



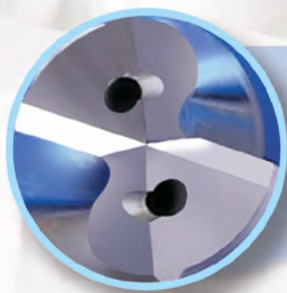
1588SL

for deep drilling
zum Tieflochbohren

10xD 12xD 15xD 20xD 30xD

1588SLK Deep drills for grey cast iron
Tieflochbohrer für Graugussmaterialien

New



ZCC Cutting Tools Europe GmbH

your Partner | your Value

1588SL for deep drilling zum Tiefbohren

10xD 12xD 15xD 20xD 30xD Drills/Bohrer

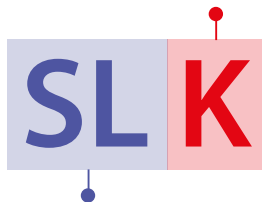
- Special flute design for optimal stability and good chip flow
Spezielles Spannutendesign für optimale Stabilität und guten Spanabfluß
- Special margin for high accuracy and stable operation
Spezielle Führungsfase für hohe Genauigkeit und eine stabile Bearbeitung
- Optimal cutting edge for good chip control in different materials
Optimierte Schneidkantenausführung für guten Spanbruch in vielen Anwendungsbereichen
- New PVD-coating for smooth chip flow, less friction and good wear resistance
Neuartige PVD-Beschichtung für optimalen Spanabfluß, weniger Reibung und gute Verschleißfestigkeit

1588SLK **NEW** DIN 1412 D

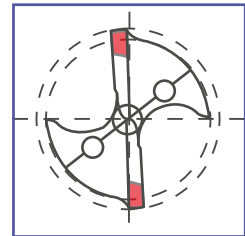
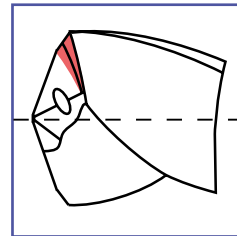
Deep drills for grey cast iron

Tieflochbohrer für die Bearbeitung von Graugussmaterialien

For grey cast iron
Für Graugussmaterialien



Twist drill for deep drilling
Spiralbohrer zum Tieflochbohren



Form D - Double Angle for Cast Iron
Form D - Anschlag für Grauguss

- **Applications / Anwendung:**
For drilling grey cast iron, malleable cast iron and forgings.
Für Bohrungen in Grauguss, Temperguss und Schmiedestücke.
- **Advantages / Vorteile:**
Wear on cutting corners is reduced by extended major cutting edges, resistant to impact, good heat conductivity, all giving improved tool life.
Schonung der Schneidenecken durch verlängerte Hauptschneiden, unempfindlich gegen Stoß, gute Wärmeableitung – dadurch verbesserte Standzeit.

All articles 1588SLK on demand, please add **K** when ordering.

Alle Artikel 1588SLK auf Anfrage, bitte bei der Bestellung **K** ergänzen.

1588SLK10C-0300

Drilling · Bohren

Solid Carbide drills · Vollhartmetallbohrer

SL & SLK

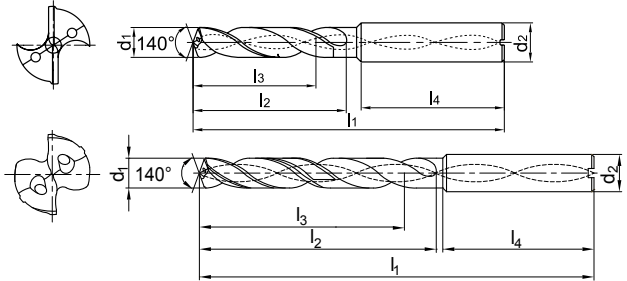
General machining · Allgemeine Bearbeitung
(Deep drill · Tiefbohrer)

Please add K when ordering / Bitte bei der Bestellung K ergänzen

1588SL10C / 1588SL12C / 1588SL15C



1588SL20C / 1588SL30C



| Drilling diameter Bohrerdurchmesser d1 12D(m7) 20/30D(h7) | Drilling depth Bohrtiefe (l/d1) | Cooling mode Kühlmittel | Shank Schaft | Type Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade Sorte |
|---|---------------------------------------|----------------------------|----------------------------------|----------------|---|-----|-----|-----|----|----------------|
| | | | | | d2(h5) | l1 | l2 | l3 | l4 | KDG303 |
| | | | | | | | | | | |
| 3.0 | 10 | Internal Intern | Straight shank Zylinderschaft | 1588SL10C-0300 | 6 | 80 | 43 | 39 | 36 | ● |
| | 12 | | | 1588SL12C-0300 | 6 | 90 | 50 | 40 | 36 | ● |
| | 15 | | | 1588SL15C-0300 | 6 | 100 | 60 | 50 | 36 | ● |
| | 20 | | | 1588SL20C-0300 | 6 | 110 | 70 | 62 | 36 | ● |
| | 30 | | | 1588SL30C-0300 | 6 | 140 | 100 | 92 | 36 | ● |
| 3.1 | 10 | | | 1588SL10C-0310 | 6 | 80 | 43 | 39 | 36 | ○ |
| | 12 | | | 1588SL12C-0310 | 6 | 90 | 50 | 40 | 36 | ● |
| | 15 | | | 1588SL15C-0310 | 6 | 105 | 65 | 55 | 36 | ○ |
| | 20 | | | 1588SL20C-0310 | 6 | 123 | 83 | 72 | 36 | ● |
| | 30 | | | 1588SL30C-0310 | 6 | 160 | 120 | 108 | 36 | ○ |
| 3.2 | 10 | | | 1588SL10C-0320 | 6 | 80 | 43 | 39 | 36 | ● |
| | 12 | | | 1588SL12C-0320 | 6 | 90 | 50 | 40 | 36 | ● |
| | 15 | | | 1588SL15C-0320 | 6 | 105 | 65 | 55 | 36 | ○ |
| | 20 | | | 1588SL20C-0320 | 6 | 123 | 83 | 72 | 36 | ● |
| | 30 | | | 1588SL30C-0320 | 6 | 160 | 120 | 108 | 36 | ○ |
| 3.3 | 10 | 1588SL10C-0330 | 6 | 80 | 43 | 39 | 36 | ● | | |
| | 12 | 1588SL12C-0330 | 6 | 90 | 50 | 40 | 36 | ● | | |
| | 15 | 1588SL15C-0330 | 6 | 105 | 65 | 55 | 36 | ○ | | |
| | 20 | 1588SL20C-0330 | 6 | 123 | 83 | 72 | 36 | ● | | |
| | 30 | 1588SL30C-0330 | 6 | 160 | 120 | 108 | 36 | ○ | | |
| 3.4 | 10 | 1588SL10C-0340 | 6 | 80 | 43 | 39 | 36 | ● | | |
| | 12 | 1588SL12C-0340 | 6 | 90 | 50 | 40 | 36 | ● | | |
| | 15 | 1588SL15C-0340 | 6 | 105 | 65 | 55 | 36 | ○ | | |
| | 20 | 1588SL20C-0340 | 6 | 123 | 83 | 72 | 36 | ● | | |
| | 30 | 1588SL30C-0340 | 6 | 160 | 120 | 108 | 36 | ○ | | |
| 3.5 | 10 | 1588SL10C-0350 | 6 | 80 | 43 | 39 | 36 | ● | | |
| | 12 | 1588SL12C-0350 | 6 | 90 | 50 | 40 | 36 | ● | | |
| | 15 | 1588SL15C-0350 | 6 | 105 | 65 | 55 | 36 | ○ | | |
| | 20 | 1588SL20C-0350 | 6 | 123 | 83 | 72 | 36 | ● | | |
| | 30 | 1588SL30C-0350 | 6 | 160 | 120 | 108 | 36 | ○ | | |
| 3.6 | 10 | 1588SL10C-0360 | 6 | 80 | 43 | 39 | 36 | ● | | |
| | 12 | 1588SL12C-0360 | 6 | 90 | 50 | 40 | 36 | ● | | |
| | 15 | 1588SL15C-0360 | 6 | 112 | 72 | 62 | 36 | ○ | | |
| | 20 | 1588SL20C-0360 | 6 | 136 | 96 | 84 | 36 | ● | | |
| | 30 | 1588SL30C-0360 | 6 | 176 | 136 | 124 | 36 | ○ | | |
| 3.7 | 10 | 1588SL10C-0370 | 6 | 80 | 43 | 39 | 36 | ● | | |
| | 12 | 1588SL12C-0370 | 6 | 90 | 50 | 46 | 36 | ● | | |
| | 15 | 1588SL15C-0370 | 6 | 112 | 72 | 68 | 36 | ○ | | |
| | 20 | 1588SL20C-0370 | 6 | 136 | 96 | 84 | 36 | ● | | |
| | 30 | 1588SL30C-0370 | 6 | 176 | 136 | 124 | 36 | ○ | | |

✓ = Very suitable · Sehr empfohlen

✓ = Suitable · Empfohlen

Material Overview · Material Übersicht

| Type Typ | Grade Sorte | Workpiece material · Werkstückstoff | | | | | | | | | | |
|-------------|----------------|---|-----------------------------------|-----------------------------------|--------|--------|--|-----------------------------|--|---------------------------|----------------------------|--|
| | | Carbon steel Kohlenstoff- Stahl HB≤180 | Alloy steel Legierter Stahl | Hardened steel · Gehärteter Stahl | | | Stainless steel Rostfreier Stahl | Grey cast iron Gusseisen | Nodular cast iron GGG Kugelgraphitguss | Aluminum alloy Aluleg. | Copper alloy Kupferleg. | Heat resist. alloy Warmfeste Leg. |
| | | | | ~40HRC | ~50HRC | ~60HRC | | | | | | |
| 1588SL* | KDG303 | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | | ✓ | |
| 1588SLK* | KDG303 | | | | | | | ✓ | | | | |

● ex Stock · ab Lager ○ on demand · auf Anfrage

All articles 1588SLK on demand / Alle Artikel 1588SLK auf Anfrage

Drilling · Bohren

Solid Carbide drills · Vollhartmetallbohrer

SL & SLK

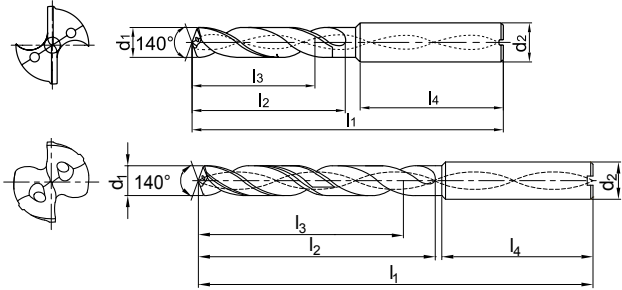
General machining · Allgemeine Bearbeitung
(Deep drill · Tiefbohrer)

Please add K when ordering / Bitte bei der Bestellung K ergänzen

1588SL10C / 1588SL12C / 1588SL15C



1588SL20C / 1588SL30C



| Drilling diameter Bohrerdurchmesser d1 12D(m7) 20/30D(h7) | Drilling depth Bohrtiefe (l/d1) | Cooling mode Kühlmittel | Shank Schaft | Type Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade Sorte |
|---|---------------------------------------|-------------------------------|--|----------------|---|-----|-----|-----|----|----------------|
| | | | | | d2(h5) | l1 | l2 | l3 | l4 | KDG303 |
| | | | | | | | | | | |
| 3.8 | 10 | Internal Intern | Straight shank Zylinder- schaft | 1588SL10C-0380 | 6 | 80 | 43 | 39 | 36 | ● |
| | 12 | | | 1588SL12C-0380 | 6 | 90 | 50 | 46 | 36 | ● |
| | 15 | | | 1588SL15C-0380 | 6 | 112 | 72 | 68 | 36 | ○ |
| | 20 | | | 1588SL20C-0380 | 6 | 136 | 96 | 84 | 36 | ● |
| | 30 | | | 1588SL30C-0380 | 6 | 176 | 136 | 124 | 36 | ○ |
| 3.9 | 10 | | | 1588SL10C-0390 | 6 | 80 | 43 | 39 | 36 | ● |
| | 12 | | | 1588SL12C-0390 | 6 | 90 | 50 | 46 | 36 | ● |
| | 15 | | | 1588SL15C-0390 | 6 | 112 | 72 | 68 | 36 | ● |
| | 20 | | | 1588SL20C-0390 | 6 | 136 | 96 | 84 | 36 | ● |
| | 30 | | | 1588SL30C-0390 | 6 | 176 | 136 | 124 | 36 | ○ |
| 4.0 | 10 | | | 1588SL10C-0400 | 6 | 92 | 55 | 50 | 36 | ● |
| | 12 | | | 1588SL12C-0400 | 6 | 102 | 64 | 56 | 36 | ● |
| | 15 | | | 1588SL15C-0400 | 6 | 112 | 72 | 64 | 36 | ● |
| | 20 | | | 1588SL20C-0400 | 6 | 136 | 96 | 84 | 36 | ● |
| | 30 | | | 1588SL30C-0400 | 6 | 176 | 136 | 124 | 36 | ● |
| 4.1 | 10 | | | 1588SL10C-0410 | 6 | 92 | 55 | 50 | 36 | ● |
| | 12 | | | 1588SL12C-0410 | 6 | 102 | 64 | 56 | 36 | ● |
| | 15 | | | 1588SL15C-0410 | 6 | 120 | 80 | 72 | 36 | ● |
| | 20 | | | 1588SL20C-0410 | 6 | 148 | 108 | 96 | 36 | ● |
| | 30 | | | 1588SL30C-0410 | 6 | 192 | 152 | 140 | 36 | ○ |
| 4.2 | 10 | | | 1588SL10C-0420 | 6 | 92 | 55 | 50 | 36 | ● |
| | 12 | | | 1588SL12C-0420 | 6 | 102 | 64 | 56 | 36 | ● |
| | 15 | | | 1588SL15C-0420 | 6 | 120 | 80 | 72 | 36 | ● |
| | 20 | | | 1588SL20C-0420 | 6 | 148 | 108 | 96 | 36 | ● |
| | 30 | | | 1588SL30C-0420 | 6 | 192 | 152 | 140 | 36 | ○ |
| 4.3 | 10 | | | 1588SL10C-0430 | 6 | 92 | 55 | 50 | 36 | ● |
| | 12 | | | 1588SL12C-0430 | 6 | 102 | 64 | 56 | 36 | ● |
| | 15 | | | 1588SL15C-0430 | 6 | 120 | 80 | 72 | 36 | ○ |
| | 20 | | | 1588SL20C-0430 | 6 | 148 | 108 | 96 | 36 | ● |
| | 30 | | | 1588SL30C-0430 | 6 | 192 | 152 | 140 | 36 | ○ |
| 4.4 | 10 | 1588SL10C-0440 | 6 | 92 | 55 | 50 | 36 | ● | | |
| | 12 | 1588SL12C-0440 | 6 | 102 | 64 | 56 | 36 | ● | | |
| | 15 | 1588SL15C-0440 | 6 | 120 | 80 | 72 | 36 | ○ | | |
| | 20 | 1588SL20C-0440 | 6 | 148 | 108 | 96 | 36 | ● | | |
| | 30 | 1588SL30C-0440 | 6 | 192 | 152 | 140 | 36 | ○ | | |
| 4.5 | 10 | 1588SL10C-0450 | 6 | 92 | 55 | 50 | 36 | ● | | |
| | 12 | 1588SL12C-0450 | 6 | 102 | 64 | 56 | 36 | ● | | |
| | 15 | 1588SL15C-0450 | 6 | 120 | 80 | 72 | 36 | ● | | |
| | 20 | 1588SL20C-0450 | 6 | 148 | 108 | 96 | 36 | ● | | |
| | 30 | 1588SL30C-0450 | 6 | 192 | 152 | 140 | 36 | ● | | |
| 4.6 | 10 | 1588SL10C-0460 | 6 | 92 | 55 | 50 | 36 | ● | | |
| | 12 | 1588SL12C-0460 | 6 | 102 | 64 | 56 | 36 | ● | | |
| | 15 | 1588SL15C-0460 | 6 | 128 | 88 | 80 | 36 | ● | | |
| | 20 | 1588SL20C-0460 | 6 | 158 | 118 | 106 | 36 | ● | | |
| | 30 | 1588SL30C-0460 | 6 | 208 | 168 | 156 | 36 | ○ | | |

