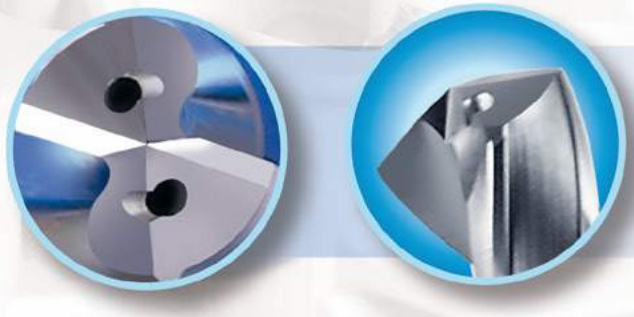
1588SL for deep drilling *zum Tieflochbohren*

10xD 12xD 15xD 20xD 30xD

New

1588SLK Deep drills for grey cast iron
Tieflochbohrer für Graugussmaterialien



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**

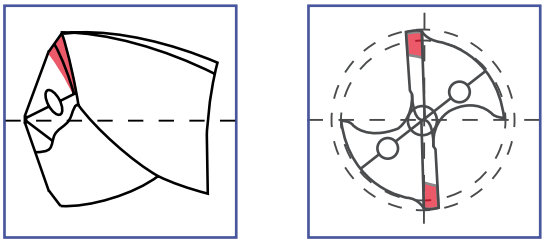
DIN 1412 D

Deep drills for grey cast iron
Tieflochbohrer für die Bearbeitung von Graugussmaterialien

For grey cast iron
Für Graugussmaterialien

SL K

Twist drill for deep drilling
Spiralbohrer zum Tieflochbohren



Form D - Double Angle for Cast Iron
Form D - Anschliff 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

SL & SLK

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

General machining · Allgemeine Bearbeitung
(Deep drill · Tiefbohrer)

1588SL10C / 1588SL12C / 1588SL15C

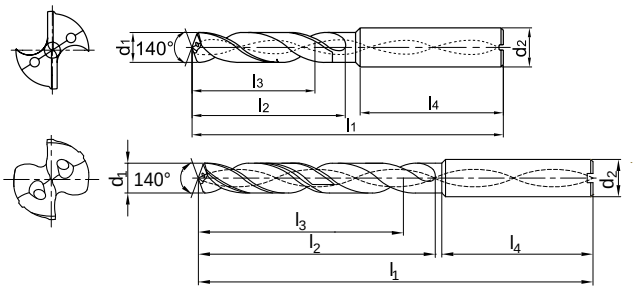
Internal Coolant
Interne Kühlung

Straight shank
Zylinderschaft

1588SL20C / 1588SL30C

Internal Coolant
Interne Kühlung

Straight shank
Zylinderschaft



Drilling diameter Bohrerdurchmesser d_1 12D(m7) 20/30D(h7)	Drilling depth Bohrtiefe (l/d_1)	Cooling mode Kühlmittel.	Shank Schaft	Type Typ	Basic dimension(mm) · Basis Abmessungen					Grade Sorte
					$d_2(h_5)$	l_1	l_2	l_3	l_4	KDG303
3.0	10	Internal Intern	Straight shank Zylinder-schaft	**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 Kugelgra-phitguss	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*

SL & SLK

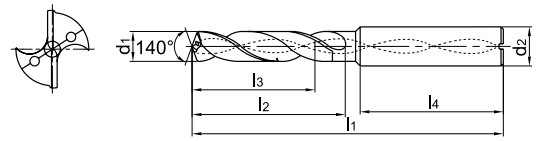
Please add K when ordering / *Bitte bei der Bestellung K ergänzen*

General machining · Allgemeine Bearbeitung
(Deep drill · Tiefbohrer)

1588SL10C /1588SL12C / 1588SL15C

Internal Coolant
Interne Kühlung

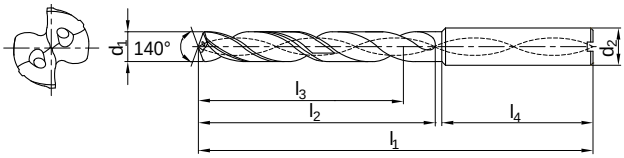
Straight shank
Zylinderschaft



1588SL20C / 1588SL30C

Internal Coolant
Interne Kühlung

Straight shank
Zylinderschaft



Drilling diameter Bohrerdurchmesser d_1 12D(m7) 20/30D(h7)	Drilling depth Bohrtiefe (l/d_1)	Cooling mode Kühlmittel.	Shank Schaft	Type Typ	Basic dimension(mm) · Basis Abmessungen					Grade Sorte
					$d_2(h_5)$	l_1	l_2	l_3	l_4	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	○

● ex Stock · *ab Lager* ○ on demand · *auf Anfrage*
All articles 1588SLK on demand / *Alle Artikel 1588SLK auf Anfrage*

