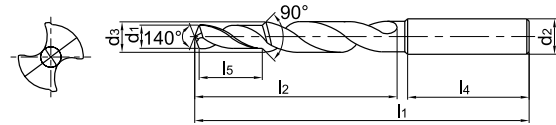


SU series · SU Serie

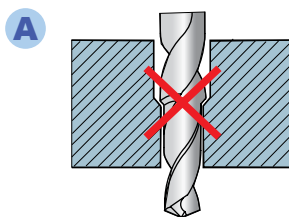
General machining · Allgemeine Bearbeitung (Step drill · Stufenbohrer)



- For thread pre-hole, chamfering.
- Gewindebohrung mit Fase.

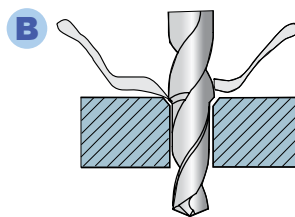
Drill diameter d1(m8)	Drilling depth Bohrtiefe (L/d1)	Cooling mode Kühlmittel	Shank Schaft	Type Typ	Basic dimension(mm) · Basis Abmessungen						Grade Sorte	
					Thread size Gewinde	d2 (h6)	d3	l1	l2	l4		l5
3.3	3	External Extern	Straight shank Zylinderschaft	1557SU03-M4	M4	6.0	4.5	66	28	36	11.4	●
4.2	3			1557SU03-M5	M5	6.0	6.0	66	28	36	13.6	●
5.0	3			1557SU03-M6	M6	8.0	7.0	79	41	36	16.5	●
6.75	3			1557SU03-M8	M8	10.0	9.5	89	47	40	21.0	●
8.5	3			1557SU03-M10	M10	12.0	12.0	102	55	45	25.5	●
10.25	3			1557SU03-M12	M12	14.0	14.0	107	60	45	30.0	●
12.0	3			1557SU03-M14	M14	16.0	16.0	115	65	48	34.5	●
14.0	3			1557SU03-M16	M16	18.0	18.0	123	73	48	38.5	●
7.0	3			1557SU03-M8×1.0	M8×1.0	10.0	9.8	89	47	40	21.0	○
9.0	3			1557SU03-M10×1.0	M10×1.0	12.0	12.0	102	55	45	25.5	○
10.5	3			1557SU03-M12×1.5	M12×1.5	14.0	14.0	107	60	45	30.0	●
12.5	3			1557SU03-M14×1.5	M14×1.5	16.0	16.0	115	65	48	34.5	○
14.5	3			1557SU03-M16×1.5	M16×1.5	18.0	18.0	123	73	48	38.5	○

Attentions when using step drill · Einsatzempfehlung für Stufenbohrer



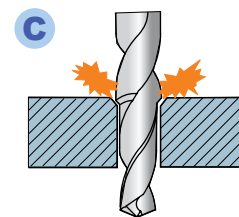
Because of no chamfer on the large diameter, countersink drill as shown above is not possible.

Aufgrund der fehlenden Fase, bei großen Durchmessern ist das Aufbohren nicht zu empfehlen.



Long chips will roll around the drill and obstruct machining when countersink drill. It is recommended to select small feed drilling in order to cut chips.

Beim Ansenken können lange Späne entstehen. Vorschub reduzieren.



When countersink drill, cutting force increases at initial. Reduce the feedrate/ please.

Beim Aufbohren werden die Schnittkräfte höher. Bitte Vorschub reduzieren.

Material Overview · Material Übersicht

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

Grade Sorte	Workpiece material · Werkstückstoff										
	Carbon steel Kohlenstoff Stahl HB≤180	Alloy steel Legierter Stahl	Hardened steel · Gehärteter Stahl			Stainless steel Rostfreier Stahl	Cast iron, Grauguss	Nodular cast iron GGG Kugelgraphitguss	Aluminum alloy Alu leg.	Copper alloy Kupfer leg.	Heat resist. alloy Warmfest. leg.
			~40HRC	~50HRC	~60HRC						
KDG303	✓	✓	✓			✓	✓	✓			

SU series step drills · SU Stufenbohrer Serie (External coolant / 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 Kugelgraphitguss		Aluminum alloy Alulegierungen		Heat resistant alloy Warmfeste Legierungen	
Vc	50~100m/min		50~100m/min		30~50m/min		25~40m/min		50~100m/min		40~80m/min		60~120m/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)
3.3	5800	0.09~0.12	5800	0.09~0.12	3850	0.09~0.12	2900	0.03~0.07	5800	0.09~0.12	5000	0.09~0.12	10000	0.09~0.12	1600	0.03~0.06
4.2	4550	0.10~0.15	4550	0.10~0.15	3000	0.10~0.15	2300	0.04~0.08	4550	0.10~0.15	3800	0.10~0.15	7600	0.10~0.15	1250	0.04~0.07
5	3800	0.12~0.18	3800	0.12~0.18	2550	0.12~0.18	1900	0.05~0.10	3800	0.12~0.18	3200	0.12~0.18	6400	0.12~0.18	1050	0.05~0.10
6.75	2850	0.14~0.20	2850	0.14~0.20	1900	0.14~0.20	1400	0.06~0.12	2850	0.14~0.20	2400	0.14~0.20	4800	0.14~0.20	800	0.06~0.11
7	2750	0.15~0.22	2750	0.15~0.22	1800	0.15~0.22	1350	0.07~0.14	2750	0.15~0.22	2300	0.15~0.22	4550	0.15~0.22	730	0.07~0.12
8.5	2250	0.16~0.24	2250	0.16~0.24	1500	0.16~0.24	1100	0.08~0.16	2250	0.16~0.24	1800	0.16~0.24	3600	0.16~0.24	600	0.08~0.14
9	2100	0.17~0.25	2100	0.17~0.25	1400	0.17~0.25	1050	0.09~0.17	2100	0.17~0.25	1750	0.17~0.25	3500	0.17~0.25	560	0.09~0.15
10.25	1850	0.18~0.27	1850	0.18~0.27	1250	0.18~0.27	930	0.10~0.18	1850	0.18~0.27	1550	0.18~0.27	3100	0.18~0.27	500	0.10~0.16
10.5	1800	0.19~0.28	1800	0.19~0.28	1200	0.19~0.28	900	0.11~0.19	1800	0.19~0.28	1500	0.19~0.28	3000	0.19~0.28	480	0.11~0.17
12	1600	0.20~0.30	1600	0.20~0.30	1050	0.20~0.30	800	0.12~0.20	1600	0.20~0.30	1300	0.20~0.30	2600	0.20~0.30	450	0.12~0.18
12.5	1550	0.20~0.30	1550	0.20~0.30	1000	0.20~0.30	760	0.12~0.20	1550	0.20~0.30	1250	0.20~0.30	2550	0.20~0.30	410	0.12~0.18
14	1350	0.22~0.35	1350	0.22~0.35	900	0.22~0.35	700	0.14~0.24	1350	0.22~0.35	1150	0.22~0.35	2300	0.22~0.35	370	0.13~0.20
14.5	1300	0.22~0.35	1300	0.22~0.35	880	0.22~0.35	650	0.14~0.24	1300	0.22~0.35	1050	0.22~0.35	2200	0.22~0.35	350	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.

1. Beim ersten Einsatz 90% der empfohlenen Schnittgeschwindigkeit oder 85% des Vorschubes 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 unten 0,02mm liegen.

C

Solid Carbide drills
Vollhartmetallbohrer