |
| | 40,00 | 0,200 | 0,250 | 0,315 | 0,400 | 0,500 | 0,630 | 0,800 | 1,000 | 1,250 |

Werkzeuge mit fett gedruckten Vorschubreihen-Codebuchstaben sind für die entsprechende Werkstoffgruppe vorrangig einzusetzen.

K, P, K/P

Die universelle Einsetzbarkeit unserer neuen K-Hartmetalle hat u.a. auch zur Folge, dass wir die HM-Anwendungsgruppen nur noch mit K bzw. K/P definieren.

Bedeutung der Kennbuchstaben bei den Typbezeichnungen:

- G** für Guss, AlSi-Legierungen
- S** für hochfeste Werkstoffe
- U/F** für Universalbearbeitung, Kohlenstoffstähle
- VA** für rostfreie Werkstoffe
- UX** für Stahlbearbeitung

* stark verjüngte Werkzeuge einsetzen

Kühlmitteleinsatz:

- Schneidöl, hochaktiviert
- Bohrölemulsion
- ohne Schmiermittel
- nur Luftkühlung

| Werkstoffgruppe | Werkstoffbeispiele, neue Bezeichnung (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN | Zugfestigkeit MPa (N/mm ²) | Härte | Kühl- mittel |
|--|---|---|--------------------------|---|
| Allgemeine Baustähle | 1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2) 1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500) | ≤500 >500-850 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Automatenstähle | 1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20) | ≤850 850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Unlegierte Vergütungsstähle | 1.0402 C22, 1.1178 C30E (Ck30) 1.0503 C45, 1.1191 C45E (Ck45) 1.0601 C60, 1.1221 C60E (Ck60) | ≤ 700 700-850 850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Legierte Vergütungsstähle | 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4 | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Unlegierte Einsatzstähle | 1.0301 (C10), 1.1121 C10E (Ck10) | ≤750 | | <input checked="" type="checkbox"/> |
| Legierte Einsatzstähle | 1.7043 38Cr4 1.5752 15NiCr13 (15NiCr13), 1.7131 16MnCr5, 1.7264 20CrMo5 | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Nitrierstähle | 1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7 | >850-≤1000 ≥1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Werkzeugstähle | 1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4 | ≤850 >850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Schnellarbeitsstähle | 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3 | ≥650-1000 | | <input checked="" type="checkbox"/> |
| Federstähle | 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4) | | ≤330 HB | <input checked="" type="checkbox"/> |
| Gehärtete Stähle | - | | ≤40-48 HRC >48-60 HRC | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Rostfreie Stähle, geschwefelt austenitisch martensitisch | 1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A) 1.4057 X20CrNi 17 2 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2 | ≤850 ≤850 ≤850 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Gusseisen | 0.6010 EN-GJL-100(GG10), 0.6020 EN-GJL-200(GG20) 0.6025 EN-GJL-250(GG25), 0.6035 EN-GJL-350(GG35) | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Kugelgraphit- und Temperguss | 0.7050 EN-GJS-500-7(GGG50), 0.8035 EN-GJMw-350-4(GTW35) 0.7070 EN-GJS-700-2(GGG70), 0.8170 EN-GJMB-700-2(GTS70) | | ≤240 HB <300 HB | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Hartguss | - | | ≤350 HB | <input checked="" type="checkbox"/> |
| Neue Gusswerkstoffe GGV | EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo6 | | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Neue Gusswerkstoffe ADI | EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400) | 800-1000 1200-1400 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Sonderlegierungen | Nimonic, Inconel, Monel, Hastelloy | ≤1200 | | <input checked="" type="checkbox"/> |
| Titan und Titan-Legierungen | 3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5, - TiAl8Mo1V1 | ≤850 >850-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Aluminium und Al-Legierungen | 3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1 | ≤400 | | <input checked="" type="checkbox"/> |
| Al-Knetlegierungen | 3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5 | ≤450 | | <input checked="" type="checkbox"/> |
| Al-Gusslegierungen ≤ 10 % Si > 10 % Si | 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg | ≤600 ≤600 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Magnesium-Legierungen | 3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5812.05 G-MgAl6Zn1 | ≤450 | | <input type="checkbox"/> |
| Kupfer, niedriglegiert | 2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb | ≤400 | | <input checked="" type="checkbox"/> |
| Messing, kurzspanend langspanend | 2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5 | ≤600 ≤600 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Bronzen, kurzspanend | 2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn 2.0790 CuNi18Zn19Pb | ≤600 >600-850 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Bronzen, langspanend | 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2 | ≤850 >850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Kunststoffe, duroplastisch thermoplastisch | Epoxidharz, Resopal, Pertinax, Moltopren Plexiglas, Hostalen, Novodur, Makralon | | - | <input type="checkbox"/> <input checked="" type="checkbox"/> |
| Kunststoffe, aramidfaserverstärkt glas-/kohlefaserverstärkt | Kevlar GFK/CFK | | - | <input type="checkbox"/> <input type="checkbox"/> |

SuperV-Bohrer

Arbeitsrichtwerte

| Vorschubreihen | | | | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Code-Buchstabe | A | B | C | D | E | F | G | H | I | |
| Werkzeug-Ø mm | 0,50 | 0,004 | 0,006 | 0,007 | 0,008 | 0,010 | 0,012 | 0,014 | 0,016 | 0,019 |
| | 1,00 | 0,006 | 0,008 | 0,012 | 0,014 | 0,016 | 0,018 | 0,020 | 0,023 | 0,025 |
| | 2,00 | 0,020 | 0,025 | 0,032 | 0,040 | 0,050 | 0,063 | 0,080 | 0,100 | 0,125 |
| | 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 |
| | 31,50 | 0,160 | 0,200 | 0,250 | 0,315 | 0,400 | 0,500 | 0,630 | 0,800 | 1,000 |
| | 40,00 | 0,200 | 0,250 | 0,315 | 0,400 | 0,500 | 0,630 | 0,800 | 1,000 | 1,250 |

Werkzeuge mit fett gedruckten Vorschubreihen-Codebuchstaben sind für die entsprechende Werkstoffgruppe vorrangig einzusetzen.

K, P, K/P

Die universelle Einsetzbarkeit unserer neuen K-Hartmetalle hat u.a. auch zur Folge, dass wir die HM-Anwendungsgruppen nur noch mit K bzw. K/P definieren.

Bedeutung der Kennbuchstaben bei den Typbezeichnungen:

- G** für Guss, AlSi-Legierungen
- S** für hochfeste Werkstoffe
- U/F** für Universalbearbeitung, Kohlenstoffstähle
- VA** für rostfreie Werkstoffe
- UX** für Stahlbearbeitung

* stark verjüngte Werkzeuge einsetzen

Kühlmitteleinsatz:

- Schneidöl, hochaktiviert
- Bohrölemulsion
- ohne Schmiermittel
- nur Luftkühlung