Drilling · Bohren

Solid Carbide drills · Vollhartmetallbohrer

| Drilling diameter Bohrerdurchmesser d1 12D(m7) 20/30D(h7) | Drilling depth Bohrtiefe l/d1 | Cooling mode Kühlmittel. | Shank Schaft | Type Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade Sorte |
|---|-------------------------------------|-----------------------------|--|----------------|---|-----|-----|-----|----|----------------|
| | | | | | dz(h5) | l1 | l2 | l3 | l4 | |
| | | | | | | | | | | KDG303 |
| 4.7 | 10 | Internal Intern | Straight shank Zylinder- schaft | 1588SL10C-0470 | 6 | 92 | 55 | 50 | 36 | ● |
| | 12 | | | 1588SL12C-0470 | 6 | 102 | 64 | 56 | 36 | ● |
| | 15 | | | 1588SL15C-0470 | 6 | 128 | 88 | 80 | 36 | ○ |
| | 20 | | | 1588SL20C-0470 | 6 | 158 | 118 | 106 | 36 | ● |
| | 30 | | | 1588SL30C-0470 | 6 | 208 | 168 | 156 | 36 | ● |
| 4.8 | 10 | | | 1588SL10C-0480 | 6 | 92 | 55 | 50 | 36 | ● |
| | 12 | | | 1588SL12C-0480 | 6 | 102 | 64 | 56 | 36 | ● |
| | 15 | | | 1588SL15C-0480 | 6 | 128 | 88 | 80 | 36 | ● |
| | 20 | | | 1588SL20C-0480 | 6 | 158 | 118 | 106 | 36 | ● |
| | 30 | | | 1588SL30C-0480 | 6 | 208 | 168 | 156 | 36 | ○ |
| 4.9 | 10 | | | 1588SL10C-0490 | 6 | 92 | 55 | 50 | 36 | ● |
| | 12 | | | 1588SL12C-0490 | 6 | 102 | 64 | 56 | 36 | ● |
| | 15 | | | 1588SL15C-0490 | 6 | 128 | 88 | 80 | 36 | ● |
| | 20 | | | 1588SL20C-0490 | 6 | 158 | 118 | 106 | 36 | ○ |
| | 30 | | | 1588SL30C-0490 | 6 | 208 | 168 | 156 | 36 | ○ |
| 5.0 | 10 | | | 1588SL10C-0500 | 6 | 104 | 68 | 61 | 36 | ● |
| | 12 | | | 1588SL12C-0500 | 6 | 116 | 78 | 72 | 36 | ● |
| | 15 | | | 1588SL15C-0500 | 6 | 128 | 88 | 82 | 36 | ● |
| | 20 | | | 1588SL20C-0500 | 6 | 158 | 118 | 106 | 36 | ● |
| | 30 | | | 1588SL30C-0500 | 6 | 208 | 168 | 156 | 36 | ● |
| 5.1 | 10 | | | 1588SL10C-0510 | 6 | 104 | 68 | 61 | 36 | ● |
| | 12 | | | 1588SL12C-0510 | 6 | 116 | 78 | 72 | 36 | ● |
| | 15 | | | 1588SL15C-0510 | 6 | 136 | 96 | 90 | 36 | ○ |
| | 20 | | | 1588SL20C-0510 | 6 | 168 | 128 | 116 | 36 | ○ |
| | 30 | | | 1588SL30C-0510 | 6 | 228 | 188 | 170 | 36 | ○ |
| 5.2 | 10 | | | 1588SL10C-0520 | 6 | 104 | 68 | 61 | 36 | ● |
| | 12 | | | 1588SL12C-0520 | 6 | 116 | 78 | 72 | 36 | ● |
| | 15 | | | 1588SL15C-0520 | 6 | 136 | 96 | 90 | 36 | ○ |
| | 20 | | | 1588SL20C-0520 | 6 | 168 | 128 | 116 | 36 | ● |
| | 30 | | | 1588SL30C-0520 | 6 | 228 | 188 | 170 | 36 | ● |
| 5.3 | 10 | 1588SL10C-0530 | 6 | 104 | 68 | 61 | 36 | ● | | |
| | 12 | 1588SL12C-0530 | 6 | 116 | 78 | 72 | 36 | ○ | | |
| | 15 | 1588SL15C-0530 | 6 | 136 | 96 | 90 | 36 | ● | | |
| | 20 | 1588SL20C-0530 | 6 | 168 | 128 | 116 | 36 | ● | | |
| | 30 | 1588SL30C-0530 | 6 | 228 | 188 | 170 | 36 | ● | | |
| 5.4 | 10 | 1588SL10C-0540 | 6 | 104 | 68 | 61 | 36 | ● | | |
| | 12 | 1588SL12C-0540 | 6 | 116 | 78 | 72 | 36 | ○ | | |
| | 15 | 1588SL15C-0540 | 6 | 136 | 96 | 90 | 36 | ○ | | |
| | 20 | 1588SL20C-0540 | 6 | 168 | 128 | 116 | 36 | ● | | |
| | 30 | 1588SL30C-0540 | 6 | 228 | 188 | 170 | 36 | ○ | | |
| 5.5 | 10 | 1588SL10C-0550 | 6 | 104 | 68 | 61 | 36 | ● | | |
| | 12 | 1588SL12C-0550 | 6 | 116 | 78 | 72 | 36 | ● | | |
| | 15 | 1588SL15C-0550 | 6 | 136 | 96 | 90 | 36 | ● | | |
| | 20 | 1588SL20C-0550 | 6 | 168 | 128 | 116 | 36 | ● | | |
| | 30 | 1588SL30C-0550 | 6 | 228 | 188 | 170 | 36 | ● | | |
| 5.6 | 10 | 1588SL10C-0560 | 6 | 104 | 68 | 61 | 36 | ● | | |
| | 12 | 1588SL12C-0560 | 6 | 116 | 78 | 72 | 36 | ● | | |
| | 15 | 1588SL15C-0560 | 6 | 144 | 104 | 98 | 36 | ○ | | |
| | 20 | 1588SL20C-0560 | 6 | 180 | 140 | 126 | 36 | ○ | | |
| | 30 | 1588SL30C-0560 | 6 | 240 | 200 | 182 | 36 | ○ | | |

Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen
 ✓ = Suitable · Empfohlen

| Type Typ | Grade Sorte | Workpiece material · Werkstückstoff | | | | | | | | | | |
|-------------|----------------|---|-----------------------------------|-----------------------------------|--------|--------|---|--------------------------------|--|------------------------------|----------------------------|--|
| | | Carbon steel Kohlenstoff- Stahl HB≤180 | Alloy steel Legierter Stahl | Hardened steel · Gehärteter Stahl | | | Stainless steel Rostfreier Stahl | Grey cast iron Gusseisen | Nodular cast iron GGG Kugelgra- phitguss | Aluminum alloy Aluleg. | Copper alloy Kupferleg. | Heat resist. alloy Warmfeste Leg. |
| | | | | ~40HRC | ~50HRC | ~60HRC | | | | | | |
| 1588SL* | KDG303 | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 1588SLK* | KDG303 | | | | | | | ✓ | | | | |

Drilling · Bohren

Solid Carbide drills · Vollhartmetallbohrer

SL & SLK

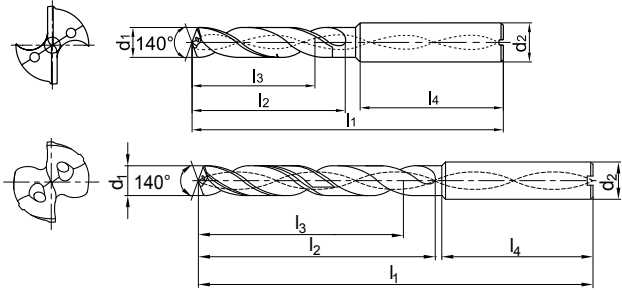
General machining · Allgemeine Bearbeitung
(Deep drill · Tiefbohrer)

Please add K when ordering / Bitte bei der Bestellung K ergänzen

1588SL10C / 1588SL12C / 1588SL15C



1588SL20C / 1588SL30C



| Drilling diameter Bohrerdurchmesser d1 12D(m7) 20/30D(h7) | Drilling depth Bohrtiefe (l/d1) | Cooling mode Kühlmittel. | Shank Schaft | Type Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade Sorte |
|---|---------------------------------------|--------------------------------|----------------------------------|----------------|---|-----|-----|-----|----|----------------|
| | | | | | d2(h5) | l1 | l2 | l3 | l4 | |
| | | | | | | | | | | KDG303 |
| 5.7 | 10 | Internal | Straight shank Zylinderschaft | 1588SL10C-0570 | 6 | 104 | 68 | 61 | 36 | ● |
| | 12 | | | 1588SL12C-0570 | 6 | 116 | 78 | 72 | 36 | ● |
| | 15 | | | 1588SL15C-0570 | 6 | 144 | 104 | 98 | 36 | ○ |
| | 20 | | | 1588SL20C-0570 | 6 | 180 | 140 | 126 | 36 | ○ |
| | 30 | | | 1588SL30C-0570 | 6 | 240 | 200 | 182 | 36 | ○ |
| 5.8 | 10 | | | 1588SL10C-0580 | 6 | 104 | 68 | 61 | 36 | ● |
| | 12 | | | 1588SL12C-0580 | 6 | 116 | 78 | 72 | 36 | ● |
| | 15 | | | 1588SL15C-0580 | 6 | 144 | 104 | 98 | 36 | ○ |
| | 20 | | | 1588SL20C-0580 | 6 | 180 | 140 | 126 | 36 | ● |
| | 30 | | | 1588SL30C-0580 | 6 | 240 | 200 | 182 | 36 | ● |
| 5.9 | 10 | | | 1588SL10C-0590 | 6 | 104 | 68 | 61 | 36 | ● |
| | 12 | | | 1588SL12C-0590 | 6 | 116 | 78 | 72 | 36 | ● |
| | 15 | | | 1588SL15C-0590 | 6 | 144 | 104 | 98 | 36 | ○ |
| | 20 | | | 1588SL20C-0590 | 6 | 180 | 140 | 126 | 36 | ○ |
| | 30 | | | 1588SL30C-0590 | 6 | 240 | 200 | 182 | 36 | ○ |
| 6.0 | 10 | | | 1588SL10C-0600 | 6 | 104 | 68 | 61 | 36 | ● |
| | 12 | | | 1588SL12C-0600 | 6 | 116 | 78 | 72 | 36 | ● |
| | 15 | | | 1588SL15C-0600 | 6 | 144 | 104 | 98 | 36 | ● |
| | 20 | | | 1588SL20C-0600 | 6 | 180 | 140 | 126 | 36 | ● |
| | 30 | | | 1588SL30C-0600 | 6 | 240 | 200 | 182 | 36 | ● |
| 6.1 | 10 | | | 1588SL10C-0610 | 8 | 117 | 80 | 71 | 36 | ● |
| | 12 | | | 1588SL12C-0610 | 8 | 131 | 93 | 84 | 36 | ● |
| | 15 | | | 1588SL15C-0610 | 8 | 152 | 112 | 103 | 36 | ○ |
| | 20 | | | 1588SL20C-0610 | 8 | 192 | 150 | 132 | 36 | ● |
| | 30 | | | 1588SL30C-0610 | 8 | 260 | 220 | 202 | 36 | ○ |
| 6.2 | 10 | | | 1588SL10C-0620 | 8 | 117 | 80 | 71 | 36 | ● |
| | 12 | | | 1588SL12C-0620 | 8 | 131 | 93 | 84 | 36 | ● |
| | 15 | | | 1588SL15C-0620 | 8 | 152 | 112 | 103 | 36 | ○ |
| | 20 | | | 1588SL20C-0620 | 8 | 192 | 150 | 132 | 36 | ○ |
| | 30 | | | 1588SL30C-0620 | 8 | 260 | 220 | 202 | 36 | ○ |
| 6.3 | 10 | 1588SL10C-0630 | 8 | 117 | 80 | 71 | 36 | ● | | |
| | 12 | 1588SL12C-0630 | 8 | 131 | 93 | 84 | 36 | ● | | |
| | 15 | 1588SL15C-0630 | 8 | 152 | 112 | 103 | 36 | ○ | | |
| | 20 | 1588SL20C-0630 | 8 | 192 | 150 | 132 | 36 | ○ | | |
| | 30 | 1588SL30C-0630 | 8 | 260 | 220 | 202 | 36 | ○ | | |
| 6.4 | 10 | 1588SL10C-0640 | 8 | 117 | 80 | 71 | 36 | ● | | |
| | 12 | 1588SL12C-0640 | 8 | 131 | 93 | 84 | 36 | ● | | |
| | 15 | 1588SL15C-0640 | 8 | 152 | 112 | 103 | 36 | ○ | | |
| | 20 | 1588SL20C-0640 | 8 | 192 | 150 | 132 | 36 | ○ | | |
| | 30 | 1588SL30C-0640 | 8 | 260 | 220 | 202 | 36 | ○ | | |
| 6.5 | 10 | 1588SL10C-0650 | 8 | 117 | 80 | 71 | 36 | ● | | |
| | 12 | 1588SL12C-0650 | 8 | 131 | 93 | 84 | 36 | ● | | |
| | 15 | 1588SL15C-0650 | 8 | 152 | 112 | 103 | 36 | ● | | |
| | 20 | 1588SL20C-0650 | 8 | 192 | 150 | 132 | 36 | ● | | |
| | 30 | 1588SL30C-0650 | 8 | 260 | 220 | 202 | 36 | ● | | |

