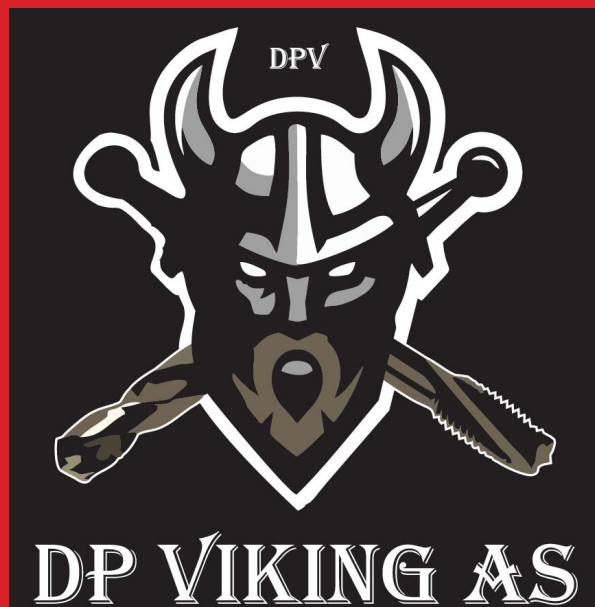


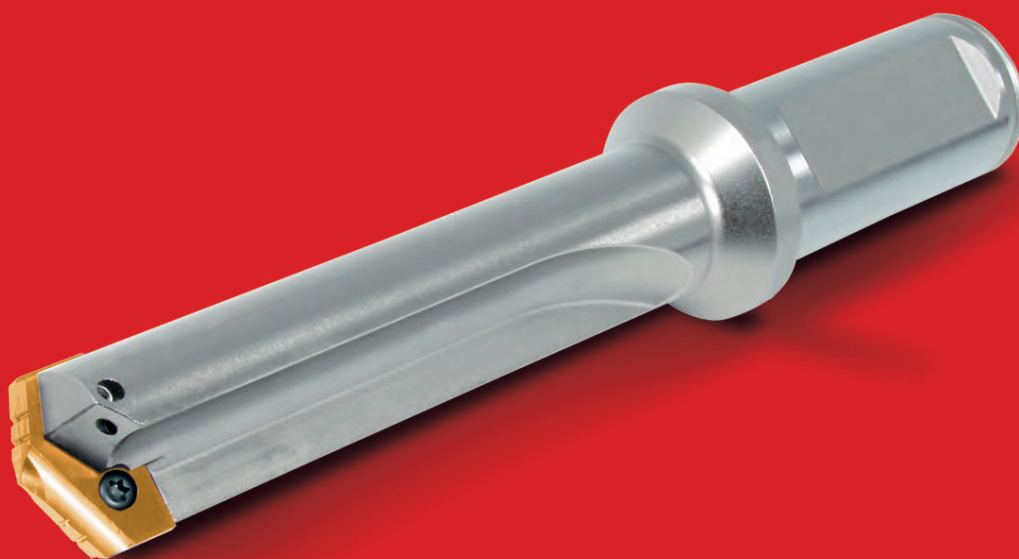


www.dpviking.no

SHARK-DRILL®

Katalog med Linker og bokmerker

- *Holder oversikt*
- *Holder Weldon*
- *Holder MK*
- *Borskjær*
- *Skjærgeometri*
- *Tilbehør*
- *Skjærdata*
- *Brukerveiledning*



1

ARNO Schneidplattenbohrer SHARK-Drill®

ARNO Flanged holders SHARK-Drill®

ARNO Corpo punta SHARK-Drill®

1 Alle Halter mit innerer Kühlmittelzuführung

All holders with through tool coolant supply

Passaggio interno del refrigerante su tutti i corpi

Vernickelte Oberfläche – „Rostet nicht“. Glatte Spankammern für bessere Spanausbringung.

Nickel plated surface – “no rust” smooth swarf chambers for better swarf evacuation.

Corpi con rivestimenti Nickel – resistenza alla ossidazione e migliore avacuazione truciolo.

Spiralgenutet oder gerade genutet lieferbar.

Spiral or straight flutes available.

Scarico truciolo elicoidale o diritto.

Torx-Schrauben für einfaches und sicheres Spannen.

Torx screws for easy and secure locking.

Viti Torx.

ARNO Inserts SHARK-Drill®

All inserts are CNC ground

*TiN-, TiCN- and TiAlN- coatings available.
Special coatings on request.*

Version with coolant adaptor.

Corner clip protection for better tool life and edge stability.

Self-centering point allows to drill into solid up to 10xD.

*Chipbreakers on all insert
(except K10 up to Dia. 18 mm).*

1

Designation system

Flanged holders

1



H	A	950	1107	65	SP	W 20
Holder	Series	Diameter from: 9.5 mm	Diameter up to: 11.07 mm	Max. drill depth	Flute style: SP = helical G = straight	Schafttyp: W = DIN ISO 9766 + Durchmesser MK = Morsekegel mit Austreibklappen + MK-Größen MK -G = Morsekegel mit Austreibklappen + MK-Größe (Form BK) W.. -W = DIN ISO 9766 + Durchmesser + Anzugsgewinde Shank type: W = DIN ISO 9766 + Diameter MK = Morse Taper + MT size MK -G = Morse Taper + MT size (form BK) W.. -W = DIN ISO 9766 + Diameter + Thread Attacco tipo: W = DIN ISO 9766 + Diametro MK = Cono Morse + dimensione MK -G = Cono morse + dimensione (pollici) W.. -W = DIN ISO 9766 + diametro + foro filettato
	A C E G I K M O Q S U W					