| Werkstoffgruppe | Werkstoffbeispiele, neue Bezeichnung (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN | Zugfestigkeit MPa (N/mm ²) | Härte | Kühl- mittel |
|--|---|---|--------------------------|---|
| Allgemeine Baustähle | 1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2) 1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500) | ≤500 >500-850 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Automatenstähle | 1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20) | ≤850 850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Unlegierte Vergütungsstähle | 1.0402 C22, 1.1178 C30E (Ck30) 1.0503 C45, 1.1191 C45E (Ck45) 1.0601 C60, 1.1221 C60E (Ck60) | ≤ 700 700-850 850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Legierte Vergütungsstähle | 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4 | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Unlegierte Einsatzstähle | 1.0301 (C10), 1.1121 C10E (Ck10) | ≤750 | | <input checked="" type="checkbox"/> |
| Legierte Einsatzstähle | 1.7043 38Cr4 1.5752 15NiCr13 (15NiCr13), 1.7131 16MnCr5, 1.7264 20CrMo5 | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Nitrierstähle | 1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7 | ≥850-≤1000 >1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Werkzeugstähle | 1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4 | ≤850 >850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Schnellarbeitsstähle | 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3 | ≥650-1000 | | <input checked="" type="checkbox"/> |
| Federstähle | 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4) | | ≤330 HB | <input checked="" type="checkbox"/> |
| Gehärtete Stähle | - | | ≤40-48 HRC >48-60 HRC | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Rostfreie Stähle, geschwefelt austenitisch martensitisch | 1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A) 1.4057 X20CrNi 17 2 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2 | ≤850 ≤850 ≤850 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Gusseisen | 0.6010 EN-GJL-100(GG10), 0.6020 EN-GJL-200(GG20) 0.6025 EN-GJL-250(GG25), 0.6035 EN-GJL-350(GG35) | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Kugelgraphit- und Temperguss | 0.7050 EN-GJS-500-7(GGG50), 0.8035 EN-GJMw-350-4(GTW35) 0.7070 EN-GJS-700-2(GGG70), 0.8170 EN-GJMB-700-2(GTS70) | | ≤240 HB <300 HB | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Hartguss | - | | ≤350 HB | <input checked="" type="checkbox"/> |
| Neue Gusswerkstoffe GGV | EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo6 | | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Neue Gusswerkstoffe ADI | EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400) | 800-1000 1200-1400 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Sonderlegierungen | Nimonic, Inconel, Monel, Hastelloy | ≤1200 | | <input checked="" type="checkbox"/> |
| Titan und Titan-Legierungen | 3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5, - TiAl8Mo1V1 | ≤850 >850-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Aluminium und Al-Legierungen | 3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1 | ≤400 | | <input checked="" type="checkbox"/> |
| Al-Knetlegierungen | 3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5 | ≤450 | | <input checked="" type="checkbox"/> |
| Al-Gusslegierungen ≤ 10 % Si | 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 | ≤600 | | <input checked="" type="checkbox"/> |
| > 10 % Si | 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg | ≤600 | | <input checked="" type="checkbox"/> |
| Magnesium-Legierungen | 3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5812.05 G-MgAl6Zn1 | ≤450 | | <input type="checkbox"/> |
| Kupfer, niedriglegiert | 2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb | ≤400 | | <input checked="" type="checkbox"/> |
| Messing, kurzspanend | 2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2 | ≤600 | | <input checked="" type="checkbox"/> |
| langspanend | 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5 | ≤600 | | <input checked="" type="checkbox"/> |
| Bronzen, kurzspanend | 2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn | ≤600 | | <input checked="" type="checkbox"/> |
| langspanend | 2.0790 CuNi18Zn19Pb | >600-850 | | <input checked="" type="checkbox"/> |
| Bronzen, langspanend | 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2 | ≤850 >850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Kunststoffe, duroplastisch | Epoxidharz, Resopal, Pertinax, Moltopren | | - | <input type="checkbox"/> |
| thermoplastisch | Plexiglas, Hostalen, Novodur, Makralon | | - | <input checked="" type="checkbox"/> |
| Kunststoffe, aramidfaserverstärkt | Kevlar | | - | <input type="checkbox"/> |
| glas-/kohlefaserverstärkt | GFK/CFK | | - | <input type="checkbox"/> |

SuperV-Bohrer

Arbeitsrichtwerte

| Vorschubreihen | | | | | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-----------------------|
| Code-Buchstabe | A | B | C | D | E | F | G | H | I | | |
| Werkzeug-Ø mm | 0,50 | 0,004 | 0,006 | 0,007 | 0,008 | 0,010 | 0,012 | 0,014 | 0,016 | 0,019 | Vorschübe f (mm/U) |
| | 1,00 | 0,006 | 0,008 | 0,012 | 0,014 | 0,016 | 0,018 | 0,020 | 0,023 | 0,025 | |
| | 2,00 | 0,020 | 0,025 | 0,032 | 0,040 | 0,050 | 0,063 | 0,080 | 0,100 | 0,125 | |
| | 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 | |
| | 31,50 | 0,160 | 0,200 | 0,250 | 0,315 | 0,400 | 0,500 | 0,630 | 0,800 | 1,000 | |
| | 40,00 | 0,200 | 0,250 | 0,315 | 0,400 | 0,500 | 0,630 | 0,800 | 1,000 | 1,250 | |

Werkzeuge mit fett gedruckten Vorschubreihen-Codebuchstaben sind für die entsprechende Werkstoffgruppe vorrangig einzusetzen.

K, P, K/P

Die universelle Einsetzbarkeit unserer neuen K-Hartmetalle hat u.a. auch zur Folge, dass wir die HM-Anwendungsgruppen nur noch mit K bzw. K/P definieren.

Bedeutung der Kennbuchstaben bei den Typbezeichnungen:

- G** für Guss, AlSi-Legierungen
- S** für hochfeste Werkstoffe
- U/F** für Universalbearbeitung, Kohlenstoffstähle
- VA** für rostfreie Werkstoffe
- UX** für Stahlbearbeitung

* stark verjüngte Werkzeuge einsetzen

Kühlmitteleinsatz:

- Schneidöl, hochaktiviert
- Bohrölemulsion
- ohne Schmiermittel
- nur Luftkühlung

| Werkstoffgruppe | Werkstoffbeispiele, neue Bezeichnung (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN | Zugfestigkeit MPa (N/mm ²) | Härte | Kühl- mittel |
|--|---|---|--------------------------|---|
| Allgemeine Baustähle | 1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2) 1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500) | ≤500 >500-850 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Automatenstähle | 1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20) | ≤850 850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Unlegierte Vergütungsstähle | 1.0402 C22, 1.1178 C30E (Ck30) 1.0503 C45, 1.1191 C45E (Ck45) 1.0601 C60, 1.1221 C60E (Ck60) | ≤ 700 700-850 850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Legierte Vergütungsstähle | 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4 | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Unlegierte Einsatzstähle | 1.0301 (C10), 1.1121 C10E (Ck10) | ≤750 | | <input checked="" type="checkbox"/> |
| Legierte Einsatzstähle | 1.7043 38Cr4 1.5752 15NiCr13 (15NiCr13), 1.7131 16MnCr5, 1.7264 20CrMo5 | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Nitrierstähle | 1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7 | ≥850-≤1000 >1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Werkzeugstähle | 1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4 | ≤850 >850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Schnellarbeitsstähle | 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3 | ≥650-1000 | | <input checked="" type="checkbox"/> |
| Federstähle | 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4) | | ≤330 HB | <input checked="" type="checkbox"/> |
| Gehärtete Stähle | - | | ≤40-48 HRC >48-60 HRC | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Rostfreie Stähle, geschwefelt austenitisch martensitisch | 1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A) 1.4057 X20CrNi 17 2 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2 | ≤850 ≤850 ≤850 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Gusseisen | 0.6010 EN-GJL-100(GG10), 0.6020 EN-GJL-200(GG20) 0.6025 EN-GJL-250(GG25), 0.6035 EN-GJL-350(GG35) | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Kugelgraphit- und Temperguss | 0.7050 EN-GJS-500-7(GGG50), 0.8035 EN-GJMw-350-4(GTW35) 0.7070 EN-GJS-700-2(GGG70), 0.8170 EN-GJMB-700-2(GTS70) | | ≤240 HB <300 HB | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Hartguss | - | | ≤350 HB | <input checked="" type="checkbox"/> |
| Neue Gusswerkstoffe GGV | EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo6 | | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Neue Gusswerkstoffe ADI | EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400) | 800-1000 1200-1400 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Sonderlegierungen | Nimonic, Inconel, Monel, Hastelloy | ≤1200 | | <input checked="" type="checkbox"/> |
| Titan und Titan-Legierungen | 3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5, - TiAl8Mo1V1 | ≤850 >850-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Aluminium und Al-Legierungen | 3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1 | ≤400 | | <input checked="" type="checkbox"/> |
| Al-Knetlegierungen | 3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5 | ≤450 | | <input checked="" type="checkbox"/> |
| Al-Gusslegierungen ≤ 10 % Si > 10 % Si | 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg | ≤600 ≤600 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Magnesium-Legierungen | 3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5812.05 G-MgAl6Zn1 | ≤450 | | <input type="checkbox"/> |
| Kupfer, niedriglegiert | 2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb | ≤400 | | <input checked="" type="checkbox"/> |
| Messing, kurzspanend langspanend | 2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5 | ≤600 ≤600 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Bronzen, kurzspanend | 2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn 2.0790 CuNi18Zn19Pb | ≤600 >600-850 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Bronzen, langspanend | 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2 | ≤850 >850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Kunststoffe, duroplastisch thermoplastisch | Epoxidharz, Resopal, Pertinax, Moltopren Plexiglas, Hostalen, Novodur, Makralon | | - | <input type="checkbox"/> <input checked="" type="checkbox"/> |
| Kunststoffe, aramidfaserverstärkt glas-/kohlefaserverstärkt | Kevlar GFK/CFK | | - | <input type="checkbox"/> <input type="checkbox"/> |