Drilling · Bohren

Solid Carbide drills · Vollhartmetallbohrer

| Drilling diameter Bohrerdurchmesser d1 12D(m7) 20/30D(h7) | Drilling depth Bohrtiefe (l/d1) | Cooling mode Kühlmittel. | Shank Schaft | Type Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade Sorte |
|---|---------------------------------------|--------------------------------|--|----------------|---|-----|-----|-----|----|----------------|
| | | | | | dz(h5) | l1 | l2 | l3 | l4 | |
| | | | | | | | | | | KDG303 |
| 6.6 | 10 | Internal Intern | Straight shank Zylinder- schaft | 1588SL10C-0660 | 8 | 117 | 80 | 71 | 36 | ● |
| | 12 | | | 1588SL12C-0660 | 8 | 131 | 93 | 84 | 36 | ● |
| | 15 | | | 1588SL15C-0660 | 8 | 160 | 120 | 111 | 36 | ○ |
| | 20 | | | 1588SL20C-0660 | 8 | 202 | 162 | 144 | 36 | ○ |
| | 30 | | | 1588SL30C-0660 | 8 | 272 | 232 | 214 | 36 | ○ |
| 6.7 | 10 | | | 1588SL10C-0670 | 8 | 117 | 80 | 71 | 36 | ● |
| | 12 | | | 1588SL12C-0670 | 8 | 131 | 93 | 84 | 36 | ● |
| | 15 | | | 1588SL15C-0670 | 8 | 160 | 120 | 111 | 36 | ● |
| | 20 | | | 1588SL20C-0670 | 8 | 202 | 162 | 144 | 36 | ○ |
| | 30 | | | 1588SL30C-0670 | 8 | 272 | 232 | 214 | 36 | ○ |
| 6.8 | 10 | | | 1588SL10C-0680 | 8 | 117 | 80 | 71 | 36 | ● |
| | 12 | | | 1588SL12C-0680 | 8 | 131 | 93 | 84 | 36 | ● |
| | 15 | | | 1588SL15C-0680 | 8 | 160 | 120 | 111 | 36 | ○ |
| | 20 | | | 1588SL20C-0680 | 8 | 202 | 162 | 144 | 36 | ● |
| | 30 | | | 1588SL30C-0680 | 8 | 272 | 232 | 214 | 36 | ○ |
| 6.9 | 10 | | | 1588SL10C-0690 | 8 | 117 | 80 | 71 | 36 | ● |
| | 12 | | | 1588SL12C-0690 | 8 | 131 | 93 | 84 | 36 | ● |
| | 15 | | | 1588SL15C-0690 | 8 | 160 | 120 | 111 | 36 | ○ |
| | 20 | | | 1588SL20C-0690 | 8 | 202 | 162 | 144 | 36 | ○ |
| | 30 | | | 1588SL30C-0690 | 8 | 272 | 232 | 214 | 36 | ○ |
| 7.0 | 10 | | | 1588SL10C-0700 | 8 | 117 | 80 | 71 | 36 | ● |
| | 12 | | | 1588SL12C-0700 | 8 | 131 | 93 | 84 | 36 | ● |
| | 15 | | | 1588SL15C-0700 | 8 | 160 | 120 | 111 | 36 | ● |
| | 20 | | | 1588SL20C-0700 | 8 | 202 | 162 | 144 | 36 | ● |
| | 30 | | | 1588SL30C-0700 | 8 | 272 | 232 | 214 | 36 | ● |
| 7.1 | 10 | | | 1588SL10C-0710 | 8 | 130 | 94 | 84 | 36 | ● |
| | 12 | | | 1588SL12C-0710 | 8 | 146 | 108 | 96 | 36 | ● |
| | 15 | | | 1588SL15C-0710 | 8 | 170 | 130 | 118 | 36 | ● |
| | 20 | | | 1588SL20C-0710 | 8 | 213 | 173 | 155 | 36 | ○ |
| | 30 | | | 1588SL30C-0710 | 8 | 290 | 250 | 232 | 36 | ○ |
| 7.2 | 10 | 1588SL10C-0720 | 8 | 130 | 94 | 84 | 36 | ● | | |
| | 12 | 1588SL12C-0720 | 8 | 146 | 108 | 96 | 36 | ● | | |
| | 15 | 1588SL15C-0720 | 8 | 170 | 130 | 118 | 36 | ○ | | |
| | 20 | 1588SL20C-0720 | 8 | 213 | 173 | 155 | 36 | ○ | | |
| | 30 | 1588SL30C-0720 | 8 | 290 | 250 | 232 | 36 | ○ | | |
| 7.3 | 10 | 1588SL10C-0730 | 8 | 130 | 94 | 84 | 36 | ● | | |
| | 12 | 1588SL12C-0730 | 8 | 146 | 108 | 96 | 36 | ● | | |
| | 15 | 1588SL15C-0730 | 8 | 170 | 130 | 118 | 36 | ○ | | |
| | 20 | 1588SL20C-0730 | 8 | 213 | 173 | 155 | 36 | ○ | | |
| | 30 | 1588SL30C-0730 | 8 | 290 | 250 | 232 | 36 | ○ | | |
| 7.4 | 10 | 1588SL10C-0740 | 8 | 130 | 94 | 84 | 36 | ● | | |
| | 12 | 1588SL12C-0740 | 8 | 146 | 108 | 96 | 36 | ● | | |
| | 15 | 1588SL15C-0740 | 8 | 170 | 130 | 118 | 36 | ○ | | |
| | 20 | 1588SL20C-0740 | 8 | 213 | 173 | 155 | 36 | ○ | | |
| | 30 | 1588SL30C-0740 | 8 | 290 | 250 | 232 | 36 | ○ | | |
| 7.5 | 10 | 1588SL10C-0750 | 8 | 130 | 94 | 84 | 36 | ● | | |
| | 12 | 1588SL12C-0750 | 8 | 146 | 108 | 96 | 36 | ● | | |
| | 15 | 1588SL15C-0750 | 8 | 170 | 130 | 118 | 36 | ○ | | |
| | 20 | 1588SL20C-0750 | 8 | 213 | 173 | 155 | 36 | ● | | |
| | 30 | 1588SL30C-0750 | 8 | 290 | 250 | 232 | 36 | ● | | |

Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen
 ✓ = Suitable · Empfohlen

| Type Typ | Grade Sorte | Workpiece material · Werkstückstoff | | | | | | | | | | |
|-------------|----------------|---|-----------------------------------|-----------------------------------|--------|--------|---|--------------------------------|--|------------------------------|----------------------------|--|
| | | Carbon steel Kohlenstoff- Stahl HB≤180 | Alloy steel Legierter Stahl | Hardened steel · Gehärteter Stahl | | | Stainless steel Rostfreier Stahl | Grey cast iron Gusseisen | Nodular cast iron GGG Kugelgra- phitguss | Aluminum alloy Aluleg. | Copper alloy Kupferleg. | Heat resist. alloy Warmfeste Leg. |
| | | | | ~40HRC | ~50HRC | ~60HRC | | | | | | |
| 1588SL* | KDG303 | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 1588SLK* | KDG303 | | | | | | | ✓ | | | | |

Drilling · Bohren

Solid Carbide drills · Vollhartmetallbohrer

SL & SLK

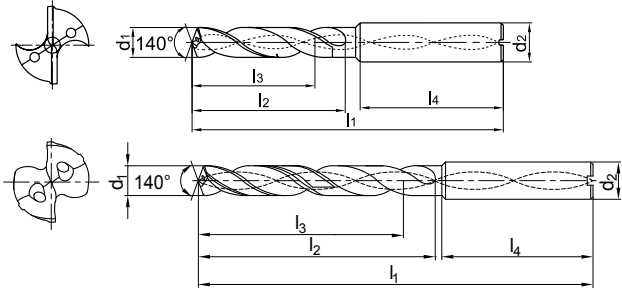
General machining · Allgemeine Bearbeitung
(Deep drill · Tiefbohrer)

Please add K when ordering / Bitte bei der Bestellung K ergänzen

1588SL10C / 1588SL12C / 1588SL15C



1588SL20C / 1588SL30C



| Drilling diameter Bohrerdurchmesser d1 12D(m7) 20/30D(h7) | Drilling depth Bohrtiefe (l/d1) | Cooling mode Kühlmittel. | Shank Schaft | Type Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade Sorte |
|---|---------------------------------------|--------------------------------|--|----------------|---|-----|-----|-----|----|----------------|
| | | | | | d2(h5) | l1 | l2 | l3 | l4 | KDG303 |
| | | | | | | | | | | |
| 7.6 | 10 | Internal | Straight shank Zylinder- schaft | 1588SL10C-0760 | 8 | 130 | 94 | 84 | 36 | ● |
| | 12 | | | 1588SL12C-0760 | 8 | 146 | 108 | 96 | 36 | ● |
| | 15 | | | 1588SL15C-0760 | 8 | 180 | 140 | 128 | 36 | ○ |
| | 20 | | | 1588SL20C-0760 | 8 | 223 | 183 | 165 | 36 | ○ |
| | 30 | | | 1588SL30C-0760 | 8 | 305 | 265 | 246 | 36 | ○ |
| 7.7 | 10 | | | 1588SL10C-0770 | 8 | 130 | 94 | 84 | 36 | ● |
| | 12 | | | 1588SL12C-0770 | 8 | 146 | 108 | 96 | 36 | ● |
| | 15 | | | 1588SL15C-0770 | 8 | 180 | 140 | 128 | 36 | ○ |
| | 20 | | | 1588SL20C-0770 | 8 | 223 | 183 | 165 | 36 | ○ |
| | 30 | | | 1588SL30C-0770 | 8 | 305 | 265 | 246 | 36 | ○ |
| 7.8 | 10 | | | 1588SL10C-0780 | 8 | 130 | 94 | 84 | 36 | ● |
| | 12 | | | 1588SL12C-0780 | 8 | 146 | 108 | 96 | 36 | ● |
| | 15 | | | 1588SL15C-0780 | 8 | 180 | 140 | 128 | 36 | ○ |
| | 20 | | | 1588SL20C-0780 | 8 | 223 | 183 | 165 | 36 | ○ |
| | 30 | | | 1588SL30C-0780 | 8 | 305 | 265 | 246 | 36 | ○ |
| 7.9 | 10 | | | 1588SL10C-0790 | 8 | 130 | 94 | 84 | 36 | ● |
| | 12 | | | 1588SL12C-0790 | 8 | 146 | 108 | 96 | 36 | ● |
| | 15 | | | 1588SL15C-0790 | 8 | 180 | 140 | 128 | 36 | ○ |
| | 20 | | | 1588SL20C-0790 | 8 | 223 | 183 | 165 | 36 | ○ |
| | 30 | | | 1588SL30C-0790 | 8 | 305 | 265 | 246 | 36 | ○ |
| 8.0 | 10 | 1588SL10C-0800 | 8 | 130 | 94 | 84 | 36 | ● | | |
| | 12 | 1588SL12C-0800 | 8 | 146 | 108 | 96 | 36 | ● | | |
| | 15 | 1588SL15C-0800 | 8 | 180 | 140 | 128 | 36 | ● | | |
| | 20 | 1588SL20C-0800 | 8 | 223 | 183 | 165 | 36 | ● | | |
| | 30 | 1588SL30C-0800 | 8 | 305 | 265 | 246 | 36 | ● | | |
| 8.1 | 10 | 1588SL10C-0810 | 10 | 148 | 105 | 94 | 40 | ● | | |
| | 12 | 1588SL12C-0810 | 10 | 162 | 120 | 108 | 40 | ● | | |
| | 15 | 1588SL15C-0810 | 10 | 194 | 150 | 138 | 40 | ○ | | |
| | 20 | 1588SL20C-0810 | 10 | 239 | 195 | 176 | 40 | ○ | | |
| | 30 | 1588SL30C-0810 | 10 | 330 | 285 | 265 | 40 | ○ | | |
| 8.2 | 10 | 1588SL10C-0820 | 10 | 148 | 105 | 94 | 40 | ● | | |
| | 12 | 1588SL12C-0820 | 10 | 162 | 120 | 108 | 40 | ● | | |
| | 15 | 1588SL15C-0820 | 10 | 194 | 150 | 138 | 40 | ○ | | |
| | 20 | 1588SL20C-0820 | 10 | 239 | 195 | 176 | 40 | ○ | | |
| | 30 | 1588SL30C-0820 | 10 | 330 | 285 | 265 | 40 | ○ | | |
| 8.3 | 10 | 1588SL10C-0830 | 10 | 148 | 105 | 94 | 40 | ● | | |
| | 12 | 1588SL12C-0830 | 10 | 162 | 120 | 108 | 40 | ● | | |
| | 15 | 1588SL15C-0830 | 10 | 194 | 150 | 138 | 40 | ○ | | |
| | 20 | 1588SL20C-0830 | 10 | 239 | 195 | 176 | 40 | ○ | | |
| | 30 | 1588SL30C-0830 | 10 | 330 | 285 | 265 | 40 | ○ | | |
| 8.4 | 10 | 1588SL10C-0840 | 10 | 148 | 105 | 94 | 40 | ● | | |
| | 12 | 1588SL12C-0840 | 10 | 162 | 120 | 108 | 40 | ● | | |
| | 15 | 1588SL15C-0840 | 10 | 194 | 150 | 138 | 40 | ○ | | |
| | 20 | 1588SL20C-0840 | 10 | 239 | 195 | 176 | 40 | ○ | | |
| | 30 | 1588SL30C-0840 | 10 | 330 | 285 | 265 | 40 | ○ | | |