Inserts

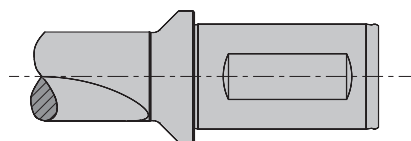


P	A	9,5	HSS5	TiAlN
Schneideinsatz	Serie	Durchmesser (mm)	HSS	Beschichtung
Insert	Series	Diameter (mm)	HSS5 = ohne Co-Gehalt = without Cobalt content = senza contenuto di Cobalto	Coating
Inserto	Serie	Diametro (mm)	HSS5 = mit 5% Co-Gehalt = with 5% Cobalt content = con 5% contenuto di Cobalto	Rivestimento
	A C E G I K M O Q S U W		HSS8 = mit 8% Co-Gehalt = with 8% Cobalt content = con 8% contenuto di Cobalto	
	Muss immer zum Halter passen! Must always be suitable to holders! Deve corrispondere al corpo punta!		AP40 = P40 nach ISO = P40 (ISO-Standard) = P40 (classe ISO)	
			AK20 = K20 nach ISO = K20 (ISO-Standard) = K20 (classe ISO)	
			AK10 = K10 nach ISO = K10 (ISO-Standard) = K10 (classe ISO)	

Mit DIN ISO 9766-Schaft

With DIN ISO 9766 shank

Corpo con attacco DIN ISO 9766

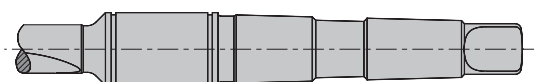


Serie Series Serie	Ø [mm]	max. Bohrtiefe [mm] max. drill depth [mm] Prof. foro max [mm]	Werkzeug auf Seite Tools on page Corpo punta a pagina	Wendeschneidplatte auf Seite Inserts on page Inserto a pagina
A	9,5–11,07	290	38 – 39	75 – 76
C	11,1–12,95	290	39 – 40	76 – 77
E	12,98–17,65	387	41 – 43	78 – 80
G	15,5–17,65	178	41/43	78 – 80
I	17,53–24,38	565	44 – 46	81 – 83
K	22,0–24,38	270	44 – 45	81 – 83
M	24,41–35,05	692	46 – 48	84 – 87
O	30,0–35,05	289	47 – 48	84 – 87
Q	34,37–47,80	787	49 – 50	88 – 89
S	46,99–65,28	879	50 – 51	90 – 91

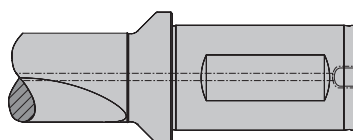
Mit Morsekegel

With shank holders

Corpo con attacco Morse tipo



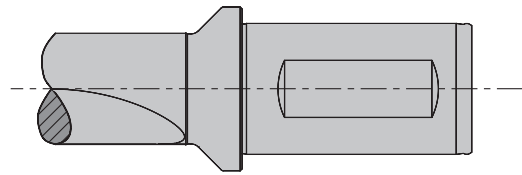
Serie Series Serie	Ø [mm]	max. Bohrtiefe [mm] max. drill depth [mm] Prof. foro max [mm]	Werkzeug auf Seite Tools on page Corpo punta a pagina	Wendeschneidplatte auf Seite Inserts on page Inserto a pagina
A	9,5–11,07	290	52 – 53	75 – 76
C	11,1–12,95	290	53 – 54	76 – 77
E	12,98–17,65	387	55 – 57	78 – 80
G	15,5–17,65	178	55 – 56	78 – 80
I	17,53–24,38	565	57 – 59	81 – 83
K	22,0–24,38	270	58 – 60	81 – 83
M	24,41–35,05	692	60 – 62	84 – 87
O	30,0–35,05	289	61 – 62	84 – 87
Q	34,37–47,80	787	63 – 64	88 – 89
S	46,99–65,28	879	65 – 66	90 – 91
U	62,38–89,08	889	66 – 67	92
W	46,99–65,28	939	68 – 69	93

**Optional mit Morsekegel (-G)
Erweiterte DIN 228 Form BK**Optional with morse taper (-G)
for DIN 228 form BKCorpo con attacco Morse (-G)
tipo DIN 228 forma BK**Optional mit DIN ISO 9766-Schaft (-W)
und rückseitigem Gewinde nach BSP ISO 7-1**Optional with DIN ISO 9766 shank (-W)
for threaded coolant connection to BSP ISO 7-1Versione corpi (-W)
con foro filettato BSP ISO 7-1

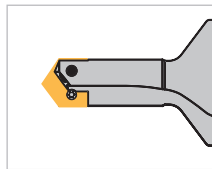
Schneidplatten-Bohrer mit DIN ISO 9766-Schaft

Flanged holders – DIN ISO 9766 shank

Corpo punta – Attacco DIN ISO 9766

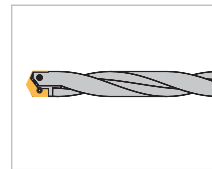
**Serie/ Series/ Serie A**

Ø 9,5 mm – Ø 11,0 mm



Zylinderschaft – gerade genutet
Straight cylindrical shank – straight flute
Attacco cilindrico – elica dritta

Seite
Page
Pagina **38 – 39**

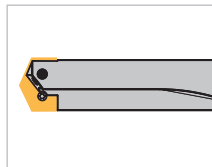


Zylinderschaft – spiralgenutet
Straight cylindrical shank – helical flute
Attacco cilindrico – elica a spirale

Seite
Page
Pagina **38**

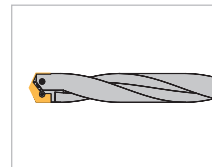
Serie/ Series/ Serie C

Ø 11,5 mm – Ø 12,8 mm



Zylinderschaft – gerade genutet
Straight cylindrical shank – straight flute
Attacco cilindrico – elica dritta

Seite
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Pagina **39 – 40**

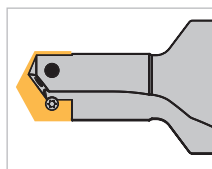


Zylinderschaft – spiralgenutet
Straight cylindrical shank – helical flute
Attacco cilindrico – elica a spirale