≤5×D Bohrtiefe

| | | | |
|----------------|--------------|--------------|--------------|
| Katalog-Nr. | 51681 | 51781 | 51881 |
| Schneidstoff | VHM | VHM | VHM |
| HM-Anwendgsgr. | K/P | K/P | K/P |
| Oberfläche | TiAlN nano | TiAlN nano | TiAlN nano |
| DIN/Form | 6537L | 6537L | 6537L |
| Typ | U | U | U |
| Innenkühlung | mit | mit | mit |
| Katalogseite | 36 | 32 | 34 |

| | |
|--------------|--------------|
| 51754 | 51755 |
| VHM | VHM |
| K/P | K/P |
| TiAlSiN | TiAlSiN |
| 6537L | 6537L |
| S | S |
| mit | mit |
| 65 | 67 |

| | |
|--------------|--------------|
| 51772 | 51773 |
| VHM | VHM |
| K/P | K/P |
| AlTiN nano | AlTiN nano |
| 6537L | 6537L |
| VA | VA |
| mit | mit |
| 76 | 78 |

| |
|--------------|
| 51785 |
| VHM |
| K/P |
| TiAlN nano |
| 6537L |
| UX |
| mit |
| 57 |

| |
|--------------|
| 71862 |
| VHM |
| K |
| blank |
| 6537L |
| V83-GAL |
| ohne |
| 80 |



| V _c m/min | VR-Code | | | V _c m/min | VR-Code | | | V _c m/min | VR-Code | | | V _c m/min | VR-Code | | |
|-------------------------|---------|---|---|-------------------------|---------|---|----|-------------------------|---------|--|-----|-------------------------|---------|--|--|
| 145 | G | G | G | 145 | G | G | | 145-230 | H | | | | | | |
| 120 | F | F | F | 120 | F | F | | 120-220 | G | | | | | | |
| 170 | H | H | H | 170 | H | H | | 170-260 | H | | | | | | |
| 145 | H | H | H | 145 | H | H | | 145-230 | H | | | | | | |
| 130 | H | H | H | 130 | H | H | | 130-220 | H | | | | | | |
| 125 | G | G | G | 125 | G | G | | 125-210 | G | | | | | | |
| 120 | G | G | G | 120 | G | G | | 120-200 | G | | | | | | |
| 120 | G | G | G | 120 | G | G | | 120-210 | G | | | | | | |
| 105 | G | G | G | 105 | G | G | | 105-200 | G | | | | | | |
| 145 | H | H | H | 145 | H | H | | 145-230 | H | | | | | | |
| 120 | G | G | G | 120 | G | G | | 120-210 | G | | | | | | |
| 85 | E | E | E | 85 | E | E | | 105-200 | F | | | | | | |
| 105 | G | G | G | 110 | G | G | | 110-150 | G | | | | | | |
| 100 | E | E | E | 105 | E | E | | 100-150 | E | | | | | | |
| 70 | F | F | F | 80 | F | F | | 70-120 | F | | | | | | |
| 55 | E | E | E | 65 | E | E | | 55-100 | E | | | | | | |
| 60 | E | E | E | 60 | D | D | | 60-100 | E | | | | | | |
| 60 | C | C | C | 60 | C | C | | 60-100 | E | | | | | | |
| 55 | C | C | C | 55 | C | C | | | | | | | | | |
| 35 | B | B | B | 35 | B | B | | | | | | | | | |
| 60 | E | E | E | | | | 80 | E | E | | | | | | |
| 55 | B | B | B | | | | 60 | B-C | B-C | | | | | | |
| 50 | E | E | E | | | | 80 | E | E | | | | | | |
| 195 | I | I | I | | | | | | | | 100 | F | | | |
| 160 | I | I | I | | | | | | | | 80 | F | | | |
| 140 | I | I | I | | | | | | | | 80 | F | | | |
| 130 | H | H | H | | | | | | | | 70 | F | | | |
| 40 | C | C | C | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | |
| 35 | D | D | D | 35 | D | D | 30 | D | D | | | | | | |
| 45 | D | D | D | 45 | D | D | 45 | D | D | | | | | | |
| 40 | C | C | C | 40 | C | C | 40 | C | C | | | | | | |
| 310 | I | I | I | | | | | | | | 180 | G | | | |
| 310 | I | I | I | | | | | | | | 160 | G | | | |
| 260 | I | I | I | | | | | | | | 150 | G | | | |
| 220 | I | I | I | | | | | | | | 120 | F | | | |
| 280 | H | H | H | | | | | | | | 180 | F | | | |
| 125 | G | G | G | | | | | | | | | | | | |
| 325 | H | H | H | | | | | | | | 180 | F | | | |
| 220 | G | G | G | | | | | | | | | | | | |
| 125 | G | G | G | | | | | | | | | | | | |
| 105 | F | F | F | | | | | | | | | | | | |
| 90 | F | F | F | | | | | | | | | | | | |
| 80 | F | F | F | | | | | | | | | | | | |

SuperV-Bohrer

Arbeitsrichtwerte

| Vorschubreihen | | | | | | | | | | |
|----------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Code-Buchstabe | A | B | C | D | E | F | G | H | I | |
| Werkzeug-Ø mm | 0,50 | 0,004 | 0,006 | 0,007 | 0,008 | 0,010 | 0,012 | 0,014 | 0,016 | 0,019 |
| | 1,00 | 0,006 | 0,008 | 0,012 | 0,014 | 0,016 | 0,018 | 0,020 | 0,023 | 0,025 |
| | 2,00 | 0,020 | 0,025 | 0,032 | 0,040 | 0,050 | 0,063 | 0,080 | 0,100 | 0,125 |
| | 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 |
| | 31,50 | 0,160 | 0,200 | 0,250 | 0,315 | 0,400 | 0,500 | 0,630 | 0,800 | 1,000 |
| | 40,00 | 0,200 | 0,250 | 0,315 | 0,400 | 0,500 | 0,630 | 0,800 | 1,000 | 1,250 |

Werkzeuge mit fett gedruckten Vorschubreihen-Codebuchstaben sind für die entsprechende Werkstoffgruppe vorrangig einzusetzen.

K, P, K/P

Die universelle Einsetzbarkeit unserer neuen K-Hartmetalle hat u.a. auch zur Folge, dass wir die HM-Anwendungsgruppen nur noch mit K bzw. K/P definieren.

Bedeutung der Kennbuchstaben bei den Typbezeichnungen:

G für Guss, AlSi-Legierungen

S für hochfeste Werkstoffe

U/F für Universalbearbeitung, Kohlenstoffstähle

VA für rostfreie Werkstoffe

UX für Stahlbearbeitung

* stark verjüngte Werkzeuge einsetzen

Kühlmitteleinsatz:

- Schneidöl, hochaktiviert
- Bohrölemulsion
- ohne Schmiermittel
- nur Luftkühlung

