



VOLLHARTMETALL

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**WECHSELPLATTENBOHRER**



## ISO-CODES

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

Auf den Produktseiten finden Sie zu jedem Werkzeug Empfehlungen zur Eignung für die Anwendungsgruppen bzw. die Angaben von max. Zugfestigkeit und Härte:

- optimal geeignet
- bedingt geeignet
- nicht geeignet



## PIKTOGRAMME

SCHNEIDSTOFF	VHM				HM							
	Vollhartmetall				Hartmetall							
BESCHICHTUNG	blank	vernickelt	TiN	TiAlN nano	AlTiN nano	Al-TiN	TiAlN	TiCN	Al-TiN+			
Ø-TOLERANZ	h5	h6	h7	h8	m7							
BOHRTIEFE	1,5xD	3xD	4xD	5xD	7xD	8xD	10xD	12xD	15xD			
	20xD	25xD	30xD	40xD	50xD	75xD	80xD	~3xD	~5xD			
SCHNEIDRICHTUNG	 rechts											
SCHAFTFORM	Cyl	HA	HE	MK								
SPITZENWINKEL	90°	118°	120°	130°	135°	140°	142°	145°				
NORM	DIN 6539	DIN 6537K	DIN 6537L	DIN 8037	DIN 8041	WN						
TYP	Werksnorm											
	SuperV-F	SuperV-U	SuperV- <b>IK-U</b>	SuperV-VA	SuperV-95-GG	SuperV- <b>IK-F</b>	SuperV-95-GN	SuperV-T	SuperV-83-GAL	N	TBE-VHM	
	SuperV-NX	SuperV- <b>IK-NX</b>	SuperV-M	SuperV-AP mini	SuperV-AP mini U	SuperV-AP mini VA	SuperV-AP mini AL	SuperV-AP mini NC	SuperV-APmaxi	SuperT-AL	SuperT-N	SuperT-NX

P	M	K	N	S	H	Typ	Schaftform	Bohrtiefe	Schneidstoff	Oberfläche	Norm	d1/mm	Katalog-Nr.	Progr. Seite
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### SuperV-NX VHM-Hochleistungs-Kleinstbohrer mit Innenkühlung

	•	•	•	○	○	SuperV-IK-NX	HA	5xD	VHM	AlTiN	Werksnorm	1,400 - 3,000	51997	105
	•	•	•	○	○	SuperV-IK-NX	HA	8xD	VHM	AlTiN	Werksnorm	1,400 - 3,000	51998	106
	•	•	•	○	○	SuperV-IK-NX	HA	15xD	VHM	AlTiN	Werksnorm	1,400 - 3,000	51999	107

### SuperV-M VHM-Universal-Kleinstbohrer

	•	•	•	○	○	SuperV-M	HA		VHM	AlTiN	Werksnorm	0,100 - 3,000	51720	108
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### SuperV-AP mini Wechselplattenhalter

						SuperV-AP mini	HE	1,5xD		vernickelt	Werksnorm		77007	109
						SuperV-AP mini	HE	3xD		vernickelt	Werksnorm		77000	110
						SuperV-AP mini	HE	5xD		vernickelt	Werksnorm		77001	111
						SuperV-AP mini	HE	7xD		vernickelt	Werksnorm		77003	112
						SuperV-AP mini	HE	10xD		vernickelt	Werksnorm		77004	113

### SuperV-AP mini Wechselplatte

	•	○	○	○		SuperV-AP mini U			VHM	TiAlN-nano	Werksnorm	11,000 - 40,000	67011	114
	•	○	○	○		SuperV-AP mini VA			VHM	AlTiN nano	Werksnorm	11,000 - 40,000	67012	117
	•	○	○	○		SuperV-AP mini AL			VHM	blank	Werksnorm	11,000 - 40,000	77012	120

P	M	K	N	S	H	Typ	Schaftform	Bohrtiefe	Schneidstoff	Oberfläche	Norm	d1/mm	Katalog-Nr.	Progr. Seite
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### SuperV-AP mini Wechselplatte



•	•	•	•	○		SuperV-AP mini NC			<b>VHM</b>	AlTiN nano	Werksnorm	11,000 - 40,000	<b>77011</b>	123
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### SuperV-AP maxi Wechselplattenhalter



						SuperV-AP maxi	HE	3xD		vernickelt	Werksnorm		<b>76000</b>	125
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						SuperV-AP maxi	HE	5xD		vernickelt	Werksnorm		<b>76001</b>	126
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						SuperV-AP maxi	HE	7xD		vernickelt	Werksnorm		<b>76003</b>	127
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### SuperV-AP maxi Wechselplatte



•	•	•	○			SuperV-AP maxi			<b>VHM</b>	TiN	Werksnorm	16,000 - 40,500	<b>76011</b>	128
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•	•	•	○			SuperV-AP maxi			<b>VHM</b>	TiAlN	Werksnorm	16,000 - 40,500	<b>56011</b>	129
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### Spannschrauben



											Werksnorm		<b>76020</b>	130
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											Werksnorm		<b>77020</b>	130
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											Werksnorm		<b>77022</b>	131
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											Werksnorm		<b>77021</b>	131
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											Werksnorm		<b>76021</b>	131
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# SuperV-AP mini - Das Wechsellplatten-Bohrsystem

## Arbeitsrichtwerte

Vorschubreihen										
Code-Buchstabe	A	B	C	D	E	F	G	H	I	
Werkzeug-Ø mm	10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
	12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
	16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
	20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
	25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
	31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
	40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250

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

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

### Kühlmitteleinsatz:

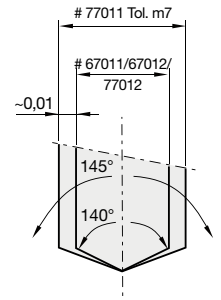
- Schneidöl, hochaktiviert ■
- Bohrölemulsion ■
- ohne Schmiermittel
- nur Luftkühlung

Bitte beachten Sie die Anwendungsrichtlinien auf Seite 55!

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

# Wechselplatten-Träger $\leq 1,5 \times D$ , Pilotierwerkzeug

## Katalog-Nr. 77007



Katalog-Nr.	<b>67011</b>
Schneidstoff	<b>VHM</b>
HM-Anwendungsgr.	K/P
Oberfläche	TiAlN nano
Typ	U
Innenkühlung	axial
Katalogseite	114



Katalog-Nr.	<b>67012</b>
Schneidstoff	<b>VHM</b>
HM-Anwendungsgr.	K/P
Oberfläche	AlTiN nano
Typ	VA
Innenkühlung	axial
Katalogseite	117



Katalog-Nr.	<b>77012</b>
Schneidstoff	<b>VHM</b>
HM-Anwendungsgr.	K/P
Oberfläche	blank
Typ	AL
Innenkühlung	axial
Katalogseite	120



Katalog-Nr.	<b>77011</b>
Schneidstoff	<b>VHM</b>
HM-Anwendungsgr.	K/P
Oberfläche	AlTiN nano
Typ	NC
Innenkühlung	axial
Katalogseite	123



$v_c$ m/min	VR-Code
130	F
110	E
130	G
110	F
130	F
125	F
110	E
110	F
90	E
130	G
110	F
70	D
105	E
70	D
60	E
55	D
55	C
50	B
25	B
55	C
40	C
35	C
90	F
25	B
40	C
35	B
200	G
180	G
150	G
120	G
180	G
70	F
180	G
120	F
70	F
50	F
45	F
35	E

$v_c$ m/min	VR-Code
25	B
55	C
40	C
35	C
90	F
25	B
40	C
35	B
200	G
180	G
150	G
120	G
180	G
70	F
180	G
120	F
70	F
50	F
45	F
35	E

$v_c$ m/min	VR-Code
130	F
110	E
130	G
110	F
130	F
125	F
110	E
110	F
90	E
130	G
110	F
70	D
105	E
70	D
60	E
55	D
55	C
50	B
25	B
55	C
40	C
35	C
100	F
90	F
120	G
100	F
80	E
80	E
80	E
80	E
90	F
25	B
40	C
35	B
200	G
180	G
150	G
120	G
180	G
70	F
180	G
120	F
70	F
50	F
45	F
35	E

$v_c$ m/min	VR-Code
130	F
110	E
130	G
110	F
130	F
125	F
110	E
110	F
90	E
130	G
110	F
70	D
105	E
70	D
60	E
55	D
55	C
50	B
25	B
55	C
40	C
35	C
100	F
90	F
120	G
100	F
80	E
80	E
80	E
80	E
90	F
25	B
40	C
35	B
200	G
180	G
150	G
120	G
180	G
70	F
180	G
120	F
70	F
50	F
45	F
35	E

# SuperV-AP mini - Das Wechsellplatten-Bohrsystem

## Arbeitsrichtwerte

Vorschubreihen										
Code-Buchstabe	A	B	C	D	E	F	G	H	I	
Werkzeug-Ø mm	10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
	12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
	16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
	20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
	25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
	31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
	40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250

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

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

### Kühlmitteleinsatz:

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

Bitte beachten Sie die Anwendungsrichtlinien auf Seite 55!

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





# SuperV-AP mini - Das Wechselplatten-Bohrsystem

## Arbeitsrichtwerte

Vorschubreihen										
Code-Buchstabe	A	B	C	D	E	F	G	H	I	
Werkzeug-Ø mm	10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
	12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
	16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
	20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
	25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
	31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
	40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250

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

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

### Kühlmitteleinsatz:

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

Bitte beachten Sie die Anwendungsrichtlinien auf Seite 55!

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



# SuperV-AP mini - Das Wechsellplatten-Bohrsystem

## Arbeitsrichtwerte

Vorschubreihen										
Code-Buchstabe	A	B	C	D	E	F	G	H	I	
Werkzeug-Ø mm	10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
	12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
	16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
	20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
	25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
	31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
	40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250

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

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

### Kühlmitteleinsatz:

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

Bitte beachten Sie die Anwendungsrichtlinien auf Seite 55!

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



# SuperV-AP mini - Das Wechselplatten-Bohrsystem

## Arbeitsrichtwerte

Vorschubreihen										
Code-Buchstabe	A	B	C	D	E	F	G	H	I	
Werkzeug-Ø mm	10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
	12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
	16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
	20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
	25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
	31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
	40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250

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

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

### Kühlmitteleinsatz:

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

Bitte beachten Sie die Anwendungsrichtlinien auf Seite 55!

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



# SuperV-AP maxi - Das Wechsellplatten-Bohrsystem

## Arbeitsrichtwerte

Vorschubreihen										
Code-Buchstabe	A	B	C	D	E	F	G	H	I	
Werkzeug-Ø mm	10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
	12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
	16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
	20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
	25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
	31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
	40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250

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

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

- Kühlmitteleinsatz:**
- Schneidöl, hochaktiviert
  - Bohrölemulsion
  - ohne Schmiermittel
  - nur Luftkühlung

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

# Wechselplatten-Träger ≤ 3×D

## Katalog-Nr. 76000



Katalog-Nr.	<b>56011</b>
Schneidstoff	<b>VHM</b>
HM-Anwendungsgr.	K/P
Oberfläche	TiAlN
Typ	SuperV-AP maxi
Innenkühlung	axial
Katalogseite	129

Katalog-Nr.	<b>76011</b>
Schneidstoff	<b>VHM</b>
HM-Anwendungsgr.	K/P
Oberfläche	TiN
Typ	SuperV-AP maxi
Innenkühlung	axial
Katalogseite	128



V <sub>c</sub> m/min	VR-Code
130	F
110	E
130	G
110	F
130	F
125	F
110	E
110	F
90	E
130	G
110	F
70	D
105	E
70	D
55	E
50	D
55	C
50	B
25	B
55	C
40	C
35	C
210	G
155	G
155	G
130	F
35	B
40	C
35	B
290	G
260	G
235	G
195	G
260	G
105	F
270	G
180	F
105	F
85	F
65	F
55	E
105	E
105	E
105	E
105	E

V <sub>c</sub> m/min	VR-Code
100	F
85	E
100	G
85	F
100	F
95	F
85	E
85	F
70	E
100	G
85	F
55	D
80	E
55	D
40	E
35	D
40	C
35	B
20	B
40	C
30	C
25	C
160	G
80	G
120	G
100	F
25	B
30	C
25	B
220	G
200	G
180	G
150	G
200	G
80	F
210	G
140	F
80	F
65	F
50	F
40	E
80	E
80	E
80	E
80	E



# SuperV-AP maxi - Das Wechsellplatten-Bohrsystem

## Arbeitsrichtwerte

Vorschubreihen										
Code-Buchstabe	A	B	C	D	E	F	G	H	I	
Werkzeug-Ø mm	10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
	12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
	16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
	20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
	25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
	31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
	40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250

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

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

- Kühlmitteleinsatz:**
- Schneidöl, hochaktiviert
  - Bohrölemulsion
  - ohne Schmiermittel
  - nur Luftkühlung

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

# Wechselplatten-Träger ≤ 5×D

## Katalog-Nr. 76001



Katalog-Nr.	<b>56011</b>
Schneidstoff	<b>VHM</b>
HM-Anwendungsgr.	K/P
Oberfläche	TiAlN
Typ	SuperV-AP maxi
Innenkühlung	axial
Katalogseite	129

