ATE Tools GmbH

Standard Programm

Vollhartmetall Werkzeuge

BOHRER – FRÄSER – REIBAHLE

Solid carbide Tools

DRILLS – END MILLS – REAMER

ATE TOOLS GmbH

ATE Tools GmbH – Unser Team

Mehr als 25 Jahre Erfahrung in der Branche und über 10 Jahre mit der Herstellung von Werkzeugen vertraut. Mit unseren CNC- Fertigungsmaschinen erfüllen wir höchste Qualität. Durch enge Zusammenarbeit mit dem Kunden werden Werkzeuge gefertigt, die den jeweiligen Anwendungszweck entsprechen.

Unsere Zerspanungswerkzeuge zeichnen sich durch besondere Präzision und Langlebigkeit aus. Zudem können wir Sonderwerkzeuge mit individuellen Eigenschaften schaffen. Dadurch ist es uns gelungen, bei unseren Kunden Maßstäbe zu setzen. VHM Werkzeuge bis hin zu Nachschleifarbeiten, wir fertigen und bearbeiten für Sie.

More than 25 years of experience in the industry and over 10 years familiar with tool manufacturing. Our CNC production machinery meets superior quality standards. In close cooperation with the customer we manufacture tools which are perfectly suited for specific application purposes.

Our cutting tools excel in utmost precision and durability. Furthermore, we offer special tools with customized features. In this way, we succeeded in setting new benchmarks for our customers. From solid carbide tools to regrinding work – we are your trusted partner in manufacture and processing.

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Standardwerkzeuge & Sonderwerkzeuge
Standard tools & Special tools

Standardwerkzeuge

Unsere VHM-Standard-Werkzeuge für effizientes und wirtschaftliches Arbeiten - hier liefern wir eine breite Palette an Bohrern, Fräsern, Reibahlen in hervorragender Qualität. Einsetzbar in vielen Bereichen und mit einer Auswahl an verschiedenen Beschichtungen.

Standard tools

Our solid carbide standard tools ensure efficient and economic processing. We offer a large range of high-quality drills, milling tools and reamers used for a variety of applications and including a wide array of coatings.

Sonderwerkzeuge – unsere große Stärke

Wenn es um spezielle Geometrien und anspruchsvolle Bohrprozesse geht, dann ist die Sonderanfertigung eines Bohr- oder Fräswerkzeuges besonders interessant. Oft lassen sich mehrere Bearbeitungsschritte zu einem Bohr- oder Fräsvorgang zusammenlegen – das bedeutet eine nachhaltige Reduktion Ihrer Kosten sowie eine enorme Zeitersparnis.

Unsere Sonderwerkzeuge überzeugen durch hohe Qualität und optimale Wirtschaftlichkeit. Zugleich steigt mit intelligent konstruierten Sonderwerkzeugen auch das Resultat des Werkstücks, was beispielsweise die Präzision der Konturen aus einem Guss und die Exaktheit der Bearbeitung angeht.

Special tools – our core strength

When it comes to special geometries and demanding drilling processes, the tailormade production of a drilling or milling tool is particularly interesting. In many cases several processing steps can be combined to one drilling or milling operation – resulting in sustainable cost reduction and enormous time-saving.

Our special tools demonstrate high quality and optimum economic efficiency. At the same time, smartly designed special tools enhance the result of the workpiece, e.g. in terms of consistent contour precision or machining accuracy.

ISOCERT Konformitäts-bewertungen

Deutsche Qualitätsmanagement Akademie
In Kooperation mit EuroConsult Deutschland GmbH - Mitglied der EFQM und DGQ

Zertifikat

Hiermit wird bescheinigt, dass das
Qualitätsmanagement-System der

ATE TOOLS GmbH

ATE Tools GmbH

D – 72336 Balingen – Am Bangraben 22

geprüft und bewertet wurde
sowie durch den Audit-Bericht Nr. 120/06/18
den Nachweis erbracht hat, dass die Forderungen der

DIN EN ISO 9001:2015

für den Geltungsbereich

„Fertigung und Vertrieb von Werkzeugen für die
spanabhebende Metallbearbeitung"

erfüllt sind.

Dieses Zertifikat mit Nr. 0575/18 ist gültig bis 31. Dezember 2020.

DQM® AKADEMIE
www.dqm-akademie.de

Lead-Auditor/EFQM-Assessor

Internationaler Akkreditierungs Rat 246/05
IAR

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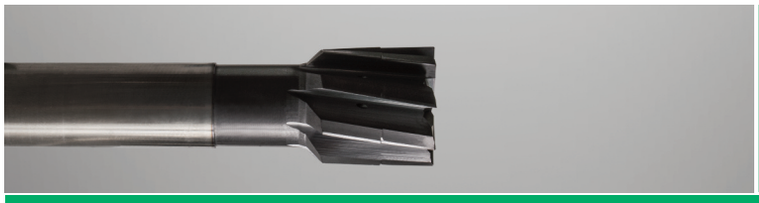

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VHM Mikrobohrer 0,05 mm steigend

Solid carbide micro drill rising in steps of 0.05 mm

130° | Z=2 | BLANK | VHM | STAHL steel | INOX | TITAN

d1 h6, d2	l2	l1	CODE
0,30	1.5	38	B10001-0003015
0,35	1.5	38	B10001-0003515
0,40	2,0	38	B10001-0004020
0,45	3,5	38	B10001-0004535
0,50	4,0	38	B10001-0005040
0,55	4,5	38	B10001-0005545
0,60	5,0	38	B10001-0006050
0,65	5,0	38	B10001-0006515
0,70	5,5	38	B10001-0007055
0,75	5,5	38	B10001-0007555
0,80	5,5	38	B10001-0008055
0,90	7,0	38	B10001-0009070
1,00	8,0	38	B10001-0100080
1,10	8,0	38	B10001-0110080
1,20	10,00	38	B10001-0120010
1,30	10,00	38	B10001-0130010
1,40	11,00	38	B10001-0140011
1,50	11,00	38	B10001-0150011
1,60	12,00	38	B10001-0160012
1,70	12,00	38	B10001-0170012
1,80	12,00	38	B10001-0180012
1,90	12,00	38	B10001-0190012
2,00	12,00	38	B10001-0200012

VHM Kleinstbohrer 5xd

Solid carbide minimum drill 5xd

5xd | HA | INOX | STAHL steel | TITAN | ≤ 65 HRC | TiALN

Verpackungseinheit: 10 Stück
Unit size: 10 pieces

d1	d2	l	l1	CODE
0,10	3	38	1.5	B10117-0100015
0,12	3	38	1.5	B10117-0120015
0,15	3	38	1.5	B10117-0150015
0,18	3	38	1.5	B10117-0180015
0,20	3	38	1.5	B10117-0200015
0,25	3	38	2	B10117-0250020
0,30	3	38	2	B10117-0300020
0,35	3	38	3	B10117-0350030
0,40	3	38	3	B10117-0400030
0,45	3	38	3	B10117-0450030
0,50	3	38	5	B10117-0500050
0,55	3	40	5	B10117-0550050
0,60	3	40	5	B10117-0600050
0,65	3	40	6	B10117-0650060
0,70	3	40	6	B10117-0700060
0,75	3	40	6	B10117-0750060
0,80	3	40	6	B10117-0800060
0,90	3	40	8	B10117-0900080
1,00	3	40	8	B10117-1000080
1,10	3	40	10	B10117-1100100
1,20	3	40	10	B10117-1200100
1,30	3	40	10	B10117-1300100
1,40	3	40	10	B10117-1400100
1,50	3	40	10	B10117-1500100
1,60	3	40	10	B10117-1600100
1,70	3	40	10	B10117-1700100
1,80	3	40	11	B10117-1800110
1,90	3	40	11	B10117-1900110
2,00	3	40	13	B10117-2000130
2,10	3	40	13	B10117-2100130
2,20	3	40	13	B10117-2200130
2,30	3	40	13	B10117-2300130
2,40	3	40	15	B10117-2400150
2,50	3	40	15	B10117-2500150
2,60	3	40	15	B10117-2600150
2,70	3	40	15	B10117-2700150
2,80	3	40	15	B10117-2800150
2,90	3	40	15	B10117-2900150
3,00	3	40	15	B10117-3000150

VHM Kleinstbohrer 8xd

Solid carbide minimum drill 8xd

8xd | HA | INOX | STAHL steel | TITAN | ≤ 65 HRC | TiALN

Verpackungseinheit: 10 Stück
Unit size: 10 pieces

d1	d2	l	l1	CODE
0,10	3	38	2	B10118-0100020
0,12	3	38	2	B10118-0120020
0,15	3	38	2	B10118-0150020
0,18	3	38	2	B10118-0180020
0,20	3	38	2	B10118-0200020
0,25	3	38	2.5	B10118-0250025
0,30	3	38	4	B10118-0300040
0,40	3	40	5	B10118-0400050
0,45	3	40	5	B10118-0450050
0,50	3	40	5	B10118-0500050
0,55	3	40	5	B10118-0550050
0,60	3	40	6	B10118-0600060
0,65	3	40	6	B10118-0650060
0,70	3	40	7	B10118-0700070
0,75	3	40	7	B10118-0750070
0,80	3	40	8	B10118-0800080
0,90	3	40	8	B10118-0900080
1,00	3	40	10	B10118-1000100
1,10	3	40	12	B10118-1100120
1,20	3	40	12	B10118-1200120
1,30	3	40	12	B10118-1300120
1,40	3	40	14	B10118-1400140
1,50	3	40	14	B10118-1500140
1,60	3	40	16	B10118-1600160
1,70	3	40	16	B10118-1700160
1,80	3	40	16	B10118-1800160
1,90	3	40	16	B10118-1900160
2,00	3	46	18	B10118-2000180
2,10	3	46	18	B10118-2100180
2,20	3	46	18	B10118-2200180
2,30	3	50	22	B10118-2300220
2,40	3	50	22	B10118-2400200
2,50	3	50	22	B10118-2500220
2,60	3	50	25	B10118-2600250
2,70	3	50	25	B10118-2700250
2,80	3	50	25	B10118-2800250
2,90	3	50	25	B10118-2900250
3,00	3	50	28	B10118-3000280

VHM Kleinstbohrer 5xd – IKK

Solid carbide minimum drill 5xd – inner cooling

5xd | HA | INOX | STAHL steel | TITAN | ≤ 45 HRC | TiALN

Verpackungseinheit: 10 Stück
Unit size: 10 pieces

d1	d2	l	l1	CODE	d1	d2	l	l1	CODE
0.5	3	38	4	B10119-0500040	**2,0**	3	46	18	B10119-2000180
0.6	3	38	4	B10119-0600040	**2.1**	3	46	18	B10119-2100180
0.7	3	38	5	B10119-0700050	**2.2**	3	46	18	B10119-2200180
0.8	3	38	5	B10119-0800050	**2.3**	3	46	18	B10119-2300180
1,0	3	38	6	B10119-1000060	**2.4**	3	46	18	B10119-2400180
1.2	3	38	8	B10119-1200080	**2.5**	3	46	18	B10119-2500180
1.5	3	38	12	B10119-1500120	**2.6**	3	46	18	B10119-2600180
1.6	3	38	12	B10119-1600120	**2.7**	3	46	18	B10119-2700180
1.7	3	38	12	B10119-1700120	**2.8**	3	46	18	B10119-2800180
1.8	3	38	12	B10119-1800120	**2.9**	3	46	18	B10119-2900180
1.9	3	38	12	B10119-1900120	**3,0**	3	46	18	B10119-3000180

VHM Kleinstbohrer 10xd – IKK

Solid carbide minimum drill 10xd – inner cooling

10xd | HA | INOX | STAHL steel | TITAN | ≤ 45 HRC | TiALN

Verpackungseinheit: 10 Stück
Unit size: 10 pieces

d1	d2	l	l1	CODE	d1	d2	l	l1	CODE
0.5	3	38	6	B10120-0050006	**2,0**	3	46	20	B10120-0200020
0.6	3	38	6	B10120-0060006	**2.1**	3	60	25	B10120-0210025
0.7	3	38	8	B10120-0070008	**2.2**	3	60	25	B10120-0220025
0.8	3	38	10	B10120-0080010	**2.3**	3	60	25	B10120-0230025
1,0	3	38	12	B10120-0100012	**2.4**	3	60	25	B10120-0240025
1.2	3	38	12	B10120-0120012	**2.5**	3	60	25	B10120-0250025
1.5	3	38	16	B10120-0150016	**2.6**	3	60	30	B10120-0260030
1.6	3	46	16	B10120-0160016	**2.7**	3	60	30	B10120-0270030
1.7	3	46	18	B10120-0170018	**2.8**	3	60	30	B10120-0280030
1.8	3	46	18	B10120-0180018	**2.9**	3	60	30	B10120-0290030
1.9	3	46	20	B10120-0190020	**3,0**	3	60	30	B10120-0300030

HM Bohrer Kunststoffe, Alu

Carbide drill for plastic material - aluminium

120° ALU HA GFK CFK

BLANK

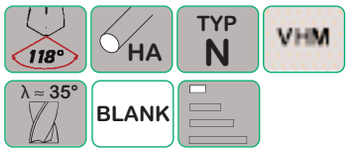
Anwendungen
Glasepoxidmaterialien: FR4,G10,G20,G30,G40
CEM 1,CEM 2,
Harzpapierkomponente: Fr2,Fr3, Polimide,Teflon, Kapton,
Acrylate,Gold,Silber,Aluminium, Messing, Kupfer,
Carbonfaserkomponente

Verpackungseinheit/ Unit size:
0.16 – 1.30 mm = 50 St./ pices
1.35 – 4.00 mm = 25 St./ pices
4.10 – 6.50 mm = 10 St./ pices

d1	l1	l	CODE	d1	l1	l	CODE
0,16	2,0	38,0	B10121-0160020	**2,55**	10,0	38,0	B10121-2550038
0,18	2,5	38,0	B10121-0180025	**2,60**	10,0	38,0	B10121-2600038
0,20	2,5	38,0	B10121-0200025	**2,65**	10,0	38,0	B10121-2650038
0,25	3,5	38,0	B10121-0250035	**2,70**	10,0	38,0	B10121-2700010
0,30	4,8	38,0	B10121-0300048	**2,75**	10,0	38,0	B10121-2750010
0,35	5,5	38,0	B10121-0350055	**2,80**	10,0	38,0	B10121-2800010
0,40	6,5	38,0	B10121-0400065	**2,85**	10,0	38,0	B10121-2850010
0,45	6,5	38,0	B10121-0450065	**2,90**	10,0	38,0	B10121-2900010
0,50	7,0	38,0	B10121-0500070	**2,95**	10,0	38,0	B10121-2950010
0,55	7,0	38,0	B10121-0550070	**3,00**	10,0	38,0	B10121-3000010
0,60	8,0	38,0	B10121-0600080	**3,05**	10,0	38,0	B10121-3050010
0,65	8,0	38,0	B10121-0650080	**3,10**	10,0	38,0	B10121-3100010
0,70	9,0	38,0	B10121-0700090	**3,15**	10,0	38,0	B10121-3150010
0,75	9,0	38,0	B10121-0750090	**3,17**	10,0	38,0	B10121-3170010
0,80	9,0	38,0	B10121-0800090	**3,20**	12,0	38,0	B10121-3200012
0,85	10,0	38,0	B10121-0850100	**3,30**	12,0	38,0	B10121-3300012
0,90	10,0	38,0	B10121-0900100	**3,40**	12,0	38,0	B10121-3400012
0,95	10,0	38,0	B10121-0950100	**3,50**	12,0	38,0	B10121-3500012
1,00	10,0	38,0	B10121-1000100	**3,60**	12,0	38,0	B10121-3600012
1,10	10,0	38,0	B10121-1100038	**3,70**	12,0	38,0	B10121-3700012
1,15	10,0	38,0	B10121-1150038	**3,80**	12,0	38,0	B10121-3800012
1,20	10,0	38,0	B10121-1200038	**3,90**	12,0	38,0	B10121-3900012
1,25	10,0	38,0	B10121-1250038	**4,00**	12,0	38,0	B10121-4000012
1,30	10,0	38,0	B10121-1300038	**4,10**	12,0	38,0	B10121-4100012
1,35	10,0	38,0	B10121-1350038	**4,20**	12,0	38,0	B10121-4200012
1,40	10,0	38,0	B10121-1400038	**4,30**	12,0	38,0	B10121-4300012
1,45	10,0	38,0	B10121-1450038	**4,40**	12,0	38,0	B10121-4400012
1,50	10,0	38,0	B10121-1500038	**4,50**	12,0	38,0	B10121-4500012
1,55	10,0	38,0	B10121-1550038	**4,60**	12,0	38,0	B10121-4600012
1,60	10,0	38,0	B10121-1600038	**4,70**	12,0	38,0	B10121-4700012
1,65	10,0	38,0	B10121-1650038	**4,80**	12,0	38,0	B10121-4800012
1,70	10,0	38,0	B10121-1700038	**4,90**	12,0	38,0	B10121-4900012
1,75	10,0	38,0	B10121-1750038	**5,00**	12,0	38,0	B10121-5000012
1,80	10,0	38,0	B10121-1800038	**5,10**	12,0	38,0	B10121-5100012
1,85	10,0	38,0	B10121-1850038	**5,20**	12,0	38,0	B10121-5200012
1,90	10,0	38,0	B10121-1900038	**5,30**	12,0	38,0	B10121-5300012
1,95	10,0	38,0	B10121-1950038	**5,40**	12,0	38,0	B10121-5400012
2,00	10,0	38,0	B10121-2000038	**5,50**	12,0	38,0	B10121-5500012
2,05	10,0	38,0	B10121-2050038	**5,60**	12,0	38,0	B10121-5600012
2,10	10,0	38,0	B10121-2100038	**5,70**	12,0	38,0	B10121-5700012
2,15	10,0	38,0	B10121-2150038	**5,80**	12,0	38,0	B10121-5800012
2,20	10,0	38,0	B10121-2200038	**5,90**	12,0	38,0	B10121-5900012
2,25	10,0	38,0	B10121-2250038	**6,00**	12,0	38,0	B10121-6000012
2,30	10,0	38,0	B10121-2300038	**6,10**	12,0	38,0	B10121-6100012
2,35	10,0	38,0	B10121-2350038	**6,20**	12,0	38,0	B10121-6200012
2,40	10,0	38,0	B10121-2400038	**6,30**	12,0	38,0	B10121-6300012
2,45	10,0	38,0	B10121-2450038	**6,40**	12,0	38,0	B10121-6400012
2,50	10,0	38,0	B10121-2500038	**6,50**	12,0	38,0	B10121-6500012

VHM Kleinstbohrer ähnl. DIN 1899A

Solid carbide minimum drill similar to DIN 1899A



Verpackungseinheit: 10 Stück
Unit size: 10 pieces

d1 h6	l2	l1+ 0,1	d2 h6	CODE
0,20	3	30	1,0	B10002-0020003
0,25	3	30	1,0	B10002-0025003
0,30	3	30	1,0	B10002-0030003
0,35	4	30	1,0	B10002-0035004
0,40	4	30	1,0	B10002-0040004
0,45	6	30	1,0	B10002-0045006
0,50	6	30	1,0	B10002-0050006
0,55	6	30	1,0	B10002-0055006
0,60	6	30	1,0	B10002-0060006
0,65	7	30	1,0	B10002-0065007
0,70	7	30	1,0	B10002-0070007
0,75	8	30	1,5	B10002-0075008
0,80	8	30	1,5	B10002-0080008
0,85	8	30	1,5	B10002-0085008
0,90	8	30	1,5	B10002-0090008
0,95	10	30	1,5	B10002-0095010
1,00	10	30	1,5	B10002-0100010
1,05	10	30	1,5	B10002-0105010
1,10	10	30	1,5	B10002-0110010
1,15	12	30	1,5	B10002-0115012
1,20	12	30	1,5	B10002-0120012
1,25	12	30	1,5	B10002-0125012
1,30	12	30	1,5	B10002-0130012
1,35	12	30	1,5	B10002-0135012
1,40	12	30	1,5	B10002-0140012
1,45	12	30	1,5	B10002-0145012
1,50	12	30	2,0	B10002-0150012
1,55	12	30	2,0	B10002-0155012
1,60	12	30	2,0	B10002-0160012
1,65	12	30	2,0	B10002-0165012
1,70	12	30	2,0	B10002-0170012
1,75	12	30	2,0	B10002-0175012
1,80	12	30	2,0	B10002-0180012
1,85	12	30	2,0	B10002-0185012
1,90	12	30	2,0	B10002-0190012
1,95	12	30	2,0	B10002-0195012
2,00	12	30	2,0	B10002-0200012

Einsatzrichtwerte / Estimated values

VHM Bohrer DIN 1897

Solid carbide twist drill DIN 1897

118° HA BLANK VHM UNI

d1h6,d2	l2	l1	CODE	d1h6,d2	l2	l1	CODE
0,80	5,0	24	B10004-0080050	**5,60**	28,0	66	B10004-0560028
0,90	5,5	25	B10004-0090055	**5,70**	28,0	66	B10004-0570028
1,00	6,0	26	B10004-0100060	**5,80**	28,0	66	B10004-0580028
1,10	7,0	28	B10004-0110070	**5,90**	28,0	66	B10004-0590028
1,20	8,0	30	B10004-0120080	**6,00**	28,0	66	B10004-0600028
1,30	8,0	30	B10004-0130080	**6,10**	31,0	70	B10004-0610031
1,40	9,0	32	B10004-0140090	**6,20**	31,0	70	B10004-0620031
1,50	9,0	32	B10004-0150090	**6,30**	31,0	70	B10004-0630031
1,60	10,0	34	B10004-0160010	**6,40**	31,0	70	B10004-0640031
1,70	10,0	34	B10004-0170010	**6,50**	31,0	70	B10004-0650031
1,80	11,0	36	B10004-0180011	**6,60**	31,0	70	B10004-0660031
1,90	11,0	36	B10004-0190011	**6,70**	31,0	70	B10004-0670031
2,00	12,0	38	B10004-0200012	**6,80**	34,0	74	B10004-0680034
2,10	12,0	38	B10004-0210012	**6,90**	34,0	74	B10004-0690034
2,20	13,0	40	B10004-0220013	**7,00**	34,0	74	B10004-0700034
2,30	13,0	40	B10004-0230013	**7,10**	34,0	74	B10004-0710034
2,40	14,0	43	B10004-0240014	**7,20**	34,0	74	B10004-0720034
2,50	14,0	43	B10004-0250014	**7,30**	34,0	74	B10004-0730034
2,60	14,0	43	B10004-0260014	**7,40**	34,0	74	B10004-0740034
2,70	16,0	46	B10004-0270016	**7,50**	34,0	74	B10004-0750034
2,80	16,0	46	B10004-0280016	**7,60**	37,0	79	B10004-0760037
2,90	16,0	46	B10004-0290016	**7,70**	37,0	79	B10004-0770037
3,00	16,0	46	B10004-0300016	**7,80**	37,0	79	B10004-0780037
3,10	18,0	49	B10004-0310018	**7,90**	37,0	79	B10004-0790037
3,20	18,0	49	B10004-0320018	**8,00**	37,0	79	B10004-0800037
3,30	18,0	49	B10004-0330018	**8,10**	37,0	79	B10004-0810037
3,40	20,0	52	B10004-0340020	**8,20**	37,0	79	B10004-0820037
3,50	20,0	52	B10004-0350020	**8,30**	37,0	79	B10004-0830037
3,60	20,0	52	B10004-0360020	**8,40**	37,0	79	B10004-0840037
3,70	20,0	52	B10004-0370020	**8,50**	37,0	79	B10004-0850037
3,80	22,0	55	B10004-0380022	**8,60**	40,0	84	B10004-0860040
3,90	22,0	55	B10004-0390022	**8,70**	40,0	84	B10004-0870040
4,00	22,0	55	B10004-0400022	**8,80**	40,0	84	B10004-0880040
4,10	22,0	55	B10004-0410022	**8,90**	40,0	84	B10004-0890040
4,20	22,0	55	B10004-0420022	**9,00**	40,0	84	B10004-0900040
4,30	24,0	58	B10004-0430024	**9,10**	40,0	84	B10004-0910040
4,40	24,0	58	B10004-0440024	**9,20**	40,0	84	B10004-0920040
4,50	24,0	58	B10004-0450024	**9,30**	40,0	84	B10004-0930040
4,60	24,0	58	B10004-0460024	**9,40**	40,0	84	B10004-0940040
4,70	24,0	58	B10004-0470024	**9,50**	40,0	84	B10004-0950040
4,80	26,0	62	B10004-0480026	**9,60**	43,0	89	B10004-0960043
4,90	26,0	62	B10004-0490026	**9,70**	43,0	89	B10004-0970043
5,00	26,0	62	B10004-0500026	**9,80**	43,0	89	B10004-0980043
5,10	26,0	62	B10004-0510026	**9,90**	43,0	89	B10004-0990043
5,20	26,0	62	B10004-0520026	**10,00**	43,0	89	B10004-1000043
5,30	26,0	62	B10004-0530026	**10,20**	43,0	89	B10004-1020043
5,40	28,0	66	B10004-0540028	**10,50**	43,0	89	B10004-1050043
5,50	28,0	66	B10004-0550028	**11,00**	47,0	95	B10004-1100047

d1h6,d2	l2	l1	CODE	d1h6,d2	l2	l1	CODE
11,50	47,0	95	B10004-1150047	**14,00**	54,0	107	B10004-1400054
12,00	51,0	102	B10004-1200051	**14,50**	56,0	111	B10004-1450056
12,50	51,0	102	B10004-1250051	**15,00**	56,0	111	B10004-1500056
13,00	51,0	102	B10004-1300051	**16,00**	58,0	115	B10004-1600058
13,50	54,0	107	B10004-1350054				

VHM Bohrer DIN 338

Solid carbide twist drill DIN 338

d1h6,d2	l2	l1	CODE	d1h6,d2	l2	l1	CODE
1,00	12,0	34	B10006-0100012	**5,90**	57,0	93	B10006-0590057
1,10	14,0	36	B10006-0110014	**6,00**	57,0	93	B10006-0600057
1,20	16,0	38	B10006-0120016	**6,10**	63,0	101	B10006-0610063
1,30	16,0	38	B10006-0130016	**6,20**	63,0	101	B10006-0620063
1,40	18,0	40	B10006-0140018	**6,30**	63,0	101	B10006-0630063
1,50	18,0	40	B10006-0150018	**6,40**	63,0	101	B10006-0640063
1,60	20,0	43	B10006-0160020	**6,50**	63,0	101	B10006-0650063
1,70	20,0	43	B10006-0170020	**6,60**	63,0	101	B10006-0660063
1,80	22,0	46	B10006-0180022	**6,70**	63,0	101	B10006-0670063
1,90	22,0	46	B10006-0190022	**6,80**	69,0	109	B10006-0680069
2,00	24,0	49	B10006-0200024	**6,90**	69,0	109	B10006-0690069
2,10	24,0	49	B10006-0210024	**7,00**	69,0	109	B10006-0700069
2,20	27,0	53	B10006-0220027	**7,10**	69,0	109	B10006-0710069
2,30	27,0	53	B10006-0230027	**7,20**	69,0	109	B10006-0720069
2,40	30,0	57	B10006-0240030	**7,30**	69,0	109	B10006-0730069
2,50	30,0	57	B10006-0250030	**7,40**	69,0	109	B10006-0740069
2,60	30,0	57	B10006-0260030	**7,50**	69,0	109	B10006-0750069
2,70	33,0	61	B10006-0270033	**7,60**	75,0	117	B10006-0760075
2,80	33,0	61	B10006-0280033	**7,70**	75,0	117	B10006-0770075
2,90	33,0	61	B10006-0290033	**7,80**	75,0	117	B10006-0780075
3,00	33,0	61	B10006-0300033	**7,90**	75,0	117	B10006-0790075
3,10	36,0	65	B10006-0310036	**8,00**	75,0	117	B10006-0800075
3,20	36,0	65	B10006-0320036	**8,10**	75,0	117	B10006-0810075
3,30	36,0	65	B10006-0330036	**8,20**	75,0	117	B10006-0820075
3,40	39,0	70	B10006-0340039	**8,30**	75,0	117	B10006-0830075
3,50	39,0	70	B10006-0350039	**8,40**	75,0	117	B10006-0840075
3,60	39,0	70	B10006-0360039	**8,50**	75,0	117	B10006-0850075
3,70	39,0	70	B10006-0370039	**8,60**	81,0	125	B10006-0860081
3,80	43,0	75	B10006-0380043	**8,70**	81,0	125	B10006-0870081
3,90	43,0	75	B10006-0390043	**8,80**	81,0	125	B10006-0880081
4,00	43,0	75	B10006-0400043	**8,90**	81,0	125	B10006-0890081
4,10	43,0	75	B10006-0410043	**9,00**	81,0	125	B10006-0900081
4,20	43,0	75	B10006-0420043	**9,20**	81,0	125	B10006-0920081
4,30	47,0	80	B10006-0430047	**9,50**	81,0	125	B10006-0950081
4,40	47,0	80	B10006-0440047	**9,60**	87,0	133	B10006-0960087
4,50	47,0	80	B10006-0450047	**9,80**	87,0	133	B10006-0980087
4,60	47,0	80	B10006-0460047	**10,00**	87,0	133	B10006-1000087
4,70	47,0	80	B10006-0470047	**10,20**	87,0	133	B10006-1020087
4,80	52,0	86	B10006-0480052	**10,50**	87,0	133	B10006-1050087
4,90	52,0	86	B10006-0490052	**11,00**	94,0	142	B10006-1100094
5,00	52,0	86	B10006-0500052	**11,50**	94,0	142	B10006-1150094
5,10	52,0	86	B10006-0510052	**12,00**	101,0	151	B10006-1200101
5,20	52,0	86	B10006-0520052	**12,50**	101,0	151	B10006-1250101
5,30	52,0	86	B10006-0530052	**13,00**	101,0	151	B10006-1300101
5,40	57,0	93	B10006-0540057	**13,50**	108,0	160	B10006-1350108
5,50	57,0	93	B10006-0550057	**14,00**	108,0	160	B10006-1400108
5,60	57,0	93	B10006-0560057	**14,50**	114,0	169	B10006-1450114
5,70	57,0	93	B10006-0570057	**15,00**	114,0	169	B10006-1500114
5,80	57,0	93	B10006-0580057	**16,00**	120,0	178	B10006-1600120

VHM Mikrobohrer 0,01 mm steigend

Solid carbide micro drill rising in steps of 0.01 mm

130° HA BLANK

VHM UNI

d1=d2 h6	l2	l1	CODE	d1 h6	l2	l1	CODE
1,00	25,0	75	B10007-0100025	**4,10**	50,0	100	B10007-0410050
1,10	25,0	75	B10007-0110025	**4,20**	50,0	100	B10007-0420050
1,20	25,0	75	B10007-0120025	**4,30**	50,0	100	B10007-0430050
1,30	25,0	75	B10007-0130025	**4,40**	50,0	100	B10007-0440050
1,40	30,0	75	B10007-0140030	**4,50**	50,0	100	B10007-0450050
1,50	30,0	75	B10007-0150030	**4,60**	50,0	100	B10007-0460050
1,60	30,0	75	B10007-0160030	**4,70**	50,0	100	B10007-0470050
1,70	30,0	75	B10007-0170030	**4,80**	50,0	100	B10007-0480050
1,80	30,0	75	B10007-0180030	**4,90**	50,0	100	B10007-0490050
1,90	30,0	75	B10007-0190030	**5,00**	75,0	150	B10007-0500075
2,00	30,0	75	B10007-0200030	**5,10**	75,0	150	B10007-0510075
2,10	30,0	75	B10007-0210030	**5,20**	75,0	150	B10007-0520075
2,20	30,0	75	B10007-0220030	**5,30**	75,0	150	B10007-0530075
2,30	30,0	75	B10007-0230030	**5,40**	75,0	150	B10007-0540075
2,40	35,0	100	B10007-0240035	**5,50**	75,0	150	B10007-0550075
2,50	35,0	100	B10007-0250035	**5,60**	75,0	150	B10007-0560075
2,60	35,0	100	B10007-0260035	**5,70**	75,0	150	B10007-0570075
2,70	35,0	100	B10007-0270035	**5,80**	75,0	150	B10007-0580075
2,80	35,0	100	B10007-0280035	**5,90**	75,0	150	B10007-0590075
2,90	35,0	100	B10007-0290035	**6,00**	75,0	150	B10007-0600075
3,00	50,0	100	B10007-0300050	**6,10**	75,0	150	B10007-0610075
3,10	50,0	100	B10007-0310050	**6,20**	75,0	150	B10007-0620075
3,20	50,0	100	B10007-0320050	**6,30**	75,0	150	B10007-0630075
3,30	50,0	100	B10007-0330050	**6,40**	75,0	150	B10007-0640075
3,40	50,0	100	B10007-0340050	**6,50**	75,0	150	B10007-0650075
3,50	50,0	100	B10007-0350050	**6,60**	75,0	150	B10007-0660075
3,60	50,0	100	B10007-0360050	**6,70**	75,0	150	B10007-0670075
3,70	50,0	100	B10007-0370050	**6,80**	75,0	150	B10007-0680075
3,80	50,0	100	B10007-0380050	**6,90**	75,0	150	B10007-0690075
3,90	50,0	100	B10007-0390050	**7,00**	75,0	150	B10007-0700075
4,00	50,0	100	B10007-0400050	**7,10**	75,0	150	B10007-0710075

Einsatzrichtwerte / Estimated values

CODE – 10007 – Seite 33

130° | HA | BLANK

VHM | STAHL steel | UNI

d1 h6	l2	l1	CODE	d1 h6	l2	l1	CODE
7,20	75,0	150	B10007-0720075	**9,00**	75,0	150	B10007-0900075
7,30	75,0	150	B10007-0730075	**9,10**	75,0	150	B10007-0910075
7,40	75,0	150	B10007-0740075	**9,20**	75,0	150	B10007-0920075
7,50	75,0	150	B10007-0750075	**9,30**	75,0	150	B10007-0930075
7,60	75,0	150	B10007-0760075	**9,40**	75,0	150	B10007-0940075
7,70	75,0	150	B10007-0770075	**9,50**	75,0	150	B10007-0950075
7,80	75,0	150	B10007-0780075	**9,60**	75,0	150	B10007-0960075
7,90	75,0	150	B10007-0790075	**9,70**	75,0	150	B10007-0970075
8,00	75,0	150	B10007-0800075	**9,80**	75,0	150	B10007-0980075
8,10	75,0	150	B10007-0810075	**9,90**	75,0	150	B10007-0990075
8,20	75,0	150	B10007-0820075	**10,00**	75,0	150	B10007-1000075
8,30	75,0	150	B10007-0830075	**10,50**	90,0	200	B10007-1050075
8,40	75,0	150	B10007-0840075	**11,00**	90,0	200	B10007-1100200
8,50	75,0	150	B10007-0850075	**11,50**	90,0	200	B10007-1150200
8,60	75,0	150	B10007-0860075	**12,00**	90,0	200	B10007-1200200
8,70	75,0	150	B10007-0870075	**12,50**	90,0	200	B10007-1250200
8,80	75,0	150	B10007-0880075	**13,00**	90,0	200	B10007-1300200
8,90	75,0	150	B10007-0890075				

Einsatzrichtwerte / Estimated values

CODE – 10007 – Seite 33

VHM Spiralbohrer 3xd spiralgenutet

Solid carbide twist drill 3xd spiral-fluted

140° | HA | 3xd

VHM

TiALN | STAHL steel

TiALN | STAHL steel

TiALN | TITAN | INOX

d1 m7	l2	l1	d2 h6	CODE	CODE	CODE
3,00	20	62	6,0	B10008-0300020	B10009-0300020	B10010-0300020
3,10	20	62	6,0	B10008-0310020	B10009-0310020	B10010-0310020
3,20	20	62	6,0	B10008-0320020	B10009-0320020	B10010-0320020
3,30	20	62	6,0	B10008-0330020	B10009-0330020	B10010-0330020
3,40	20	62	6,0	B10008-0340020	B10009-0340020	B10010-0340020
3,50	20	62	6,0	B10008-0350020	B10009-0350020	B10010-0350020
3,60	20	62	6,0	B10008-0360020	B10009-0360020	B10010-0360020
3,70	20	62	6,0	B10008-0370020	B10009-0370020	B10010-0370020
3,80	24	66	6,0	B10008-0380024	B10009-0380024	B10010-0380024
3,90	24	66	6,0	B10008-0390024	B10009-0390024	B10010-0390024
4,00	24	66	6,0	B10008-0400024	B10009-0400024	B10010-0400024
4,10	24	66	6,0	B10008-0410024	B10009-0410024	B10010-0410024
4,20	24	66	6,0	B10008-0420024	B10009-0420024	B10010-0420024
4,30	24	66	6,0	B10008-0430024	B10009-0430024	B10010-0430024
4,40	24	66	6,0	B10008-0440024	B10009-0440024	B10010-0440024
4,50	24	66	6,0	B10008-0450024	B10009-0450024	B10010-0450024

ATE TOOLS GmbH

140° HA 3xd

VHM

TiALN STAHL steel

TiALN STAHL steel

TiALN TITAN INOX

d1 m7	l2	l1	d2 h6	CODE	CODE	CODE
4,60	24	66	6,0	B10008-0460024	B10009-0460024	B10010-0460024
4,70	24	66	6,0	B10008-0470024	B10009-0470024	B10010-0470024
4,80	28	66	6,0	B10008-0480028	B10009-0480028	B10010-0480028
4,90	28	66	6,0	B10008-0490028	B10009-0490028	B10010-0490028
5,00	28	66	6,0	B10008-0500028	B10009-0500028	B10010-0500028
5,10	28	66	6,0	B10008-0510028	B10009-0510028	B10010-0510028
5,20	28	66	6,0	B10008-0520028	B10009-0520028	B10010-0520028
5,30	28	66	6,0	B10008-0530028	B10009-0530028	B10010-0530028
5,40	28	66	6,0	B10008-0540028	B10009-0540028	B10010-0540028
5,50	28	66	6,0	B10008-0550028	B10009-0550028	B10010-0550028
5,60	28	66	6,0	B10008-0560028	B10009-0560028	B10010-0560028
5,70	28	66	6,0	B10008-0570028	B10009-0570028	B10010-0570028
5,90	28	66	6,0	B10008-0590028	B10009-0590028	B10010-0590028
6,00	28	66	6,0	B10008-0600028	B10009-0600028	B10010-0600028
6,10	34	79	8,0	B10008-0610034	B10009-0610034	B10010-0610034
6,20	34	79	8,0	B10008-0620034	B10009-0620034	B10010-0620034
6,30	34	79	8,0	B10008-0630034	B10009-0630034	B10010-0630034
6,40	34	79	8,0	B10008-0640034	B10009-0640034	B10010-0640034
6,50	34	79	8,0	B10008-0650034	B10009-0650034	B10010-0650034
6,60	34	79	8,0	B10008-0660034	B10009-0660034	B10010-0660034
6,70	34	79	8,0	B10008-0670034	B10009-0670034	B10010-0670034
6,80	34	79	8,0	B10008-0680034	B10009-0680034	B10010-0680034
6,90	34	79	8,0	B10008-0690034	B10009-0690034	B10010-0690034
7,00	34	79	8,0	B10008-0700034	B10009-0700034	B10010-0700034
7,10	41	79	8,0	B10008-0710041	B10009-0710041	B10010-0710041
7,20	41	79	8,0	B10008-0720041	B10009-0720041	B10010-0720041
7,30	41	79	8,0	B10008-0730041	B10009-0730041	B10010-0730041
7,40	41	79	8,0	B10008-0740041	B10009-0740041	B10010-0740041
7,50	41	79	8,0	B10008-0750041	B10009-0750041	B10010-0750041
7,60	41	79	8,0	B10008-0760041	B10009-0760041	B10010-0760041
7,70	41	79	8,0	B10008-0770041	B10009-0770041	B10010-0770041
7,80	41	79	8,0	B10008-0780041	B10009-0780041	B10010-0780041
7,90	41	79	8,0	B10008-0790041	B10009-0790041	B10010-0790041
8,00	41	79	8,0	B10008-0800041	B10009-0800041	B10010-0800041
8,10	47	89	10,0	B10008-0810047	B10009-0810047	B10010-0810047
8,20	47	89	10,0	B10008-0820047	B10009-0820047	B10010-08200417
8,30	47	89	10,0	B10008-0830047	B10009-0830047	B10010-0830047
8,40	47	89	10,0	B10008-0840047	B10009-0840047	B10010-0840047
8,50	47	89	10,0	B10008-0850047	B10009-0850047	B10010-0850047
8,60	47	89	10,0	B10008-0860047	B10009-0860047	B10010-0860047
8,70	47	89	10,0	B10008-0870047	B10009-0870047	B10010-0870047
8,80	47	89	10,0	B10008-0880047	B10009-0880047	B10010-0880047
8,90	47	89	10,0	B10008-0890047	B10009-0890047	B10010-0890047
9,00	47	89	10,0	B10008-0900047	B10009-0900047	B10010-0900047
9,10	47	89	10,0	B10008-0910047	B10009-0910047	B10010-0910047
9,20	47	89	10,0	B10008-0920047	B10009-0920047	B10010-0920047
9,30	47	89	10,0	B10008-0930047	B10009-0930047	B10010-0930047
9,40	47	89	10,0	B10008-0940047	B10009-0940047	B10010-0940047
9,50	47	89	10,0	B10008-0950047	B10009-0950047	B10010-0950047
9,60	47	89	10,0	B10008-0960047	B10009-0960047	B10010-0960047
9,70	47	89	10,0	B10008-0970047	B10009-0970047	B10010-0970047

140° | HA | 3xd | VHM

TiALN | STAHL steel | TiALN | STAHL steel | TiALN | TITAN | INOX

d1 m7	l2	l1	d2 h6	CODE	CODE	CODE
9,80	47	89	10,0	B10008-0980047	B10009-0980047	B10010-0980047
9,90	47	89	10,0	B10008-0990047	B10009-0990047	B10010-0990047
10,00	47	89	10,0	B10008-1000047	B10009-1000047	B10010-1000047
10,10	55	102	12,0	B10008-1010055	B10009-1010055	B10010-1010055
10,20	55	102	12,0	B10008-1020055	B10009-1020055	B10010-1020055
10,30	55	102	12,0	B10008-1030055	B10009-1030055	B10010-1030055
10,40	55	102	12,0	B10008-1040055	B10009-1040055	B10010-1040055
10,50	55	102	12,0	B10008-1050055	B10009-1050055	B10010-1050055
10,60	55	102	12,0	B10008-1060055	B10009-1060055	B10010-1060055
10,70	55	102	12,0	B10008-1070055	B10009-1070055	B10010-1070055
10,80	55	102	12,0	B10008-1080055	B10009-1080055	B10010-1080055
10,90	55	102	12,0	B10008-1090055	B10009-1090055	B10010-1090055
11,00	55	102	12,0	B10008-1100055	B10009-1100055	B10010-1100055
11,10	55	102	12,0	B10008-1110055	B10009-1110055	B10010-1110055
11,20	55	102	12,0	B10008-1120055	B10009-1120055	B10010-1120055
11,30	55	102	12,0	B10008-1130055	B10009-1130055	B10010-1130055
11,40	55	102	12,0	B10008-1140055	B10009-1140055	B10010-1140055
11,50	55	102	12,0	B10008-1150055	B10009-1150055	B10010-1150055
11,60	55	102	12,0	B10008-1160055	B10009-1160055	B10010-1160055
11,70	55	102	12,0	B10008-1170055	B10009-1170055	B10010-1170055
11,80	55	102	12,0	B10008-1180055	B10009-1180055	B10010-1180055
11,90	55	102	12,0	B10008-1190055	B10009-1190055	B10010-1190055
12,00	55	102	12,0	B10008-1200055	B10009-1200055	B10010-1200060
12,30	60	107	14,0	B10008-1230060	B10009-1230060	B10010-1230060
12,50	60	107	14,0	B10008-1250060	B10009-1250060	B10010-1250060
12,80	60	107	14,0	B10008-1280060	B10009-1280060	B10010-1280060
13,00	60	107	14,0	B10008-1300060	B10009-1300060	B10010-1300060
13,50	60	107	14,0	B10008-1350060	B10009-1350060	B10010-1350060
13,80	60	107	14,0	B10008-1380060	B10009-1380060	B10010-1380060
14,00	60	107	14,0	B10008-1400060	B10009-1400060	B10010-1400060
14,50	65	115	16,0	B10008-1450065	B10009-1450065	B10010-1450065
14,80	65	115	16,0	B10008-1480065	B10009-1480065	B10010-1480065
15,00	65	115	16,0	B10008-1500065	B10009-1500065	B10010-1500065
15,50	65	115	16,0	B10008-1550065	B10009-1550065	B10010-1550065
15,80	65	115	16,0	B10008-1580065	B10009-1580065	B10010-1580065
16,00	65	115	16,0	B10008-1600065	B10009-1600065	B10010-1600065
16,50	73	123	18,0	B10008-1650073	B10009-1650073	B10010-1650073
16,80	73	123	18,0	B10008-1680073	B10009-1680073	B10010-1680073
17,00	73	123	18,0	B10008-1700073	B10009-1700073	B10010-1700073
17,50	73	123	18,0	B10008-1750073	B10009-1750073	B10010-1750073
17,80	73	123	18,0	B10008-1780073	B10009-1780073	B10010-1780073
18,00	73	123	18,0	B10008-1800073	B10009-1800073	B10010-1800073
18,50	79	131	20,0	B10008-1850079	B10009-1850079	B10010-1850079
19,00	79	131	20,0	B10008-1900079	B10009-1900079	B10010-1900079
19,50	79	131	20,0	B10008-1950079	B10009-1950079	B10010-1950079
19,80	79	131	20,0	B10008-1980079	B10009-1980079	B10010-1980079
20,00	79	131	20,0	B10008-2000079	B10009-2000079	B10010-2000079

Einsatzrichtwerte / Estimated values

CODE – 10008 – Seite 35 **CODE – 10009 – Seite 36** **CODE – 10010 – Seite 38**

VHM Spiralbohrer 5xd spiralgenutet

Solid carbide twist drill 5xd spiral-fluted

140° HA 5xd VHM

TiALN STAHL steel

TiALN STAHL steel

TiALN TITAN INOX

d1 m7	l2	l1	d2 h6	CODE	CODE	CODE
3,00	28	66	6,0	B10016-0300028	B10017-0300028	B10018-0300028
3,10	28	66	6,0	B10016-0310028	B10017-0310028	B10018-0310028
3,20	28	66	6,0	B10016-0320028	B10017-0320028	B10018-0320028
3,30	28	66	6,0	B10016-0330028	B10017-0330028	B10018-0330028
3,40	28	66	6,0	B10016-0340028	B10017-0340028	B10018-0340028
3,50	28	66	6,0	B10016-0350028	B10017-0350028	B10018-0350028
3,60	28	66	6,0	B10016-0360028	B10017-0360028	B10018-0360028
3,70	28	66	6,0	B10016-0370028	B10017-0370028	B10018-0370028
3,80	36	74	6,0	B10016-0380036	B10017-0380036	B10018-0380036
3,90	36	74	6,0	B10016-0390036	B10017-0390036	B10018-0390036
4,00	36	74	6,0	B10016-0400036	B10017-0400036	B10018-0400036
4,10	36	74	6,0	B10016-0410036	B10017-0410036	B10018-0410036
4,20	36	74	6,0	B10016-0420036	B10017-0420036	B10018-0420036
4,30	36	74	6,0	B10016-0430036	B10017-0430036	B10018-0430036
4,40	36	74	6,0	B10016-0440036	B10017-0440036	B10018-0440036
4,50	36	74	6,0	B10016-0450036	B10017-0450036	B10018-0450036
4,60	36	74	6,0	B10016-0460036	B10017-0460036	B10018-0460036
4,65	36	74	6,0	B10016-0465036	B10017-0465036	B10018-0465036
4,70	36	74	6,0	B10016-0470036	B10017-0470036	B10018-0470036
4,80	44	82	6,0	B10016-0480044	B10017-0480044	B10018-0480044
4,90	44	82	6,0	B10016-0490044	B10017-0490044	B10018-0490044
5,00	44	82	6,0	B10016-0500044	B10017-0500044	B10018-0500044
5,10	44	82	6,0	B10016-0510044	B10017-0510044	B10018-0510044
5,20	44	82	6,0	B10016-0520044	B10017-0520044	B10018-0520044
5,30	44	82	6,0	B10016-0530044	B10017-0530044	B10018-0530044
5,40	44	82	6,0	B10016-0540044	B10017-0540044	B10018-0540044
5,50	44	82	6,0	B10016-0550044	B10017-0550044	B10018-0550044
5,55	44	82	6,0	B10016-0555044	B10017-0555044	B10018-0555044
5,60	44	82	6,0	B10016-0560044	B10017-0560044	B10018-0560044
5,70	44	82	6,0	B10016-0570044	B10017-0570044	B10018-0570044
5,80	44	82	6,0	B10016-0580044	B10017-0580044	B10018-0580044
5,90	44	82	6,0	B10016-0590044	B10017-0590044	B10018-0590044
6,00	44	82	6,0	B10016-0600044	B10017-0600044	B10018-0600044
6,10	53	91	8,0	B10016-0610053	B10017-0610053	B10018-0610053
6,20	53	91	8,0	B10016-0620053	B10017-0620053	B10018-0620053
6,30	53	91	8,0	B10016-0630053	B10017-0630053	B10018-0630053
6,40	53	91	8,0	B10016-0640053	B10017-0640053	B10018-0640053
6,50	53	91	8,0	B10016-0650053	B10017-0650053	B10018-0650053
6,60	53	91	8,0	B10016-0660053	B10017-0660053	B10018-0660053
6,70	53	91	8,0	B10016-0670053	B10017-0670053	B10018-0670053
6,80	53	91	8,0	B10016-0680053	B10017-0680053	B10018-0680053
6,90	53	91	8,0	B10016-0690053	B10017-0690053	B10018-0690053
7,00	53	91	8,0	B10016-0700053	B10017-0700053	B10018-0700053
7,10	53	91	8,0	B10016-0710053	B10017-0710053	B10018-0710053
7,20	53	91	8,0	B10016-0720053	B10017-0720053	B10018-0720053