Drilling · Bohren

Solid Carbide drills · Vollhartmetallbohrer

| Drilling diameter Bohrerdurchmesser d1 12D(m7) 20/30D(h7) | Drilling depth Bohrtiefe l(l/d1) | Cooling mode Kühlmittel. | Shank Schaft | Type Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade Sorte | | | | | | | |
|---|--|-----------------------------|-----------------|----------------|---|----------------|-----------------|----------------|-----------------|----------------|-----|-----|-----|-----|----|---|--|
| | | | | | d2(h5) | l1 | l2 | l3 | l4 | KDG303 | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| 8.5 | 10 | Internal | Straight shank | 1588SL10C-0850 | 10 | 148 | 105 | 94 | 40 | ● | | | | | | | |
| | 12 | | | 1588SL12C-0850 | 10 | 162 | 120 | 108 | 40 | ● | | | | | | | |
| | 15 | | | 1588SL15C-0850 | 10 | 194 | 150 | 138 | 40 | ● | | | | | | | |
| | 20 | | | 1588SL20C-0850 | 10 | 239 | 195 | 176 | 40 | ● | | | | | | | |
| | 30 | | | 1588SL30C-0850 | 10 | 330 | 285 | 265 | 40 | ● | | | | | | | |
| 8.6 | 10 | | | Intern | Zylinder-schaft | 1588SL10C-0860 | 10 | 148 | 105 | 94 | 40 | ● | | | | | |
| | 12 | | | | | 1588SL12C-0860 | 10 | 162 | 120 | 108 | 40 | ● | | | | | |
| | 15 | | | | | 1588SL15C-0860 | 10 | 204 | 160 | 148 | 40 | ● | | | | | |
| | 20 | | | | | 1588SL20C-0860 | 10 | 249 | 205 | 186 | 40 | ○ | | | | | |
| | 30 | | | | | 1588SL30C-0860 | 10 | 340 | 295 | 275 | 40 | ○ | | | | | |
| 8.7 | 10 | | | | | Intern | Zylinder-schaft | 1588SL10C-0870 | 10 | 148 | 105 | 94 | 40 | ● | | | |
| | 12 | | | | | | | 1588SL12C-0870 | 10 | 162 | 120 | 108 | 40 | ● | | | |
| | 15 | | | | | | | 1588SL15C-0870 | 10 | 204 | 160 | 148 | 40 | ○ | | | |
| | 20 | | | | | | | 1588SL20C-0870 | 10 | 249 | 205 | 186 | 40 | ○ | | | |
| | 30 | | | | | | | 1588SL30C-0870 | 10 | 340 | 295 | 275 | 40 | ○ | | | |
| 8.8 | 10 | | | | | | | Intern | Zylinder-schaft | 1588SL10C-0880 | 10 | 148 | 105 | 94 | 40 | ● | |
| | 12 | | | | | | | | | 1588SL12C-0880 | 10 | 162 | 120 | 108 | 40 | ● | |
| | 15 | | | | | | | | | 1588SL15C-0880 | 10 | 204 | 160 | 148 | 40 | ● | |
| | 20 | | | | | | | | | 1588SL20C-0880 | 10 | 249 | 205 | 186 | 40 | ○ | |
| | 30 | | | | | | | | | 1588SL30C-0880 | 10 | 340 | 295 | 275 | 40 | ○ | |
| 8.9 | 10 | Intern | Zylinder-schaft | | | | | | | 1588SL10C-0890 | 10 | 148 | 105 | 94 | 40 | ● | |
| | 12 | | | | | | | | | 1588SL12C-0890 | 10 | 162 | 120 | 108 | 40 | ● | |
| | 15 | | | | | | | | | 1588SL15C-0890 | 10 | 204 | 160 | 148 | 40 | ○ | |
| | 20 | | | | | | | | | 1588SL20C-0890 | 10 | 249 | 205 | 186 | 40 | ○ | |
| | 30 | | | | | | | | | 1588SL30C-0890 | 10 | 340 | 295 | 275 | 40 | ○ | |
| 9.0 | 10 | | | Intern | Zylinder-schaft | | | | | 1588SL10C-0900 | 10 | 148 | 105 | 94 | 40 | ● | |
| | 12 | | | | | | | | | 1588SL12C-0900 | 10 | 162 | 120 | 108 | 40 | ● | |
| | 15 | | | | | | | | | 1588SL15C-0900 | 10 | 204 | 160 | 148 | 40 | ● | |
| | 20 | | | | | | | | | 1588SL20C-0900 | 10 | 249 | 205 | 186 | 40 | ○ | |
| | 30 | | | | | | | | | 1588SL30C-0900 | 10 | 340 | 295 | 275 | 40 | ● | |
| 9.1 | 10 | | | | | Intern | Zylinder-schaft | | | 1588SL10C-0910 | 10 | 158 | 115 | 103 | 40 | ● | |
| | 12 | | | | | | | | | 1588SL12C-0910 | 10 | 174 | 132 | 120 | 40 | ○ | |
| | 15 | | | | | | | | | 1588SL15C-0910 | 10 | 216 | 172 | 160 | 40 | ○ | |
| | 20 | | | | | | | | | 1588SL20C-0910 | 10 | 262 | 218 | 196 | 36 | ○ | |
| | 30 | | | | | | | | | 1588SL30C-0910 | 10 | 360 | 315 | 292 | 40 | ○ | |
| 9.2 | 10 | | | | | | | Intern | Zylinder-schaft | 1588SL10C-0920 | 10 | 158 | 115 | 103 | 40 | ● | |
| | 12 | | | | | | | | | 1588SL12C-0920 | 10 | 174 | 132 | 120 | 40 | ● | |
| | 15 | | | | | | | | | 1588SL15C-0920 | 10 | 216 | 172 | 160 | 40 | ○ | |
| | 20 | | | | | | | | | 1588SL20C-0920 | 10 | 262 | 218 | 196 | 36 | ○ | |
| | 30 | | | | | | | | | 1588SL30C-0920 | 10 | 360 | 315 | 292 | 40 | ○ | |
| 9.3 | 10 | Intern | Zylinder-schaft | | | | | | | 1588SL10C-0930 | 10 | 158 | 115 | 103 | 40 | ● | |
| | 12 | | | | | | | | | 1588SL12C-0930 | 10 | 174 | 132 | 120 | 40 | ● | |
| | 15 | | | | | | | | | 1588SL15C-0930 | 10 | 216 | 172 | 160 | 40 | ○ | |
| | 20 | | | | | | | | | 1588SL20C-0930 | 10 | 262 | 218 | 196 | 36 | ○ | |
| | 30 | | | | | | | | | 1588SL30C-0930 | 10 | 360 | 315 | 292 | 40 | ○ | |
| 9.4 | 10 | | | Intern | Zylinder-schaft | | | | | 1588SL10C-0940 | 10 | 158 | 115 | 103 | 40 | ● | |
| | 12 | | | | | | | | | 1588SL12C-0940 | 10 | 174 | 132 | 120 | 40 | ● | |
| | 15 | | | | | | | | | 1588SL15C-0940 | 10 | 216 | 172 | 160 | 40 | ○ | |
| | 20 | | | | | | | | | 1588SL20C-0940 | 10 | 262 | 218 | 196 | 36 | ○ | |
| | 30 | | | | | | | | | 1588SL30C-0940 | 10 | 360 | 315 | 292 | 40 | ○ | |

Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen
 ✓ = Suitable · Empfohlen

| Type Typ | Grade Sorte | Workpiece material · Werkstückstoff | | | | | | | | | | |
|-------------|----------------|---|-----------------------------------|-----------------------------------|--------|--------|---|--------------------------------|--|------------------------------|----------------------------|--|
| | | Carbon steel Kohlenstoff- Stahl HB≤180 | Alloy steel Legierter Stahl | Hardened steel · Gehärteter Stahl | | | Stainless steel Rostfreier Stahl | Grey cast iron Gusseisen | Nodular cast iron GGG Kugelgra- phitguss | Aluminum alloy Aluleg. | Copper alloy Kupferleg. | Heat resist. alloy Warmfeste Leg. |
| | | | | ~40HRC | ~50HRC | ~60HRC | | | | | | |
| 1588SL* | KDG303 | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | |
| 1588SLK* | KDG303 | | | | | | ✓ | | | | | |

Drilling · Bohren

Solid Carbide drills · Vollhartmetallbohrer

SL & SLK

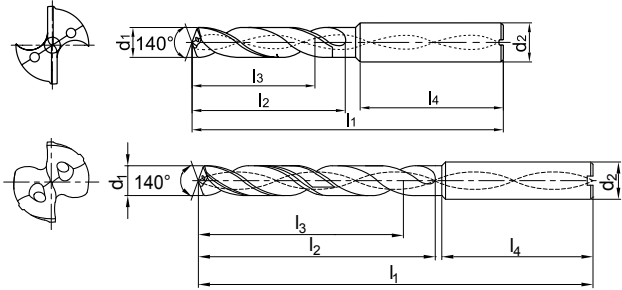
General machining · Allgemeine Bearbeitung
(Deep drill · Tiefbohrer)

Please add K when ordering / Bitte bei der Bestellung K ergänzen

1588SL10C / 1588SL12C / 1588SL15C



1588SL20C / 1588SL30C



| Drilling diameter Bohrerdurchmesser d1 12D(m7) 20/30D(h7) | Drilling depth Bohrtiefe (l/d1) | Cooling mode Kühlmittel | Shank Schaft | Type Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade Sorte |
|---|---------------------------------------|----------------------------|--|----------------|---|-----|-----|-----|----|----------------|
| | | | | | d2(h5) | l1 | l2 | l3 | l4 | KDG303 |
| | | | | | | | | | | |
| 9.5 | 10 | Internal Intern | Straight shank Zylinder- schaft | 1588SL10C-0950 | 10 | 158 | 115 | 103 | 40 | ● |
| | 12 | | | 1588SL12C-0950 | 10 | 174 | 132 | 120 | 40 | ● |
| | 15 | | | 1588SL15C-0950 | 10 | 216 | 172 | 160 | 40 | ○ |
| | 20 | | | 1588SL20C-0950 | 10 | 262 | 218 | 196 | 36 | ● |
| | 30 | | | 1588SL30C-0950 | 10 | 360 | 315 | 292 | 40 | ● |
| 9.6 | 10 | | | 1588SL10C-0960 | 10 | 158 | 115 | 103 | 40 | ● |
| | 12 | | | 1588SL12C-0960 | 10 | 174 | 132 | 120 | 40 | ○ |
| | 15 | | | 1588SL15C-0960 | 10 | 226 | 182 | 170 | 40 | ○ |
| | 20 | | | 1588SL20C-0960 | 10 | 272 | 228 | 206 | 40 | ○ |
| | 30 | | | 1588SL30C-0960 | 10 | 372 | 328 | 305 | 40 | ○ |
| 9.7 | 10 | | | 1588SL10C-0970 | 10 | 158 | 115 | 103 | 40 | ● |
| | 12 | | | 1588SL12C-0970 | 10 | 174 | 132 | 120 | 40 | ○ |
| | 15 | | | 1588SL15C-0970 | 10 | 226 | 182 | 170 | 40 | ○ |
| | 20 | | | 1588SL20C-0970 | 10 | 272 | 228 | 206 | 40 | ○ |
| | 30 | | | 1588SL30C-0970 | 10 | 372 | 328 | 305 | 40 | ○ |
| 9.8 | 10 | | | 1588SL10C-0980 | 10 | 158 | 115 | 103 | 40 | ● |
| | 12 | | | 1588SL12C-0980 | 10 | 174 | 132 | 120 | 40 | ● |
| | 15 | | | 1588SL15C-0980 | 10 | 226 | 182 | 170 | 40 | ○ |
| | 20 | | | 1588SL20C-0980 | 10 | 272 | 228 | 206 | 40 | ○ |
| | 30 | | | 1588SL30C-0980 | 10 | 372 | 328 | 305 | 40 | ○ |
| 9.9 | 10 | 1588SL10C-0990 | 10 | 158 | 115 | 103 | 40 | ● | | |
| | 12 | 1588SL12C-0990 | 10 | 174 | 132 | 120 | 40 | ○ | | |
| | 15 | 1588SL15C-0990 | 10 | 226 | 182 | 170 | 40 | ○ | | |
| | 20 | 1588SL20C-0990 | 10 | 272 | 228 | 206 | 40 | ○ | | |
| | 30 | 1588SL30C-0990 | 10 | 372 | 328 | 305 | 40 | ○ | | |
| 10.0 | 10 | 1588SL10C-1000 | 10 | 158 | 115 | 103 | 40 | ● | | |
| | 12 | 1588SL12C-1000 | 10 | 174 | 132 | 120 | 40 | ● | | |
| | 15 | 1588SL15C-1000 | 10 | 226 | 182 | 170 | 40 | ● | | |
| | 20 | 1588SL20C-1000 | 10 | 272 | 228 | 206 | 40 | ● | | |
| | 30 | 1588SL30C-1000 | 10 | 372 | 328 | 305 | 40 | ● | | |
| 10.1 | 10 | 1588SL10C-1010 | 12 | 183 | 135 | 121 | 45 | ● | | |
| | 12 | 1588SL12C-1010 | 12 | 204 | 156 | 144 | 45 | ● | | |
| | 15 | 1588SL15C-1010 | 12 | 240 | 190 | 178 | 45 | ○ | | |
| | 20 | 1588SL20C-1010 | 12 | 292 | 242 | 220 | 45 | ○ | | |
| 10.2 | 10 | 1588SL10C-1020 | 12 | 183 | 135 | 121 | 45 | ● | | |
| | 12 | 1588SL12C-1020 | 12 | 204 | 156 | 144 | 45 | ● | | |
| | 15 | 1588SL15C-1020 | 12 | 240 | 190 | 178 | 45 | ○ | | |
| | 20 | 1588SL20C-1020 | 12 | 292 | 242 | 220 | 45 | ○ | | |
| 10.3 | 10 | 1588SL10C-1030 | 12 | 183 | 135 | 121 | 45 | ● | | |
| | 12 | 1588SL12C-1030 | 12 | 204 | 156 | 144 | 45 | ● | | |
| | 15 | 1588SL15C-1030 | 12 | 240 | 190 | 178 | 45 | ○ | | |
| | 20 | 1588SL20C-1030 | 12 | 292 | 242 | 220 | 45 | ○ | | |
| 10.4 | 10 | 1588SL10C-1040 | 12 | 183 | 135 | 121 | 45 | ● | | |
| | 12 | 1588SL12C-1040 | 12 | 204 | 156 | 144 | 45 | ● | | |
| | 15 | 1588SL15C-1040 | 12 | 240 | 190 | 178 | 45 | ○ | | |
| | 20 | 1588SL20C-1040 | 12 | 292 | 242 | 220 | 45 | ○ | | |