Katalog-Nr.	<b>76011</b>
Schneidstoff	<b>VHM</b>
HM-Anwendungsgr.	K/P
Oberfläche	TiN
Typ	SuperV-AP maxi
Innenkühlung	axial
Katalogseite	128



V <sub>c</sub> m/min	VR-Code
125	F
105	E
125	G
105	F
125	F
120	F
105	E
105	F
85	E
125	G
105	F
70	D
105	E
70	D
55	E
50	D
55	C
50	B
25	B
55	C
40	C
35	C
195	G
145	G
145	G
120	F
35	B
25	B
40	C
35	B
260	G
260	G
220	G
180	G
260	G
105	F
270	G
180	F
105	F
85	F
65	F
55	E
105	E
105	E
105	E
105	E

V <sub>c</sub> m/min	VR-Code
95	F
80	E
95	G
80	F
95	F
90	F
80	E
80	F
65	E
95	G
80	F
55	D
80	E
55	D
40	E
35	D
40	C
35	B
20	B
40	C
30	C
25	C
150	G
110	G
110	G
90	F
25	B
20	B
30	C
25	B
200	G
200	G
170	G
140	G
200	G
80	F
210	G
140	F
80	F
65	F
50	F
40	E
80	E
80	E
80	E
80	E

# SuperV-AP maxi - Das Wechsellplatten-Bohrsystem

## Arbeitsrichtwerte

Vorschubreihen										
Code-Buchstabe	A	B	C	D	E	F	G	H	I	
Werkzeug-Ø mm	10,00	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,400
	12,50	0,080	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500
	16,00	0,100	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630
	20,00	0,125	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,630
	25,00	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	0,800
	31,50	0,160	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000
	40,00	0,200	0,250	0,315	0,400	0,500	0,630	0,800	1,000	1,250

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

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

- Kühlmitteleinsatz:**
- Schneidöl, hochaktiviert
  - Bohrölemulsion
  - ohne Schmiermittel
  - nur Luftkühlung

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

# Wechselplatten-Träger ≤ 7×D

## Katalog-Nr. 76003



Katalog-Nr.	<b>56011</b>
Schneidstoff	<b>VHM</b>
HM-Anwendungsgr.	K/P
Oberfläche	TiAlN
Typ	SuperV-AP maxi
Innenkühlung	axial
Katalogseite	129

Katalog-Nr.	<b>76011</b>
Schneidstoff	<b>VHM</b>
HM-Anwendungsgr.	K/P
Oberfläche	TiN
Typ	SuperV-AP maxi
Innenkühlung	axial
Katalogseite	128



V <sub>c</sub> m/min	VR-Code
120	E
105	D
120	F
105	E
120	E
110	E
100	D
100	E
85	D
120	F
100	E
70	D
105	D
70	C
55	D
50	C
55	B
50	B
25	A
55	B
40	B
35	B
195	F
145	F
145	F
120	E
35	B
25	A
40	B
35	A
260	F
260	F
220	F
180	F
260	F
105	E
270	F
180	E
105	E
85	E
65	E
55	D
105	D
105	D
105	D
105	D

V <sub>c</sub> m/min	VR-Code
90	E
80	D
90	F
80	E
90	E
85	E
75	D
75	E
65	D
90	F
75	E
55	D
80	D
55	C
40	D
35	C
40	B
35	B
20	A
40	B
30	B
25	B
150	F
110	F
110	F
90	E
25	B
20	A
30	B
25	A
200	F
200	F
170	F
140	F
200	F
80	E
210	F
140	E
80	E
65	E
50	E
40	D
80	D
80	D
80	D
80	D

# Stock SuperV-Bohrsysteme

## Anwendungsrichtlinien

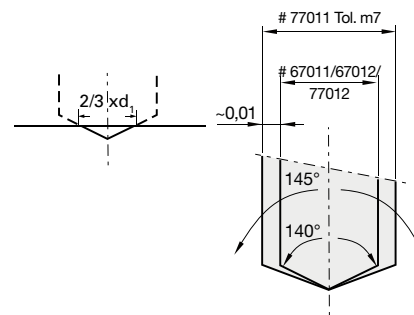
### für alle Wechselplatten-Träger

- Bei Durchgangsbohrungen ist darauf zu achten, dass die Führungsfasen im Eingriff bleiben.
- Das Bohrwerkzeug ist nicht ohne Versuch im unterbrochenen Schnitt (Nuten, Querbohrungen) einzusetzen. Bei unterbrochenem Schnitt (max.  $0,2 \times D$ ) empfehlen wir den Vorschub nach Möglichkeit zu reduzieren.
- SuperV-AP ist im Gegensatz zum klassischen Wendepplattenbohrer auch zum Bohren von Blechpakete geeignet.
- Bei Drehmaschinen (stehendes Bohrwerkzeug) ist darauf zu achten, dass das Werkzeug exakt auf Mitte steht.
- Voraussetzung für eine optimale Zerspanung ist eine ausreichende Kühlschmierstoff-Versorgung durch Emulsion oder Öl.
- Das Werkzeug ist nur bedingt für die Trockenbearbeitung oder MMS geeignet.

Unsere Anwendungstechniker beraten Sie gerne.

### Zusätzliche Hinweise für Wechselplatten-Träger **ab $5 \times D$**

- **Generell empfehlen wir bei Bohrtiefen ab  $5 \times D$  mit Halter Katalog-Nr. 77007 und NC-Platte Katalog-Nr. 77011 zu zentrieren bzw. zu pilotieren. Alternativ können - abhängig vom zu bearbeitenden Werkstoff - SuperV-Bohrer vom Typ U, GG oder VA bzw. der VHM-NC-Anbohrer  $142^\circ$ , Katalog-Nr. 71189, eingesetzt werden.**
- Bei Durchgangsbohrungen ist darauf zu achten, dass die Führungsfasen im Eingriff bleiben. Außerdem empfehlen wir, vor dem Durchbohren den Vorschub zu reduzieren.



Für SuperV-AP mini:

Bitte beachten Sie beim Plattenwechsel die folgenden Anzugsmomente für die Spannschraube. Ihre Einhaltung ist für optimale Bebearbeitungsergebnisse unbedingt erforderlich!

Durchmesserbereich mm	11,0 - 12,99	13,0 - 13,99	14,0 - 15,99	16,0 - 17,99	18,0 - 19,99	20,0 - 21,99	22,0 - 29,99	30,0 - 40,0
Gewinde	M2,2	M2,5	M3	M3,5	M4	M4,5	M5	M6
Torxgröße	T7	T8	T9	T10	T15	T15	T20	T25
Anzugsmoment (Nm)	0,8	1,0	1,7	2,7	4,0	6,0	8,0	14,0

Angaben sind gültig für Gewindesicherung (Loctite).

## SuperV-Bohrsysteme

### SuperV-AP mini Wechselplattenhalter

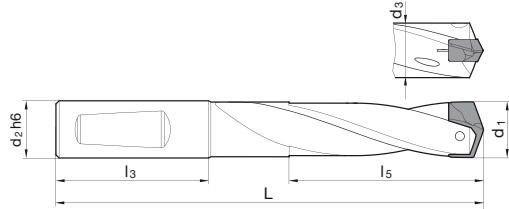


Katalog-Nr. 77007



Arbeitsrichtwerte Seite 36

- besonders hohe Verschleißfestigkeit
- optimierter Nutquerschnitt
- optimierter Kühlkanalaustritt
- Spanschrauben Katalog-Nr. 77020 enthalten
- Schraubendreher Katalog-Nr. 76021 enthalten



d1 mm	Code-Nr.	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	Größe
11,00-11,49	<b>11,000</b>	12,000	10,700	84,000	45,000	19,300	110
11,50-11,99	<b>11,500</b>	12,000	11,200	85,000	45,000	20,100	115
12,00-12,49	<b>12,000</b>	12,000	11,700	87,000	45,000	21,000	120
12,50-12,99	<b>12,500</b>	14,000	12,200	89,000	45,000	21,900	125
13,00-13,49	<b>13,000</b>	14,000	12,700	90,000	45,000	22,600	130
13,50-13,99	<b>13,500</b>	14,000	13,200	92,000	45,000	23,600	135
14,00-14,49	<b>14,000</b>	14,000	13,700	93,000	45,000	24,500	140
14,50-14,99	<b>14,500</b>	16,000	14,200	98,000	48,000	25,300	145
15,00-15,49	<b>15,000</b>	16,000	14,700	100,000	48,000	26,100	150
15,50-15,99	<b>15,500</b>	16,000	15,200	101,000	48,000	27,000	155
16,00-16,49	<b>16,000</b>	16,000	15,700	102,000	48,000	27,800	160
16,50-16,99	<b>16,500</b>	18,000	16,200	105,000	48,000	28,700	165
17,00-17,49	<b>17,000</b>	18,000	16,700	106,000	48,000	29,600	170
17,50-17,99	<b>17,500</b>	18,000	17,200	107,000	48,000	30,400	175
18,00-18,49	<b>18,000</b>	18,000	17,700	109,000	48,000	31,200	180
18,50-18,99	<b>18,500</b>	20,000	18,200	113,000	50,000	32,100	185
19,00-19,49	<b>19,000</b>	20,000	18,700	114,000	50,000	32,900	190
19,50-19,99	<b>19,500</b>	20,000	19,200	116,000	50,000	33,700	195
20,00-20,49	<b>20,000</b>	20,000	19,700	117,000	50,000	34,600	200
20,50-20,99	<b>20,500</b>	25,000	20,200	128,000	56,000	35,500	205
21,00-21,49	<b>21,000</b>	25,000	20,700	129,000	56,000	36,400	210
21,50-21,99	<b>21,500</b>	25,000	21,200	130,000	56,000	37,200	215
22,00-22,49	<b>22,000</b>	25,000	21,700	131,000	56,000	38,000	220
22,50-22,99	<b>22,500</b>	25,000	22,200	134,000	56,000	38,900	225
23,00-23,49	<b>23,000</b>	25,000	22,700	135,000	56,000	39,800	230
23,50-23,99	<b>23,500</b>	25,000	23,200	137,000	56,000	40,600	235
24,00-24,49	<b>24,000</b>	25,000	23,700	138,000	56,000	41,500	240
24,50-24,99	<b>24,500</b>	25,000	24,200	140,000	56,000	42,300	245
25,00-25,49	<b>25,000</b>	25,000	24,700	142,000	56,000	43,200	250
25,50-25,99	<b>25,500</b>	32,000	25,200	148,000	60,000	44,000	255
26,00-26,49	<b>26,000</b>	32,000	25,700	151,000	60,000	44,300	260
26,50-26,99	<b>26,500</b>	32,000	26,200	153,000	60,000	45,100	265
27,00-27,49	<b>27,000</b>	32,000	26,700	155,000	60,000	46,000	270
27,50-27,99	<b>27,500</b>	32,000	27,200	156,000	60,000	46,800	275
28,00-28,49	<b>28,000</b>	32,000	27,700	157,000	60,000	47,700	280
28,50-28,99	<b>28,500</b>	32,000	28,200	159,000	60,000	48,500	285
29,00-29,49	<b>29,000</b>	32,000	28,700	161,000	60,000	49,400	290
29,50-29,99	<b>29,500</b>	32,000	29,200	162,000	60,000	50,200	295
30,00-30,49	<b>30,000</b>	32,000	29,700	164,000	60,000	50,900	300
30,50-30,99	<b>30,500</b>	32,000	30,200	166,000	60,000	51,700	305
31,00-31,49	<b>31,000</b>	32,000	30,700	167,000	60,000	52,600	310
31,50-31,99	<b>31,500</b>	32,000	31,200	168,000	60,000	53,400	315
32,00-32,99	<b>32,000</b>	32,000	31,700	172,000	60,000	55,100	320
33,00-33,99	<b>33,000</b>	32,000	32,700	175,000	60,000	56,800	330
34,00-34,99	<b>34,000</b>	32,000	33,700	178,000	60,000	58,500	340
35,00-35,99	<b>35,000</b>	32,000	34,700	181,000	60,000	60,200	350
36,00-36,99	<b>36,000</b>	32,000	35,700	184,000	60,000	61,800	360
37,00-37,99	<b>37,000</b>	32,000	36,700	188,000	60,000	63,500	370
38,00-38,99	<b>38,000</b>	32,000	37,700	191,000	60,000	65,200	380
39,00-40,00	<b>39,000</b>	32,000	38,700	194,000	60,000	66,900	390