140° | HA | 5xd | VHM

	TiALN	STAHL steel	TiALN	STAHL steel	TiALN	TITAN	INOX

d1 m7	l2	l1	d2 h6	CODE	CODE	CODE
7,30	53	91	8,0	B10016-0730053	B10017-0730053	B10018-0730053
7,40	53	91	8,0	B10016-0740053	B10017-0740053	B10018-0740053
7,50	53	91	8,0	B10016-0750053	B10017-0750053	B10018-0750053
7,60	53	91	8,0	B10016-0760053	B10017-0760053	B10018-0760053
7,70	53	91	8,0	B10016-0770053	B10017-0770053	B10018-0770053
7,80	53	91	8,0	B10016-0780053	B10017-0780053	B10018-0780053
7,90	53	91	8,0	B10016-0790053	B10017-0790053	B10018-0790053
8,00	53	91	8,0	B10016-0800053	B10017-0800053	B10018-0800053
8,10	61	103	10,0	B10016-0810061	B10017-0810061	B10018-0810061
8,20	61	103	10,0	B10016-0820061	B10017-0820061	B10018-0820061
8,30	61	103	10,0	B10016-0830061	B10017-0830061	B10018-0830061
8,40	61	103	10,0	B10016-0840061	B10017-0840061	B10018-0840061
8,50	61	103	10,0	B10016-0850061	B10017-0850061	B10018-0850061
8,60	61	103	10,0	B10016-0860061	B10017-0860061	B10018-0860061
8,70	61	103	10,0	B10016-0870061	B10017-0870061	B10018-0870061
8,80	61	103	10,0	B10016-0880061	B10017-0880061	B10018-0880061
8,90	61	103	10,0	B10016-0890061	B10017-0890061	B10018-0890061
9,00	61	103	10,0	B10016-0900061	B10017-0900061	B10018-0900061
9,10	61	103	10,0	B10016-0910061	B10017-0910061	B10018-0910061
9,20	61	103	10,0	B10016-0920061	B10017-0920061	B10018-0920061
9,30	61	103	10,0	B10016-0930061	B10017-0930061	B10018-0930061
9,40	61	103	10,0	B10016-0940061	B10017-0940061	B10018-0940061
9,50	61	103	10,0	B10016-0950061	B10017-0950061	B10018-0950061
9,60	61	103	10,0	B10016-0960061	B10017-0960061	B10018-0960061
9,70	61	103	10,0	B10016-0970061	B10017-0970061	B10018-0970061
9,80	61	103	10,0	B10016-0980061	B10017-0980061	B10018-0980061
9,90	61	103	10,0	B10016-0990061	B10017-0990061	B10018-0990061
10,00	61	103	10,0	B10016-1000061	B10017-1000061	B10018-1000061
10,10	71	118	12,0	B10016-1010071	B10017-1010071	B10018-1010071
10,20	71	118	12,0	B10016-1020071	B10017-1020071	B10018-1020071
10,30	71	118	12,0	B10016-1030071	B10017-1030071	B10018-1030071
10,40	71	118	12,0	B10016-1040071	B10017-1040071	B10018-1040071
10,50	71	118	12,0	B10016-1050071	B10017-1050071	B10018-1050071
10,60	71	118	12,0	B10016-1060071	B10017-1060071	B10018-1060071
10,70	71	118	12,0	B10016-1070071	B10017-1070071	B10018-1070071
10,80	71	118	12,0	B10016-1080071	B10017-1080071	B10018-1080071
10,90	71	118	12,0	B10016-1090071	B10017-1090071	B10018-1090071
11,00	71	118	12,0	B10016-1100071	B10017-1100071	B10018-1100071
11,10	71	118	12,0	B10016-1110071	B10017-1110071	B10018-1110071
11,20	71	118	12,0	B10016-1120071	B10017-1120071	B10018-1120071
11,30	71	118	12,0	B10016-1130071	B10017-1130071	B10018-1130071
11,40	71	118	12,0	B10016-1140071	B10017-1140071	B10018-1140071
11,50	71	118	12,0	B10016-1150071	B10017-1150071	B10018-1150071
11,60	71	118	12,0	B10016-1160071	B10017-1160071	B10018-1160071
11,70	71	118	12,0	B10016-1170071	B10017-1170071	B10018-1170071
11,80	71	118	12,0	B10016-1180071	B10017-1180071	B10018-1180071
11,90	71	118	12,0	B10016-1190071	B10017-1190071	B10018-1190071
12,00	71	118	12,0	B10016-1200071	B10017-1200071	B10018-1200071
12,30	77	124	14,0	B10016-1230077	B10017-1230077	B10018-1230077
12,50	77	124	14,0	B10016-1250077	B10017-1250077	B10018-1250077
12,80	77	124	14,0	B10016-1280077	B10017-1280077	B10018-1280077

140° | HA | 5xd | VHM

TiALN | STAHL steel

TiALN | STAHL steel

TiALN | TITAN | INOX

d1 m7	l2	l1	d2 h6	CODE	CODE	CODE
13,00	77	124	14,0	B10016-1300077	B10017-1300077	B10018-1300077
13,50	77	124	14,0	B10016-1350077	B10017-1350077	B10018-1350077
13,80	77	124	14,0	B10016-1380077	B10017-1380077	B10018-1380077
14,00	77	124	14,0	B10016-1400077	B10017-1400077	B10018-1400077
14,50	83	133	16,0	B10016-1450083	B10017-1450083	B10018-1450083
14,80	83	133	16,0	B10016-1480083	B10017-1480083	B10018-1480083
15,00	83	133	16,0	B10016-1500083	B10017-1500083	B10018-1500083
15,50	83	133	16,0	B10016-1550083	B10017-1550083	B10018-1550083
15,80	83	133	16,0	B10016-1580083	B10017-1580083	B10018-1580083
16,00	83	133	16,0	B10016-1600083	B10017-1600083	B10018-1600083
16,50	93	143	18,0	B10016-1650093	B10017-1650093	B10018-1650093
16,80	93	143	18,0	B10016-1680093	B10017-1680093	B10018-1680093
17,00	93	143	18,0	B10016-1700093	B10017-1700093	B10018-1700093
17,50	93	143	18,0	B10016-1750093	B10017-1750093	B10018-1750093
17,80	93	143	18,0	B10016-1780093	B10017-1780093	B10018-1780093
18,00	93	143	18,0	B10016-1800093	B10017-1800093	B10018-1800093
18,50	101	153	20,0	B10016-1850101	B10017-1850101	B10018-1850101
19,00	101	153	20,0	B10016-1900101	B10017-1900101	B10018-1900101
19,50	101	153	20,0	B10016-1950101	B10017-1950101	B10018-1950101
19,80	101	153	20,0	B10016-1980101	B10017-1980101	B10018-1980101
20,00	101	153	20,0	B10016-2000101	B10017-2000101	B10018-2000101

Einsatzrichtwerte / Estimated values

CODE – 10016 – Seite 37 **CODE – 10017 – Seite 38** **CODE – 10018 – Seite 39**

VHM Spiralbohrer 8xd spiralgenutet
Solid carbide twist drill 8xd spiral-fluted

140° | HA | 8xd | VHM

Führungsfasen / Guide margine 4 | TiALN | STAHL steel

TiALN | STAHL steel

TiALN | TITAN | INOX

d1 m7	l2	l1	d2 h6	CODE	CODE	CODE
1,10	17	55	3,0	B10020-0110017	–	–
1,20	17	55	3,0	B10020-0120017	–	–
1,30	17	55	3,0	B10020-0130017	–	–
1,40	17	55	3,0	B10020-0140017	–	–
1,50	17	55	3,0	B10020-0150017	–	–
1,60	22	65	3,0	B10020-0160022	–	–
1,70	22	65	3,0	B10020-0170022	–	–
1,80	22	65	3,0	B10020-0180022	–	–
1,90	22	65	3,0	B10020-0190022	–	–
2,00	22	65	3,0	B10020-0200022	–	–
2,10	28	74	3,0	B10020-0210028	–	–
2,20	28	74	3,0	B10020-0220028	–	–
2,30	28	74	3,0	B10020-0230028	–	–
2,40	28	74	3,0	B10020-0240028	–	–
2,50	28	74	3,0	B10020-0250028	–	–
2,60	32	81	3,0	B10020-0260032	–	–
2,70	32	81	3,0	B10020-0270032	–	–
2,80	32	81	3,0	B10020-0280032	–	–
2,90	32	81	3,0	B10020-0290032	–	–
3,00	34	72	6,0	B10020-0300034	B10021-0300034	B10022-0300034
3,10	34	72	6,0	B10020-0310034	B10021-0310034	B10022-0310034
3,20	34	72	6,0	B10020-0320034	B10021-0320034	B10022-0320034
3,30	34	72	6,0	B10020-0330034	B10021-0330034	B10022-0330034
3,40	34	72	6,0	B10020-0340034	B10021-0340034	B10022-0340034
3,50	34	72	6,0	B10020-0350034	B10021-0350034	B10022-0350034
3,60	34	72	6,0	B10020-0360034	B10021-0360034	B10022-0360034
3,70	34	72	6,0	B10020-0370034	B10021-0370034	B10022-0370034
3,80	43	81	6,0	B10020-0380043	B10021-0380043	B10022-0380043
3,90	43	81	6,0	B10020-0390043	B10021-0390043	B10022-0390043
4,00	43	81	6,0	B10020-0400043	B10021-0400043	B10022-0400043
4,10	43	81	6,0	B10020-0410043	B10021-0410043	B10022-0410043
4,20	43	81	6,0	B10020-0420043	B10021-0420043	B10022-0420043
4,30	43	81	6,0	B10020-0430043	B10021-0430043	B10022-0430043
4,40	43	81	6,0	B10020-0440043	B10021-0440043	B10022-0440043
4,50	43	81	6,0	B10020-0450043	B10021-0450043	B10022-0450043
4,60	43	81	6,0	B10020-0460043	B10021-0460043	B10022-0460043
4,70	43	81	6,0	B10020-0470043	B10021-0470043	B10022-0470043
4,80	57	95	6,0	B10020-0480057	B10021-0480057	B10022-0480057
4,90	57	95	6,0	B10020-0490057	B10021-0490057	B10022-0490057
5,00	57	95	6,0	B10020-0500057	B10021-0500057	B10022-0500057
5,10	57	95	6,0	B10020-0510057	B10021-0510057	B10022-0510057
5,20	57	95	6,0	B10020-0520057	B10021-0520057	B10022-0520057
5,30	57	95	6,0	B10020-0530057	B10021-0530057	B10022-0530057
5,40	57	95	6,0	B10020-0540057	B10021-0540057	B10022-0540057

ATE TOOLS GmbH

140° | HA | 8xd | VHM

Führungsfasen / Guide margine 4 | TiALN | STAHL steel

TiALN | STAHL steel

TiALN | TITAN | INOX

d1 m7	l2	l1	d2 h6	CODE	CODE	CODE
5,50	57	95	6,0	B10020-0550057	B10021-0550057	B10022-0550057
5,60	57	95	6,0	B10020-0560057	B10021-0560057	B10022-0560057
5,70	57	95	6,0	B10020-0570057	B10021-0570057	B10022-0570057
5,80	57	95	6,0	B10020-0580057	B10021-0580057	B10022-0580057
5,90	57	95	6,0	B10020-0590057	B10021-0590057	B10022-0590057
6,00	57	95	6,0	B10020-0600057	B10021-0600057	B10022-0600057
6,10	76	114	8,0	B10020-0610076	B10021-0610076	B10022-0610076
6,20	76	114	8,0	B10020-0620076	B10021-0620076	B10022-0620076
6,30	76	114	8,0	B10020-0630076	B10021-0630076	B10022-0630076
6,40	76	114	8,0	B10020-0640076	B10021-0640076	B10022-0640076
6,50	76	114	8,0	B10020-0650076	B10021-0650076	B10022-0650076
6,60	76	114	8,0	B10020-0660076	B10021-0660076	B10022-0660076
6,70	76	114	8,0	B10020-0670076	B10021-0670076	B10022-0670076
6,80	76	114	8,0	B10020-0680076	B10021-0680076	B10022-0680076
6,90	76	114	8,0	B10020-0690076	B10021-0690076	B10022-0690076
7,00	76	114	8,0	B10020-0700076	B10021-0700076	B10022-0700076
7,10	76	114	8,0	B10020-0710076	B10021-0710076	B10022-0710076
7,20	76	114	8,0	B10020-0720076	B10021-0720076	B10022-0720076
7,30	76	114	8,0	B10020-0730076	B10021-0730076	B10022-0730076
7,40	76	114	8,0	B10020-0740076	B10021-0740076	B10022-0740076
7,50	76	114	8,0	B10020-0750076	B10021-0750076	B10022-0750076
7,60	76	114	8,0	B10020-0760076	B10021-0760076	B10022-0760076
7,70	76	114	8,0	B10020-0770076	B10021-0770076	B10022-0770076
7,80	76	114	8,0	B10020-0780076	B10021-0780076	B10022-0780076
7,90	76	114	8,0	B10020-0790076	B10021-0790076	B10022-0790076
8,00	76	114	8,0	B10020-0800076	B10021-0800076	B10022-0800076
8,10	95	142	10,0	B10020-0810095	B10021-0810095	B10022-0810095
8,20	95	142	10,0	B10020-0820095	B10021-0820095	B10022-0820095
8,30	95	142	10,0	B10020-0830095	B10021-0830095	B10022-0830095
8,40	95	142	10,0	B10020-0840095	B10021-0840095	B10022-0840095
8,50	95	142	10,0	B10020-0850095	B10021-0850095	B10022-0850095
8,60	95	142	10,0	B10020-0860095	B10021-0860095	B10022-0860095
8,70	95	142	10,0	B10020-0870095	B10021-0870095	B10022-0870095
8,80	95	142	10,0	B10020-0880095	B10021-0880095	B10022-0880095
8,90	95	142	10,0	B10020-0890095	B10021-0890095	B10022-0890095
9,00	95	142	10,0	B10020-0900095	B10021-0900095	B10022-0900095
9,10	95	142	10,0	B10020-0910095	B10021-0910095	B10022-0910095
9,20	95	142	10,0	B10020-0920095	B10021-0920095	B10022-0920095
9,30	95	142	10,0	B10020-0930095	B10021-0930095	B10022-0930095
9,40	95	142	10,0	B10020-0940095	B10021-0940095	B10022-0940095
9,50	95	142	10,0	B10020-0950095	B10021-0950095	B10022-0950095
9,60	95	142	10,0	B10020-0960095	B10021-0960095	B10022-0960095
9,70	95	142	10,0	B10020-0970095	B10021-0970095	B10022-0970095
9,80	95	142	10,0	B10020-0980095	B10021-0980095	B10022-0980095
9,90	95	142	10,0	B10020-0990095	B10021-0990095	B10022-0990095
10,00	95	142	10,0	B10020-1000095	B10021-1000095	B10022-1000095
10,10	114	162	12,0	B10020-1010114	B10021-1010114	B10022-1010114
10,20	114	162	12,0	B10020-1020114	B10021-1020114	B10022-1020114
10,30	114	162	12,0	B10020-1030114	B10021-1030114	B10022-1030114
10,40	114	162	12,0	B10020-1040114	B10021-1040114	B10022-1040114
10,50	114	162	12,0	B10020-1050114	B10021-1050114	B10022-1050114
10,60	114	162	12,0	B10020-1060114	B10021-1060114	B10022-1060114

140° | HA | 8xd | VHM

Führungsfasen / Guide margine 4 | TiALN | STAHL steel

TiALN | STAHL steel

TiALN | TITAN | INOX

d1 m7	l2	l1	d2 h6	CODE	CODE	CODE
10,70	114	162	12,0	B10020-1070114	B10021-1070114	B10022-1070114
10,80	114	162	12,0	B10020-1080114	B10021-1080114	B10022-1080114
10,90	114	162	12,0	B10020-1090114	B10021-1090114	B10022-1090114
11,00	114	162	12,0	B10020-1100114	B10021-1100114	B10022-1100114
11,10	114	162	12,0	B10020-1110114	B10021-1110114	B10022-1110114
11,20	114	162	12,0	B10020-1120114	B10021-1120114	B10022-1120114
11,30	114	162	12,0	B10020-1130114	B10021-1130114	B10022-1130114
11,40	114	162	12,0	B10020-1140114	B10021-1140114	B10022-1140114
11,50	114	162	12,0	B10020-1150114	B10021-1150114	B10022-1150114
11,60	114	162	12,0	B10020-1160114	B10021-1160114	B10022-1160114
11,70	114	162	12,0	B10020-1170114	B10021-1170114	B10022-1170114
11,80	114	162	12,0	B10020-1180114	B10021-1180114	B10022-1180114
11,90	114	162	12,0	B10020-1190114	B10021-1190114	B10022-1190114
12,00	114	162	12,0	B10020-1200114	B10021-1200114	B10022-1200114
12,50	123	170	14,0	B10020-1250123	B10021-1250123	B10022-1250123
12,80	123	170	14,0	B10020-1280123	B10021-1280123	B10022-1280123
13,00	123	170	14,0	B10020-1300123	B10021-1300123	B10022-1300123
13,50	123	170	14,0	B10020-1350123	B10021-1350123	B10022-1350123
14,00	123	170	14,0	B10020-1400123	B10021-1400123	B10022-1400123
14,50	142	192	16,0	B10020-1450142	B10021-1450142	B10022-1450142
15,00	142	192	16,0	B10020-1500142	B10021-1500142	B10022-1500142
15,50	142	192	16,0	B10020-1550142	B10021-1550142	B10022-1550142
16,00	142	192	16,0	B10020-1600142	B10021-1600142	B10022-1600142

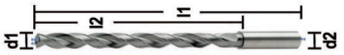
Einsatzrichtwerte / Estimated values

CODE – 10020 – Seite 40

CODE – 10022 – Seite 41

VHM Spiralbohrer 12xd spiralgenutet

Solid carbide twist drill 12xd spiral-fluted



140° | HA | 12 x D | VHM

Führungs-fasen / Guide margine 4 | TiALN | STAHL steel

TiALN | STAHL steel

d1 m7	l2	l1	d2 h6	CODE	CODE
3,00	54	92	6,0	B10024-0300054	B10025-0300054
3,10	54	92	6,0	B10024-0310054	B10025-0310054
3,20	54	92	6,0	B10024-0320054	B10025-0320054
3,30	54	92	6,0	B10024-0330054	B10025-0330054
3,40	54	92	6,0	B10024-0340054	B10025-0340054
3,50	54	92	6,0	B10024-0350054	B10025-0350054
3,60	54	92	6,0	B10024-0360054	B10025-0360054
3,70	54	92	6,0	B10024-0370054	B10025-0370054
3,80	64	102	6,0	B10024-0380064	B10025-0380064
3,90	64	102	6,0	B10024-0390064	B10025-0390064
4,00	64	102	6,0	B10024-0400064	B10025-0400064
4,10	64	102	6,0	B10024-0410064	B10025-0410064
4,20	64	102	6,0	B10024-0420064	B10025-0420064
4,30	64	102	6,0	B10024-0430064	B10025-0430064
4,40	64	102	6,0	B10024-0440064	B10025-0440064
4,50	64	102	6,0	B10024-0450064	B10025-0450064
4,60	64	102	6,0	B10024-0460064	B10025-0460064
4,70	64	102	6,0	B10024-0470064	B10025-0470064
4,80	78	116	6,0	B10024-0480064	B10025-0480078
4,90	78	116	6,0	B10024-0490078	B10025-0490078
5,00	78	116	6,0	B10024-0500078	B10025-0500078
5,10	78	116	6,0	B10024-0510078	B10025-0510078
5,20	78	116	6,0	B10024-0520078	B10025-0520078
5,30	78	116	6,0	B10024-0530078	B10025-0530078
5,40	78	116	6,0	B10024-0540078	B10025-0540078
5,50	78	116	6,0	B10024-0550078	B10025-0550078

140° | HA | 12 x D | VHM | Führungsfasen / Guide margine 4 | TiALN | STAHL steel | TiALN | STAHL steel

d1 m7	l2	l1	d2 h6	CODE	CODE
5,60	78	116	6,0	B10024-0560078	B10025-0560078
5,70	78	116	6,0	B10024-0570078	B10025-0570078
5,80	78	116	6,0	B10024-0580078	B10025-0580078
5,90	78	116	6,0	B10024-0590078	B10025-0590078
6,00	78	116	6,0	B10024-0600078	B10025-0600078
6,50	108	146	8,0	B10024-0650108	B10025-0650108
6,80	108	146	8,0	B10024-0680108	B10025-0680108
7,00	108	146	8,0	B10024-0700108	B10025-0700108
7,50	108	146	8,0	B10024-0750108	B10025-0750108
7,80	108	146	8,0	B10024-0780108	B10025-0780108
8,00	108	146	8,0	B10024-0800108	B10025-0800108
8,50	120	162	10,0	B10024-0850120	B10025-0850120
8,80	120	162	10,0	B10024-0880120	B10025-0880120
9,00	120	162	10,0	B10024-0900120	B10025-0900120
9,50	120	162	10,0	B10024-0950120	B10025-0950120
9,80	120	162	10,0	B10024-0980120	B10025-0980120
10,00	120	162	10,0	B10024-1000120	B10025-1000120
10,20	156	204	12,0	B10024-1020156	B10025-1020156
10,50	156	204	12,0	B10024-1050156	B10025-1050156
10,80	156	204	12,0	B10024-1080156	B10025-1080156
11,00	156	204	12,0	B10024-1100156	B10025-1100156
11,50	156	204	12,0	B10024-1150156	B10025-1150156
11,80	156	204	12,0	B10024-1180156	B10025-1180156
12,00	156	204	12,0	B10024-1200156	B10025-1200156
12,50	182	230	14,0	B10024-1250182	B10025-1250182
12,80	182	230	14,0	B10024-1280182	B10025-1280182
13,00	182	230	14,0	B10024-1300182	B10025-1300182
13,50	182	230	14,0	B10024-1350182	B10025-1350182
14,00	182	230	14,0	B10024-1400182	B10025-1400182
14,50	208	260	16,0	B10024-1450208	B10025-1450208
15,00	208	260	16,0	B10024-1500208	B10025-1500208
15,50	208	260	16,0	B10024-1550208	B10025-1550208
16,00	208	260	16,0	B10024-1600208	B10025-1600208

Einsatzrichtwerte / Estimated values

CODE – 10024 – Seite 43 **CODE – 10025 – Seite 43**

VHM 4-Fasen-Bohrer 5xd geradegenutet

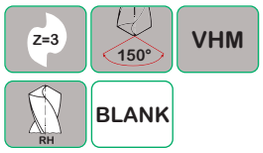
Solid carbide 4-bevel drill 5xd straight-fluted

5xd | HA | Führungs-fasen / Guide margine 4 | VHM | 130° | GUSS Cast iron | TiALN

d1 m7	l2	l1	d2	CODE
2,80	28	66	6,0	B10027-0280028
3,00	28	66	6,0	B10027-0300028
3,30	28	66	6,0	B10027-0330028
3,50	28	66	6,0	B10027-0350028
3,80	36	74	6,0	B10027-0380036
4,00	36	74	6,0	B10027-0400036
4,20	36	74	6,0	B10027-0420036
4,50	36	74	6,0	B10027-0450036
4,80	44	82	6,0	B10027-0480044
5,00	44	85	6,0	B10027-0500044
5,50	44	82	6,0	B10027-0550044
5,80	44	82	6,0	B10027-0580044
6,00	44	82	6,0	B10027-0600044
6,50	53	91	8,0	B10027-0650053
6,80	53	91	8,0	B10027-0680053
7,00	53	91	8,0	B10027-0700053
7,50	53	91	8,0	B10027-0750053
7,80	53	91	8,0	B10027-0780053
8,80	53	91	8,0	B10027-0800053
8,50	61	103	10,0	B10027-0850061
8,00	61	103	10,0	B10027-0880061
9,00	61	103	10,0	B10027-0900061
9,20	61	103	10,0	B10027-0920061
9,50	61	103	10,0	B10027-0950061
9,80	61	103	10,0	B10027-0980061
10,00	61	103	10,0	B10027-1000061
10,20	71	118	12,0	B10027-1020071
10,50	71	118	12,0	B10027-1050071
10,80	71	118	12,0	B10027-1080071
11,00	71	118	12,0	B10027-1100071
11,50	71	118	12,0	B10027-1150071
11,80	71	118	12,0	B10027-1180071
12,00	71	118	12,0	B10027-1200071
12,50	77	124	14,0	B10027-1250077
12,80	77	124	14,0	B10027-1280077
13,00	77	124	14,0	B10027-1300077
13,50	77	124	14,0	B10027-1350077
13,80	77	124	14,0	B10027-1380077
14,00	77	124	14,0	B10027-1400077
14,50	83	133	16,0	B10027-1450077
14,80	83	133	16,0	B10027-1480083
15,00	83	133	16,0	B10027-1500083
15,50	83	133	16,0	B10027-1550083
15,80	83	133	16,0	B10027-1580083
16,00	83	133	16,0	B10027-1600083
17,00	93	143	18,0	B10027-1700093
18,00	93	143	18,0	B10027-1800093
19,00	101	153	20,0	B10027-1900101
20,00	101	153	20,0	B10027-2000101

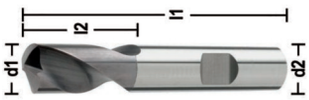
Einsatzrichtwerte / Estimated values

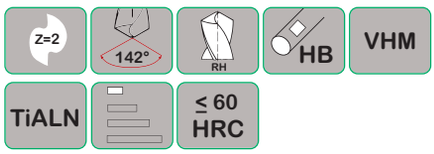
VHM Pilotbohrer H7
Solid carbide pilot drill H7



d1 h7	l2	l1	CODE	d1 h7	l2	l1	CODE
3,00	16	46	B10030-03016	**7,00**	34	74	B10030-07034
3,20	18	49	B10030-03218	**7,50**	34	74	B10030-07534
3,30	18	49	B10030-03318	**8,00**	37	79	B10030-08037
3,50	20	52	B10030-03520	**8,50**	37	79	B10030-08537
4,00	22	55	B10030-04022	**9,00**	40	84	B10030-09040
4,20	22	55	B10030-04222	**9,50**	40	84	B10030-09540
4,50	24	58	B10030-04524	**10,00**	43	89	B10030-10043
5,00	26	62	B10030-05026	**10,20**	43	89	B10030-10243
5,50	28	66	B10030-05528	**11,00**	47	95	B10030-11047
6,00	28	66	B10030-06028	**12,00**	51	102	B10030-12051
6,80	34	74	B10030-06834				

VHM Pilot-Zentrierbohrer
Solid carbide pilot center drill





d1 h6	l2	l1	d2	CODE
6,00	13	50	6,0	B10031-06013
8,00	23	60	8,0	B10031-08023
10,00	24	70	10,0	B10031-10024
12,00	24	70	12,0	B10031-12024
16,00	26	75	16,0	B10031-16026
20,00	33	100	20,0	B10031-20033

VHM NC Anbohrer bis max.45 HRC
Solid carbide NC center drill to 45 HRC max.

HA | Z=2 | BLANK | ≤ 45 HRC | VHM | 90° RH | 90° LH | 120° RH | 142° RH

d1 h6	l2	l1	CODE	CODE	CODE	CODE
1,00	3	26	B10032-0100006	B10033-0100006	B10034-0100006	B10035-0100006
1,50	9	32	B10032-0150009	B10033-0150009	B10034-0150009	B10035-0150009
2,00	6	32	B10032-0200012	B10033-0200012	B10034-0200012	B10035-0200012
3,00	8	32	B10032-0300012	B10033-0300012	B10034-0300012	B10035-0300012
4,00	10	40	B10032-0400015	B10033-0400015	B10034-0400015	B10035-0400015
5,00	13	50	B10032-0500018	B10033-0500018	B10034-0500018	B10035-0500018
6,00	13	50	B10032-0600021	B10033-0600021	B10034-0600021	B10035-0600021
8,00	23	60	B10032-0800025	B10033-0800025	B10034-0800025	B10035-0800025
10,00	24	70	B10032-1000027	B10033-1000027	B10034-1000027	B10035-1000027
12,00	24	70	B10032-1200027	B10033-1200027	B10034-1200027	B10035-1200027
14,00	26	75	B10032-1400030	B10033-1400030	B10034-1400030	B10035-1400030
16,00	26	75	B10032-1600030	B10033-1600030	B10034-1600030	B10035-1600030
18,00	33	100	B10032-1800033	B10033-1800033	B10034-1800033	B10035-1800033
20,00	33	100	B10032-2000033	B10033-2000033	B10034-2000033	B10035-2000033

Einsatzrichtwerte / Estimated values | **CODE – 10032 – Seite 34** | **CODE 10033 – Seite 34** | **CODE 10034 – Seite 34** | **CODE 10035 – Seite 34**

VHM NC Anbohrer lang
Solid carbide NC center drill, long

HA | VHM | BLANK | ≤ 60 HRC | 90° RH | 120° RH

d1 h6	l2	l1	d2	CODE	CODE
3,00	15	100	3,0	B10036-0300015	B10037-0300015
4,00	15	100	4,0	B10036-0400015	B10037-0400015
5,00	20	100	5,0	B10036-0500020	B10037-0500020
6,00	20	100	6,0	B10036-0600020	B10037-0600020
8,00	25	100	8,0	B10036-0800020	B10037-0800025
10,00	25	100	10,0	B10036-1000020	B10037-1000025
12,00	25	150	12,0	B10036-1200020	B10037-1200025

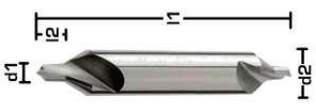
Einsatzrichtwerte / Estimated values | **CODE 10036 – Seite 34** | **CODE 10037 – Seite 34**

VHM NC Anbohrer bis max.60 HRC
Solid carbide NC center drill to max. 60 HRC

HA | Z=2 | TiALN | ≤ 60 HRC | 90° RH | 120° RH

d1 h6	l2	l1	CODE	CODE
6,00	11	57	B10038-0600011	B10039-0600011
8,00	19	63	B10038-0800019	B10039-0800019
10,00	20	66	B10038-1000020	B10039-1000020
12,00	22	73	B10038-1200022	B10039-1200022
16,00	24	82	B10038-1600024	B10039-1600024
20,00	30	92	B10038-2000030	B10039-2000030

VHM Zentrierbohrer 60°, DIN 333
Solid carbide center drill 60°, DIN 333



60° | FORM A | HA | DIN 333 | BLANK

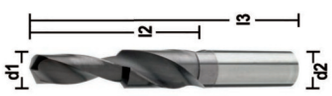
d1	l2	l1	d2	CODE
0,50	0,8	31,5	3,15	B10040-0050008
0,80	1,0	31,5	3,15	B10040-0080001
1,00	1,3	31,5	3,15	B10040-0100013
1,25	1,6	31,5	3,15	B10040-0125016
1,60	2,0	35,5	4,00	B10040-0160020
2,00	2,5	40,0	5,00	B10040-0200025
2,50	3,1	45,0	6,30	B10040-0250031
3,15	3,9	50,0	8,00	B10040-0315039

VHM Stufenbohrer
Solid carbide step drill

180° 140° | HA | VHM | Z=2 | UNI | BLANK

für Schraube / for screw	d1	Stufenlänge/ Step length	l2	l1	d2	Senker-Ø / Counter sink Ø	CODE
M 4,0	4,5	11	37	79	8	8,0	B10041-0400037
M 5,0	5,5	13	43	89	10	10,0	B10041-0500043
M 6,0	6,6	15	55	102	12	11,0	B10041-0600047
M 8,0	9,0	23	62	123	15	16,0	B10041-0800056
M 10,0	11,0	23	18	62	123	18,0	B10041-1000062

VHM Kernloch Stufenbohrer 90°
Solid carbide step drill for core holes 90°



HA | Z=2 | VHM | 90° 140° | BLANK | TiALN

Gewinde / Thread	d1 m7	Stufenlänge / Step length	l2	l1	d2	CODE	CODE
M 3,0	2,50	8,8	20	66	6,0	B10042-0300020	B10043-0300020
M 4,0	3,30	11,4	24	66	6,0	B10042-0400024	B10043-0400024
M 5,0	4,20	13,6	28	66	6,0	B10042-0500028	B10043-0500028
M 6,0	5,00	16,5	34	79	8,0	B10042-0600034	B10043-0600034
M 8,0	6,80	21,0	47	89	10,0	B10042-0800047	B10043-0800047
M 10,0	8,50	25,5	55	102	12,0	B10042-1000055	B10043-1000055
M 12,0	10,20	30,0	60	107	14,0	B10042-1200060	B10043-1200060
M 14,0	12,00	34,5	65	115	16,0	B10042-1400065	B10043-1400065
M 16,0	14,00	38,5	73	123	18,0	B10042-1600073	B10043-1600073

Einsatzrichtwerte / Estimated values

CODE – 10043 – Seite 32

VHM Stufenbohrer
Solid carbide stepp drill

HA | 90° 140° | Z=3 | VHM

STAHL steel | GUSS | BLANK | TiALN

Gewinde / Thread	d1 h6	l4	l2	l1	d2=d4	CODE	CODE
M 3,0	2,50	8,8	20	66	6,0	B10044-0300020	B10045-0300020
M 4,0	3,30	11,4	24	66	6,0	B10044-0400024	B10045-0400024
M 5,0	4,20	13,6	28	66	6,0	B10044-0500028	B10045-0500028
M 6,0	5,00	16,5	34	79	8,0	B10044-0600034	B10045-0600034
M 8,0	6,80	21,0	47	89	10,0	B10044-0800047	B10045-0800047
M 10,0	8,50	25,5	55	102	12,0	B10044-1000055	B10045-1000055
M 12,0	10,20	30,0	60	107	14,0	B10044-1200060	B10045-1200060
M 14,0	12,00	34,5	65	115	16,0	B10044-1400065	B10045-1400065
M 16,0	14,00	38,5	73	123	18,0	B10044-1600073	B10045-1600073

VHM Stufenbohrer für Gewindeformer
Solid carbide stepp drill for forming taps

90° 140° | Z=2 | RH | VHM

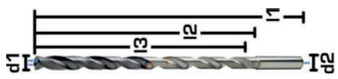
TiALN

Gewinde / Thread	d1 h8	d4 h8	l4	l1	d2	CODE
M 2,5	2,35	4,0	10	60	4,0	B10046-0250010
M 3,0	2,80	4,0	12	62	4,0	B10046-0300012
M 4,0	3,70	6,0	14	64	6,0	B10046-0400014
M 5,0	4,65	6,0	20	80	6,0	B10046-0500020
M 6,0	5,55	8,0	24	80	8,0	B10046-0600024
M 8,0	7,45	10,0	30	80	10,0	B10046-0800030
M 10,0	9,30	12,0	40	90	12,0	B10046-1000040
M 12,0	10,20	14,0	45	100	14,0	B10046-1200045

Einsatzrichtwerte / Estimated values

CODE – 10046 – Seite 32

VHM Tieflochbohrer mit IK, 15xd
Solid carbide deep hole drill with IC, 15xd

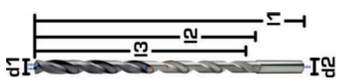


140° HA

15 x D TiALN

Ø h7	l2	l1	d2 (HA)	CODE	Ø h7	l2	l1	d2 (HA)	CODE
4,00	78	108	6,0	B10049-0400078	**8,50**	163	208	10,0	B10049-0850163
4,50	78	108	6,0	B10049-0450078	**9,00**	163	208	10,0	B10049-0900163
5,00	94	134	6,0	B10049-0500094	**9,50**	163	208	10,0	B10049-0950163
5,50	94	134	6,0	B10049-0550094	**10,00**	163	208	10,0	B10049-1000163
6,00	94	134	6,0	B10049-0600094	**10,50**	195	245	12,0	B10049-1050195
6,50	130	170	8,0	B10049-0650130	**11,00**	195	245	12,0	B10049-1100195
7,00	130	170	8,0	B10049-0700130	**11,50**	195	245	12,0	B10049-1150195
7,50	130	170	8,0	B10049-0750130	**12,00**	195	245	12,0	B10049-1200195
8,00	130	170	8,0	B10049-0800130					

VHM Tieflochbohrer mit IK, 15xd
Solid carbide deep hole drill with IC, 15xd



140° HA

30 x D TiALN

Ø h7	l2	l1	d2	CODE
4,00	135	185	6,0	B10050-0400135
5,00	165	215	6,0	B10050-0500165
6,00	180	230	6,0	B10050-0600180
7,00	230	280	8,0	B10050-0700230
8,00	265	315	8,0	B10050-0800265

Einsatzrichtwerte für VHM Bohrer
Estimated values for solid carbide drills

														Einsatzrichtwerte / Estimated values CODE – B10002	
				f mm/U		f mm/U		f mm/U		f mm/U		f mm/U		f mm/U	
		Vc m/min		Ø 0,1-0,3		Ø 0,3-0,5		Ø 0,5-0,8		Ø 0,8-1,0		Ø 1,0-1,5		Ø 1,5-2,5	
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis	von	bis	von	bis
P	allg.Stähle / *general steels* <500 N/mm	50	60	0,005	0,012	0,012	0,012	0,012	0,025	0,025	0,040	0,040	0,050	0,050	0,070
P	allg.Stähle / *general steels* <700 N/mm	50	60	0,004	0,010	0,010	0,012	0,012	0,020	0,020	0,035	0,035	0,045	0,045	0,060
P	allg.Stähle / *general steels* <850 N/mm	50	60	0,004	0,010	0,010	0,012	0,012	0,020	0,020	0,036	0,035	0,045	0,045	0,060
P	allg.Stähle / general steels <1000 N/mm	40	50	0,004	0,010	0,010	0,012	0,012	0,020	0,020	0,035	0,035	0,045	0,045	0,060
P	Einsatzstähle / case harden steels <1000 N/mm	35	45	0,003	0,006	0,006	0,008	0,008	0,015	0,015	0,030	0,030	0,040	0,040	0,050
P	Nitrierstähle / *nitriding steels* <1000 N/mm	35	45	0,003	0,006	0,006	0,006	0,008	0,008	0,015	0,030	0,040	0,040	0,040	0,050
P	Vergütungsstähle / *heat treatable steels* <850 N/mm	40	50	0,003	0,006	0,006	0,006	0,008	0,008	0,015	0,030	0,040	0,040	0,040	0,050
P	Werkzeugstähle (legiert u unlegiert) / *tool steels*	30	40	0,003	0,006	0,006	0,006	0,008	0,008	0,015	0,030	0,040	0,040	0,040	0,050
M	Rost- und säurebeständige Stähle <700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	20	30	0,003	0,006	0,006	0,006	0,008	0,008	0,015	0,030	0,040	0,040	0,040	0,050
M	Rost- und säurebeständige Stähle >700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	20	30	0,003	0,005	0,005	0,007	0,007	0,012	0,012	0,025	0,025	0,035	0,035	0,050
K	Gusseisen / *cast iron* <180 HB	60	80	0,005	0,012	0,012	0,012	0,012	0,025	0,025	0,040	0,040	0,050	0,050	0,070
K	Temperguss / *melleable cast iron*	50	60	0,005	0,012	0,012	0,012	0,012	0,025	0,025	0,040	0,040	0,050	0,050	0,070
K	Gusseisen mit Kugelgraphit / *ductile cast iron*	50	60	0,005	0,012	0,012	0,012	0,012	0,025	0,025	0,040	0,040	0,050	0,050	0,070
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	120	180	0,010	0,020	0,020	0,025	0,025	0,040	0,040	0,060	0,060	0,070	0,070	0,095
N	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	80	120	0,006	0,015	0,015	0,020	0,020	0,030	0,030	0,050	0,050	0,060	0,060	0,085
N	AL-Legierungen / *AL alloys* >12% Si	60	80	0,006	0,015	0,015	0,020	0,020	0,020	0,030	0,030	0,050	0,060	0,060	0,085
N	Messing, Kupfer, Bronze, Rotguss / *brass, copper, bronze, red brass*	40	60	0,005	0,012	0,012	0,012	0,012	0,025	0,025	0,040	0,040	0,050	0,050	0,070
N	Duro- und Thermoplaste / *duro- and thermoplastics*	30	50	0,003	0,006	0,006	0,008	0,008	0,015	0,015	0,030	0,030	0,030	0,040	0,050
S	Titan und Titanlegierung / *titanium and tit. - alloys*	20	30	0,003	0,006	0,006	0,008	0,008	0,015	0,015	0,030	0,030	0,030	0,040	0,050

Einsatzrichtwerte für VHM Bohrer
Estimated values for solid carbide drills

			Einsatzrichtwerte / Estimated values CODE – B10043, B10046		
			f mm/U	f mm/U	f mm/U
	Materialbezeichnung / material description	Vc	M3-M6	M8-M10	M12-M16
P	allg.Stähle / *general steels* <500 N/mm	75	0,100	0,150	0,210
P	allg.Stähle / *general steels* <700 N/mm	75	0,100	0,150	0,210
P	allg.Stähle / *general steels* <850 N/mm	70	0,100	0,150	0,210
P	allg.Stähle / general steels <1000 N/mm	65	0,110	0,130	0,180
P	allg.Stähle / general steels <1400 N/mm	35	0,100	0,120	0,170
P	Einsatzstähle / case harden steels <1000 N/mm	60	0,100	0,120	0,170
P	Nitrierstähle / *nitriding steels* <1000 N/mm	50	0,100	0,120	0,170
P	Vergütungsstähle / *heat treatable steels*<850 N/mm	45	0,100	0,150	0,210
P	Werkzeugstähle (legiert u unlegiert) / *tool steels*	45	0,100	0,120	0,170
M	Rost- und säurebeständige Stähle <700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	30	0,090	0,120	0,180
M	Rost- und säurebeständige Stähle >700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	25	0,800	0,110	0,160
K	Gusseisen / *cast iron* <180 HB	70	0,180	0,240	0,340
K	Temperguss / *melleable cast iron*	60	0,180	0,240	0,340
K	Gusseisen mit Kugelgraphit / *ductile cast iron*	60	0,180	0,240	0,340
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	200	0,140	0,200	0,320
N	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	180	0,140	0,200	0,320
N	AL-Legierungen / *AL alloys* >12% Si	140	0,140	0,200	0,320
N	Messing, Kupfer, Bronze, Rotguss / *brass, copper, bronze, red brass*	80	0,110	0,180	0,280
N	Duro- und Thermoplaste / *duro- and thermoplastics*	40	0,080	0,140	0,200
N	Grafit, GFK	35	0,080	0,140	0,200
S	Titan und Titanlegierung / *titanium and tit. - alloys*	35	0,060	0,100	0,150

Einsatzrichtwerte für VHM Bohrer
Estimated values for solid carbide drills

												Einsatzrichtwerte / Estimated values CODE – B10004 / B10006 / 10007	
				f mm/U		f mm/U		f mm/U		f mm/U		f mm/U	
		Vc m/min		Ø 0,3-2,9		Ø 3,0-5,9		Ø 6,0-9,9		Ø 10,0-15,9		Ø 16,0-20,0	
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis	von	bis
P	allg.Stähle / *general steels* <500 N/mm	60	80	0,010	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,300
P	allg.Stähle / *general steels* <700 N/mm	60	80	0,010	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,300
P	allg.Stähle / *general steels* <850 N/mm	60	80	0,010	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,300
P	allg.Stähle / general steels <1000 N/mm	50	70	0,010	0,080	0,080	0,120	0,120	0,180	0,180	0,220	0,220	0,280
P	allg.Stähle / *general steels* <1400 N/mm	20	35	0,010	0,080	0,080	0,100	0,100	0,150	0,150	0,180	0,180	0,220
P	Einsatzstähle / case harden steels <1000 N/mm	35	50	0,010	0,080	0,080	0,120	0,120	0,180	0,180	0,220	0,220	0,280
P	Nitrierstähle / *nitriding steels* <1000 N/mm	35	50	0,010	0,080	0,080	0,120	0,120	0,180	0,180	0,220	0,220	0,280
P	Vergütungsstähle / *heat treatable steels* <850 N/mm	40	56	0,010	0,080	0,080	0,120	0,120	0,180	0,180	0,220	0,220	0,280
P	Werkzeugstähle (legiert u unlegiert) / *tool steels*	20	35	0,010	0,080	0,080	0,100	0,100	0,150	0,150	0,180	0,180	0,220
M	Rost- und säurebeständige Stähle <700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	25	35	0,010	0,080	0,080	0,120	0,120	0,180	0,180	0,220	0,220	0,280
M	Rost- und säurebeständige Stähle >700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	20	30	0,010	0,080	0,080	0,120	0,120	0,180	0,180	0,220	0,220	0,280
K	Gusseisen / *cast iron* <180 HB	80	100	0,010	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,300
K	Temperguss / *melleable cast iron*	70	90	0,010	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,300
K	Gusseisen mit Kugelgraphit / *ductile cast iron*	60	80	0,010	0,080	0,080	0,120	0,120	0,180	0,180	0,220	0,220	0,280
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	180	220	0,010	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,300
N	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	130	180	0,010	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,300
N	AL-Legierungen / *AL alloys* >12% Si	90	130	0,010	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,300
N	Messing, Kupfer, Bronze, Rotguss / *brass, copper, bronze, red brass*	120	160	0,010	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,300
N	Duro- und Thermoplaste / *duro- and thermoplastics*	40	60	0,010	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,300
S	Titan und Titanlegierung / *titanium and tit. - alloys*	20	35	0,010	0,080	0,080	0,120	0,120	0,180	0,180	0,220	0,220	0,280

Einsatzrichtwerte für VHM Bohrer
Estimated values for solid carbide drills

				Einsatzrichtwerte / Estimated values CODE – B10032, B10033, B10034, B10035, B10036, B10037									
				f mm/U		f mm/U		f mm/U		f mm/U		f mm/U	
		Vc m/min		Ø 1,0-3,0		Ø 3,0-5,00		Ø 5,0-6,0		Ø 6,0-12,0		Ø 12,0-20,0	
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis	von	bis
P	allg.Stähle / *general steels* <500 N/mm	70	80	0,050	0,060	0,060	0,110	0,110	0,140	0,140	0,160	0,160	0,160
P	allg.Stähle / *general steels* <700 N/mm	65	75	0,050	0,060	0,060	0,110	0,110	0,140	0,140	0,160	0,160	0,160
P	allg.Stähle / *general steels* <850 N/mm	55	65	0,050	0,060	0,060	0,110	0,110	0,140	0,140	0,160	0,160	0,160
P	allg.Stähle / general steels <1000 N/mm	40	50	0,040	0,050	0,050	0,090	0,090	0,120	0,120	0,140	0,140	0,140
P	allg.Stähle / general steels <1400 N/mm	25	35	0,030	0,040	0,040	0,090	0,090	0,110	0,110	0,130	0,130	0,130
P	Einsatzstähle / case harden steels <1000 N/mm	30	40	0,040	0,050	0,050	0,090	0,090	0,120	0,120	0,140	0,140	0,140
P	Nitrierstähle / *nitriding steels* <1000 N/mm	30	40	0,040	0,050	0,050	0,090	0,090	0,120	0,120	0,140	0,140	0,140
P	Vergütungsstähle / *heat treatable steels* <850 N/mm	40	50	0,040	0,050	0,050	0,090	0,090	0,120	0,120	0,140	0,140	0,140
P	Werkzeugstähle (legiert u unlegiert) / *tool steels*	25	35	0,030	0,040	0,040	0,090	0,090	0,110	0,110	0,130	0,130	0,130
M	Rost- und säurebeständige Stähle <700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	20	30	0,010	0,010	0,010	0,030	0,030	0,070	0,070	0,070	0,070	0,070
M	Rost- und säurebeständige Stähle >700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	20	25	0,010	0,010	0,010	0,030	0,030	0,070	0,070	0,070	0,070	0,070
K	Gusseisen / *cast iron* <180 HB	60	70	0,030	0,040	0,040	0,090	0,090	0,110	0,110	0,130	0,130	0,130
K	Temperguss / *melleable cast iron*	60	70	0,030	0,040	0,040	0,090	0,090	0,110	0,110	0,130	0,130	0,130
K	Gusseisen mit Kugelgraphit / *ductile cast iron*	60	70	0,030	0,040	0,040	0,090	0,090	0,110	0,110	0,130	0,130	0,130
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	18/0	200	0,020	0,020	0,020	0,030	0,030	0,070	0,070	0,070	0,070	0,070
N	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	160	180	0,020	0,020	0,020	0,030	0,030	0,070	0,070	0,070	0,070	0,070
N	AL-Legierungen / *AL alloys* >12% Si	140	160	0,020	0,020	0,020	0,030	0,030	0,700	0,070	0,070	0,070	0,070
N	Messing, Kupfer, Bronze, Rotguss / *brass, copper, bronze, red brass*	60	80	0,010	0,010	0,010	0,020	0,020	0,060	0,060	0,070	0,070	0,070
N	Duro- und Thermoplaste / *duro- and thermoplastics*	40	50	0,010	0,010	0,010	0,020	0,020	0,040	0,040	0,060	0,060	0,060
S	Titan und Titanlegierung / *titanium and tit. - alloys*	25	35	0,010	0,010	0,010	0,030	0,030	0,070	0,070	0,070	0,070	0,070
S	Nickel	25	35	0,010	0,010	0,010	0,030	0,030	0,070	0,070	0,070	0,070	0,070