Drilling diameter Bohrerdurchmesser d_1 12D(m7) 20/30D(h7)	Drilling depth Bohrtiefe (l/d_1)	Cooling mode Kühlmittel.	Shank Schaft	Type Typ	Basic dimension(mm) · Basis Abmessungen					Grade Sorte
					$d_2(h_5)$	l_1	l_2	l_3	l_4	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**							✔				

SL & SLK

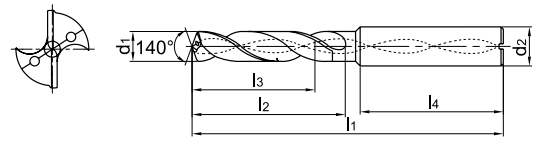
Please add K when ordering / *Bitte bei der Bestellung K ergänzen*

General machining · Allgemeine Bearbeitung
(Deep drill · Tiefbohrer)

1588SL10C /1588SL12C / 1588SL15C

Internal Coolant
Interne Kühlung

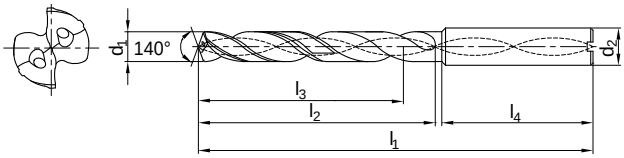
Straight shank
Zylinderschaft



1588SL20C / 1588SL30C

Internal Coolant
Interne Kühlung

Straight shank
Zylinderschaft



Drilling diameter Bohrerdurchmesser d_1 12D(m7) 20/30D(h7)	Drilling depth Bohrtiefe (l/d_1)	Cooling mode Kühlmittel.	Shank Schaft	Type Typ	Basic dimension(mm) · Basis Abmessungen					Grade Sorte
					$d_2(h_5)$	l_1	l_2	l_3	l_4	KDG303
5.7	10	Internal Intern	Straight shank Zylinder-schaft	**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	●

● ex Stock · *ab Lager* ○ on demand · *auf Anfrage*
All articles 1588SLK on demand / *Alle Artikel 1588SLK auf Anfrage*

Drilling diameter Bohrerdurchmesser d_1 12D(m7) 20/30D(h7)	Drilling depth Bohrtiefe (l/d_1)	Cooling mode Kühlmittel.	Shank Schaft	Type Typ	Basic dimension(mm) · Basis Abmessungen					Grade Sorte
					$d_2(h_5)$	l_1	l_2	l_3	l_4	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**							✔				

SL & SLK

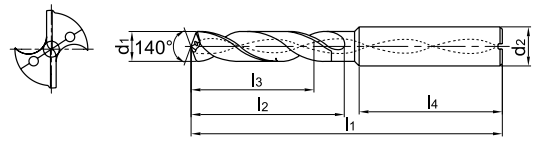
Please add K when ordering / *Bitte bei der Bestellung K ergänzen*

General machining · Allgemeine Bearbeitung
(Deep drill · Tiefbohrer)

1588SL10C /1588SL12C / 1588SL15C

Internal Coolant
Interne Kühlung

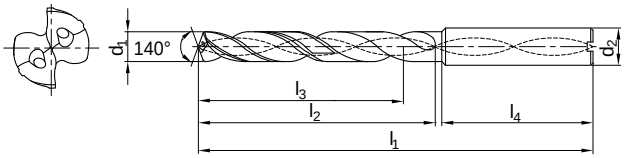
Straight shank
Zylinderschaft



1588SL20C / 1588SL30C

Internal Coolant
Interne Kühlung

Straight shank
Zylinderschaft



Drilling diameter Bohrerdurchmesser d_1 12D(m7) 20/30D(h7)	Drilling depth Bohrtiefe (l/d_1)	Cooling mode Kühlmittel.	Shank Schaft	Type Typ	Basic dimension(mm) · Basis Abmessungen					Grade Sorte
					$d_2(h_5)$	l_1	l_2	l_3	l_4	KDG303
7.6	10	Internal Intern	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	○

● ex Stock · *ab Lager* ○ on demand · *auf Anfrage*
All articles 1588SLK on demand / *Alle Artikel 1588SLK auf Anfrage*

Drilling diameter Bohrerdurchmesser d_1 12D(m7) 20/30D(h7)	Drilling depth Bohrtiefe (l/d_1)	Cooling mode Kühlmittel.	Shank Schaft	Type Typ	Basic dimension(mm) · Basis Abmessungen					Grade Sorte
					$d_2(h_5)$	l_1	l_2	l_3	l_4	KDG303
8.5	10	Internal Intern	Straight shank Zylinder-schaft	**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			**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			**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			**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			**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			**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			**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			**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			**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			**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**							✔				