| Werkstoffgruppe | Werkstoffbeispiele, neue Bezeichnung (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN | Zugfestigkeit MPa (N/mm ²) | Härte | Kühl- mittel |
|--|---|---|--------------------------|---|
| Allgemeine Baustähle | 1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2) 1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500) | ≤500 >500-850 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Automatenstähle | 1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20) | ≤850 850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Unlegierte Vergütungsstähle | 1.0402 C22, 1.1178 C30E (Ck30) 1.0503 C45, 1.1191 C45E (Ck45) 1.0601 C60, 1.1221 C60E (Ck60) | ≤ 700 700-850 850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Legierte Vergütungsstähle | 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4 | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Unlegierte Einsatzstähle | 1.0301 (C10), 1.1121 C10E (Ck10) | ≤750 | | <input checked="" type="checkbox"/> |
| Legierte Einsatzstähle | 1.7043 38Cr4 1.5752 15NiCr13 (15NiCr13), 1.7131 16MnCr5, 1.7264 20CrMo5 | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Nitrierstähle | 1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7 | >850-≤1000 >1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Werkzeugstähle | 1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4 | ≤850 >850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Schnellarbeitsstähle | 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3 | ≥650-1000 | | <input checked="" type="checkbox"/> |
| Federstähle | 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4) | | ≤330 HB | <input checked="" type="checkbox"/> |
| Gehärtete Stähle | - | | ≤40-48 HRC >48-60 HRC | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Rostfreie Stähle, geschwefelt austenitisch martensitisch | 1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A) 1.4057 X20CrNi 17 2 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2 | ≤850 ≤850 ≤850 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Gusseisen | 0.6010 EN-GJL-100(GG10), 0.6020 EN-GJL-200(GG20) 0.6025 EN-GJL-250(GG25), 0.6035 EN-GJL-350(GG35) | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Kugelgraphit- und Temperguss | 0.7050 EN-GJS-500-7(GGG50), 0.8035 EN-GJMw-350-4(GTW35) 0.7070 EN-GJS-700-2(GGG70), 0.8170 EN-GJMB-700-2(GTS70) | | ≤240 HB <300 HB | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Hartguss | - | | ≤350 HB | <input checked="" type="checkbox"/> |
| Neue Gusswerkstoffe GGV | EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo6 | | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Neue Gusswerkstoffe ADI | EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400) | 800-1000 1200-1400 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Sonderlegierungen | Nimonic, Inconel, Monel, Hastelloy | ≤1200 | | <input checked="" type="checkbox"/> |
| Titan und Titan-Legierungen | 3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5, - TiAl8Mo1V1 | ≤850 >850-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Aluminium und Al-Legierungen | 3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1 | ≤400 | | <input checked="" type="checkbox"/> |
| Al-Knetlegierungen | 3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5 | ≤450 | | <input checked="" type="checkbox"/> |
| Al-Gusslegierungen ≤ 10 % Si | 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 | ≤600 | | <input checked="" type="checkbox"/> |
| > 10 % Si | 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg | ≤600 | | <input checked="" type="checkbox"/> |
| Magnesium-Legierungen | 3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5812.05 G-MgAl6Zn1 | ≤450 | | <input type="checkbox"/> |
| Kupfer, niedriglegiert | 2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb | ≤400 | | <input checked="" type="checkbox"/> |
| Messing, kurzspanend | 2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2 | ≤600 | | <input checked="" type="checkbox"/> |
| langspanend | 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5 | ≤600 | | <input checked="" type="checkbox"/> |
| Bronzen, kurzspanend | 2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn | ≤600 | | <input checked="" type="checkbox"/> |
| langspanend | 2.0790 CuNi18Zn19Pb | >600-850 | | <input checked="" type="checkbox"/> |
| Bronzen, langspanend | 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2 | ≤850 >850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Kunststoffe, duroplastisch | Epoxidharz, Resopal, Pertinax, Moltopren | | - | <input type="checkbox"/> |
| thermoplastisch | Plexiglas, Hostalen, Novodur, Makralon | | - | <input checked="" type="checkbox"/> |
| Kunststoffe, aramidfaserverstärkt | Kevlar | | - | <input type="checkbox"/> |
| glas-/kohlefaserverstärkt | GFK/CFK | | - | <input type="checkbox"/> |

≤7×D Bohrtiefe

≤8×D

≤10×D

| Katalog-Nr. | 51789 | 51889 | 51756 | 71994 | 51790 | 71996 |
|----------------|------------|------------|------------|------------|------------|------------|
| Schneidstoff | VHM | VHM | VHM | VHM | VHM | VHM |
| HM-Anwendgsgr. | K/P | K/P | K/P | K | K | K |
| Oberfläche | TiAlN nano | TiAlN nano | TiAlSiN | blank | TiAlN nano | blank |
| DIN/Form | WN | WN | WN | WN | WN | WN |
| Typ | U | U | S | V95-GG | UX | V95-GG |
| Innenkühlung | mit | mit | mit | mit | mit | mit |
| Katalogseite | 38 | 39 | 69 | 83 | 59 | 84 |



| V _c m/min | VR-Code | | V _c m/min | VR-Code | | V _c m/min | VR-Code | | V _c m/min | VR-Code | |
|-------------------------|---------|---|-------------------------|---------|-----|-------------------------|---------|--|-------------------------|---------|--|
| 145 | F | F | 145 | F | | 145-230 | G | | | | |
| 120 | E | E | 120 | E | | 120-220 | F | | | | |
| 170 | G | G | 170 | G | | 170-260 | G | | | | |
| 145 | G | G | 145 | G | | 145-230 | G | | | | |
| 130 | G | G | 130 | G | | 130-220 | G | | | | |
| 125 | F | F | 125 | F | | 125-210 | F | | | | |
| 120 | F | F | 120 | F | | 120-200 | F | | | | |
| 120 | F | F | 120 | F | | 120-210 | F | | | | |
| 105 | F | F | 105 | F | | 105-200 | F | | | | |
| 145 | G | G | 145 | G | | 145-230 | G | | | | |
| 120 | F | F | 120 | F | | 120-210 | F | | | | |
| 85 | D | D | 85 | D | | 105-200 | E | | | | |
| 110 | F | F | 110 | F | | 110-150 | F | | | | |
| 105 | D | D | 105 | D | | 100-150 | D | | | | |
| 80 | E | E | 80 | E | | 70-120 | E | | | | |
| 65 | D | D | 65 | D | | 65-100 | D | | | | |
| 60 | D | D | 60 | C | | 60-100 | D | | | | |
| 60 | B | B | 60 | B | | 60-100 | D | | | | |
| 55 | B | B | 55 | B | | | | | | | |
| 35 | A | A | 35 | A | | | | | | | |
| 60 | D | D | | | | | | | | | |
| 55 | B | B | | | | | | | | | |
| 45 | D | D | | | | | | | | | |
| 195 | H | H | | | 120 | F | | | 120 | F | |
| 160 | H | H | | | 100 | F | | | 100 | F | |
| 140 | H | H | | | 90 | F | | | 90 | F | |
| 130 | G | G | | | 80 | F | | | 80 | F | |
| 40 | B | B | | | 40 | B | | | 40 | A | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| 35 | C | C | 35 | C | | | | | | | |
| 40 | C | C | 45 | C | | | | | | | |
| 40 | B | B | 40 | D | | | | | | | |
| 310 | H | H | | | 410 | H | | | 410 | H | |
| 310 | H | H | | | 410 | H | | | 410 | H | |
| 260 | H | H | | | 380 | H | | | 380 | H | |
| 220 | H | H | | | 330 | H | | | 330 | H | |
| 280 | G | G | | | | | | | | | |
| 125 | F | F | | | | | | | | | |
| 325 | G | G | | | 280 | G | | | 280 | G | |
| 220 | F | F | | | | | | | | | |
| 125 | F | F | | | 110 | F | | | 110 | F | |
| 105 | E | E | | | 80 | E | | | 80 | E | |
| 90 | E | E | | | | | | | | | |
| 80 | E | E | | | | | | | | | |

SuperV-Bohrer

Arbeitsrichtwerte

| | | Vorschubreihen | | | | | | | | |
|----------------|--------------|----------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Code-Buchstabe | A | B | C | D | E | F | G | H | I | |
| Werkzeug-Ø mm | 0,50 | 0,004 | 0,006 | 0,007 | 0,008 | 0,010 | 0,012 | 0,014 | 0,016 | 0,019 |
| | 1,00 | 0,006 | 0,008 | 0,012 | 0,014 | 0,016 | 0,018 | 0,020 | 0,023 | 0,025 |
| | 2,00 | 0,020 | 0,025 | 0,032 | 0,040 | 0,050 | 0,063 | 0,080 | 0,100 | 0,125 |
| | 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 |
| | 31,50 | 0,160 | 0,200 | 0,250 | 0,315 | 0,400 | 0,500 | 0,630 | 0,800 | 1,000 |
| | 40,00 | 0,200 | 0,250 | 0,315 | 0,400 | 0,500 | 0,630 | 0,800 | 1,000 | 1,250 |

Werkzeuge mit fett gedruckten Vorschubreihen-Codebuchstaben sind für die entsprechende Werkstoffgruppe vorrangig einzusetzen.

K, P, K/P

Die universelle Einsetzbarkeit unserer neuen K-Hartmetalle hat u.a. auch zur Folge, dass wir die HM-Anwendungsgruppen nur noch mit K bzw. K/P definieren.

Bedeutung der Kennbuchstaben bei den Typbezeichnungen:

G für Guss, AlSi-Legierungen

S für hochfeste Werkstoffe

U/F für Universalbearbeitung, Kohlenstoffstähle

VA für rostfreie Werkstoffe

UX für Stahlbearbeitung

* stark verjüngte Werkzeuge einsetzen

Einsatzhinweise SuperV-T-Bohrer:

Um bei tiefen Bohrungen optimale Bearbeitungsergebnisse zu erzielen, empfehlen wir:

- Herstellen einer zylindrischen Pilotbohrung (Toleranz F9), Bohrtiefe 1 x D mit unseren SuperV-Bohrern Typ U bzw. VA (140° Spitzwinkel, Ø-Toleranz m7). Alternativ kann auch der Pilotbohrfräser Artikel-Nr. 54700 eingesetzt werden.
- Einfahren in Pilotbohrung: Drehzahl ca. 300 U/min, Vorschub ca. 500 mm/min.
- Einstellen des Kühlschmierstoffdruckes und der Drehzahl.
- Kontinuierliches Bohren auf volle Bohrtiefe ohne Entspanzyklus.
- Bei Durchgangsbohrungen mit geradem (90°) Austritt, v_f ca. 1 mm vor dem Durchbrechen auf 50% reduzieren.
- Bei Durchgangsbohrungen mit schrägem Austritt, v_f ca. 1 mm vor dem Durchbrechen auf 40% reduzieren.
- Nach Erreichen der Bohrtiefe Drehzahl und Kühlschmierstoff abschalten, Ausfahren im Eilgang.