Einsatzrichtwerte für VHM Bohrer
Estimated values for solid carbide drills

										Einsatzrichtwerte / Estimated values CODE – B10008	
				f mm/U		f mm/U		f mm/U		f mm/U	
		Vc m/min		Ø 3,0-6,0		Ø 6,0-10,00		Ø 10,0-16,0		Ø 10,0-16,0	
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis
P	allg.Stähle / *general steels* <500 N/mm	80	100	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
P	allg.Stähle / *general steels* <700 N/mm	80	100	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
P	allg.Stähle / *general steels* <850 N/mm	80	100	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
P	allg.Stähle / general steels <1000 N/mm	70	90	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
P	allg.Stähle / general steels <1400 N/mm	30	50	0,060	0,120	0,120	0,150	0,150	0,200	0,200	0,300
P	Einsatzstähle / case harden steels <1000 N/mm	60	80	0,070	0,130	0,130	0,160	0,160	0,220	0,220	0,300
P	Nitrierstähle / *nitriding steels* <1000 N/mm	60	80	0,070	0,130	0,130	0,160	0,160	0,220	0,220	0,300
P	Vergütungsstähle / *heat treatable steels* <850 N/mm	50	70	0,070	0,130	0,130	0,160	0,160	0,220	0,220	0,300
P	Werkzeugstähle (legiert u unlegiert) / *tool steels*	30	50	0,060	0,120	0,120	0,150	0,150	0,200	0,200	0,300
M	Rost- und säurebeständige Stähle <700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	30	50	0,060	0,100	0,100	0,150	0,150	0,180	0,180	0,250
M	Rost- und säurebeständige Stähle >700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	25	40	0,060	0,100	0,100	0,150	0,150	0,180	0,180	0,250
K	Gusseisen / *cast iron* <180 HB	100	120	0,050	0,130	0,130	0,170	0,170	0,220	0,220	0,350
K	Temperguss / *melleable cast iron*	100	120	0,050	0,130	0,130	0,170	0,170	0,220	0,220	0,350
K	Gusseisen mit Kugelgraphit / *ductile cast iron*	80	110	0,050	0,130	0,130	0,170	0,170	0,220	0,220	0,350
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	200	250	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
N	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	160	200	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
N	AL-Legierungen / *AL alloys* >12% Si	120	180	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
N	Messing, Kupfer, Bronze, Rotguss / *brass, copper, bronze, red brass*	10	200	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
S	Titan und Titanlegierung / *titanium and tit. - alloys*	25	40	0,060	0,100	0,100	0,150	0,150	0,180	0,180	0,250

Einsatzrichtwerte für VHM Bohrer
Estimated values for solid carbide drills

											Einsatzrichtwerte / Estimated values CODE – B10009
				f mm/U		f mm/U		f mm/U		f mm/U	
		Vc m/min		Ø 3,0-6,0		Ø 6,0-10,00		Ø 10,0-16,0		Ø 16,0-20,0	
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis
P	allg.Stähle / *general steels* <500 N/mm	100	130	0,120	0,180	0,180	0,230	0,230	0,270	0,270	0,300
P	allg.Stähle / *general steels* <700 N/mm	100	130	0,120	0,180	0,180	0,230	0,230	0,270	0,270	0,300
P	allg.Stähle / *general steels* <850 N/mm	100	130	0,120	0,180	0,180	0,230	0,230	0,270	0,270	0,300
P	allg.Stähle / general steels <1000 N/mm	90	120	0,120	0,180	0,180	0,230	0,230	0,270	0,270	0,300
P	allg.Stähle / general steels <1400 N/mm	35	55	0,060	0,090	0,090	0,150	0,150	0,200	0,200	0,230
P	Einsatzstähle / case harden steels <1000 N/mm	80	100	0,100	0,160	0,160	0,200	0,200	0,220	0,220	0,250
P	Nitrierstähle / *nitriding steels* <1000 N/mm	80	100	0,100	0,160	0,160	0,200	0,200	0,220	0,220	0,250
P	Vergütungsstähle / *heat treatable steels* <850 N/mm	80	100	0,100	0,160	0,160	0,200	0,200	0,220	0,220	0,250
P	Werkzeugstähle (legiert u unlegiert) / *tool steels*	50	80	0,100	0,160	0,160	0,200	0,200	0,220	0,220	0,250
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	220	260	0,150	0,250	0,250	0,380	0,380	0,420	0,420	0,550
N	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	220	260	0,150	0,250	0,250	0,380	0,380	0,420	0,420	0,550
N	Messing, Kupfer, Bronze, Rotguss / *brass, copper, bronze, red brass*	90	110	0,150	0,220	0,220	0,300	0,300	0,400	0,400	0,500

Einsatzrichtwerte für VHM Bohrer
Estimated values for solid carbide drills

													Einsatzrichtwerte / Estimated values CODE – B10016
				f mm/U		f mm/U		f mm/U		f mm/U		f mm/U	
		Vc m/min		Ø 1,0-3,0		Ø 3,0-6,0		Ø 6,0-10,0		Ø 10,0-16,0		Ø 16,0-20,0	
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis	von	bis
P	allg.Stähle / *general steels* <500 N/mm	80	100	0,040	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
P	allg.Stähle / *general steels* <700 N/mm	80	100	0,040	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
P	allg.Stähle / *general steels* <850 N/mm	80	100	0,040	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
P	allg.Stähle / general steels <1000 N/mm	70	90	0,040	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
P	allg.Stähle / general steels <1400 N/mm	30	50	0,030	0,060	0,060	0,120	0,120	0,150	0,150	0,200	0,200	0,300
P	Einsatzstähle / case harden steels <1000 N/mm	60	80	0,030	0,070	0,070	0,130	0,130	0,160	0,160	0,220	0,220	0,300
P	Nitrierstähle / *nitriding steels* <1000 N/mm	60	80	0,030	0,070	0,070	0,130	0,130	0,160	0,160	0,220	0,220	0,300
P	Vergütungsstähle / *heat treatable steels* <850 N/mm	50	70	0,030	0,070	0,070	0,130	0,130	0,160	0,160	0,220	0,220	0,300
P	Werkzeugstähle (legiert u unlegiert) / *tool steels*	30	50	0,030	0,070	0,060	0,120	0,130	0,150	0,150	0,200	0,200	0,300
M	Rost- und säurebeständige Stähle <700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	30	50	0,020	0,060	0,060	0,100	0,100	0,150	0,150	0,180	0,180	0,250
M	Rost- und säurebeständige Stähle >700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	25	40	0,020	0,060	0,060	0,100	0,100	0,150	0,150	0,180	0,180	0,250
K	Gusseisen / *cast iron* <180 HB	100	120	0,030	0,060	0,050	0,130	0,130	0,170	0,170	0,220	0,220	0,350
K	Temperguss / *melleable cast iron*	100	120	0,030	0,050	0,050	0,130	0,130	0,170	0,170	0,220	0,220	0,350
K	Gusseisen mit Kugelgraphit / *ductile cast iron*	80	110	0,030	0,080	0,080	0,130	0,150	0,170	0,170	0,220	0,220	0,350
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	200	250	0,040	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
N	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	160	200	0,040	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
N	AL-Legierungen / *AL alloys* >12% Si	120	180	0,040	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
N	Messing, Kupfer, Bronze, Rotguss / *brass, copper, bronze, red brass*	160	200	0,040	0,080	0,080	0,150	0,150	0,200	0,200	0,250	0,250	0,350
S	Titan und Titanlegierung / *titanium and tit. - alloys*	25	40	0,020	0,060	0,060	0,100	0,100	0,150	0,150	0,180	0,180	0,350

Einsatzrichtwerte für VHM Bohrer
Estimated values for solid carbide drills

Einsatzrichtwerte / Estimated values
CODE – B10010

				f mm/U		f mm/U		f mm/U		f mm/U	
		Vc m/min		Ø 3,0-6,0		Ø 6,0-10,00		Ø 10,0-16,0		Ø 16,0-20,0	
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis
P	allg.Stähle / *general steels* <500 N/mm	100	130	0,100	0,150	0,150	0,200	0,200	0,220	0,220	0,300
M	Rost- und säurebeständige Stähle <700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	40	60	0,080	0,120	0,120	0,160	0,160	0,200	0,200	0,250
	Rost- und säurebeständige Stähle >700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	40	60	0,080	0,120	0,120	0,160	0,160	0,200	0,200	0,250
K	Gusseisen mit Kugelgraphit / *ductile cast iron*	60	80	0,130	0,180	0,180	0,240	0,240	0,280	0,280	0,320
	Temperguss / *melleable cast iron*	60	80	0,130	0,180	0,180	0,240	0,240	0,280	0,280	0,450
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	120	160	0,130	0,200	0,200	0,300	0,300	0,400	0,400	0,450
	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	120	160	0,130	0,200	0,200	0,300	0,300	0,400	0,400	0,450
	AL-Legierungen / *AL alloys* >12% Si	100	140	0,130	0,200	0,200	0,300	0,300	0,400	0,400	0,450
S	Titan und Titanlegierung / *titanium and tit. - alloys*	30	50	0,80	0,120	0,120	0,160	0,160	0,200	0,200	0,250

Einsatzrichtwerte / Estimated values
CODE – B10017

				f mm/U		f mm/U		f mm/U		f mm/U		f mm/U	
		Vc m/min		Ø 1,0-3,0		Ø 3,0-6,00		Ø 6,0-10,0		Ø 10,0-16,0		Ø 16,0-20,0	
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis	von	bis
P	allg.Stähle / *general steels* <500 N/mm	100	130	0,070	0,120	0,120	0,180	0,180	0,230	0,230	0,270	0,270	0,300
	allg.Stähle / *general steels* <700 N/mm	100	130	0,070	0,120	0,120	0,180	0,180	0,230	0,230	0,270	0,270	0,300
	allg.Stähle / *general steels* <850 N/mm	100	130	0,070	0,120	0,120	0,180	0,180	0,230	0,230	0,270	0,270	0,300
	allg.Stähle / general steels <1000 N/mm	90	120	0,070	0,120	0,120	0,180	0,180	0,230	0,230	0,270	0,270	0,300
	allg.Stähle / general steels <1400 N/mm	35	55	0,040	0,060	0,060	0,090	0,090	0,150	0,150	0,200	0,200	0,230
	Einsatzstähle / case harden steels <1000 N/mm	80	100	0,060	0,100	0,100	0,160	0,160	0,200	0,200	0,220	0,220	0,250
	Nitrierstähle / *nitriding steels* <1000 N/mm	80	100	0,060	0,100	0,100	0,160	0,160	0,200	0,200	0,220	0,220	0,250
	Vergütungsstähle / *heat treatable steels* <850 N/mm	80	100	0,060	0,100	0,100	0,160	0,160	0,200	0,200	0,220	0,220	0,250
	Werkzeugstähle (legiert u unlegiert) / *tool steels*	50	80	0,050	0,100	0,100	0,160	0,160	0,200	0,200	0,220	0,220	0,250
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	220	260	0,100	0,150	0,150	0,250	0,250	0,380	0,380	0,420	0,420	0,550
	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	220	260	0,100	0,150	0,150	0,250	0,250	0,380	0,380	0,420	0,420	0,550
	Messing, Kupfer, Bronze, Rotguss / *brass, copper, bronze, red brass*	90	110	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,400	0,400	0,500

Einsatzrichtwerte für VHM Bohrer
Estimated values for solid carbide drills

													Einsatzrichtwerte / Estimated values CODE – B10018
				f mm/U		f mm/U		f mm/U		f mm/U		f mm/U	
		Vc m/min		Ø 1,0-3,0		Ø 3,0-6,0		Ø 6,0-10,00		Ø 10,0-16,0		Ø 16,0-20,0	
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis	von	bis
P	allg.Stähle / *general steels* <500 N/mm	100	130	0,060	0,100	0,100	0,150	0,150	0,200	0,200	0,220	0,220	0,300
M	Rost- und säurebeständige Stähle <700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	40	60	0,030	0,070	0,070	0,120	0,120	0,160	0,160	0,200	0,200	0,250
	Rost- und säurebeständige Stähle >700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	40	60	0,030	0,070	0,070	0,120	0,120	0,160	0,160	0,200	0,200	0,250
K	Gusseisen / *cast iron* <180 HB	60	80	0,100	0,130	0,130	0,180	0,180	0,240	0,240	0,280	0,280	0,320
	Temperguss / *melleable cast iron*	60	80	0,100	0,130	0,130	0,180	0,180	0,240	0,240	0,280	0,280	0,320
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	120	160	0,100	0,130	0,130	0,200	0,200	0,300	0,300	0,400	0,400	0,450
	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	120	160	0,100	0,130	0,130	0,200	0,200	0,300	0,300	0,400	0,400	0,450
	AL-Legierungen / *AL alloys* >12% Si	100	140	0,100	0,130	0,130	0,200	0,200	0,300	0,300	0,400	0,400	0,450
S	Titan und Titanlegierung / *titanium and tit. - alloys*	30	50	0,030	0,070	0,070	0,120	0,120	0,160	0,160	0,200	0,200	0,250

													Einsatzrichtwerte / Estimated values CODE – B10027
				f mm/U		f mm/U		f mm/U		f mm/U			
		Vc m/min		Ø 2,8-6,0		Ø 6,0-10,0		Ø 10,0-16,0		Ø 16,0-20,0			
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis		
K	Gusseisen / *cast iron* <180 HB	100	120	0,100	0,180	0,180	0,320	0,320	0,400	0,400	0,500		
	Temperguss / *melleable cast iron*	90	110	0,100	0,180	0,180	0,320	0,320	0,400	0,400	0,500		
	Gusseisen mit Kugelgraphit / *ductile cast iron*	80	100	0,100	0,180	0,180	0,320	0,320	0,400	0,400	0,500		
N	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	300	350	0,100	0,180	0,180	0,320	0,320	0,400	0,400	0,500		
	AL-Legierungen / *AL alloys* >12% Si	280	330	0,100	0,180	0,180	0,320	0,320	0,400	0,400	0,500		
	Messing, Kupfer, Bronze, Rotguss / *brass, copper, bronze, red brass*	200	250	0,100	0,120	0,120	0,160	0,160	0,250	0,250	0,300		
	Duro- und Thermoplaste / *duro- and thermoplastics*	120	150	0,050	0,090	0,070	0,140	0,120	0,200	0,140	0,250		

Einsatzrichtwerte für VHM Bohrer
Estimated values for solid carbide drills

										Einsatzrichtwerte / Estimated values CODE – B10020	
				f mm/U		f mm/U		f mm/U		f mm/U	
		Vc m/min		Ø 3,0-6,0		Ø 6,0-10,00		Ø 10,0-16,0		Ø 16,0-20,0	
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis
P	allg.Stähle / *general steels* <500 N/mm	90	120	0,120	0,200	0,200	0,250	0,250	0,400	0,400	0,480
P	allg.Stähle / *general steels* <700 N/mm	80	100	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	allg.Stähle / *general steels* <850 N/mm	80	100	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	allg.Stähle / general steels <1000 N/mm	60	80	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	allg.Stähle / general steels <1400 N/mm	30	45	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	Einsatzstähle / case harden steels <1000 N/mm	60	80	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	Nitrierstähle / *nitriding steels* <1000 N/mm	60	80	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	Vergütungsstähle / *heat treatable steels* <850 N/mm	60	80	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	Werkzeugstähle (legiert u unlegiert) / *tool steels*	30	50	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
M	Rost- und säurebeständige Stähle <700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	35	50	0,050	0,100	0,100	0,120	0,100	0,180	0,180	0,220
M	Rost- und säurebeständige Stähle >700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	30	50	0,050	0,100	0,100	0,120	0,100	0,180	0,180	0,220
K	Gusseisen / *cast iron* <180 HB	70	90	0,150	0,250	0,250	0,320	0,320	0,360	0,360	0,420
K	Temperguss / *melleable cast iron*	70	90	0,150	0,250	0,250	0,320	0,320	0,360	0,360	0,420
K	Gusseisen mit Kugelgraphit / *ductile cast iron*	65	85	0,150	0,220	0,220	0,300	0,300	0,350	0,350	0,380
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	180	220	0,120	0,200	0,200	0,250	0,250	0,400	0,400	0,480
N	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	150	200	0,120	0,200	0,200	0,250	0,250	0,400	0,400	0,480
N	Messing, Kupfer, Bronze, Rotguss / *brass, copper, bronze, red brass*	110	150	0,120	0,200	0,200	0,250	0,250	0,400	0,400	0,480
S	Titan und Titanlegierung / *titanium and tit. - alloys*	20	35	0,050	0,080	0,080	0,110	0,100	0,140	0,140	0,170

Einsatzrichtwerte für VHM Bohrer
Estimated values for solid carbide drills

											Einsatzrichtwerte / Estimated values CODE – B10022
				f mm/U		f mm/U		f mm/U		f mm/U	
		Vc m/min		Ø 3,0-6,0		Ø 6,0-10,00		Ø 10,0-16,0		Ø 16,0-20,0	
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis
P	allg.Stähle / *general steels* <500 N/mm	80	120	0,120	0,200	0,200	0,300	0,300	0,400	0,400	0,500
M	Rost- und säurebeständige Stähle <700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	35	45	0,050	0,100	0,100	0,130	0,130	0,180	0,180	0,220
	Rost- und säurebeständige Stähle >700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	30	40	0,050	0,100	0,100	0,130	0,130	0,180	0,180	0,220
K	Gusseisen / *cast iron* <180 HB	60	80	0,160	0,250	0,250	0,320	0,320	0,380	0,380	0,420
	Temperguss / *melleable cast iron*	55	75	0,160	0,250	0,250	0,320	0,320	0,380	0,380	0,420
	Gusseisen mit Kugelgraphit / *ductile cast iron*	55	75	0,150	0,220	0,220	0,300	0,300	0,350	0,350	0,400
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	180	220	0,150	0,200	0,200	0,280	0,280	0,400	0,400	0,460
	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	150	200	0,150	0,200	0,200	0,280	0,280	0,400	0,400	0,460
	Messing, Kupfer, Bronze, Rotguss / *brass, copper, bronze, red brass*	110	150	0,150	0,200	0,200	0,280	0,280	0,400	0,400	0,460
S	Titan und Titanlegierung / *titanium and tit. - alloys*	15	25	0,150	0,080	0,080	0,100	0,100	0,140	0,140	0,180

Einsatzrichtwerte für VHM Bohrer
Estimated values for solid carbide drills

										Einsatzrichtwerte / Estimated values CODE – B10023	
				f mm/U		f mm/U		f mm/U		f mm/U	
		Vc m/min		Ø 3,0-6,0		Ø 6,0-10,00		Ø 10,0-16,0		Ø 16,0-20,0	
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis
P	allg.Stähle / *general steels* <500 N/mm	100	130	0,100	0,150	0,150	0,200	0,200	0,250	0,250	0,300
M	Rost- und säurebeständige Stähle <700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	40	60	0,080	0,120	0,120	0,160	0,160	0,200	0,200	0,250
	Rost- und säurebeständige Stähle >700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	40	60	0,080	0,120	0,120	0,160	0,160	0,200	0,200	0,250
K	Gusseisen / *cast iron* <180 HB	60	80	0,200	0,300	0,300	0,400	0,400	0,500	0,500	0,600
	Temperguss / *melleable cast iron*	60	80	0,200	0,300	0,300	0,400	0,400	0,500	0,500	0,600
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	220	260	0,180	0,250	0,250	0,380	0,380	0,450	0,450	0,550
	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	160	220	0,180	0,250	0,250	0,380	0,380	0,450	0,450	0,550
	Messing, Kupfer, Bronze, Rotguss / *brass, copper, bronze, red brass*	120	160	0,150	0,200	0,200	0,300	0,300	0,380	0,380	0,400
S	Titan und Titanlegierung / *titanium and tit. - alloys*	30	50	0,080	0,120	0,120	0,160	0,160	0,200	0,200	0,250

Einsatzrichtwerte für VHM Bohrer
Estimated values for solid carbide drills

				Einsatzrichtwerte / Estimated values CODE – B10024, B10025									
				f mm/U		f mm/U		f mm/U		f mm/U		f mm/U	
		Vc m/min		Ø 1,0-3,0		Ø 3,0-6,00		Ø 6,0-10,0		Ø 10,0-16,0		Ø 16,0-20,0	
	Materialbezeichnung / material description	von	bis	von	bis	von	bis	von	bis	von	bis	von	bis
P	allg.Stähle / *general steels* <500 N/mm	90	110	0,080	0,150	0,150	0,200	0,200	0,300	0,300	0,400	0,350	0,450
P	allg.Stähle / *general steels* <700 N/mm	70	90	0,060	0,100	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	allg.Stähle / *general steels* <850 N/mm	70	90	0,060	0,100	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	allg.Stähle / general steels <1000 N/mm	60	80	0,060	0,100	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	allg.Stähle / general steels <1400 N/mm	30	45	0,060	0,100	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	Einsatzstähle / case harden steels <1000 N/mm	60	80	0,060	0,100	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	Nitrierstähle / *nitriding steels* <1000 N/mm	60	80	0,060	0,100	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	Vergütungsstähle / *heat treatable steels* <850 N/mm	60	80	0,060	0,100	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
P	Werkzeugstähle (legiert u unlegiert) / *tool steels*	30	50	0,060	0,100	0,100	0,150	0,150	0,220	0,220	0,300	0,300	0,350
M	Rost- und säurebeständige Stähle <700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	30	50	0,050	0,100	0,100	0,120	0,120	0,140	0,140	0,240	0,240	0,300
M	Rost- und säurebeständige Stähle >700 N/mm / *corrosion- and acid-proof steels >700 N/mm*	30	40	0,050	0,100	0,100	0,120	0,120	0,140	0,140	0,240	0,240	0,300
K	Gusseisen / *cast iron* <180 HB	60	80	0,100	0,180	0,180	0,250	0,250	0,320	0,320	0,370	0,370	0,420
K	Temperguss / *melleable cast iron*	60	80	0,100	0,180	0,180	0,250	0,250	0,320	0,320	0,370	0,370	0,420
K	Gusseisen mit Kugelgraphit / *ductile cast iron*	60	70	0,080	0,160	0,160	0,220	0,220	0,300	0,300	0,360	0,360	0,400
N	AL- und AL-Legierungen / *AL- and AL- alloy*<6% Si	170	220	0,080	0,150	0,150	0,200	0,200	0,300	0,300	0,400	0,350	0,450
N	AL- und AL-Legierungen / *AL- and AL- alloy*<12% Si	150	200	0,080	0,150	0,150	0,200	0,200	0,300	0,300	0,400	0,350	0,450
N	AL-Legierungen / *AL alloys* >12% Si	100	150	0,080	0,150	0,150	0,200	0,200	0,300	0,300	0,400	0,350	0,450
N	Duro- und Thermoplaste / *duro- and thermoplastics*	30	50	0,050	0,080	0,080	0,120	0,120	0,150	0,150	0,220	0,220	0,300
S	Titan und Titanlegierung / *titanium and tit. - alloys*	20	35	0,050	0,100	0,100	0,120	0,120	0,140	0,140	0,240	0,240	0,300

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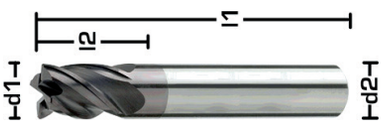
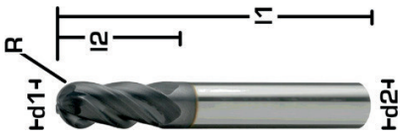
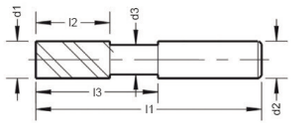
VHM Radiusfräser – kurz, extra lang Solid carbide radius milling cutter – short, extra long	F40149 ; F40150	**119**	**ALU**
VHM Schaftfräser – lang Solid carbide end mill – long	F40151 ; F40152	**120**	**ALU**
VHM Torusfräser – lang, extra lang Solid carbide torus cutter – long, extra long	F40153 ; F40154	**121**	**ALU**
PKD Schaftfräser mit Innenkühlung PCD end mill with internal cooling	F40198 ; F40199	**122**	**ALU**
Einsatzrichtwerte – VHM Fräser Estimated values – Solid carbide end mills	–	**124 – 125**	

VHM HPC Star Fräser, ungleiche Teilung, abgesetzt

Solid carbide HPC Star end mill, unequal pitch, reduced







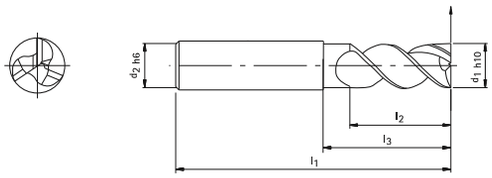
VHM | DIN 6535 HA | 35° 38° | Z=4 | STAR | nACo | R

d1	l2	l3	l1	d3	d2 h6	CODE	CODE
3,00	6,00	16,00	54,00	2,80	6,00	F40156-0301606	F40157-0301606
3,00	8,00	21,00	57,00	2,80	6,00	F40156-0302108	F40157-0302108
3,00	8,00	21,00	80,00	2,80	6,00	F40156-0303108	F40157-0303108
4,00	8,00	18,00	54,00	3,80	6,00	F40156-0401808	F40157-0401808
4,00	11,00	21,00	57,00	3,80	6,00	F40156-0402111	F40157-0402111
4,00	11,00	21,00	80,00	3,80	6,00	F40156-0403111	F40157-0403111
5,00	9,00	18,00	54,00	2,80	6,00	F40156-0500918	F40157-0500918
5,00	13,00	21,00	57,00	4,80	6,00	F40156-0501321	F40157-0501321
5,00	21,00	31,00	63,00	4,80	6,00	F40156-0502131	F40157-0502131
5,00	13,00	21,00	80,00	4,80	6,00	F40156-0501331	F40157-0501331
6,00	10,00	18,00	54,00	5,50	6,00	F40156-0601018	F40157-0610018
6,00	13,00	21,00	57,00	5,50	6,00	F40156-0601321	F40157-0613021
6,00	22,00	31,00	63,00	5,50	6,00	F40156-0602231	F40157-0622031
7,00	12,00	21,00	58,00	6,50	8,00	F40156-0701221	F40157-0712021
7,00	19,00	27,00	63,00	7,50	8,00	F40156-0701927	F40157-0719027
8,00	12,00	21,00	58,00	7,50	8,00	F40156-0801221	F40157-0812021
8,00	19,00	27,00	63,00	7,50	8,00	F40156-0801927	F40157-0819027
8,00	28,00	40,00	80,00	7,50	8,00	F40156-0802840	F40157-0828040
9,00	14,00	24,00	66,00	8,50	10,00	F40156-0901424	F40157-0901424
9,00	22,00	32,00	72,00	8,50	10,00	F40156-0902224	F40157-0902232
10,00	14,00	24,00	66,00	9,50	10,00	F40156-1001424	F40157-1001424
10,00	22,00	32,00	72,00	9,50	10,00	F40156-1002232	F40157-1022032
10,00	33,00	43,00	100,00	9,50	10,00	F40156-1003343	F40157-1030343
10,00	40,00	50,00	100,00	9,20	10,00	F40156-1004050	F40157-1004050
11,00	16,00	28,00	73,00	10,50	12,00	F40156-1101628	F40157-1101628
11,00	26,00	38,00	83,00	10,50	12,00	F40156-1102638	F40157-1102638
12,00	16,00	28,00	73,00	11,00	12,00	F40156-1201628	F40157-1201628
12,00	26,00	38,00	83,00	11,00	12,00	F40156-1202638	F40157-1202638
12,00	42,00	52,00	100,00	11,00	12,00	F40156-1204252	F40157-1204252
12,00	45,00	55,00	150,00	11,00	12,00	F40156-1204555	F40157-1204555
13,00	26,00	42,00	83,00	12,00	14,00	F40156-1302642	F40157-1302642
14,00	18,00	30,00	75,00	13,00	14,00	F40156-1401830	F40157-1401830
14,00	26,00	42,00	83,00	14,00	14,00	F40156-1402642	F40157-1402642
14,00	48,00	60,00	100,00	13,00	14,00	F40156-1404860	F40157-1404860
14,00	45,00	60,00	150,00	13,00	14,00	F40156-1404560	F40157-1404560
16,00	22,00	32,00	82,00	15,00	16,00	F40156-1602232	F40157-1602232
16,00	32,00	44,00	92,00	15,00	16,00	F40156-1603244	F40157-1603244
16,00	53,00	100,00	150,00	15,00	16,00	F40156-1653100	F40157-1653100
16,00	65,00	100,00	150,00	15,00	16,00	F40156-1665100	F40157-1665100
18,00	24,00	50,00	84,00	17,00	18,00	F40156-1824050	F40157-1824050
18,00	32,00	50,00	92,00	17,00	18,00	F40156-1832050	F40157-1832050
18,00	32,00	50,00	100,00	17,00	18,00	F40156-1803250	F40157-1803250
18,00	65,00	100,00	150,00	17,00	18,00	F40156-1865100	F40157-1865100

d1	l2	l3	l1	d3	d2 h6	CODE	CODE
20,00	26,00	50,00	92,00	19,00	20,00	F40156-2026050	F40157-2026050
20,00	38,00	54,00	104,00	19,00	20,00	F40156-2038054	F40157-2038054
20,00	68,00	100,00	150,00	19,00	20,00	F40156-2068100	F40157-2068100
25,00	32,00	55,00	92,00	24,00	25,00	F40156-2532055	F40157-2532055
25,00	38,00	60,00	104,00	24,00	25,00	F40156-2538060	F40157-2538060
25,00	45,00	74,00	121,00	24,00	25,00	F40156-2545074	F40157-2545074
25,00	75,00	100,00	150,00	24,00	25,00	F40156-2575100	F40157-2575100

HPC Star Schaftfräser für die Zerspanung von Aluminium

Solid carbide HPC Star mill for aluminium



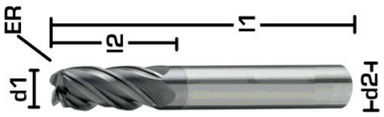
DIN 6535 HA | Z=3 | 45° | 41° 42° 43°

VHM | STAR | ZrN | **Nuten poliert /** polished grooves

D1	D2	L1	L2	L3	C x 45°	CODE
3,00	6,0	57	8	–	0.06	F40200-03008
4,00	6,0	57	11	–	0.08	F40200-04011
5,00	6,0	57	13	–	0,10	F40200-05013
6,00	6,0	57	13	18	0.12	F40200-06013
8,00	8,0	63	21	25	0.16	F40200-08021
10,00	10,0	72	22	30	0,20	F40200-10022
12,00	12,0	83	26	36	0.24	F40200-12026
16,00	16,0	92	36	42	0.32	F40200-16036
20,00	20,0	104	41	52	0,40	F40200-20041

VHM HPC Star Fräser mit Eckenradius

Solid carbide HPC Star end mill with corner radius



VHM | Z=4 | DIN 6535 HA | N/mm² < 1400 | 35° 38° | STAR | nACo

D1	ER +- 0,02	L2	L1	D2 h6	CODE
4,00	0,25	11	57	6,0	F40163-0400025
4,00	0,50	11	57	6,0	F40163-0400050
4,00	1,00	11	57	6,0	F40163-0400100
5,00	0,50	13	57	6,0	F40163-0500050
5,00	1,00	13	57	6,0	F40163-0500100
5,00	1,50	13	57	6,0	F40163-0500150
6,00	0,50	13	57	6,0	F40163-0600050
6,00	1,00	13	57	6,0	F40163-0600100
6,00	1,50	13	57	6,0	F40163-0600150
6,00	2,00	13	57	6,0	F40163-0600200
8,00	0,50	19	63	8,0	F40163-0800050
8,00	1,00	19	63	8,0	F40163-0800100
8,00	1,50	19	63	8,0	F40163-0800150
8,00	2,00	19	63	8,0	F40163-0800200
10,00	0,50	22	72	10,0	F40163-1000050
10,00	1,00	22	72	10,0	F40163-1000100
10,00	1,50	22	72	10,0	F40163-1000150
10,00	2,00	22	72	10,0	F40163-1000200
12,00	0,50	26	83	12,0	F40163-1200050
12,00	1,00	26	83	12,0	F40163-1200100
12,00	1,50	26	83	12,0	F40163-1200150
12,00	2,00	26	83	12,0	F40163-1200200
14,00	1,00	26	83	14,0	F40163-1400100
14,00	2,00	26	83	14,0	F40163-1400200
16,00	1,00	32	92	16,0	F40163-1600100
16,00	1,50	32	92	16,0	F40163-1600150
16,00	2,00	32	92	16,0	F40163-1600200
16,00	2,50	32	92	16,0	F40163-1600250
18,00	1,50	32	92	18,0	F40163-1800150
18,00	2,50	32	92	18,0	F40163-1800250
20,00	1,00	38	104	20,0	F40163-2000100
20,00	1,50	38	104	20,0	F40163-2000150
20,00	2,00	38	104	20,0	F40163-2000200
20,00	2,50	38	104	20,0	F40163-2000250
20,00	3,00	38	104	20,0	F40163-2000300
20,00	4,00	38	104	20,0	F40163-2000400
20,00	5,00	38	104	20,0	F40163-2000500

VHM HPC Star Fräser mit IK

Solid carbide HPC Star end mill with IC

VHM | DIN 6535 HA | N/mm² < 1400 | 35° 38° | STAR | nACo | Z=4

D1	L2	L3	L1	D3	D2 h6	CODE
6,00	13,00	21,00	57,00	5,50	6,00	F40165-0600013
6,00	30,00	40,00	75,00	5,50	6,00	F40165-0600030
8,00	19,00	30,00	63,00	7,50	8,00	F40165-0800019
8,00	40,00	50,00	100,00	7,50	8,00	F40165-0800040
10,00	22,00	32,00	72,00	9,50	10,00	F40165-1000022
10,00	40,00	50,00	100,00	9,50	10,00	F40165-1000040
12,00	26,00	40,00	83,00	11,00	12,00	F40165-1200026
12,00	40,00	50,00	100,00	11,00	12,00	F40165-1200040
14,00	26,00	40,00	83,00	13,00	14,00	F40165-1400026
14,00	40,00	50,00	100,00	13,00	14,00	F40165-1400040
16,00	32,00	45,00	92,00	15,00	16,00	F40165-1600032
16,00	40,00	50,00	100,00	15,00	16,00	F40165-1600040
18,00	32,00	45,00	93,00	17,00	18,00	F40165-1800032
18,00	45,00	60,00	102,00	17,00	18,00	F40165-1800045
20,00	35,00	55,00	93,20	19,00	20,00	F40165-2000035
20,00	38,00	55,00	104,00	19,00	20,00	F40165-2000038
20,00	75,00	90,00	150,00	19,00	20,00	F40165-2000075
25,00	60,00	70,00	122,00	24,00	25,00	F40165-2500060

VHM HPC Star Schlichtfräser

Solid carbide HPC Star finishing end mill

VHM | DIN 6535 HA | N/mm² < 1400 | STAR | nACo | Z=3/6

D1	L2	L3	L1	D3	D2 h6	Z	CODE
6,00	13	21	57	5,50	6	3 / 6	F40167-0600013
8,00	19	30	63	7,50	8	3 / 6	F40167-0800019
10,00	22	32	72	9,50	10	3 / 6	F40167-1000022
12,00	26	40	83	11,50	12	3 / 6	F40167-1200026
16,00	32	45	92	15,00	16	3 / 6	F40167-1600032
20,00	38	55	104	19,00	20	3 / 6	F40167-2000038
25,00	42	65	110	24,00	25	3 / 6	F40167-2500042

VHM HPC Star Schruppfräser
Solid carbide HPC Star roughing end mill

VHM | DIN 6535 HA | 35° 38° | TYP-HR | STAR | nACo | Z=4

D1	L2	L3	L1	D3	D2 h6	CODE
4,00	11	21	57	5,50	6,0	F40166-0400011
5,00	13	21	57	5,50	6,0	F40166-0500013
6,00	13	21	57	5,50	6,0	F40166-0600013
6,00	18	29	65	5,50	6,0	F40166-0600018
6,00	13	40	80	5,50	6,0	F40166-0604013
8,00	16	27	63	7,50	8,0	F40166-0800016
8,00	24	39	75	7,50	8,0	F40166-0800024
8,00	19	50	100	7,50	8,0	F40166-0800019
10,00	22	32	72	9,50	10,0	F40166-1000022
10,00	30	40	80	9,20	10,0	F40166-1000030
10,00	22	50	100	9,20	10,0	F40166-1005022
12,00	26	38	83	11,50	12,0	F40166-1200026
12,00	26	80	150	11,20	12,0	F40166-1208026
12,00	36	48	93	11,20	12,0	F40166-1200036
14,00	26	38	83	13,20	14,0	F40166-1400026
16,00	32	44	92	15,00	16,0	F40166-1600032
16,00	48	60	110	15,00	16,0	F40166-1600048
16,00	32	80	150	15,00	16,0	F40166-1608032
20,00	60	86	126	19,00	20,0	F40166-2000060
20,00	38	55	104	19,00	20,0	F40166-2000038
20,00	38	80	150	19,00	20,0	F40166-2008038
25,00	45	65	121	24,00	25,0	F40166-2500045

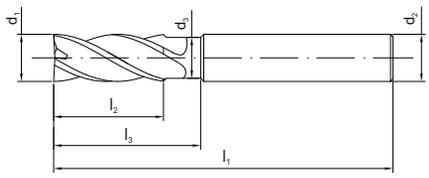
VHM HPC Star Fräser Superfinish
Solid carbide HPC Star superfinish end mill

VHM | DIN 6535 HA | 44°/45°/46° | Universal TOOL | STAR | nACo | Z=6

D1	L2	L3	L1	D3	D2 h6	CODE
8,00	19	27	63	7,50	8	F40170-0800019
10,00	22	32	72	9,50	10	F40170-1000022
12,00	26	40	83	11,00	12	F40170-1200026
16,00	32	45	92	15,00	16	F40170-1600032
20,00	38	55	104	19,00	20	F40170-2000038
25,00	42	65	110	24,00	25	F40170-2500042

VHM HPC Star Fräser, ungleiche Teilung, abgesetzt

Solid carbide HPC Star end mill, unequal pitch, reduced



VHM | Z=5 | 35° 38° | STAR | TiALN

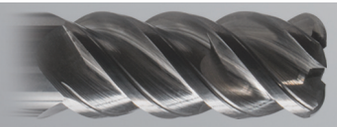
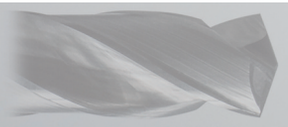
DIN 6535 HA | DIN 6535 HA R

d1	d2	d3	l1	l2	l3	Z	R	CODE	CODE
6,0	6,0	5,5	63	13	18	5	0,5	F40212-0613	F40213-0613/0,5
6,0	6,0	5,5	63	13	18	5	1,0	–	F40213-0613/1,0
8,0	8,0	7,5	68	19	24	5	0,5	F40212-0819	F40213-0819/0,5
8,0	8,0	7,5	68	19	24	5	1,0	–	F40213-0819/1,0
10,0	10,0	9,2	76	22	30	5	0,5	F40212-1022	F40213-1022/0,5
10,0	10,0	9,2	76	22	30	5	1,0	–	F40213-1022/1,0
12,0	12,0	11,0	84	26	36	5	0,5	F40212-1226	F40213-1226/0,5
12,0	12,0	11,0	84	26	36	5	1,0	–	F40213-1226/1,0
14,0	14,0	13,0	84	26	36	5	1,0	F40212-1426	F40213-1426/1,0
16,0	16,0	15,0	100	32	48	5	1,0	F40212-1632	F40213-1632/1,0
16,0	16,0	15,0	100	32	48	5	2,0	–	F40213-1632/2,0
18,0	18,0	17,0	100	32	48	5	1,0	F40212-1832	F40213-1832/1,0
20,0	20,0	19,0	115	38	60	5	1,0	F40212-2038	F40213-2038/1,0
20,0	20,0	19,0	115	38	60	5	2,0	–	F40213-2038/2,0
20,0	20,0	19,0	115	38	60	5	3,0	–	F40213-2038/3,0
20,0	20,0	19,0	115	38	60	5	4,0	–	F40213-2038/4,0

Einsatzrichtwerte – VHM Fräser

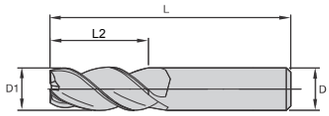
Estimated values – Solid carbide end mill

	Werkstoff	Festigkeit (N/mm²) Härte	UNIVERSALFRÄSER								HSC-FRÄSEN					Kühlung E= Emulsion, Ö= Schneidöl, T= Trocken, L= Luft
			Schnittgeschwindigkeit		Mittelwert Vorschub fz (mm/Zahn) Fräser-Ø in mm					Schnittgeschwindigkeit Vc m/min	Mittelwert Vorschub fz (mm/Zahn) Fräser-Ø in mm					
			ohne Beschichtung	mit Beschichtung	Ø 2 bis 4	Ø 5 bis 8	Ø 9 bis 12	Ø 13 bis 16	Ø 17 bis 20		Ø 2 bis 4	Ø 5 bis 8	Ø 9 bis 12	Ø 13 bis 16	Ø 17 bis 20	
Stähle	Baustähle, Vergütungsstahl, Einsatzstahl, Automatenstahl, Nitrierstahl	bis 700	60-120	100-300	0.03	0.04	0.05	0.06	0.07	550-600	0.03	0.1	0.12	0.15	0.18	E / Ö
		über 700	50-80	50-140	0.015	0.03	0.04	0.05	0.06	300-400	0.02	0.07	0.1	0.12	0.15	E / Ö
	Werkzeugstähle	bis 1400	50-90	60-120	0.015	0.02	0.03	0.05	0.06	250-300	0.02	0.05	0.08	0.1	0.12	E / Ö
		über 1400	40-70	50-100	0.015	0.02	0.03	0.05	0.06	200-250	0.015	0.04	0.07	0.08	0.1	E / Ö
	Hochlegierte Stähle		nicht empfohlen	70-100	0.01	0.02	0.03	0.04	0.05	200-250	0.015	0.04	0.06	0.07	0.08	E / Ö
	Gehärtete Stähle	bis 55 HRC	nicht empfohlen	40-70	0.01	0.02	0.03	0.04	0.05	100-300	0.015	0.04	0.06	0.08	0.1	T / E Ö
		über 55 HRC	nicht empfohlen	30-50	0.01	0.015	0.025	0.03	0.035	80-180	0.004	0.02	0.035	0.05	0.06	T / E Ö
Eisen-werkstoffe	Gusseisen, Hartguss, Temperguss	bis 200 HB	70-110	100-150	0.035	0.06	0.07	0.09	0.12	300-350	0.03	0.06	0.08	0.1	0.15	T / E
		über 200 HB	60-100	90-140	0.03	0.05	0.06	0.08	0.1	300-350	0.03	0.06	0.08	0.1	0.15	T / E
	Stahlguss	bis 500	90-140	120-180	0.03	0.05	0.06	0.07	0.08	400-450	0.02	0.05	0.08	0.09	0.1	E
		über 500	70-120	100-150	0.01	0.03	0.04	0.05	0.06	350-400	0.015	0.04	0.06	0.07	0.08	E
Nichteisen-werkstoffe	Kupfer, Messing, Rotguss, Bronze		90-200	120-250	0.02	0.04	0.06	0.08	0.1	600-700	0.04	0.08	0.12	0.15	0.18	T / E
	Aluminiumlegierung		160-300	250-600	0.04	0.06	0.08	0.15	0.2	800-900	0.05	0.1	0.12	0.18	0.2	E
	Titan, Titanlegierung		20-60	30-70	0.01	0.025	0.03	0.04	0.05	70-120	0.03	0.05	0.07	0.08	0.1	E
	Hochwarmf. Cr/ Ni-Leier.		30-50	40-60	0.01	0.025	0.03	0.04	0.04	50-70	0.01	0.025	0.03	0.06	0.08	E / Ö
	Graphit		160-260	150-900	0.01	0.02	0.03	0.045	0.06	800-900	0.06	0.12	0.15	0.18	0.2	T
Kunst-stoffe	Thermoplaste		120-200	nicht empfohlen	0.04	0.08	0.12	0.2	0.25	700-800	0.05	0.1	0.12	0.15	0.18	T / L
	Duroplaste		100-200	nicht empfohlen	0.03	0.06	0.07	0.1	0.15	500-600	0.05	0.1	0.12	0.15	0.18	T / L
	Faserverstärkte Kunststoffe		90-160	280-800	0.03	0.06	0.08	0.12	0.18	–	–	–	–	–	–	–

TOPSTAR = hohe Qualität und Leistung ohne Nachschliff
TOPSTAR = high quality and performance without regrinding

TOPSTAR – VHM Schaftfräser 36°/ 38°/ 37°
TOPSTAR – Solid carbide end mill 36°/ 38°/ 37°



VHM | Z=3 | 36°/38°/37°

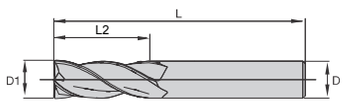
TOP | UNI | HA TiCN | HA TiALN | HB TiCN | HB TiALN

D1	D	L2	L	CODE	CODE	CODE	CODE
2,00	6,0	4,0	38	F40202-0200040	F40203-0200040	F40204-0200040	F40205-0200040
3,00	6,0	5,0	38	F40202-0300050	F40203-0300050	F40204-0300050	F40205-0300050
4,00	6,0	7,0	38	F40202-0400070	F40203-0400070	F40204-0400070	F40205-0400070
5,00	6,0	8,0	38	F40202-0500080	F40203-0500080	F40204-0500080	F40205-0500080
6,00	6,0	8,0	38	F40202-0600080	F40203-0600080	F40204-0600080	F40205-0600080
8,00	8,0	11,0	43	F40202-0800110	F40203-0800110	F40204-0800110	F40205-0800110
10,00	10,0	13,0	50	F40202-1000130	F40203-1000130	F40204-1000130	F40205-1000130
12,00	12,0	15,0	55	F40202-1200150	F40203-1200150	F40204-1200150	F40205-1200150
16,00	16,0	22,0	75	F40202-1600220	F40203-1600220	F40204-1600220	F40205-1600220
20,00	20,0	22,0	75	F40202-2000220	F40203-2000220	F40204-2000220	F40205-2000220

	P				M		K		N		
	1	2	3	4	1	2	1	2	1	2	5
TiCN	●	●	●	●	●	●	●	●	●	●	●
TiALN	●	●	●	●	●	●	●	●			●

Einsatzrichtwerte auf Seite 124 /
Estimated values page 124.

TOPSTAR – VHM HPC Schaftfräser 36°/ 38°
TOPSTAR – Solid carbide end mill 36°/ 38°



VHM | Z=4 | 36°/38°

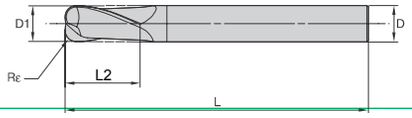
TOP | UNI | HA AlTiN | HB AlTiN

D1	D	L2	L	CODE	CODE
4,00	6,0	7,0	38	F40206-0400070	F40207-0400070
6,00	6,0	8,0	38	F40206-0600080	F40207-0600080
8,00	8,0	11,0	43	F40206-0800110	F40207-0800110
10,00	10,0	13,0	50	F40206-1000130	F40207-1000130
12,00	12,0	15,0	55	F40206-1200150	F40207-1200150
16,00	16,0	22,0	75	F40206-1600220	F40207-1600220
20,00	20,0	22,0	75	F40206-2000220	F40207-2000220

	P				M		K		
	1	2	3	4	1	2	1	2	3
AlTiN	●	●	●	●	●	●	●	●	●

Einsatzrichtwerte auf Seite 124 /
Estimated values page 124.

TOPSTAR – VHM Stirnradiusfräser 35°
TOPSTAR – Solid carbide radius milling cutters 35°



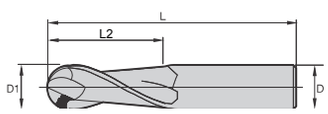
VHM | Z=2 | 35° | UNI | HA AlTiN | HB AlTiN

D1	D	L2	L	CODE	CODE
2,00	6,0	4,0	38	F40210-0200040	F40211-0200040
3,00	6,0	5,0	38	F40210-0300050	F40211-0300050
4,00	6,0	7,0	38	F40210-0400070	F40211-0400070
5,00	6,0	8,0	38	F40210-0500070	F40211-0500070
6,00	6,0	8,0	38	F40210-0600080	F40211-0600080
8,00	8,0	11,0	43	F40210-0800110	F40211-0800110
10,00	10,0	13,0	50	F40210-1000130	F40211-1000130
12,00	12,0	15,0	55	F40210-1200150	F40211-1200150
16,00	16,0	22,0	75	F40210-1600220	F40211-1600220
20,00	20,0	22,0	75	F40210-2000220	F40211-2000220

	P				M		K		N
	1	2	3	4	1	2	1	2	5
AlTiN	●	●	●	●	●	●	●	●	●

Einsatzrichtwerte auf Seite 125 /
Estimated values page 125.