## SuperV-Bohrsysteme

### SuperV-AP mini Wechselplattenhalter

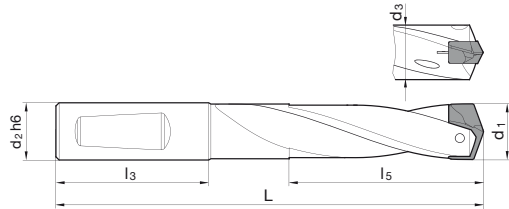


Katalog-Nr. 77000



Arbeitsrichtwerte Seite 38

- besonders hohe Verschleißfestigkeit
- optimierter Nutquerschnitt
- optimierter Kühlkanalaustritt
- Spannschrauben Katalog-Nr. 77020 enthalten
- Schraubendreher Katalog-Nr. 76021 enthalten



d1 mm	Code-Nr.	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	Größe
11,00-11,49	<b>11,000</b>	12,000	10,700	101,000	45,000	36,600	110
11,50-11,99	<b>11,500</b>	12,000	11,200	103,000	45,000	38,100	115
12,00-12,49	<b>12,000</b>	12,000	11,700	106,000	45,000	39,700	120
12,50-12,99	<b>12,500</b>	14,000	12,200	108,000	45,000	41,300	125
13,00-13,49	<b>13,000</b>	14,000	12,700	110,000	45,000	42,900	130
13,50-13,99	<b>13,500</b>	14,000	13,200	113,000	45,000	44,600	135
14,00-14,49	<b>14,000</b>	14,000	13,700	115,000	45,000	46,200	140
14,50-14,99	<b>14,500</b>	16,000	14,200	120,000	48,000	47,800	145
15,00-15,49	<b>15,000</b>	16,000	14,700	123,000	48,000	49,300	150
15,50-15,99	<b>15,500</b>	16,000	15,200	125,000	48,000	50,900	155
16,00-16,49	<b>16,000</b>	16,000	15,700	127,000	48,000	52,900	160
16,50-16,99	<b>16,500</b>	18,000	16,200	130,000	48,000	54,100	165
17,00-17,49	<b>17,000</b>	18,000	16,700	132,000	48,000	55,800	170
17,50-17,99	<b>17,500</b>	18,000	17,200	134,000	48,000	57,400	175
18,00-18,49	<b>18,000</b>	18,000	17,700	137,000	48,000	58,900	180
18,50-18,99	<b>18,500</b>	20,000	18,200	141,000	50,000	60,500	185
19,00-19,49	<b>19,000</b>	20,000	18,700	143,000	50,000	62,100	190
19,50-19,99	<b>19,500</b>	20,000	19,200	146,000	50,000	63,700	195
20,00-20,49	<b>20,000</b>	20,000	19,700	148,000	50,000	65,300	200
20,50-20,99	<b>20,500</b>	25,000	20,200	159,000	56,000	67,000	205
21,00-21,49	<b>21,000</b>	25,000	20,700	161,000	56,000	68,600	210
21,50-21,99	<b>21,500</b>	25,000	21,200	163,000	56,000	70,100	215
22,00-22,49	<b>22,000</b>	25,000	21,700	165,000	56,000	71,700	220
22,50-22,99	<b>22,500</b>	25,000	22,200	168,000	56,000	73,300	225
23,00-23,49	<b>23,000</b>	25,000	22,700	170,000	56,000	74,900	230
23,50-23,99	<b>23,500</b>	25,000	23,200	173,000	56,000	76,500	235
24,00-24,49	<b>24,000</b>	25,000	23,700	175,000	56,000	78,100	240
24,50-24,99	<b>24,500</b>	25,000	24,200	177,000	56,000	79,700	245
25,00-25,49	<b>25,000</b>	25,000	24,700	180,000	56,000	81,300	250
25,50-25,99	<b>25,500</b>	32,000	25,200	187,000	60,000	82,900	255
26,00-26,49	<b>26,000</b>	32,000	25,700	191,000	60,000	84,000	260
26,50-26,99	<b>26,500</b>	32,000	26,200	193,000	60,000	86,100	265
27,00-27,49	<b>27,000</b>	32,000	26,700	196,000	60,000	87,200	270
27,50-27,99	<b>27,500</b>	32,000	27,200	198,000	60,000	88,900	275
28,00-28,49	<b>28,000</b>	32,000	27,700	200,000	60,000	90,400	280
28,50-28,99	<b>28,500</b>	32,000	28,200	202,000	60,000	92,500	285
29,00-29,49	<b>29,000</b>	32,000	28,700	205,000	60,000	94,600	290
29,50-29,99	<b>29,500</b>	32,000	29,200	207,000	60,000	95,100	295
30,00-30,49	<b>30,000</b>	32,000	29,700	210,000	60,000	96,700	300
30,50-30,99	<b>30,500</b>	32,000	30,200	212,000	60,000	98,300	305
31,00-31,49	<b>31,000</b>	32,000	30,700	214,000	60,000	99,800	310
31,50-31,99	<b>31,500</b>	32,000	31,200	216,000	60,000	101,400	315
32,00-32,99	<b>32,000</b>	32,000	31,700	221,000	60,000	104,600	320
33,00-33,99	<b>33,000</b>	32,000	32,700	226,000	60,000	107,800	330
34,00-34,99	<b>34,000</b>	32,000	33,700	230,000	60,000	111,000	340
35,00-35,99	<b>35,000</b>	32,000	34,700	235,000	60,000	114,200	350
36,00-36,99	<b>36,000</b>	32,000	35,700	240,000	60,000	117,300	360
37,00-37,99	<b>37,000</b>	32,000	36,700	245,000	60,000	120,500	370
38,00-38,99	<b>38,000</b>	32,000	37,700	249,000	60,000	123,700	380
39,00-40,00	<b>39,000</b>	32,000	38,700	254,000	60,000	126,900	390

## SuperV-Bohrsysteme

### SuperV-AP mini Wechselplattenhalter

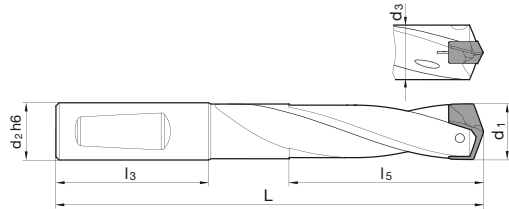


Katalog-Nr. 77001



Arbeitsrichtwerte Seite 40

- besonders hohe Verschleißfestigkeit
- optimierter Nutquerschnitt
- optimierter Kühlkanalaustritt
- Spannschrauben Katalog-Nr. 77020 enthalten
- Schraubendreher Katalog-Nr. 76021 enthalten



d1 mm	Code-Nr.	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	Größe
11,00-11,49	<b>11,000</b>	12,000	10,700	124,000	45,000	59,600	110
11,50-11,99	<b>11,500</b>	12,000	11,200	127,000	45,000	62,100	115
12,00-12,49	<b>12,000</b>	12,000	11,700	131,000	45,000	64,700	120
12,50-12,99	<b>12,500</b>	14,000	12,200	134,000	45,000	67,300	125
13,00-13,49	<b>13,000</b>	14,000	12,700	137,000	45,000	69,900	130
13,50-13,99	<b>13,500</b>	14,000	13,200	141,000	45,000	72,600	135
14,00-14,49	<b>14,000</b>	14,000	13,700	144,000	45,000	75,200	140
14,50-14,99	<b>14,500</b>	16,000	14,200	150,000	48,000	77,800	145
15,00-15,49	<b>15,000</b>	16,000	14,700	154,000	48,000	80,300	150
15,50-15,99	<b>15,500</b>	16,000	15,200	157,000	48,000	82,900	155
16,00-16,49	<b>16,000</b>	16,000	15,700	160,000	48,000	85,900	160
16,50-16,99	<b>16,500</b>	18,000	16,200	164,000	48,000	88,100	165
17,00-17,49	<b>17,000</b>	18,000	16,700	167,000	48,000	90,800	170
17,50-17,99	<b>17,500</b>	18,000	17,200	170,000	48,000	93,400	175
18,00-18,49	<b>18,000</b>	18,000	17,700	174,000	48,000	95,900	180
18,50-18,99	<b>18,500</b>	20,000	18,200	179,000	50,000	98,500	185
19,00-19,49	<b>19,000</b>	20,000	18,700	182,000	50,000	101,100	190
19,50-19,99	<b>19,500</b>	20,000	19,200	186,000	50,000	103,700	195
20,00-20,49	<b>20,000</b>	20,000	19,700	189,000	50,000	106,300	200
20,50-20,99	<b>20,500</b>	25,000	20,200	201,000	56,000	109,000	205
21,00-21,49	<b>21,000</b>	25,000	20,700	204,000	56,000	111,600	210
21,50-21,99	<b>21,500</b>	25,000	21,200	207,000	56,000	114,100	215
22,00-22,49	<b>22,000</b>	25,000	21,700	210,000	56,000	116,700	220
22,50-22,99	<b>22,500</b>	25,000	22,200	214,000	56,000	119,300	225
23,00-23,49	<b>23,000</b>	25,000	22,700	217,000	56,000	121,900	230
23,50-23,99	<b>23,500</b>	25,000	23,200	221,000	56,000	124,500	235
24,00-24,49	<b>24,000</b>	25,000	23,700	224,000	56,000	127,100	240
24,50-24,99	<b>24,500</b>	25,000	24,200	227,000	56,000	129,700	245
25,00-25,49	<b>25,000</b>	25,000	24,700	231,000	56,000	132,300	250
25,50-25,99	<b>25,500</b>	32,000	25,200	239,000	60,000	134,900	255
26,00-26,49	<b>26,000</b>	32,000	25,700	244,000	60,000	137,000	260
26,50-26,99	<b>26,500</b>	32,000	26,200	247,000	60,000	140,000	265
27,00-27,49	<b>27,000</b>	32,000	26,700	251,000	60,000	142,200	270
27,50-27,99	<b>27,500</b>	32,000	27,200	254,000	60,000	144,800	275
28,00-28,49	<b>28,000</b>	32,000	27,700	257,000	60,000	147,400	280
28,50-28,99	<b>28,500</b>	32,000	28,200	260,000	60,000	150,400	285
29,00-29,49	<b>29,000</b>	32,000	28,700	264,000	60,000	153,500	290
30,00-30,49	<b>30,000</b>	32,000	29,700	271,000	60,000	157,600	300
30,50-30,99	<b>30,500</b>	32,000	30,200	274,000	60,000	160,200	305
31,00-31,49	<b>31,000</b>	32,000	30,700	277,000	60,000	162,800	310
31,50-31,99	<b>31,500</b>	32,000	31,200	280,000	60,000	165,400	315
32,00-32,99	<b>32,000</b>	32,000	31,700	287,000	60,000	170,600	320
33,00-33,99	<b>33,000</b>	32,000	32,700	294,000	60,000	175,800	330
34,00-34,99	<b>34,000</b>	32,000	33,700	300,000	60,000	181,000	340
35,00-35,99	<b>35,000</b>	32,000	34,700	307,000	60,000	186,200	350
36,00-36,99	<b>36,000</b>	32,000	35,700	314,000	60,000	191,300	360
37,00-37,99	<b>37,000</b>	32,000	36,700	321,000	60,000	196,500	370
38,00-38,99	<b>38,000</b>	32,000	37,700	327,000	60,000	201,700	380
39,00-40,00	<b>39,000</b>	32,000	38,700	334,000	60,000	206,900	390



## SuperV-Bohrsysteme

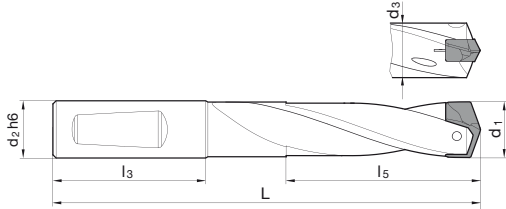
### SuperV-AP mini Wechselplattenhalter



Katalog-Nr. 77003

Arbeitsrichtwerte Seite 42

- besonders hohe Verschleißfestigkeit
- optimierter Nutquerschnitt
- optimierter Kühlkanalaustritt
- Spanschrauben Katalog-Nr. 77020 enthalten
- Schraubendreher Katalog-Nr. 76021 enthalten