Kühlmitteleinsatz:

- Schneidöl, hochaktiviert
- Bohrölemulsion
- ohne Schmiermittel
- nur Luftkühlung

| Werkstoffgruppe | Werkstoffbeispiele, neue Bezeichnung (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN | Zugfestigkeit MPa (N/mm ²) | Härte | Kühl- mittel |
|--|---|---|--------------------------|---|
| Allgemeine Baustähle | 1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2) 1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500) | ≤500 >500-850 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Automatenstähle | 1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20) | ≤850 850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Unlegierte Vergütungsstähle | 1.0402 C22, 1.1178 C30E (Ck30) 1.0503 C45, 1.1191 C45E (Ck45) 1.0601 C60, 1.1221 C60E (Ck60) | ≤ 700 700-850 850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Legierte Vergütungsstähle | 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4 | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Unlegierte Einsatzstähle | 1.0301 (C10), 1.1121 C10E (Ck10) | ≤750 | | <input checked="" type="checkbox"/> |
| Legierte Einsatzstähle | 1.7043 38Cr4 1.5752 15NiCr13 (15NiCr13), 1.7131 16MnCr5, 1.7264 20CrMo5 | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Nitrierstähle | 1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7 | ≥850-≤1000 >1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Werkzeugstähle | 1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4 | ≤850 >850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Schnellarbeitsstähle | 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3 | ≥650-1000 | | <input checked="" type="checkbox"/> |
| Federstähle | 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4) | | ≤330 HB | <input checked="" type="checkbox"/> |
| Gehärtete Stähle | - | | ≤40-48 HRC >48-60 HRC | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Rostfreie Stähle, geschwefelt austenitisch martensitisch | 1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A) 1.4057 X20CrNi 17 2 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2 | ≤850 ≤850 ≤850 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Gusseisen | 0.6010 EN-GJL-100(GG10), 0.6020 EN-GJL-200(GG20) 0.6025 EN-GJL-250(GG25), 0.6035 EN-GJL-350(GG35) | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Kugelgraphit- und Temperguss | 0.7050 EN-GJS-500-7(GGG50), 0.8035 EN-GJMw-350-4(GTW35) 0.7070 EN-GJS-700-2(GGG70), 0.8170 EN-GJMB-700-2(GTS70) | | ≤240 HB <300 HB | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Hartguss | - | | ≤350 HB | <input checked="" type="checkbox"/> |
| Neue Gusswerkstoffe GGV | EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo6 | | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Neue Gusswerkstoffe ADI | EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400) | 800-1000 1200-1400 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Sonderlegierungen | Nimonic, Inconel, Monel, Hastelloy | ≤1200 | | <input checked="" type="checkbox"/> |
| Titan und Titan-Legierungen | 3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5, - TiAl8Mo1V1 | ≤850 >850-1200 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Aluminium und Al-Legierungen | 3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1 | ≤400 | | <input checked="" type="checkbox"/> |
| Al-Knetlegierungen | 3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5 | ≤450 | | <input checked="" type="checkbox"/> |
| Al-Gusslegierungen ≤ 10 % Si > 10 % Si | 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg | ≤600 ≤600 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Magnesium-Legierungen | 3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1 | ≤450 | | <input type="checkbox"/> |
| Kupfer, niedriglegiert | 2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb | ≤400 | | <input checked="" type="checkbox"/> |
| Messing, kurzspanend langspanend | 2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5 | ≤600 ≤600 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Bronzen, kurzspanend | 2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn 2.0790 CuNi18Zn19Pb | ≤600 >600-850 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Bronzen, langspanend | 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2 | ≤850 >850-1000 | | <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> |
| Kunststoffe, duroplastisch | Epoxidharz, Resopal, Pertinax, Moltopren | | - | <input type="checkbox"/> |
| thermoplastisch | Plexiglas, Hostalen, Novodur, Makralon | | - | <input checked="" type="checkbox"/> |
| Kunststoffe, aramidfaserverstärkt | Kevlar | | - | <input type="checkbox"/> |
| glas-/kohlefaserverstärkt | GFK/CFK | | - | <input type="checkbox"/> |

≤12×D

≤15×D

≤20×D

≤25×D

≤30×D

≤40×D

| | |
|----------------|--------------|
| Katalog-Nr. | 51893 |
| Schneidstoff | VHM |
| HM-Anwendgsgr. | K/P |
| Oberfläche | TiAlN nano |
| DIN/Form | WN |
| Typ | U |
| Innenkühlung | mit |
| Katalogeseite | 40 |

| | |
|----------------|--------------|
| Katalog-Nr. | 71997 |
| Schneidstoff | VHM |
| HM-Anwendgsgr. | K |
| Oberfläche | blank |
| DIN/Form | WN |
| Typ | V95-GN |
| Innenkühlung | mit |
| Katalogeseite | 85 |

| | |
|----------------|--------------|
| Katalog-Nr. | 51764 |
| Schneidstoff | VHM |
| HM-Anwendgsgr. | K/P |
| Oberfläche | AlTiN |
| DIN/Form | WN |
| Typ | T |
| Innenkühlung | mit |
| Katalogeseite | 47 |

| | |
|----------------|--------------|
| Katalog-Nr. | 51765 |
| Schneidstoff | VHM |
| HM-Anwendgsgr. | K/P |
| Oberfläche | AlTiN |
| DIN/Form | WN |
| Typ | T |
| Innenkühlung | mit |
| Katalogeseite | 48 |

| | |
|----------------|--------------|
| Katalog-Nr. | 51766 |
| Schneidstoff | VHM |
| HM-Anwendgsgr. | K/P |
| Oberfläche | AlTiN |
| DIN/Form | WN |
| Typ | T |
| Innenkühlung | mit |
| Katalogeseite | 49 |

| | |
|----------------|--------------|
| Katalog-Nr. | 51767 |
| Schneidstoff | VHM |
| HM-Anwendgsgr. | K/P |
| Oberfläche | AlTiN |
| DIN/Form | WN |
| Typ | T |
| Innenkühlung | mit |
| Katalogeseite | 50 |

| | |
|----------------|--------------|
| Katalog-Nr. | 51768 |
| Schneidstoff | VHM |
| HM-Anwendgsgr. | K/P |
| Oberfläche | AlTiN |
| DIN/Form | WN |
| Typ | T |
| Innenkühlung | mit |
| Katalogeseite | 51 |