TOPSTAR – VHM Torusfräser 35°
TOPSTAR – Solid carbide torus cutter 35°



VHM | Z=2 | 35° | UNI | HA AlTiN | HB AlTiN

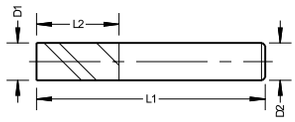
D1	D	L2	L	RE	CODE	CODE
2,00	6,0	4,0	38	0,50	F40208-0200040	F40209-0200040
3,00	6,0	5,0	38	0,50	F40208-0300050	F40209-0300050
4,00	6,0	7,0	38	0,50	F40208-0400070	F40209-0400070
5,00	6,0	8,0	38	0,50	F40208-0500080	F40209-0500080
6,00	6,0	8,0	38	1,00	F40208-0600080	F40209-0600080
8,00	8,0	11,0	43	2,00	F40208-0800110	F40209-0800110
10,00	10,0	13,0	50	3,00	F40208-1000130	F40209-1000130
12,00	12,0	15,0	55	3,00	F40208-1200150	F40209-1200150
16,00	16,0	22,0	75	3,00	F40208-1600220	F40209-1600220
20,00	20,0	22,0	75	3,00	F40208-2000220	F40209-2000220

	P				M		K		N
	1	2	3	4	1	2	1	2	5
AlTiN	●	●	●	●	●	●	●	●	●

Einsatzrichtwerte auf Seite 125 /
Estimated values page 125.

VHM Bohrnutenfräser – kurz

Solid carbide center cut end mill – short



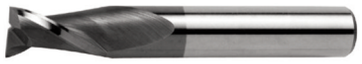
VHM | DIN 6535 HA | 30° R | N/mm² < 1000

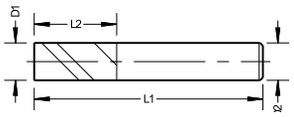
UNI | Z=2 | BLANK | TiALN

D1	L1	L2	D2	CODE	CODE
0,30	38	1.5	3,0	F40001-00315	F40002-00315
0,50	38	2	3,0	F40001-00502	F40002-00502
0,60	38	2	3,0	F40001-00602	F40002-00602
0,80	38	3	3,0	F40001-00803	F40002-00803
1,00	38	3	3,0	F40001-01003	F40002-01003
1,20	38	3	3,0	F40001-01203	F40002-01203
1,50	38	6	3,0	F40001-01506	F40002-01506
2,00	38	8	2,0	F40001-0208	F40002-0208
2,50	38	8	2,5	F40001-02508	F40002-02508
2,80	38	8	3,0	F40001-02808	F40002-02808
3,00	38	12	3,0	F40001-0312	F40002-0312
3,50	50	12	3,5	F40001-03512	F40002-03512
3,80	50	12	4,0	F40001-03812	F40002-03812
4,00	50	12	4,0	F40001-0412	F40002-0412
4,50	50	12	4,5	F40001-04512	F40002-04512
4,80	50	12	5,0	F40001-04812	F40002-04812
5,00	50	14	5,0	F40001-0514	F40002-0514
5,50	50	14	5,5	F40001-05514	F40002-05514
5,75	50	14	6,0	F40001-057514	F40002-057514
6,00	50	14	6,0	F40001-0614	F40002-0614
6,50	60	16	6,5	F40001-06516	F40002-06516
6,75	60	16	7,0	F40001-067516	F40002-067516
7,00	60	18	7,0	F40001-0718	F40002-0718
7,75	60	18	8,0	F40001-077518	F40002-077518
8,00	60	18	8,0	F40001-0818	F40002-0818
8,70	60	18	9,0	F40001-08718	F40002-08718
9,00	60	18	9,0	F40001-0918	F40002-0918
9,70	70	20	10,0	F40001-09720	F40002-09720
10,00	70	20	10,0	F40001-1020	F40002-1020
11,00	70	20	11,0	F40001-1120	F40002-1120
11,70	70	20	12,0	F40001-11720	F40002-11720
12,00	70	20	12,0	F40001-1220	F40002-1220
13,00	70	20	13,0	F40001-1320	F40002-1320
14,00	75	25	14,0	F40001-1425	F40002-1425
15,00	75	22	15,0	F40001-1522	F40002-1522
15,70	75	22	16,0	F40001-15722	F40002-15722
16,00	75	22	16,0	F40001-1622	F40002-1622
17,70	100	32	18,0	F40001-17732	F40002-17732
18,00	100	32	18,0	F40001-1832	F40002-1832
19,70	100	30	20,0	F40001-19730	F40002-19730
20,00	100	30	20,0	F40001-2030	F40002-2030
22,00	104	32	22,0	F40001-2232	F40002-2232
25,00	104	32	25,0	F40001-2532	F40002-2532

VHM Bohrnutenfräser – kurz

Solid carbide center cut end mill – short





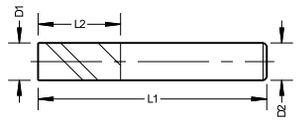
VHM | DIN 6535 HA | 30° R

UNI | Z=2 | BLANK | TiALN

D1	L1	L2	D2	CODE	CODE
2,00	50	3	6,0	F40003-0203	F40004-0203
2,50	50	3	6,0	F40003-02503	F40004-02503
2,80	50	4	6,0	F40003-02804	F40004-02804
3,00	50	4	6,0	F40003-0304	F40004-0304
3,50	50	4	6,0	F40003-03504	F40004-03504
3,80	54	5	6,0	F40003-03805	F40004-03805
4,00	54	5	6,0	F40003-0405	F40004-0405
4,80	54	6	6,0	F40003-04806	F40004-04806
5,00	54	6	6,0	F40003-0506	F40004-0506
5,75	54	7	6,0	F40003-057507	F40004-057507
6,00	54	7	6,0	F40003-0607	F40004-0607
6,75	58	8	8,0	F40003-067508	F40004-067508
7,00	58	8	8,0	F40003-0708	F40004-0708
8,00	58	9	8,0	F40003-0809	F40004-0809
9,00	66	10	10,0	F40003-0910	F40004-0910
10,00	66	11	10,0	F40003-1011	F40004-1011
11,70	73	12	12,0	F40003-11712	F40004-11712
12,00	73	12	12,0	F40003-1212	F40004-1212
13,70	75	14	14,0	F40003-13714	F40004-13714
14,00	75	14	14,0	F40003-1414	F40004-1414
15,70	82	16	16,0	F40003-15716	F40004-15716
16,00	82	16	16,0	F40003-1616	F40004-1616
18,00	82	18	18,0	F40003-1818	F40004-1818
20,00	92	20	20,0	F40003-2020	F40004-2020

VHM Bohrnutenfräser – lang

Solid carbide center cut end mill – long

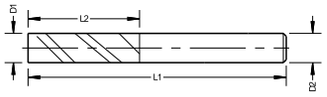


VHM | DIN 6535 HA | 30° R

UNI | Z=2 | BLANK | TiALN

D1	L1	L2	D2	CODE	CODE
2,00	50	5	6,0	F40005-0205	F40006-0205
2,50	50	5	6,0	F40005-02505	F40006-02505
3,00	57	7	6,0	F40005-0307	F40006-0307
3,50	57	7	6,0	F40005-03507	F40006-03507
4,00	57	8	6,0	F40005-0408	F40006-0408
4,50	57	8	6,0	F40005-04508	F40006-04508
5,00	57	10	6,0	F40005-0510	F40006-0510
5,50	57	10	6,0	F40005-05510	F40006-05510
6,00	57	10	6,0	F40005-0610	F40006-0610
7,00	63	13	8,0	F40005-0713	F40006-0713
8,00	63	16	8,0	F40005-0816	F40006-0816
9,00	72	16	10,0	F40005-0916	F40006-0916
10,00	72	22	10,0	F40005-1022	F40006-1022
12,00	83	22	12,0	F40005-1222	F40006-1222
14,00	83	22	14,0	F40005-1422	F40006-1422
16,00	92	26	16,0	F40005-1626	F40006-1626
18,00	92	26	18,0	F40005-1826	F40006-1826
20,00	104	32	20,0	F40005-2032	F40006-2032

VHM Bohrnutenfräser – extra lang
Solid carbide center cut end mill – extra long

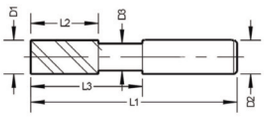


VHM | DIN 6535 HA | 30° R

UNI | Z=2 | BLANK | TiALN

D1	L1	L2	D2	CODE	CODE
5,00	75	30	6,0	F40007-0530	F40008-0530
6,00	75	30	6,0	F40007-0630	F40008-0630
6,00	100	40	6,0	F40007-0640	F40008-0640
8,00	75	30	8,0	F40007-0830	F40008-0830
8,00	100	40	8,0	F40007-0840	F40008-0840
10,00	75	30	10,0	F40007-1030	F40008-1030
10,00	100	40	10,0	F40007-1040	F40008-1040
12,00	100	45	12,0	F40007-1245	F40008-1245
12,00	150	75	12,0	F40007-1275	F40008-1275
14,00	100	45	14,0	F40007-1445	F40008-1445
14,00	150	75	14,0	F40007-1475	F40008-1475
16,00	100	45	16,0	F40007-1645	F40008-1645
16,00	150	75	16,0	F40007-1675	F40008-1675
18,00	110	45	18,0	F40007-1845	F40008-1845
18,00	150	75	18,0	F40007-1875	F40008-1875
20,00	110	45	20,0	F40007-2045	F40008-2045
20,00	150	75	20,0	F40007-2075	F40008-2075
25,00	120	45	25,0	F40007-2545	F40008-2545
25,00	150	75	25,0	F40007-2575	F40008-2575

VHM Schaftfräser – lang
Solid carbide end mill - long

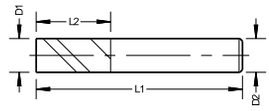


VHM | DIN 6535 HA | 30° R

UNI | nACo | Z=2

D1 h9	L1	L2	D2 h6	D3 x L3	CODE
3,00	58	10	6,0	2,8x14	F40120-0310
4,00	58	13	6,0	3,8x17	F40120-0413
5,00	58	15	6,0	4,8x19	F40120-0515
6,00	58	16	6,0	5,7x20	F40120-0616
8,00	64	22	8,0	7,7x26	F40120-0822
10,00	73	25	10,0	9,6x31	F40120-1025
12,00	84	26	12,0	11,6x37	F40120-1226
14,00	84	26	14,0	13,6x37	F40120-1426
16,00	93	30	16,0	15,6x43	F40120-1630
18,00	93	30	18,0	17,6x43	F40120-1830
20,00	104	40	20,0	19,6x52	F40120-2040

VHM Schaftfräser – kurz
Solid carbide end mill – short

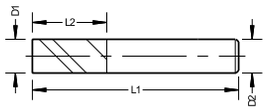


VHM | DIN 6535 HA | 30° R

UNI | Z=3 | BLANK | TiALN

D1	L1	L2	D2	CODE	CODE
0,50	38	1.5	3,0	F40014-00515	F40015-00515
0,80	38	1.5	3,0	F40014-00815	F40015-00815
1,00	38	2	3,0	F40014-01002	F40015-01002
1,50	38	2	3,0	F40014-01502	F40015-01502
2,00	38	8	2,0	F40014-02008	F40015-02008
2,50	38	8	2,5	F40014-02508	F40015-02508
2,80	38	8	3,0	F40014-02808	F40015-02808
3,00	38	12	3,0	F40014-03012	F40015-03012
3,50	50	12	3,5	F40014-03512	F40015-03512
3,80	50	12	4,0	F40014-03812	F40015-03812
4,00	50	12	4,0	F40014-04012	F40015-04012
4,50	50	12	4,5	F40014-04512	F40015-04512
4,80	50	12	5,0	F40014-04812	F40015-04812
5,00	50	14	5,0	F40014-05014	F40015-05014
5,50	50	14	5,5	F40014-05514	F40015-05514
5,75	50	14	6,0	F40014-057514	F40015-057514
6,00	50	14	6,0	F40014-06014	F40015-06014
6,50	60	16	6,5	F40014-06516	F40015-06516
6,75	60	16	7,0	F40014-067516	F40015-067516
7,00	60	18	7,0	F40014-07018	F40015-07018
7,75	60	18	8,0	F40014-077518	F40015-077518
8,00	60	18	8,0	F40014-08018	F40015-08018
8,70	60	18	9,0	F40014-08718	F40015-08718
9,00	60	18	9,0	F40014-09018	F40015-09018
9,70	70	20	10,0	F40014-09720	F40015-09720
10,00	70	20	10,0	F40014-10020	F40015-10020
11,00	70	20	11,0	F40014-11020	F40015-11020
11,70	70	20	12,0	F40014-11720	F40015-11720
12,00	70	20	12,0	F40014-12020	F40015-12020
13,00	70	20	13,0	F40014-13020	F40015-13020
14,00	75	25	14,0	F40014-14025	F40015-14025
15,00	75	25	15,0	F40014-15022	F40015-15022
15,70	75	25	16,0	F40014-15722	F40015-15722
16,00	75	25	16,0	F40014-16022	F40015-16022
17,70	100	32	18,0	F40014-17732	F40015-17732
18,00	100	32	18,0	F40014-18032	F40015-18032
19,70	100	32	20,0	F40014-19730	F40015-19730
20,00	100	32	20,0	F40014-20030	F40015-20030
22,00	104	32	22,0	F40014-22032	F40015-22032
25,00	104	32	25,0	F40014-25032	F40015-25032

VHM Schaftfräser – lang
Solid carbide end mill – long



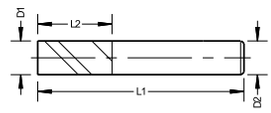
VHM | DIN 6535 HA | 30° R

UNI | Z=3

BLANK | TiALN

D1	L1	L2	D2	CODE	CODE
2,00	50	5	6,0	F40016-0205	F40017-02005
2,50	50	5	6,0	F40016-02505	F40017-02505
3,00	57	7	6,0	F40016-0307	F40017-03007
3,50	57	7	6,0	F40016-03507	F40017-03507
4,00	57	8	6,0	F40016-0408	F40017-04008
4,50	57	8	6,0	F40016-04508	F40017-04508
5,00	57	10	6,0	F40016-0510	F40017-05010
5,50	57	10	6,0	F40016-05510	F40017-05510
6,00	57	10	6,0	F40016-0610	F40017-06010
7,00	63	13	8,0	F40016-0713	F40017-07013
8,00	63	16	8,0	F40016-0816	F40017-08016
9,00	72	16	10,0	F40016-0916	F40017-09016
10,00	72	22	10,0	F40016-1022	F40017-10022
12,00	83	22	12,0	F40016-1222	F40017-12022
14,00	83	22	14,0	F40016-1422	F40017-14022
16,00	92	26	16,0	F40016-1626	F40017-16026
18,00	92	26	18,0	F40016-1826	F40017-18026
20,00	104	32	20,0	F40016-2032	F40017-20032

VHM Schaftfräser – extra lang
Solid carbide end mill - extra long

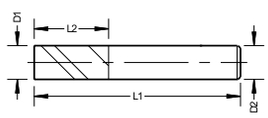


VHM | DIN 6535 HA | 30° R

UNI | Z=3 | BLANK | TiALN

D1 h9	L1	L2	D2 h6	CODE	CODE
6,00	75	30	6,0	F40121-0630	F40122-0630
6,00	100	40	6,0	F40121-0640	F40122-0640
8,00	75	30	8,0	F40121-0830	F40122-0830
8,00	100	40	8,0	F40121-0840	F40122-0840
10,00	75	30	10,0	F40121-1030	F40122-1030
10,00	100	40	10,0	F40121-1040	F40122-1040
12,00	100	45	12,0	F40121-1245	F40122-1245
12,00	150	75	12,0	F40121-1275	F40122-1275
16,00	100	45	16,0	F40121-1645	F40122-1645
16,00	150	75	16,0	F40121-1675	F40122-1675
20,00	150	65	20,0	F40121-2065	F40122-2065
20,00	150	90	20,0	F40121-2090	F40122-2090

VHM Schaftfräser – lang
Solid carbide end mill - long

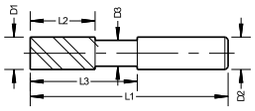


VHM | DIN 6535 HA | 45° R

UNI | Z=3 | BLANK | TiALN

D1	L1	L2	D2	CODE	CODE
3,00	57	8	6,0	F40018-0308	F40019-0308
3,50	57	11	6,0	F40018-03511	F40019-03511
4,00	57	11	6,0	F40018-0411	F40019-0411
4,50	57	13	6,0	F40018-04513	F40019-04513
5,00	57	13	6,0	F40018-0513	F40019-0513
5,50	57	13	6,0	F40018-05513	F40019-05513
6,00	57	13	6,0	F40018-0613	F40019-0613
7,00	63	16	8,0	F40018-0716	F40019-0716
8,00	63	19	8,0	F40018-0819	F40019-0819
9,00	72	19	10,0	F40018-0919	F40019-0919
10,00	72	22	10,0	F40018-1022	F40019-1022
12,00	83	26	12,0	F40018-1226	F40019-1226
14,00	83	26	14,0	F40018-1426	F40019-1426
16,00	92	32	16,0	F40018-1632	F40019-1632
18,00	92	32	18,0	F40018-1832	F40019-1832
20,00	104	38	20,0	F40018-2038	F40019-2038

VHM Schaftfräser – lang
Solid carbide end mill - long



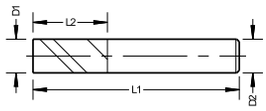
VHM | DIN 6535 HA | 45° R

UNI | Z=3 | BLANK | TiALN

D1	L1	L2	D2	D3 x L3	CODE	CODE
3,00	58	8	6,0	2,8x12	F40020-0308	F40021-0308
4,00	58	11	6,0	3,8x16	F40020-0411	F40021-0411
5,00	58	13	6,0	4,8x19	F40020-0513	F40021-0513
6,00	58	13	6,0	5,7x19	F40020-0613	F40021-0613
8,00	63	19	8,0	7,8 x 27	F40020-0819	F40021-0819
10,00	72	22	10,0	9,8 x 32	F40020-1022	F40021-1022
12,00	83	26	12,0	11,8 x 38	F40020-1226	F40021-1226
14,00	83	26	14,0	13,8 x 38	F40020-1426	F40021-1426
16,00	92	32	16,0	15,7 x 44	F40020-1632	F40021-1632
18,00	92	32	18,0	17,7 x 44	F40020-1832	F40021-1832
20,00	104	38	20,0	19,7 x 54	F40020-2038	F40021-2038

VHM Schaftfräser – extra lang

Solid carbide end mill – extra long

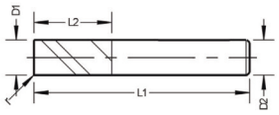


VHM | DIN 6535 HA | 30° R

UNI | Z=4

D1	L1	L2	D2	CODE (BLANK)	CODE (TiALN)
2,00	38	8	2,0	F40022-0208	F40023-0208
2,50	38	8	2,5	F40022-02508	F40023-02508
3,00	38	12	3,0	F40022-0312	F40023-0312
3,50	50	12	3,5	F40022-03512	F40023-03512
4,00	50	12	4,0	F40022-0412	F40023-0412
4,50	50	12	4,5	F40022-04512	F40023-04512
5,00	50	14	5,0	F40022-0514	F40023-0514
5,50	50	14	5,5	F40022-05514	F40023-05514
6,00	50	14	6,0	F40022-0614	F40023-0614
6,50	60	16	6,5	F40022-06516	F40023-06516
7,00	60	18	7,0	F40022-0718	F40023-0718
8,00	60	18	8,0	F40022-0818	F40023-0818
9,00	60	18	9,0	F40022-0918	F40023-0918
10,00	70	20	10,0	F40022-1020	F40023-1020
11,00	70	20	11,0	F40022-1120	F40023-1120
12,00	70	20	12,0	F40022-1220	F40023-1220
13,00	70	20	13,0	F40022-1320	F40023-1320
14,00	75	25	14,0	F40022-1425	F40023-1425
15,00	75	22	15,0	F40022-1522	F40023-1522
16,00	75	22	16,0	F40022-1622	F40023-1622
18,00	100	32	18,0	F40022-1832	F40023-1832
20,00	100	30	20,0	F40022-2030	F40023-2030

VHM Schaftfräser – lang
Solid carbide end mill – long



VHM | DIN 6535 HA | 30° R

UNI | Z=4

BLANK | TiALN

D1	L1	L2	D2	CODE	CODE
2,00	50	7	6,0	F40024-0207	F40025-0207
2,50	50	8	6,0	F40024-02508	F40025-02508
3,00	57	8	6,0	F40024-0308	F40025-0308
3,50	57	10	6,0	F40024-03510	F40025-03510
4,00	57	11	6,0	F40024-0411	F40025-0411
4,50	57	11	6,0	F40024-04511	F40025-04511
5,00	57	13	6,0	F40024-0513	F40025-0513
5,50	57	13	6,0	F40024-05513	F40025-05513
6,00	57	13	6,0	F40024-0613	F40025-0613
6,50	63	16	8,0	F40024-06516	F40025-06516
7,00	63	16	8,0	F40024-0716	F40025-0716
8,00	63	19	8,0	F40024-0819	F40025-0819
9,00	72	19	10,0	F40024-0919	F40025-0919
10,00	72	22	10,0	F40024-1022	F40025-1022
12,00	83	26	12,0	F40024-1226	F40025-1226
14,00	83	26	14,0	F40024-1426	F40025-1426
16,00	92	32	16,0	F40024-1632	F40025-1632
18,00	92	32	18,0	F40024-1832	F40025-1832
20,00	104	38	20,0	F40024-2038	F40025-2038

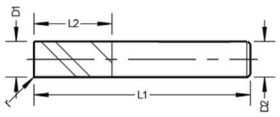
VHM Schaftfräser – extra lang
Solid carbide end mill – extra long

VHM | DIN 6535 HA | 30° R

UNI | Z=4

D1	L1	L2	D2	CODE BLANK	CODE TiALN
3,00	57	19	6,0	F40026-0319	F40027-0319
4,00	57	19	6,0	F40026-0419	F40027-0419
4,00	75	25	6,0	F40026-0425	F40027-0425
4,00	75	30	6,0	F40026-0430	F40027-0430
5,00	75	30	6,0	F40026-0530	F40027-0530
6,00	75	30	6,0	F40026-0630	F40027-0630
6,00	100	40	6,0	F40026-0640	F40027-0640
8,00	75	30	8,0	F40026-0830	F40027-0830
8,00	100	40	8,0	F40026-0840	F40027-0840
10,00	75	30	10,0	F40026-1030	F40027-1030
10,00	100	40	10,0	F40026-1040	F40027-1040
10,00	125	60	10,0	F40026-1060	F40027-1060
12,00	100	45	12,0	F40026-1245100	F40027-1245100
12,00	150	45	12,0	F40026-1245	F40027-1245
12,00	150	65	12,0	F40026-1265	F40027-1265
12,00	150	75	12,0	F40026-1275	F40027-1275
14,00	100	45	14,0	F40026-1445	F40027-1445
14,00	150	75	14,0	F40026-1475	F40027-1475
16,00	100	45	16,0	F40026-1645	F40027-1645
16,00	150	65	16,0	F40026-1665	F40027-1665
16,00	150	75	16,0	F40026-1675	F40027-1675
16,00	150	90	16,0	F40026-1690	F40027-1690
18,00	100	45	18,0	F40026-1845	F40027-1845
18,00	150	65	18,0	F40026-1865	F40027-1865
18,00	150	75	18,0	F40026-1875	F40027-1875
20,00	100	45	20,0	F40026-2045	F40027-2045
20,00	150	65	20,0	F40026-2065	F40027-2065
20,00	150	75	20,0	F40026-2075	F40027-2075
20,00	150	90	20,0	F40026-2090	F40027-2090
25,00	120	45	25,0	F40026-2545	F40027-2545
25,00	150	75	25,0	F40026-2575	F40027-2575
25,00	150	90	25,0	F40026-2590	F40027-2590

VHM Schaftfräser – kurz, lang
Solid carbide end mill – short, long



VHM | DIN 6535 HA | 45° R

UNI | nACo | Z=6/8

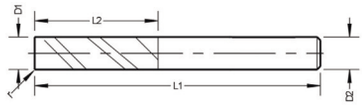
D1/r	L1	L2	D2	Z	CODE
5,00	54	10	6,0	6	F40030-0510
6,00	54	10	6,0	6	F40030-0610
6,00/1,0	54	10	6,0	6	F40030-0610/1,0
8,00	58	12	8,0	6	F40030-0812
8,00/1,0	58	12	8,0	6	F40030-0812/1,0
10,00	66	14	10,0	6	F40030-1014
10,00/1,5	66	14	10,0	6	F40030-1014/1,5
12,00	73	16	12,0	6	F40030-1216
12,00/1,5	73	16	12,0	6	F40030-1216/1,5
16,00	82	20	16,0	8	F40030-1620
16,00/2,0	82	20	16,0	8	F40030-1620/2,0
20,00	92	25	20,0	8	F40030-2025
20,00/2,0	92	25	20,0	8	F40030-2025/2,0
25,00	100	32	25,0	8	F40030-2532
25,00/2,5	100	32	25,0	8	F40030-2532/2,5

VHM | DIN 6535 HA | 45° R

UNI | nACo | Z=6/8

D1/r	L1	L2	D2	Z	CODE
5,00	57	13	6,0	6	F40031-0513
6,00	57	13	6,0	6	F40031-0613
6,00/1,0	57	13	6,0	6	F40031-0613/1,0
8,00	63	19	8,0	6	F40031-0819
8,00/1,0	63	19	8,0	6	F40031-0819/1,0
10,00	72	22	10,0	6	F40031-1022
10,00/1,5	72	22	10,0	6	F40031-1022/1,5
12,00	83	26	12,0	6	F40031-1226
12,00/1,5	83	26	12,0	6	F40031-1226/1,5
16,00	92	32	16,0	8	F40031-1632
16,00/2,0	92	32	16,0	8	F40031-1632/2,0
20,00	104	38	20,0	8	F40031-2038
20,00/2,0	104	35	20,0	8	F40031-2038/2,0
25,00	121	45	25,0	8	F40031-2545
25,00/2,5	121	45	25,0	8	F40031-2545/2,5

VHM Schaftfräser – extra lang
Solid carbide end mill – extra long

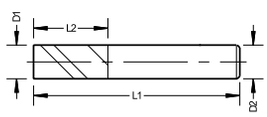


VHM | DIN 6535 HA | 45° R

UNI | nACo | Z=6/8

D1/r	L1	L2	D2	Z	CODE
5,00	62	18	6,0	6	F40032-0518
6,00	62	18	6,0	6	F40032-0618
6,00/1,0	62	18	6,0	6	F40032-0618/1,0
8,00	68	24	8,0	6	F40032-0824
8,00/1,0	68	24	8,0	6	F40032-0824/1,0
10,00	80	30	10,0	6	F40032-1030
10,00/1,5	80	30	10,0	6	F40032-1030/1,5
12,00	93	36	12,0	6	F40032-1236
12,00/1,5	93	36	12,0	6	F40032-1236/1,5
16,00	108	48	16,0	8	F40032-1648
16,00/2,0	108	48	16,0	8	F40032-1648/2,0
20,00	126	60	20,0	8	F40032-2060
20,00/2,0	126	60	20,0	8	F40032-2060/2,0
25,00	180	92	25,0	8	F40032-2592
25,00/2,5	180	92	25,0	8	F40032-2592/2,5

VHM Schaftfräser – lang
Solid carbide end mill – long



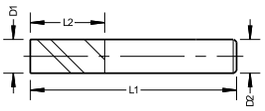
VHM | DIN 6535 HA | 60° R

UNI | Z=6

BLANK | nACo

D1	L1	L2	D2	CODE	CODE
6,00	57	13	6,0	F40035-0613	F40036-0613
8,00	63	19	8,0	F40035-0819	F40036-0819
10,00	72	22	10,0	F40035-1022	F40036-1022
12,00	83	26	12,0	F40035-1226	F40036-1226
14,00	83	26	14,0	F40035-1426	F40036-1426
16,00	92	32	16,0	F40035-1632	F40036-1632
18,00	92	32	18,0	F40035-1832	F40036-1832
20,00	104	38	20,0	F40035-2038	F40036-12038

VHM Schaftfräser – lang
Solid carbide end mill – long



VHM | DIN 6535 HA | 50° R

UNI | nACo | Z=6

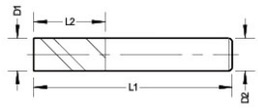
D1 h9	L1	L2	D2 h6	Z	CODE
6,00	57	13	6,0	8,0	F40126-0613
8,00	63	19	8,0	10,0	F40126-0819
10,00	72	22	10,0	12,0	F40126-1022
12,00	83	26	12,0	12,0	F40126-1226
16,00	93	32	16,0	16,0	F40126-1632

VHM | DIN 6535 HA | 50° R

UNI | nACo | Z=6

D1 h9	L1	L2	D2 h6	Z	CODE
6,00	62	18	6,0	8,0	F40127-0618
8,00	68	24	8,0	10,0	F40127-0824
10,00	80	30	10,0	12,0	F40127-1030
12,00	93	36	12,0	12,0	F40127-1236
16,00	108	48	16,0	16,0	F40127-1648

VHM Schruppfräser – kurz / lang
Solid carbide roughing end mill – short / long



VHM | DIN 6535 HA | 25° R | TYP-HR

UNI | nACo | Z=4

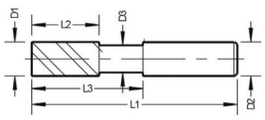
D1 h10	L1	L2	D2 h6	CODE
4,00	54	6	6,0	F40038-0406
5,00	54	8	6,0	F40038-0508
6,00	54	8	6,0	F40038-0608
8,00	58	11	8,0	F40038-0811
10,00	66	13	10,0	F40038-1013
12,00	73	16	12,0	F40038-1216
14,00	75	16	14,0	F40038-1416
16,00	82	19	16,0	F40038-1619
18,00	84	19	18,0	F40038-1819
20,00	92	19	20,0	F40038-2019

VHM | DIN 6535 HA | 25° R | TYP-HR

UNI | nACo | Z=4

D1 h10	L1	L2	D2 h6	CODE
4,00	57	8	6,0	F40039-0457
5,00	57	10	6,0	F40039-0510
6,00	57	13	6,0	F40039-0613
8,00	63	19	8,0	F40039-0819
10,00	72	22	10,0	F40039-1022
12,00	83	26	12,0	F40039-1226
14,00	83	26	14,0	F40039-1426
16,00	92	32	16,0	F40039-1632
18,00	92	32	18,0	F40039-1832
20,00	104	38	20,0	F40039-2038
25,00	121	45	25,0	F40039-2545

VHM Schruppfräser – 2 1/2 xd
Solid carbide roughing end mill – 2 1/2 xd

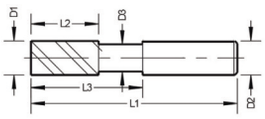


VHM | DIN 6535 HA | 25° R | TYP-HR | 2,5 xD

UNI | nACo | Z=4

D1 h10	L1	L2	D3	L3	D2 h6	CODE
6,00	62	13	5.7	18	6,0	F40130-0613
8,00	68	20	7.7	24	8,0	F40130-0820
10,00	80	25	9.7	30	10,0	F40130-1025
12,00	93	30	11.7	36	12,0	F40130-1230
14,00	100	35	13.7	42	14,0	F40130-1435
16,00	108	40	15.7	48	16,0	F40130-1640
18,00	115	45	17.6	54	18,0	F40130-1845
20,00	126	50	19.6	60	20,0	F40130-2050

VHM Schruppfräser – extra lang
Solid carbide roughing end mill – extra long

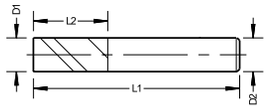


VHM | DIN 6535 HA | 25° R | TYP-HR

UNI | nACo | Z=4

D1 h10	L1	L2	D2 h6	D3 x L3	CODE
6,00	80	15	6	5,8x30	F40040-0615
8,00	85	21	8	7,8x42	F40040-0821
10,00	100	24	10	9,7x48	F40040-1024
12,00	110	28	12	11,7x56	F40040-1228
14,00	110	28	14	13,7x56	F40040-1428
16,00	125	34	16	15,6x68	F40040-1634
18,00	125	34	18	17,6x68	F40040-1834
20,00	140	42	20	19,6x84	F40040-2042

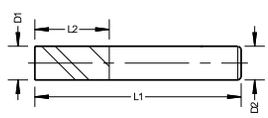
VHM Schrupp-Schlichtfräser – lang
Solid carbide roughing/finishing end mill – long



VHM | DIN 6535 HA | 45° R | UNI | nACo | Z=4

D1 h10	L1	L2	D2 h6	CODE
4,00	57	11	6	F40132-0411
5,00	57	13	6	F40132-0513
6,00	57	13	6	F40132-0613
8,00	63	19	8	F40132-0819
10,00	72	22	10	F40132-1022
12,00	83	26	12	F40132-1226
14,00	83	26	14	F40132-1426
16,00	92	32	16	F40132-1632
18,00	92	32	18	F40132-1832
20,00	104	38	20	F40132-2038

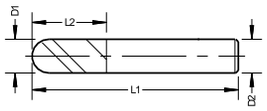
VHM Schrupp-Schlichtfräser – lang
Solid carbide roughing/finishing end mill – long



VHM | DIN 6535 HA | 25° R | 45° | UNI | nACo | Z=4

D1 h10	L1	L2	D2 h6	CODE
6,0	53	13	6	F40133-0613
8,0	64	19	8	F40133-0819
10,0	73	22	10	F40133-1022
12,0	84	26	12	F40133-1226
16,0	93	32	16	F40133-1632
20,0	105	38	20	F40133-2038
25,0	121	45	25	F40133-2545

VHM Radiusfräser – lang
Solid carbide radius milling cutter – long

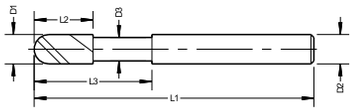


VHM | DIN 6535 HA | 30° R | R

UNI | Z=2

D1	L1	L2	D2	CODE BLANK	CODE TiALN
2,00	50	6	6,0	F40042-0206	F40043-0206
3,00	57	7	6,0	F40042-0307	F40043-0307
4,00	57	8	6,0	F40042-0408	F40043-0408
5,00	57	10	6,0	F40042-0510	F40043-0510
6,00	57	10	6,0	F40042-0610	F40043-0610
7,00	63	16	8,0	F40042-0716	F40043-0716
8,00	63	16	8,0	F40042-0816	F40043-0816
9,00	72	19	10,0	F40042-0919	F40043-0919
10,00	72	19	10,0	F40042-1019	F40043-1019
12,00	83	22	12,0	F40042-1222	F40043-1222
14,00	83	22	14,0	F40042-1422	F40043-1422
16,00	92	26	16,0	F40042-1626	F40043-1626
18,00	92	26	18,0	F40042-1826	F40043-1826
20,00	104	32	20,0	F40042-2032	F40043-2032

VHM Radiusfräser – extra lang
Solid carbide radius milling cutter – extra long

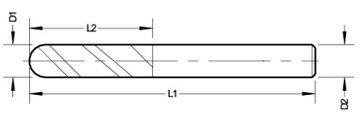


VHM | DIN 6535 HA | 30° R | R

UNI | Z=2 | BLANK | TiALN

D1	L1	L2	D2	D3	L3	CODE	CODE
2,00	75	5	6,0	1,8	20	F40044-0205	F40045-0205
3,00	75	6	6,0	2,8	20	F40044-0306	F40045-0306
4,00	75	8	6,0	3,8	20	F40044-0408	F40045-0408
5,00	100	20	6,0	4,8	40	F40044-0520	F40045-0520
6,00	100	20	6,0	5,8	40	F40044-0620	F40045-0620
8,00	100	20	8,0	7,8	40	F40044-0820	F40045-0820
10,00	100	20	10,0	9,8	40	F40044-1020	F40045-1020
10,00	150	20	10,0	9,8	60	F40044-1020150	F40045-1020150
12,00	100	20	12,0	11,7	40	F40044-1220	F40045-1220
12,00	150	20	12,0	11,7	60	F40044-1220150	F40045-1220150
16,00	150	30	16,0	15,7	70	F40044-1630	F40045-1630
18,00	150	30	18,0	17,7	70	F40044-1830	F40045-1830
20,00	150	30	20,0	19,7	80	F40044-2030	F40045-2030

VHM Radiusfräser – extra lang
Solid carbide radius milling cutter – extra long

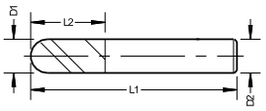


VHM | DIN 6535 HA | 30° R | R

UNI | Z=2 | STAHL steel | BLANK | TiALN

D1	L1	L2	D2	CODE	CODE
4,00	75	8	4,0 HA	F40046-0408	F40047-0408
6,00	100	10	6,0 HA	F40046-0610	F40047-0610
8,00	100	12	8,0 HA	F40046-0812	F40047-0812
10,00	100	14	10,0 HA	F40046-1014	F40047-1014
12,00	100	16	12,0 HA	F40046-1216	F40047-1216
16,00	150	22	16,0 HA	F40046-1622	F40047-1622
20,00	150	26	20,0 HA	F40046-2026	F40047-2026

VHM Radiusfräser – lang
Solid carbide radius milling cutter – long

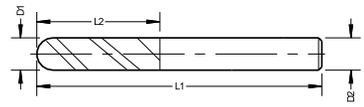


VHM | DIN 6535 HA | 30° R | R

UNI | Z=4 | BLANK | TiALN

D1	L1	L2	D2	CODE	CODE
2,00	57	6	6,0	F40048-0206	F40049-0206
3,00	57	8	6,0	F40048-0308	F40049-0308
4,00	57	11	6,0	F40048-0411	F40049-0411
5,00	57	13	6,0	F40048-0513	F40049-0513
6,00	57	13	6,0	F40048-0613	F40049-0613
8,00	63	19	8,0	F40048-0819	F40049-0819
10,00	72	22	10,0	F40048-1022	F40049-1022
12,00	83	26	12,0	F40048-1226	F40049-1226
14,00	83	26	14,0	F40048-1426	F40049-1426
16,00	92	32	16,0	F40048-1632	F40049-1632
18,00	92	32	18,0	F40048-1832	F40049-1832
20,00	104	38	20,0	F40048-2038	F40049-2038

VHM Radiusfräser – kurz, extra lang
Solid carbide radius milling cutter – short, extra long

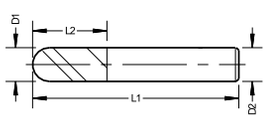


VHM | DIN 6535 HA | 30° R | R

UNI | Z=4 | BLANK | TiALN

D1	L1	L2	D2	CODE	CODE
3,00	57	20	6,0	F40050-0320	F40051-0320
4,00	57	20	6,0	F40050-0420	F40051-0420
5,00	75	30	6,0	F40050-0530	F40051-0530
6,00	75	30	6,0	F40050-0630	F40051-0630
6,00	100	40	6,0	F40050-0640	F40051-0640
8,00	75	30	8,0	F40050-0830	F40051-0830
8,00	100	40	8,0	F40050-0840	F40051-0840
10,00	75	30	10,0	F40050-1030	F40051-1030
10,00	100	40	10,0	F40050-1040	F40051-1040
12,00	100	45	12,0	F40050-1245100	F40051-1245100
12,00	150	45	12,0	F40050-1245	F40051-1245
12,00	150	65	12,0	F40050-1265	F40051-1265
14,00	100	45	14,0	F40050-1445	F40051-1445
14,00	150	65	14,0	F40050-1465	F40051-1465
16,00	100	45	16,0	F40050-1645	F40051-1645
16,00	150	65	16,0	F40050-1665	F40051-1665
16,00	150	90	16,0	F40050-1690	F40051-1690
18,00	100	45	18,0	F40050-1845	F40051-1845
18,00	150	65	18,0	F40050-1865	F40051-1865
20,00	100	45	20,0	F40050-2045	F40051-2045
20,00	150	65	20,0	F40050-2065	F40051-2065
20,00	150	90	20,0	F40050-2090	F40051-2090

VHM Radiusfräser – kurz
Solid carbide ball nose end mills – short

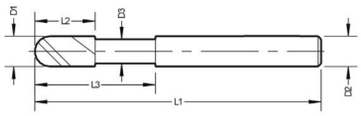


VHM | DIN 6535 HA | 45° R | R | Z=4

UNI | TiALN

D1	L1	L2	L3	D3	D2	CODE
6,00	54	10	20,0	5,8	6,0	F40052-0610
8,00	58	12	25,0	5,8	8,0	F40052-0812
10,00	66	14	27,0	7,8	10,0	F40052-1014
12,00	73	16	35,0	7,8	12,0	F40052-1216
14,00	75	18	30,0	9,8	14,0	F40052-1418
16,00	82	22	40,0	9,8	16,0	F40052-1622
20,00	92	26	35,0	11,7	20,0	F40052-2026

VHM Radiusfräser – extra lang
Solid carbide radius milling cutter – extra long

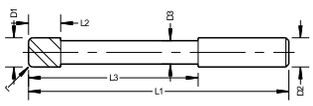


VHM | DIN 6535 HA | 45° R | Z=4

UNI | TiALN

D1	L1	L2	L3	D3	D2	CODE
6,00	100	10	40,0	5,8	6,0	F40053-0610
8,00	100	12	40,0	7,8	8,0	F40053-0812
10,00	100	14	40,0	9,7	10,0	F40053-1014
12,00	100	16	40,0	11,7	12,0	F40053-1216
14,00	100	18	40,0	13,7	14,0	F40053-1418
16,00	150	22	70,0	15,6	16,0	F40053-1622
20,00	150	26	70,0	19,6	20,0	F40053-2026

VHM Torusfräser – extra lang
Solid carbide torus cutter – extra long



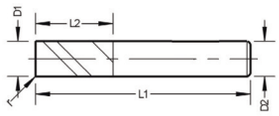
VHM | DIN 6535 HA | 30° R | Z=2

UNI | nACo

D1	L1	L2	D2	D3	L3	r	CODE
2,00	103	4	3,0	1,9	20,0	0.2	F40056-0204
3,00	103	6	3,0	2,9	30,0	0.3	F40056-0306
4,00	103	8	4,0	3,9	40,0	0.4	F40056-0408
5,00	125	10	5,0	4,9	70,0	0.5	F40056-0510
6,00	135	12	6,0	5,9	80,0	0.5	F40056-0612
8,00	150	16	8,0	7,8	90,0	0.5	F40056-0816

VHM Torusfräser – kurz, lang, extra lang

Solid carbide torus cutter – short, long, extra long



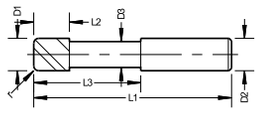
VHM | DIN 6535 HA | 30° R | Z=4

UNI | TiALN

D1	L1	L2	D2	r	CODE
4,0	50	10	6	0,5	F40134-0,5/04010050
4,0	50	10	6	1,0	F40134-1,0/04010050
4,0	58	20	6	0,5	F40134-0,5/04020058
4,0	58	20	6	1,0	F40134-1,0/04020058
4,0	75	25	6	0,5	F40134-0,5/04025075
4,0	75	25	6	1,0	F40134-1,0/04025075
5,0	50	10	6	0,5	F40134-0,5/05010050
5,0	50	10	6	1,0	F40134-1,0/05010050
5,0	58	20	6	0,5	F40134-0,5/05020058
5,0	58	20	6	1,0	F40134-1,0/05020058
5,0	75	30	6	0,5	F40134-0,5/05030075
5,0	75	30	6	1,0	F40134-1,0/05030075
6,0	50	10	6	0,5	F40134-0,5/06010050
6,0	50	10	6	1,0	F40134-1,0/06010050
6,0	50	10	6	1,5	F40134-1,5/06010050
6,0	75	30	6	0,5	F40134-0,5/06030075
6,0	75	30	6	1,0	F40134-1,0/06030075
6,0	75	30	6	1,5	F40134-1,5/06030075
6,0	100	40	6	0,5	F40134-0,5/06040100
6,0	100	40	6	1,0	F40134-1,0/06040100
6,0	100	40	6	1,5	F40134-1,5/06040100
8,0	58	10	8	0,5	F40134-0,5/08010058
8,0	58	10	8	1,0	F40134-1,0/08010058
8,0	58	10	8	1,5	F40134-1,5/08010058
8,0	75	30	8	0,5	F40134-0,5/08030075
8,0	75	30	8	1,0	F40134-1,0/08030075
8,0	75	30	8	1,5	F40134-1,5/08030075
8,0	100	40	8	0,5	F40134-0,5/08040100
8,0	100	40	8	1,0	F40134-1,0/08040100
8,0	100	40	8	1,5	F40134-1,5/08040100
10,0	66	15	10	0,5	F40134-0,5/10015066
10,0	66	15	10	1,0	F40134-1,0/10015066
10,0	66	15	10	2,0	F40134-2,0/10015066
10,00	75	35	10	0,5	F40134-0,5/10035075
10,00	75	35	10	1,0	F40134-1,0/10035075
10,00	75	35	10	2,0	F40134-2,0/10035075
10,00	100	50	10	0,5	F40134-0,5/10050100
10,00	100	50	10	1,0	F40134-1,0/10050100
10,00	100	50	10	2,0	F40134-2,0/10050100

D1	L1	L2	D2	r	CODE
12,00	73	15	12	0,5	F40134-0,5/12015073
12,00	73	15	12	1,0	F40134-1,0/12015073
12,00	73	15	12	2,0	F40134-2,0/12015073
12,00	100	45	12	0,5	F40134-0,5/12045100
12,00	100	45	12	1,0	F40134-1,0/12045100
12,00	100	45	12	2,0	F40134-2,0/12045100
12,00	150	75	12	0,5	F40134-0,5/12075150
12,00	150	75	12	1,0	F40134-1,0/12075150
12,00	150	75	12	2,0	F40134-2,0/12075150
16,00	75	20	16	1,0	F40134-1,0/16020075
16,00	75	20	16	2,0	F40134-2,0/16020075
16,00	75	20	16	3,0	F40134-3,0/16020075
16,00	100	50	16	1,0	F40134-1,0/16050100
16,00	100	50	16	2,0	F40134-2,0/16050100
16,00	100	50	16	3,0	F40134-3,0/16050100
16,00	150	75	16	1,0	F40134-1,0/16075150
16,00	150	75	16	2,0	F40134-2,0/16075150
16,00	150	75	16	3,0	F40134-3,0/16075150
20,00	93	20	20	1,0	F40134-1,0/20020093
20,00	93	20	20	2,0	F40134-2,0/20020093
20,00	93	20	20	3,0	F40134-3,0/20020093
20,00	120	55	20	1,0	F40134-1,0/20055120
20,00	120	55	20	2,0	F40134-2,0/20055120
20,00	120	55	20	3,0	F40134-3,0/20055120
20,00	150	75	20	1,0	F40134-1,0/20075150
20,00	150	75	20	2,0	F40134-2,0/20075150
20,00	150	75	20	3,0	F40134-3,0/20075150

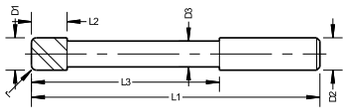
VHM Torusfräser – lang
Solid carbide torus cutter – long



VHM | DIN 6535 HA | 30° R | UNI | nACo | Z=4

D1/r	L1	L2	D2	D3	L3	CODE
2,0/0,1	40	4	2,0	1,8	12	F40057-0204/0,1
2,0/0,3	40	4	2,0	1,8	12	F40057-0204/0,3
3,0/0,3	50	4	3,0	2,7	14	F40057-0304/0,3
3,0/1,0	50	4	3,0	2,7	14	F40057-0304/1,0
4,0/0,4	50	5	4,0	3,7	16	F40057-0405/0,4
4,0/1,0	50	5	4,0	3,7	16	F40057-0405/1,0
5,0/0,5	54	6	5,0	4,6	18	F40057-0506/0,5
5,0/1,0	54	6	5,0	4,6	18	F40057-0506/1,0
6,0/0,5	57	7	6,0	5,5	21	F40057-0607/0,5
6,0/1,0	57	7	6,0	5,5	21	F40057-0607/1,0
6,0/1,5	57	7	6,0	5,5	21	F40057-0607/1,5
8,0/0,5	63	9	8,0	7,4	27	F40057-0809/0,5
8,0/1,0	63	9	8,0	7,4	27	F40057-0809/1,0
8,0/1,5	63	9	8,0	7,4	27	F40057-0809/1,5
8,0/2,0	63	9	8,0	7,4	27	F40057-0809/2,0
10,0/0,5	72	11	10,0	9,2	32	F40057-1011/0,5
10,0/1,0	72	11	10,0	9,2	32	F40057-1011/1,0
10,0/1,5	72	11	10,0	9,2	32	F40057-1011/1,5
10,0/2,0	72	11	10,0	9,2	32	F40057-1011/2,0
12,0/05	83	12	12,0	11,0	38	F40057-1212/0,5
12,0/1,0	83	12	12,0	11,0	38	F40057-1212/1,0
12,0/1,5	83	12	12,0	11,0	38	F40057-1212/1,5
12,0/2,0	83	12	12,0	11,0	38	F40057-1212/2,0
16,0/2,0	92	16	16,0	15,0	44	F40057-1616/2,0
20,0/2,5	104	20	20,0	18,5	50	F40057-2020/2,5