SL & SLK

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

General machining · Allgemeine Bearbeitung
(Deep drill · Tiefbohrer)

1588SL10C /1588SL12C / 1588SL15C

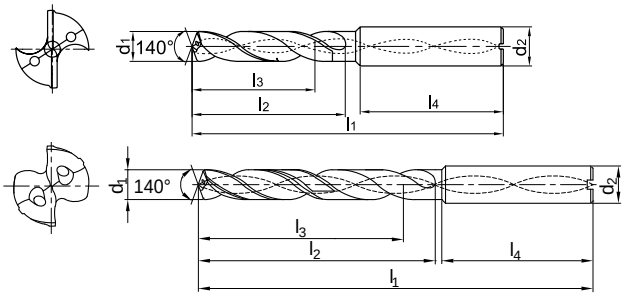
Internal Coolant
Interne Kühlung

Straight shank
Zylinderschaft

1588SL20C / 1588SL30C

Internal Coolant
Interne Kühlung

Straight shank
Zylinderschaft



Drilling diameter Bohrerdurchmesser d_1 12D(m7) 20/30D(h7)	Drilling depth Bohrtiefe (l/d_1)	Cooling mode Kühlmittel.	Shank Schaft	Type Typ	Basic dimension(mm) · Basis Abmessungen					Grade Sorte
					$d_2(h_5)$	l_1	l_2	l_3	l_4	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	○

● ex Stock · *ab Lager* ○ on demand · *auf Anfrage*
All articles 1588SLK on demand / *Alle Artikel 1588SLK auf Anfrage*

Drilling diameter Bohrerdurchmesser d_1 12D(m7) 20/30D(h7)	Drilling depth Bohrtiefe (l/d_1)	Cooling mode Kühlmittel.	Shank Schaft	Type Typ	Basic dimension(mm) · Basis Abmessungen					Grade Sorte
					$d_2(h_5)$	l_1	l_2	l_3	l_4	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**							✔				

SL & SLK

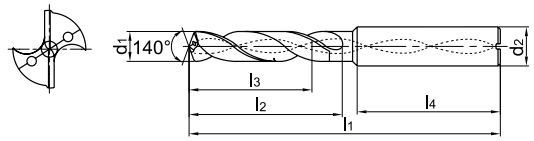
Please add K when ordering / *Bitte bei der Bestellung K ergänzen*

General machining · Allgemeine Bearbeitung
(Deep drill · Tiefbohrer)

1588SL10C /1588SL12C / 1588SL15C

Internal Coolant
Interne Kühlung

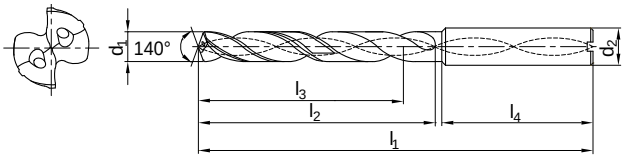
Straight shank
Zylinderschaft



1588SL20C / 1588SL30C

Internal Coolant
Interne Kühlung

Straight shank
Zylinderschaft



Drilling diameter Bohrerdurchmesser d_1 12D(m7) 20/30D(h7)	Drilling depth Bohrtiefe (l/d_1)	Cooling mode Kühlmittel.	Shank Schaft	Type Typ	Basic dimension(mm) · Basis Abmessungen					Grade Sorte
					$d_2(h_5)$	l_1	l_2	l_3	l_4	KDG303
11.8	10	Intern / Internal	Zylinderschaft / Straight shank	**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			**1588SL12C-1270**	14	230	182	168	45	○
12.75	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			**1588SL10C-1310**	14	209	160	144	45	●
13.5	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	●
14.0	10			**1588SL10C-1400**	14	209	160	144	45	●
	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	○

● ex Stock · *ab Lager* ○ on demand · *auf Anfrage*
All articles 1588SLK on demand / *Alle Artikel 1588SLK auf Anfrage*

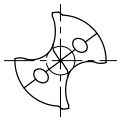
SP series · SP Serie

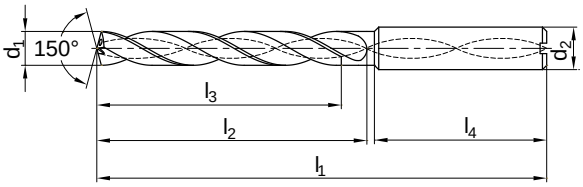
General machining · Allgemeine Bearbeitung

1534SP03C Pilot drills · Pilotbohrer

Internal Coolant
Interne Kühlung

Straight shank
Zylinderschaft





1534SP03C* Drilling diameter/ Bohrerdurchmesser $d_1(h_7)$	Drilling depth/ Bohrtiefe (l/d_1)	1588SL20C*/30C* Drilling diameter/ Bohrerdurchmesser $d_1(h_7)$	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
3.03	3	3.0			**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	Internal	Straight shank	**1534SP03C-0433**	6	66	24	17	36	○
4.43	3	4.40	Intern	Zylinder-schaft	**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	○