d1 mm	Code-Nr.	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	Größe
11,00-11,49	<b>11,000</b>	12,000	10,700	147,000	45,000	82,600	110
11,50-11,99	<b>11,500</b>	12,000	11,200	151,000	45,000	86,100	115
12,00-12,49	<b>12,000</b>	12,000	11,700	156,000	45,000	89,700	120
12,50-12,99	<b>12,500</b>	14,000	12,200	160,000	45,000	93,300	125
13,00-13,49	<b>13,000</b>	14,000	12,700	164,000	45,000	96,900	130
13,50-13,99	<b>13,500</b>	14,000	13,200	169,000	45,000	100,600	135
14,00-14,49	<b>14,000</b>	14,000	13,700	173,000	45,000	104,200	140
14,50-14,99	<b>14,500</b>	16,000	14,200	180,000	48,000	107,800	145
15,00-15,49	<b>15,000</b>	16,000	14,700	185,000	48,000	111,300	150
15,50-15,99	<b>15,500</b>	16,000	15,200	189,000	48,000	114,900	155
16,00-16,49	<b>16,000</b>	16,000	15,700	193,000	48,000	118,900	160
16,50-16,99	<b>16,500</b>	18,000	16,200	198,000	48,000	122,100	165
17,00-17,49	<b>17,000</b>	18,000	16,700	202,000	48,000	125,800	170
17,50-17,99	<b>17,500</b>	18,000	17,200	206,000	48,000	129,400	175
18,00-18,49	<b>18,000</b>	18,000	17,700	211,000	48,000	132,900	180
18,50-18,99	<b>18,500</b>	20,000	18,200	217,000	50,000	136,500	185
19,00-19,49	<b>19,000</b>	20,000	18,700	221,000	50,000	140,100	190
19,50-19,99	<b>19,500</b>	20,000	19,200	226,000	50,000	143,700	195
20,00-20,49	<b>20,000</b>	20,000	19,700	230,000	50,000	147,300	200
20,50-20,99	<b>20,500</b>	25,000	20,200	243,000	56,000	151,000	205
21,00-21,49	<b>21,000</b>	25,000	20,700	247,000	56,000	154,600	210
21,50-21,99	<b>21,500</b>	25,000	21,200	251,000	56,000	158,100	215
22,00-22,49	<b>22,000</b>	25,000	21,700	255,000	56,000	161,700	220
22,50-22,99	<b>22,500</b>	25,000	22,200	260,000	56,000	165,300	225
23,00-23,49	<b>23,000</b>	25,000	22,700	264,000	56,000	168,900	230
23,50-23,99	<b>23,500</b>	25,000	23,200	269,000	56,000	172,500	235
24,00-24,49	<b>24,000</b>	25,000	23,700	273,000	56,000	176,100	240
24,50-24,99	<b>24,500</b>	25,000	24,200	277,000	56,000	179,700	245
25,00-25,49	<b>25,000</b>	25,000	24,700	282,000	56,000	183,300	250
25,50-25,99	<b>25,500</b>	32,000	25,200	291,000	60,000	186,900	255
26,00-26,49	<b>26,000</b>	32,000	25,700	297,000	60,000	190,000	260
26,50-26,99	<b>26,500</b>	32,000	26,200	301,000	60,000	194,000	265
27,00-27,49	<b>27,000</b>	32,000	26,700	306,000	60,000	197,200	270
27,50-27,99	<b>27,500</b>	32,000	27,200	310,000	60,000	200,800	275
28,00-28,49	<b>28,000</b>	32,000	27,700	314,000	60,000	204,400	280
28,50-28,99	<b>28,500</b>	32,000	28,200	318,000	60,000	208,400	285
29,00-29,49	<b>29,000</b>	32,000	28,700	323,000	60,000	212,500	290
29,50-29,99	<b>29,500</b>	32,000	29,200	327,000	60,000	215,100	295
30,00-30,49	<b>30,000</b>	32,000	29,700	332,000	60,000	218,600	300
30,50-30,99	<b>30,500</b>	32,000	30,200	336,000	60,000	222,200	305
31,00-31,49	<b>31,000</b>	32,000	30,700	340,000	60,000	225,800	310
31,50-31,99	<b>31,500</b>	32,000	31,200	344,000	60,000	229,400	315
33,00-33,99	<b>33,000</b>	32,000	32,700	362,000	60,000	244,600	330
36,00-36,99	<b>36,000</b>	32,000	35,700	387,000	60,000	265,800	360
39,00-40,00	<b>39,000</b>	32,000	38,700	413,000	60,000	287,400	390

## SuperV-Bohrsysteme

### SuperV-AP mini Wechselplattenhalter

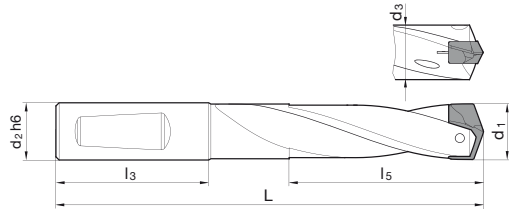


Katalog-Nr. 77004



Arbeitsrichtwerte Seite 44

- besonders hohe Verschleißfestigkeit
- optimierter Nutquerschnitt
- optimierter Kühlkanalaustritt
- Spanschrauben Katalog-Nr. 77020 enthalten
- Schraubendreher Katalog-Nr. 76021 enthalten



d1 mm	Code-Nr.	d2 h6 mm	d3 mm	L mm	l3 mm	l5 mm	Größe
11,00-11,49	<b>11,000</b>	12,000	10,700	182,000	45,000	117,100	110
11,50-11,99	<b>11,500</b>	12,000	11,200	187,000	45,000	122,100	115
12,00-12,49	<b>12,000</b>	12,000	11,700	194,000	45,000	127,200	120
12,50-12,99	<b>12,500</b>	14,000	12,200	199,000	45,000	132,300	125
13,00-13,49	<b>13,000</b>	14,000	12,700	205,000	45,000	137,500	130
13,50-13,99	<b>13,500</b>	14,000	13,200	211,000	45,000	142,500	135
14,00-14,49	<b>14,000</b>	14,000	13,700	217,000	45,000	147,700	140
14,50-14,99	<b>14,500</b>	16,000	14,200	225,000	48,000	152,800	145
15,00-15,49	<b>15,000</b>	16,000	14,700	232,000	48,000	157,800	150
15,50-15,99	<b>15,500</b>	16,000	15,200	237,000	48,000	162,900	155
16,00-16,49	<b>16,000</b>	16,000	15,700	243,000	48,000	168,000	160
16,50-16,99	<b>16,500</b>	18,000	16,200	249,000	48,000	170,000	165
17,00-17,49	<b>17,000</b>	18,000	16,700	255,000	48,000	178,300	170
17,50-17,99	<b>17,500</b>	18,000	17,200	260,000	48,000	183,500	175
18,00-18,49	<b>18,000</b>	18,000	17,700	267,000	48,000	188,400	180
18,50-18,99	<b>18,500</b>	20,000	18,200	274,000	50,000	193,500	185
19,00-19,49	<b>19,000</b>	20,000	18,700	280,000	50,000	198,700	190
19,50-19,99	<b>19,500</b>	20,000	19,200	286,000	50,000	203,700	195
20,00-20,49	<b>20,000</b>	20,000	19,700	292,000	50,000	208,900	200
20,50-20,99	<b>20,500</b>	25,000	20,200	306,000	56,000	214,000	205
21,00-21,49	<b>21,000</b>	25,000	20,700	312,000	56,000	219,100	210
21,50-21,99	<b>21,500</b>	25,000	21,200	317,000	56,000	224,200	215
22,00-22,49	<b>22,000</b>	25,000	21,700	323,000	56,000	229,300	220
22,50-22,99	<b>22,500</b>	25,000	22,200	329,000	56,000	234,400	225
23,00-23,49	<b>23,000</b>	25,000	22,700	335,000	56,000	239,500	230
23,50-23,99	<b>23,500</b>	25,000	23,200	341,000	56,000	244,600	235
24,00-24,49	<b>24,000</b>	25,000	23,700	347,000	56,000	249,700	240
24,50-24,99	<b>24,500</b>	25,000	24,200	352,000	56,000	254,800	245
25,00-25,49	<b>25,000</b>	25,000	24,700	359,000	56,000	259,900	250
25,50-25,99	<b>25,500</b>	32,000	25,200	369,000	60,000	265,000	255
26,00-26,49	<b>26,000</b>	32,000	25,700	377,000	60,000	270,000	260
26,50-26,99	<b>26,500</b>	32,000	26,200	382,000	60,000	275,000	265
27,00-27,49	<b>27,000</b>	32,000	26,700	388,000	60,000	280,100	270
27,50-27,99	<b>27,500</b>	32,000	27,200	394,000	60,000	285,200	275
28,00-28,49	<b>28,000</b>	32,000	27,700	400,000	60,000	290,300	280
28,50-28,99	<b>28,500</b>	32,000	28,200	405,000	60,000	295,400	285
29,00-29,49	<b>29,000</b>	32,000	28,700	412,000	60,000	300,500	290
29,50-29,99	<b>29,500</b>	32,000	29,200	418,000	60,000	305,600	295
30,00-30,49	<b>30,000</b>	32,000	29,700	424,000	60,000	310,600	300
30,50-30,99	<b>30,500</b>	32,000	30,200	429,000	60,000	315,700	305
31,00-31,49	<b>31,000</b>	32,000	30,700	435,000	60,000	320,800	310
31,50-31,99	<b>31,500</b>	32,000	31,200	441,000	60,000	325,900	315

## SuperV-Bohrsysteme

### SuperV-AP mini Wechselplatte



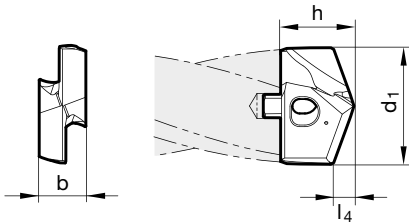
Katalog-Nr. 67011



P	M	K	N	S	H
●		○			

Arbeitsrichtwerte  
Seite 36-44

- Ausspitzung  $\geq \varnothing 11,000$
- Flächenanschliff
- Hauptschneidenform gerade (durch Korrektur)
- Spannschrauben Katalog-Nr. 77020 enthalten



d1 mm	d1 inch	Code-Nr.	l4 mm	b mm	h mm	Größe
11,000		<b>11,000</b>	2,100	4,500	7,500	110
11,200		<b>11,200</b>	2,100	4,500	7,500	110
11,500		<b>11,500</b>	2,100	4,500	7,500	115
11,510	29/64	<b>11,510</b>	2,100	4,500	7,500	115
11,700		<b>11,700</b>	2,200	4,500	7,500	115
11,800		<b>11,800</b>	2,200	4,500	7,500	115
11,910	15/32	<b>11,910</b>	2,200	4,500	7,500	115
12,000		<b>12,000</b>	2,200	5,000	7,700	120
12,100		<b>12,100</b>	2,300	5,000	7,700	120
12,200		<b>12,200</b>	2,300	5,000	7,700	120
12,300	31/64	<b>12,300</b>	2,300	5,000	7,700	120
12,500		<b>12,500</b>	2,300	5,000	7,700	125
12,600		<b>12,600</b>	2,300	5,000	7,700	125
12,700	1/2	<b>12,700</b>	2,400	5,000	7,700	125
12,800		<b>12,800</b>	2,400	5,000	7,700	125
12,900		<b>12,900</b>	2,400	5,000	7,700	125
13,000		<b>13,000</b>	2,400	5,500	8,500	130
13,100	33/64	<b>13,100</b>	2,400	5,500	8,500	130
13,490	17/32	<b>13,490</b>	2,500	5,500	8,500	130
13,500		<b>13,500</b>	2,500	5,500	8,500	135
13,600		<b>13,600</b>	2,500	5,500	8,500	135
13,700		<b>13,700</b>	2,500	5,500	8,500	135
13,800		<b>13,800</b>	2,600	5,500	8,500	135
13,890	35/64	<b>13,890</b>	2,600	5,500	8,500	135
14,000		<b>14,000</b>	2,600	6,000	9,600	140
14,100		<b>14,100</b>	2,600	6,000	9,600	140
14,290	9/16	<b>14,290</b>	2,700	6,000	9,600	140
14,400		<b>14,400</b>	2,700	6,000	9,600	140
14,500		<b>14,500</b>	2,700	6,000	9,600	145
14,600		<b>14,600</b>	2,700	6,000	9,600	145
14,680	37/64	<b>14,680</b>	2,700	6,000	9,600	145
14,700		<b>14,700</b>	2,700	6,000	9,600	145
14,800		<b>14,800</b>	2,700	6,000	9,600	145
15,000		<b>15,000</b>	2,800	6,000	9,800	150
15,080	19/32	<b>15,080</b>	2,800	6,000	9,800	150
15,100		<b>15,100</b>	2,800	6,000	9,800	150
15,200		<b>15,200</b>	2,800	6,000	9,800	150
15,300		<b>15,300</b>	2,800	6,000	9,800	150
15,480	39/64	<b>15,480</b>	2,900	6,000	9,800	150
15,500		<b>15,500</b>	2,900	6,000	9,800	155
15,600		<b>15,600</b>	2,900	6,000	9,800	155
15,700		<b>15,700</b>	2,900	6,000	9,800	155
15,800		<b>15,800</b>	2,900	6,000	9,800	155
15,870	5/8	<b>15,870</b>	2,900	6,000	9,800	155
16,000		<b>16,000</b>	3,000	7,000	11,000	160
16,270	41/64	<b>16,270</b>	3,000	7,000	11,000	160
16,500		<b>16,500</b>	3,100	7,000	11,000	165
16,670	21/32	<b>16,670</b>	3,100	7,000	11,000	165