Drilling · Bohren

Solid Carbide drills · Vollhartmetallbohrer

| Drilling diameter Bohrerdurchmesser d1 12D(m7) 20/30D(h7) | Drilling depth Bohrtiefe l(l/d1) | Cooling mode Kühlmittel. | Shank Schaft | Type Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade Sorte | |
|---|--|-----------------------------|--|----------------|---|-----|-----|-----|----|----------------|--|
| | | | | | d2(h5) | l1 | l2 | l3 | l4 | KDG303 | |
| | | | | | | | | | | | |
| 10.5 | 10 | Internal Intern | Straight shank Zylinder- schaft | 1588SL10C-1050 | 12 | 183 | 135 | 121 | 45 | ● | |
| | 12 | | | 1588SL12C-1050 | 12 | 204 | 156 | 144 | 45 | ● | |
| | 15 | | | 1588SL15C-1050 | 12 | 240 | 190 | 178 | 45 | ○ | |
| | 20 | | | 1588SL20C-1050 | 12 | 292 | 242 | 220 | 45 | ● | |
| 10.6 | 10 | | | 1588SL10C-1060 | 12 | 183 | 135 | 121 | 45 | ● | |
| | 12 | | | 1588SL12C-1060 | 12 | 204 | 156 | 144 | 45 | ● | |
| | 15 | | | 1588SL15C-1060 | 12 | 248 | 198 | 186 | 45 | ○ | |
| | 20 | | | 1588SL20C-1060 | 12 | 300 | 250 | 228 | 45 | ○ | |
| 10.7 | 10 | | | 1588SL10C-1070 | 12 | 183 | 135 | 121 | 45 | ● | |
| | 12 | | | 1588SL12C-1070 | 12 | 204 | 156 | 144 | 45 | ○ | |
| | 15 | | | 1588SL15C-1070 | 12 | 248 | 198 | 186 | 45 | ○ | |
| | 20 | | | 1588SL20C-1070 | 12 | 300 | 250 | 228 | 45 | ○ | |
| 10.8 | 10 | | | 1588SL10C-1080 | 12 | 183 | 135 | 121 | 45 | ● | |
| | 12 | | | 1588SL12C-1080 | 12 | 204 | 156 | 144 | 45 | ○ | |
| | 15 | | | 1588SL15C-1080 | 12 | 248 | 198 | 186 | 45 | ○ | |
| | 20 | | | 1588SL20C-1080 | 12 | 300 | 250 | 228 | 45 | ○ | |
| 10.9 | 10 | | | 1588SL10C-1090 | 12 | 183 | 135 | 121 | 45 | ● | |
| | 12 | | | 1588SL12C-1090 | 12 | 204 | 156 | 144 | 45 | ○ | |
| | 15 | | | 1588SL15C-1090 | 12 | 248 | 198 | 186 | 45 | ○ | |
| | 20 | | | 1588SL20C-1090 | 12 | 300 | 250 | 228 | 45 | ○ | |
| 11.0 | 10 | | | 1588SL10C-1100 | 12 | 183 | 135 | 121 | 45 | ● | |
| | 12 | | | 1588SL12C-1100 | 12 | 204 | 156 | 144 | 45 | ● | |
| | 15 | | | 1588SL15C-1100 | 12 | 248 | 198 | 186 | 45 | ● | |
| | 20 | | | 1588SL20C-1100 | 12 | 300 | 250 | 228 | 45 | ● | |
| 11.1 | 10 | | | 1588SL10C-1110 | 12 | 183 | 135 | 121 | 45 | ● | |
| | 12 | | | 1588SL12C-1110 | 12 | 204 | 156 | 144 | 45 | ○ | |
| | 15 | | | 1588SL15C-1110 | 12 | 262 | 212 | 200 | 45 | ○ | |
| | 20 | | | 1588SL20C-1110 | 12 | 315 | 265 | 240 | 45 | ○ | |
| 11.2 | 10 | 1588SL10C-1120 | 12 | 183 | 135 | 121 | 45 | ● | | | |
| | 12 | 1588SL12C-1120 | 12 | 204 | 156 | 144 | 45 | ● | | | |
| | 15 | 1588SL15C-1120 | 12 | 262 | 212 | 200 | 45 | ○ | | | |
| | 20 | 1588SL20C-1120 | 12 | 315 | 265 | 240 | 45 | ○ | | | |
| 11.3 | 10 | 1588SL10C-1130 | 12 | 183 | 135 | 121 | 45 | ● | | | |
| | 12 | 1588SL12C-1130 | 12 | 204 | 156 | 144 | 45 | ○ | | | |
| | 15 | 1588SL15C-1130 | 12 | 262 | 212 | 200 | 45 | ○ | | | |
| | 20 | 1588SL20C-1130 | 12 | 315 | 265 | 240 | 45 | ○ | | | |
| 11.4 | 10 | 1588SL10C-1140 | 12 | 183 | 135 | 121 | 45 | ● | | | |
| | 12 | 1588SL12C-1140 | 12 | 204 | 156 | 144 | 45 | ○ | | | |
| | 15 | 1588SL15C-1140 | 12 | 262 | 212 | 200 | 45 | ○ | | | |
| | 20 | 1588SL20C-1140 | 12 | 315 | 265 | 240 | 45 | ○ | | | |
| 11.5 | 10 | 1588SL10C-1150 | 12 | 183 | 135 | 121 | 45 | ● | | | |
| | 12 | 1588SL12C-1150 | 12 | 204 | 156 | 144 | 45 | ● | | | |
| | 15 | 1588SL15C-1150 | 12 | 262 | 212 | 200 | 45 | ● | | | |
| | 20 | 1588SL20C-1150 | 12 | 315 | 265 | 240 | 45 | ○ | | | |
| 11.6 | 10 | 1588SL10C-1160 | 12 | 183 | 135 | 121 | 45 | ● | | | |
| | 12 | 1588SL12C-1160 | 12 | 204 | 156 | 144 | 45 | ○ | | | |
| | 15 | 1588SL15C-1160 | 12 | 272 | 222 | 210 | 45 | ○ | | | |
| | 20 | 1588SL20C-1160 | 12 | 325 | 275 | 250 | 45 | ○ | | | |
| 11.7 | 10 | 1588SL10C-1170 | 12 | 183 | 135 | 121 | 45 | ● | | | |
| | 12 | 1588SL12C-1170 | 12 | 204 | 156 | 144 | 45 | ● | | | |
| | 15 | 1588SL15C-1170 | 12 | 272 | 222 | 210 | 45 | ○ | | | |
| | 20 | 1588SL20C-1170 | 12 | 325 | 275 | 250 | 45 | ○ | | | |

Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen
 ✓ = Suitable · Empfohlen

| Type Typ | Grade Sorte | Workpiece material · Werkstückstoff | | | | | | | | | | |
|-------------|----------------|---|-----------------------------------|-----------------------------------|--------|--------|---|--------------------------------|--|------------------------------|----------------------------|--|
| | | Carbon steel Kohlenstoff- Stahl HB≤180 | Alloy steel Legierter Stahl | Hardened steel · Gehärteter Stahl | | | Stainless steel Rostfreier Stahl | Grey cast iron Gusseisen | Nodular cast iron GGG Kugelgra- phitguss | Aluminum alloy Aluleg. | Copper alloy Kupferleg. | Heat resist. alloy Warmfeste Leg. |
| | | | | ~40HRC | ~50HRC | ~60HRC | | | | | | |
| 1588SL* | KDG303 | ✓ | ✓ | ✓ | | | ✓ | | ✓ | | ✓ | |
| 1588SLK* | KDG303 | | | | | | | ✓ | | | | |

Drilling · Bohren

Solid Carbide drills · Vollhartmetallbohrer

SL & SLK

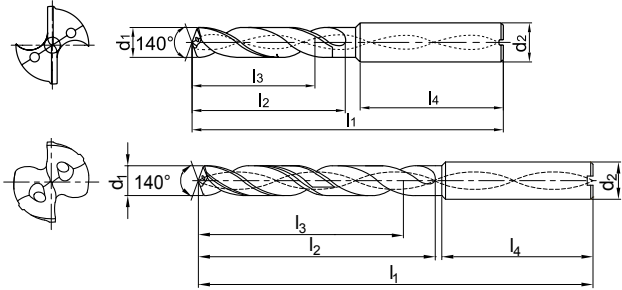
General machining · Allgemeine Bearbeitung
(Deep drill · Tiefbohrer)