VHM Torusfräser – extra lang
Solid carbide torus cutter – extra long



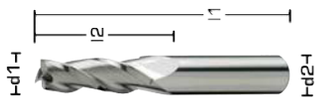
VHM | DIN 6535 HA | 30° R

UNI | nACo | Z=4

D1 h9 / r	L1	L2	D2 h6	D3 x L3	CODE
2,0/01	60	4	2,0	1,8x20	F40058-0204/0,1
2,0/0,3	60	4	2,0	1,8x20	F40058-0204/0,3
3,0/0,3	75	4	3,0	2,7x32	F40058-0304/0,3
3,0/1,0	75	4	3,0	2,7x32	F40058-0304/1,0
4,0/0,4	75	5	4,0	3,7x36	F40058-0405/0,4
4,0/1,0	75	5	4,0	3,7x36	F40058-0405/1,0
5,0/0,5	75	6	5,0	4,6x40	F40058-0506/0,5
5,0/1,0	75	6	5,0	4,6x40	F40058-0506/1,0
6,0/0,5	80	7	6,0	5,5x44	F40058-0607/0,5
6,0/1,0	80	7	6,0	5,5x44	F40058-0607/1,0
6,0/1,5	80	7	6,0	5,5x44	F40058-0607/1,5
8,0/0,5	100	9	8,0	7,4x54	F40058-0809/0,5
8,0/1,0	100	9	8,0	7,4x54	F40058-0809/1,0
8,0/1,5	100	9	8,0	7,4x54	F40058-0809/1,5
8,0/2,0	100	9	8,0	7,4x54	F40058-0809/2,0
10,0/0,5	100	11	10,0	9,2x60	F40058-1011/0,5
10,0/1,0	100	11	10,0	9,2x60	F40058-1011/1,0
10,0/1,5	100	11	10,0	9,2x60	F40058-1011/1,5
10,0/2,0	100	11	10,0	9,2x60	F40058-1011/2,0
12,0/0,5	120	12	12,0	11,0x75	F40058-1212/0,5
12,0/1,0	120	12	12,0	11,0x75	F40058-1212/1,0
12,0/1,5	120	12	12,0	11,0x75	F40058-1212/1,5
12,0/2,0	120	12	12,0	11,0x75	F40058-1212/2,0
16,0/2,0	150	16	16,0	15,0x92	F40058-1616/2,0
20,0/2,5	150	20	20,0	18,5x92	F40058-2020/2,5

VHM Schaftfräser – konisch 0,5°; 1° und 1,5°

Solid carbide end mill – conical 0.5°; 1° and 1.5°



Z=3/4 | DIN 6535 HA | 30° R | 0,5°

UNI | BLANK

h10 < d1	> d1 h6	d2 h6	l2	l1	Z	CODE
2,5	2.85	4,0	20	57	3	F40171-02520
3,0	3.35	4,0	20	57	3	F40171-03020
4,0	4.35	5,0	20	57	3	F40171-04020
5,0	5.52	6,0	30	75	3	F40171-05030
6,0	6.52	8,0	30	75	3	F40171-06030
8,0	8.52	10,0	30	75	4	F40171-08030
10,0	10.52	12,0	30	83	4	F40171-10030
12,0	12.52	14,0	30	83	4	F40171-12030
12,0/1	12.87	14,0	50	100	4	F40171-12030/1,0
16,0	17.05	18,0	60	115	4	F40171-16030

1°

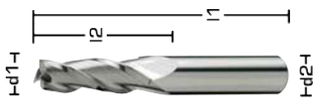
h10 < d1	> d1 h6	d2 h6	l2	l1	Z	CODE
2,5	3,20	4,0	20	57	3	F40172-02520
3,0	3,70	4,0	20	57	3	F40172-03020
4,0	4,70	5,0	20	57	3	F40172-04020
5,0	6,00	6,0	30	75	3	F40172-05030
6,0	7,05	8,0	30	75	3	F40172-06030
8,0	9,05	10,0	30	75	4	F40172-08030
10,0	11,05	12,0	30	83	4	F40172-10030
12,0	13,05	14,0	30	83	4	F40172-12030
12,0/1	13,75	14,0	50	103	4	F40172-12030/1,0
16,0	18,00	18,0	57	115	4	F40172-16057

1,5°

h10 < d1	> d1 h6	d2 h6	l2	l1	Z	CODE
2,5	3,55	4,0	20	57	3	F40173-02520
3,0	4,00	4,0	19	57	3	F40173-03019
4,0	5,00	5,0	19	57	3	F40173-04019
5,0	6,57	8,0	30	75	3	F40173-05030
6,0	7,57	8,0	30	75	3	F40173-06030
8,0	9,57	10,0	30	75	4	F40173-08030
10,0	11,57	12,0	30	83	4	F40173-10030
12,0	13,57	14,0	30	83	4	F40173-12030
12,0/1	14,62	16,0	50	110	4	F40173-12050/1
16,0	18,62	20,0	50	115	4	F40173-16050

VHM Schaftfräser – konisch 2°; 3°

Solid carbide end mill – conical 2°; 3°



Z=3/4 | DIN 6535 HA | 30° R

UNI | BLANK

2°

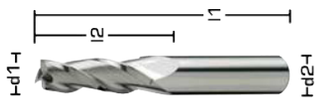
h10 < d1	> d1 h6	d2 h6	l2	l1	Z	CODE
2,5	3,90	4,0	20	57	3	F40174-02520
3,0	4,40	5,0	20	57	3	F40174-03020
3,5	4,90	5,0	20	57	3	F40174-03520
4,0	5,40	6,0	20	65	3	F40174-04030
4,5	6,60	8,0	30	75	3	F40174-04530
5,0	7,10	8,0	30	75	3	F40174-05030
5,0/1	9,19	10,0	60	110	3	F40174-05060/1
6,0	7,96	8,0	28	75	3	F40174-06028
6,0/1	9,98	10,0	57	110	4	F40174-06057/1
8,0	9,96	10,0	28	75	4	F40174-08028
8,0/1	11,98	12,0	57	110	4	F40174-08057/1
10,0	11,96	12,0	28	83	4	F40174-10028
12,0	13,96	14,0	28	83	4	F40174-12028
12,0/1	15,94	16,0	56	115	4	F40174-12056/1
16,0	19,49	20,0	50	115	4	F40174-16050

3°

h10 < d1	> d1 h6	d2 h6	l2	l1	Z	CODE
2,5	4,60	6,0	20	63	3	F40175-02520
3,0	5,62	6,0	25	75	3	F40175-03025
3,0	7,19	8,0	40	90	3	F40175-03040
4,0	7,14	8,0	30	75	3	F40175-04030
5,0	9,19	10,0	40	90	3	F40175-05040
6,0	9,14	10,0	30	75	3	F40175-06030
6,0/1	11,24	12,0	50	104	3	F40175-06050/1
8,0	11,14	12,0	30	83	4	F40175-08030
8,0/1	13,24	14,0	50	104	4	F40175-08050/1
10,0	13,14	14,0	30	83	4	F40175-10030
10,0/1	15,24	16,0	50	104	4	F40175-10050/1
12,0	17,24	18,0	50	104	4	F40175-12050

VHM Schaftfräser – konisch 5°; 7° und 10°

Solid carbide end mill – conical 5°; 7° und 10°



Z=3/4 | DIN 6535 HA | 30° R

UNI | BLANK

5°

h10 < d1	> d1 h6	d2 h6	l2	l1	Z	CODE
2,5	6,00	6,0	20	65	3	F40176-02520
3,0	8,25	10,0	30	75	3	F40176-03030
3,0/1	10,00	10,0	40	100	3	F40176-03040/1
3,5	12,00	12,0	49	104	3	F40176-03549
4,0	8,00	8,0	23	63	3	F40176-04023
4,0/1	9,25	10,0	30	75	3	F40176-04030/1
4,0/2	11,00	12,0	40	100	3	F40176-04040/2
5,0	12,00	12,0	40	100	3	F40176-05040
6,0	11,25	12,0	30	83	3	F40176-06030
6,0/1	14,75	16,0	50	104	3	F40176-06050/1
8,0	16,75	18,0	50	104	4	F40176-08050
10,0	15,25	16,0	30	92	4	F40176-10030
10,0/1	18,75	20,0	50	104	4	F40176-10050/1
12,0	17,25	18,0	30	92	4	F40176-12030
12,0/1	19,87	20,0	45	104	4	F40176-12045/1

7°

h10 < d1	> d1 h6	d2 h6	l2	l1	Z	CODE
2,5	7,41	8,0	20	63	3	F40177-02520
5,0	11,14	12,0	25	73	3	F40177-05025

10°

h10 < d1	> d1 h6	d2 h6	l2	l1	Z	CODE
2,5	9,55	10,0	20	72	3	F40178-02520
3,0	13,58	14,0	30	83	3	F40178-03030
6,0	15,87	16,0	28	92	3	F40178-06028

VHM Radiusfräser – konisch 0,5°; 1° und 1,5°

Solid carbide radius milling cutter – conical 0.5°; 1° und 1.5°

Z=3/4 | DIN 6535 HA | 30° R

UNI | BLANK

0,5°

h10 < d1	> d1 h6	d2 h6	l2	l1	Z	CODE
2,5	2.85	4,0	20	57	3	F40179-02520
3,0	3.35	4,0	20	57	3	F40179-03020
4,0	4.35	5,0	20	57	3	F40179-04020
5,0	5.52	6,0	30	75	3	F40179-05030
6,0	6.52	8,0	30	75	3	F40179-06030
8,0	8.52	10,0	30	75	4	F40179-08030
10,0	10.52	12,0	30	83	4	F40179-10030
12,0	12.52	14,0	30	83	4	F40179-12030
12,0/1	12.87	14,0	50	100	4	F40179-12050/1
16,0	17.05	18,0	60	115	4	F40179-16060

1°

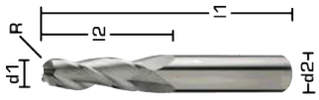
h10 < d1	> d1 h6	d2 h6	l2	l1	Z	CODE
2,5	3,20	4,0	20	57	3	F40180-02520
3,0	3,70	4,0	20	57	3	F40180-03020
4,0	4,70	5,0	20	57	3	F40180-04020
5,0	6,00	6,0	30	75	3	F40180-05030
6,0	7,05	8,0	30	75	3	F40180-06030
8,0	9,05	10,0	30	75	4	F40180-08030
10,0	11,05	12,0	30	83	4	F40180-10030
12,0	13,05	14,0	30	83	4	F40180-12030
12,0/1	13,75	14,0	50	106	4	F40180-12050/1
16,0	18,00	18,0	57	115	4	F40180-16057

1,5°

h10 < d1	> d1 h6	d2 h6	l2	l1	Z	CODE
2,5	3,55	4,0	20	57	3	F40181-02520
3,0	4,00	4,0	19	57	3	F40181-03019
4,0	5,00	5,0	19	57	3	F40181-04019
5,0	6,57	8,0	30	75	3	F40181-05030
6,0	7,57	8,0	30	75	3	F40181-06030
8,0	9,57	10,0	30	75	4	F40181-08030
10,0	11,57	12,0	30	83	4	F40181-10030
12,0	13,57	14,0	30	83	4	F40181-12030
12,0/1	14,62	16,0	50	110	4	F40181-12050/1
16,0	18,62	20,0	50	115	4	F40181-16050

VHM Radiusfräser – konisch 2°; 3°

Solid carbide radius milling cutter – conical 2°; 3°



Z=3/4 | DIN 6535 HA | 30° R

UNI | BLANK

2°

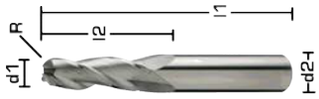
h10 < d1	> d1 h6	d2 h6	l2	l1	Z	CODE
2,5	3.9	4,0	20	57	3	F40182-02520
3,0	4.4	5,0	20	57	3	F40182-03020
3,5	4.9	5,0	20	57	3	F40182-03520
4,0	5.4	6,0	20	65	3	F40182-04020
4,5	6.6	8,0	30	75	3	F40182-04530
5,0	7.1	8,0	30	75	3	F40182-05030
5,0/1	9.19	10,0	60	110	3	F40182-05060/1
6,0	7.96	8,0	28	75	3	F40182-06028
6,0/1	9.98	10,0	57	110	4	F40182-06057/1
8,0	9.96	10,0	28	75	4	F40182-08028
8,0/1	11.98	12,0	57	110	4	F40182-08057/1
10,0	11.96	12,0	28	83	4	F40182-10028
12,0	13.96	14,0	28	83	4	F40182-12028
12,0/1	15.94	16,0	56	115	4	F40182-12056/1
16,0	19.49	20,0	50	115	4	F40182-16050

3°

h10 < d1	> d1 h6	d2 h6	l2	l1	Z	CODE
2,5	4,60	6,0	20	63	3	F40183-02520
3,0	5,62	6,0	25	75	3	F40183-03025
3,0	7,19	8,0	40	90	3	F40183-03040
4,0	7,14	8,0	30	75	3	F40183-04030
5,0	9,19	10,0	40	90	3	F40183-05040
6,0	9,14	10,0	30	75	3	F40183-06030
6,0/1	11,24	12,0	50	104	3	F40183-06050/1
8,0	11,14	12,0	30	83	4	F40183-08030
8,0/1	13,24	14,0	50	104	4	F40183-08050/1
10,0	13,14	14,0	30	83	4	F40183-10030
10,0/1	15,24	16,0	50	104	4	F40183-10050/1
12,0	17,24	18,0	50	104	4	F40183-12050

VHM Radiusfräser – konisch 5°; 7° und 10°

Solid carbide radius milling cutter – conical 5°; 7° and 10°



Z=3/4 | DIN 6535 HA | 30° R

UNI | BLANK

5°

h10 < Ø	> Ø h6	d2 h6	SL	GL	Z	CODE
2,5	6,00	6,0	20	65	3	F40184-02520
3,0	8,25	10,0	30	75	3	F40184-03030
3,0/1	10,00	10,0	40	100	3	F40184-03040/1
3,5	12,00	12,0	49	104	3	F40184-03549
4,0	8,00	8,0	23	63	3	F40184-04023
4,0/1	9,25	10,0	30	75	3	F40184-04030/1
4,0/2	11,00	12,0	40	100	3	F40184-04040/2
5,0	12,00	12,0	40	100	3	F40184-05040
6,0	11,26	12,0	30	83	3	F40184-06030
6,0/1	14,75	16,0	50	104	3	F40184-06050/1
8,0	16,75	18,0	50	104	4	F40184-08050
10,0	15,25	16,0	30	92	4	F40184-10030
10,0/1	18,75	20,0	50	104	4	F40184-10050/1
12,0	17,25	18,0	30	92	4	F40184-12030
12,0/1	19,87	20,0	45	104	4	F40184-12045/1

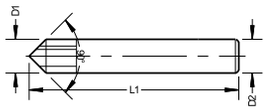
7°

h10 < Ø	> Ø h6	d2 h6	SL	GL	Z	CODE
2,5	7,41	8,0	20	63	3	F40185-02520
5,0	11,14	12,0	25	73	3	F40185-05025

10°

h10 < Ø	> Ø h6	d2 h6	SL	GL	Z	CODE
2,5	9,55	10,0	20	72	3	F40186-02520
3,0	13,58	14,0	30	83	3	F40186-03030
6,0	15,87	16,0	28	92	3	F40186-06028
8,0	18,58	20,0	30	104	4	F40186-08030

VHM Entgratfräser 90°
Solid carbide deburring mill 90°



VHM | DIN 6535 HA | UNI | Z=4 | BLANK | TiALN

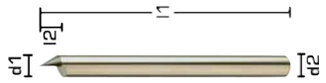
D1 h9	L1	D2 h6	CODE	CODE
4,00	50,00	4,00	F40064-0450	F40155-0450
5,00	50,00	5,00	F40064-0550	F40155-0550
6,00	50,00	6,00	F40064-0650	F40155-0650
8,00	63,00	8,00	F40064-0863	F40155-0863
10,00	72,00	10,00	F40064-1072	F40155-1072
12,00	84,00	12,00	F40064-1284	F40155-1284
16,00	93,00	16,00	F40064-1693	F40155-1693
20,00	104,00	20,00	F40064-20104	F40155-20104

VHM Entgrater 90°
Solid carbide deburring mill 90°

VHM | 90° | DIN 6535 HA | UNI | Z=3 | Z=4 | nACo

d	D	L	Z	CODE
1,80	6,0	100	3	F40214-0180100
2,80	6,0	100	3	F40214-0280100
4,00	6,0	100	4	F40214-0400100
6,00	6,0	100	4	F40214-0600100
8,00	6,0	100	4	F40214-0800100
10,00	6,0	100	4	F40214-1000100
12,00	6,0	100	4	F40214-1200100
16,00	10,0	100	4	F40214-1600100

VHM Gravierstichel mit Spitze fertiggeschliffen
Solid carbide graver with finished point



VHM | HA | 60° | BLANK

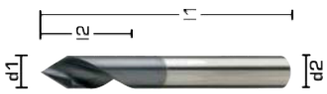
UNI | Z=1

d1	l2	l1	CODE
2,00	3,00	50	F40187-02000350
2,50	3,00	50	F40187-02500350
3,00	4,50	50	F40187-03004550
4,00	6,00	50	F40187-04000650
5,00	7,50	50	F40187-05007550
6,00	9,00	50	F40187-06000950
7,00	11,50	50	F40187-07011550
8,00	12,00	50	F40187-08001250

UNI

d1	l2	l1	CODE
2,00	3,00	100	F40187-020003100
2,50	3,00	100	F40187-025003100
3,00	4,50	100	F40187-030045100
4,00	6,00	100	F40187-040006100
5,00	7,50	100	F40187-050075100
6,00	9,00	100	F40187-060009100
7,00	11,50	100	F40187-070115100
8,00	12,00	100	F40187-080012100
9,00	13,50	100	F40187-090113100
10,00	15,00	100	F40187-100015100
11,00	16,50	100	F40187-110165100
12,00	18,00	100	F40187-120165100
14,00	21,00	100	F40187-140021100
16,00	24,00	100	F40187-160024100

VHM Universal-Gravierfräser
Solid carbide unispecial engraving end mill



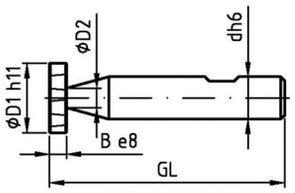
VHM | HA | λ ≈ 30° | TiALN

UNI | 60°

d1	l3	l2	l1	d2 h6	CODE
3,00	2	10	40	3	F40188-030010040
4,00	3	10	40	4	F40188-040010040
6,00	5	10	50	5	F40188-060010050

VHM Hochleistungs-Schlitzfräser
Solid carbide high performance Woodruff keyseating cutter

Zum Fräsen von Scheibenfedernuten nach DIN 6888 oder zum Fräsen kleiner Schlitze.
For milling Eoodruff keyways to DIN 6888 or for milling small slots.

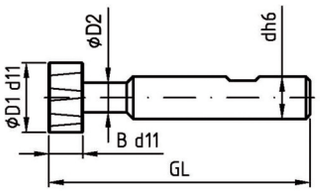


VHM | DIN 850 D/F | TYP N | UNI

D1xB h11xe8 (mm)	für Scheibenfedern / for Woodruff keyways to DIN 6888	D2 (mm)	GL (mm)	Z (mm)	d (mm)	fz (mm)	CODE
10,5 x 2	2,0 x 3,7	4,0	50	6	6	0,035	F40189-10502
10,5 x 3	3,0 x 3,7	4,2	50	6	6	0,035	F40189-10503
13,5 x 2	2,0 x 5,0	4,6	56	8	10	0,035	F40189-13502
13,5 x 3	3,0 x 5,0	4,6	56	8	10	0,035	F40189-13503
13,5 x 4	4,0 x 5,0	4,6	56	8	10	0,035	F40189-13504
16,5 x 3	3,0 x 6,5	4,6	56	10	10	0,035	F40189-16503
16,5 x 4	4,0 x 6,5	4,6	56	10	10	0,035	F40189-16504
19,5 x 3	3,0 x 7,5	5,6	63	10	10	0,038	F40189-19503
19,5 x 4	4,0 x 7,5	5,6	63	10	10	0,038	F40189-19504
22,5 x 4	4,0 x 9,0	6,0	63	10	10	0,038	F40189-22504
25,5 x 5	5,0 x 10,0	7,5	63	10	10	0,038	F40189-25505
28,5 x 5	5,0 x 11,0	8,5	63	10	10	0,040	F40189-28505
32,5 x 5	5,0 x 13,0	8,5	71	10	10	0,040	F40189-32505
38,5 x 10	10,0 x 15,0	11,8	71	10	10	0,040	F40189-38510
45,5 x 10	10,0 x 16,0	11,8	71	10	10	0,040	F40189-45510

VHM T-Nutenfräser
Solid carbide T-slot cutter

Zum Fräsen von T-Nuten nach DIN 650.
For milling T-slots to DIN 650.

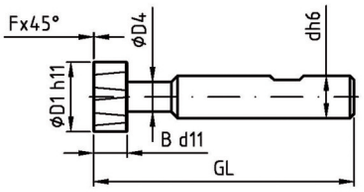


VHM | DIN 851 | TYP N | UNI

DxB h11xd11 (mm)	für T-Nuten / for T-slots DIN 650	D2 (mm)	GL (mm)	Z (mm)	d (mm)	45°	fz (mm)	CODE
12,5 x 6	6	5	57	6	10	0,2	0,033	F40190-10502
16 x 8	8	7	62	6	10	0,2	0,034	F40190-16008
18 x 8	10	8	70	6	12	0,2	0,034	F40190-18008
21 x 9	12	10	74	6	12	0,2	0,034	F40190-21009
25 x 11	14	12	82	6	16	0,2	0,034	F40190-25011
28 x 12	16	13	85	6	16	0,2	0,035	F40190-28012
32 x 14	18	15	90	6	16	0,2	0,035	F40190-32014

VHM T-Nutenfräser mit Schrupp-Schlichtprofil
Solid carbide T-slot cutter with semi-roughing profile

Zum Fräsen von T-Nuten nach DIN 650.
For milling T-slots to DIN 650.

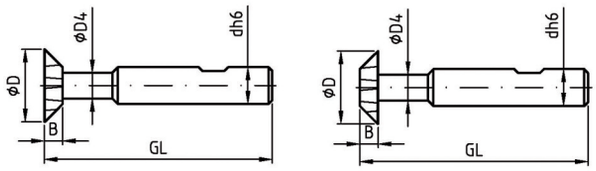


VHM | DIN 851 | TYP NF | UNI

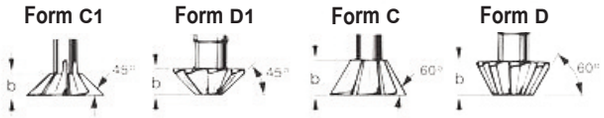
Øx d11xd11 (mm)	für T-Nuten / for T-slots DIN 650	D4 (mm)	GL (mm)	Z (mm)	h6 (mm)	fz (mm)	CODE
12,5 x 6	6	5	57	6	10	0,033	F40191-12506
16 x 8	8	7	62	6	10	0,034	F40191-16008
18 x 8	10	8	70	6	12	0,034	F40191-18008
21 x 9	12	10	74	6	12	0,034	F40191-21009
25 x 11	14	12,0	82	6	16	0,034	F40191-25011
28 x 12	16	13,0	85	6	16	0,035	F40191-28012
32 x 14	18	15,0	90	6	16	0,035	F40191-32014

VHM Multifräser
Solid carbide multi end mill

Zum Frsäen von Führungen im Werkzeug- und Maschinenbau.
For milling dovetails in tool making and machine building

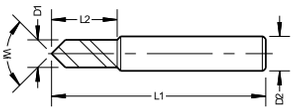


VHM | DIN 851 | js 16 | Z 6-10 | UNI



Ø js16 Dc (mm)	Maß / dimension b		D4				GL	Z	d	fz	Form C 45°	Form D 45°	Form C 60°	Form D 60°
	C1 / D1	C / D (mm)	C1 (mm)	D1 (mm)	C (mm)	D (mm)					CODE	CODE	CODE	CODE
16	4	6,3	6,7	8	6	8,2	60	6	10	0,042	F40192-1660	F40193-1660	F40194-1660	F40195-1660
20	5	8	7	10	7,8	10,5	63	8	12	0,042	F40192-2063	F40193-2063	F40194-2063	F40195-2063
22	6	9	8	10,2	10	10,2	67	8	12	0,043	F40192-2267	F40193-2267	F40194-2267	F40195-2267
25	6,3	10	8	11	9	11,5	67	8	12	0,046	F40192-2567	F40193-2567	F40194-2567	F40195-2567
28	7,5	11	8,5	14	13	14	80	10	16	0,045	F40192-2810	F40193-2810	F40194-2810	F40195-2810
32	8	12,5	13	15	15	15	71	10	16	0,045	F40192-3271	F40193-3271	F40194-3271	F40195-3271
38	10	16	15	15	15	15	80	10	16	0,045	F40192-3880	F40193-3880	F40194-3880	F40195-3880

VHM Multifräser
Solid carbide multi end mill



Z=2 | DIN 6535 HA | 60°

UNI | BLANK

D1	L1	L2	D2	CODE
3,0	50	6	4,0	F40059-0306
4,0	50	8	5,0	F40059-0408
5,0	50	10	6,0	F40059-0510
6,0	60	12	8,0	F40059-0612
8,0	70	16	10,0	F40059-0816
10,0	70	18	12,0	F40059-1018
12,0	70	20	12,0	F40059-1220
16,0	80	26	16,0	F40059-1626
20,0	100	32	20,0	F40059-2032

Z=2 | DIN 6535 HA | 90°

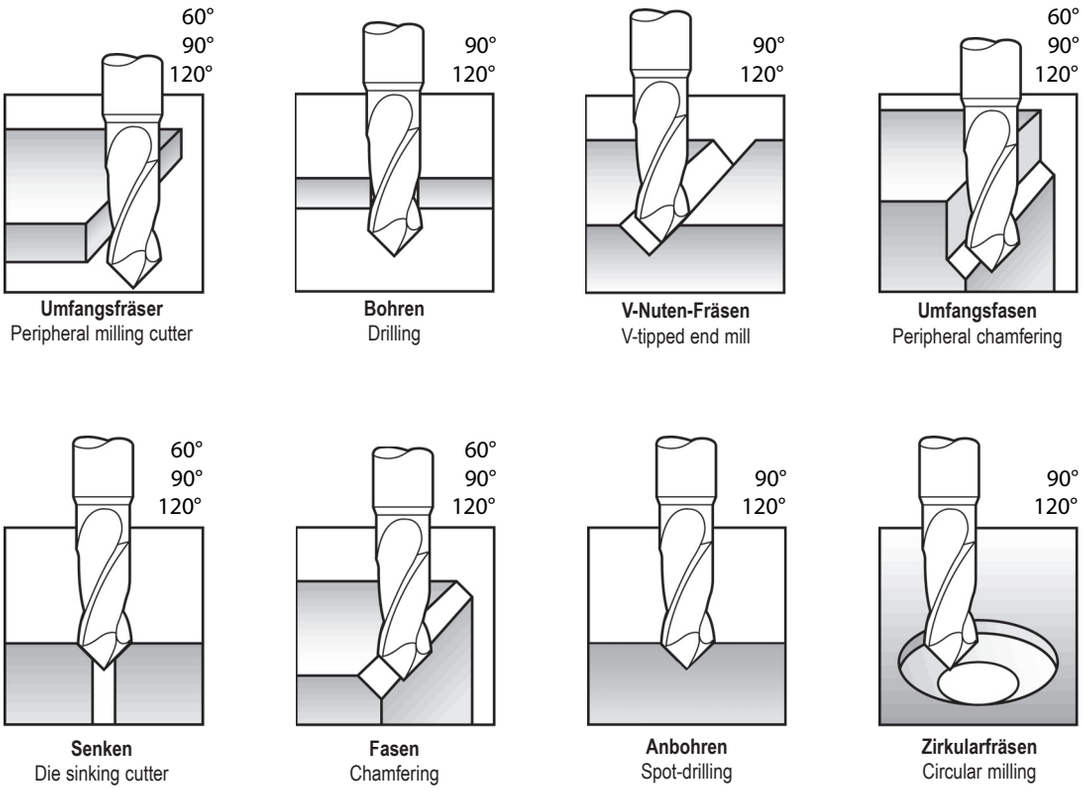
UNI | BLANK

D1	L1	L2	D2	CODE
3,0	50	6	4,0	F40060-0306
4,0	50	8	5,0	F40060-0408
5,0	50	10	6,0	F40060-0510
6,0	60	12	8,0	F40060-0612
8,0	70	16	10,0	F40060-0816
10,0	70	18	12,0	F40060-1018
12,0	70	20	12,0	F40060-1220
16,0	80	26	16,0	F40060-1626
20,0	100	32	20,0	F40060-2032

Z=2 | DIN 6535 HA | 120°

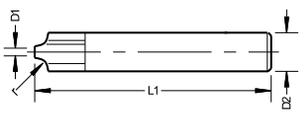
UNI | BLANK

D1	L1	L2	D2	CODE
3,0	50	6	4,0	F40061-0306
4,0	50	8	5,0	F40061-0408
5,0	50	10	6,0	F40061-0510
6,0	60	12	8,0	F40061-0612
8,0	70	16	10,0	F40061-0816
10,0	70	18	12,0	F40061-1018
12,0	70	20	12,0	F40061-1220
16,0	80	26	16,0	F40061-1626
20,0	100	32	20,0	F40061-2032



VHM Viertelrund-Profilfräser

Solid carbide corner rounding cutter



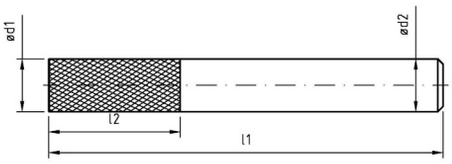
Z=4 | DIN 6535 HA

UNI | BLANK | TiALN

r	L1	D1	D2	CODE	CODE
0,50	70	7	8,0	F40062-00570	F40063-00570
1,00	70	6	8,0	F40062-0170	F40063-0170
1,50	75	7	10,0	F40062-01575	F40063-01575
2,00	75	6	10,0	F40062-0275	F40063-0275
2,50	75	7	12,0	F40062-02575	F40063-02575
3,00	75	6	12,0	F40062-0375	F40063-0375
3,50	80	10	16,0	F40062-03580	F40063-03580
4,00	80	8	16,0	F40062-0480	F40063-0480
4,50	80	7	16,0	F40062-04580	F40063-04580
5,00	80	10	20,0	F40062-0580	F40063-0580
6,00	80	8	20,0	F40062-0680	F40063-0680

VHM Vielzahnfräser - mittlere Verzahnung, ziehende Schneide

Solid carbide multi tooth cutter - medium tooth, pulling cutting egde



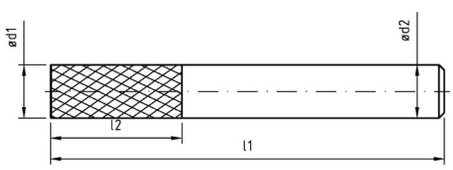
VHM | DIN 6535 HA | Vielzahn/ Multiple | CFK/GFK > 40 % | 180° | Fräser Ø 4 – 20 mm

UNI | BLANK

d1	d2	l1	l2	z	CODE
4	4	50	16	Vielzahn / Multiple	F40701-0405016
5	5	50	16	Vielzahn / Multiple	F40701-0505016
5	5	75	16	Vielzahn / Multiple	F40701-0507516
6	6	60	19	Vielzahn / Multiple	F40701-0606019
6	6	75	30	Vielzahn / Multiple	F40701-0607530
8	8	63	25	Vielzahn / Multiple	F40701-0806325
8	8	75	35	Vielzahn / Multiple	F40701-0807535
10	10	72	25	Vielzahn / Multiple	F40701-1007225
12	12	83	32	Vielzahn / Multiple	F40701-1208332
16	16	92	36	Vielzahn / Multiple	F40701-1609236
20	20	104	45	Vielzahn / Multiple	F40701-2010445

VHM Vielzahnfräser - grobe Verzahnung, ziehende Schneide

Solid carbide multi tooth cutters - coarse tooth, pulling cutting egde

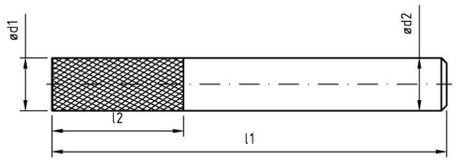


VHM | DIN 6535 HA | Vielzahn/ Multiple | CFK/GFK < 40 % | 180° | Fräser Ø 4 – 20 mm

UNI | BLANK

d1	d2	l1	l2	z	CODE
4	4	50	16	Vielzahn / Multiple	F40702-0405016
5	5	50	16	Vielzahn / Multiple	F40702-0505016
5	5	75	16	Vielzahn / Multiple	F40702-0507516
6	6	60	19	Vielzahn / Multiple	F40702-0606019
6	6	75	30	Vielzahn / Multiple	F40702-0607530
8	8	63	25	Vielzahn / Multiple	F40702-0806325
8	8	75	35	Vielzahn / Multiple	F40702-0807535
10	10	72	25	Vielzahn / Multiple	F40702-1007225
12	12	83	32	Vielzahn / Multiple	F40702-1208332
16	16	92	36	Vielzahn / Multiple	F40702-1609236
20	20	104	45	Vielzahn / Multiple	F40702-2010445

VHM Vielzahnfräser - mittlere Verzahnung, schiebende Schneide
Solid carbide multi tooth cutter - medium tooth, pushing cutting egde

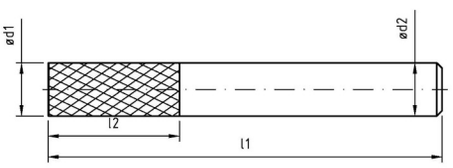


VHM | DIN 6535 HA | Vielzahn/ Multiple | CFK/GFK > 40 % | 180° | Fräser Ø 4 – 10 mm

UNI | BLANK

d1	d2	l1	l2	z	CODE
4	4	50	16	Vielzahn / Multiple	F40703-0405016
5	5	50	16	Vielzahn / Multiple	F40703-0505016
6	6	60	19	Vielzahn / Multiple	F40703-0606019
10	10	72	25	Vielzahn / Multiple	F40703-1007225

VHM Vielzahnfräser - grobe Verzahnung, schiebende Schneide
Solid carbide multi tooth cutter - coarse tooth, pushing cutting egde



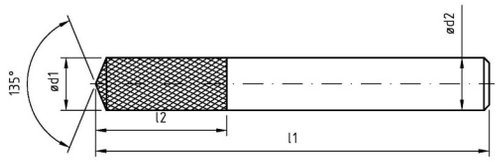
VHM | DIN 6535 HA | Vielzahn/ Multiple | CFK/GFK < 40 % | 180° | Fräser Ø 4 – 10 mm

UNI | BLANK

d1	d2	l1	l2	z	CODE
4	4	50	16	Vielzahn / Multiple	F40704-0405016
5	5	50	16	Vielzahn / Multiple	F40704-0505016
6	6	60	19	Vielzahn / Multiple	F40704-0606019
10	10	72	25	Vielzahn / Multiple	F40704-1007225

VHM Vielzahnfräser - mittlere Verzahnung, Ausführung mit Bohrspitze, ziehende Schneide

Solid carbide multi tooth cutter - medium tooth, design with drill point design, pulling cutting egde



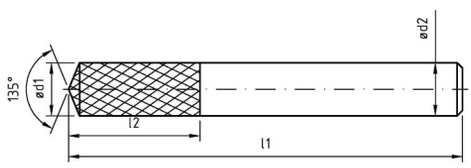
VHM | DIN 6535 HA | Vielzahn/ Multiple | CFK/GFK > 40 % | 135° Bohrspitze/ drill point | Fräser Ø 4 – 20 mm

UNI | BLANK

d1	d2	l1	l2	z	CODE
4	4	50	16	Vielzahn / Multiple	F40711-0405016
5	5	50	16	Vielzahn / Multiple	F40711-0505016
5	5	75	16	Vielzahn / Multiple	F40711-0507516
6	6	60	19	Vielzahn / Multiple	F40711-0606019
6	6	75	30	Vielzahn / Multiple	F40711-0607530
8	8	60	25	Vielzahn / Multiple	F40711-0806025
8	8	75	35	Vielzahn / Multiple	F40711-0807535
10	10	72	30	Vielzahn / Multiple	F40711-1007230
12	12	83	32	Vielzahn / Multiple	F40711-1208332
16	16	92	36	Vielzahn / Multiple	F40711-1609236
20	20	104	45	Vielzahn / Multiple	F40711-2010445

VHM Vielzahnfräser - grobe Verzahnung, Ausführung mit Bohrspitze, ziehende Schneide

Solid carbide multi tooth cutter - coarse tooth, design with drill point design, pulling cutting egde



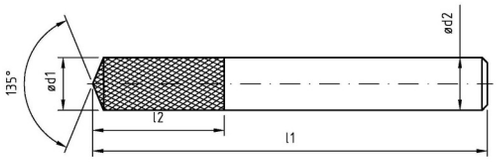
VHM | DIN 6535 HA | Vielzahn/ Multiple | CFK/GFK < 40 % | 135° Bohrspitze/ drill point | Fräser Ø 4 – 20 mm

UNI | BLANK

d1	d2	l1	l2	z	CODE
4	4	50	16	Vielzahn / Multiple	F40712-0405016
5	5	50	16	Vielzahn / Multiple	F40712-0505016
5	5	75	16	Vielzahn / Multiple	F40712-0507516
6	6	60	19	Vielzahn / Multiple	F40712-0606019
6	6	75	30	Vielzahn / Multiple	F40712-0607530
8	8	60	25	Vielzahn / Multiple	F40712-0806025
8	8	75	35	Vielzahn / Multiple	F40712-0807535
10	10	72	30	Vielzahn / Multiple	F40712-1007230
12	12	83	32	Vielzahn / Multiple	F40712-1208332
16	16	92	36	Vielzahn / Multiple	F40712-1609236
20	20	104	45	Vielzahn / Multiple	F40712-2010445

VHM Vielzahnfräser - mittlere Verzahnung, Ausführung mit Bohrspitze, schiebende Schneide

Solid carbide multi tooth cutter - medium tooth, design with drill point, pushing cutting egde



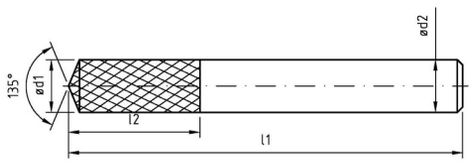
VHM | DIN 6535 HA | Vielzahn/ Multiple | CFK/GFK > 40 % | 135° Bohrspitze/ drill point | Fräser Ø 4 – 10 mm

UNI | BLANK

d1	d2	l1	l2	z	CODE
4	4	50	16	Vielzahn / Multiple	F40713-0405016
5	5	50	16	Vielzahn / Multiple	F40713-0505016
6	6	60	19	Vielzahn / Multiple	F40713-0606019
10	10	72	25	Vielzahn / Multiple	F40713-1007225

VHM Vielzahnfräser - grobe Verzahnung, Ausführung mit Bohrspitze schiebende Schneide

Solid carbide multi tooth cutter - coarse tooth, design with drill point design, pushing cutting egde



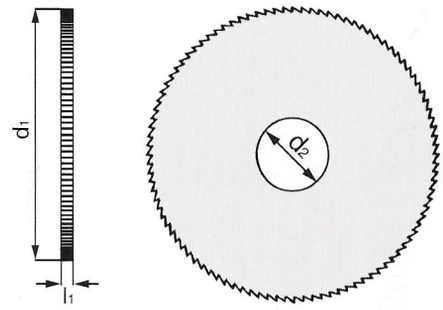
VHM | DIN 6535 HA | Vielzahn/ Multiple | CFK/GFK < 40 % | 135° Bohrspitze/ drill point | Fräser Ø 4 – 10 mm

UNI | BLANK

d1	d2	l1	l2	z	CODE
4	4	50	16	Vielzahn / Multiple	F40714-0405016
5	5	50	16	Vielzahn / Multiple	F40714-0505016
6	6	60	19	Vielzahn / Multiple	F40714-0606019
10	10	72	25	Vielzahn / Multiple	F40714-1007225

Kreissägeblätter aus Vollhartmetall nach DIN 1837 und DIN 1838

Solid carbide slitting saws according to DIN 1837 and DIN 1838



				VHM DIN 1837 UNI		DIN 1838
d1	l1	d2	Z	CODE	Z	CODE
20,0	0,20	5	80	F40099-0200020	32	F40100-0200020
20,0	0,25	5	64	F40099-0200025	32	F40100-0200025
20,0	0,30	5	64	F40099-0200030	32	F40100-0200030
20,0	0,35	5	64	F40099-0200035	32	F40100-0200035
20,0	0,40	5	64	F40099-0200040	32	F40100-0200040
20,0	0,50	5	48	F40099-0200050	24	F40100-0200050
20,0	0,60	5	48	F40099-0200060	24	F40100-0200060
20,0	0,70	5	48	F40099-0200070	24	F40100-0200070
20,0	0,80	5	40	F40099-0200080	24	F40100-0200080
20,0	0,90	5	40	F40099-0200090	20	F40100-0200090
20,0	1,00	5	40	F40099-0200100	20	F40100-0200100
20,0	1,10	5	40	F40099-0200110	20	F40100-0200110
20,0	1,20	5	40	F40099-0200120	20	F40100-0200120
20,0	1,30	5	40	F40099-0200130	20	F40100-0200130
20,0	1,40	5	40	F40099-0200140	20	F40100-0200140
20,0	1,50	5	40	F40099-0200150	20	F40100-0200150
20,0	1,60	5	40	F40099-0200160	20	F40100-0200160
20,0	1,70	5	32	F40099-0200170	20	F40100-0200170
20,0	1,80	5	32	F40099-0200180	16	F40100-0200180
20,0	1,90	5	32	F40099-0200190	16	F40100-0200190
20,0	2,00	5	32	F40099-0200200	16	F40100-0200200
20,0	2,50	5	32	F40099-0200250	16	F40100-0200250
20,0	3,00	5	32	F40099-0200300	16	F40100-0200300
20,0	4,00	5	24	F40099-0200400	16	F40100-0200400
20,0	5,00	5	24	F40099-0200500	16	F40100-0200500
20,0	6,00	5	24	F40099-0200600	16	F40100-0200600
25,0	0,20	8	80	F40099-0250020	32	F40100-0250020
25,0	0,25	8	80	F40099-0250025	32	F40100-0250250
25,0	0,30	8	80	F40099-0250030	32	F40100-0250025
25,0	0,35	8	64	F40099-0250035	32	F40100-0250035
25,0	0,40	8	64	F40099-0250040	32	F40100-0250040
25,0	0,50	8	64	F40099-0250050	24	F40100-0250050
25,0	0,60	8	64	F40099-0250060	24	F40100-0250060
25,0	0,70	8	48	F40099-0250070	24	F40100-0250070
25,0	0,80	8	48	F40099-0250080	24	F40100-0250080
25,0	0,90	8	48	F40099-0250090	20	F40100-0250090
25,0	1,00	8	48	F40099-0250100	20	F40100-0250100
25,0	1,10	8	48	F40099-0250110	20	F40100-0250110
25,0	1,20	8	48	F40099-0250120	20	F40100-0250120
25,0	1,30	8	40	F40099-0250130	20	F40100-0250130
25,0	1,40	8	40	F40099-0250140	20	F40100-0250140
25,0	1,50	8	40	F40099-0250150	20	F40100-0250150
25,0	1,60	8	40	F40099-0250160	20	F40100-0250160
25,0	1,70	8	40	F40099-0250170	20	F40100-0250170
25,0	1,80	8	40	F40099-0250180	16	F40100-0250180

VHM **UNI**

d1	l1	d2	Z	DIN 1837 CODE	Z	DIN 1838 CODE
25,0	1,90	8	40	F40099-0250190	16	F40100-0250190
25,0	2,00	8	40	F40099-0250200	16	F40100-0250200
25,0	2,50	8	40	F40099-0250250	16	F40100-0250250
25,0	3,00	8	32	F40099-0250300	16	F40100-0250300
25,0	4,00	8	32	F40099-0250400	16	F40100-0250400
25,0	5,00	8	32	F40099-0250500	16	F40100-0250500
25,0	6,00	8	32	F40099-0250600	16	F40100-0250600
32,0	0,20	8	100	F40099-0320020	32	F40100-0320020
32,0	0,25	8	100	F40099-0320025	32	F40100-0320025
32,0	0,30	8	80	F40099-0320030	32	F40100-0320030
32,0	0,35	8	80	F40099-0320035	32	F40100-0320035
32,0	0,40	8	80	F40099-0320040	32	F40100-0320040
32,0	0,50	8	80	F40099-0320050	24	F40100-0320050
32,0	0,60	8	64	F40099-0320060	24	F40100-0320060
32,0	0,70	8	64	F40099-0320070	24	F40100-0320070
32,0	0,80	8	64	F40099-0320080	24	F40100-0320080
32,0	0,90	8	64	F40099-0320090	24	F40100-0320090
32,0	1,00	8	64	F40099-0320100	24	F40100-0320100
32,0	1,10	8	48	F40099-0320110	24	F40100-0320110
32,0	1,20	8	48	F40099-0320120	24	F40100-0320120
32,0	1,30	8	48	F40099-0320130	20	F40100-0320130
32,0	1,40	8	48	F40099-0320140	20	F40100-0320140
32,0	1,50	8	48	F40099-0320150	20	F40100-0320150
32,0	1,60	8	48	F40099-0320160	20	F40100-0320160
32,0	1,70	8	48	F40099-0320170	20	F40100-0320170
32,0	1,80	8	48	F40099-0320180	20	F40100-0320180
32,0	1,90	8	48	F40099-0320190	20	F40100-0320190
32,0	2,00	8	48	F40099-0320200	20	F40100-0320200
32,0	2,50	8	40	F40099-0320250	20	F40100-0320250
32,0	3,00	8	40	F40099-0320300	20	F40100-0320300
32,0	4,00	8	40	F40099-0320400	18	F40100-0320400
32,0	5,00	8	32	F40099-0320500	18	F40100-0320500
32,0	6,00	8	32	F40099-0320600	18	F40100-0320600
40,0	0,20	10	128	F40099-0400020	48	F40100-0400020
40,0	0,25	10	100	F40099-0400025	48	F40100-0400025
40,0	0,30	10	100	F40099-0400030	48	F40100-0400030
40,0	0,35	10	100	F40099-0400035	48	F40100-0400035
40,0	0,40	10	100	F40099-0400040	48	F40100-0400040
40,0	0,50	10	80	F40099-0400050	40	F40100-0400050
40,0	0,60	10	80	F40099-0400060	40	F40100-0400060
40,0	0,70	10	80	F40099-0400070	40	F40100-0400070
40,0	0,80	10	80	F40099-0400080	40	F40100-0400080
40,0	0,90	10	64	F40099-0400090	32	F40100-0400090
40,0	1,00	10	64	F40099-0400100	32	F40100-0400100
40,0	1,10	10	64	F40099-0400110	32	F40100-0400110

VHM UNI

			DIN 1837			DIN 1838
d1	l1	d2	Z	CODE	Z	CODE
40,0	1,20	10	64	F40099-0400120	32	F40100-0400120
40,0	1,30	10	64	F40099-0400130	32	F40100-0400130
40,0	1,40	10	64	F40099-0400140	32	F40100-0400140
40,0	1,50	10	64	F40099-0400150	32	F40100-0400150
40,0	1,60	10	64	F40099-0400160	32	F40100-0400160
40,0	1,70	10	48	F40099-0400170	32	F40100-0400170
40,0	1,80	10	48	F40099-0400180	24	F40100-0400180
40,0	1,90	10	48	F40099-0400190	24	F40100-0400190
40,0	2,00	10	48	F40099-0400200	24	F40100-0400200
40,0	2,50	10	48	F40099-0400250	24	F40100-0400250
40,0	3,00	10	48	F40099-0400300	24	F40100-0400300
40,0	4,00	10	40	F40099-0400400	20	F40100-0400400
40,0	5,00	10	40	F40099-0400500	20	F40100-0400500
40,0	6,00	10	40	F40099-0400600	20	F40100-0400600
50,0	0,20	13	128	F40099-0500020	48	F40100-0500020
50,0	0,25	13	128	F40099-0500025	48	F40100-0500025
50,0	0,30	13	128	F40099-0500030	48	F40100-0500030
50,0	0,35	13	100	F40099-0500035	48	F40100-0500035
50,0	0,40	13	100	F40099-0500040	48	F40100-0500040
50,0	0,50	13	100	F40099-0500050	48	F40100-0500050
50,0	0,60	13	100	F40099-0500060	48	F40100-0500060
50,0	0,70	13	80	F40099-0500070	40	F40100-0500070
50,0	0,80	13	80	F40099-0500080	40	F40100-0500080
50,0	0,90	13	80	F40099-0500090	40	F40100-0500090
50,0	1,00	13	80	F40099-0500100	40	F40100-0500100
50,0	1,10	13	80	F40099-0500110	40	F40100-0500110
50,0	1,20	13	80	F40099-0500120	40	F40100-0500120
50,0	1,30	13	64	F40099-0500130	32	F40100-0500130
50,0	1,40	13	64	F40099-0500140	32	F40100-0500140
50,0	1,50	13	64	F40099-0500150	32	F40100-0500150
50,0	1,60	13	64	F40099-0500160	32	F40100-0500160
50,0	1,70	13	64	F40099-0500170	32	F40100-0500170
50,0	1,80	13	64	F40099-0500180	32	F40100-0500180
50,0	1,90	13	64	F40099-0500190	32	F40100-0500190
50,0	2,00	13	64	F40099-0500200	32	F40100-0500200
50,0	2,50	13	64	F40099-0500250	32	F40100-0500250
50,0	3,00	13	48	F40099-0500300	24	F40100-0500300
50,0	4,00	13	48	F40099-0500400	24	F40100-0500400
50,0	5,00	13	48	F40099-0500500	24	F40100-0500500
50,0	6,00	13	40	F40099-0500600	20	F40100-0500600
63,0	0,20	16	160	F40099-0630020	64	F40100-0630020
63,0	0,25	16	128	F40099-0630025	64	F40100-0630025
63,0	0,30	16	128	F40099-0630030	64	F40100-0630030
63,0	0,35	16	128	F40099-0630035	64	F40100-0630035
63,0	0,40	16	128	F40099-0630040	64	F40100-0630040