d1 mm	d1 inch	Code-Nr.	l4 mm	b mm	h mm	Größe
17,000		<b>17,000</b>	3,100	7,000	11,000	170
17,070	43/64	<b>17,070</b>	3,200	7,000	11,000	170
17,250		<b>17,250</b>	3,200	7,000	11,000	170
17,460	11/16	<b>17,460</b>	3,200	7,000	11,000	170
17,500		<b>17,500</b>	3,200	7,000	11,000	175
17,600		<b>17,600</b>	3,300	7,000	11,000	175
17,860	45/64	<b>17,860</b>	3,300	7,000	11,000	175
18,000		<b>18,000</b>	3,300	8,000	12,600	180
18,260	23/32	<b>18,260</b>	3,400	8,000	12,600	180
18,500		<b>18,500</b>	3,400	8,000	12,600	185
18,650	47/64	<b>18,650</b>	3,400	8,000	12,600	185
19,000		<b>19,000</b>	3,500	8,000	12,600	190
19,050	3/4	<b>19,050</b>	3,500	8,000	12,600	190
19,250		<b>19,250</b>	3,600	8,000	12,600	190
19,450	49/64	<b>19,450</b>	3,600	8,000	12,600	190
19,500		<b>19,500</b>	3,600	8,000	12,600	195
19,600		<b>19,600</b>	3,600	8,000	12,600	195
19,840	25/32	<b>19,840</b>	3,700	8,000	12,600	195
20,000		<b>20,000</b>	3,700	9,000	13,900	200
20,240	51/64	<b>20,240</b>	3,700	9,000	13,900	200
20,500		<b>20,500</b>	3,800	9,000	13,900	205
20,640	13/16	<b>20,640</b>	3,800	9,000	13,900	205
21,000		<b>21,000</b>	3,900	9,000	13,900	210
21,030	53/64	<b>21,030</b>	3,900	9,000	13,900	210
21,100		<b>21,100</b>	3,900	9,000	13,900	210
21,430	27/32	<b>21,430</b>	3,900	9,000	13,900	210
21,500		<b>21,500</b>	4,000	9,000	13,900	215
21,830	55/64	<b>21,830</b>	4,000	9,000	13,900	215
22,000		<b>22,000</b>	4,100	10,000	15,300	220
22,220	7/8	<b>22,220</b>	4,100	10,000	15,300	220
22,500		<b>22,500</b>	4,100	10,000	15,300	225
22,620	57/64	<b>22,620</b>	4,200	10,000	15,300	225
23,000		<b>23,000</b>	4,200	10,000	15,300	230
23,020	29/32	<b>23,020</b>	4,200	10,000	15,300	230
23,420	59/64	<b>23,420</b>	4,300	10,000	15,300	230
23,500		<b>23,500</b>	4,300	10,000	15,300	235
23,810	15/16	<b>23,810</b>	4,400	10,000	15,300	235
24,000		<b>24,000</b>	4,400	11,000	15,800	240
24,100		<b>24,100</b>	4,400	11,000	15,800	240
24,210	61/64	<b>24,210</b>	4,500	11,000	15,800	240
24,500		<b>24,500</b>	4,500	11,000	15,800	245
24,610	31/32	<b>24,610</b>	4,500	11,000	15,800	245
25,000	63/64	<b>25,000</b>	4,600	11,000	15,800	250
25,250		<b>25,250</b>	4,600	11,000	15,800	250
25,400	1	<b>25,400</b>	4,700	11,000	15,800	250
25,500		<b>25,500</b>	4,700	11,000	15,800	255
25,650		<b>25,650</b>	4,700	11,000	15,800	255
25,670		<b>25,670</b>	4,700	11,000	15,800	255
25,700		<b>25,700</b>	4,700	11,000	15,800	255
25,810		<b>25,810</b>	4,700	11,000	15,800	255
26,000		<b>26,000</b>	4,800	12,000	20,000	260
26,190	1 1/32	<b>26,190</b>	4,800	12,000	20,000	260
26,500		<b>26,500</b>	4,900	12,000	20,000	265
26,590	1 3/64	<b>26,590</b>	4,900	12,000	20,000	265
27,000		<b>27,000</b>	5,000	12,000	20,000	270
27,500		<b>27,500</b>	5,100	12,000	20,000	275
27,700		<b>27,700</b>	5,100	12,000	20,000	275
27,780	1 3/32	<b>27,780</b>	5,100	12,000	20,000	275
28,000		<b>28,000</b>	5,100	13,000	20,700	280
28,180	1 7/64	<b>28,180</b>	5,200	13,000	20,700	280
28,500		<b>28,500</b>	5,200	13,000	20,700	285
28,580		<b>28,580</b>	5,300	13,000	20,700	285
29,000		<b>29,000</b>	5,300	13,000	20,700	290
29,370	1 5/32	<b>29,370</b>	5,400	13,000	20,700	290
29,500		<b>29,500</b>	5,400	13,000	20,700	295
29,600		<b>29,600</b>	5,400	13,000	20,700	295
29,770	1 11/64	<b>29,770</b>	5,500	13,000	20,700	295
30,000		<b>30,000</b>	5,500	14,000	22,300	300
30,160	1 3/16	<b>30,160</b>	5,500	14,000	22,300	300
30,500		<b>30,500</b>	5,600	14,000	22,300	305
30,960	1 7/32	<b>30,960</b>	5,700	14,000	22,300	305
31,000		<b>31,000</b>	5,700	14,000	22,300	310

d1 mm	d1 inch	Code-Nr.	l4 mm	b mm	h mm	Größe
31,500		<b>31,500</b>	5,800	14,000	22,300	315
31,750	1 1/4	<b>31,750</b>	5,800	14,000	22,300	315
32,000		<b>32,000</b>	5,900	15,000	23,100	320
32,500		<b>32,500</b>	6,000	15,000	23,100	320
32,540	1 9/32	<b>32,540</b>	6,000	15,000	23,100	320
32,940	1 19/64	<b>32,940</b>	6,000	15,000	23,100	320
33,000		<b>33,000</b>	6,100	15,000	23,100	330
33,340	1 5/16	<b>33,340</b>	6,100	15,000	23,100	330
33,500		<b>33,500</b>	6,100	15,000	23,100	330
34,000		<b>34,000</b>	6,200	15,000	23,100	340
34,130	1 11/32	<b>34,130</b>	6,300	15,000	23,100	340
34,500		<b>34,500</b>	6,300	15,000	23,100	340
34,930		<b>34,930</b>	6,400	15,000	23,100	340
35,000		<b>35,000</b>	6,400	15,000	23,100	350
35,500		<b>35,500</b>	6,500	15,000	23,100	350
35,720	1 13/32	<b>35,720</b>	6,600	15,000	23,100	350
36,000		<b>36,000</b>	6,600	16,000	23,900	360
36,500		<b>36,500</b>	6,700	16,000	23,900	360
36,510	1 7/16	<b>36,510</b>	6,700	16,000	23,900	360
37,000		<b>37,000</b>	6,800	16,000	23,900	370
37,310	1 15/32	<b>37,310</b>	6,800	16,000	23,900	370
37,500		<b>37,500</b>	6,900	16,000	23,900	370
38,000		<b>38,000</b>	7,000	16,000	23,900	380
38,100	1 1/2	<b>38,100</b>	7,000	16,000	23,900	380
38,500	1 33/64	<b>38,500</b>	7,100	16,000	23,900	380
39,000		<b>39,000</b>	7,100	16,000	23,900	390
39,500		<b>39,500</b>	7,200	16,000	23,900	390
40,000		<b>40,000</b>	7,300	16,000	23,900	400

## SuperV-Bohrsysteme

### SuperV-AP mini Wechselplatte



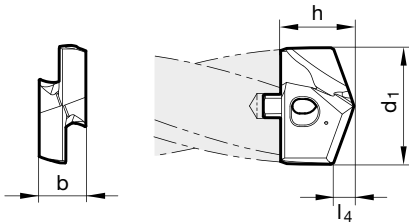
Katalog-Nr. 67012



P	M	K	N	S	H
	●	○		○	

Arbeitsrichtwerte  
Seite 36-44

- Ausspitzung  $\geq \varnothing 11,000$
- Kegelmantelanschiff
- Hauptschneidenform gerade (durch Korrektur)
- Spannschrauben Katalog-Nr. 77020 enthalten



d1 mm	d1 inch	Code-Nr.	l4 mm	b mm	h mm	Größe
11,000		<b>11,000</b>	2,100	4,500	7,500	110
11,200		<b>11,200</b>	2,100	4,500	7,500	110
11,500		<b>11,500</b>	2,100	4,500	7,500	115
11,510	29/64	<b>11,510</b>	2,100	4,500	7,500	115
11,700		<b>11,700</b>	2,200	4,500	7,500	115
11,800		<b>11,800</b>	2,200	4,500	7,500	115
11,910	15/32	<b>11,910</b>	2,200	4,500	7,500	115
12,000		<b>12,000</b>	2,200	5,000	7,700	120
12,100		<b>12,100</b>	2,300	5,000	7,700	120
12,200		<b>12,200</b>	2,300	5,000	7,700	120
12,300	31/64	<b>12,300</b>	2,300	5,000	7,700	120
12,500		<b>12,500</b>	2,300	5,000	7,700	125
12,600		<b>12,600</b>	2,300	5,000	7,700	125
12,700	1/2	<b>12,700</b>	2,400	5,000	7,700	125
12,800		<b>12,800</b>	2,400	5,000	7,700	125
12,900		<b>12,900</b>	2,400	5,000	7,700	125
13,000		<b>13,000</b>	2,400	5,500	8,500	130
13,100	33/64	<b>13,100</b>	2,400	5,500	8,500	130
13,490	17/32	<b>13,490</b>	2,500	5,500	8,500	130
13,500		<b>13,500</b>	2,500	5,500	8,500	135
13,600		<b>13,600</b>	2,500	5,500	8,500	135
13,700		<b>13,700</b>	2,500	5,500	8,500	135
13,800		<b>13,800</b>	2,600	5,500	8,500	135
13,890	35/64	<b>13,890</b>	2,600	5,500	8,500	135
14,000		<b>14,000</b>	2,600	6,000	9,600	140
14,100		<b>14,100</b>	2,600	6,000	9,600	140
14,290	9/16	<b>14,290</b>	2,700	6,000	9,600	140
14,400		<b>14,400</b>	2,700	6,000	9,600	140
14,500		<b>14,500</b>	2,700	6,000	9,600	145
14,600		<b>14,600</b>	2,700	6,000	9,600	145
14,700		<b>14,700</b>	2,700	6,000	9,600	145
14,800		<b>14,800</b>	2,700	6,000	9,600	145
15,000		<b>15,000</b>	2,800	6,000	9,800	150
15,080	19/32	<b>15,080</b>	2,800	6,000	9,800	150
15,100		<b>15,100</b>	2,800	6,000	9,800	150
15,200		<b>15,200</b>	2,800	6,000	9,800	150
15,300		<b>15,300</b>	2,800	6,000	9,800	150
15,500		<b>15,500</b>	2,900	6,000	9,800	155
15,600		<b>15,600</b>	2,900	6,000	9,800	155
15,700		<b>15,700</b>	2,900	6,000	9,800	155
15,800		<b>15,800</b>	2,900	6,000	9,800	155
15,870	5/8	<b>15,870</b>	2,900	6,000	9,800	155
16,000		<b>16,000</b>	3,000	7,000	11,000	160
16,270	41/64	<b>16,270</b>	3,000	7,000	11,000	160
16,500		<b>16,500</b>	3,100	7,000	11,000	165
16,670	21/32	<b>16,670</b>	3,100	7,000	11,000	165
17,000		<b>17,000</b>	3,100	7,000	11,000	170
17,070	43/64	<b>17,070</b>	3,200	7,000	11,000	170