Please add K when ordering / Bitte bei der Bestellung K ergänzen

1588SL10C / 1588SL12C / 1588SL15C



1588SL20C / 1588SL30C



| Drilling diameter Bohrerdurchmesser d1 12D(m7) 20/30D(h7) | Drilling depth Bohrtiefe l/d1 | Cooling mode Kühlmittel | Shank Schaft | Type Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade Sorte |
|---|-------------------------------------|-------------------------------|---------------------|----------------|---|-----|-----|-----|-----|----------------|
| | | | | | d2(h5) | l1 | l2 | l3 | l4 | KDG303 |
| | | | | | | | | | | |
| 11.8 | 10 | Intern | Zylinder- schaft | 1588SL10C-1180 | 12 | 183 | 135 | 121 | 45 | ● |
| | 12 | | | 1588SL12C-1180 | 12 | 204 | 156 | 144 | 45 | ● |
| | 15 | | | 1588SL15C-1180 | 12 | 272 | 222 | 210 | 45 | ○ |
| | 20 | | | 1588SL20C-1180 | 12 | 325 | 275 | 250 | 45 | ○ |
| 11.9 | 10 | | | 1588SL10C-1190 | 12 | 183 | 135 | 121 | 45 | ● |
| | 12 | | | 1588SL12C-1190 | 12 | 204 | 156 | 144 | 45 | ○ |
| | 15 | | | 1588SL15C-1190 | 12 | 272 | 222 | 210 | 45 | ○ |
| | 20 | | | 1588SL20C-1190 | 12 | 325 | 275 | 250 | 45 | ○ |
| 12.0 | 10 | | | 1588SL10C-1200 | 12 | 183 | 135 | 121 | 45 | ● |
| | 12 | | | 1588SL12C-1200 | 12 | 204 | 156 | 144 | 45 | ● |
| | 15 | | | 1588SL15C-1200 | 12 | 272 | 222 | 210 | 45 | ○ |
| | 20 | | | 1588SL20C-1200 | 12 | 325 | 275 | 250 | 45 | ○ |
| 12.25 | 10 | | | 1588SL10C-1225 | 14 | 209 | 160 | 144 | 45 | ● |
| 12.5 | 10 | | | 1588SL10C-1250 | 14 | 209 | 160 | 144 | 45 | ● |
| | 12 | | | 1588SL12C-1250 | 14 | 230 | 182 | 168 | 45 | ● |
| | 20 | | | 1588SL20C-1250 | 14 | 325 | 275 | 250 | 45 | ○ |
| | 12.7 | | | 10 | 1588SL10C-1270 | 14 | 209 | 160 | 144 | 45 |
| 12.75 | 12 | | | 1588SL12C-1270 | 14 | 230 | 182 | 168 | 45 | ○ |
| | 10 | | | 1588SL10C-1275 | 14 | 209 | 160 | 144 | 45 | ● |
| 12.8 | 10 | | | 1588SL10C-1280 | 14 | 209 | 160 | 144 | 45 | ● |
| | 12 | 1588SL12C-1280 | 14 | 230 | 182 | 168 | 45 | ○ | | |
| 13.0 | 10 | 1588SL10C-1300 | 14 | 209 | 160 | 144 | 45 | ● | | |
| | 12 | 1588SL12C-1300 | 14 | 230 | 182 | 168 | 45 | ● | | |
| | 20 | 1588SL20C-1300 | 14 | 338 | 290 | 265 | 45 | ○ | | |
| 13.1 | 10 | Internal | Straight shank | 1588SL10C-1310 | 14 | 209 | 160 | 144 | 45 | ● |
| | 10 | | | 1588SL10C-1350 | 14 | 209 | 160 | 144 | 45 | ● |
| | 12 | | | 1588SL12C-1350 | 14 | 230 | 182 | 168 | 45 | ● |
| | 20 | | | 1588SL20C-1350 | 14 | 338 | 290 | 265 | 45 | ○ |
| 13.8 | 10 | | | 1588SL10C-1380 | 14 | 209 | 160 | 144 | 45 | ● |
| | 10 | | | 1588SL10C-1400 | 14 | 209 | 160 | 144 | 45 | ● |
| 14.0 | 12 | | | 1588SL12C-1400 | 14 | 230 | 182 | 168 | 45 | ● |
| | 20 | | | 1588SL20C-1400 | 14 | 367 | 318 | 290 | 45 | ○ |
| | 14.5 | | | 12 | 1588SL12C-1450 | 16 | 260 | 208 | 194 | 48 |
| 15.0 | 12 | | | 1588SL12C-1500 | 16 | 260 | 208 | 194 | 48 | ● |
| 15.5 | 12 | | | 1588SL12C-1550 | 16 | 260 | 208 | 194 | 48 | ● |
| 16.0 | 12 | | | 1588SL12C-1600 | 16 | 260 | 208 | 194 | 48 | ● |
| 16.5 | 12 | | | 1588SL12C-1650 | 18 | 286 | 234 | 218 | 48 | ● |
| 17.0 | 12 | | | 1588SL12C-1700 | 18 | 286 | 234 | 218 | 48 | ● |
| 17.5 | 12 | | | 1588SL12C-1750 | 18 | 286 | 234 | 218 | 48 | ● |
| 18.0 | 12 | | | 1588SL12C-1800 | 18 | 286 | 234 | 218 | 48 | ● |
| 18.5 | 12 | | | 1588SL12C-1850 | 20 | 310 | 258 | 240 | 48 | ○ |
| 19.0 | 12 | | | 1588SL12C-1900 | 20 | 310 | 258 | 240 | 48 | ○ |
| 19.5 | 12 | | | 1588SL12C-1950 | 20 | 310 | 258 | 240 | 48 | ○ |
| 20.0 | 12 | | | 1588SL12C-2000 | 20 | 310 | 258 | 240 | 48 | ○ |
| 20.5 | 12 | 1588SL12C-2050 | 22 | 310 | 258 | 240 | 48 | ○ | | |
| 21.0 | 12 | 1588SL12C-2100 | 22 | 310 | 258 | 240 | 48 | ○ | | |

SP series - SP Serie

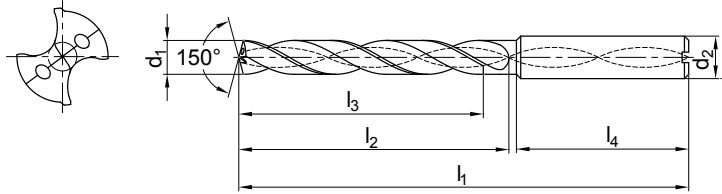
General machining - Allgemeine Bearbeitung

1534SP03C Pilot drills - Pilotbohrer

Internal Coolant
Interne Kühlung



Straight shank
Zylinderschaft



| 1534SP03C* Drilling diameter/ Bohrerdurchmesser d1(h7) | Drilling depth/ Bohrtiefe l/d1 | 1588SL20C*/30C* Drilling diameter/ Bohrerdurchmesser d1(h7) | Cooling mode/ Kühlmittel | Shank/ Schaft | Type · Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade/ Sorte KDG303 |
|---|---|--|--------------------------------|--|----------------|---|----|----|----|----|-------------------------------|
| | | | | | | d2(h6) | l1 | l2 | l3 | l4 | |
| 3.03 | 3 | 3.0 | Internal Intern | Straight shank Zylinder- schaft | 1534SP03C-0303 | 6 | 62 | 20 | 14 | 36 | ● |
| 3.13 | 3 | 3.10 | | | 1534SP03C-0313 | 6 | 62 | 20 | 14 | 36 | ○ |
| 3.23 | 3 | 3.20 | | | 1534SP03C-0323 | 6 | 62 | 20 | 14 | 36 | ○ |
| 3.33 | 3 | 3.30 | | | 1534SP03C-0333 | 6 | 62 | 20 | 14 | 36 | ● |
| 3.43 | 3 | 3.40 | | | 1534SP03C-0343 | 6 | 62 | 20 | 14 | 36 | ● |
| 3.53 | 3 | 3.50 | | | 1534SP03C-0353 | 6 | 62 | 20 | 14 | 36 | ● |
| 3.63 | 3 | 3.60 | | | 1534SP03C-0363 | 6 | 62 | 20 | 14 | 36 | ○ |
| 3.73 | 3 | 3.70 | | | 1534SP03C-0373 | 6 | 62 | 20 | 14 | 36 | ○ |
| 3.83 | 3 | 3.80 | | | 1534SP03C-0383 | 6 | 66 | 24 | 17 | 36 | ○ |
| 3.93 | 3 | 3.90 | | | 1534SP03C-0393 | 6 | 66 | 24 | 17 | 36 | ○ |
| 4.03 | 3 | 4.0 | | | 1534SP03C-0403 | 6 | 66 | 24 | 17 | 36 | ● |
| 4.13 | 3 | 4.10 | | | 1534SP03C-0413 | 6 | 66 | 24 | 17 | 36 | ○ |
| 4.23 | 3 | 4.20 | | | 1534SP03C-0423 | 6 | 66 | 24 | 17 | 36 | ○ |
| 4.33 | 3 | 4.30 | | | 1534SP03C-0433 | 6 | 66 | 24 | 17 | 36 | ○ |
| 4.43 | 3 | 4.40 | | | 1534SP03C-0443 | 6 | 66 | 24 | 17 | 36 | ○ |
| 4.53 | 3 | 4.50 | | | 1534SP03C-0453 | 6 | 66 | 24 | 17 | 36 | ● |
| 4.63 | 3 | 4.60 | | | 1534SP03C-0463 | 6 | 66 | 24 | 17 | 36 | ● |
| 4.73 | 3 | 4.70 | | | 1534SP03C-0473 | 6 | 66 | 24 | 17 | 36 | ○ |
| 4.83 | 3 | 4.80 | | | 1534SP03C-0483 | 6 | 66 | 28 | 20 | 36 | ○ |
| 4.93 | 3 | 4.90 | | | 1534SP03C-0493 | 6 | 66 | 28 | 20 | 36 | ○ |
| 5.03 | 3 | 5.0 | | | 1534SP03C-0503 | 6 | 66 | 28 | 20 | 36 | ● |
| 5.13 | 3 | 5.10 | | | 1534SP03C-0513 | 6 | 66 | 28 | 20 | 36 | ○ |
| 5.23 | 3 | 5.20 | | | 1534SP03C-0523 | 6 | 66 | 28 | 20 | 36 | ● |
| 5.33 | 3 | 5.30 | | | 1534SP03C-0533 | 6 | 66 | 28 | 20 | 36 | ○ |
| 5.43 | 3 | 5.40 | | | 1534SP03C-0543 | 6 | 66 | 28 | 20 | 36 | ○ |
| 5.53 | 3 | 5.50 | | | 1534SP03C-0553 | 6 | 66 | 28 | 20 | 36 | ● |
| 5.63 | 3 | 5.60 | | | 1534SP03C-0563 | 6 | 66 | 28 | 20 | 36 | ● |
| 5.73 | 3 | 5.70 | | | 1534SP03C-0573 | 6 | 66 | 28 | 20 | 36 | ○ |

Material Overview - Material Übersicht

✓ = Very suitable · Sehr empfohlen

✓ = Suitable · Empfohlen

| Type Typ | Grade Sorte | Workpiece material · Werkstückstoff | | | | | | | | | | |
|-------------|----------------|---|-----------------------------------|-----------------------------------|--------|--------|---|--------------------------------|--|------------------------------|----------------------------|--|
| | | Carbon steel Kohlenstoff- Stahl HB≤180 | Alloy steel Legierter Stahl | Hardened steel · Gehärteter Stahl | | | Stainless steel Rostfreier Stahl | Grey cast iron Gusseisen | Nodular cast iron GGG Kugelgra- phitguss | Aluminum alloy Aluleg. | Copper alloy Kupferleg. | Heat resist. alloy Warmfeste Leg. |
| | | | | ~40HRC | ~50HRC | ~60HRC | | | | | | |
| 1588SL* | KDG303 | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | | | ✓ |
| 1588SLK* | KDG303 | | | | | | | ✓ | ✓ | | | |
| 1534SP* | KDG303 | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | ✓ | | ✓ |

Drilling · Bohren

Solid Carbide drills · Vollhartmetallbohrer

| 1534SP03C* Drilling diameter/ Bohrerdurchmesser d ₁ (h7) | Drilling depth/ Bohrtiefe (l/d ₁) | 1588SL20C*/30C* Drilling diameter/ Bohrerdurchmesser d ₁ (h7) | Cooling mode/ Kühlmittel. | Shank/ Schaft | Type · Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade/ Sorte |
|--|--|---|---------------------------------|--|----------------|---|----------------|----------------|----------------|----------------|-----------------|
| | | | | | | d ₂ (h ₆) | l ₁ | l ₂ | l ₃ | l ₄ | KDG303 |
| | | | | | | | | | | | |
| 5.83 | 3 | 5.80 | Internal Intern | Straight shank Zylinder- schaft | 1534SP03C-0583 | 6 | 66 | 28 | 20 | 36 | ○ |
| 5.93 | 3 | 5.90 | | | 1534SP03C-0593 | 6 | 66 | 28 | 20 | 36 | ○ |
| 6.03 | 3 | 6.0 | | | 1534SP03C-0603 | 6 | 66 | 28 | 20 | 36 | ● |
| 6.13 | 3 | 6.10 | | | 1534SP03C-0613 | 8 | 79 | 34 | 24 | 36 | ○ |
| 6.23 | 3 | 6.20 | | | 1534SP03C-0623 | 8 | 79 | 34 | 24 | 36 | ○ |
| 6.33 | 3 | 6.30 | | | 1534SP03C-0633 | 8 | 79 | 34 | 24 | 36 | ● |
| 6.43 | 3 | 6.40 | | | 1534SP03C-0643 | 8 | 79 | 34 | 24 | 36 | ● |
| 6.53 | 3 | 6.50 | | | 1534SP03C-0653 | 8 | 79 | 34 | 24 | 36 | ● |
| 6.63 | 3 | 6.60 | | | 1534SP03C-0663 | 8 | 79 | 34 | 24 | 36 | ○ |
| 6.73 | 3 | 6.70 | | | 1534SP03C-0673 | 8 | 79 | 34 | 24 | 36 | ○ |
| 6.83 | 3 | 6.80 | | | 1534SP03C-0683 | 8 | 79 | 34 | 24 | 36 | ○ |
| 6.93 | 3 | 6.90 | | | 1534SP03C-0693 | 8 | 79 | 34 | 24 | 36 | ○ |
| 7.03 | 3 | 7.0 | | | 1534SP03C-0703 | 8 | 79 | 34 | 24 | 36 | ● |
| 7.13 | 3 | 7.10 | | | 1534SP03C-0713 | 8 | 79 | 41 | 29 | 36 | ○ |
| 7.23 | 3 | 7.20 | | | 1534SP03C-0723 | 8 | 79 | 41 | 29 | 36 | ○ |
| 7.33 | 3 | 7.30 | | | 1534SP03C-0733 | 8 | 79 | 41 | 29 | 36 | ● |
| 7.43 | 3 | 7.40 | | | 1534SP03C-0743 | 8 | 79 | 41 | 29 | 36 | ○ |
| 7.53 | 3 | 7.50 | | | 1534SP03C-0753 | 8 | 79 | 41 | 29 | 36 | ● |
| 7.63 | 3 | 7.60 | | | 1534SP03C-0763 | 8 | 79 | 41 | 29 | 36 | ○ |
| 7.73 | 3 | 7.70 | | | 1534SP03C-0773 | 8 | 79 | 41 | 29 | 36 | ○ |
| 7.83 | 3 | 7.80 | | | 1534SP03C-0783 | 8 | 79 | 41 | 29 | 36 | ○ |
| 7.93 | 3 | 7.90 | | | 1534SP03C-0793 | 8 | 79 | 41 | 29 | 36 | ○ |
| 8.03 | 3 | 8.0 | | | 1534SP03C-0803 | 8 | 79 | 41 | 29 | 36 | ● |
| 8.13 | 3 | 8.10 | | | 1534SP03C-0813 | 10 | 89 | 47 | 35 | 40 | ○ |
| 8.23 | 3 | 8.20 | | | 1534SP03C-0823 | 10 | 89 | 47 | 35 | 40 | ○ |
| 8.33 | 3 | 8.30 | | | 1534SP03C-0833 | 10 | 89 | 47 | 35 | 40 | ○ |
| 8.43 | 3 | 8.40 | | | 1534SP03C-0843 | 10 | 89 | 47 | 35 | 40 | ○ |
| 8.53 | 3 | 8.50 | | | 1534SP03C-0853 | 10 | 89 | 47 | 35 | 40 | ● |
| 8.63 | 3 | 8.60 | | | 1534SP03C-0863 | 10 | 89 | 47 | 35 | 40 | ● |
| 8.73 | 3 | 8.70 | | | 1534SP03C-0873 | 10 | 89 | 47 | 35 | 40 | ● |
| 8.83 | 3 | 8.80 | 1534SP03C-0883 | 10 | 89 | 47 | 35 | 40 | ● | | |
| 8.93 | 3 | 8.90 | 1534SP03C-0893 | 10 | 89 | 47 | 35 | 40 | ○ | | |
| 9.03 | 3 | 9.0 | 1534SP03C-0903 | 10 | 89 | 47 | 35 | 40 | ● | | |
| 9.13 | 3 | 9.10 | 1534SP03C-0913 | 10 | 89 | 47 | 35 | 40 | ○ | | |
| 9.23 | 3 | 9.20 | 1534SP03C-0923 | 10 | 89 | 47 | 35 | 40 | ○ | | |
| 9.33 | 3 | 9.30 | 1534SP03C-0933 | 10 | 89 | 47 | 35 | 40 | ○ | | |
| 9.43 | 3 | 9.40 | 1534SP03C-0943 | 10 | 89 | 47 | 35 | 40 | ○ | | |

Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen
 ✓ = Suitable · Empfohlen

| Type | Grade | Workpiece material · | | | | | | | | | | |
|---------|--------|------------------------|-------------|------------------|--------|--------|-----------------|----------------|-----------------------|----------------|--------------|--------------------|
| | | Carbon steel HB≤180 | Alloy steel | Hardened steel · | | | Stainless steel | Grey cast iron | Nodular cast iron GGG | Aluminum alloy | Copper alloy | Heat resist. alloy |
| | | | | ~40HRC | ~50HRC | ~60HRC | | | | | | |
| 1534SP* | KDG303 | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | | ✓ | |

Drilling · Bohren

Solid Carbide drills · Vollhartmetallbohrer

| 1534SP03C* Drilling diameter/ Bohrerdurchmesser d1(h7) | Drilling depth/ Bohrtiefe (l/d1) | 1588SL20C*/30C* Drilling diameter/ Bohrerdurchmesser d1(h7) | Cooling mode/ Kühlmittel. | Shank/ Schaft | Type · Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade/ Sorte |
|---|---|--|---------------------------------|-------------------|----------------|---|-----|----|----|----|-----------------|
| | | | | | | dz(h6) | l1 | l2 | l3 | l4 | |
| | | | | | | | | | | | KDG303 |
| 9.53 | 3 | 9.50 | Internal | Straight shank | 1534SP03C-0953 | 10 | 89 | 47 | 35 | 40 | ● |
| 9.63 | 3 | 9.60 | | | 1534SP03C-0963 | 10 | 89 | 47 | 35 | 40 | ○ |
| 9.73 | 3 | 9.70 | | | 1534SP03C-0973 | 10 | 89 | 47 | 35 | 40 | ○ |
| 9.83 | 3 | 9.80 | | | 1534SP03C-0983 | 10 | 89 | 47 | 35 | 40 | ● |
| 9.93 | 3 | 9.90 | | | 1534SP03C-0993 | 10 | 89 | 47 | 35 | 40 | ○ |
| 10.03 | 3 | 10.0 | | | 1534SP03C-1003 | 10 | 89 | 47 | 35 | 40 | ● |
| 10.13 | 3 | 10.10 | | | 1534SP03C-1013 | 12 | 102 | 55 | 40 | 45 | ● |
| 10.23 | 3 | 10.20 | | | 1534SP03C-1023 | 12 | 102 | 55 | 40 | 45 | ○ |
| 10.33 | 3 | 10.30 | | | 1534SP03C-1033 | 12 | 102 | 55 | 40 | 45 | ○ |
| 10.43 | 3 | 10.40 | | | 1534SP03C-1043 | 12 | 102 | 55 | 40 | 45 | ○ |
| 10.53 | 3 | 10.50 | | | 1534SP03C-1053 | 12 | 102 | 55 | 40 | 45 | ● |
| 10.63 | 3 | 10.60 | | | 1534SP03C-1063 | 12 | 102 | 55 | 40 | 45 | ○ |
| 10.73 | 3 | 10.70 | | | 1534SP03C-1073 | 12 | 102 | 55 | 40 | 45 | ○ |
| 10.83 | 3 | 10.80 | | | 1534SP03C-1083 | 12 | 102 | 55 | 40 | 45 | ● |
| 10.93 | 3 | 10.90 | | | 1534SP03C-1093 | 12 | 102 | 55 | 40 | 45 | ○ |
| 11.03 | 3 | 11.0 | | | 1534SP03C-1103 | 12 | 102 | 55 | 40 | 45 | ● |
| 11.13 | 3 | 11.10 | | | 1534SP03C-1113 | 12 | 102 | 55 | 40 | 45 | ○ |
| 11.23 | 3 | 11.20 | | | 1534SP03C-1123 | 12 | 102 | 55 | 40 | 45 | ○ |
| 11.33 | 3 | 11.30 | | | 1534SP03C-1133 | 12 | 102 | 55 | 40 | 45 | ○ |
| 11.43 | 3 | 11.40 | | | 1534SP03C-1143 | 12 | 102 | 55 | 40 | 45 | ○ |
| 11.53 | 3 | 11.50 | | | 1534SP03C-1153 | 12 | 102 | 55 | 40 | 45 | ● |
| 11.63 | 3 | 11.60 | | | 1534SP03C-1163 | 12 | 102 | 55 | 40 | 45 | ○ |
| 11.73 | 3 | 11.70 | | | 1534SP03C-1173 | 12 | 102 | 55 | 40 | 45 | ○ |
| 11.83 | 3 | 11.80 | | | 1534SP03C-1183 | 12 | 102 | 55 | 40 | 45 | ● |
| 11.93 | 3 | 11.90 | | | 1534SP03C-1193 | 12 | 102 | 55 | 40 | 45 | ○ |
| 12.03 | 3 | 12.0 | | | 1534SP03C-1203 | 12 | 102 | 55 | 40 | 45 | ● |
| 12.53 | 3 | 12.50 | | | 1534SP03C-1253 | 14 | 107 | 60 | 43 | 45 | ● |
| 12.73 | 3 | 12.70 | | | 1534SP03C-1273 | 14 | 107 | 60 | 43 | 45 | ○ |
| 12.83 | 3 | 12.80 | | | 1534SP03C-1283 | 14 | 107 | 60 | 43 | 45 | ○ |
| 13.03 | 3 | 13.0 | | | 1534SP03C-1303 | 14 | 107 | 60 | 43 | 45 | ○ |
| 13.53 | 3 | 13.50 | | | 1534SP03C-1353 | 14 | 107 | 60 | 43 | 45 | ○ |
| 14.03 | 3 | 14.0 | | | 1534SP03C-1403 | 14 | 107 | 60 | 43 | 45 | ○ |
| 14.53 | 3 | 14.50 | | | 1534SP03C-1453 | 16 | 115 | 65 | 45 | 48 | ○ |
| 15.03 | 3 | 15.0 | 1534SP03C-1503 | 16 | 115 | 65 | 45 | 48 | ○ | | |
| 15.53 | 3 | 15.50 | 1534SP03C-1553 | 16 | 115 | 65 | 45 | 48 | ○ | | |
| 16.03 | 3 | 16.0 | 1534SP03C-1603 | 16 | 115 | 65 | 45 | 48 | ○ | | |
| 16.53 | 3 | 16.50 | 1534SP03C-1653 | 18 | 123 | 73 | 51 | 48 | ○ | | |

Material Overview · Material Übersicht

✓ = Very suitable · Sehr empfohlen
 ✓ = Suitable · Empfohlen

| Type Typ | Grade Sorte | Workpiece material · Werkstückstoff | | | | | | | | | |
|-------------|----------------|---|-----------------------------------|-----------------------------------|--|--|---|--------------------------------|--|------------------------------|----------------------------|
| | | Carbon steel Kohlenstoff- Stahl HB≤180 | Alloy steel Legierter Stahl | Hardened steel · Gehärteter Stahl | | | Stainless steel Rostfreier Stahl | Grey cast iron Gusseisen | Nodular cast iron GGG Kugelgra- phitguss | Aluminum alloy Aluleg. | Copper alloy Kupferleg. |
| ~40HRC | ~50HRC | | | ~60HRC | | | | | | | |
| 1534SP* | KDG303 | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | | ✓ |

Drilling · Bohren

Solid Carbide drills · Vollhartmetallbohrer

| 1534SP03C* Drilling diameter/ Bohrerdurchmesser d1(h7) | Drilling depth/ Bohrtiefe (l/d1) | 1588SL20C*/30C* Drilling diameter/ Bohrerdurchmesser d1(h7) | Cooling mode/ Kühlmittel | Shank/ Schaft | Type · Typ | Basic dimension(mm) · Basis Abmessungen | | | | | Grade/ Sorte KDG303 |
|---|---|--|--------------------------------|--|-----------------------|---|-----|----|----|----|-------------------------------|
| | | | | | | d2(h6) | l1 | l2 | l3 | l4 | |
| 17.03 | 3 | 17.0 | Internal Intern | Straight shank Zylinder- schaft | 1534SP03C-1703 | 18 | 123 | 73 | 51 | 48 | ○ |
| 17.53 | 3 | 17.50 | | | 1534SP03C-1753 | 18 | 123 | 73 | 51 | 48 | ○ |
| 18.03 | 3 | 18.0 | | | 1534SP03C-1803 | 18 | 123 | 73 | 51 | 48 | ○ |
| 18.53 | 3 | 18.50 | | | 1534SP03C-1853 | 20 | 131 | 79 | 55 | 50 | ○ |
| 19.03 | 3 | 19.0 | | | 1534SP03C-1903 | 20 | 131 | 79 | 55 | 50 | ○ |
| 19.53 | 3 | 19.50 | | | 1534SP03C-1953 | 20 | 131 | 79 | 55 | 50 | ○ |
| 20.03 | 3 | 20.0 | | | 1534SP03C-2003 | 20 | 131 | 79 | 55 | 50 | ○ |

Material Overview · Material Übersicht

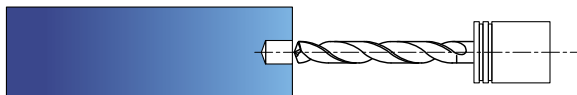
✓ = Very suitable · Sehr empfohlen
 ✓ = Suitable · Empfohlen

| Type | Grade | Workpiece material · | | | | | | | | | | |
|---------|--------|------------------------|-------------|------------------|--------|--------|--------------------|-------------------|-----------------------------|-------------------|--------------|-----------------------|
| | | Carbon steel HB≤180 | Alloy steel | Hardened steel · | | | Stainless steel | Grey cast iron | Nodular cast iron GGG | Aluminum alloy | Copper alloy | Heat resist. alloy |
| | | | | ~40HRC | ~50HRC | ~60HRC | | | | | | |
| 1534SP* | KDG303 | ✓ | ✓ | ✓ | | | ✓ | ✓ | ✓ | | ✓ | |

SL series · SL Serie

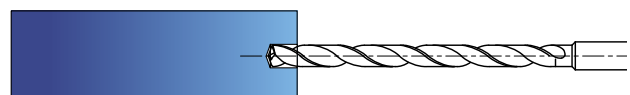
Recommended cutting data · Schnittdatenempfehlung (Deep drill · Tiefbohrer)

1 Preparation pilot hole with 1534SP03C* Herstellung der Pilotbohrung mit 1534SP03C*



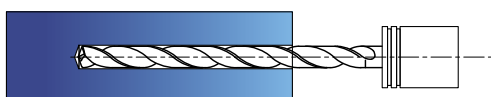
- Top angel of pilot drill must be bigger than SL-drill.
Spitzenwinkel des Pilotbohrers muß größer sein als beim SL-Bohrer.
- Diameter of pilot drill must be 0.01~0.04mm bigger than SL-drill.
Der Durchmesser des Pilotbohrers sollte 0.01~0.04 mm größer sein als beim SL-Bohrer.
- The pilot hole should be 1~3×D.
Tiefe der Pilotbohrung soll 1~3×D betragen.
- Vc: 60-80 m/min; f: 0.1-0.25 mm/r; ap: 1~3×D

2 Entering into pilot hole with SL-drill Einführen des SL-Bohrers in die Pilotbohrung



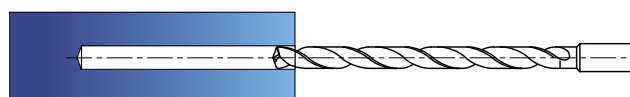
- Entering the pilot hole with low cutting speed. (Vc:20~30m/min)
Den SL-Bohrer mit geringer Drehzahl in die Pilotbohrung einführen. (Vc:20~30 m/min)
- 1~3 mm stop before end of pilot hole. (Vf=0)
1~3 mm vor dem Lochende stehenbleiben. (Vf=0)
- Increase cutting speed up to recommended parameter and than start feed rate.
Die Schnittgeschwindigkeit auf die empfohlenen Parameter erhöhen und erst dann mit dem Vorschub beginnen.

3 Making deep hole Herstellung der Tieflochbohrung



- Drilling with suitable cutting speed and feed rate.
Bohren mit geeigneter Schnittgeschwindigkeit und Vorschüben.
- At cross holes feed rate should be reduced to 0.05 mm/rev..
Bei Querbohrungen den Vorschub auf 0.05 mm/u reduzieren.

4 Pull back of drill Herausziehen des Bohrers



- After reaching the required depth reduce the cutting speed (Vc: 20~30 m/min) and pull back the drill by high feed rate. (Vf: 2000 mm/min)
Nach Erreichen der geforderten Bohrtiefe die Schnittgeschwindigkeit reduzieren (Vc: 20~30 m/min) und den Bohrer mit hohem Vorschub (Vf: 2000 mm/min) herausziehen.