VHM **UNI**

d1	l1	d2	Z	DIN 1837 CODE	Z	DIN 1838 CODE
63,0	0,50	16	128	F40099-0630050	64	F40100-0630050
63,0	0,60	16	100	F40099-0630060	48	F40100-0630060
63,0	0,70	16	100	F40099-0630070	48	F40100-0630070
63,0	0,80	16	100	F40099-0630080	48	F40100-0630080
63,0	0,90	16	100	F40099-0630090	48	F40100-0630090
63,0	1,00	16	100	F40099-0630100	48	F40100-0630100
63,0	1,10	16	80	F40099-0630110	40	F40100-0630110
63,0	1,20	16	80	F40099-0630120	40	F40100-0630120
63,0	1,30	16	80	F40099-0630130	40	F40100-0630130
63,0	1,40	16	80	F40099-0630140	40	F40100-0630140
63,0	1,50	16	80	F40099-0630150	40	F40100-0630150
63,0	1,60	16	80	F40099-0630160	40	F40100-0630160
63,0	1,70	16	80	F40099-0630170	40	F40100-0630170
63,0	1,80	16	80	F40099-0630180	40	F40100-0630180
63,0	1,90	16	80	F40099-0630190	40	F40100-0630190
63,0	2,00	16	80	F40099-0630200	40	F40100-0630200
63,0	2,50	16	64	F40099-0630250	32	F40100-0630250
63,0	3,00	16	64	F40099-0630300	32	F40100-0630300
63,0	4,00	16	64	F40099-0630400	32	F40100-0630400
63,0	5,00	16	48	F40099-0630500	24	F40100-0630500
63,0	6,00	16	84	F40099-0630600	24	F40100-0630600
80,0	0,40	22	160	F40099-0800040	64	F40100-0800040
80,0	0,50	22	128	F40099-0800050	64	F40100-0800050
80,0	0,60	22	128	F40099-0800060	64	F40100-0800060
80,0	0,70	22	128	F40099-0800070	64	F40100-0800070
80,0	0,80	22	128	F40099-0800080	64	F40100-0800080
80,0	0,90	22	100	F40099-0800090	48	F40100-0800090
80,0	1,00	22	100	F40099-0800100	48	F40100-0800100
80,0	1,10	22	100	F40099-0800110	48	F40100-0800110
80,0	1,20	22	100	F40099-0800120	48	F40100-0800120
80,0	1,30	22	100	F40099-0800130	48	F40100-0800130
80,0	1,40	22	100	F40099-0800140	48	F40100-0800140
80,0	1,50	22	100	F40099-0800150	48	F40100-0800150
80,0	1,60	22	100	F40099-0800160	48	F40100-0800160
80,0	1,70	22	80	F40099-0800170	40	F40100-0800170
80,0	1,80	22	80	F40099-0800180	40	F40100-0800180
80,0	1,90	22	80	F40099-0800190	40	F40100-0800190
80,0	2,00	22	80	F40099-0800200	40	F40100-0800200
80,0	2,50	22	80	F40099-0800250	40	F40100-0800250
80,0	3,00	22	80	F40099-0800300	40	F40100-0800300
80,0	4,00	22	64	F40099-0800400	32	F40100-0800400
80,0	5,00	22	64	F40099-0800500	32	F40100-0800500
80,0	6,00	22	64	F40099-0800600	32	F40100-0800600
100,0	0,50	22	160	F40099-1000050	80	F40100-1000050
100,0	0,60	22	160	F40099-1000060	80	F40100-1000060

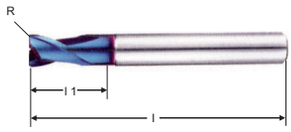
VHM UNI

				DIN 1837		DIN 1838
d1	l1	d2	Z	CODE	Z	CODE
100,0	0,70	22	128	F40099-1000070	64	F40100-1000070
100,0	0,80	22	128	F40099-1000080	64	F40100-1000080
100,0	0,90	22	128	F40099-1000090	64	F40100-1000090
100,0	1,00	22	128	F40099-1000100	64	F40100-1000100
100,0	1,10	22	128	F40099-1000110	64	F40100-1000110
100,0	1,20	22	128	F40099-1000120	64	F40100-1000120
100,0	1,30	22	100	F40099-1000130	48	F40100-1000130
100,0	1,40	22	100	F40099-1000140	48	F40100-1000140
100,0	1,50	22	100	F40099-1000150	48	F40100-1000150
100,0	1,60	22	100	F40099-1000160	48	F40100-1000160
100,0	1,70	22	100	F40099-1000170	48	F40100-1000170
100,0	1,80	22	100	F40099-1000180	48	F40100-1000180
100,0	1,90	22	100	F40099-1000190	48	F40100-1000190
100,0	2,00	22	100	F40099-1000200	48	F40100-1000200
100,0	2,50	22	100	F40099-1000250	48	F40100-1000250
100,0	3,00	22	80	F40099-1000300	40	F40100-1000300
100,0	4,00	22	80	F40099-1000400	40	F40100-1000400
100,0	5,00	22	80	F40099-1000500	40	F40100-1000500
100,0	6,00	22	64	F40099-1000600	32	F40100-1000600
125,0	0,60	22	160	F40099-1250060	80	F40100-1250060
125,0	0,70	22	160	F40099-1250070	80	F40100-1250070
125,0	0,80	22	160	F40099-1250080	80	F40100-1250080
125,0	0,90	22	160	F40099-1250090	80	F40100-1250090
125,0	1,00	22	160	F40099-1250100	80	F40100-1250100
125,0	1,10	22	128	F40099-1250110	64	F40100-1250110
125,0	1,20	22	128	F40099-1250120	64	F40100-1250120
125,0	1,30	22	128	F40099-1250130	64	F40100-1250130
125,0	1,40	22	128	F40099-1250140	64	F40100-1250140
125,0	1,50	22	128	F40099-1250150	64	F40100-1250150
125,0	1,60	22	128	F40099-1250160	64	F40100-1250160
125,0	1,70	22	128	F40099-1250170	64	F40100-1250170
125,0	1,80	22	128	F40099-1250180	64	F40100-1250180
125,0	1,90	22	128	F40099-1250190	64	F40100-1250190
125,0	2,00	22	128	F40099-1250200	64	F40100-1250200
125,0	2,50	22	100	F40099-1250250	48	F40100-1250250
125,0	3,00	22	100	F40099-1250300	48	F40100-1250300
125,0	4,00	22	100	F40099-1250400	48	F40100-1250400
125,0	5,00	22	80	F40099-1250500	40	F40100-1250500
125,0	6,00	22	80	F40099-1250600	40	F40100-1250600
150,0	1,00	32	150	F40099-1500100	80	F40100-1500100
150,0	1,20	32	150	F40099-1500120	80	F40100-1500120
150,0	1,50	32	150	F40099-1500150	80	F40100-1500150
150,0	1,60	32	150	F40099-1500160	64	F40100-1500160
150,0	2,00	32	128	F40099-1500200	64	F40100-1500200
150,0	2,50	32	128	F40099-1500250	64	F40100-1500250

VHM **UNI**

				DIN 1837		DIN 1838
d1	**l1**	**d2**	**Z**	**CODE**	**Z**	**CODE**
150,0	3,00	32	128	F40099-1500300	64	F40100-1500300
150,0	4,00	32	100	F40099-1500400	48	F40100-1500400
160,0	1,00	32	160	F40099-1600100	80	F40100-1600100
160,0	1,20	32	160	F40099-1600120	80	F40100-1600120
160,0	1,50	32	160	F40099-1600150	80	F40100-1600150
160,0	1,60	32	160	F40099-1600160	80	F40100-1600160
160,0	2,00	32	128	F40099-1600200	64	F40100-1600200
160,0	2,50	32	128	F40099-1600250	64	F40100-1600250
160,0	3,00	32	128	F40099-1600300	80	F40100-1600300
160,0	4,00	32	128	F40099-1600400	80	F40100-1600400
200,0	1,50	32	160	F40099-2000150	80	F40100-2000150
200,0	2,00	32	160	F40099-2000200	80	F40100-2000200
200,0	2,50	32	160	F40099-2000250	80	F40100-2000250
200,0	3,00	32	128	F40099-2000300	64	F40100-2000300
200,0	4,00	32	128	F40099-2000400	64	F40100-2000400

VHM Torus Schaftfräser
Solid carbide torus cutter



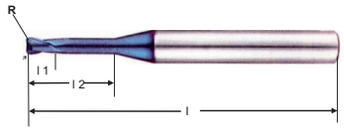
VHM | Z=2 | 30° | DIN 6535 HA

HRC <65 | Hartbearbeitung hard machining | TiALN

D1 h10	d2	l	l1	R	R	R	CODE
0,5	3,0	38	2,0	0,15			F40215-0050020
0,8	3,0	38	3,0	0,15			F40215-0080030
1,0	3,0	38	3,0	0,20			F40215-0100030
1,2	3,0	38	4,0	0,20			F40215-0120040
1,5	3,0	38	5,0	0,20	0,30		F40215-0150050
2,0	3,0	38	7,0	0,20	0,50		F40215-0200070
2,5	3,0	38	8,0	0,20	0,50		F40215-0250080
3,0	3,0	38	10,0	0,20	0,50		F40215-0300010
4,0	4,0	40	10,0	0,30	0,50	1	F40215-0400010
5,0	5,0	50	12,0	0,30	0,50	1	F40215-0500120
6,0	6,0	50	14,0	0,30	0,50	1	F40215-0600140
8,0	8,0	60	18,0		0,50	1	F40215-0800180
10,0	10,0	60	20,0		0,50	1	F40215-1000030
12,0	12,0	65	25,0		0,50	1	F40215-1200025

D1 h10	d2	l	l1	R	R	R	CODE
1,0	3,0	38	3,0	0,20			F40216-0100030
1,2	3,0	38	4,0	0,20			F40216-0120040
1,5	3,0	38	5,0	0,20	0,30		F40216-0150050
2,0	3,0	38	7,0	0,20	0,50		F40216-0200070
2,5	3,0	38	8,0	0,20	0,50		F40216-0250080
3,0	3,0	38	10,0	0,20	0,50		F40216-0300100
4,0	4,0	40	10,0	0,30	0,50	1	F40216-0400100
5,0	5,0	50	12,0	0,30	0,50	1	F40216-0500120
6,0	6,0	50	14,0	0,30	0,50	1	F40216-0600140
8,0	8,0	60	18,0		0,50	1	F40216-0800180
10,0	10,0	60	20,0		0,50	1	F40216-1000200
12,0	12,0	65	25,0		0,50	1	F40216-1200250

VHM Torus Kopierfräser
Solid carbide torus copy cutter



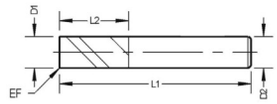
VHM | Z=2 | 30° | DIN 6535 HA | HRC <65 | Hartbearbeitung hard machining | TiALN

D1 h10	d3	d2	l	l1	l2	R	CODE
0,5	0,48	3,0	40	1,0	8	0,15	F40217-0050080
0,6	0,58	3,0	40	1,0	8	0,15	F40217-0060080
0,8	0,78	3,0	40	1,2	8	0,2	F40217-0080080
1,0	0,98	3,0	40	2,0	10	0,2	F40217-0100100
1,2	1,10	3,0	40	2,0	10	0,2	F40217-0120100
1,5	1,40	3,0	50	2,5	12	0,3	F40217-0150120
2,0	1,80	3,0	50	3,0	14	0,3	F40217-0200140
2,5	2,30	3,0	50	4,0	14	0,3	F40217-0250140
3,0	2,80	3,0	50	5,0	16	0,3	F40217-0300160
4,0	3,80	4,0	65	7,0	20	0,3	F40217-0400200
5,0	5,40	6,0	65	8,0	25	1,0	F40217-0500250
6,0	5,80	6,0	65	10,0	25	1,0	F40217-0600250
8,0	7,80	8,0	65	10,0	32	2,0	F40217-0800320
10,0	9,60	10,0	72	15,0	32	2,0	F40217-1000320
12,0	11,60	12,0	83	15,0	38	2,0	F40217-1200380

D1 h10	d3	d2	l	l1	l2	R	CODE
0,5	0,48	3,0	40	1	8	0,15	F40218-0050080
0,6	0,58	3,0	40	1	8	0,15	F40218-0060080
0,8	0,78	3,0	40	1,2	8	0,2	F40218-0080080
1,0	0,98	3,0	40	2	10	0,2	F40218-0100100
1,2	1,10	3,0	40	2	10	0,2	F40218-0120100
1,5	1,40	3,0	50	2,5	12	0,3	F40218-0150120
2,0	1,80	3,0	50	3	14	0,3	F40218-0200140
2,5	2,30	3,0	50	4	14	0,3	F40218-0250140
3,0	2,80	3,0	50	5	16	0,3	F40218-0300160
4,0	3,80	4,0	65	7	20	0,3	F40218-0400200
5,0	5,40	6,0	65	8	25	1,0	F40218-0500250
6,0	5,80	6,0	65	10	25	1,0	F40218-0600250
8,00	7,80	8,0	65	10	32	2,0	F40218-0800320
10,00	9,60	10,0	72	15	32	2,0	F40218-1000320
12,00	11,60	12,0	83	15	38	2,0	F40218-1200380

VHM Schaftfräser – kurz, lang, extralang, bis 50 HRC

Solid carbide end mill – short, long, extra long, up to 50 HRC



Z=4 | 52° R | DIN 6535 HA | 45°

nACo | HRC bis 50 | Hartbearbeitung hard machining

D1 h9	L1	L2	D2 h6	EF	CODE
4,00	54	8	6,0	0,05 x 45°	F40028-0408
5,00	54	9	6,0	0,05 x 45°	F40028-0509
6,00	54	10	6,0	0,05 x 45°	F40028-0610
8,00	58	12	8,0	0,1 x 45°	F40028-0812
10,00	66	14	10,0	0,1 x 45°	F40028-1014
12,00	73	16	12,0	0,15 x 45°	F40028-1216
14,00	75	18	14,0	0,15 x 45°	F40028-1418
16,00	82	22	16,0	0,2 x 45°	F40028-1622
18,00	84	24	18,0	0,2 x 45°	F40028-1824
20,00	92	26	20,0	0,2 x 45°	F40028-2026

Z=4 | 52° R | DIN 6535 HA | 45°

nACo | HRC bis 50 | Hartbearbeitung hard machining

D1 h9	L1	L2	D2 h6	EF	CODE
4,00	57	11	6,0	0,05 x 45 °	F40029-0411
5,00	57	13	6,0	0,05 x 45°	F40029-0513
6,00	57	13	6,0	0,05 x 45°	F40029-0613
8,00	63	19	8,0	0,1 x 45°	F40029-0819
10,00	72	22	10,0	0,1 x 45 °	F40029-1022
12,00	83	26	12,0	0,15 x 45°	F40029-1226
14,00	83	26	14,0	0,2 x 45°	F40029-1426
16,00	92	32	16,0	0,2 x 45°	F40029-1632
18,00	92	32	18,0	0,2 x 45°	F40029-1832
20,00	104	38	20,0	0,2 x 45°	F40029-2038

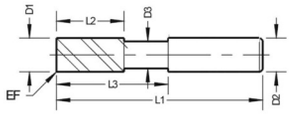
Z=4 | 52° R | DIN 6535 HA | 45°

nACo | HRC bis 50 | Hartbearbeitung hard machining

D1 h9	L1	L2	D2 h6	EF	CODE
4,00	62	16	6,0	0,05 x 45°	F40136-0416
5,00	62	17	6,0	0,05 x 45°	F40136-0517
6,00	62	18	6,0	0,05 x 45°	F40136-0618
8,00	68	24	8,0	0,1 x 45°	F40136-0824
10,00	80	30	10,0	0,1 x 45°	F40136-1030
12,00	93	36	12,0	0,15 x 45°	F40136-1236
14,00	99	42	14,0	0,15 x 45°	F40136-1442
16,00	108	48	16,0	0,2 x 45°	F40136-1648
18,00	114	54	18,0	0,2 x 45°	F40136-1854
20,00	126	60	20,0	0,2 x 45°	F40136-2060

VHM Hochleistungs-Schaftfräser – lang, extra lang von 48 bis 54 HRC

Solid carbide high performance end mill – long, extra long from 48 to 54 HRC



Z=4 | 55° R | DIN 6535 HA | 45°

nACo | HRC 48-54 | Hartbearbeitung hard machining

D1 h9	L1	L2	D2 h6	D3 x L3	EF	CODE
6,00	58	7	6,0	5,8 x 20	0,05 x 45°	F40137-0607
8,00	63	9	8,0	7,8 x 25	0,1 x 45°	F40137-0863
10,00	72	11	10,0	9,7 x 30	0,1 x 45°	F40137-1011
12,00	83	13	12,0	11,7 x 35	0,15 x 45°	F40137-1213
16,00	93	17	16,0	15,7 x 45	0,2 x 45°	F40137-1617
20,00	105	21	20,0	19.7 x 55	0,2 x 45°	F40137-2021

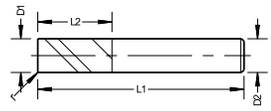
Z=4 | 55° R | DIN 6535 HA | 45°

nACo | HRC 48-54 | Hartbearbeitung hard machining

D1 h9	L1	L2	D2 h6	D3 x L3	EF	CODE
6,00	70	7	6,0	5,8 x 30	0,05 x 45°	F40138-0607
8,00	80	9	8,0	7,8 x 40	0,1 x 45°	F40138-0809
10,00	84	11	10,0	9,7 x 45	0,1 x 45°	F40138-1011
12,00	97	13	12,0	11,7 x 50	0,15 x 45°	F40138-1213
16,00	115	17	16,0	15,7 x 65	0,2 x 45°	F40138-1617
20,00	130	21	20,0	19,7 x 80	0,2 x 45°	F40138-2021

VHM Schaftfräser – lang, extra lang bis 68 HRC

Solid carbide end mill – long, extra long up to 68 HRC



Z=6/8 | 50° R | DIN 6535 HA

nACo | HRC bis 68 | Hartbearbeitung hard machining

D1 h9 / r	L1	L2	D2 h6	Z	CODE
5,00	57	13	6	6	F40033-0513
6,00	57	13	6	6	F40033-0613
6,00 /1,0	57	13	6	6	F40033-0613/1,0
8,00	63	16	8	6	F40033-0816
8,00 / 1,0	63	16	8	6	F40033-0816/1,0
10,00	72	19	10	6	F40033-1019
10,00 / 1,5	72	19	10	6	F40033-1019/1,5
12,00	83	22	12	6	F40033-1222
12,00 / 1,5	83	22	12	6	F40033-1222/1,5
14,00	83	22	14	6	F40033-1422
16,00	92	26	16	8	F40033-1626
16,00 / 2,0	92	26	16	8	F40033-1626/2,0
18,00	92	26	18	8	F40033-1826
20,00	104	32	20	8	F40033-2032
20,00 / 2,0	104	32	20	8	F40033-2032/2,0
25,00	121	45	25	8	F40033-2545
25,00 / 2,5	121	45	25	8	F40033-2545/2,5

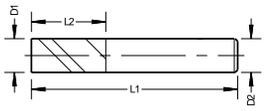
Z=6/8 | 50° R | DIN 6535 HA

nACo | HRC bis 68 | Hartbearbeitung hard machining

D1 h9 / r	L1	L2	D2 h6	Z	CODE
6,00	62	18	6	6	F40034-0618
6,00 / 1,0	62	18	6	6	F40034-06/1,0
8,00	68	24	8	6	F40034-0824
8,00 / 1,0	68	24	8	6	F40034-08/1,0
10,00	80	30	10	6	F40034-1030
10,00/1,5	80	30	10	6	F40034-10/1,5
12,00	93	36	12	6	F40034-1236
12,00 / 1,5	93	36	12	6	F40034-12/1,5
14,00	99	42	14	6	F40034-1442
16,00	108	48	16	8	F40034-1648
16,00 / 2,0	108	48	16	8	F40034-16/2,0
18,00	114	54	18	8	F40034-1854
20,00	126	60	20	8	F40034-2060
20,00 / 2,0	126	60	20	8	F40034-20/2,0
25,00	180	92	25	8	F40034-2592
25,00 / 2,5	180	92	25	8	F40034-2592/2,0

VHM Schruppfräser bis 54 HRC

Solid carbide roughing end mill up to 54 HRC



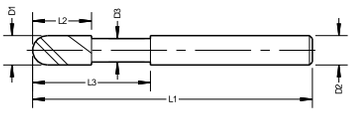
Z=6 | 25° R | DIN 6535 HA | TYP-HR

nACo | HRC bis 54 | Hartbearbeitung hard machining

D1	L1	L2	D2	CODE
6,00	57	16	6,0	F40041-0616
8,00	63	16	8,0	F40041-0816
10,00	72	22	10,0	F40041-1022
12,00	83	26	12,0	F40041-1226
16,00	92	32	16,0	F40041-1632
20,00	104	38	20,0	F40041-2038

VHM Radiusfräser bis 68 HRC

Solide carbide radius milling cutter up to 68 HRC



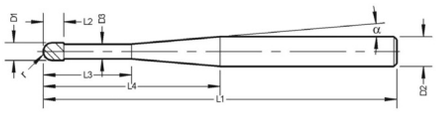
Z=2 | 20° R | DIN 6535 HA | R

nACo | HRC bis 68 | Hartbearbeitung hard machining

D1 h9	L1	L2	D2 h6	D3 x L3	CODE
2,0	50	2.5	3,0	1,9 x 12,0	F40139-02025
2,0	60	4	3,0	1,9 x 20,0	F40139-0204
3,0	50	3	3,0	2,9 x 15,0	F40139-0303
3,0	60	6	3,0	2,9 x 20,0	F40139-0306
4,0	50	4	4,0	3,9 x 15,0	F40139-0404
4,0	60	8	4,0	3,9 x 20,0	F40139-0408
5,0	55	5	5,0	4,8 x 18,0	F40139-0505
5,0	70	10	5,0	4,8 x 23,0	F40139-0510
6,0	62	6	6,0	5,8 x 20,0	F40139-0606
6,0	80	12	6,0	5,8 x 25,0	F40139-0612
8,0	75	8	8,0	7,8 x 27,0	F40139-0808
8,0	100	14	8,0	7,8 x 35,0	F40139-0814
10,0	80	10	10,0	9,8 x 30,0	F40139-1010
10,0	110	18	10,0	9,8 x 40,0	F40139-1018
12,0	93	12	12,0	11,7 x 35,0	F40139-1212
12,0	110	22	12,0	11,7 x 45,0	F40139-1222
16,0	93	16	16,0	15,7 x 38,0	F40139-1616
16,0	125	28	16,0	15,7 x 50,0	F40139-1628

VHM Radiusfräser – kurz, lang, extra lang von 48 bis 54 HRC

Solid carbide radius milling cutter – short, long, extra long from 48 to 54 HRC



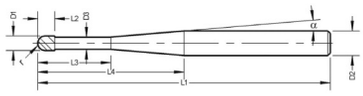
Z=2 | 30° R | DIN 6535 HA | R

HRC 48-54 | Hartbearbeitung hard machining | nACo | nACRo

D1 h9	r	L1	L2	D2 h6	D3 x L3 / a	CODE	CODE
2,0	1,0	45	3,0	4,0	1,9 x 6 / 15°	F40140-0203006	F40141-0203006
2,0	1,0	45	3,0	4,0	1,9 x 10 / 15°	F40140-0203010	F40141-0203010
2,0	1,0	55	3,0	4,0	1,9 x 15 / 15°	F40140-0203015	F40141-0203015
2,0	1,0	55	3,0	4,0	1,9 x 20 / 15°	F40140-0203020	F40141-0203020
3,0	1,5	45	4,5	6,0	2,9 x 6 / 20°	F40140-0304506	F40141-0304506
3,0	1,5	54	4,5	6,0	2,9 x 12 / 20°	F40140-0304512	F40141-0304512
3,0	1,5	58	4,5	6,0	2,9 x 18 / 20°	F40140-0304518	F40141-0304518
3,0	1,5	67	4,5	6,0	2,9 x 24 / 20°	F40140-0304524	F40141-0304524
4,0	2,0	58	6,0	6,0	3,9 x 8 / 15°	F40140-0400608	F40141-0400608
4,0	2,0	58	6,0	6,0	3,9 x 16 / 15°	F40140-0400616	F40141-0400616
4,0	2,0	67	6,0	6,0	3,9 x 24 / 15°	F40140-0400624	F40141-0400624
4,0	2,0	72	6,0	6,0	3,9 x 36 / 15°	F40140-0400636	F40141-0400636
6,0	3,0	60	8,0	6,0	5,9 x 16	F40140-0600816	F40141-0600816
6,0	3,0	70	8,0	6,0	5,9 x 25	F40140-0600825	F40141-0600825
6,0	3,0	70	8,0	6,0	5,9 x 35	F40140-0600835	F40141-0600835
6,0	3,0	80	8,0	6,0	5,9 x 45	F40140-0600845	F40141-0600845
8,0	4,0	70	10,0	8,0	7,8 x 25	F40140-0801025	F40141-0801025
8,0	4,0	80	10,0	8,0	7,8 x 40	F40140-0801040	F40141-0801040
8,0	4,0	100	10,0	8,0	7,8 x 60	F40140-0801060	F40141-0801060
10,0	5,0	75	12,0	10,0	9,8 x 30	F40140-1001230	F40141-1001230
10,0	5,0	100	12,0	10,0	9,8 x 60	F40140-1001260	F40141-1001260
10,0	5,0	120	12,0	10,0	9,8 x 80	F40140-1001280	F40141-1001280
12,0	6,0	90	14,0	12,0	11,8 x 45	F40140-1201445	F40141-1201445
12,0	6,0	135	14,0	12,0	11,8 x 90	F40140-1201490	F40141-1201490

VHM Radiusfräser – kurz, lang, extra lang von 54 bis 60 HRC

Solid carbide radius milling cutter – short, long, extra long from 54 to 60 HRC



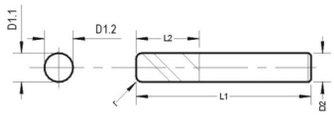
Z=2 | 25° R | DIN 6535 HA | R

HRC 54-60 | Hartbearbeitung hard machining | nACo | nACRo

D1 h9	r	L1	L2	D2 h6	D3 x L3 / a	CODE	CODE
2,0	1,0	45	3,0	4,0	1,9 x 6 / 15°	F40142-0203006	F40143-0203006
2,0	1,0	45	3,0	4,0	1,9 x 10 / 15°	F40142-0203010	F40143-0203010
2,0	1,0	55	3,0	4,0	1,9 x 15 / 15°	F40142-0203015	F40143-0203015
2,0	1,0	55	3,0	4,0	1,9 x 20 / 15°	F40142-0203020	F40143-0203020
3,0	1,5	45	4,5	6,0	2,9 x 6 / 20°	F40142-0304506	F40143-0304506
3,0	1,5	54	4,5	6,0	2,9 x 12 / 20°	F40142-0304512	F40143-0304512
3,0	1,5	58	4,5	6,0	2,9 x 18 / 20°	F40142-0304518	F40143-0304518
3,0	1,5	67	4,5	6,0	2,9 x 24 / 20°	F40142-0304524	F40143-0304524
4,0	2,0	58	6,0	6,0	3,9 x 8 / 15°	F40142-0400608	F40143-0400608
4,0	2,0	58	6,0	6,0	3,9 x 16 / 15°	F40142-0400616	F40143-0400616
4,0	2,0	67	6,0	6,0	3,9 x 24 / 15°	F40142-0400624	F40143-0400624
4,0	2,0	72	6,0	6,0	3,9 x 36 / 15°	F40142-0400636	F40143-0400636
6,0	3,0	60	8,0	6,0	5,9 x 16	F40142-0600816	F40143-0600816
6,0	3,0	70	8,0	6,0	5,9 x 25	F40142-0600825	F40143-0600825
6,0	3,0	70	8,0	6,0	5,9 x 35	F40142-0600835	F40143-0600835
6,0	3,0	80	8,0	6,0	5,9 x 45	F40142-0600845	F40143-0600845
8,0	4,0	70	10,0	8,0	7,8 x 25	F40142-0801025	F40143-0801025
8,0	4,0	80	10,0	8,0	7,8 x 40	F40142-0801040	F40143-0801040
8,0	4,0	100	10,0	8,0	7,8 x 60	F40142-0801060	F40143-0801060
10,0	5,0	75	12,0	10,0	9,8 x 30	F40142-1001230	F40143-1001230
10,0	5,0	100	12,0	10,0	9,8 x 60	F40142-1001260	F40143-1001260
10,0	5,0	120	12,0	10,0	9,8 x 80	F40142-1001280	F40143-1001280
12,0	6,0	90	14,0	12,0	11,8 x 45	F40142-1201445	F40143-1201445
12,0	6,0	135	14,0	12,0	11,8 x 90	F40142-1201490	F40143-1201490

VHM Torus Hochleistungs-Schaftfräser bis 60 HRC – lang

Solid carbide torus high performance end mill up to 60 HRC – long



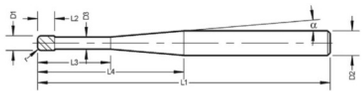
Z=4 | 45° R | DIN 6535 HA | R

nACo | HRC bis 60 | Hartbearbeitung hard machining

D1.1 / D1.2 h9	r	L1	L2	D2 h6	CODE
6,0 / 5,8	1,5	80	12,0	6,0	F40144-06/5,8
8,0 / 7,8	2,0	100	16,0	8,0	F40144-08/7,8
10,0 / 9,8	2,0	100	20,0	10,0	F40144-10/9,8
12,0 / 11,8	2,0	120	25,0	12,0	F40144-12/11,8

VHM Torusfräser – kurz, lang, extra lang, von 48 bis 54 HRC

Solid carbide torus cutter – short, long, extra long, from 48 to 54 HRC



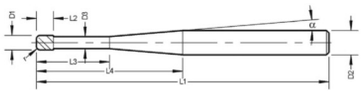
Z=4 | 30° R | DIN 6535 HA

HRC 48-54 | Hartbearbeitung hard machining

D1 h9	r	L1	L2	D2 h6	D3 x L3 / a	nACo CODE	nACRo CODE
2,00	0,15	45	3,0	4,0	1,9 x 6 / 15°	F40145-02003006	F40146-02003006
2,00	0,15	45	3,0	4,0	1,9 x 10 / 15°	F40145-02003010	F40146-02003010
2,00	0,10	55	3,0	4,0	1,9 x 15 / 15°	F40145-02003015	F40146-02003015
2,00	0,10	55	3,0	4,0	1,9 x 20 / 15°	F40145-02003020	F40146-02003020
3,00	0,20	45	4,5	6,0	2,9 x 6 / 20°	F40145-03004506	F40146-03004506
3,00	0,20	54	4,5	6,0	2,9 x 12 / 20°	F40145-03005412	F40146-03005412
3,00	0,15	58	4,5	6,0	2,9 x 18 / 20°	F40145-03005818	F40146-03005818
3,00	0,15	67	4,5	6,0	2,9 x 24 / 20°	F40145-03006724	F40146-03006724
4,00	0,30	58	6,0	6,0	3,9 x 8 / 15°	F40145-04005808	F40146-04005808
4,00	0,30	58	6,0	6,0	3,9 x 16 / 15°	F40145-04005816	F40146-04005816
4,00	0,30	67	6,0	6,0	3,9 x 24 / 15°	F40145-04006724	F40146-04006724
4,00	0,20	72	6,0	6,0	3,9 x 36 / 15°	F40145-04007236	F40146-04007236
6,00	0,40	60	8,0	6,0	5,9 x 16	F40145-06006016	F40146-06006016
6,00	0,40	70	8,0	6,0	5,9 x 25	F40145-06007025	F40146-06007025
6,00	0,40	70	8,0	6,0	5,9 x 35	F40145-06007035	F40146-06007035
6,00	0,25	80	8,0	6,0	5,9 x 45	F40145-06008045	F40146-06008045
8,00	0,70	70	10,0	8,0	7,8 x 25	F40145-08007025	F40146-08007025
8,00	0,70	80	10,0	8,0	7,8 x 40	F40145-08008040	F40146-08008040
8,00	0,50	100	10,0	8,0	7,8 x 60	F40145-08010060	F40146-08010060
10,00	0,80	75	12,0	10,0	9,8 x 30	F40145-10007530	F40146-10007530
10,00	0,80	100	12,0	10,0	9,8 x 60	F40145-10010060	F40146-10010060
10,00	0,50	120	12,0	10,0	9,8 x 80	F40145-10012080	F40146-10012080
12,00	1,00	90	14,0	12,0	11,8 x 45	F40145-12009045	F40146-12009045
12,00	0,50	135	14,0	12,0	11,8 x 90	F40145-12013590	F40146-12013590

VHM Torusfräser – kurz, lang, extra lang, von 54 bis 60 HRC

Solid carbide torus cutter – short, long, extra long, from 54 to 60 HRC



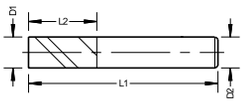
Z=4-8 | 25° R | DIN 6535 HA

HRC 54-60 | Hartbearbeitung hard machining

nACo | nACRo

D1 h9	z	r	L1	L2	D2 h6	D3 x L3 / a	CODE	CODE
2,00	4,0	0,15	45	3,0	4,0	1,9 x 6 / 15°	F40147-02003006	F40148-02003006
2,00	4,0	0,15	45	3,0	4,0	1,9 x 10 / 15°	F40147-02003010	F40148-02003010
2,00	4,0	0,10	55	3,0	4,0	1,9 x 15 / 15°	F40147-02003015	F40148-02003015
2,00	4,0	0,10	55	3,0	4,0	1,9 x 20 / 15°	F40147-02003020	F40148-02003020
3,00	4,0	0,20	45	4,5	6,0	2,9 x 6 / 20°	F40147-03004506	F40148-03004506
3,00	4,0	0,20	54	4,5	6,0	2,9 x 12 / 20°	F40147-03004512	F40148-03004512
3,00	4,0	0,15	58	4,5	6,0	2,9 x 18 / 20°	F40147-03004518	F40148-03004518
3,00	4,0	0,15	67	4,5	6,0	2,9 x 24 / 20°	F40147-03004524	F40148-03004524
4,00	4,0	0,30	58	6,0	6,0	3,9 x 8 / 15°	F40147-04006008	F40148-04006008
4,00	4,0	0,30	58	6,0	6,0	3,9 x 16 / 15°	F40147-04006016	F40148-04006016
4,00	4,0	0,30	67	6,0	6,0	3,9 x 24 / 15°	F40147-04006024	F40148-04006024
4,00	4,0	0,20	72	6,0	6,0	3,9 x 36 / 15°	F40147-04006036	F40148-04006036
6,00	4,0	0,40	60	8,0	6,0	5,9 x 16	F40147-06008016	F40148-06008016
6,00	4,0	0,40	70	8,0	6,0	5,9 x 25	F40147-06008025	F40148-06008025
6,00	6,0	0,40	70	8,0	6,0	5,9 x 25	F40147-06008025-1	F40148-06008025-1
6,00	4,0	0,40	70	8,0	6,0	5,9 x 35	F40147-06008035	F40148-06008035
6,00	4,0	0,25	80	8,0	6,0	5,9 x 45	F40147-06008045	F40148-06008045
6,00	6,0	0,25	80	10,0	6,0	5,9 x 45	F40147-06010045	F40148-06010045
8,00	4,0	0,70	70	10,0	8,0	7,8 x 25	F40147-08010025	F40148-08010025
8,00	4,0	0,70	80	10,0	8,0	7,8 x 40	F40147-08010040	F40148-08010040
8,00	6,0	0,70	80	10,0	8,0	7,8 x 40	F40147-08010040-1	F40148-08010040-1
8,00	4,0	0,50	100	10,0	8,0	7,8 x 60	F40147-08010060	F40148-08010060
8,00	6,0	0,50	100	12,0	8,0	7,8 x 60	F40147-08012060	F40148-08012060
10,00	4,0	0,80	75	12,0	10,0	9,8 x 30	F40147-10012030	F40148-10012030
10,00	4,0	0,80	100	12,0	10,0	9,8 x 60	F40147-10012060	F40148-10012060
10,00	8,0	0,80	100	12,0	10,0	9,8 x 60	F40147-10012060-1	F40148-10012060-1
10,00	4,0	0,50	120	12,0	10,0	9,8 x 80	F40147-10012080	F40148-10012080
10,00	8,0	0,50	120	12,0	10,0	9,8 x 80	F40147-10012080-1	F40148-10012080-1
12,00	4,0	1,00	90	14,0	12,0	11,8 x 45	F40147-12090045	F40148-12090045
12,00	8,0	1,00	90	14,0	12,0	11,8 x 45	F40147-12090045-1	F40148-12090045-1
12,00	4,0	0,50	135	14,0	12,0	11,8 x 90	F40147-12135090	F40148-12135090
12,00	8,0	0,50	135	14,0	12,0	11,8 x 90	F40147-12135090-1	F40148-12135090-1

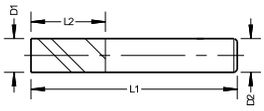
VHM Schaftfräser – lang
Solid carbide end mill – long



Z=2 | 45° R | DIN 6535 HA | ALU | BLANK

D1	L1	L2	D2	CODE
3,00	57	8	6,0	F40009-0308
4,00	57	11	6,0	F40009-0411
5,00	57	13	6,0	F40009-0513
6,00	57	13	6,0	F40009-0613
8,00	63	19	8,0	F40009-0819
10,00	72	22	10,0	F40009-1022
12,00	83	22	12,0	F40009-1222
14,00	83	26	14,0	F40009-1426
16,00	92	32	16,0	F40009-1632
18,00	92	32	18,0	F40009-1832
20,00	104	38	20,0	F40009-2038

VHM Schaftfräser – kurz, lang
Solid carbide end mill – short, long



Z=2 | 45° R | DIN 6535 HA

ALU | ZrN

D1 e8	L1	L2	D2 h6	CODE
4,00	54	8	6,0	F40010-0408
5,00	54	9	6,0	F40010-0509
6,00	54	10	6,0	F40010-0610
8,00	58	12	8,0	F40010-0812
10,00	66	14	10,0	F40010-1014
12,00	73	16	12,0	F40010-1216
14,00	75	18	14,0	F40010-1418
16,00	82	22	16,0	F40010-1622
18,00	84	24	18,0	F40010-1824
20,00	92	26	20,0	F40010-2026

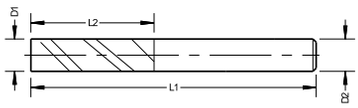
Z=2 | 45° R | DIN 6535 HA

ALU | ZrN

D1 e8	L1	L2	D2 h6	CODE
4,00	57	11	6,0	F40011-0411
5,00	57	13	6,0	F40011-0513
6,00	57	13	6,0	F40011-0613
8,00	63	19	8,0	F40011-0819
10,00	72	22	10,0	F40011-1022
12,00	83	22	12,0	F40011-1222
14,00	83	26	14,0	F40011-1426
16,00	92	32	16,0	F40011-1632
18,00	92	32	18,0	F40011-1832
20,00	104	38	20,0	F40011-2038

VHM Schaftfräser – lang, extra lang

Solid carbide end mill – long, extra long

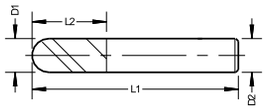


Z=3 | 45° R | DIN 6535 HA | ALU | BLANK

D1	L1	L2	D2	CODE
3,00	58	8	6,0	F40066-0308
4,00	58	11	6,0	F40066-0411
4,00	63	19	6,0	F40066-0419
5,00	58	13	6,0	F40066-0513
5,00	68	24	6,0	F40066-0524
6,00	58	13	6,0	F40066-0613
6,00	68	24	6,0	F40066-0624
8,00	64	19	8,0	F40066-0819
8,00	88	38	8,0	F40066-0838
10,00	72	22	10,0	F40066-1022
10,00	95	45	10,0	F40066-1045
12,00	83	26	12,0	F40066-1226
12,00	110	53	12,0	F40066-1253
14,00	83	26	14,0	F40066-1426
14,00	110	53	14,0	F40066-1453
16,00	92	32	16,0	F40066-1632
16,00	123	63	16,0	F40066-1663
18,00	92	32	18,0	F40066-1832
18,00	123	63	18,0	F40066-1863
20,00	105	38	20,0	F40066-2038
20,00	141	75	20,0	F40066-2075

VHM Radiusfräser – kurz, extra lang

Solid carbide radius milling cutter – short, extra long



Z=2 | 45° R | DIN 6535 HA | R

ALU BLANK

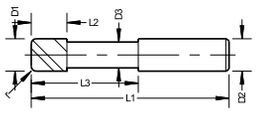
D1 h9	L1	L2	D2 h6	CODE
3,00	50	6	3,0 HA	F40149-0306
4,00	54	7	4,0 HA	F40149-0407
5,00	54	8	5,0 HA	F40149-0508
6,00	54	10	6,0 HB	F40149-0610
8,00	59	12	8,0 HB	F40149-0812
10,00	67	13	10,0 HB	F40149-1013
12,00	73	16	12,0 HB	F40149-1216
14,00	75	16	14,0 HB	F40149-1416
16,00	83	20	16,0 HB	F40149-1620
20,00	93	25	20,0 HB	F40149-2025

Z=2 | 45° R | DIN 6535 HA

ALU BLANK

D1 h9	L1	L2	D2 h6	CODE
3,00	75	10	3,0 HA	F40150-0310
4,00	75	13	4,0 HA	F40150-0413
5,00	75	15	5,0 HA	F40150-0515
6,00	100	16	6,0 HB	F40150-0616
8,00	100	22	8,0 HB	F40150-0822
10,00	100	25	10,0 HB	F40150-1025
12,00	100	26	12,0 HB	F40150-1226
14,00	100	26	14,0 HB	F40150-1426
16,00	150	30	16,0 HB	F40150-1630
20,00	150	40	20,0 HB	F40150-2040

VHM Schaftfräser – lang
Solid carbide end mill – long

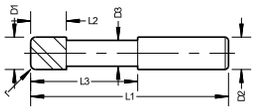


Z=3 | 45° R | DIN 6535 HA

ALU | **BLANK** | **ZrN**

D1 h9 / r	L1	L2	D2 h6	D3 x L3	CODE	CODE
6,00	57	16	6,0	5,8 x 21	F40151-0616	F40152-0616
6,0/5,0	57	16	6,0	5,8 x 21	F40151-0616/5,0	F40152-0616/5,0
8,00	63	19	8,0	7,8 x 27	F40151-0819	F40152-0819
8,0/0,5	63	19	8,0	7,8 x 27	F40151-0819/0,5	F40152-0819/0,5
10,00	72	22	10,0	9,8 x 32	F40151-1022	F40152-1022
10,0/1,0	72	22	10,0	9,8 x 32	F40151-1022/1,0	F40152-1022/1,0
12,00	83	26	12,0	11,8 x 38	F40151-1226	F40152-1226
12,0/1,0	83	26	12,0	11,8 x 38	F40151-1226/1,0	F40152-1226/1,0
16,00	92	32	16,0	15,7 x 44	F40151-1632	F40152-1632
16,0/1,5	92	32	16,0	15,7 x 44	F40151-1632/1,5	F40152-1632/1,5
20,00	104	38	20,0	19,7 x 54	F40151-2038	F40152-2038
20,0/1,5	104	38	20,0	19,7 x 54	F40151-2038/1,5	F40152-2038/1,5

VHM Torusfräser – lang, extra lang
Solid carbide torus cutter – long, extra long



Z=2 | 25° R | DIN 6535 HA

ALU | BLANK

D1 h9 / r	r	L1	L2	D2 h6	D 3 x L3	CODE
3,00	0,3	50	4	3	2,7 x 14	F40153-0,3/ 03004014
3,00	1,0	50	4	3	2,7 x 14	F40153-1,0/ 03004014
4,00	0,4	50	5	4	3,7 x 16	F40153-0,4/ 04005016
4,00	1,0	50	5	4	3,7 x 16	F40153-1,0/ 04005016
5,00	0,5	54	6	5	4,6 x 18	F40153-0,5/ 05005418
5,00	1,0	54	6	5	4,6 x 18	F40153-1,0/ 05005418
6,00	0,5	58	7	6	5,5 x 21	F40153-0,5/ 06005821
6,00	1,0	58	7	6	5,5 x 21	F40153-1,0/ 06005821
8,00	0,5	63	9	8	7,4 x 27	F40153-0,5/ 08006327
8,00	1,0	63	9	8	7,4 x 27	F40153-1,0/ 08006327
10,00	0,5	72	11	10	9,2 x 32	F40153-0,5/10007232
10,00	1,0	72	11	10	9,2 x 32	F40153-1,0/10007232
12,00	0,5	83	12	12	11,0 x 38	F40153-0,5/12008338
12,00	1,5	83	12	12	11,0 x 38	F40153-1,5/12008338
16,00	2,0	93	16	16	15,0 x 44	F40153-2,0/16009344

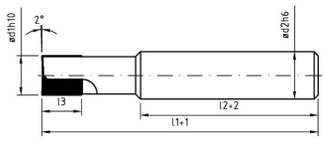
Z=2 | 25° R | DIN 6535 HA

ALU | BLANK

D1 h9 / r	r	L1	L2	D2 h6	D 3 x L3	CODE
3,00	0,3	75	4	3	2,7 x 32	F40154-0,3/ 03007532
3,00	1,0	75	4	3	2,7 x 32	F40154-1,0/ 03007532
4,00	0,4	75	5	4	3,7 x 36	F40154-0,4/ 04007536
4,00	1,0	75	5	4	3,7 x 36	F40154-1,0/04007536
5,00	0,5	75	6	5	4,6 x 40	F40154-0,5/05007540
5,00	1,0	75	6	5	4,6 x 40	F40154-1,0/05007540
6,00	0,5	80	7	6	5,5 x 44	F40154-0,5/06008044
6,00	1,0	80	7	6	5,5 x 44	F40154-1,0/06008044
8,00	0,5	100	9	8	7,4 x 54	F40154-0,5/08010054
8,00	1,0	100	9	8	7,4 x 54	F40154-1,0/08010054
10,00	0,5	100	11	10	9,2 x 60	F40154-0,5/10010060
10,00	1,0	100	11	10	9,2 x 60	F40154-1,0/10010060
12,00	0,5	120	12	12	11,0 x 75	F40154-0,5/12012075
12,00	1,5	120	12	12	11,0 x 75	F40154-1,5/12012075
16,00	2,0	150	16	16	15,0 x 92	F40154-2,0/16015092

PKD Schaftfräser mit Innenkühlung

PCD end mill with internal cooling



PKD PCD | 0,05x45° | DIN 6535 HA

ALU <6% Si | ALU >6% Si | Kupfer cooper | Messing brass | Graphit graphite | GFK CFK

d1	d2	l1	l2	l3	CODE
6	8	60	36	10	F40198–0606036
6	8	80	36	20	F40198–0608036
8	10	60	40	10	F40198–0806040
8	10	80	40	20	F40198–0808040
10	12	70	45	10	F40198–1007045
10	12	90	45	20	F40198–1009045
12	14	70	45	10	F40198–1207045
12	14	90	45	20	F40198–1209045
14	16	80	48	10	F40198–1408048
14	16	100	48	20	F40198–1410048
16	16	90	48	10	F40198–1609048
16	16	110	48	20	F40198–1611048
18	20	100	50	10	F40198–1810050
18	20	120	50	20	F40198–1812050
20	20	140	50	10	F40198–2014050
20	20	150	50	20	F40198–2015050

PKD PCD | DIN 6535 HA | R

ALU <6% Si | ALU >6% Si | Kupfer cooper | Messing brass | Graphit graphite | GFK CFK

d1	d2	l1	l2	l3	CODE
4	6	75	40	2.5	F40199–0407540
5	8	75	40	3	F40199–0507540
6	8	100	60	6	F40199–0610060
8	10	100	60	7	F40199–0810060
12	14	100	60	9	F40199–1210060
16	16	150	100	11	F40199–1615100
20	20	150	90	13	F40199–2015090