d1 mm	d1 inch	Code-Nr.	l4 mm	b mm	h mm	Größe
17,250		<b>17,250</b>	3,200	7,000	11,000	170
17,460	11/16	<b>17,460</b>	3,200	7,000	11,000	170
17,500		<b>17,500</b>	3,200	7,000	11,000	175
17,600		<b>17,600</b>	3,300	7,000	11,000	175
17,860	45/64	<b>17,860</b>	3,300	7,000	11,000	175
18,000		<b>18,000</b>	3,300	8,000	12,600	180
18,260	23/32	<b>18,260</b>	3,400	8,000	12,600	180
18,500		<b>18,500</b>	3,400	8,000	12,600	185
18,650	47/64	<b>18,650</b>	3,400	8,000	12,600	185
19,000		<b>19,000</b>	3,500	8,000	12,600	190
19,050	3/4	<b>19,050</b>	3,500	8,000	12,600	190
19,250		<b>19,250</b>	3,600	8,000	12,600	190
19,450	49/64	<b>19,450</b>	3,600	8,000	12,600	190
19,500		<b>19,500</b>	3,600	8,000	12,600	195
19,600		<b>19,600</b>	3,600	8,000	12,600	195
19,840	25/32	<b>19,840</b>	3,700	8,000	12,600	195
20,000		<b>20,000</b>	3,700	9,000	13,900	200
20,240	51/64	<b>20,240</b>	3,700	9,000	13,900	200
20,500		<b>20,500</b>	3,800	9,000	13,900	205
20,640	13/16	<b>20,640</b>	3,800	9,000	13,900	205
21,000		<b>21,000</b>	3,900	9,000	13,900	210
21,030	53/64	<b>21,030</b>	3,900	9,000	13,900	210
21,100		<b>21,100</b>	3,900	9,000	13,900	210
21,430	27/32	<b>21,430</b>	3,900	9,000	13,900	210
21,500		<b>21,500</b>	4,000	9,000	13,900	215
21,830	55/64	<b>21,830</b>	4,000	9,000	13,900	215
22,000		<b>22,000</b>	4,100	10,000	15,300	220
22,220	7/8	<b>22,220</b>	4,100	10,000	15,300	220
22,500		<b>22,500</b>	4,100	10,000	15,300	225
22,620	57/64	<b>22,620</b>	4,200	10,000	15,300	225
23,000		<b>23,000</b>	4,200	10,000	15,300	230
23,020	29/32	<b>23,020</b>	4,200	10,000	15,300	230
23,420	59/64	<b>23,420</b>	4,300	10,000	15,300	230
23,500		<b>23,500</b>	4,300	10,000	15,300	235
23,810	15/16	<b>23,810</b>	4,400	10,000	15,300	235
24,000		<b>24,000</b>	4,400	11,000	15,800	240
24,100		<b>24,100</b>	4,400	11,000	15,800	240
24,210	61/64	<b>24,210</b>	4,500	11,000	15,800	240
24,500		<b>24,500</b>	4,500	11,000	15,800	245
24,610	31/32	<b>24,610</b>	4,500	11,000	15,800	245
25,000	63/64	<b>25,000</b>	4,600	11,000	15,800	250
25,250		<b>25,250</b>	4,600	11,000	15,800	250
25,400	1	<b>25,400</b>	4,700	11,000	15,800	250
25,500		<b>25,500</b>	4,700	11,000	15,800	255
25,650		<b>25,650</b>	4,700	11,000	15,800	255
25,670		<b>25,670</b>	4,700	11,000	15,800	255
25,700		<b>25,700</b>	4,700	11,000	15,800	255
26,000		<b>26,000</b>	4,800	12,000	20,000	260
26,190	1 1/32	<b>26,190</b>	4,800	12,000	20,000	260
26,500		<b>26,500</b>	4,900	12,000	20,000	265
27,000		<b>27,000</b>	5,000	12,000	20,000	270
27,500		<b>27,500</b>	5,100	12,000	20,000	275
27,700		<b>27,700</b>	5,100	12,000	20,000	275
27,780	1 3/32	<b>27,780</b>	5,100	12,000	20,000	275
28,000		<b>28,000</b>	5,100	13,000	20,700	280
28,180	1 7/64	<b>28,180</b>	5,200	13,000	20,700	280
28,500		<b>28,500</b>	5,200	13,000	20,700	285
28,580		<b>28,580</b>	5,300	13,000	20,700	285
29,000		<b>29,000</b>	5,300	13,000	20,700	290
29,370	1 5/32	<b>29,370</b>	5,400	13,000	20,700	290
29,500		<b>29,500</b>	5,400	13,000	20,700	295
29,600		<b>29,600</b>	5,400	13,000	20,700	295
30,000		<b>30,000</b>	5,500	14,000	22,300	300
30,160	1 3/16	<b>30,160</b>	5,500	14,000	22,300	300
30,500		<b>30,500</b>	5,600	14,000	22,300	305
30,960	1 7/32	<b>30,960</b>	5,700	14,000	22,300	305
31,000		<b>31,000</b>	5,700	14,000	22,300	310
31,500		<b>31,500</b>	5,800	14,000	22,300	315
31,750	1 1/4	<b>31,750</b>	5,800	14,000	22,300	315
32,000		<b>32,000</b>	5,900	15,000	23,100	320
32,500		<b>32,500</b>	6,000	15,000	23,100	320
32,540	1 9/32	<b>32,540</b>	6,000	15,000	23,100	320

d1 mm	d1 inch	Code-Nr.	l4 mm	b mm	h mm	Größe
33,000		<b>33,000</b>	6,100	15,000	23,100	330
33,340	1 5/16	<b>33,340</b>	6,100	15,000	23,100	330
33,500		<b>33,500</b>	6,100	15,000	23,100	330
34,000		<b>34,000</b>	6,200	15,000	23,100	340
34,130	1 11/32	<b>34,130</b>	6,300	15,000	23,100	340
34,500		<b>34,500</b>	6,300	15,000	23,100	340
34,930		<b>34,930</b>	6,400	15,000	23,100	340
35,000		<b>35,000</b>	6,400	15,000	23,100	350
35,500		<b>35,500</b>	6,500	15,000	23,100	350
35,720	1 13/32	<b>35,720</b>	6,600	15,000	23,100	350
36,000		<b>36,000</b>	6,600	16,000	23,900	360
36,500		<b>36,500</b>	6,700	16,000	23,900	360
36,510	1 7/16	<b>36,510</b>	6,700	16,000	23,900	360
37,000		<b>37,000</b>	6,800	16,000	23,900	370
37,310	1 15/32	<b>37,310</b>	6,800	16,000	23,900	370
37,500		<b>37,500</b>	6,900	16,000	23,900	370
38,000		<b>38,000</b>	7,000	16,000	23,900	380
38,100	1 1/2	<b>38,100</b>	7,000	16,000	23,900	380
38,500	1 33/64	<b>38,500</b>	7,100	16,000	23,900	380
39,000		<b>39,000</b>	7,100	16,000	23,900	390
39,500		<b>39,500</b>	7,200	16,000	23,900	390
40,000		<b>40,000</b>	7,300	16,000	23,900	400



## SuperV-Bohrsysteme

### SuperV-AP mini Wechselplatte

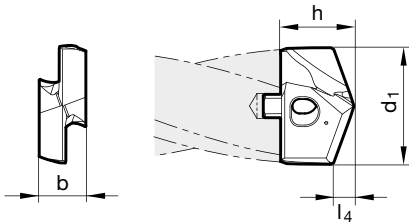


Katalog-Nr. 77012



Arbeitsrichtwerte  
Seite 36-44

- Ausspitzung  $\geq \varnothing 11,000$
- Kegelmantelanschiff
- Hauptschneidenform konkav
- Spannschrauben Katalog-Nr. 77020 enthalten



d1 mm	d1 inch	Code-Nr.	l4 mm	b mm	h mm	Größe
11,000		<b>11,000</b>	2,100	4,500	7,500	110
11,200		<b>11,200</b>	2,100	4,500	7,500	110
11,510	29/64	<b>11,510</b>	2,100	4,500	7,500	115
11,800		<b>11,800</b>	2,200	4,500	7,500	115
12,000		<b>12,000</b>	2,200	5,000	7,700	120
12,200		<b>12,200</b>	2,300	5,000	7,700	120
12,500		<b>12,500</b>	2,300	5,000	7,700	125
12,700	1/2	<b>12,700</b>	2,400	5,000	7,700	125
12,900		<b>12,900</b>	2,400	5,000	7,700	125
13,100	33/64	<b>13,100</b>	2,400	5,500	8,500	130
13,500		<b>13,500</b>	2,500	5,500	8,500	135
13,700		<b>13,700</b>	2,500	5,500	8,500	135
13,800		<b>13,800</b>	2,600	5,500	8,500	135
14,000		<b>14,000</b>	2,600	6,000	9,600	140
14,100		<b>14,100</b>	2,600	6,000	9,600	140
14,400		<b>14,400</b>	2,700	6,000	9,600	140
14,500		<b>14,500</b>	2,700	6,000	9,600	145
14,680	37/64	<b>14,680</b>	2,700	6,000	9,600	145
14,700		<b>14,700</b>	2,700	6,000	9,600	145
15,000		<b>15,000</b>	2,800	6,000	9,800	150
15,080	19/32	<b>15,080</b>	2,800	6,000	9,800	150
15,200		<b>15,200</b>	2,800	6,000	9,800	150
15,300		<b>15,300</b>	2,800	6,000	9,800	150
15,500		<b>15,500</b>	2,900	6,000	9,800	155
15,600		<b>15,600</b>	2,900	6,000	9,800	155
15,800		<b>15,800</b>	2,900	6,000	9,800	155
15,870	5/8	<b>15,870</b>	2,900	6,000	9,800	155
16,270	41/64	<b>16,270</b>	3,000	7,000	11,000	160
16,500		<b>16,500</b>	3,100	7,000	11,000	165
17,000		<b>17,000</b>	3,100	7,000	11,000	170
17,070	43/64	<b>17,070</b>	3,200	7,000	11,000	170
17,460	11/16	<b>17,460</b>	3,200	7,000	11,000	170
17,500		<b>17,500</b>	3,200	7,000	11,000	175
17,600		<b>17,600</b>	3,300	7,000	11,000	175
17,860	45/64	<b>17,860</b>	3,300	7,000	11,000	175
18,000		<b>18,000</b>	3,300	8,000	12,600	180
18,260	23/32	<b>18,260</b>	3,400	8,000	12,600	180
18,500		<b>18,500</b>	3,400	8,000	12,600	185
18,650	47/64	<b>18,650</b>	3,400	8,000	12,600	185
19,000		<b>19,000</b>	3,500	8,000	12,600	190
19,050	3/4	<b>19,050</b>	3,500	8,000	12,600	190
19,250		<b>19,250</b>	3,600	8,000	12,600	190
19,450	49/64	<b>19,450</b>	3,600	8,000	12,600	190
19,500		<b>19,500</b>	3,600	8,000	12,600	195
19,600		<b>19,600</b>	3,600	8,000	12,600	195
19,840	25/32	<b>19,840</b>	3,700	8,000	12,600	195
20,000		<b>20,000</b>	3,700	9,000	13,900	200
20,240	51/64	<b>20,240</b>	3,700	9,000	13,900	200

d1 mm	d1 inch	Code-Nr.	l4 mm	b mm	h mm	Größe
20,500		<b>20,500</b>	3,800	9,000	13,900	205
20,640	13/16	<b>20,640</b>	3,800	9,000	13,900	205
21,000		<b>21,000</b>	3,900	9,000	13,900	210
21,030	53/64	<b>21,030</b>	3,900	9,000	13,900	210
21,100		<b>21,100</b>	3,900	9,000	13,900	210
21,430	27/32	<b>21,430</b>	3,900	9,000	13,900	210
21,500		<b>21,500</b>	4,000	9,000	13,900	215
21,830	55/64	<b>21,830</b>	4,000	9,000	13,900	215
22,000		<b>22,000</b>	4,100	10,000	15,300	220
22,220	7/8	<b>22,220</b>	4,100	10,000	15,300	220
22,500		<b>22,500</b>	4,100	10,000	15,300	225
22,620	57/64	<b>22,620</b>	4,200	10,000	15,300	225
23,000		<b>23,000</b>	4,200	10,000	15,300	230
23,020	29/32	<b>23,020</b>	4,200	10,000	15,300	230
23,420	59/64	<b>23,420</b>	4,300	10,000	15,300	230
23,500		<b>23,500</b>	4,300	10,000	15,300	235
23,810	15/16	<b>23,810</b>	4,400	10,000	15,300	235
24,000		<b>24,000</b>	4,400	11,000	15,800	240
24,100		<b>24,100</b>	4,400	11,000	15,800	240
24,210	61/64	<b>24,210</b>	4,500	11,000	15,800	240
24,500		<b>24,500</b>	4,500	11,000	15,800	245
24,610	31/32	<b>24,610</b>	4,500	11,000	15,800	245
25,000	63/64	<b>25,000</b>	4,600	11,000	15,800	250
25,400	1	<b>25,400</b>	4,700	11,000	15,800	250
25,500		<b>25,500</b>	4,700	11,000	15,800	255
25,670		<b>25,670</b>	4,700	11,000	15,800	255
25,700		<b>25,700</b>	4,700	11,000	15,800	255
25,810		<b>25,810</b>	4,700	11,000	15,800	255
26,000		<b>26,000</b>	4,800	12,000	20,000	260
26,190	1 1/32	<b>26,190</b>	4,800	12,000	20,000	260
26,500		<b>26,500</b>	4,900	12,000	20,000	265
26,590	1 3/64	<b>26,590</b>	4,900	12,000	20,000	265
27,000		<b>27,000</b>	5,000	12,000	20,000	270
27,500		<b>27,500</b>	5,100	12,000	20,000	275
27,700		<b>27,700</b>	5,100	12,000	20,000	275
27,780	1 3/32	<b>27,780</b>	5,100	12,000	20,000	275
28,000		<b>28,000</b>	5,100	13,000	20,700	280
28,180	1 7/64	<b>28,180</b>	5,200	13,000	20,700	280
28,500		<b>28,500</b>	5,200	13,000	20,700	285
28,580		<b>28,580</b>	5,300	13,000	20,700	285
29,000		<b>29,000</b>	5,300	13,000	20,700	290
29,370	1 5/32	<b>29,370</b>	5,400	13,000	20,700	290
29,500		<b>29,500</b>	5,400	13,000	20,700	295
29,770	1 11/64	<b>29,770</b>	5,500	13,000	20,700	295
30,000		<b>30,000</b>	5,500	14,000	22,300	300
30,160	1 3/16	<b>30,160</b>	5,500	14,000	22,300	300
30,500		<b>30,500</b>	5,600	14,000	22,300	305
30,960	1 7/32	<b>30,960</b>	5,700	14,000	22,300	305
31,000		<b>31,000</b>	5,700	14,000	22,300	310
31,500		<b>31,500</b>	5,800	14,000	22,300	315
31,750	1 1/4	<b>31,750</b>	5,800	14,000	22,300	315
32,000		<b>32,000</b>	5,900	15,000	23,100	320
32,500		<b>32,500</b>	6,000	15,000	23,100	320
32,540	1 9/32	<b>32,540</b>	6,000	15,000	23,100	320
32,940	1 19/64	<b>32,940</b>	6,000	15,000	23,100	320
33,000		<b>33,000</b>	6,100	15,000	23,100	330
33,340	1 5/16	<b>33,340</b>	6,100	15,000	23,100	330
33,500		<b>33,500</b>	6,100	15,000	23,100	330
34,000		<b>34,000</b>	6,200	15,000	23,100	340
34,130	1 11/32	<b>34,130</b>	6,300	15,000	23,100	340
34,500		<b>34,500</b>	6,300	15,000	23,100	340
34,930		<b>34,930</b>	6,400	15,000	23,100	340
35,000		<b>35,000</b>	6,400	15,000	23,100	350
35,500		<b>35,500</b>	6,500	15,000	23,100	350
35,720	1 13/32	<b>35,720</b>	6,600	15,000	23,100	350
36,000		<b>36,000</b>	6,600	16,000	23,900	360
36,500		<b>36,500</b>	6,700	16,000	23,900	360
36,510	1 7/16	<b>36,510</b>	6,700	16,000	23,900	360
37,000		<b>37,000</b>	6,800	16,000	23,900	370
37,310	1 15/32	<b>37,310</b>	6,800	16,000	23,900	370
37,500		<b>37,500</b>	6,900	16,000	23,900	370
38,000		<b>38,000</b>	7,000	16,000	23,900	380

d1 mm	d1 inch	Code-Nr.	l4 mm	b mm	h mm	Größe
38,100	1 1/2	<b>38,100</b>	7,000	16,000	23,900	380
38,500	1 33/64	<b>38,500</b>	7,100	16,000	23,900	380
39,000		<b>39,000</b>	7,100	16,000	23,900	390
39,500		<b>39,500</b>	7,200	16,000	23,900	390
40,000		<b>40,000</b>	7,300	16,000	23,900	400