Seite
Page
Pagina **40**

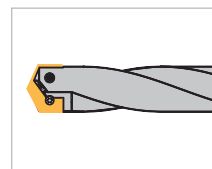
Serie/ Series/ Serie E+G

Ø 13,0 mm – Ø 17,5 mm



Zylinderschaft – gerade genutet
Straight cylindrical shank – straight flute
Attacco cilindrico – elica dritta

Seite
Page
Pagina **41/43**

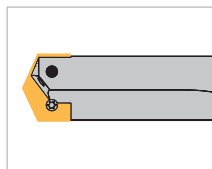


Zylinderschaft – spiralgenutet
Straight cylindrical shank – helical flute
Attacco cilindrico – elica a spirale

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Page
Pagina **42 – 43**

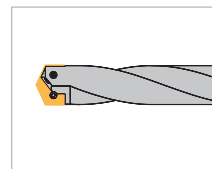
Serie/ Series/ Serie I+K

Ø 17,8 mm – Ø 24,0 mm



Zylinderschaft – gerade genutet
Straight cylindrical shank – straight flute
Attacco cilindrico – elica dritta

Seite
Page
Pagina **44/46**

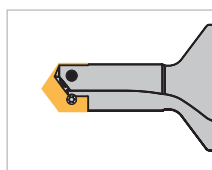


Zylinderschaft – spiralgenutet
Straight cylindrical shank – helical flute
Attacco cilindrico – elica a spirale

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Pagina **45**

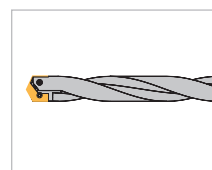
Serie/ Series/ Serie M+O

Ø 24,5 mm – Ø 35,0 mm



Zylinderschaft – gerade genutet
Straight cylindrical shank – straight flute
Attacco cilindrico – elica dritta

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Pagina **46 – 48**



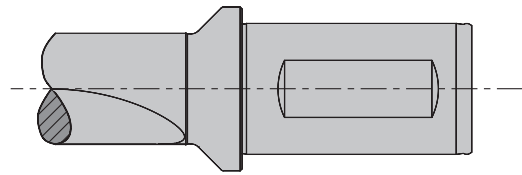
Zylinderschaft – spiralgenutet
Straight cylindrical shank – helical flute
Attacco cilindrico – elica a spirale

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Page
Pagina **47 – 48**

Schneidplatten-Bohrer mit DIN ISO 9766-Schaft

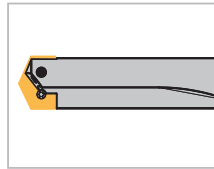
Flanged holders – DIN ISO 9766 shank

Corpo punta – Attacco DIN ISO 9766



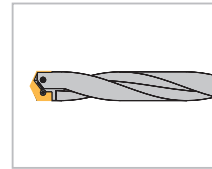
Serie / Series / Serie **Q**

Ø 36,0 mm – Ø 47,0 mm



**Zylinderschaft –
gerade genutet**
Straight cylindrical shank –
straight flute
Attacco cilindrico –
elica diritta

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Page
Pagina **49 – 50**

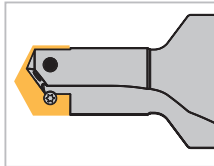


**Zylinderschaft –
spiralgenutet**
Straight cylindrical shank –
helical flute
Attacco cilindrico –
elica a spirale

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Pagina **49**

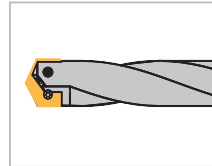
Serie / Series / Serie **S**

Ø 48,0 mm – Ø 65,0 mm



**Zylinderschaft –
gerade genutet**
Straight cylindrical shank –
straight flute
Attacco cilindrico –
elica diritta

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Pagina **50 – 51**



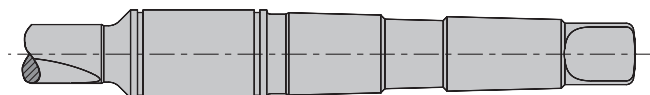
**Zylinderschaft –
spiralgenutet**
Straight cylindrical shank –
helical flute
Attacco cilindrico –
elica a spirale

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Page
Pagina **51**

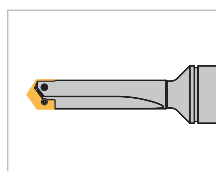
Schneidplatten-Bohrer mit Morsekegel

Taper shank holders

Corpo con Cono Morse

Serie/Series/Serie **A**

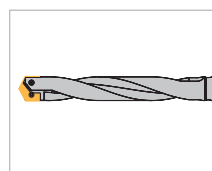
Ø 9,5 mm – Ø 11,0 mm



Morsekegelschaft – gerade genutet
Taper shank – straight flute
Attacco Cono Morse – elica dritta

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Pagina

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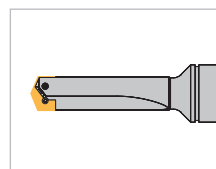
Morsekegelschaft – spiralgenutet
Taper shank – helical flute
Attacco Cono Morse – elica a spirale

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Pagina

52 – 53

Serie/Series/Serie **C**

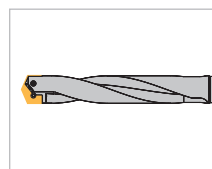
Ø 11,5 mm – Ø 12,8 mm



Morsekegelschaft – gerade genutet
Taper shank – straight flute
Attacco Cono Morse – elica dritta

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Pagina

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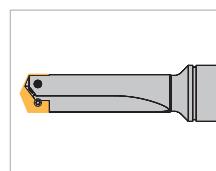
Morsekegelschaft – spiralgenutet
Taper shank – helical flute
Attacco Cono Morse – elica a spirale

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Pagina

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Serie/Series/Serie **E+G**

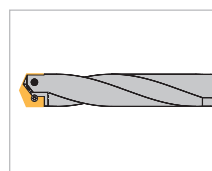
Ø 13,0 mm – Ø 17,5 mm



Morsekegelschaft – gerade genutet
Taper shank – straight flute
Attacco Cono Morse – elica dritta