Einsatzrichtwerte – VHM Fräser
Estimated values – Solid carbide end mills

Werkstoff	Legierung	Schnitt-geschw. Vc (m/min)	fz						Spantiefe
			Ø 4 – 6	Ø 4 – 8	Ø 8 – 12	Ø 12 – 16	Ø 16 – 20	Ø 20 – 25	in mm
Aluminium	Si < 4%	200 – 400	0,03 – 0,08	0,04 – 0,10	0,06 – 0,15	0,08 – 0,20	0,01 – 0,25	0,12 – 0,30	0,1 - 5,0
	Si < 8%	150 – 3500	0,03 – 0,08	0,04 – 0,10	0,06 – 0,15	0,08 – 0,20	0,01 – 0,25	0,12 – 0,30	0,1 - 5,0
	Si < 12%	130 – 3000	0,03 – 0,08	0,04 – 0,10	0,06 – 0,15	0,08 – 0,20	0,01 – 0,25	0,12 – 0,30	0,1 - 5,0
	Si > 12%	100 – 2500	0,02 – 0,06	0,03 – 0,08	0,04 – 0,10	0,05 – 0,12	0,06 – 0,14	0,08 – 0,16	0,1 - 3,0
Magnesium		200 – 4000	0,03 – 0,08	0,04 – 0,10	0,05 – 0,12	0,08 – 0,18	0,10 – 0,20	0,15 – 0,25	0,1 - 4,0
NE-Metalle	Messing	200 – 2000	0,03 – 0,10	0,04 – 0,12	0,05 – 0,15	0,08 – 0,20	0,10 – 0,25	0,15 – 0,30	0,1 - 4,0
	Kupfer	200 – 2000	0,03 – 0,10	0,04 – 0,12	0,05 – 0,15	0,08 – 0,20	0,10 – 0,25	0,15 – 0,20	0,1 - 4,0
	Bronze	200 – 2000	0,03 – 0,10	0,04 – 0,12	0,05 – 0,15	0,08 – 0,20	0,10 – 0,25	0,15 – 0,30	0,1 - 4,0
Graphite		60 – 1500	0,08 – 0,10	0,10 – 0,12	0,12 – 0,15	0,13 – 0,16	0,14 – 0,18	0,15 – 0,20	0,1 - 3,0
CFK, GFK		100 – 3000	0,08 – 0,16	0,10 – 0,20	0,12 – 0,24	0,13 – 0,16	0,14 – 0,18	0,15 – 0,20	0,1 - 5,0

Einsatzrichtwerte – VHM Fräser
Estimated values – End mills solid carbide

																		F40202; F40204; F40205
				K30F-DCF TiCN			K30F-DCF TiALN			Empfohlener Vorschub pro Zahn (Fz=mm/Zahn) für Wälzfräser (A). Für Nutenfräser (B), Fz um 20% reduziert.								
	A		B	Schnittge-schwindigkeit Vc m/min			Schnittge-schwindigkeit Vc m/min				D1							
ISO	ap	ae	ap	Min.		Max.	Min.		Max.	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0
P1	0,5 x D	0,1 x D	0,25 x D	120	–	160	150	–	200	Fz	0.0138	0.021	0.0284	0.036	0.0438	0.06	0.072	0.0828
P2	0,5 x D	0,1 x D	0,25 x D	112	–	152	140	–	190	Fz	0.0138	0.021	0.028	0.036	0.044	0.06	0.072	0.083
P3	0,5 x D	0,1 x D	0,25 x D	96	–	128	120	–	160	Fz	0.0113	0.017	0.023	0,030	0.036	0,050	0,061	0,070
P4	0,5 x D	0,1 x D	0,25 x D	72	–	120	90	–	150	Fz	0.01048	0.016	0.021	0.027	0.033	0.045	0.054	0,062
M1	0,5 x D	0,1 x D	0,25 x D	72	–	92	90	–	115	Fz	0.0113	0.017	0.023	0,030	0.036	0,050	0,061	0,070
M2	0,5 x D	0,1 x D	0,25 x D	48	–	64	60	–	80	Fz	0.0094	0.014	0.019	0.024	0.029	0,040	0,048	0,056
K1	0,5 x D	0,1 x D	0,25 x D	96	–	120	120	–	150	Fz	0.0138	0.021	0.028	0.036	0.044	0,060	0,072	0,083
K2	0,5 x D	0,1 x D	0,25 x D	88	–	104	110	–	130	Fz	0.0113	0.017	0.023	0,030	0.036	0.05	0.061	0,070
N1	0,5 x D	0,1 x D	0,25 x D	400	–	1600		–		Fz	0.02	0,030	0,040	0,050	0,060	0,080	0,100	0,120
N2	0,5 x D	0,1 x D	0,25 x D	400	–	1200		–		Fz	0.016	0.024	0.032	0,040	0.048	0.064	0,080	0,096
N5	0,5 x D	0,1 x D	0,25 x D	200	–	600	250	–	750	Fz	0.018	0.027	0.036	0.045	0.054	0.072	0,090	0,108

												F40206; F40207
				K30F-DCHP AlTiN			Empfohlener Vorschub pro Zahn (Fz=mm/Zahn) für Wälzfräser (A). Für Nutenfräser (B), Fz um 20% reduziert.					
	A		B	Schnittge-schwindigkeit Vc m/min				D1				
ISO	ap	ae	ap	Min.		Max.	mm	4,0	6,0	8,0	10,0	12,0
P1	1,5 x D	0,5 x D	1 x D	180	–	220	Fz	0,030	0,050	0,060	0,070	0,072
P2	1,5 x D	0,5 x D	1 x D	160	–	200	Fz	0,030	0,050	0,060	0,070	0,072
P3	1,5 x D	0,5 x D	1 x D	160	–	180	Fz	0,025	0,040	0,050	0,060	0,070
P4	1,5 x D	0,5 x D	1 x D	140	–	160	Fz	0,023	0,036	0,045	0,054	0,063
M1	1,5 x D	0,5 x D	1 x D	90	–	115	Fz	0,025	0,040	0,050	0,060	0,065
M2	1,5 x D	0,5 x D	1 x D	60	–	80	Fz	0,020	0,030	0,040	0,050	0,060
K1	1,5 x D	0,5 x D	1 x D	120	–	150	Fz	0,030	0,050	0,060	0,070	0,080
K2	1,5 x D	0,5 x D	1 x D	110	–	130	Fz	0,025	0,040	0,050	0,060	0,070
K3	1,5 x D	0,5 x D	1 x D	100	–	130	Fz	0,020	0,030	0,040	0,050	0,060

Einsatzrichtwerte – VHM Fräser
Estimated values – End mills solid carbide

															F40208; F40209
				K30F-DCHP AlTiN			Empfohlener Vorschub pro Zahn (Fz=mm/Zahn) für Wälzfräser (A). Für Nutenfräser (B), Fz um 20% reduziert.								
A			B	Schnittge-schwindigkeit Vc m/min				D1							
ISO	ap	ap	ae	Min.		Max.	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0
P1	1 x D	0,1 x D	0,5 x D	150	–	200	Fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083
P2	1 x D	0,1 x D	0,5 x D	140	–	190	Fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083
P3	1 x D	0,1 x D	0,5 x D	120	–	160	Fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070
P4	1 x D	0,1 x D	0,5 x D	90	–	150	Fz	0,010	0,016	0,021	0,027	0,033	0,045	0,054	0,062
M1	1 x D	0,1 x D	0,5 x D	90	–	115	Fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070
M2	1 x D	0,1 x D	0,5 x D	60	–	80	Fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056
K1	1 x D	0,1 x D	0,5 x D	120	–	150	Fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083
K2	1 x D	0,1 x D	0,5 x D	110	–	130	Fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070
N5	1 x D	0,1 x D	0,5 x D	250	–	750	Fz	0,018	0,027	0,036	0,045	0,054	0,072	0,090	0,108

															F40210; F40211
			K30F-DCHP AlTiN			Empfohlener Vorschub pro Zahn (Fz=mm/Zahn) für Wälzfräser (A). Für Nutenfräser (B), Fz um 20% reduziert.									
A			Schnittge-schwindigkeit Vc m/min				D1								
ISO	ap	ae	Min.		Max.	mm	2,0	3,0	4,0	5,0	6,0	8,0	10,0	12,0	
P1	0,7 x D	0,25 x D	150	–	200	Fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	
P2	0,7 x D	0,25 x D	140	–	190	Fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	
P3	0,7 x D	0,25 x D	120	–	160	Fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	
P4	0,7 x D	0,25 x D	90	–	150	Fz	0,010	0,016	0,021	0,027	0,033	0,045	0,054	0,062	
M1	0,7 x D	0,25 x D	90	–	115	Fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	
M2	0,7 x D	0,25 x D	60	–	80	Fz	0,009	0,014	0,019	0,024	0,029	0,040	0,048	0,056	
K1	0,7 x D	0,25 x D	120	–	150	Fz	0,014	0,021	0,028	0,036	0,044	0,060	0,072	0,083	
K2	0,7 x D	0,25 x D	110	–	130	Fz	0,011	0,017	0,023	0,030	0,036	0,050	0,061	0,070	
N5	0,7 x D	0,25 x D	250	–	750	Fz	0,018	0,027	0,036	0,045	0,054	0,072	0,090	0,108	

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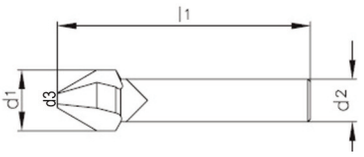
Kegelsenker 60° – HM, DIN 334

Countersink 60° - solid carbide, DIN 334



HM | FORM C | Z=3 | DIN 334 | 60°

R | HA

d1	d3	**Hartmetall** / hard metal	d2	l1	CODE
8,0	2,0	Vollhartmetall / solid carbide	6,0	50	SR50032-08.00-C
10,0	2,5	Vollhartmetall-Kopf / solid carbide head	8,0	50	SR50032-10.00-C
12,5	3,2	Vollhartmetall-Kopf / solid carbide head	8,0	56	SR50032-12.50-C
16,0	4,0	Vollhartmetall-Kopf / solid carbide head	10,0	63	SR50032-16.00-C
20,0	5,0	Vollhartmetall-Kopf / solid carbide head	10,0	67	SR50032-20.00-C
25,0	6,3	Vollhartmetall-Kopf / solid carbide head	10,0	71	SR50032-25.00-C

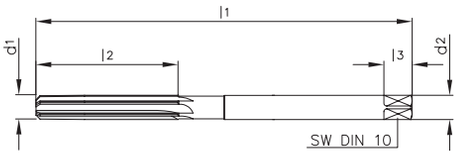
Kegelsenker 90° – HM, DIN 335

Countersink 90° - solid carbide, DIN 335

HM | FORM C | Z=3 | DIN 335 | 90° | R | HA

d1	d3	Hartmetall P30 / hard metal P30	d2	l1	CODE
6,0	2,0	**Vollhartmetall /** solid carbide	5	40	SR50035-06.00-C
6,3	2,0	**Vollhartmetall /** solid carbide	5	40	SR50035-06.30-C
8,0	2,0	**Vollhartmetall /** solid carbide	6	45	SR50035-08.00-C
8,3	2,0	**Vollhartmetall /** solid carbide	6	45	SR50035-08.30-C
10,0	2,5	**Vollhartmetall-Kopf /** solid carbide head	8	46	SR50035-10.00-C
10,4	2,5	**Vollhartmetall-Kopf /** solid carbide head	8	46	SR50035-10.40-C
11,5	2,8	**Vollhartmetall-Kopf /** solid carbide head	8	56	SR50035-11.50-C
12.4	2,8	**Vollhartmetall-Kopf /** solid carbide head	8	56	SR50035-12.40-C
15,0	3,2	**Vollhartmetall-Kopf /** solid carbide head	10	60	SR50035-15.00-C
16,5	3,2	**Vollhartmetall-Kopf /** solid carbide head	10	60	SR50035-16.50-C
20,5	3,5	**Vollhartmetall-Kopf /** solid carbide head	10	63	SR50035-20.50-C
25,0	3,8	**Vollhartmetall-Kopf /** solid carbide head	10	67	SR50035-25.00-C
31,0	4,2	**Vollhartmetall-Kopf /** solid carbide head	12	71	SR50035-31.00-C

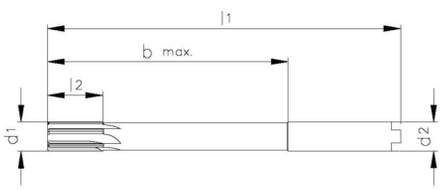
Handreibahle ähnl. DIN 206
Hand reamers similar to DIN 206



DIN 206 | HM K10 | R

d1	l2	l1	d2	sw	l3	z	CODE
10,0	45,0	133	10,0	8,00	11,0	6	SR50045-10.00-A
11,0	45,0	142	11,0	9,00	12,0	6	SR50045-11.00-A
12,0	45,0	152	12,0	10,00	13,0	6	SR50045-12.00-A
13,0	45,0	152	13,0	10,00	13,0	6	SR50045-13.00-A
14,0	45,0	163	14,0	11,20	14,0	6	SR50045-14.00-A
15,0	45,0	163	15,0	11,20	14,0	6	SR50045-15.00-A
16,0	56,0	175	16,0	12,50	16,0	6	SR50045-16.00-A
17,0	56,0	175	17,0	12,50	16,0	6	SR50045-17.00-A
18,0	56,0	188	18,0	14,00	18,0	6	SR50045-18.00-A
19,0	56,0	188	19,0	14,00	18,0	6	SR50045-19.00-A
20,0	56,0	201	20,0	16,00	20,0	6	SR50045-20.00-A

Maschinenreibahle – DIN 8050
Machine reamer – DIN 8050

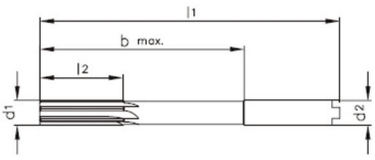


DIN 8050 | HM K10 | R

d1	l2	l1	d2	b	z	CODE	CODE
5,0	16	86	5,0	52	4	SR50046-05.00-A	SR50046-05.00-B
6,0	16	93	5,6	57	4	SR50046-06.00-A	SR50046-06.00-B
7,0	16	109	7,1	69	4	SR50046-07.00-A	SR50046-07.00-B
8,0	16	117	8,0	75	4	SR50046-08.00-A	SR50046-08.00-B
9,0	19	125	9,0	81	4	SR50046-09.00-A	SR50046-09.00-B
10,0	19	133	10,0	87	6	SR50046-10.00-A	SR50046-10.00-B
11,0	19	142	10,0	96	6	SR50046-11.00-A	SR50046-11.00-B
12,0	19	151	10,0	105	6	SR50046-12.00-A	SR50046-12.00-B
13,0	19	151	10,0	105	6	SR50046-13.00-A	SR50046-13.00-B
14,0	19	160	12,5	110	6	SR50046-14.00-A	SR50046-14.00-B
15,0	19	162	12,5	112	6	SR50046-15.00-A	SR50046-15.00-B
16,0	22	170	12,5	120	6	SR50046-16.00-A	SR50046-16.00-B
17,0	22	175	14,0	123	6	SR50046-17.00-A	SR50046-17.00-B
18,0	22	182	14,0	130	6	SR50046-18.00-A	SR50046-18.00-B
19,0	22	189	16,0	131	6	SR50046-19.00-A	SR50046-19.00-B
20,0	22	195	16,0	137	6	SR50046-20.00-A	SR50046-20.00-B

Maschinenreibahle – DIN 8093

Machine reamer – DIN 8093

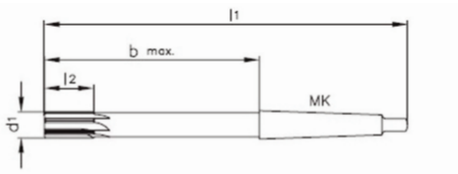


DIN 8093 | HM K10 | R

d1	l2	b max.	l1	d2	z	CODE	CODE
5,0	30	52	86	5,0	4	SR50047-05.00-A	SR50047-05.00-B
6,0	30	57	93	5,6	4	SR50047-06.00-A	SR50047-06.00-B
7,0	30	69	109	7,1	4	SR50047-07.00-A	SR50047-07.00-B
8,0	30	75	117	8,0	4	SR50047-08.00-A	SR50047-08.00-B
9,0	30	81	125	9,0	4	SR50047-09.00-A	SR50047-09.00-B
10,0	45	87	133	10,0	6	SR50047-10.00-A	SR50047-10.00-B
11,0	45	96	142	10,0	6	SR50047-11.00-A	SR50047-11.00-B
12,0	45	105	151	10,0	6	SR50047-12.00-A	SR50047-12.00-B
13,0	45	105	151	10,0	6	SR50047-13.00-A	SR50047-13.00-B
14,0	45	110	160	12,5	6	SR50047-14.00-A	SR50047-14.00-B
15,0	45	112	162	12,5	6	SR50047-15.00-A	SR50047-15.00-B
16,0	56	120	170	12,5	6	SR50047-16.00-A	SR50047-16.00-B
17,0	56	123	175	14,0	6	SR50047-17.00-A	SR50047-17.00-B
18,0	56	130	182	14,0	6	SR50047-18.00-A	SR50047-18.00-B
19,0	56	131	189	16,0	6	SR50047-19.00-A	SR50047-19.00-B
20,0	56	137	195	16,0	6	SR50047-20.00-A	SR50047-20.00-B

Maschinenreibahle – DIN 8093

Machine reamer – DIN 8093

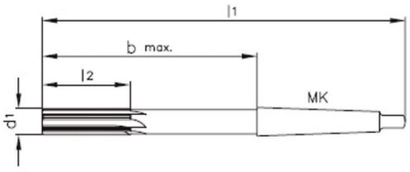


DIN 8051 | HM K10 | R | MK

d1	l2	b max.	l1	MK	z	CODE	CODE
5,0*	16	67,5	133	1	4	SR50048-05.00-A	SR50048-05.00-B
6,0*	16	72,5	138	1	4	SR50048-06.00-A	SR50048-06.00-B
7,0*	16	84,5	150	1	4	SR50048-07.00-A	SR50048-07.00-B
8,0	16	90,5	156	1	4	SR50048-08.00-A	SR50048-08.00-B
9,0	19	96,5	162	1	4	SR50048-09.00-A	SR50048-09.00-B
10,0	19	102,5	168	1	6	SR50048-10.00-A	SR50048-10.00-B
11,0	19	109,5	175	1	6	SR50048-11.00-A	SR50048-11.00-B
12,0	19	116,5	182	1	6	SR50048-12.00-A	SR50048-12.00-B
13,0	19	116,5	182	1	6	SR50048-13.00-A	SR50048-13.00-B
14,0	19	123,5	189	1	6	SR50048-14.00-A	SR50048-14.00-B
15,0	19	124,0	204	2	6	SR50048-15.00-A	SR50048-15.00-B
16,0	22	130,0	210	2	6	SR50048-16.00-A	SR50048-16.00-B
17,0	22	134,0	214	2	6	SR50048-17.00-A	SR50048-17.00-B
18,0	22	139,0	219	2	6	SR50048-18.00-A	SR50048-18.00-B
19,0	22	143,0	223	2	6	SR50048-19.00-A	SR50048-19.00-B
20,0	22	148,0	228	2	6	SR50048-20.00-A	SR50048-20.00-B
21,0	25	152,0	232	2	6	SR50048-21.00-A	SR50048-21.00-B
22,0	25	157,0	237	2	6	SR50048-22.00-A	SR50048-22.00-B
23,0	25	161,0	241	2	6	SR50048-23.00-A	SR50048-23.00-B
24,0	25	169,0	268	3	8	SR50048-24.00-A	SR50048-24.00-B
25,0	25	169,0	268	3	8	SR50048-25.00-A	SR50048-25.00-B
26,0	25	174,0	273	3	8	SR50048-26.00-A	SR50048-26.00-B
27,0	30	178,0	277	3	8	SR50048-27.00-A	SR50048-27.00-B
28,0	30	178,0	277	3	8	SR50048-28.00-A	SR50048-28.00-B
29,0	30	182,0	281	3	8	SR50048-29.00-A	SR50048-29.00-B
30,0	30	182,0	281	3	8	SR50048-30.00-A	SR50048-30.00-B
31,0	30	186,0	285	3	8	SR50048-31.00-A	SR50048-31.00-B
32,0	30	193,0	317	4	8	SR50048-32.00-A	SR50048-32.00-B
34,0	30	197,0	321	4	8	SR50048-34.00-A	SR50048-34.00-B
35,0	30	197,0	321	4	8	SR50048-35.00-A	SR50048-35.00-B
36,0	30	201,0	325	4	8	SR50048-36.00-A	SR50048-36.00-B
38,0	30	205,0	329	4	8	SR50048-38.00-A	SR50048-38.00-B
40,0	30	205,0	329	4	8	SR50048-40.00-A	SR50048-40.00-B

Maschinenreibahle – DIN 8094

Machine reamer – DIN 8094

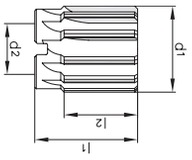


DIN 8094 | HM K10 | R | MK

d1	l2	b max.	l1	MK	z	CODE	CODE
5,0	30	67,5	133	1	4	SR50049-05.00-A	SR50049-05.00-B
6,0	30	72,5	138	1	4	SR50049-06.00-A	SR50049-06.00-B
7,0	30	84,5	150	1	4	SR50049-07.00-A	SR50049-07.00-B
8,0	30	90,5	156	1	4	SR50049-08.00-A	SR50049-08.00-B
9,0	30	96,5	162	1	4	SR50049-09.00-A	SR50049-09.00-B
10,0	45	102,5	168	1	6	SR50049-10.00-A	SR50049-10.00-B
11,0	45	109,5	175	1	6	SR50049-11.00-A	SR50049-11.00-B
12,0	45	116,5	182	1	6	SR50049-12.00-A	SR50049-12.00-B
13,0	45	116,5	182	1	6	SR50049-13.00-A	SR50049-13.00-B
14,0	45	123,5	189	1	6	SR50049-14.00-A	SR50049-14.00-B
15,0	45	124,0	204	2	6	SR50049-15.00-A	SR50049-15.00-B
16,0	45	130,0	210	2	6	SR50049-16.00-A	SR50049-16.00-B
17,0	56	134,0	214	2	6	SR50049-17.00-A	SR50049-17.00-B
18,0	56	139,0	219	2	6	SR50049-18.00-A	SR50049-18.00-B
19,0	56	143,0	223	2	6	SR50049-19.00-A	SR50049-19.00-B
20,0	56	148,0	228	2	6	SR50049-20.00-A	SR50049-20.00-B
21,0	56	152,0	232	2	6	SR50049-21.00-A	SR50049-21.00-B
22,0	56	157,0	237	2	6	SR50049-22.00-A	SR50049-22.00-B
23,0	56	161,0	241	2	6	SR50049-23.00-A	SR50049-23.00-B
24,0	70	169,0	268	3	8	SR50049-24.00-A	SR50049-24.00-B
25,0	70	169,0	268	3	8	SR50049-25.00-A	SR50049-25.00-B
26,0	70	174,0	273	3	8	SR50049-26.00-A	SR50049-26.00-B
27,0	70	178,0	277	3	8	SR50049-27.00-A	SR50049-27.00-B
28,0	70	178,0	277	3	8	SR50049-28.00-A	SR50049-28.00-B
29,0	70	182,0	281	3	8	SR50049-29.00-A	SR50049-29.00-B
30,0	70	182,0	281	3	8	SR50049-30.00-A	SR50049-30.00-B
31,0	70	186,0	285	3	8	SR50049-31.00-A	SR50049-31.00-B
32,0	70	193,0	317	4	8	SR50049-32.00-A	SR50049-32.00-B
34,0	70	197,0	321	4	8	SR50049-34.00-A	SR50049-34.00-B
35,0	70	197,0	321	4	8	SR50049-35.00-A	SR50049-35.00-B
36,0	70	201,0	325	4	8	SR50049-36.00-A	SR50049-36.00-B
38,0	70	205,0	329	4	8	SR50049-38.00-A	SR50049-38.00-B
40,0	70	205,0	329	4	8	SR50049-40.00-A	SR50049-40.00-B

Aufsteckreibahle – DIN 8054

Plug reamer – DIN 8054

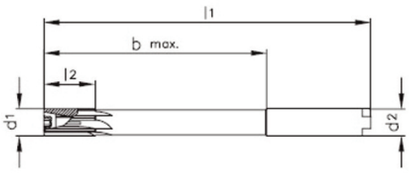


DIN 8054 | HM K10 | R | 1:30 Bohrung/ bore

d1	l2	l1	d2	z	CODE
30,0	30	45	13	6	SR50050-30.00
31,0	30	45	13	8	SR50050-31.00
32,0	30	45	13	8	SR50050-32.00
34,0	30	45	13	8	SR50050-34.00
35,0	30	45	13	8	SR50050-35.00
36,0	30	50	16	8	SR50050-36.00
37,0	30	50	16	8	SR50050-37.00
38,0	30	50	16	8	SR50050-38.00
40,0	30	50	16	8	SR50050-40.00
42,0	30	50	16	8	SR50050-42.00
45,0	30	50	16	8	SR50050-45.00
46,0	30	56	19	10	SR50050-46.00
47,0	30	56	19	10	SR50050-47.00
48,0	30	56	19	10	SR50050-48.00
50,0	30	56	19	10	SR50050-50.00
52,0	30	56	19	10	SR50050-52.00
54,0	30	63	22	10	SR50050-54.00
55,0	30	63	22	10	SR50050-55.00
58,0	30	63	22	10	SR50050-58.00
60,0	30	63	22	10	SR50050-60.00
62,0	30	63	22	10	SR50050-62.00
65,0	30	71	27	12	SR50050-65.00
68,0	30	71	27	12	SR50050-68.00
70,0	30	71	27	12	SR50050-70.00
72,0	30	71	27	12	SR50050-72.00
75,0	30	71	27	12	SR50050-75.00

Aufsteckreibahle – ähnlich DIN 8050

Plug reamer – similar to DIN 8050

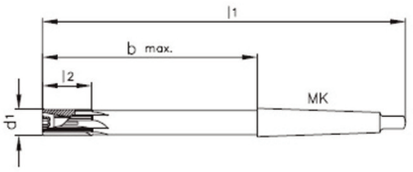


DIN 8050 | HM K10 | R

d1	l2	b max.	l1	d2	z	CODE
8,0	16,0	75	117	8	4	SR50051-08.00
9,0	19,0	81	125	9	4	SR50051-09.00
10,0	19,0	87	133	10	6	SR50051-10.00
11,0	19,0	96	142	10	6	SR50051-11.00
12,0	19,0	105	151	10	6	SR50051-12.00
13,0	19,0	105	151	10	6	SR50051-13.00
14,0	19,0	110	160	12,5	6	SR50051-14.00
15,0	19,0	112	162	12,5	6	SR50051-15.00
16,0	22,0	120	170	12,5	6	SR50051-16.00
18,0	22,0	130	182	14	6	SR50051-18.00
20,0	22,0	137	195	16	6	SR50051-20.00

Maschinen-Dehnreibahle – ähnlich DIN 8051

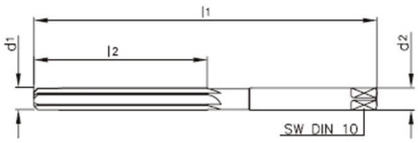
Expanding machine reamer – similar to DIN 8051



DIN 8051 | HM K10 | R | MK

d1	l2	b max.	l1	MK	z	CODE
8,0	16	90,5	156	1	4	SR50052-08.00
9,0	19	96,5	162	1	4	SR50052-09.00
10,0	19	102,5	168	1	6	SR50052-10.00
11,0	19	109,5	175	1	6	SR50052-11.00
12,0	19	116,5	182	1	6	SR50052-12.00
13,0	19	116,5	182	1	6	SR50052-13.00
14,0	19	123,5	189	1	6	SR50052-14.00
15,0	19	124,0	204	2	6	SR50052-15.00
16,0	22	130,0	210	2	6	SR50052-16.00
17,0	22	134,0	214	2	6	SR50052-17.00
18,0	22	139,0	219	2	6	SR50052-18.00
19,0	22	143,0	223	2	6	SR50052-19.00
20,0	22	148,0	228	2	6	SR50052-20.00
22,0	25	157,0	237	2	6	SR50052-22.00
24,0	25	168,0	268	3	8	SR50052-24.00
25,0	25	169,0	268	3	8	SR50052-25.00
26,0	25	174,0	273	3	8	SR50052-26.00
28,0	30	178,0	277	3	8	SR50052-28.00
30,0	30	182,0	281	3	8	SR50052-30.00
32,0	30	193,0	317	4	8	SR50052-32.00
34,0	30	197,0	321	4	8	SR50052-34.00
35,0	30	197,0	321	4	8	SR50052-35.00
36,0	30	201,0	325	4	8	SR50052-36.00
38,0	30	205,0	329	4	8	SR50052-38.00
40,0	30	205,0	329	4	8	SR50052-40.00

Handreibahle – ähnlich DIN 206
Hand reamer – similar to DIN 206

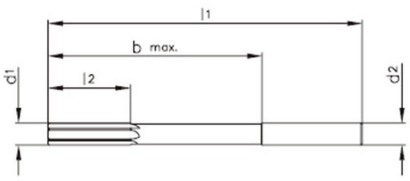


DIN 206 | VHM K10 | R

d1	l2	l1	d2	sw	l3	z	CODE
1,5	20	40	1,5	1,12	4,0	3	SR50055-01.50-A
2,0	25	49	2,0	1,60	4,0	4	SR50055-02.00-A
2,5	29	57	2,5	2,00	4,0	4	SR50055-02.50-A
3,0	31	61	3,0	2,24	5,0	4	SR50055-03.00-A
3,5	35	70	3,5	2,80	5,0	4	SR50055-03.50-A
4,0	38	75	4,0	3,15	6,0	4	SR50055-04.00-A
4,5	41	80	4,5	3,55	6,0	6	SR50055-04.50-A
5,0	44	86	5,0	4,00	7,0	6	SR50055-05.00-A
6,0	47	93	6,0	4,50	7,0	6	SR50055-06.00-A
7,0	54	107	7,0	5,60	8	6	SR50055-07.00-A
8,0	58	115	8,0	6,30	9	6	SR50055-08.00-A
9,0	62	125	9,0	7,10	10	6	SR50055-09.00-A

Maschinenreibahle – ähnlich DIN 8093

Machine reamer – similar to DIN 8093

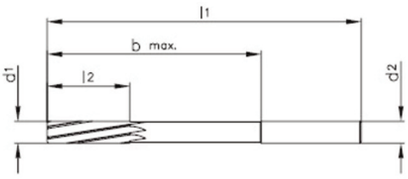


DIN 8093 | VHM K10 | R | HA

d1	l1	b max.	l2	d2	z	CODE	CODE
1,0	34	20	6	1,0	3	SR50056-01.00-A	SR50056-01.00-B
1,2	34	20	6	1,2	3	SR50056-01.20-A	SR50056-01.20-B
1,4	40	24	8	1,4	3	SR50056-01.40-A	SR50056-01.40-B
1,5	40	24	8	1,5	3	SR50056-01.50-A	SR50056-01.50-B
1,6	43	25	9	1,6	3	SR50056-01.60-A	SR50056-01.60-B
1,8	46	28	10	1,8	4	SR50056-01.80-A	SR50056-01.80-B
2,0	49	29	11	2,0	4	SR50056-02.00-A	SR50056-02.00-B
2,2	53	32	12	2,2	4	SR50056-02.20-A	SR50056-02.20-B
2,5	57	34	14	2,5	4	SR50056-02.50-A	SR50056-02.50-B
2,8	61	41	15	2,8	6	SR50056-02.80-A	SR50056-02.80-B
3,0	61	41	15	3,0	6	SR50056-03.00-A	SR50056-03.00-B
3,2	65	41	16	3,2	6	SR50056-03.20-A	SR50056-03.20-B
3,5	70,0	43	18	3,5	6	SR50056-03.50-A	SR50056-03.50-B
4,0	75,0	43	19	4,0	6	SR50056-04.00-A	SR50056-04.00-B
4,5	80,0	47	21	4,5	6	SR50056-04.50-A	SR50056-04.50-B
5,0	86,0	52	23	5,0	6	SR50056-05.00-A	SR50056-05.00-B
5,5	93,0	57	26	5,6	6	SR50056-05.50-A	SR50056-05.50-B
6,0	93,0	57	26	5,6	6	SR50056-06.00-A	SR50056-06.00-B
6,5	101,0	63	28	6,3	6	SR50056-06.50-A	SR50056-06.50-B
7,0	109,0	69	31	7,1	6	SR50056-07.00-A	SR50056-07.00-B
8,0	117,0	75	33	8,0	6	SR50056-08.00-A	SR50056-08.00-B
9,0	125,0	81	36	9,0	6	SR50056-09.00-A	SR50056-09.00-B
10,0	133,0	87	38	10,0	6	SR50056-10.00-A	SR50056-10.00-B
11,0	142,0	96	41	10,0	6	SR50056-11.00-A	SR50056-11.00-B
12,0	151,0	105	44	10,0	6	SR50056-12.00-A	SR50056-12.00-B
13,0	151,0	105	44	10,0	8	SR50056-13.00-A	SR50056-13.00-B
14,0	160,0	110	47	12,5	8	SR50056-14.00-A	SR50056-14.00-B
15,0	162,0	112	50	12,5	8	SR50056-15.00-A	SR50056-15.00-B
16,0	170,0	120	52	12,5	8	SR50056-16.00-A	SR50056-16.00-B
17,0	175,0	123	54	14,0	8	SR50056-17.00-A	SR50056-17.00-B
18,0	182,0	130	56	14,0	8	SR50056-18.00-A	SR50056-18.00-B
19,0	189,0	131	58	16,0	8	SR50056-19.00-A	SR50056-19.00-B
20,0	195,0	137	60	16,0	8	SR50056-20.00-A	SR50056-20.00-B

NC-Maschinenreibahle um 0,01 mm steigend – ähnlich DIN 8093

NC-Machine reamer rising by 0.01 mm – similar DIN 8093



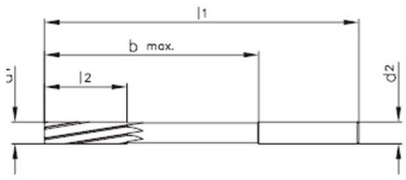
DIN 8093 | VHM K10 | R | Tol. +0,003/0

d1	l2	b max.	l1	d2	z	CODE
0,90 – 1,30	6	20	34	1,0	3	SR50057-XX.XX
1,31 – 1,50	8	24	40	2,0	3	SR50057-XX.XX
1,51 – 1,61	9	25	43	2,0	3	SR50057-XX.XX
1,62 – 1,70	9	25	43	2,0	4	SR50057-XX.XX
1,71 – 1,90	10	28	46	2,0	4	SR50057-XX.XX
1,91 – 2,12	11	29	49	2,0	4	SR50057-XX.XX
2,13 – 2,36	12	32	53	3,0	4	SR50057-XX.XX
2,37 – 2,65	14	34	57	3,0	4	SR50057-XX.XX
2,66 – 2,79	15	41	61	3,0	4	SR50057-XX.XX
2,80 – 3,09	15	41	61	3,0	6	SR50057-XX.XX
3,10 – 3,35	16	41	65	4,0	6	SR50057-XX.XX
3,36 – 3,75	18	43	70	4,0	6	SR50057-XX.XX
3,76 – 4,10	19	43	75	4,0	6	SR50057-XX.XX
4,11 – 4,25	21	47	80	4,0	6	SR50057-XX.XX
4,26 – 4,75	21	47	80	5,0	6	SR50057-XX.XX
4,76 – 5,20	23	52	86	5,0	6	SR50057-XX.XX
5,21 – 6,00	26	57	93	6,0	6	SR50057-XX.XX
6,01 – 6,60	28	63	101	6,0	6	SR50057-XX.XX
6,61 – 6,70	31	69	109	6,0	6	SR50057-XX.XX
6,71 – 7,50	31	69	109	8,0	6	SR50057-XX.XX
7,51 – 8,50	33	75	117	8,0	6	SR50057-XX.XX
8,51 – 9,50	36	81	125	10,0	6	SR50057-XX.XX
9,51 – 10,60	38	87	133	10,0	6	SR50057-XX.XX
10,61 – 11,80	41	96	142	10,0	6	SR50057-XX.XX
11,81 – 12,25	44	105	151	10,0	6	SR50057-XX.XX
12,26 – 13,20	44	105	151	10,0	8	SR50057-XX.XX

Bestellangabe / *Ordering information:*
SR50057-XX.XX,
X=Ø

NC-Maschinenreibahle – ähnlich DIN 8093

NC-Machine reamer – similar to DIN 8093

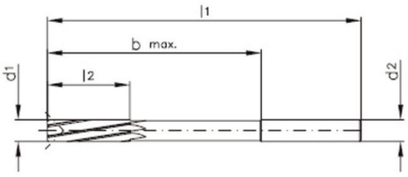


DIN 8093 | VHM K10 | R

d1	l1	b max.	l2	d2	z	CODE
1,0	34	20	6	1	3	SR50058-01.00-B
1,2	34	20	6	1	3	SR50058-01.20-B
1,4	40	24	8	2	3	SR50058-01.40-B
1,5	40	24	8	2	3	SR50058-01.50-B
1,6	43	25	9	2	3	SR50058-01.60-B
1,8	46	28	10	2	4	SR50058-01.80-B
2,0	49	29	11	2	4	SR50058-02.00-B
2,2	53	32	12	3	4	SR50058-02.20-B
2,5	57	34	14	3	4	SR50058-02.50-B
2,8	61	41	15	3	6	SR50058-02.80-B
3,0	61	41	15	3	6	SR50058-03.00-B
3,2	65	41	16	4	6	SR50058-03.20-B
3,5	70	43	18,0	4	6	SR50058-03.50-B
4,0	75	43	19,0	4	6	SR50058-04.00-B
4,5	80	47	21,0	5	6	SR50058-04.50-B
5,0	86	52	23,0	5	6	SR50058-05.00-B
5,5	93	57	26,0	6	6	SR50058-05.50-B
6,0	93	57	26,0	6	6	SR50058-06.00-B
6,5	101	63	28,0	6	6	SR50058-06.50-B
7,0	109	69	31,0	8	6	SR50058-07.00-B
8,0	117	75	33,0	8	6	SR50058-08.00-B
9,0	125	81	36,0	10	6	SR50058-09.00-B
10,0	133	87	38,0	10	6	SR50058-10.00-B
11,0	142	96	41,0	10	6	SR50058-11.00-B
12,0	151	105	44,0	10	6	SR50058-12.00-B
13,0	151	105	44,0	10	8	SR50058-13.00-B
14,0	160	110	47,0	14	8	SR50058-14.00-B
15,0	162	112	50,00	14	8	SR50058-15.00-B
16,0	170	120	52,00	14	8	SR50058-16.00-B
17,0	175	123	54,00	14	8	SR50058-17.00-B
18,0	182	130	56,00	14	8	SR50058-18.00-B
19,0	189	131	58,00	16	8	SR50058-19.00-B
20,0	195	137	60,00	16	8	SR50058-20.00-B

NC-Maschinenreibahle – ähnlich DIN 8093

NC-Machine reamer – similar to DIN 8093

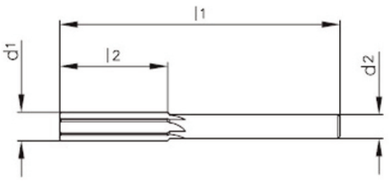


DIN 8093 | VHM K10

d1	l1	b max.	l2	d2	z	CODE
4,0	75	43	19	4	6	SR50059-04.00-B
4,5	80	47	21	5	6	SR50059-04.50-B
5,0	86	52	23	5	6	SR50059-05.00-B
5,5	93	57	26	6	6	SR50059-05.50-B
6,0	93	57	26	6	6	SR50059-06.00-B
6,5	101	63	28	6	6	SR50059-06.50-B
7,0	109	69	31	8	6	SR50059-07.00-B
8,0	117	75	33	8	6	SR50059-08.00-B
9,0	125	81	36	10	6	SR50059-09.00-B
10,0	133	87	38	10	6	SR50059-10.00-B
11,0	142	96	41	10	6	SR50059-11.00-B
12,0	151	105	44	10	6	SR50059-12.00-B
13,0	151	105	44	10	8	SR50059-13.00-B
14,0	160	110	47	14	8	SR50059-14.00-B
15,0	162	112	50	14	8	SR50059-15.00-B
16,0	170	120	52	14	8	SR50059-16.00-B
17,0	175	123	54	14	8	SR50059-17.00-B
18,0	182	130	56	14	8	SR50059-18.00-B
19,0	189	131	58	16	8	SR50059-19.00-B
20,0	195	137	60	16	8	SR50059-20.00-B

Kurze Maschinenreibahle – ähnlich DIN 8099

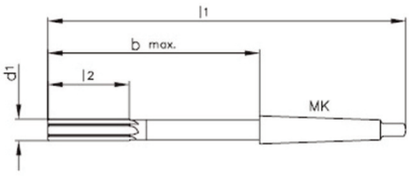
Short machine reamer – similar to DIN 8089



DIN 8089 | VHM K10 | R | HA

d1	l1	l2	d2	z	CODE	CODE
3,0	56	20	2,5	6	SR50060-03.00-A	SR50060-03.00-B
3,2	56	20	2,8	6	SR50060-03.20-A	SR50060-03.20-B
3,5	56	20	3,0	6	SR50060-03.50-A	SR50060-03.50-B
4,0	56	20	3,6	6	SR50060-04.00-A	SR50060-04.00-B
4,5	63	22	4,0	6	SR50060-04.50-A	SR50060-04.50-B
5,0	63	22	4,0	6	SR50060-05.00-A	SR50060-05.00-B
5,5	63	22	5,0	6	SR50060-05.50-A	SR50060-05.50-B
6,0	63	22	5,0	6	SR50060-06.00-A	SR50060-06.00-B
6,5	63	22	5,0	6	SR50060-06.50-A	SR50060-06.50-B
7,0	71	25	6,3	6	SR50060-07.00-A	SR50060-07.00-B
7,5	71	25	6,3	6	SR50060-07.50-A	SR50060-07.50-B
8,0	71	25	6,3	6	SR50060-08.00-A	SR50060-08.00-B
8,5	71	25	6,3	6	SR50060-08.50-A	SR50060-08.50-B
9,0	71	25	8,0	6	SR50060-09.00-A	SR50060-09.00-B
9,5	71	25	8,0	6	SR50060-09.50-A	SR50060-09.50-B
10,0	71	25	8,0	6	SR50060-10.00-A	SR50060-10.00-B
11,0	80	28	10,0	6	SR50060-11.00-A	SR50060-11.00-B
12,0	80	28	10,0	6	SR50060-12.00-A	SR50060-12.00-B
13,0	80	28	10,0	6	SR50060-13.00-A	SR50060-13.00-B
14,0	90	32	12,5	8	SR50060-14.00-A	SR50060-14.00-B
15,0	90	32	12,5	8	SR50060-15.00-A	SR50060-15.00-B
16,0	90	32	12,5	8	SR50060-16.00-A	SR50060-16.00-B
17,0	90	32	12,5	8	SR50060-17.00-A	SR50060-17.00-B
18,0	100	36	16,0	8	SR50060-18.00-A	SR50060-18.00-B
19,0	100	36	16,0	8	SR50060-19.00-A	SR50060-19.00-B
20,0	100	36	16,0	8	SR50060-20.00-A	SR50060-20.00-B

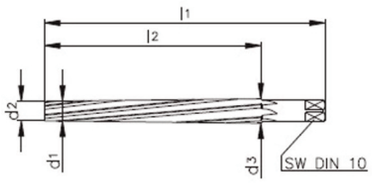
Maschinenreibahle – DIN 8094
Machine reamer – DIN 8094



DIN 8094 | VHM K10 | R | MK

d1	l2	b max.	l1	MK	z	CODE	CODE
5,0*	23	67,5	133	1	6	SR50061-05.00-A	SR50061-05.00-B
6,0*	26	72,5	138	1	6	SR50061-06.00-A	SR50061-06.00-B
7,0*	31	84,5	150	1	6	SR50061-07.00-A	SR50061-07.00-B
8,0	33	90,5	156	1	6	SR50061-08.00-A	SR50061-08.00-B
9,0	36	96,5	162	1	6	SR50061-09.00-A	SR50061-09.00-B
10,0	38	102,5	168	1	6	SR50061-10.00-A	SR50061-10.00-B
11,0	41	109,5	175	1	6	SR50061-11.00-A	SR50061-11.00-B
12,0	44	116,5	182	1	6	SR50061-12.00-A	SR50061-12.00-B
13,0	44	116,5	182	1	6	SR50061-13.00-A	SR50061-13.00-B
14,0	47	123,5	189	1	8	SR50061-14.00-A	SR50061-14.00-B
15,0	50	124,0	204	2	8	SR50061-15.00-A	SR50061-15.00-B
16,0	52	130,0	210	2	8	SR50061-16.00-A	SR50061-16.00-B
17,0	54	134,0	214	2	8	SR50061-17.00-A	SR50061-17.00-B
18,0	56	139,0	219	2	8	SR50061-18.00-A	SR50061-18.00-B
19,0	58	143,0	223	2	8	SR50061-19.00-A	SR50061-19.00-B
20,0	60	148,0	228	2	8	SR50061-20.00-A	SR50061-20.00-B

VHM-Kegelreibahlen – ähnlich DIN 9
Solid carbide taper reamer – similar to DIN 9

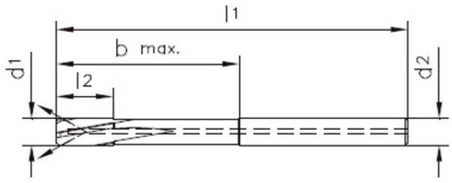


DIN 9 | VHM | HM K10 | R | 1:50 Kegelstift/ taper pin

Ø	d2	d3	l2	l1	l3	sw	z	CODE
1,5	1,4	2,1	37	57	5,0	2,5	3	SR50062-01.50-B
2,0	1,9	2,9	48	68	5,0	2,5	4	SR50062-02.00-B
3,0	2,9	4,1	58	80	6,0	3,1	5	SR50062-03.00-B
4,0	3,9	5,3	68	93	7,0	4,0	5	SR50062-04.00-B
5,0	4,9	6,4	73	100	8,0	5,0	5	SR50062-05.00-B
6,0	5,9	8,0	105	135	9,0	6,3	6	SR50062-06.00-B
8,0	7,9	10,8	145	180	11,0	8,0	6	SR50062-08.00-B

Top-Speed-Reibahle – spiralgenutet, Durchgangsloch

Top-Speed-Reamer – spiral-fluted, through-hole



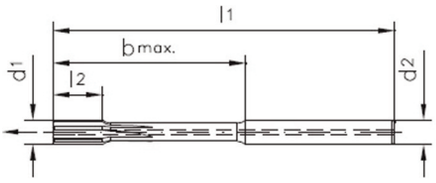
VHM K10F | R | STAHL steel | GUSS Cast iron | ALU | BRONZE

d1	l2	b max.	l1	d2	z	CODE
4,0	12	47	75	4,0	4	SR50074-04.00-B-S
4,5	12	39	75	6,0	4	SR50074-04.50-B-S
5,0	12	39	75	6,0	4	SR50074-05.00-B-S
5,5	16	39	75	6,0	4	SR50074-05.50-B-S
6,0	16	39	75	6,0	4	SR50074-06.00-B-S
6,5	16	64	100	8,0	6	SR50074-06.50-B-S
7,0	16	64	100	8,0	6	SR50074-07.00-B-S
7,5	16	64	100	8,0	6	SR50074-07.50-B-S
8,0	16	64	100	8,0	6	SR50074-08.00-B-S
8,5	19	60	100	10,0	6	SR50074-08.50-B-S
9,0	19	60	100	10,0	6	SR50074-09.00-B-S
10,0	19	80	120	10,0	6	SR50074-10.00-B-S
10,5	19	75	120	12,0	6	SR50074-10.50-B-S
11,0	19	75	120	12,0	6	SR50074-11.00-B-S
11,5	19	75	120	12,0	6	SR50074-11.50-B-S
12,0	19	75	120	12,0	6	SR50074-12.00-B-S
13,0	19	75	120	14,0	6	SR50074-13.00-B-S
14,0	22	90	135	14,0	6	SR50074-14.00-B-S
15,0	22	87	135	16,0	6	SR50074-15.00-B-S
17,0	22	97	145	18,0	8	SR50074-17.00-B-S
18,0	22	97	145	18,0	8	SR50074-18.00-B-S
19,0	22	95	145	20,0	8	SR50074-19.00-B-S
20,0	22	95	145	20,0	8	SR50074-20.00-B-S

Alle anderen Passungen oder Zwischenabmessungen auf Anfrage.
All other fits or intermediate sizes on demand.

Top-Speed-Reibahle – geradegenutet, Sackloch

Top-Speed-Reamer – straight-fluted, blind hole



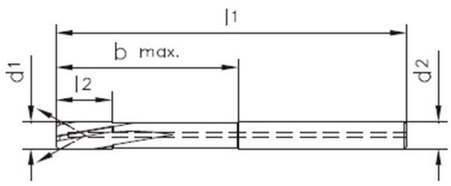
VHM K10F | R | TiALN | STAHL steel | GUSS Cast iron

d1	l2	b max.	l1	d2	z	CODE
4,0	12	47	75	4,0	4	SR50075-04.00-A-C
4,5	12	39	75	6,0	4	SR50075-04.50-A-C
5,0	12	39	75	6,0	4	SR50075-05.00-A-C
5,5	16	39	75	6,0	4	SR50075-05.50-A-C
6,0	16	39	75	6,0	4	SR50075-06.00-A-C
6,5	16	64	100	8,0	6	SR50075-06.50-A-C
7,0	16	64	100	8,0	6	SR50075-07.00-A-C
7,5	16	64	100	8,0	6	SR50075-07.50-A-C
8,0	16	64	100	8,0	6	SR50075-08.00-A-C
8,5	19	60	100	10,0	6	SR50075-08.50-A-C
9,0	19	60	100	10,0	6	SR50075-09.00-A-C
9,5	19	80	120	10,0	6	SR50075-09.50-A-C
10,0	19	80	120	10,0	6	SR50075-10.00-A-C
10,5	19	75	120	12,0	6	SR50075-10.50-A-C
11,0	19	75	120	12,0	6	SR50075-11.00-A-C
11,5	19	75	120	12,0	6	SR50075-11.50-A-C
12,0	19	75	120	12,0	6	SR50075-12.00-A-C
13,0	19	75	120	14,0	6	SR50075-13.00-A-C
14,0	22	90	135	14,0	6	SR50075-14.00-A-C
15,0	22	87	135	16,0	6	SR50075-15.00-A-C
16,0	22	87	135	16,0	6	SR50075-16.00-A-C
17,0	22	97	145	18,0	8	SR50075-17.00-A-C
18,0	22	97	145	18,0	8	SR50075-18.00-A-C
19,0	22	95	145	20,0	8	SR50075-19.00-A-C
20,0	22	95	145	20,0	8	SR50075-20.00-A-C

Alle anderen Passungen oder Zwischenabmessungen auf Anfrage.
All other fits or intermediate sizes on demand.