## SuperV-Bohrsysteme

### SuperV-AP mini Wechselplatte

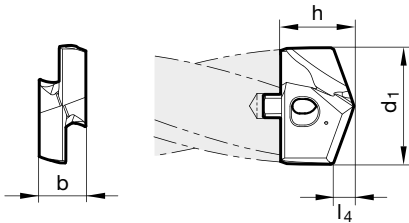


Katalog-Nr. 77011



P	M	K	N	S	H
●	●	●	●	○	

Arbeitsrichtwerte  
Seite 36



- Ausspitzung  $\geq \varnothing 11,000$
- Flächenanschliff
- vier Führungsfasen
- Hauptschneidenform gerade (durch Korrektur)
- Spanschrauben Katalog-Nr. 77020 enthalten
- speziell zum Einsatz mit Katalog-Nr. 77007

d1 mm	d1 inch	Code-Nr.	l4 mm	b mm	h mm	Größe
11,000		<b>11,000</b>	1,800	4,500	7,200	110
11,200		<b>11,200</b>	1,800	4,500	7,200	110
11,510	29/64	<b>11,510</b>	1,900	4,500	7,200	110
11,800		<b>11,800</b>	1,900	4,500	7,200	110
12,000		<b>12,000</b>	1,900	5,000	7,400	120
12,200		<b>12,200</b>	2,000	5,000	7,400	120
12,500		<b>12,500</b>	2,000	5,000	7,400	120
12,700	1/2	<b>12,700</b>	2,100	5,000	7,400	120
12,900		<b>12,900</b>	2,100	5,000	7,400	120
13,100	33/64	<b>13,100</b>	2,100	5,500	8,200	130
13,500		<b>13,500</b>	2,200	5,500	8,200	130
13,700		<b>13,700</b>	2,200	5,500	8,200	130
13,800		<b>13,800</b>	2,200	5,500	8,200	130
14,000		<b>14,000</b>	2,300	6,000	9,400	140
14,100		<b>14,100</b>	2,300	6,000	9,400	140
14,400		<b>14,400</b>	2,300	6,000	9,400	140
14,500		<b>14,500</b>	2,300	6,000	9,400	140
14,680	37/64	<b>14,680</b>	2,400	6,000	9,400	140
14,700		<b>14,700</b>	2,400	6,000	9,400	140
15,000		<b>15,000</b>	2,400	6,000	9,400	140
15,080	19/32	<b>15,080</b>	2,400	6,000	9,400	140
15,200		<b>15,200</b>	2,400	6,000	9,400	140
15,300		<b>15,300</b>	2,500	6,000	9,400	140
15,500		<b>15,500</b>	2,500	6,000	9,400	140
15,600		<b>15,600</b>	2,500	6,000	9,400	140
15,800		<b>15,800</b>	2,500	6,000	9,400	140
15,870	5/8	<b>15,870</b>	2,600	6,000	9,400	140
16,270	41/64	<b>16,270</b>	2,600	7,000	10,600	160
16,500		<b>16,500</b>	2,700	7,000	10,600	160
17,000		<b>17,000</b>	2,700	7,000	10,600	160
17,070	43/64	<b>17,070</b>	2,700	7,000	10,600	160
17,460	11/16	<b>17,460</b>	2,800	7,000	10,600	160
17,500		<b>17,500</b>	2,800	7,000	10,600	160
17,600		<b>17,600</b>	2,800	7,000	10,600	160
17,860	45/64	<b>17,860</b>	2,900	7,000	10,600	160
18,000		<b>18,000</b>	2,900	8,000	12,100	180
18,260	23/32	<b>18,260</b>	2,900	8,000	12,100	180
18,500		<b>18,500</b>	3,000	8,000	12,100	180
18,650	47/64	<b>18,650</b>	3,000	8,000	12,100	180
19,000		<b>19,000</b>	3,000	8,000	12,100	180
19,050	3/4	<b>19,050</b>	3,100	8,000	12,100	180
19,450	49/64	<b>19,450</b>	3,100	8,000	12,100	180
19,500		<b>19,500</b>	3,100	8,000	12,100	180
19,600		<b>19,600</b>	3,100	8,000	12,100	180
19,840	25/32	<b>19,840</b>	3,200	8,000	12,100	180
20,000		<b>20,000</b>	3,200	9,000	13,300	200
20,240	51/64	<b>20,240</b>	3,200	9,000	13,300	200
20,500		<b>20,500</b>	3,300	9,000	13,300	200

d1 mm	d1 inch	Code-Nr.	l4 mm	b mm	h mm	Größe
20,640	13/16	<b>20,640</b>	3,300	9,000	13,300	200
21,000		<b>21,000</b>	3,400	9,000	13,300	200
21,030	53/64	<b>21,030</b>	3,400	9,000	13,300	200
21,100		<b>21,100</b>	3,400	9,000	13,300	200
21,500		<b>21,500</b>	3,400	9,000	13,300	200
22,000		<b>22,000</b>	3,500	10,000	14,800	220
22,500		<b>22,500</b>	3,600	10,000	14,800	220
23,000		<b>23,000</b>	3,700	10,000	14,800	220
23,420	59/64	<b>23,420</b>	3,700	10,000	14,800	220
23,810	15/16	<b>23,810</b>	3,800	10,000	14,800	220
24,100		<b>24,100</b>	3,800	11,000	15,300	240
24,500		<b>24,500</b>	3,900	11,000	15,300	240
25,000	63/64	<b>25,000</b>	4,000	11,000	15,300	240
25,500		<b>25,500</b>	4,100	11,000	15,300	240
25,700		<b>25,700</b>	4,100	11,000	15,300	240
26,190	1 1/32	<b>26,190</b>	4,200	12,000	19,400	260
26,500		<b>26,500</b>	4,200	12,000	19,400	260
27,500		<b>27,500</b>	4,400	12,000	19,400	260
27,700		<b>27,700</b>	4,400	12,000	19,400	260
28,000		<b>28,000</b>	4,500	13,000	20,100	280
28,180	1 7/64	<b>28,180</b>	4,500	13,000	20,100	280
28,580		<b>28,580</b>	4,600	13,000	20,100	280
29,000		<b>29,000</b>	4,600	13,000	20,100	280
29,500		<b>29,500</b>	4,700	13,000	20,100	280
30,000		<b>30,000</b>	4,800	14,000	21,700	300
30,500		<b>30,500</b>	4,900	14,000	21,700	300
30,960	1 7/32	<b>30,960</b>	4,900	14,000	21,700	300
31,500		<b>31,500</b>	5,000	14,000	21,700	300
31,750	1 1/4	<b>31,750</b>	5,100	14,000	21,700	300
32,500		<b>32,500</b>	5,200	15,000	22,400	320
32,540	1 9/32	<b>32,540</b>	5,200	15,000	22,400	320
33,340	1 5/16	<b>33,340</b>	5,300	15,000	22,400	320
33,500		<b>33,500</b>	5,300	15,000	22,400	320
34,000		<b>34,000</b>	5,400	15,000	22,400	320
34,130	1 11/32	<b>34,130</b>	5,400	15,000	22,400	320
34,500		<b>34,500</b>	5,500	15,000	22,400	320
34,930		<b>34,930</b>	5,600	15,000	22,400	320
35,000		<b>35,000</b>	5,600	15,000	22,400	320
35,500		<b>35,500</b>	5,600	15,000	22,400	320
36,000		<b>36,000</b>	5,700	16,000	23,200	360
36,500		<b>36,500</b>	5,800	16,000	23,200	360
36,510	1 7/16	<b>36,510</b>	5,800	16,000	23,200	360
37,000		<b>37,000</b>	5,900	16,000	23,200	360
37,310	1 15/32	<b>37,310</b>	5,900	16,000	23,200	360
37,500		<b>37,500</b>	6,000	16,000	23,200	360
38,000		<b>38,000</b>	6,000	16,000	23,200	360
38,100	1 1/2	<b>38,100</b>	6,100	16,000	23,200	360
38,500	1 33/64	<b>38,500</b>	6,100	16,000	23,200	360
39,000		<b>39,000</b>	6,200	16,000	23,200	360
39,500		<b>39,500</b>	6,300	16,000	23,200	360
40,000		<b>40,000</b>	6,400	16,000	23,200	360

## SuperV-Bohrsysteme

### SuperV-AP maxi Wechselplattenhalter

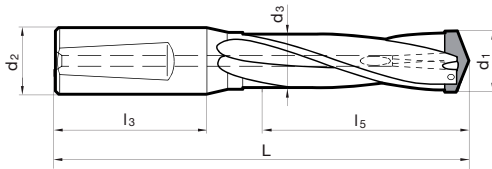


Katalog-Nr. 76000



Arbeitsrichtwerte Seite 46

- verstärkter Schaft
- Wechselplatte im eingebauten Zustand austauschbar
- Spannschrauben Katalog-Nr. 76020 enthalten
- Schraubendreher Katalog-Nr. 76021 enthalten



d1 mm	Code-Nr.	d2 mm	d3 mm	L mm	l3 mm	l5 mm	Größe
16,00-17,00	<b>17,000</b>	20,000	15,700	128,400	50,000	53,000	0.1
17,01-17,99	<b>17,990</b>	20,000	16,700	128,400	50,000	53,000	0.2
18,00-19,00	<b>19,000</b>	20,000	17,700	136,700	50,000	53,000	1.1
19,01-20,00	<b>20,000</b>	20,000	18,700	136,700	50,000	58,000	1.2
20,01-21,00	<b>21,000</b>	25,000	19,700	151,600	56,000	58,000	2.1
21,01-22,50	<b>22,500</b>	25,000	20,700	151,600	56,000	63,000	2.2
22,51-24,00	<b>24,000</b>	25,000	22,200	159,400	56,000	63,000	3.1
24,01-25,50	<b>25,500</b>	25,000	23,700	168,400	56,000	68,000	3.2
25,51-27,50	<b>27,500</b>	32,000	25,200	180,000	60,000	68,000	4.1
27,51-29,50	<b>29,500</b>	32,000	27,200	188,000	60,000	68,000	4.2
29,51-32,00	<b>32,000</b>	32,000	29,200	195,600	60,000	75,000	5.1
32,01-34,50	<b>34,500</b>	32,000	31,700	203,600	60,000	75,000	5.2
34,51-37,50	<b>37,500</b>	32,000	34,000	215,100	60,000	75,000	6.1
37,51-40,50	<b>40,500</b>	32,000	37,000	228,100	60,000	120,000	6.2