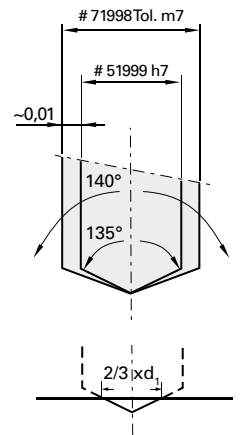
| V _c m/min | VR-Code | V _c m/min | VR-Code | V _c m/min | VR-Code | V _c m/min | VR-Code | V _c m/min | VR-Code | V _c m/min | VR-Code | V _c m/min | VR-Code |
|-------------------------|---------|-------------------------|---------|-------------------------|---------|-------------------------|---------|-------------------------|---------|-------------------------|---------|-------------------------|---------|
| 110 | F | | | 110 | H | 110 | H | 100 | H | 80 | G | 80 | G |
| 110 | E | | | 110 | H | 110 | H | 100 | H | 80 | G | 80 | G |
| 110 | G | | | 120 | H | 120 | H | 120 | H | 100 | H | 100 | H |
| 100 | G | | | 120 | H | 120 | H | 100 | H | 100 | H | 100 | H |
| 110 | G | | | 110 | F | 110 | F | 110 | F | 110 | F | 110 | F |
| 110 | F | | | 110 | H | 110 | H | 100 | H | 80 | G | 80 | G |
| 100 | F | | | 100 | G | 100 | G | 100 | G | 80 | G | 80 | G |
| 110 | F | | | 110 | G | 110 | G | 100 | G | 80 | G | 80 | F-G |
| 105 | F | | | 110 | F | 110 | F | 100 | F | 80 | F | 80 | F |
| 110 | G | | | 110 | H | 110 | H | 100 | H | 80 | G | 80 | G |
| 110 | F | | | 110 | G | 110 | G | 100 | G | 80 | F | 80 | F |
| 85 | D | | | 110 | F | 110 | F | 100 | F | 80 | F | 80 | F |
| 100 | F | | | 100 | E | 100 | E | 80 | E | 80 | E | 80 | E |
| 80 | D | | | 80 | E | 80 | E | 60 | E | 60 | E | 60 | E |
| 80 | E | | | 100 | F-G | 100 | F | 90 | F | 80 | F | 80 | F-G |
| 65 | D | | | 80 | E | 80 | E | 70 | D | 70 | D | 70 | D |
| 50 | D | | | 50 | E | 50 | E | 50 | D | 50 | D | 50 | D |
| 50 | B | | | 50 | E | 50 | E | 50 | D | 50 | D | 50 | D |
| | | | | 50 | D | 50 | D | 50 | D | 50 | D | 50 | D |
| 60 | D | | | 100 | E | 100 | E | 100 | E | 80 | E | 80 | E |
| 55 | B | | | 70 | B-C | 60 | C | 60 | C | 60 | C | 70 | B-C |
| 45 | D | | | 100 | E | 100 | E | 100 | E | 80 | E | 80 | E |
| 120 | H | 120 | E | 140 | H | 140 | H | 130 | H | 120 | H | 120 | H |
| 120 | H | 100 | E | 100 | H | 100 | H | 90 | H | 80 | H | 80 | H |
| 100 | H | 90 | E | 140 | H | 140 | H | 130 | H | 120 | H | 120 | H |
| 90 | G | 80 | E | 100 | H | 100 | H | 90 | H | 80 | H | 80 | H |
| | | 40 | A | | | | | | | | | | |
| | | | | 100 | F | 100 | F | 90 | F | 80 | F | 80 | F |
| | | | | 100 | F | 100 | F | 90 | F | 80 | F | 80 | F |
| | | | | 90 | H | 90 | H | 80 | H | 70 | H | 70 | H |
| | | | | | | | | | | | | | |
| | | | | 30 | B | 30 | B | 30 | B | 30 | B | 30 | B |
| | | | | | | | | | | | | | |
| 150 | H | 410 | F | | | | | | | | | | |
| 150 | H | 410 | F | | | | | | | | | | |
| 150 | H | 380 | G | | | | | | | | | | |
| 120 | H | 330 | G | | | | | | | | | | |
| 150 | H | | | | | | | | | | | | |
| 80 | F | | | 120 | A | 120 | A | 120 | A | 120 | A | 120 | A |
| 120 | G | 280 | F | 120 | H | 120 | H | 110 | H | 100 | H | 100 | H |
| 120 | F | | | | | | | | | | | | |
| 40 | F | 110 | E | | | | | | | | | | |
| | | 80 | D | | | | | | | | | | |
| | | | | | | | | | | | | | |
| 40 | E | | | | | | | | | F | | F | |
| | | | | | | | | | | F | | F | |
| | | | | | | | | | | H | | H | |

SuperV-NX Hochleistungs-Kleinstbohrer

Arbeitsrichtwerte

Vorschubreihen für Hochleistungs-Kleinstbohrer

| Vorschub-Code | A | B | C | D | E | F | G | H | I | J | K | L | M | |
|---------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Werkzeug-Ø mm | 0,50 | 0,006 | 0,012 | 0,018 | 0,022 | 0,030 | 0,035 | 0,040 | 0,045 | 0,050 | 0,050 | 0,055 | 0,060 | 0,060 |
| | 0,80 | 0,008 | 0,016 | 0,024 | 0,032 | 0,040 | 0,050 | 0,060 | 0,070 | 0,080 | 0,080 | 0,080 | 0,090 | 0,090 |
| | 1,00 | 0,012 | 0,022 | 0,032 | 0,042 | 0,060 | 0,070 | 0,080 | 0,090 | 0,100 | 0,100 | 0,110 | 0,110 | 0,120 |
| | 1,50 | 0,021 | 0,036 | 0,051 | 0,066 | 0,090 | 0,100 | 0,120 | 0,130 | 0,150 | 0,150 | 0,160 | 0,170 | 0,180 |
| | 2,00 | 0,032 | 0,052 | 0,072 | 0,092 | 0,120 | 0,140 | 0,160 | 0,180 | 0,200 | 0,210 | 0,220 | 0,230 | 0,240 |
| | 2,50 | 0,045 | 0,070 | 0,095 | 0,120 | 0,150 | 0,170 | 0,200 | 0,220 | 0,250 | 0,260 | 0,270 | 0,280 | 0,300 |
| | 3,00 | 0,060 | 0,090 | 0,120 | 0,150 | 0,180 | 0,210 | 0,240 | 0,270 | 0,300 | 0,310 | 0,330 | 0,340 | 0,360 |



Werkzeuge mit **fett gedruckten** Vorschubreihen-Codebuchstaben sind für die entsprechende Werkstoffgruppe vorrangig einzusetzen.

Sicherheitshinweise: Enorm wichtig ist, dass aus Sicherheitsgründen kein Bohrer ohne Abstützung mit einer höheren Drehzahl als $n = 6.000$ U/min frei drehen darf. Die Zentrifugalkräfte könnten sonst die langen Werkzeuge schon vor dem Erreichen der Werkstückoberfläche brechen!

Allgemeine Hinweise: Spielarme Spindeln, fluchtungsgenaue Werkzeugaufnahmen. Wir empfehlen die Anwendung von Hydraulik-Dehnspannfuttern oder Schrumpffuttern sowie Kühlschmierung durch Emulsion oder Öl, Druck min. 40 bar.

Pilotbohrung

Beim Einsatz des SuperV-NX-Bohrers 15xD empfehlen wir die Herstellung einer Pilotbohrung mit 1xD bis 2xD Tiefe. Der SuperV-NX-Bohrer 4xD ist optimal für diese Pilotbohrung geeignet. Sein Spitzenwinkel und seine Durchmesser-toleranz sind darauf abgestimmt.

Zentrieren

Um bei den SuperV-NX-Bohrern ab 8xD Bohrtiefe die volle Leistung zu erreichen, empfehlen wir das Zentrieren. Hierzu kann der SuperV-NX-Bohrer bis 4xD, Katalog-Nr. 71998, verwendet werden. Der Zentrierdurchmesser sollte ca. 2/3xD haben. Alternativ kann die Zentrierung auch mit dem Stock NC-Anbohrer 142°, Katalog-Nr. 71189, erstellt werden.

Kühlmitteleinsatz:

- Schneidöl, hochaktiviert
- Bohrölemulsion
- ohne Schmiermittel
- nur Luftkühlung