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Pagina

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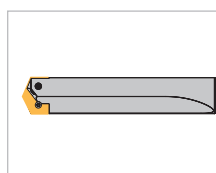
Morsekegelschaft – spiralgenutet
Taper shank – helical flute
Attacco Cono Morse – elica a spirale

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Pagina

56 – 57

Serie/Series/Serie **I+K**

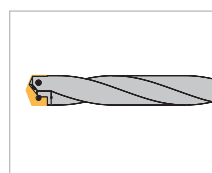
Ø 17,8 mm – Ø 24,0 mm



Morsekegelschaft – gerade genutet
Taper shank – straight flute
Attacco Cono Morse – elica dritta

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Pagina

57 – 58



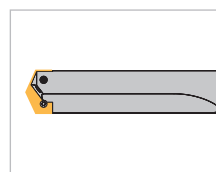
Morsekegelschaft – spiralgenutet
Taper shank – helical flute
Attacco Cono Morse – elica a spirale

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58 – 60

Serie/Series/Serie **M+O**

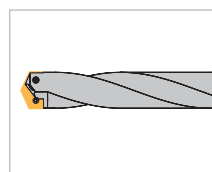
Ø 24,5 mm – Ø 35,0 mm



Morsekegelschaft – gerade genutet
Taper shank – straight flute
Attacco Cono Morse – elica dritta

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Pagina

60 – 61



Morsekegelschaft – spiralgenutet
Taper shank – helical flute
Attacco Cono Morse – elica a spirale

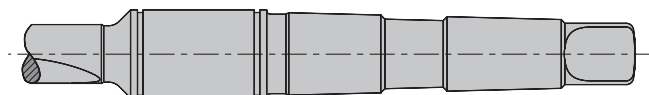
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61 – 62

Schneidplatten-Bohrer mit Morsekegel

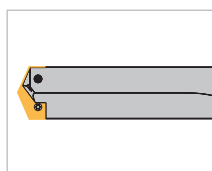
Taper shank holders

Corpo con Cono Morse



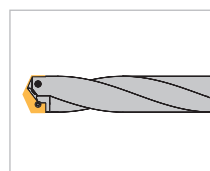
Serie / Series / Serie **Q**

Ø 36,0 mm – Ø 47,0 mm



Morsekegelschaft – gerade genutet
Taper shank – straight flute
Attacco Cono Morse – elica dritta

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Pagina **63 – 64**

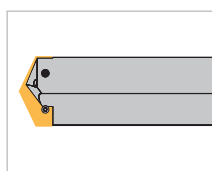


Morsekegelschaft – spiralgenutet
Taper shank – helical flute
Attacco Cono Morse – elica a spirale

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Pagina **63 – 64**

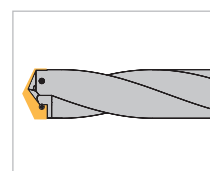
Serie / Series / Serie **S**

Ø 48,0 mm – Ø 65,0 mm



Morsekegelschaft – gerade genutet
Taper shank – straight flute
Attacco Cono Morse – elica dritta

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Pagina **65 – 66**

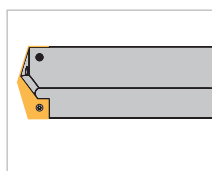


Morsekegelschaft – spiralgenutet
Taper shank – helical flute
Attacco Cono Morse – elica a spirale

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Pagina **65**

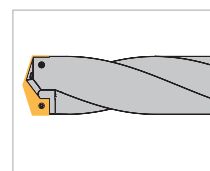
Serie / Series / Serie **U**

Ø 66,0 mm – Ø 89,0 mm



Morsekegelschaft – gerade genutet
Taper shank – straight flute
Attacco Cono Morse – elica dritta

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Pagina **66 – 67**

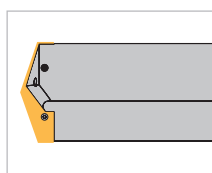


Morsekegelschaft – spiralgenutet
Taper shank – helical flute
Attacco Cono Morse – elica a spirale

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Pagina **67**

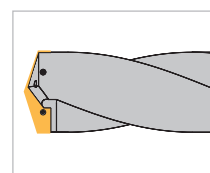
Serie / Series / Serie **W**

Ø 90,0 mm – Ø 114,0 mm



Morsekegelschaft – gerade genutet
Taper shank – straight flute
Attacco Cono Morse – elica dritta

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Pagina **68 – 69**



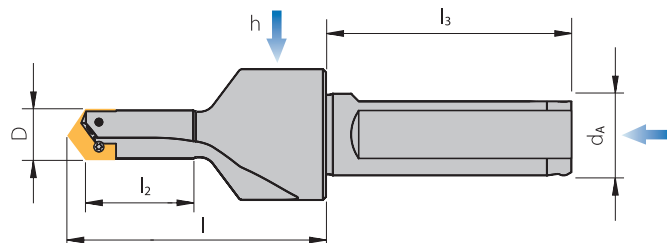
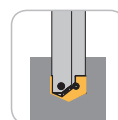
Morsekegelschaft – spiralgenutet
Taper shank – helical flute
Attacco Cono Morse – elica a spirale

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Pagina **68**

Serie / Series / Serie

A

Ø 9,5 mm – 11,07 mm
1,5 x D – 3 x D



Klikk på bildet for å komme til skjæroversikt



Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	I	I ₂	I ₃	h	d _A	MK	Gewinde Thread Filetato
HA950-1107-19GW16	1,5 x D – 2 x D	9,5 – 11,07	50	19	41,9	1/8"	16	-	-
HA950-1107-32GW20	2,5 x D – 3 x D	9,5 – 11,07	63,5	32	41,9	-	20	-	-