✔ = 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 Kugelgra-phitguss	Aluminum alloy Aluleg.	Copper alloy Kupferleg.	Heat resist. alloy Warmfeste Leg.
				~40HRC	~50HRC	~60HRC						
1588SL*	**KDG303**	✔	✔	✔			✔	✔	✔	✔		✔
1588SLK*	**KDG303**							✔				
1534SP*	**KDG303**	✔	✔	✔			✔	✔	✔	✔		✔

1534SP03C* Drilling diameter/ Bohrerdurchmesser $d_1(h_7)$	Drilling depth/ Bohrtiefe (l/d_1)	1588SL20C*/30C* Drilling diameter/ Bohrerdurchmesser $d_1(h_7)$	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 · ~40HRC	Hardened steel · ~50HRC	Hardened steel · ~60HRC	Stainless steel	Grey cast iron	Nodular cast iron GGG	Aluminum alloy	Copper alloy	Heat resist. alloy
1534SP*	**KDG303**	✔	✔	✔			✔	✔	✔	✔		✔

● ex Stock · *ab Lager* ○ on demand · *auf Anfrage*
All articles 1588SLK on demand / *Alle Artikel 1588SLK auf Anfrage*

1534SP03C* Drilling diameter/ Bohrerdurchmesser $d_1(h_7)$	Drilling depth/ Bohrtiefe (l/d_1)	1588SL20C*/30C* Drilling diameter/ Bohrerdurchmesser $d_1(h_7)$	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
9.53	3	9.50	Internal Intern	Straight shank Zylinder-schaft	**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.	Heat resist. alloy Warmfeste Leg.
				~40HRC	~50HRC	~60HRC						
1534SP*	**KDG303**	✔	✔	✔			✔	✔	✔	✔		✔

1534SP03C* Drilling diameter/ Bohrerdurchmesser $d_1(h_7)$	Drilling depth/ Bohrtiefe (l/d_1)	1588SL20C*/30C* Drilling diameter/ Bohrerdurchmesser $d_1(h_7)$	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
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	○

✔ = Very suitable · *Sehr empfohlen*
✔ = Suitable · *Empfohlen*

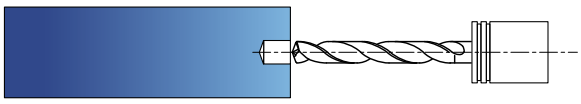
Material Overview · Material Übersicht

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

SL series · SL Serie

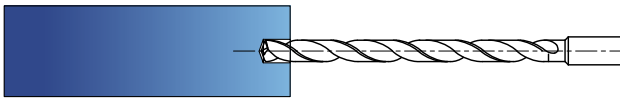
Recommended cutting data · Schnittdatenempfehlung (Deep drill · Tiefbohrer)

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



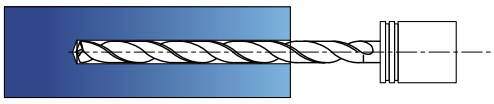
– Top angel of pilot drill must be bigger than SL-drill.
Spitzenwinkel des Pilotbohrers muß größer sein als beim SL-Bohrer.
– Diameter of pilot drill must be 0.01~0.04mm bigger than SL-drill.
Der Durchmesser des Pilotbohrers sollte 0.01~0.04 mm größer sein als beim SL-Bohrer.
– The pilot hole should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

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



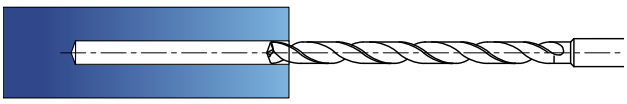
– Entering the pilot hole with low cutting speed.(V_C:20~30m/min)
Den SL-Bohrer mit geringer Drehzahl in die Pilotbohrung einführen. (V_C:20~30 m/min)
– 1~3 mm stop before end of pilot hole. (V_f=0)
1~3 mm vor dem Lochende stehenbleiben. (V_f=0)
– Increase cutting speed up to recommended parameter and 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 (V_C: 20~30 m/min) and pull back the drill by high feed rate. (V_f: 2000 mm/min)
Nach Erreichen der geforderten Bohrtiefe die Schnittgeschwindigkeit reduzieren (V_C: 20~30 m/min) und den Bohrer mit hohem Vorschub (V_f: 2000 mm/min) herausziehen.

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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/ Werkstück-stoff	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.

SL series twist deep drills · SL Spiraltiefbohrer Serie (Internal coolant · Interne Kühlung) 20D 30D

Workpiece material/ Werkstück-stoff	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/ Werkstück-stoff	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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