Top-Speed-Reibahle – spiralgenutet, Durchgangsloch

Top-Speed-Reamer – spiral-fluted, through-hole

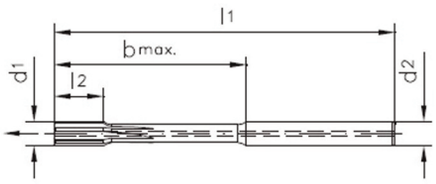


VHM K10F | R | TiALN | STAHL steel | GUSS Cast iron

d1	l2	b max.	l1	d2	z	CODE
4,0	12	47	75	4,0	4	SR50076-04.00-B-S
4,5	12	39	75	6,0	4	SR50076-04.50-B-S
5,0	12	39	75	6,0	4	SR50076-05.00-B-S
5,5	16	39	75	6,0	4	SR50076-05.50-B-S
6,0	16	39	75	6,0	4	SR50076-06.00-B-S
6,5	16	64	100	8,0	4	SR50076-06.50-B-S
7,0	16	64	100	8,0	6	SR50076-07.00-B-S
7,5	16	64	100	8,0	6	SR50076-07.50-B-S
8,0	16	64	100	8,0	6	SR50076-08.00-B-S
8,5	19	60	100	10,0	6	SR50076-08.50-B-S
9,0	19	60	100	10,0	6	SR50076-09.00-B-S
9,5	19	80	120	10,0	6	SR50076-09.50-B-S
10,0	19	80	120	10,0	6	SR50076-10.00-B-S
10,5	19	75	120	12,0	6	SR50076-10.50-B-S
11,0	19	75	120	12,0	6	SR50076-11.00-B-S
11,5	19	75	120	12,0	6	SR50076-11.50-B-S
12,0	19	75	120	12,0	6	SR50076-12.00-B-S
13,0	19	75	120	14,0	6	SR50076-13.00-B-S
14,0	22	90	135	14,0	6	SR50076-14.00-B-S
15,0	22	87	135	16,0	6	SR50076-15.00-B-S
16,0	22	87	135	16,0	6	SR50076-16.00-B-S
17,0	22	97	145	18,0	8	SR50076-17.00-B-S
18,0	22	97	145	18,0	8	SR50076-18.00-B-S
19,0	22	95	145	20,0	8	SR50076-19.00-B-S
20,0	22	95	145	20,0	8	SR50076-20.00-B-S

Alle anderen Passungen oder Zwischenabmessungen auf Anfrage.
All other fits or intermediate sizes on demand.

Top-Speed-Reibahle – geradegenutet
Top-Speed-Reamer – straight-fluted



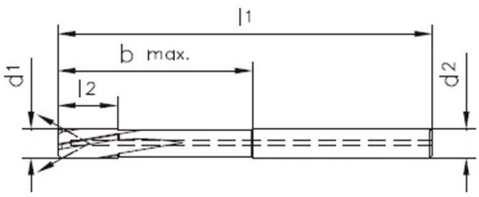
VHM K10F | R | TiALN

um 1/100 mm steigend | Tol. +0,003/0 | STAHL steel | GUSS Cast iron

d1	l2	b max.	l1	d2	z	CODE
3,97	12	47	75	4,0	4	SR50077-03.97-A-C
3,98	12	47	75	4,0	4	SR50077-03.98-A-C
3,99	12	47	75	4,0	4	SR50077-03.99-A-C
4,00	12	47	75	4,0	4	SR50077-04.00-A-C
4,01	12	47	75	4,0	4	SR50077-04.01-A-C
4,02	12	47	75	4,0	4	SR50077-04.02-A-C
4,03	12	47	75	4,0	4	SR50077-04.03-A-C
4,97	12	39	75	6,0	4	SR50077-04.97-A-C
4,98	12	39	75	6,0	4	SR50077-04.98-A-C
4,99	12	39	75	6,0	4	SR50077-04.99-A-C
5,01	12	39	75	6,0	4	SR50077-05.01-A-C
5,02	12	39	75	6,0	4	SR50077-05.02-A-C
5,03	12	39	75	6,0	4	SR50077-05.03-A-C
5,97	16	39	75	6,0	4	SR50077-05.97-A-C
5,98	16	39	75	6,0	4	SR50077-05.98-A-C
5,99	16	39	75	6,0	4	SR50077-05.99-A-C
6,00	16	39	75	6,0	4	SR50077-06.00-A-C
6,01	16	39	75	6,0	4	SR50077-06.01-A-C
6,02	16	39	75	6,0	4	SR50077-06.02-A-C
6,03	16	39	75	6,0	4	SR50077-06.03-A-C
7,97	16	64	100	8,0	6	SR50077-07.97-A-C
7,98	16	64	100	8,0	6	SR50077-07.98-A-C
7,99	16	64	100	8,0	6	SR50077-07.99-A-C
8,00	16	64	100	8,0	6	SR50077-08.00-A-C
8,01	16	64	100	8,0	6	SR50077-08.01-A-C
8,02	16	64	100	8,0	6	SR50077-08.02-A-C
8,03	16	64	100	8,0	6	SR50077-08.03-A-C
9,97	19	80	120	10,0	6	SR50077-09.97-A-C
9,98	19	80	120	10,0	6	SR50077-09.98-A-C
9,99	19	80	120	10,0	6	SR50077-09.99-A-C
10,00	19	80	120	10,0	6	SR50077-10.00-A-C
10,01	19	80	120	10,0	6	SR50077-10.01-A-C
10,02	19	80	120	10,0	6	SR50077-10.02-A-C
10,03	19	80	120	10,0	6	SR50077-10.03-A-C
11,97	19	75	120	12,0	6	SR50077-11.97-A-C
11,98	19	75	120	12,0	6	SR50077-11.98-A-C
11,99	19	75	120	12,0	6	SR50077-11.99-A-C
12,00	19	75	120	12,0	6	SR50077-12.00-A-C
12,01	19	75	120	12,0	6	SR50077-12.01-A-C
12,02	19	75	120	12,0	6	SR50077-12.02-A-C
12,03	19	75	120	12,0	6	SR50077-12.03-A-C

Top-Speed-Reibahle – spiralgenutet, Durchgangsloch

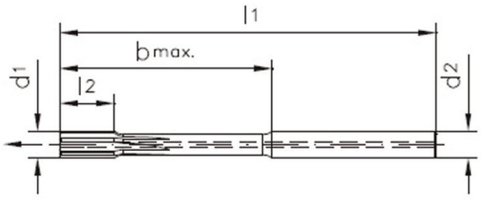
Top-Speed-Reamer – spiral-fluted, through-hole



VHM K10F | R | TiALN | um 1/100 mm steigend | Tol. +0,003/0 | STAHL steel | GUSS Cast iron

d1	l2	b max.	l1	d2	z	CODE
3,97	12	47	75	4,0	4	SR50078-03.97-B-S
3,98	12	47	75	4,0	4	SR50078-03.98-B-S
3,99	12	47	75	4,0	4	SR50078-03.99-B-S
4,00	12	47	75	4,0	4	SR50078-04.00-B-S
4,01	12	47	75	4,0	4	SR50078-04.01-B-S
4,02	12	47	75	4,0	4	SR50078-04.02-B-S
4,03	12	47	75	4,0	4	SR50078-04.03-B-S
4,97	12	39	75	6,0	4	SR50078-04.97-B-S
4,98	12	39	75	6,0	4	SR50078-04.98-B-S
4,99	12	39	75	6,0	4	SR50078-04.99-B-S
5,01	12	39	75	6,0	4	SR50078-05.01-B-S
5,02	12	39	75	6,0	4	SR50078-05.02-B-S
5,03	12	39	75	6,0	4	SR50078-05.03-B-S
5,97	16	39	75	6,0	4	SR50078-05.97-B-S
5,98	16	39	75	6,0	4	SR50078-05.98-B-S
5,99	16	39	75	6,0	4	SR50078-05.99-B-S
6,00	16	39	75	6,0	4	SR50078-06.00-B-S
6,01	16	39	75	6,0	4	SR50078-06.01-B-S
6,02	16	39	75	6,0	4	SR50078-06.02-B-S
6,03	16	39	75	6,0	4	SR50078-06.03-B-S
7,97	16	64	100	8,0	6	SR50078-07.97-B-S
7,98	16	64	100	8,0	6	SR50078-07.98-B-S
7,99	16	64	100	8,0	6	SR50078-07.99-B-S
8,00	16	64	100	8,0	6	SR50078-08.00-B-S
8,01	16	64	100	8,0	6	SR50078-08.01-B-S
8,02	16	64	100	8,0	6	SR50078-08.02-B-S
8,03	16	64	100	8,0	6	SR50078-08.03-B-S
9,97	19	80	120	10,0	6	SR50078-09.97-B-S
9,98	19	80	120	10,0	6	SR50078-09.98-B-S
9,99	19	80	120	10,0	6	SR50078-09.99-B-S
10,00	19	80	120	10,0	6	SR50078-10.00-B-S
10,01	19	80	120	10,0	6	SR50078-10.01-B-S
10,02	19	80	120	10,0	6	SR50078-10.02-B-S
10,03	19	80	120	10,0	6	SR50078-10.03-B-S
11,97	19	75	120	12,0	6	SR50078-11.97-B-S
11,98	19	75	120	12,0	6	SR50078-11.98-B-S
11,99	19	75	120	12,0	6	SR50078-11.99-B-S
12,00	19	75	120	12,0	6	SR50078-12.00-B-S
12,01	19	75	120	12,0	6	SR50078-12.01-B-S
12,02	19	75	120	12,0	6	SR50078-12.02-B-S
12,03	19	75	120	12,0	6	SR50078-12.03-B-S

Top-Speed-Reibahle – geradegenutet, Sackloch
Top-Speed-Reamer – straight-fluted, blind hole



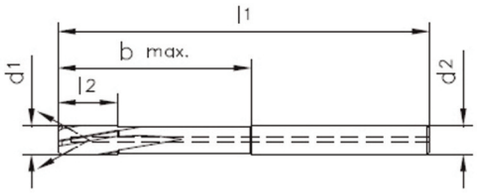
VHM K10F | R | TiALN

d1	l2	b max.	l1	d2	z	CODE
4,0	12	47	75	4,0	4	SR50079-04.00-A-C
4,5	12	39	75	6,0	4	SR50079-04.50-A-C
5,0	12	39	75	6,0	4	SR50079-05.00-A-C
6,0	16	39	75	6,0	4	SR50079-06.00-A-C
6,5	16	64	100	8,0	6	SR50079-06.50-A-C
7,0	16	64	100	8,0	6	SR50079-07.00-A-C
7,5	16	64	100	8,0	6	SR50079-07.50-A-C
8,0	16	64	100	8,0	6	SR50079-08.00-A-C
8,5	19	60	100	10,0	6	SR50079-08.50-A-C
9,0	19	60	100	10,0	6	SR50079-09.00-A-C
9,5	19	80	120	10,0	6	SR50079-09.50-A-C
10,0	19	80	120	10,0	6	SR50079-10.00-A-C
10,5	19	75	120	12,0	6	SR50079-10.50-A-C
11,0	19	75	120	12,0	6	SR50079-11.00-A-C
12,0	19	75	120	12,0	6	SR50079-12.00-A-C
13,0	19	75	120	14,0	6	SR50079-13.00-A-C
14,0	22	90	135	14,0	6	SR50079-14.00-A-C
15,0	22	87	135	16,0	6	SR50079-15.00-A-C
16,0	22	87	135	16,0	6	SR50079-16.00-A-C
17,0	22	97	145	18,0	8	SR50079-17.00-A-C
18,0	22	97	145	18,0	8	SR50079-18.00-A-C
19,0	22	95	145	20,0	8	SR50079-19.00-A-C
20,0	22	95	145	20,0	8	SR50079-20.00-A-C

Alle anderen Passungen oder Zwischenabmessungen auf Anfrage.
All other fits or intermediate sizes on demand.

Top-Speed-Reibahle – spiralgenutet, Durchgangsloch

Top-Speed-Reamer – spiral-fluted, through-hole



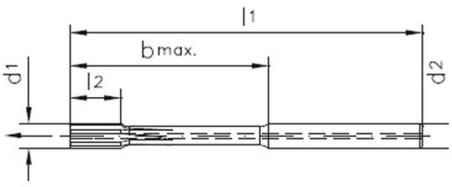
VHM K10F | R | TiALN

d1	l2	b max.	l1	d2	z	CODE
4,0	12	47	75	4,0	4	SR50080-04.00-B-S
4,5	12	39	75	6,0	4	SR50080-04.50-B-S
5,0	12	39	75	6,0	4	SR50080-05.00-B-S
6,0	16	39	75	6,0	4	SR50080-06.00-B-S
6,5	16	64	100	8,0	6	SR50080-06.50-B-S
7,0	16	64	100	8,0	6	SR50080-07.00-B-S
7,5	16	64	100	8,0	6	SR50080-07.50-B-S
8,0	16	64	100	8,0	6	SR50080-08.00-B-S
8,5	19	60	100	10,0	6	SR50080-08.50-B-S
9,0	19	60	100	10,0	6	SR50080-09.00-B-S
9,5	19	80	120	10,0	6	SR50080-09.50-B-S
10,0	19	80	120	10,0	6	SR50080-10.00-B-S
10,5	19	75	120	12,0	6	SR50080-10.50-B-S
11,0	19	75	120	12,0	6	SR50080-11.00-B-S
12,0	19	75	120	12,0	6	SR50080-12.00-B-S
13,0	19	75	120	14,0	6	SR50080-13.00-B-S
14,0	22	90	135	14,0	6	SR50080-14.00-B-S
15,0	22	87	135	16,0	6	SR50080-15.00-B-S
16,0	22	87	135	16,0	6	SR50080-16.00-B-S
17,0	22	97	145	18,0	8	SR50080-17.00-B-S
18,0	22	97	145	18,0	8	SR50080-18.00-B-S
19,0	22	95	145	20,0	8	SR50080-19.00-B-S
20,0	22	95	145	20,0	8	SR50080-20.00-B-S

Alle anderen Passungen oder Zwischenabmessungen auf Anfrage.
All other fits or intermediate sizes on demand.

Top-Speed-Reibahle – geradegenutet, Sackloch

Top-Speed-Reamer – straight-fluted, blind hole



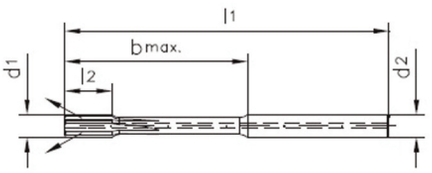
VHM K10F | R | TiALN

d1	l2	b max.	l1	d2	z	CODE
4,0	12	47	75	4,0	4	SR50081-04.00-A-C
4,5	12	39	75	6,0	4	SR50081-04.50-A-C
5,0	12	39	75	6,0	4	SR50081-05.00-A-C
5,5	16	39	75	6,0	4	SR50081-05.50-A-C
6,0	16	39	75	6,0	4	SR50081-06.00-A-C
6,5	16	64	100	8,0	6	SR50081-06.50-A-C
7,0	16	64	100	8,0	6	SR50081-07.00-A-C
7,5	16	64	100	8,0	6	SR50081-07.50-A-C
8,0	16	64	100	8,0	6	SR50081-08.00-A-C
8,5	19	60	100	10,0	6	SR50081-08.50-A-C
9,0	19	60	100	10,0	6	SR50081-09.00-A-C
9,5	19	80	120	10,0	6	SR50081-09.50-A-C
10,0	19	80	120	10,0	6	SR50081-10.00-A-C
10,5	19	75	120	12,0	6	SR50081-10.50-A-C
11,0	19	75	120	12,0	6	SR50081-11.00-A-C
11,5	19	75	120	12,0	6	SR50081-11.50-A-C
12,0	19	75	120	12,0	6	SR50081-12.00-A-C
13,0	19	75	120	14,0	6	SR50081-13.00-A-C
14,0	22	90	135	14,0	6	SR50081-14.00-A-C
15,0	22	87	135	16,0	6	SR50081-15.00-A-C
16,0	22	87	135	16,0	6	SR50081-16.00-A-C
17,0	22	97	145	18,0	8	SR50081-17.00-A-C
18,0	22	97	145	18,0	8	SR50081-18.00-A-C
19,0	22	95	145	20,0	8	SR50081-19.00-A-C
20,0	22	95	145	20,0	8	SR50081-20.00-A-C

Alle anderen Passungen oder Zwischenabmessungen auf Anfrage.
All other fits or intermediate sizes on demand.

Top-Speed-Reibahle – geradegenutet, Durchgangsloch

Top-Speed-Reamer – straight-fluted, through-hole



VHM K10F | R | TiALN

d1	l2	b max.	l1	d2	z	CODE
4,0	12	47	75	4,0	4	SR50082-04.00-A-S
4,5	12	39	75	6,0	4	SR50082-04.50-A-S
5,0	12	39	75	6,0	4	SR50082-05.00-A-S
6,0	16	39	75	6,0	4	SR50082-06.00-A-S
6,5	16	64	100	8,0	6	SR50082-06.50-A-S
7,0	16	64	100	8,0	6	SR50082-07.00-A-S
7,5	16	64	100	8,0	6	SR50082-07.50-A-S
8,0	16	64	100	8,0	6	SR50082-08.00-A-S
8,5	19	60	100	10,0	6	SR50082-08.50-A-S
9,0	19	60	100	10,0	6	SR50082-09.00-A-S
9,5	19	80	120	10,0	6	SR50082-09.50-A-S
10,0	19	80	120	10,0	6	SR50082-10.00-A-S
10,5	19	75	120	12,0	6	SR50082-10.50-A-S
11,0	19	75	120	12,0	6	SR50082-11.00-A-S
11,5	19	75	120	12,0	6	SR50082-11.50-A-S
12,0	19	75	120	12,0	6	SR50082-12.00-A-S
13,0	19	75	120	14,0	6	SR50082-13.00-A-S
14,0	22	90	135	14,0	6	SR50082-14.00-A-S
15,0	22	87	135	16,0	6	SR50082-15.00-A-S
16,0	22	87	135	16,0	6	SR50082-16.00-A-S
17,0	22	97	145	18,0	8	SR50082-17.00-A-S
18,0	22	97	145	18,0	8	SR50082-18.00-A-S
19,0	22	95	145	20,0	8	SR50082-19.00-A-S
20,0	22	95	145	20,0	8	SR50082-20.00-A-S

Alle anderen Passungen oder Zwischenabmessungen auf Anfrage.
All other fits or intermediate sizes on demand.

Einsatzrichtwerte für VHM Reibahlen

Estimated values for solid carbide reamers

Nr.	Werkzeuggruppe	Vc f_R	HSS Reibahle	HSS Reibahle beschichtet	HM Reibahlen	HM Reibahlen beschichtet	CERMET Reibahlen	PKD/PKB Reibahlen
0	Kunststoff weich	Vc f_R a_R	12 – 14 1 2	–	20 – 30 2 2	–	–	–
1	Kunststoff hart	Vc f_R a_R	8 – 12 3 3	–	10 – 15 2 2	20 – 60 2 1	–	80 – 160 8 1
2	Automatenstahl <900 N/mm²	Vc f_R a_R	10 – 15 4 2	10 – 15 4 2	15 – 20 4 2	20 – 30 4 2	40 – 75 4 2	–
3	Baustahl сталь <500 N/mm²	Vc f_R a_R	12 – 18 3 3	14 – 20 3 3	20 – 25 3 2	25 – 40 4 2	50 – 80 4 2	–
4	Niedriglegierte Stähle	Vc f_R a_R	10 – 15 4 2	12 – 16 4 2	15 – 20 4 2	20 – 30 4 2	40 – 75 4 2	–
5	Vergütungsstähle 600 – 1300 N/mm²	Vc f_R a_R	8 – 12 4 2	8 – 12 4 2	15 – 20 5 2	20 – 30 5 2	30 – 40 4 2	75 – 200 2 4
6	Werkzeugstahl <1300 N/mm²	Vc f_R a_R	4 – 6 5 1	4 – 6 5 1	12 – 15 5 1	15 – 25 5 2	25 – 35 4 4	75 – 200 2 4
7	Hochfeste Stähle	Vc f_R a_R	–	–	8 – 12 6 1	10 – 15 6 1	15 – 25 4 4	80 – 150 4 4
8	Rostfreier Stahl	Vc f_R a_R	–	–	10 – 15 4 1	15 – 40 4 1	30 – 40 4 1	–
9	Rostfreier Stahl / Mo-haltig	Vc f_R a_R	–	–	8 – 12 4 1	12 – 30 4 1	25 – 35 4 1	–
10	Rostfreier Stahl Austenitisch	Vc f_R a_R	–	–	8 – 12 4 1	12 – 30 4 1	15 – 25 4 1	–
11	Guss niedrige Härte	Vc f_R a_R	10 – 14 1 2	10 – 14 1 2	15 – 18 1 2	30 – 120 3 1	60 – 120 3 1	90 – 180 8 4
12	Guss niedrige legiert	Vc f_R a_R	8 – 12 3 2	8 – 12 3 2	12 – 15 3 2	30 – 120 3 1	60 – 120 3 1	90 – 180 8 4
13	Legierter Guss mittlere Härte	Vc f_R a_R	4 – 6 5 2	4 – 6 5 2	8 – 12 5 2	20 – 80 3 1	30 – 80 3 1	90 – 180 8 4
14	Hochlegierter Guss	Vc f_R a_R	–	–	6 – 10 5 2	15 – 30 5 2	20 – 40 5 2	90 – 180 8 4
15	Al, Mg, Zn <500 N/mm²	Vc f_R a_R	14 – 20 3 3	–	30 – 60 3 3	–	100 – 200 3 3	100 – 300 8 1
16	Al, Cu, Bronze <1200 N/mm²	Vc f_R a_R	–	–	25 – 40 3 3	–	50 – 150 3 3	100 – 300 8 1
17	Inconel, Monel <30 HRC	Vc f_R a_R	6 – 8 4 2	–	8 – 12 4 2	15 – 18 4 2	15 – 18 4 2	–
18	Inconel, Monel >30 HRC	Vc f_R a_R	4 – 6 4 2	–	5 – 8 4 2	10 – 15 4 2	10 – 15 4 2	–
19	Ti, Ti-Legierungen <1200 N/mm²	Vc f_R a_R	4 – 6 5 1	–	8 – 12 3 1	15 – 30 3 1	–	–

Einsatzrichtwerte für Top-Speed-Reibahlen mit Kühlmittelzufuhr

Estimated values for Top-Speed-Reamers with coolant supply

Nr.	Werkstoffgruppe	Vc fR	VHM SR50074 o. Beschichtung	VHM SR50074 VHM SR70077 +78 TiAlN	VHM SR50079-80 TiAlN	VHM SR50081+ 82 TiAlN	VollCermet SR50083+84 o. Beschichtung
0	Kunststoff weich	Vc f_R a_R	20 – 70 3 2	–	–	–	–
1	Kunststoff hart	Vc f_R a_R	20 – 45 3 2	70 – 180 9 3	–	–	–
2	Automatenstahl <900 N/mm²	Vc f_R a_R	15 – 30 4 3	80 – 225 9 2	–	–	80 – 120 10 3
3	Baustahl <500 N/mm²	Vc f_R a_R	20 – 35 3 2	80 – 225 9 3	–	–	90 – 210 10 3
4	Niedriglegierte Stähle	Vc f_R a_R	20 – 35 3 2	80 – 225 9 3	–	–	100 – 160 10 3
5	Vergütungsstähle 600 – 1300 N/mm²	Vc f_R a_R	4 3	80 – 225 9 3	–	–	90 – 170 10 3
6	Werkzeugstahl <1300 N/mm²	Vc f_R a_R	4 3	60 – 180 9 3	–	–	80 – 160 10 3
7	Hochfeste Stähle	Vc f_R a_R	15 – 20 4 3	60 – 180 9 3	–	–	80 – 160 10 3
8	Rostfreier Stahl	Vc f_R a_R	–	–	20 – 55 4 4	–	–
9	Rostfreier Stahl Mo-haltig	Vc f_R a_R	–	–	20 – 45 4 4	–	–
10	Rostfreier Stahl Austenitisch	Vc f_R a_R	–	–	20 – 35 4 4	–	–
11	Guss niedriger Härte	Vc f_R a_R	20 – 45 4 3	70 – 150 9 3	–	–	–
12	Guss niedrig Legierung	Vc f_R a_R	20 – 45 4 3	70 – 150 9 3	–	–	–
13	Legierter Guss mittlerer Härte	Vc f_R a_R	15 – 30 4 3	60 – 115 9 3	–	–	–
14	Hochlegierter Guss	Vc f_R a_R	10 – 25 4 3	60 – 100 9 3	–	–	–
15	Al, Mg, Zn <500 N/mm²	Vc f_R a_R	30 – 60 4 4	–	–	–	–
16	Al, Cu, Bronze <1200 N/mm²	Vc f_R a_R	20 – 45 4 4	–	–	–	–
17	Inconel, Monel <30 HRC	Vc f_R a_R	4 3	–	–	–	–
18	Inconel, Monel >30 HRC	Vc f_R a_R	10 – 15 4 3	–	–	–	–
19	Ti, Ti-Legierungen <1200 N/mm²	Vc f_R a_R	10 – 35 7 4	–	–	–	–
20	Gehärtete Stähle <65 HRC	Vc f_R a_R	–	–	–	8 – 12 7 4	–

Einsatzrichtwerte für VHM Reibahlen
Estimated values for solid carbide reamers

Vorschubreihe	Vorschub f (mm/U) bei Bohrungsdurchmesser **(mm)**								
f	<5	5	8	10	15	20	30	40	50
1	0,20	0,20	0,25	0,30	0,35	0,40	0,50	0,60	0,70
2	0,30	0,30	0,35	0,35	0,40	0,45	0,55	0,60	0,70
3	0,15	0,20	0,25	0,25	0,30	0,35	0,45	0,50	0,60
4	0,10	0,15	0,20	0,20	0,25	0,30	0,40	0,45	0,50
5	0,08	0,10	0,12	0,15	0,20	0,25	0,30	0,35	0,40
6	0,08	0,10	0,12	0,15	0,18	0,20	0,25	0,30	0,35
7	0,05	0,06	0,08	0,12	0,15	0,18	0,30	0,32	0,35
8	–	–	0,30	0,40	0,60	0,80	1,20	–	–
9	0,30	0,40	0,70	0,80	0,80	1,80	2,00	2,20	2,50
10	0,08	0,15	0,35	0,50	0,80	1,00	1,20	1,40	1,50

Aufmaßreihe	Aufmaß a (mm) in Bohrung bei Bohrungsdurchmesser **(mm)**								
a_R	<5	5	8	10	15	20	30	40	50
1	0,10	0,10	0,15	0,20	0,25	0,25	0,30	0,30	0,40
2	0,15	0,15	0,20	0,25	0,25	0,30	0,35	0,40	0,45
3	0,15	0,20	0,25	0,25	0,30	0,35	0,40	0,45	0,50
4	0,08	0,10	0,12	0,15	0,20	0,25	0,25	0,30	0,35

TOOLSERVER SCHUBLADENSCHRANK
TOOLSERVER DRAWER CABINET

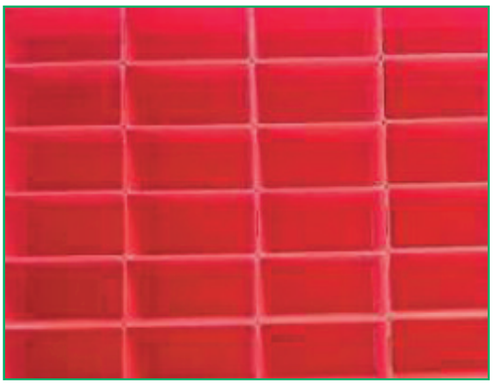
- **ansprechendes Industrie-Design**
- **unterschiedliche Schubladenhöhen**
- **elektromechanisch verriegelte Schubladen**
- **Lagereinsatzkästen**
- **optional elektromechanisch gesicherte Einzelfächer über Metallklappen**
- **Pick-By-Light**
- **LCD-Display zur Anzeige von Schubladen-Nr. und Fach-Nr.**
- **Notentriegelung über Schlüssel**
- **kombinierbar mit TOOLSERVER und TSM**
- **PIN-LOGIN Standard, Automatenzugang via Chipkarte oder Transponder optional**
- **moderne SQL-Datenbank**
- **Datenpflege erfolgt Netzweit da Clint-Server Prinzip**
- **offene Schnittstellen, Anbindung an beliebige PPS und ERP-Systeme möglich**
- **umfangreiche Datenauswertungen durch integrierte Reportingsoftware**
- **Lagerverwaltung mit Mindestbestandsüberwachung**
- **manuelles Lager (externe Lager können mitverwaltet werden).**
- **automatisches Bestellwesen**
- **integriertes Email-System**
- **LAN und ISDN Schnittstelle**
- **Notstromversorgung optional**
- **Lieferantenunabhängig**
- **Integrierter Lehren und Leihgutverwaltung**

- Appealing industrial design
- Various drawer heights
- Electromechanically locked drawers
- Storage insert bins
- Option: Electromechanically secured individual compartments via metal flaps
- Pick-by-light
- LCD diplay to show drawer and compartment numbers
- Emergency unlocking by key
- Can be combined with TOOLSERVER and TSM
- PIN-LOGIN standard, access to dispenser optionally via chip card or transponder
- Modern SQL database
- Data maintenance throughout the network owing to client/server principle
- Open interfaces, connection to any PPC and ERP systems is possible
- Comprehensive data evaluation by integrated reporting software
- Warehouse management with minimum stock level monitoring
- Manual storage system (external warehouses can also be managed)
- Automatic ordering
- Integrated e-mail system
- LAN and ISDN interface
- Emergency power option
- Vendor-independent
- Integrated monitoring of gauges and returnable packaging

TOOLSERVER SCHUBLADENSCHRANK
TOOLSERVER DRAWER CABINET

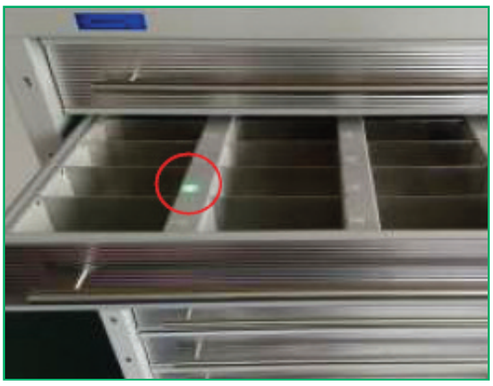
Eine formschöne Rechnereinheit mit integriertem 15“ Touch-Bildschirm stellt die Schnittstelle zum Mensch her. Der Kunde kann Schubladeneinteilung und Sicherheit selbst bestimmen.

A stylish computer unit with integrated 15" touchscreen monitor is the interface between man and machine. Drawer division and security can be customized.



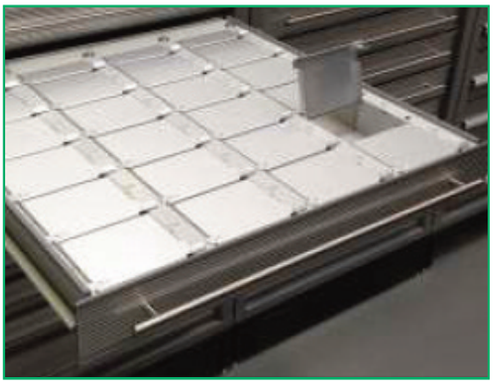
Eine Schublade kann sowohl als großes Einzelfach für lange Werkzeuge wie .B. Messwerkzeuge, Montagewerkzeuge, Bohrwerkzeuge ect. genutzt werden, als auch über Lagerkästen in eine MAtrix eingeteilt werden. Somit lässt sich sehr ökonomisch ein großes Spektrum an Werkzeugen verwalten.

The drawers can be used as large single compartments for long tools such as measuring tools, assembly tools or drilling tools. They can also be divided into a matrix by using storage boxes. This allows a large range of tools to be managed very economically.



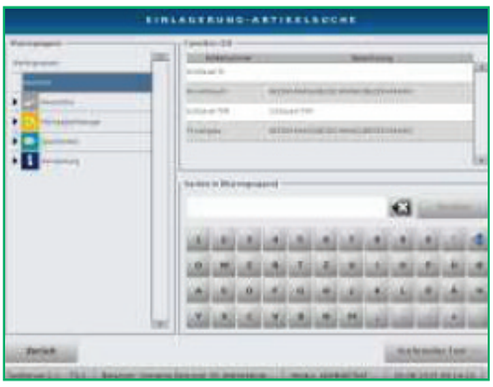
Ein innovatives Pick-By-Light steht Ihnen zur Verfügung, wenn Sie Fehlgriffe durch Ihren Mitarbeiter verhindern wollen, hierbei wird der Lagerplatz, von dem entnommen werden soll, durch eine Signalleuchte markiert.

In order to prevent human errors, the system offers an innovative pick-by-light. The storage location from which the tools are to be taken out is marked by a signal light.



Sollte höchste Sicherheit bei der Ausgabe eine zentrale Rolle spielen, so lassen sich alle Schubladen auch in „Hochsicherheitszellen“ für Werkzeuge ider Art einteilen. Hierbei werden Metallkappen eingesetzt, die nach dem gleichen Prinzip, wie bei den Schubladen, elektromechanisch verriegelt werden. Unterschiedliche Klappengrößen sind lieferbar, eine Anpassung an vorhandenes Werkzeug ist problemlos möglich.

Should security play a central role in dispensing, all drawers can also be divided into "high-security cells" for all kinds of tools.
This is done by using metal covers, which are electromechanically locked using the same principle as for the drawers. Covers are available in various sizes, the system may be easily adjusted to existing tools.



Unsere leistungsstarke und moderne Software ist einfach zu bedienen und lässt keine Wünsche offen. Artikel könnenüber Schlagbegriffe als auch über eine Warengruppenstruktur gefunden werden.
Einstellungen wie Netzwerk- oder Mail können direkt aus der Oberfläche gemacht werden. Windows, LINUX, für uns kein Problem, da die Software auf allen gängigen Betriebssystemen arbeitet, der Kundehat die freie Wahl.

Our high-performance and modern software is easy to use and leaves nothing to be desired. Items can be found both via keywords and a product group structure.
Network, e-mail or other settings can be made directly from the user interface which offers full compatibility with any common operating system. Whether Windows or LINUX - free choice for the customer.

TOOLSERVER SCHUBLADENSCHRANK
TOOLSERVER DRAWER CABINET

Grundmodul
komplett mit PC, Software, Touchterminal, Hubwagensockel bestückt mit Schubladen 9x90mm und 1x150 mm

Basic module
complete with PC, software, touch terminal, lift truck base fitted with drawers 9x90mm and 1x150 mm

Anbaumodul
inkl. Hubwagensockel, bestückt mit Schubladen 9x90 mm und 1x150mm

Add-on module
including lift truck base, fitted with drawers 9x90 mm and 1x150mm

Grundmodul
komplett mit PC, Software, Touchterminal, Hubwagensockel, unbestückt

Basic module
complete with PC, software, touch terminal, lift truck base, unfitted

Anbaumodul
inkl. Hubwagensockel, unbestückt

Add-on module
including lift truck base, unfitted

60

Schublade
Blendenhöhe
60 mm
600x600 mm

Drawer
Front panel height
60 mm
600x600 mm

150

Schublade
Blendenhöhe
150 mm
600x600 mm

Drawer
Front panel height
150 mm
600x600 mm

90

Schublade
Blendenhöhe
90 mm
600x600 mm

Drawer
Front panel height
90 mm
600x600 mm

240

Schublade
Blendenhöhe
240 mm
600x600 mm

Drawer
Front panel height
240 mm
600x600 mm

118 x 40

Einzelklappe für S90
118x40x58 mm (LxBxH)

Single flap for S90
118x40x58 mm (LxWxH)

192 x 40

Einzelklappe für S90
192x40x58 mm (LxBxH)

Single flap for S90
192x40x58 mm (LxWxH)

Einzelklappe für S90
118x89x58 mm (LxBxH)

Single flap for S90
118x89x58 mm (LxWxH)

118 x 89

Einzelklappe für S90
192x143x58 mm (LxBxH)

Single flap for S90
192x143x58 mm (LxWxH)

75 x 75

Kleinteilelagerkasten
75x75x28 mm (LxBxH)
75x75x65 mm (LxBxH)

Small parts storage box
75x75x28 mm (LxWxH)
75x75x65 mm (LxWxH)

75 x 150

Kleinteilelagerkasten
75x150x28 mm (LxBxH)
75x150x65 mm (LxBxH)

Small parts storage box
75x150x28 mm (LxWxH)
75x150x65 mm (LxWxH)

150 x 150

Kleinteilelagerkasten
150x150x28 mm (LxBxH)
150x150x65 mm (LxBxH)

Small parts storage box
150x150x28 mm (LxWxH)
150x150x65 mm (LxWxH)

Anfrage Stufenbohrer
Inquiry for step drills

ATE TOOLS GmbH

Absender / Sent by:

Firma / Company:

Ansprechpartner / Contact:

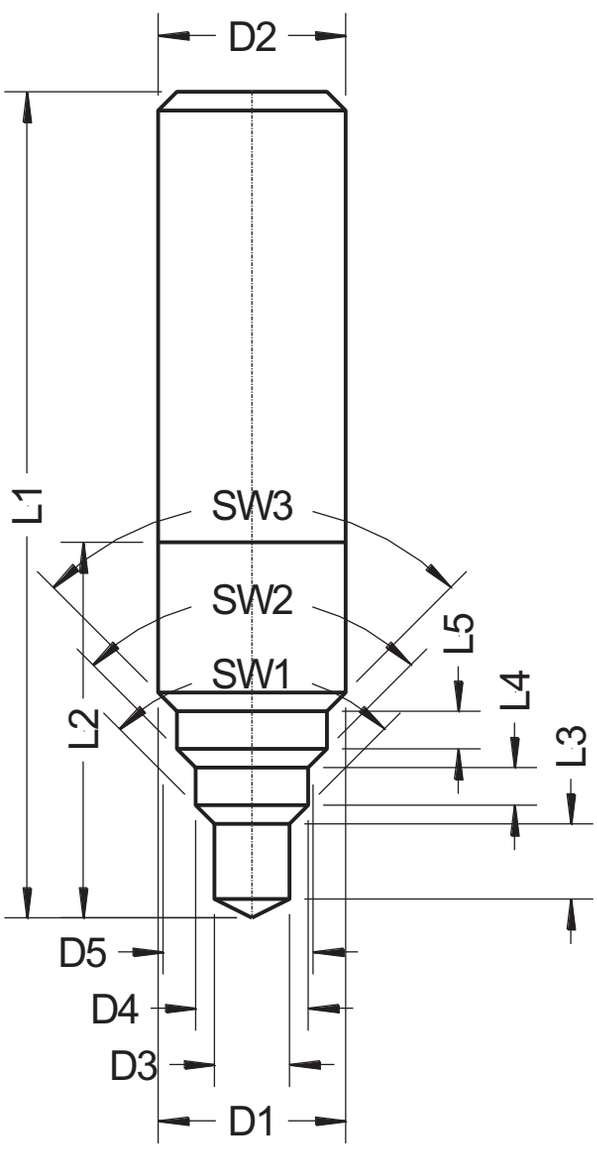
Telefon / Telephone:

Terminwunsch / Desired deadline:

Bitte Angebot bis / Please send offer by:

Anfragemenge(n) / Quantity:

Bitte hier zutreffendes ankreuzen und fehlende Angaben ergänzen / Please tick the appropriate field and fill in missing data.



❒ **Schaft** / Shaft **HA**

❒ **Schaft** / Shaft **HB**

❒ **Schaft** / Shaft **HE**

Abmessungen und Toleranzangaben / Dimensions and tolerances

D1	**L1**
D2	**L2**
D3	**L3**
D4	**L4**
D5	**L5**
SW1	
SW2	
SW3	

Geometrie / Geometry

Z (Anzahl Schneiden / no. of blades)

Drallwinkel / Angle of twist

Spitzenwinkel / Point angle

Innenkühlung / Internal cooling

Einsatz / Insert

zu bearb.Material / Material to be processed

Beschichtung / Coating

ALTIN	❒	**M-CUT**	❒
TIALN	❒	**TIN**	❒
NACO	❒	**CrN**	❒
sonstiges/other	❒		

Anlagen / Attachments

Zeichnung / Drawing ❒ **Nr.**

Sonstige Angaben / Other information

Anfrage Schaftfräser
Inquiry for end mill cutters

ATE TOOLS GmbH

Absender / Sent by:

Firma / Company: _____

_____

Ansprechpartner / Contact: _____

Telefon / Telephone: _____

_____

Terminwunsch / Desired deadline: _____

Bitte Angebot bis / Please send offer by: _____

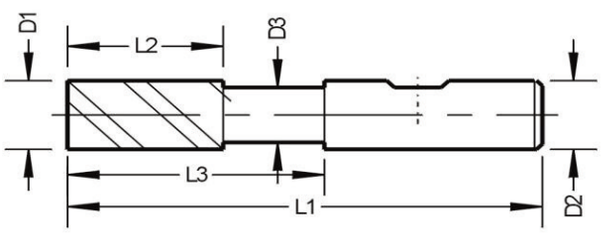
_____

Anfragemenge(n) / Quantity: _____

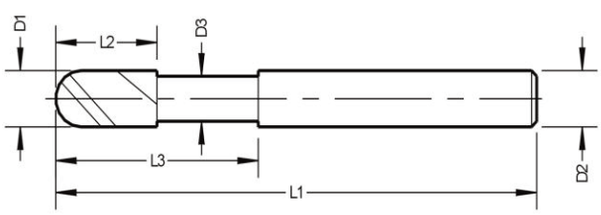
_____

Bitte hier zutreffendes ankreuzen und fehlende Angaben ergänzen / Please tick the appropriate field and fill in missing data.

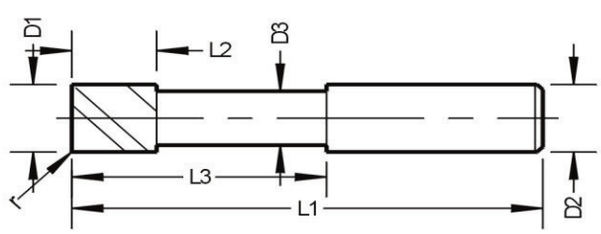
☐ **Schaftfräser, scharfkantig** / End mill cutter, sharp-edged



☐ **Radiusfräser, Vollradius** / Radius cutter, full radius



☐ **Torusfräser, Eckenradius** / Torus cutter, corner radius



☐ **Schaft** / Shaft **HA**

☐ **Schaft** / Shaft **HB**

Abmessungen und Toleranzangaben / Dimensions and tolerances

D1	
D2	
L1	
L2	
D3	
L3	
R	

Geometrie / Geometry

	Z (Anzahl Schneiden / no. of blades)
	Drallwinkel / Angle of twist
☐	**Innenkühlung** / Internal cooling
	Eckenfase / Corner chamfer
☐	**Stirnausf.** / Front version

Einsatz / Insert

zu bearb.Material / Material to be processed _____

Beschichtung / Coating

ALTIN	☐	**M-CUT**	☐
TIALN	☐	**TIN**	☐
NACO	☐	**CrN**	☐
sonstiges/other	☐		

Anlagen / Attachments

Zeichnung / Drawing ☐ **Nr.** _____

Sonstige Angaben / Other information

_____

_____

_____

_____

Allgemeine Anfrage für Sonderwerkzeuge
General inquiry for special tools

ATE TOOLS GmbH

Absender / Sent by:

Firma / Company:

Ansprechpartner / Contact:

Telefon / Telephone:

Terminwunsch / Desired deadline:

Bitte Angebot bis / Please send offer by:

Anfragemenge(n) / Quantity:

Bitte hier zutreffendes ankreuzen und fehlende Angaben ergänzen / Please tick the appropriate field and fill in missing data.

Hier ist Platz für Ihre Skizze / Space for your sketch

Fräswerkzeug / Milling tool ☐ **Bohrwerkzeug** / Drilling tool ☐

Abmessungen und Toleranzangaben zur Skizze /
Dimensions and tolerances for sketch

Geometrie / Geometry

Z (Anzahl Schneiden / no. of blades)

Drallwinkel / Angle of twist

☐ **Innenkühlung /** Internal cooling

Einsatz / Insert

zu bearb.Material / Material to be processed

Beschichtung / Coating

ALTIN	☐	**M-CUT**	☐
TIALN	☐	**TIN**	☐
NACO	☐	**CrN**	☐

sonstiges/other ☐

Anlagen / Attachments

Zeichnung / Drawing ☐ **Nr.**

Sonstige Angaben / Other information

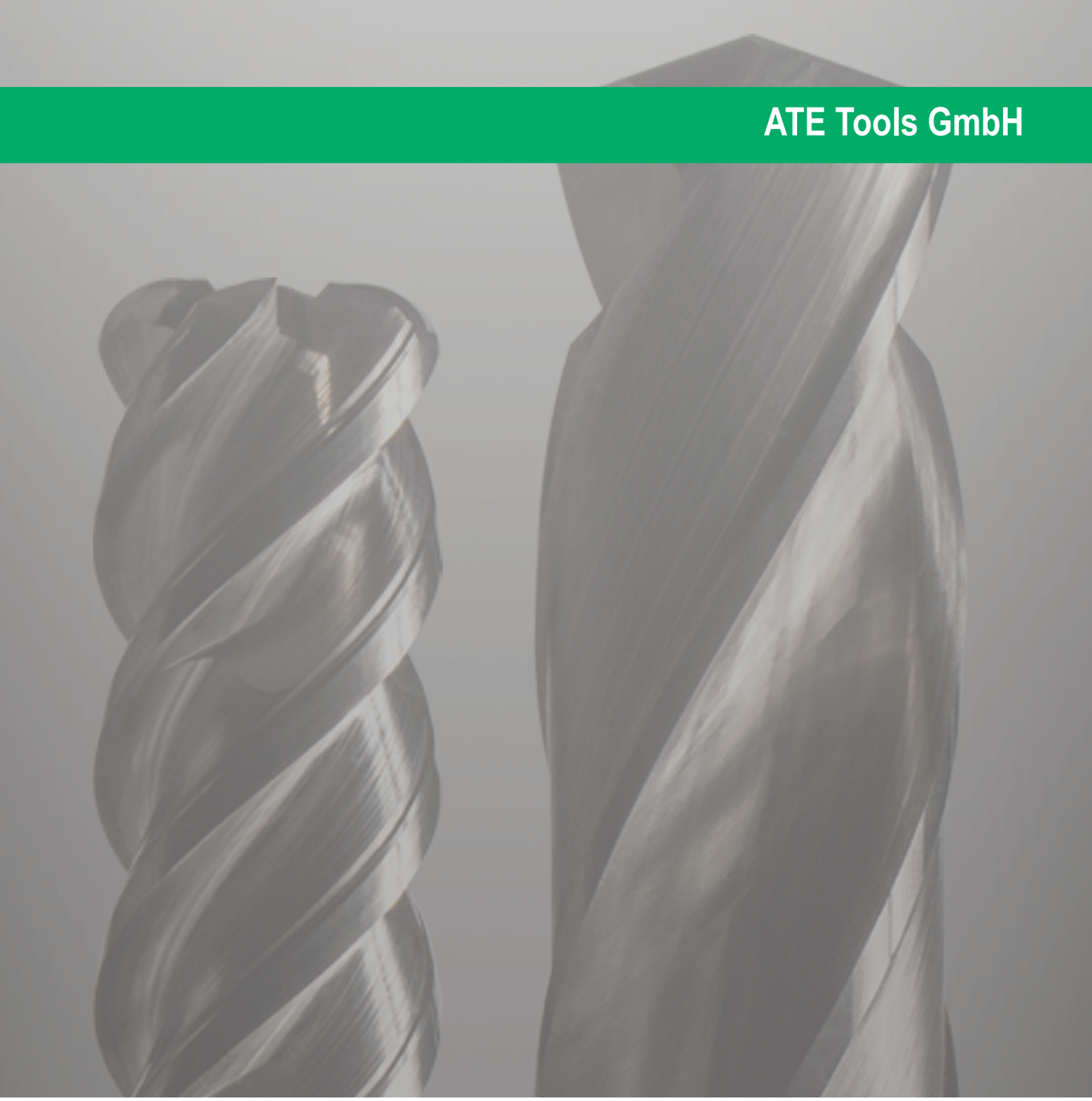
☐ **Schaft** / Shaft **HA**

☐ **Schaft** / Shaft **HB**

☐ **Schaft** / Shaft **HE**

Notizen

ATE Tools GmbH



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