Verschlussschraube 20906-G1/8
Grub screw 20906-G1/8
Tappo filettato 20906-G1/8

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

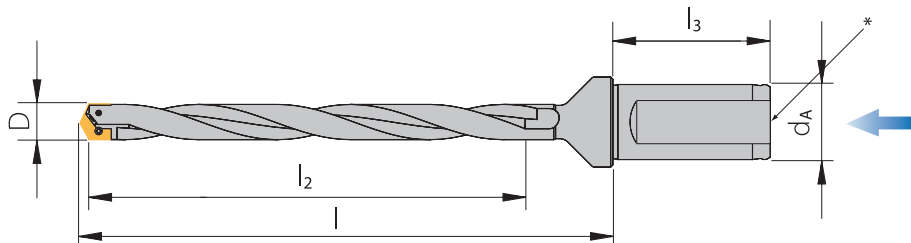
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

A

Ø 9,5 mm – 11,07 mm
5 x D – 11,5 x D



Klikk på bildet for å komme til skjæroversikt



* Gewinde G 1/8"
Thread
Filetato -W

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	I	I ₂	I ₃	h	d _A	MK	Gewinde Thread Filetato
HA950-1107-60SPW20	5 x D – 6 x D	9,5 – 11,07	91,1	60	41,9	-	20	-	-
HA950-1107-86SPW20	7,5 x D – 9 x D	9,5 – 11,07	118,0	86	41,9	-	20	-	-
HA950-1107-111SPW20	10 x D – 11,5 x D	9,5 – 11,07	142,9	111	41,9	-	20	-	-
HA950-1107-111SPW20-W	10 x D – 11,5 x D	9,5 – 11,07	142,9	111	41,9	-	20	-	G 1/8"

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

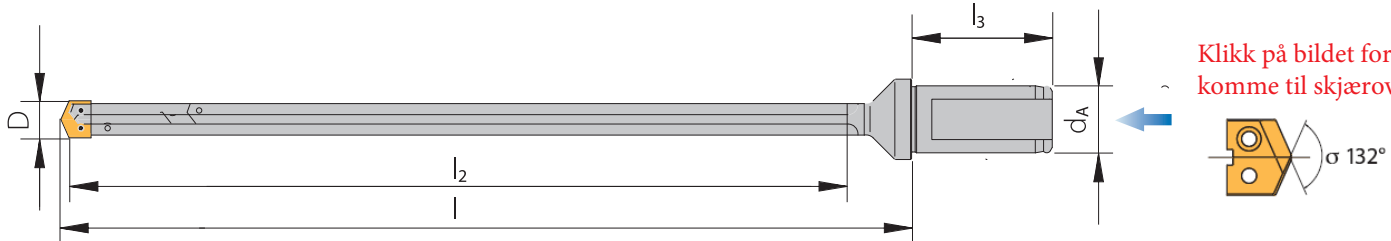
Accessori corpo a pagina 94 – 95.

Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

A

Ø 9,5 mm – 11,07 mm
20 x D – 30,5 x D



Klikk på bildet for å komme til skjærversikt

1

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HA950-1107-222GW20	20 x D – 23 x D	9,5 – 11,07	254,1	222	41,9	-	20	-	-
HA950-1107-290GW20	26 x D – 30,5 x D	9,5 – 11,07	322,3	290	41,9	-	20	-	-

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

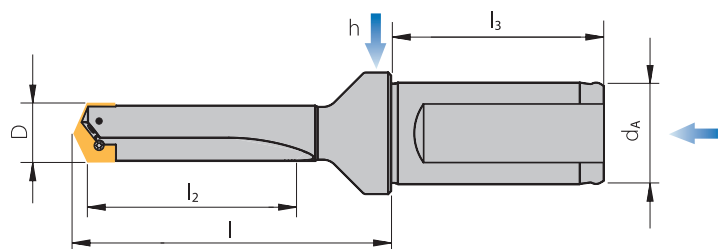
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

C

Ø 11,1 mm – 12,95 mm
1 x D – 2,5 x D



Klikk på bildet for å komme til skjærversikt

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HC1110-1295-19GW16	1 x D – 1,5 x D	11,1 – 12,95	48	19	41,9	1/8"	16	-	-
HC1110-1295-32GW20	2 x D – 2,5 x D	11,1 – 12,95	63,5	32	41,9	-	20	-	-

Verschlusschraube 20906-G1/8
Grub screw 20906-G1/8
Tappo filettato 20906-G1/8

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.

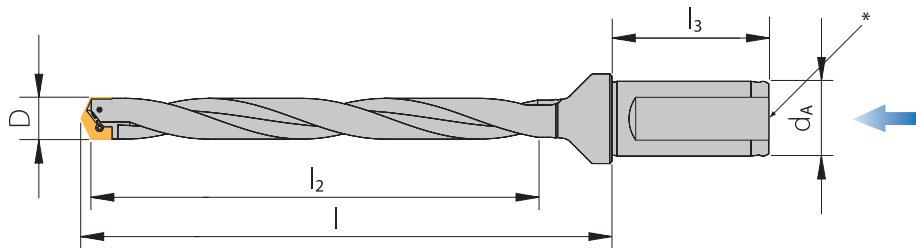
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

C

Ø 11,1 mm – 12,95 mm

4,5 x D – 16 x D



Klikk på bildet for å komme til skjæroversikt



* Gewinde G 1/8" Thread Filetato -W

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HC1110-1295-60SPW20	4,5 x D – 5 x D	11,1 – 12,95	92,1	60	41,9	-	20	-	-
HC1110-1295-60SPW20-W	4,5 x D – 5 x D	11,1 – 12,95	92,1	60	41,9	-	20	-	G 1/8"
HC1110-1295-86SPW20	6,5 x D – 7,5 x D	11,1 – 12,95	118,0	86	41,9	-	20	-	-
HC1110-1295-111SPW20	8,5 x D – 10 x D	11,1 – 12,95	142,9	111	41,9	-	20	-	-
HC1110-1295-111SPW20-W	8,5 x D – 10 x D	11,1 – 12,95	142,9	111	41,9	-	20	-	G 1/8"
HC1110-1295-180SPW20	13,5 x D – 16 x D	11,1 – 12,95	212,0	180	41,9	-	20	-	-