| Werkstoffgruppe | Werkstoffbeispiele, neue Bezeichnung (in Klammern alte Bezeichnung) Fettgedruckte Zahlen = Werkstoff-Nr. nach DIN EN | Zugfestigkeit MPa (N/mm ²) | Härte | Kühl- mittel |
|--|---|---|--------------------------|-------------------------------------|
| Allgemeine Baustähle | 1.0035 S185(St33), 1.0486 P275N(StE285), 1.0345 P235GH(H1), 1.0425 P265GH(H2) 1.0050 E295 (St50-2), 1.0070 E360 (St70-2), 1.8937 P500NH (WStE500) | ≤500 >500-850 | | <input checked="" type="checkbox"/> |
| Automatenstähle | 1.0718 11SMnPb30 (9SMnPb28), 1.0736 11SMn37 (9SMn36) 1.0727 46S20 (45S20), 1.0728 (60S20), 1.0757 46SPb20 (45SPb20) | ≤850 850-1000 | | <input checked="" type="checkbox"/> |
| Unlegierte Vergütungsstähle | 1.0402 C22, 1.1178 C30E (Ck30) 1.0503 C45, 1.1191 C45E (Ck45) 1.0601 C60, 1.1221 C60E (Ck60) | ≤ 700 700-850 850-1000 | | <input checked="" type="checkbox"/> |
| Legierte Vergütungsstähle | 1.5131 50MnSi4, 1.7003 38Cr2, 1.7030 28Cr4 1.5710 36NiCr6, 1.7035 41Cr4, 1.7225 42CrMo4 | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> |
| Unlegierte Einsatzstähle | 1.0301 (C10), 1.1121 C10E (Ck10) | ≤750 | | <input checked="" type="checkbox"/> |
| Legierte Einsatzstähle | 1.7043 38Cr4 1.5752 15NiCr13 (15NiCr13), 1.7131 16MnCr5, 1.7264 20CrMo5 | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> |
| Nitrierstähle | 1.8504 34CrAl6 1.8519 31CrMoV9, 1.8550 34CrAlNi7 | ≥850-≤1000 >1000-1200 | | <input checked="" type="checkbox"/> |
| Werkzeugstähle | 1.1750 C75W, 1.2067 102Cr6, 1.2307 29CrMoV9 1.2080 X210Cr12, 1.2083 X42Cr13, 1.2419 105WCr6, 1.2767 X45NiCrMo4 | ≤850 >850-1000 | | <input checked="" type="checkbox"/> |
| Schnellarbeitsstähle | 1.3243 S 6-5-2-5, 1.3343 S 6-5-2, 1.3344 S 6-5-3 | ≥650-1000 | | <input checked="" type="checkbox"/> |
| Federstähle | 1.5026 55Si7, 1.7176 55Cr3, 1.8159 51CrV4 (51CrV4) | | ≤330 HB | <input checked="" type="checkbox"/> |
| Gehärtete Stähle | - | | ≤40-48 HRC >48-60 HRC | <input checked="" type="checkbox"/> |
| Rostfreie Stähle, geschwefelt austenitisch martensitisch | 1.4005 X12CrS13, 1.4104 X14CrMoS17, 1.4105 X6CrMoS17, 1.4305 X8CrNiS18-9 1.4301 X5CrNi18-10 (V2A), 1.4541 X6CrNiTi18-10, 1.4571 X6CrNiMoTi 17-12-2 (V4A) 1.4057 X20CrNi 17 2 (X17CrNi16-2), 1.4122 X39CrMo17-1, 1.4521 X2CrMoTi18-2 | ≤850 ≤850 ≤850 | | <input checked="" type="checkbox"/> |
| Gusseisen | 0.6010 EN-GJL-100(GG10), 0.6020 EN-GJL-200(GG20) 0.6025 EN-GJL-250(GG25), 0.6035 EN-GJL-350(GG35) | 850-≤1000 1000-1200 | | <input checked="" type="checkbox"/> |
| Kugelgraphit- und Temporguss | 0.7050 EN-GJS-500-7(GGG50), 0.8035 EN-GJMW-350-4(GTW35) 0.7070 EN-GJS-700-2(GGG70), 0.8170 EN-GJMB-700-2(GTS70) | | ≤240 HB <300 HB | <input checked="" type="checkbox"/> |
| Hartguss | - | | ≤350 HB | <input checked="" type="checkbox"/> |
| Neue Gusswerkstoffe GGV | EN-GJV250 (GGV25), EN-GJV350 (GGV35) EN-GJV400 (GGV40), EN-GJV500 (GGV50), SiMo6 | | | <input checked="" type="checkbox"/> |
| Neue Gusswerkstoffe ADI | EN-GJS-800-8 (ADI800), EN-GJS-1000-5 (ADI1000) EN-GJS-1200-2 (ADI1200), EN-GJS-1400-1 (ADI1400) | 800-1000 1200-1400 | | <input checked="" type="checkbox"/> |
| Sonderlegierungen | Nimonic, Inconel, Monel, Hastelloy | ≤1200 | | <input checked="" type="checkbox"/> |
| Titan und Titan-Legierungen | 3.7024 Ti99,5, 3.7114 TiAl5Sn2,5, 3.7124 TiCu2 3.7154 TiAl6Zr5, 3.7165 TiAl6V4, 3.7184 TiAl4Mo4Sn2,5, - TiAl8Mo1V1 | ≤850 >850-1200 | | <input checked="" type="checkbox"/> |
| Aluminium und Al-Legierungen | 3.0255 Al99,5, 3.2315 AlMgSi1, 3.3515 AlMg1 | ≤400 | | <input checked="" type="checkbox"/> |
| Al-Knetlegierungen | 3.0615 AlMgSiPb, 3.1325 AlCuMg1, 3.3245 AlMg3Si, 3.4365 AlZnMgCu1,5 | ≤450 | | <input checked="" type="checkbox"/> |
| Al-Gusslegierungen ≤ 10 % Si | 3.2131 G-AlSi5Cu1, 3.2153 G-AlSi7Cu3, 3.2573 G-AlSi9 | ≤600 | | <input checked="" type="checkbox"/> |
| > 10 % Si | 3.2581 G-AlSi12, 3.2583 G-AlSi12Cu, - G-AlSi12CuNiMg | ≤600 | | <input checked="" type="checkbox"/> |
| Magnesium-Legierungen | 3.5200 MgMn2, 3.5812.05 G-MgAl8Zn1, 3.5612.05 G-MgAl6Zn1 | ≤450 | | <input type="checkbox"/> |
| Kupfer, niedriglegiert | 2.0070 SE-Cu, 2.1020 CuSn6, 2.1096 G-CuSn5ZnPb | ≤400 | | <input checked="" type="checkbox"/> |
| Messing, kurzspanend | 2.0380 CuZn39Pb2, 2.0401 CuZn39Pb3, 2.0410 CuZn43Pb2 | ≤600 | | <input checked="" type="checkbox"/> |
| langspanend | 2.0250 CuZn20, 2.0280 CuZn33, 2.0332 CuZn37Pb0,5 | ≤600 | | <input checked="" type="checkbox"/> |
| Bronzen, kurzspanend | 2.1090 CuSn7ZnPb, 2.1170 CuPb5Sn5, 2.1176 CuPb10Sn | ≤600 | | <input checked="" type="checkbox"/> |
| langspanend | 2.0790 CuNi18Zn19Pb | >600-850 | | <input checked="" type="checkbox"/> |
| Bronzen, langspanend | 2.0916 CuAl5, 2.0960 CuAl9Mn, 2.1050 CuSn10 2.0980 CuAl11Ni, 2.1247 CuBe2 | ≤850 >850-1000 | | <input checked="" type="checkbox"/> |

$\leq 4 \times D$ $\leq 7 \times D$ $\leq 5 \times D$ $\leq 8 \times D$ $\leq 15 \times D$

| | | | | | | |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| Katalog-Nr. | 51720 | 71998 | 71999 | 51997 | 51998 | 51999 |
| Schneidstoff | VHM | VHM | VHM | VHM | VHM | VHM |
| Oberfläche | AlTiN | AlTiN+ | AlTiN+ | AlTiN | AlTiN | AlTiN |
| DIN/Form | WN | WN | WN | WN | WN | WN |
| Typ | M | NX | NX | NX | NX | NX |
| Innenkühlung | ohne | ohne | ohne | mit | mit | mit |
| Katalogseite | 41 | 42 | 43 | 44 | 45 | 46 |



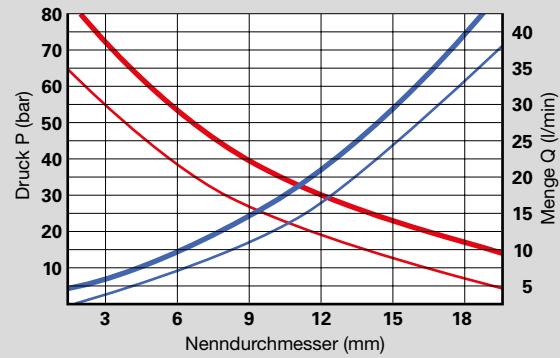
| v_c m/min | VR-Code | v_c m/min | VR-Code | v_c m/min | VR-Code | v_c m/min | VR-Code | v_c m/min | VR-Code | v_c m/min | VR-Code |
|----------------|---------|----------------|---------|----------------|---------|----------------|---------|----------------|---------|----------------|---------|
| 100 | G | 100 | I | 100 | G | | | 105 | C | 105 | C |
| 100 | G | 100 | I | 100 | G | | | 100 | C | 100 | C |
| 100 | G | 100 | I | 100 | G | | | 105 | D | 105 | D |
| 90 | F | 90 | H | 90 | F | | | 90 | D | 90 | D |
| 90 | G | 90 | I | 90 | G | | | 95 | C | 95 | C |
| 90 | G | 90 | I | 90 | G | | | 95 | C | 95 | C |
| 90 | F | 90 | H | 90 | F | | | 90 | C | 90 | C |
| 90 | F | 90 | H | 90 | F | | | 90 | C | 90 | C |
| 70 | E | 70 | G | 70 | E | | | 70 | C | 70 | C |
| 100 | F | 100 | H | 100 | F | | | 100 | B | 100 | B |
| 85 | F | 85 | H | 85 | F | | | 85 | C | 85 | C |
| 70 | E | 70 | G | 70 | E | | | 70 | C | 70 | C |
| 70 | E | 70 | G | 70 | E | | | 70 | B | 70 | B |
| 60 | E | 60 | G | 60 | E | | | 60 | B | 60 | B |
| 50 | E | 50 | G | 50 | E | | | 50 | C | 50 | C |
| 60 | E | 60 | G | 60 | E | | | 50 | C | 50 | C |
| | | 60 | B | 60 | B | | | 50 | B | 50 | B |
| | | 60 | B | 60 | B | | | 50 | B | 50 | B |
| | | | | | | | | | | | |
| | | 30 | B | 30 | B | | | 70 | B | 70 | B |
| | | 15 | A | 15 | A | | | 60 | A | 60 | A |
| | | 30 | B | 30 | B | | | 70 | B | 70 | B |
| 130 | K | 130 | M | 130 | K | 120 | E | 150 | E | 150 | E |
| 130 | K | 130 | M | 130 | K | 100 | E | 140 | E | 140 | E |
| 130 | K | 130 | M | 130 | K | 90 | E | 140 | E | 140 | E |
| 120 | J | 120 | L | 120 | J | 80 | E | 130 | E | 130 | E |
| | | | | | | 40 | A | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | 10 | A | 10 | A | | | 25 | A | 25 | A |
| | | 15 | A | 15 | A | | | 35 | A | 35 | A |
| | | 15 | A | 15 | A | | | 35 | A | 35 | A |
| | | 70 | M | 70 | M | 410 | F | 70 | M | 70 | M |
| | | 70 | M | 70 | M | 410 | F | 70 | M | 70 | M |
| | | 135 | D | 135 | D | 380 | G | 135 | D | 135 | D |
| | | 135 | D | 135 | D | 330 | G | 135 | D | 135 | D |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | 280 | F | | | | |
| | | | | | | 110 | E | | | | |
| | | | | | | 80 | D | | | | |