## SuperV-Bohrsysteme

### SuperV-AP maxi Wechselplattenhalter

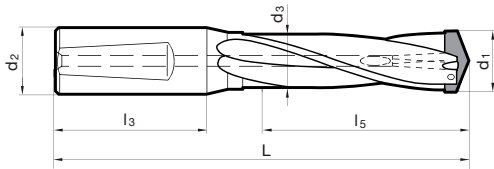


Katalog-Nr. 76001



Arbeitsrichtwerte Seite 48

- verstärkter Schaft
- Wechselplatte im eingebauten Zustand austauschbar
- Spannschrauben Katalog-Nr. 76020 enthalten
- Schraubendreher Katalog-Nr. 76021 enthalten



d1 mm	Code-Nr.	d2 mm	d3 mm	L mm	l3 mm	l5 mm	Größe
16,00-17,00	<b>17,000</b>	20,000	15,700	164,400	50,000	90,000	0.1
17,01-17,99	<b>17,990</b>	20,000	16,700	164,400	50,000	90,000	0.2
18,00-19,00	<b>19,000</b>	20,000	17,700	176,700	50,000	100,000	1.1
19,01-20,00	<b>20,000</b>	20,000	18,700	176,700	50,000	100,000	1.2
20,01-21,00	<b>21,000</b>	25,000	19,700	195,600	56,000	110,000	2.1
21,01-22,50	<b>22,500</b>	25,000	20,700	195,600	56,000	110,000	2.2
22,51-24,00	<b>24,000</b>	25,000	22,200	207,400	56,000	120,000	3.1
24,01-25,50	<b>25,500</b>	25,000	23,700	220,400	56,000	130,000	3.2
25,51-27,50	<b>27,500</b>	32,000	25,200	236,000	60,000	140,000	4.1
27,51-29,50	<b>29,500</b>	32,000	27,200	248,000	60,000	150,000	4.2
29,51-32,00	<b>32,000</b>	32,000	29,200	259,600	60,000	160,000	5.1
32,01-34,50	<b>34,500</b>	32,000	31,700	271,600	60,000	170,000	5.2
34,51-37,50	<b>37,500</b>	32,000	34,000	289,100	60,000	190,000	6.1
37,51-40,50	<b>40,500</b>	32,000	37,000	308,100	60,000	200,000	6.2

## SuperV-Bohrsysteme

### SuperV-AP maxi Wechselplattenhalter

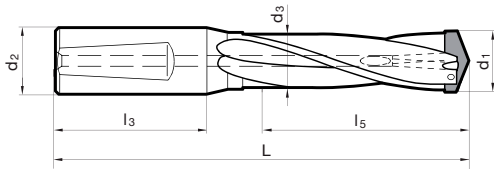


Katalog-Nr. 76003



Arbeitsrichtwerte Seite 50

- verstärkter Schaft
- Wechselplatte im eingebauten Zustand austauschbar
- Spannschrauben Katalog-Nr. 76020 enthalten
- Schraubendreher Katalog-Nr. 76021 enthalten



d1 mm	Code-Nr.	d2 mm	d3 mm	L mm	l3 mm	l5 mm	Größe
16,00-17,00	<b>17,000</b>	20,000	15,700	194,000	50,000	126,000	0.1
17,01-17,99	<b>17,990</b>	20,000	16,700	194,000	50,000	126,000	0.2
18,00-19,00	<b>19,000</b>	20,000	17,700	210,000	50,000	140,000	1.1
19,01-20,00	<b>20,000</b>	20,000	18,700	210,000	50,000	140,000	1.2
20,01-21,00	<b>21,000</b>	25,000	19,700	232,200	56,000	154,000	2.1
21,01-22,50	<b>22,500</b>	25,000	20,700	232,200	56,000	154,000	2.2
22,51-24,00	<b>24,000</b>	25,000	22,200	247,000	56,000	168,000	3.1
24,01-25,50	<b>25,500</b>	25,000	23,700	264,000	56,000	182,000	3.2
25,51-27,50	<b>27,500</b>	32,000	25,200	282,400	60,000	196,000	4.1
27,51-29,50	<b>29,500</b>	32,000	27,200	298,400	60,000	210,000	4.2
29,51-32,00	<b>32,000</b>	32,000	29,200	312,400	60,000	224,000	5.1
32,01-34,50	<b>34,500</b>	32,000	31,700	328,400	60,000	238,000	5.2
34,51-37,50	<b>37,500</b>	32,000	34,000	350,000	60,000	266,000	6.1
37,51-40,50	<b>40,500</b>	32,000	37,000	375,000	60,000	280,000	6.2



## SuperV-Bohrsysteme

### SuperV-AP maxi Wechselplatte



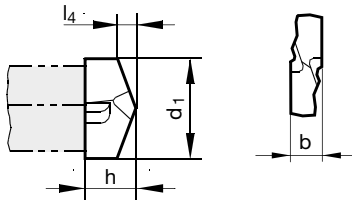
Katalog-Nr. 76011



P	M	K	N	S	H
●		●	○		

Arbeitsrichtwerte  
Seite 46-50

- Kegelmantelschliff
- Hauptschneidenform konkav
- Spannschrauben Katalog-Nr. 76020 enthalten



d1 mm	d1 inch	Code-Nr.	l4 mm	b mm	h mm	Größe
16,000		16,000	3,000	4,500	8,000	0.1
16,500		16,500	3,100	4,500	8,000	0.1
17,000		17,000	3,100	4,500	8,000	0.1
17,500		17,500	3,200	4,500	8,000	0.2
18,000		18,000	3,300	5,000	8,000	1.1
18,500		18,500	3,400	5,000	8,000	1.1
19,000		19,000	3,500	5,000	8,000	1.1
19,500		19,500	3,600	5,000	8,000	1.2
20,000		20,000	3,700	5,000	8,000	1.2
20,500		20,500	3,800	5,500	8,800	2.1
21,000		21,000	3,900	5,500	8,800	2.1
21,500		21,500	4,000	5,500	8,800	2.2
22,000		22,000	4,100	5,500	8,800	2.2
22,500		22,500	4,100	5,500	8,800	2.2
23,000		23,000	4,200	6,300	10,000	3.1
23,500		23,500	4,300	6,300	10,000	3.1
24,000		24,000	4,400	6,300	10,000	3.1
24,500		24,500	4,500	6,300	10,000	3.2
25,000	63/64	25,000	4,600	6,300	10,000	3.2
25,500		25,500	4,700	6,300	10,000	3.2
26,000		26,000	4,800	7,300	11,600	4.1
26,500		26,500	4,900	7,300	11,600	4.1
27,000		27,000	5,000	7,300	11,600	4.1
27,500		27,500	5,100	7,300	11,600	4.1
28,000		28,000	5,100	7,300	11,600	4.2
28,500		28,500	5,200	7,300	11,600	4.2
29,000		29,000	5,300	7,300	11,600	4.2
29,500		29,500	5,400	7,300	11,600	4.2
30,000		30,000	5,500	8,500	13,600	5.1
30,500		30,500	5,600	8,500	13,600	5.1
31,000		31,000	5,700	8,500	13,600	5.1
31,500		31,500	5,800	8,500	13,600	5.1
32,000		32,000	5,900	8,500	13,600	5.1
32,500		32,500	6,000	8,500	13,600	5.2
33,000		33,000	6,100	8,500	13,600	5.2
33,500		33,500	6,100	8,500	13,600	5.2
34,000		34,000	6,200	8,500	13,600	5.2
34,500		34,500	6,300	8,500	13,600	5.2
35,000		35,000	6,400	10,000	16,000	6.1
36,000		36,000	6,600	10,000	16,000	6.1
37,000		37,000	6,800	10,000	16,000	6.1
37,500		37,500	6,900	10,000	16,000	6.1
38,000		38,000	7,000	10,000	16,000	6.2
39,000		39,000	7,100	10,000	16,000	6.2
40,000		40,000	7,300	10,000	16,000	6.2
40,500		40,500	7,400	10,000	16,000	6.2

## SuperV-Bohrsysteme

### SuperV-AP maxi Wechselplatte



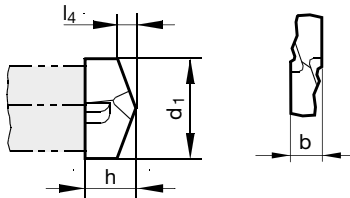
Katalog-Nr. 56011



P	M	K	N	S	H
●		●	○		

Arbeitsrichtwerte  
Seite 46-50

- Kegelmantelanschliff
- Hauptschneidenform konkav
- höhere Verschleißfestigkeit
- Spannschrauben Katalog-Nr. 76020 enthalten



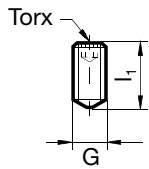
d1 mm	d1 inch	Code-Nr.	l4 mm	b mm	h mm	Größe
16,000		16,000	3,000	4,500	8,000	0.1
16,500		16,500	3,100	4,500	8,000	0.1
17,000		17,000	3,100	4,500	8,000	0.1
17,500		17,500	3,200	4,500	8,000	0.2
18,000		18,000	3,300	5,000	8,000	1.1
18,500		18,500	3,400	5,000	8,000	1.1
19,000		19,000	3,500	5,000	8,000	1.1
19,500		19,500	3,600	5,000	8,000	1.2
20,000		20,000	3,700	5,000	8,000	1.2
20,500		20,500	3,800	5,500	8,800	2.1
21,000		21,000	3,900	5,500	8,800	2.1
21,500		21,500	4,000	5,500	8,800	2.2
22,000		22,000	4,100	5,500	8,800	2.2
22,500		22,500	4,100	5,500	8,800	2.2
23,000		23,000	4,200	6,300	10,000	3.1
23,500		23,500	4,300	6,300	10,000	3.1
24,000		24,000	4,400	6,300	10,000	3.1
24,500		24,500	4,500	6,300	10,000	3.2
25,000	63/64	25,000	4,600	6,300	10,000	3.2
25,500		25,500	4,700	6,300	10,000	3.2
26,000		26,000	4,800	7,300	11,600	4.1
26,500		26,500	4,900	7,300	11,600	4.1
27,000		27,000	5,000	7,300	11,600	4.1
27,500		27,500	5,100	7,300	11,600	4.1
28,000		28,000	5,100	7,300	11,600	4.2
28,500		28,500	5,200	7,300	11,600	4.2
29,000		29,000	5,300	7,300	11,600	4.2
29,500		29,500	5,400	7,300	11,600	4.2
30,000		30,000	5,500	8,500	13,600	5.1
30,500		30,500	5,600	8,500	13,600	5.1
31,000		31,000	5,700	8,500	13,600	5.1
31,500		31,500	5,800	8,500	13,600	5.1
32,000		32,000	5,900	8,500	13,600	5.1
32,500		32,500	6,000	8,500	13,600	5.2
33,000		33,000	6,100	8,500	13,600	5.2
33,500		33,500	6,100	8,500	13,600	5.2
34,000		34,000	6,200	8,500	13,600	5.2
34,500		34,500	6,300	8,500	13,600	5.2
35,000		35,000	6,400	10,000	16,000	6.1
36,000		36,000	6,600	10,000	16,000	6.1
37,000		37,000	6,800	10,000	16,000	6.1
37,500		37,500	6,900	10,000	16,000	6.1
38,000		38,000	7,000	10,000	16,000	6.2
39,000		39,000	7,100	10,000	16,000	6.2
40,000		40,000	7,300	10,000	16,000	6.2
40,500		40,500	7,400	10,000	16,000	6.2

## SuperV-Bohrsysteme

### Spannschrauben



Katalog-Nr. 76020



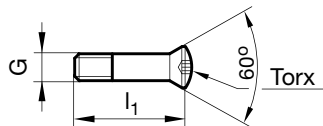
G	l1 mm	Torx	Code-Nr.
M 3X0,35	7,000	T6	3,000
M 3X0,35	6,000	T6	3,006
M 3,5X0,35	8,000	T7	3,500
M 4X0,5	9,000	T8	4,000
M 4,5X0,5	10,000	T8	4,500
M 5X0,5	11,000	T10	5,000

## SuperV-Bohrsysteme

### Spannschrauben



Katalog-Nr. 77020



G	l1 mm	Torx	Code-Nr.
M 2,2	9,500	T7	2,200
M 2,2	10,500	T7	2,201
M 2,5	11,400	T8	2,500
M 3	12,100	T9	3,000
M 3	13,100	T9	3,001
M 3,5	14,250	T10	3,500
M 4	16,000	T15	4,000
M 4,5	18,000	T15	4,500
M 5	19,750	T20	5,000
M 5	21,750	T20	5,001
M 5	23,400	T20	5,003
M 6	27,000	T25	6,000
M 6	28,500	T25	6,001
M 6	32,500	T25	6,002

## SuperV-Bohrsysteme

### Drehmomentschlüssel



Katalog-Nr. 77022

Tip	Code-Nr.	Torx	L mm	Drehmoment Nm
A	2,000	1/4"	160,000	0,8...2
A	5,001	1/4"	160,000	1...5
A	8,000	1/4"	160,000	2...8

## SuperV-Bohrsysteme

### Torx-Bit Einsätze



Katalog-Nr. 77021

Torx	L mm	kg	Code-Nr.
T6	25,000	0,040	6,000
T8	25,000	0,071	8,000
T10	25,000	0,112	10,000
T20	25,000	0,045	20,000

## SuperV-Bohrsysteme

### Torx-Schraubendreher



Katalog-Nr. 76021

Torx	Code-Nr.	L mm
T6	6,000	42,000
T7	7,001	150,000
T8	8,000	48,000
T8	8,001	150,000
T9	9,001	150,000
T10	10,001	170,000
T15	15,000	54,000
T15	15,001	190,000
T20	20,000	57,000
T20	20,001	205,000
T25	25,000	60,000
T25	25,001	207,000