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

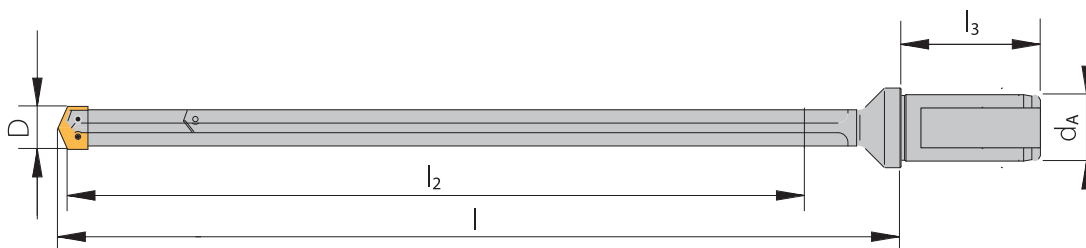
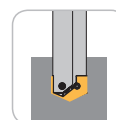
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

C

Ø 11,1 mm – 12,95 mm

17 x D – 26 x D



Klikk på bildet for å komme til skjæroversikt



Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HC1110-1295-222GW20	17 x D – 20 x D	11,1 – 12,95	254,1	222	41,9	-	20	-	-
HC1110-1295-290GW20	22 x D – 26 x D	11,1 – 12,95	322,3	290	41,9	-	20	-	-

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

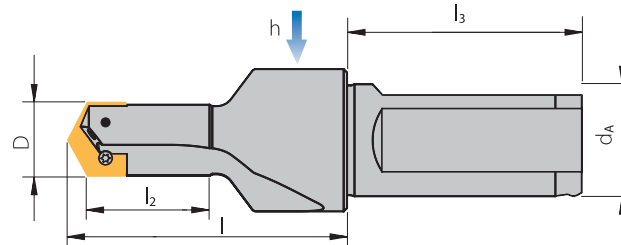
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

E

Ø 12,98 mm – 17,65 mm

1 x D – 2,5 x D



Klikk på bildet for å komme til skjæroversikt



1

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	I	I ₂	I ₃	h	d _A	MK	Gewinde Thread Filetato
HE1298-1765-22GW20	1 x D – 1,5 x D	12,98 – 17,65	50,4	22	41,9	1/8"	20	-	-
HE1298-1765-35GW20	1,5 x D – 2,5 x D	12,98 – 17,65	66,3	35	41,9	-	20	-	-

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

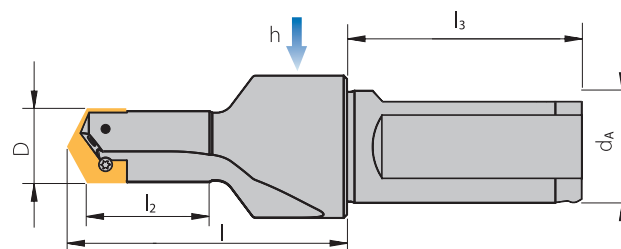
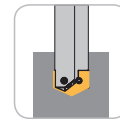
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

G

Ø 15,5 mm – 17,65 mm

1 x D – 2 x D



Klikk på bildet for å komme til skjæroversikt



Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	I	I ₂	I ₃	h	d _A	MK	Gewinde Thread Filetato
HG1550-1765-22GW20	1 x D – 1,5 x D	15,5 – 17,65	50,4	22	41,9	1/8"	20	-	-
HG1550-1765-35GW20	1,5 x D – 2 x D	15,5 – 17,65	66,3	35	41,9	-	20	-	-

Verschlusschraube 20906-G1/8
Grub screw 20906-G1/8
Tappo filettato 20906-G1/8

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.

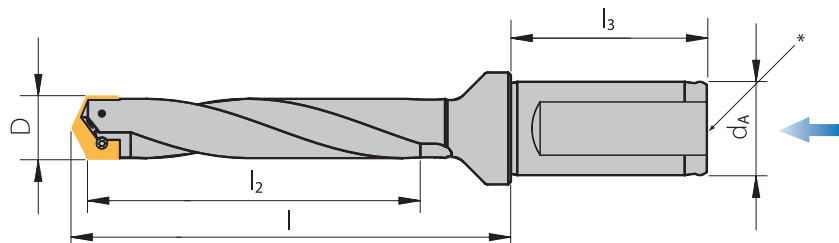
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

E

Ø 12,98 mm – 17,65 mm

3,5 x D – 18 x D



Klick på bildet for å komme til skjæroversikt



* Gewinde G 1/8"
Thread
Filetato -W

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	I	I ₂	I ₃	h	d _A	MK	Gewinde Thread Filetato
HE1298-1765-64SPW20	3,5 x D – 4,5 x D	12,98 – 17,65	94,9	64	41,9	-	20	-	-
HE1298-1765-64SPW20-W	3,5 x D – 4,5 x D	12,98 – 17,65	94,9	64	41,9	-	20	-	G 1/8"
HE1298-1765-89SPW20	5 x D – 6,5 x D	12,98 – 17,65	120,0	89	41,9	-	20	-	-
HE1298-1765-114SPW20	6 x D – 8,5 x D	12,98 – 17,65	145,7	114	41,9	-	20	-	-
HE1298-1765-114SPW20-W	6 x D – 8,5 x D	12,98 – 17,65	145,7	114	41,9	-	20	-	G 1/8"
HE1298-1765-178SPW20	10 x D – 13,5 x D	12,98 – 17,65	209,1	178	41,9	-	20	-	-
HE1298-1765-178SPW20-W	10 x D – 13,5 x D	12,98 – 17,65	209,1	178	41,9	-	20	-	G 1/8"
HE1298-1765-240SPW20	13,5 x D – 18 x D	12,98 – 17,65	271,0	240	41,9	-	20	-	-

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.