SuperV-Bohrer

Kühlmittelempfehlungen

Kühlmittel-Werte SuperV-T

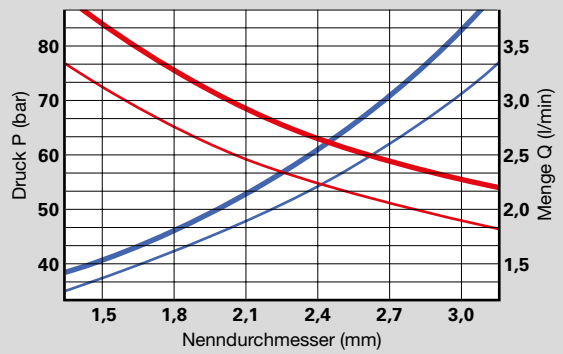
(Richtwerte für Emulsion)



— max. Kühmitteldruck — max. Kühlmittelmenge
 - - - min. Kühmitteldruck - - - min. Kühlmittelmenge

Kühlmittel-Werte SuperV-NX

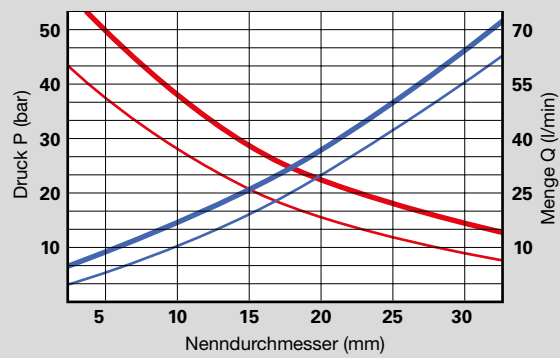
(Richtwerte für Emulsion)



— max. Kühmitteldruck — max. Kühlmittelmenge
 - - - min. Kühmitteldruck - - - min. Kühlmittelmenge

Kühlmittel-Werte SuperV 95-GG/GN

(Richtwerte für Emulsion)



— max. Kühmitteldruck — max. Kühlmittelmenge
 - - - min. Kühmitteldruck - - - min. Kühlmittelmenge

| Katalog-Nr. | Seite | Norm | Oberfläche | Bezeichnung | Schneidstoff | Typ |
|-------------|-------|-----------|------------|---|--------------|--------------|
| 51681 | 36 | DIN 6537L | TiAIN nano | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-IK-U |
| 51687 | 26 | DIN 6537L | TiAIN nano | SuperV-Bohrer ohne Innenkühlung | VHM | SuperV-U |
| 51720 | 41 | Werksnorm | AlTiN | SuperV-M Universal-Kleinstbohrer | VHM | SuperV-M |
| 51750 | 53 | DIN 6537K | TiAlSiN | SuperV-Bohrer ohne Innenkühlung | VHM | SuperV-S |
| 51752 | 61 | DIN 6537K | TiAlSiN | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-S |
| 51753 | 63 | DIN 6537K | TiAlSiN | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-S |
| 51754 | 65 | DIN 6537L | TiAlSiN | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-S |
| 51755 | 67 | DIN 6537L | TiAlSiN | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-S |
| 51756 | 69 | Werksnorm | TiAlSiN | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-S |
| 51764 | 47 | Werksnorm | AlTiN | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-T |
| 51765 | 48 | Werksnorm | AlTiN | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-T |
| 51766 | 49 | Werksnorm | AlTiN | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-T |
| 51767 | 50 | Werksnorm | AlTiN | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-T |
| 51768 | 51 | Werksnorm | AlTiN | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-T |
| 51770 | 72 | DIN 6537K | AlTiN nano | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-VA |
| 51771 | 74 | DIN 6537K | AlTiN nano | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-VA |
| 51772 | 76 | DIN 6537L | AlTiN nano | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-VA |
| 51773 | 78 | DIN 6537L | AlTiN nano | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-VA |
| 51776 | 28 | DIN 6537K | TiAIN nano | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-IK-U |
| 51781 | 32 | DIN 6537L | TiAIN nano | SuperV-Bohrer ohne Innenkühlung | VHM | SuperV-IK-U |
| 51785 | 57 | DIN 6537L | TiAIN nano | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-UX |
| 51787 | 22 | DIN 6537L | TiAIN nano | SuperV-Bohrer ohne Innenkühlung | VHM | SuperV-U |
| 51789 | 38 | Werksnorm | TiAIN nano | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-IK-U |
| 51790 | 59 | Werksnorm | TiAIN nano | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-UX |
| 51871 | 20 | DIN 6537K | TiAIN nano | SuperV-Bohrer ohne Innenkühlung | VHM | SuperV-U |
| 51873 | 18 | DIN 6537K | TiAIN nano | SuperV-Bohrer ohne Innenkühlung | VHM | SuperV-U |
| 51876 | 30 | DIN 6537K | TiAIN nano | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-IK-U |
| 51881 | 34 | DIN 6537L | TiAIN nano | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-IK-U |
| 51887 | 24 | DIN 6537L | TiAIN nano | SuperV-Bohrer ohne Innenkühlung | VHM | SuperV-U |
| 51889 | 39 | Werksnorm | TiAIN nano | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-IK-U |
| 51893 | 40 | Werksnorm | TiAIN nano | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-IK-U |
| 51997 | 44 | Werksnorm | AlTiN | SuperV-NX Hochleistungs-Kleinstbohrer mit Innenkühlung | VHM | SuperV-IK-NX |
| 51998 | 45 | Werksnorm | AlTiN | SuperV-NX Hochleistungs-Kleinstbohrer mit Innenkühlung | VHM | SuperV-IK-NX |
| 51999 | 46 | Werksnorm | AlTiN | SuperV-NX Hochleistungs-Kleinstbohrer mit Innenkühlung | VHM | SuperV-IK-NX |
| 61880 | 70 | DIN 6537L | TiN | SuperV-Bohrer mit Innenkühlung | VHM | SuperV-IK-F |
| 61888 | 55 | DIN 6539 | TiN | SuperV-Bohrer ohne Innenkühlung | VHM | SuperV-F |
| 71862 | 80 | DIN 6537L | blank | SuperV-Bohrer, 3-schneidig | VHM | SuperV83-GAL |
| 71994 | 83 | Werksnorm | blank | SuperV-Bohrer mit Innenkühlung | VHM | SuperV95-GG |
| 71995 | 81 | Werksnorm | blank | SuperV-Bohrer mit Innenkühlung | VHM | SuperV95-GG |
| 71996 | 84 | Werksnorm | blank | SuperV-Bohrer mit Innenkühlung | VHM | SuperV95-GG |
| 71997 | 85 | Werksnorm | blank | SuperV-Bohrer mit Innenkühlung | VHM | SuperV95-GN |
| 71998 | 42 | Werksnorm | AlTiN+ | SuperV-NX Hochleistungs-Kleinstbohrer ohne Innenkühlung | VHM | SuperV-NX |
| 71999 | 43 | Werksnorm | AlTiN+ | SuperV-NX Hochleistungs-Kleinstbohrer ohne Innenkühlung | VHM | SuperV-NX |



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