Drilling · Bohren

Recommended cutting data · Schnittdatenempfehlung

General information · Allgemeiner Hinweis

If surface contour is not flat use suitable operation (e.g. face milling with solid carbide endmill) for preparation.

Sollte die Kontur des Bauteils eine Schräge aufweisen, eine geeignete Bearbeitung (z.B. Planfräsen mit VHM - Fräser) zur Begradigung durchführen.

SL series twist deep drills · SL Spiraltiefbohrer Serie (Internal coolant · Interne Kühlung)

10D 12D 15D

| Workpiece material/ Werkstückstoff | Mild steel/ Baustahl HB≤180 | | Carbon steel, alloy steel/ Kohlenstoffstahl Leg. Stahl ~30HRC | | Pre-hardened steel/ Vergüteter Stahl ~40HRC | | Stainless steel/ Rostfreier Stahl | | Cast iron/ Gusseisen | | Nodular cast iron/ GGG | | Aluminum alloy/ Alu. Legierungen | | Heat resistant alloy/ Warmfeste Legierungen | |
|---------------------------------------|-----------------------------------|---------------|---|---------------|--|---------------|--------------------------------------|---------------|---------------------------|---------------|------------------------------|---------------|--|---------------|--|---------------|
| | Vc | 60~120m/min | | 60~120m/min | | 50~80 m/min | | 40~60 m/min | | 80~150 m/min | | 60~120 m/min | | 100~180 m/min | | 10~20 m/min |
| Ø (mm) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) |
| 3 | 10600 | 0.06~ 0.1 | 10600 | 0.06~ 0.1 | 7400 | 0.06~ 0.1 | 5300 | 0.03~ 0.07 | 12700 | 0.06~ 0.1 | 9500 | 0.06~ 0.1 | 15000 | 0.09~ 0.12 | 2100 | 0.03~ 0.06 |
| 4 | 8000 | 0.08~ 0.12 | 8000 | 0.08~ 0.12 | 5600 | 0.08~ 0.12 | 4000 | 0.04~ 0.08 | 96000 | 0.08~ 0.12 | 7000 | 0.08~ 0.12 | 11000 | 0.10~ 0.15 | 1600 | 0.04~ 0.07 |
| 5 | 6400 | 0.10~ 0.14 | 6400 | 0.10~ 0.14 | 4500 | 0.10~ 0.14 | 3200 | 0.05~ 0.10 | 7600 | 0.10~ 0.14 | 5700 | 0.10~ 0.14 | 9000 | 0.10~ 0.15 | 1250 | 0.05~ 0.9 |
| 6 | 5300 | 0.11~ 0.16 | 5300 | 0.11~ 0.16 | 3700 | 0.11~ 0.16 | 2700 | 0.06~ 0.12 | 6400 | 0.11~ 0.16 | 4700 | 0.11~ 0.16 | 7400 | 0.11~ 0.16 | 1050 | 0.06~ 0.11 |
| 8 | 4000 | 0.13~ 0.19 | 4000 | 0.13~ 0.19 | 2800 | 0.13~ 0.19 | 2000 | 0.08~ 0.16 | 4800 | 0.13~ 0.19 | 3600 | 0.13~ 0.19 | 5600 | 0.13~ 0.19 | 800 | 0.08~ 0.14 |
| 10 | 3200 | 0.14~ 0.22 | 3200 | 0.14~ 0.22 | 2200 | 0.14~ 0.22 | 1600 | 0.10~ 0.18 | 3800 | 0.14~ 0.22 | 2800 | 0.14~ 0.22 | 4500 | 0.14~ 0.22 | 600 | 0.10~ 0.16 |
| 12 | 2700 | 0.16~ 0.24 | 2700 | 0.16~ 0.24 | 1900 | 0.16~ 0.24 | 1300 | 0.12~ 0.20 | 3200 | 0.16~ 0.24 | 2400 | 0.16~ 0.24 | 3700 | 0.16~ 0.24 | 500 | 0.12~ 0.18 |
| 14 | 2300 | 0.18~ 0.28 | 2300 | 0.18~ 0.28 | 1600 | 0.18~ 0.28 | 1100 | 0.13~ 0.22 | 2700 | 0.18~ 0.28 | 2100 | 0.18~ 0.28 | 3200 | 0.18~ 0.28 | 450 | 0.13~ 0.20 |
| 16 | 2100 | 0.20~ 0.30 | 2100 | 0.20~ 0.30 | 1400 | 0.20~ 0.30 | 1050 | 0.14~ 0.25 | 2100 | 0.20~ 0.30 | 1800 | 0.20~ 0.30 | 2800 | 0.25~ 0.36 | 400 | 0.14~ 0.23 |
| 18 | 1800 | 0.22~ 0.32 | 1800 | 0.22~ 0.32 | 1200 | 0.22~ 0.32 | 950 | 0.15~ 0.28 | 1800 | 0.22~ 0.32 | 1600 | 0.22~ 0.32 | 2500 | 0.28~ 0.38 | 350 | 0.15~ 0.25 |
| 20 | 1600 | 0.25~ 0.35 | 1600 | 0.25~ 0.35 | 1100 | 0.25~ 0.35 | 800 | 0.16~ 0.30 | 1600 | 0.25~ 0.35 | 1400 | 0.25~ 0.35 | 2300 | 0.30~ 0.40 | 320 | 0.16~ 0.28 |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth below 30xD.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubs wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 30xD ausgelegt.

Drilling · Bohren

Recommended cutting data · Schnittdatenempfehlung

SL series twist deep drills · SL Spiraltiefbohrer Serie (Internal coolant · Interne Kühlung)

20D 30D

| Workpiece material/ Werkstückstoff | Mild steel/ Baustahl HB≤180 | | Carbon steel, alloy steel/ Kohlenstoffstahl Leg. Stahl ~30HRC | | Pre-hardened steel/ Vergüteter Stahl ~40HRC | | Stainless steel/ Rostfreier Stahl | | Cast iron/ Gusseisen | | Nodular cast iron/ GGG | | Aluminum alloy/ Alu. Legierungen | | Heat resistant alloy/ Warmfeste Legierungen | |
|---------------------------------------|-----------------------------------|---------------|---|---------------|--|---------------|--------------------------------------|---------------|---------------------------|---------------|------------------------------|---------------|--|---------------|--|---------------|
| | Vc | 70~90 m/min | 50~80 m/min | | 40~60 m/min | | 40~60 m/min | | 50~80 m/min | | 60~80 m/min | | 100~180 m/min | | 8~15 m/min | |
| Ø (mm) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) |
| 3 | 8250 | 0.06~ 0.1 | 7650 | 0.06~ 0.1 | 5200 | 0.06~ 0.1 | 4750 | 0.03~ 0.07 | 7100 | 0.06~ 0.1 | 7600 | 0.06~ 0.1 | 12750 | 0.09~ 0.12 | 1350 | 0.03~ 0.06 |
| 4 | 6250 | 0.08~ 0.12 | 5750 | 0.08~ 0.12 | 3900 | 0.08~ 0.12 | 3600 | 0.04~ 0.08 | 5400 | 0.08~ 0.12 | 5600 | 0.08~ 0.12 | 9350 | 0.10~ 0.15 | 1050 | 0.04~ 0.07 |
| 5 | 5000 | 0.10~ 0.14 | 4600 | 0.10~ 0.14 | 3150 | 0.10~ 0.14 | 2900 | 0.05~ 0.10 | 4250 | 0.10~ 0.14 | 4550 | 0.10~ 0.14 | 7650 | 0.10~ 0.15 | 800 | 0.05~ 0.9 |
| 6 | 4150 | 0.11~ 0.16 | 3800 | 0.11~ 0.16 | 2600 | 0.11~ 0.16 | 2450 | 0.06~ 0.12 | 3600 | 0.11~ 0.16 | 3750 | 0.11~ 0.16 | 6300 | 0.11~ 0.16 | 700 | 0.06~ 0.11 |
| 8 | 3100 | 0.13~ 0.19 | 2900 | 0.13~ 0.19 | 1950 | 0.13~ 0.19 | 1800 | 0.08~ 0.16 | 2700 | 0.13~ 0.19 | 2900 | 0.13~ 0.19 | 4750 | 0.13~ 0.19 | 500 | 0.08~ 0.14 |
| 10 | 2500 | 0.14~ 0.22 | 2300 | 0.14~ 0.22 | 1550 | 0.14~ 0.22 | 1450 | 0.10~ 0.18 | 2150 | 0.14~ 0.22 | 2250 | 0.14~ 0.22 | 3850 | 0.14~ 0.22 | 400 | 0.10~ 0.16 |
| 12 | 2100 | 0.16~ 0.24 | 1950 | 0.16~ 0.24 | 1350 | 0.16~ 0.24 | 1150 | 0.12~ 0.20 | 1800 | 0.16~ 0.24 | 1900 | 0.16~ 0.24 | 3150 | 0.16~ 0.24 | 350 | 0.12~ 0.18 |
| 14 | 1800 | 0.18~ 0.28 | 1650 | 0.18~ 0.28 | 1100 | 0.18~ 0.28 | 1000 | 0.13~ 0.22 | 1500 | 0.18~ 0.28 | 1700 | 0.18~ 0.28 | 2700 | 0.18~ 0.28 | 300 | 0.13~ 0.20 |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth below 30xD.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubs wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 30xD ausgelegt.

SP series pilot drills · SP Pilotbohrer Serie (Internal coolant · Interne Kühlung)

3D

| Workpiece material/ Werkstückstoff | Mild steel/ Baustahl HB≤180 | | Carbon steel, alloy steel/ Kohlenstoffstahl Leg. Stahl ~30HRC | | Pre-hardened steel/ Vergüteter Stahl ~40HRC | | Stainless steel/ Rostfreier Stahl | | Cast iron/ Gusseisen | | Nodular cast iron/ GGG | | Aluminum alloy/ Alu. Legierungen | | Heat resistant alloy/ Warmfeste Legierungen | |
|---------------------------------------|-----------------------------------|---------------|---|---------------|--|---------------|--------------------------------------|---------------|---------------------------|---------------|------------------------------|---------------|--|---------------|--|---------------|
| | Vc | 80~150m/min | | 80~150m/min | | 50~80m/min | | 50~80m/min | | 80~150m/min | | 60~120m/min | | 100~180m/min | | 15~25m/min |
| Ø (mm) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) | n (min ⁻¹) | f (mm/r) |
| 3 | 12700 | 0.09~ 0.12 | 12700 | 0.09~ 0.12 | 7400 | 0.09~ 0.12 | 6300 | 0.03~ 0.07 | 12700 | 0.09~ 0.12 | 9500 | 0.09~ 0.12 | 15000 | 0.09~ 0.12 | 2100 | 0.03~ 0.06 |
| 4 | 9600 | 0.10~ 0.15 | 9600 | 0.10~ 0.15 | 5600 | 0.10~ 0.15 | 4700 | 0.04~ 0.08 | 9600 | 0.10~ 0.15 | 7000 | 0.10~ 0.15 | 11100 | 0.10~ 0.15 | 1600 | 0.04~ 0.07 |
| 5 | 7600 | 0.12~ 0.18 | 7600 | 0.12~ 0.18 | 4500 | 0.12~ 0.18 | 3800 | 0.05~ 0.10 | 7600 | 0.12~ 0.18 | 5700 | 0.12~ 0.18 | 9000 | 0.12~ 0.18 | 1250 | 0.05~ 0.09 |
| 6 | 6400 | 0.14~ 0.20 | 6400 | 0.14~ 0.20 | 3700 | 0.14~ 0.20 | 3200 | 0.06~ 0.12 | 6400 | 0.14~ 0.20 | 4700 | 0.14~ 0.20 | 7400 | 0.14~ 0.20 | 1050 | 0.06~ 0.11 |
| 8 | 4800 | 0.16~ 0.24 | 4800 | 0.16~ 0.24 | 2800 | 0.16~ 0.24 | 2400 | 0.08~ 0.16 | 4800 | 0.16~ 0.24 | 3600 | 0.16~ 0.24 | 5600 | 0.16~ 0.24 | 800 | 0.08~ 0.14 |
| 10 | 3800 | 0.18~ 0.27 | 3800 | 0.18~ 0.27 | 2200 | 0.18~ 0.27 | 1900 | 0.10~ 0.18 | 3800 | 0.18~ 0.27 | 2800 | 0.18~ 0.27 | 4500 | 0.18~ 0.27 | 600 | 0.10~ 0.16 |
| 12 | 3200 | 0.20~ 0.30 | 3200 | 0.20~ 0.30 | 1900 | 0.20~ 0.30 | 1600 | 0.12~ 0.20 | 3200 | 0.20~ 0.30 | 2400 | 0.20~ 0.30 | 3700 | 0.20~ 0.30 | 500 | 0.12~ 0.18 |
| 14 | 2700 | 0.22~ 0.35 | 2700 | 0.22~ 0.35 | 1600 | 0.22~ 0.35 | 1350 | 0.13~ 0.22 | 2700 | 0.22~ 0.35 | 2100 | 0.22~ 0.35 | 3200 | 0.22~ 0.35 | 450 | 0.13~ 0.20 |

1. When the tool is used for the first time, please make a test cutting with 90% of cutting speed or 85% feed rate mentioned above. If the cutting conditions remain stable, gradually increase the cutting speed and feed rate.
2. The cutting conditions above are for drilling with emulsion.
3. Use a collet without any defect or dust. The radial run-out of drill must be under 0.02mm.
4. These conditions above are for cutting depth below 3xD.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubs wählen. Bei stabiler Bearbeitung die Schnittdaten entsprechend erhöhen.
2. Die obigen Schnittdatenempfehlungen basieren auf dem Einsatz von Emulsion.
3. Keine defekte Werkzeugaufnahme wählen. Die Rundlaufgenauigkeit muss unter 0,02mm liegen.
4. Die obigen Schnittdaten sind für Bohrungstiefen unter 3xD ausgelegt.



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