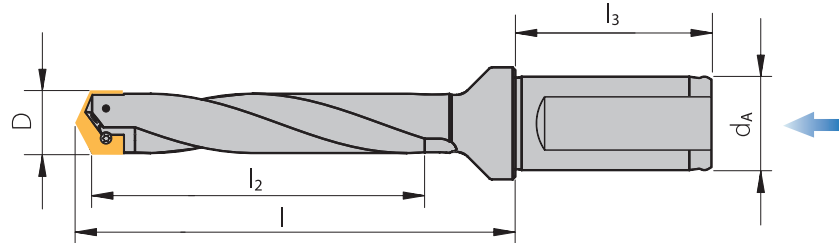
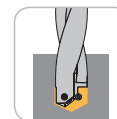
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

G

Ø 15,5 mm – 17,65 mm

3,5 x D – 11 x D



Klick på bildet for å komme til skjæroversikt



1

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HG1550-1765-64SPW20	3,5 x D – 4 x D	15,5 – 17,65	94,9	64	41,9	-	20	-	-
HG1550-1765-114SPW20	6 x D – 7 x D	15,5 – 17,65	145,7	114	41,9	-	20	-	-
HG1550-1765-178SPW20	10 x D – 11 x D	15,5 – 17,65	209,1	178	41,9	-	20	-	-

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

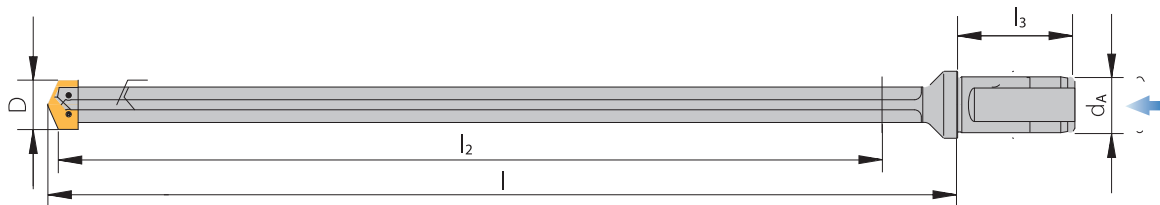
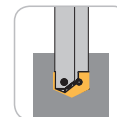
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

E

Ø 12,98 mm – 17,65 mm

16,5 x D – 29,5 x D



Klick på bildet for å komme til skjæroversikt



Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HE1298-1765-295GW20	16,5 x D – 22,5 x D	12,98 – 17,65	326,7	295	41,9	-	20	-	-
HE1298-1765-387GW20	21,5 x D – 29,5 x D	12,98 – 17,65	418,8	387	41,9	-	20	-	-

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

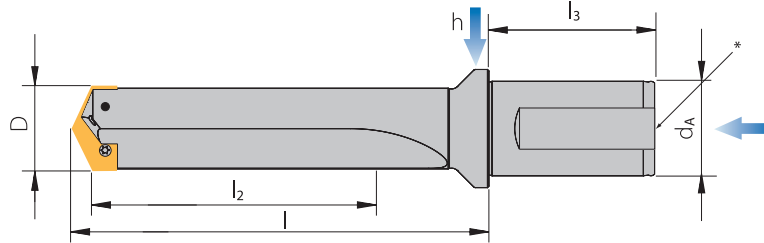
Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.

Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

I
Ø 17,53 mm – 24,38 mm
1,5 x D – 3,5 x D



Klikk på bildet for å
komme til skjæroversikt



* Gewinde G 1/8"
Thread
Filetato -W

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	I	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HI1753-2438-47GW25	1,5 x D – 2,5 x D	17,53 – 24,38	79,4	47	53,1	1/8"	25	-	-
HI1753-2438-47GW25-W	1,5 x D – 2,5 x D	17,53 – 24,38	79,4	47	53,1	1/8"	25	-	G 1/8"
HI1753-2438-67GW25	2,5 x D – 3,5 x D	17,53 – 24,38	110,7	67	53,1	-	25	-	-
HI1753-2438-67GW25-W	2,5 x D – 3,5 x D	17,53 – 24,38	110,7	67	53,1	-	25	-	G 1/8"

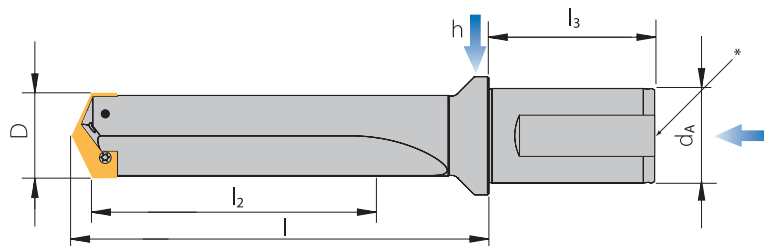
HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

K
Ø 22,0 mm – 24,38 mm
2 x D – 3 x D



Klikk på bildet for å
komme til skjæroversikt



* Gewinde G 1/8"
Thread
Filetato -W

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	I	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HK2200-2438-57GW25	2 x D – 2,5 x D	22,0 – 24,38	92,1	57	53,1	1/8"	25	-	-
HK2200-2438-67GW25	2,5 x D – 3 x D	22,0 – 24,38	110,7	67	53,1	-	25	-	-

Verschlusschraube 20906-G1/8
Grab screw 20906-G1/8
Tappo filetato 20906-G1/8

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.

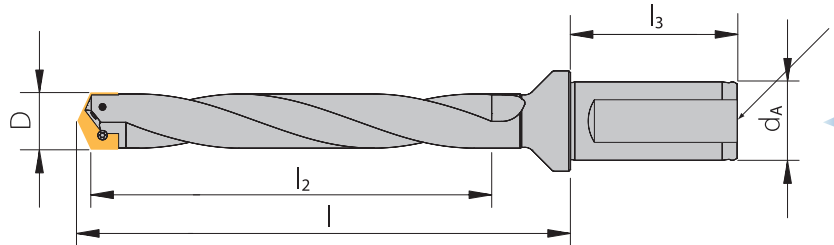
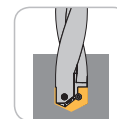
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

I

Ø 17,53 mm – 24,38 mm

4,5 x D – 20,5 x D



Klikk på bildet for å komme til skjæroversikt



* Gewinde G 1/8" Thread Filetato -W

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HI1753-2438-118SPW25	4,5 x D – 6,5 x D	17,53 – 24,38	158,4	118	53,1	-	25	-	-
HI1753-2438-168SPW25	6,5 x D – 9,5 x D	17,53 – 24,38	209,2	168	53,1	-	25	-	-
HI1753-2438-168SPW25-W	6,5 x D – 9,5 x D	17,53 – 24,38	209,2	168	53,1	-	25	-	G 1/8"
HI1753-2438-219SPW25	8,5 x D – 12 x D	17,53 – 24,38	260,0	219	53,1	-	25	-	-
HI1753-2438-270SPW25	11 x D – 15 x D	17,53 – 24,38	310,8	270	53,1	-	25	-	-
HI1753-2438-365SPW25	14,5 x D – 20,5 x D	17,53 – 24,38	406,0	365	53,1	-	25	-	-

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

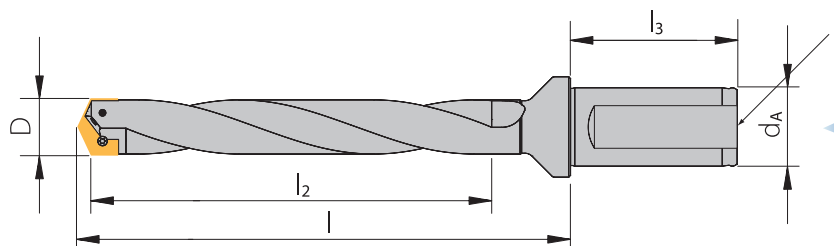
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

K

Ø 22,0 mm – 24,38 mm

4,5 x D – 12 x D



Klikk på bildet for å komme til skjæroversikt



* Gewinde G 1/8" Thread Filetato -W

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HK2200-2438-118SPW25	4,5 x D – 5 x D	22,0 – 24,38	158,4	118	53,1	-	25	-	-
HK2200-2438-168SPW25	6,5 x D – 7,5 x D	22,0 – 24,38	209,2	168	53,1	-	25	-	-
HK2200-2438-270SPW25	11 x D – 12 x D	22,0 – 24,38	310,8	270	53,1	-	25	-	-

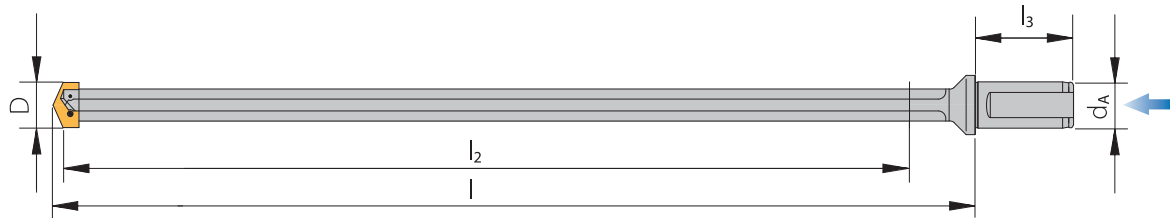
HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

I
 Ø 17,53 mm – 24,38 mm
 18,5 x D – 32 x D



Trägerwerkzeug / Drill holder / Corpo punta

Klick på bildet for å komme til skjæroversikt



Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HI1753-2438-457GW25	18,5 x D – 26 x D	17,53 – 24,38	498,1	457	53,1	-	25	-	-
HI1753-2438-565GW25	23 x D – 32 x D	17,53 – 24,38	606,1	565	53,1	-	25	-	-

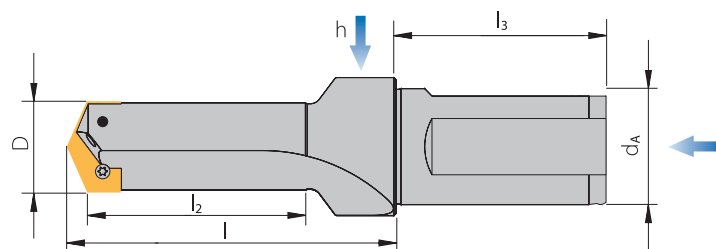
HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

M
 Ø 24,41 mm – 35,05 mm
 1,5 x D – 3,5 x D



Klick på bildet for å komme til skjæroversikt



Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HM2441-3505-57GW32	1,5 x D – 2 x D	24,41 – 35,05	92,1	57	57,9	1/8"	32	-	-
HM2441-3505-86GW32	2 x D – 3,5 x D	24,41 – 35,05	132,2	86	57,9	-	32	-	-
HM2441-3505-86GW32-W	2 x D – 3,5 x D	24,41 – 35,05	132,2	86	57,9	-	32	-	G 1/4"

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.

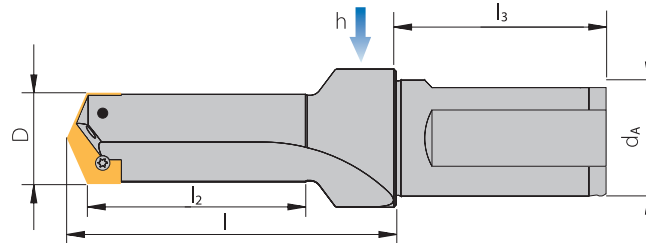
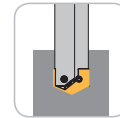
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

O

Ø 30,0 mm – 35,05 mm

2 x D – 3,5 x D



Klikk på bildet for å komme til skjæroversikt



1

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HO3000-3505-86GW32	2 x D – 3,5 x D	30,0 – 35,05	132,2	86	57,9	-	32	-	-
HO3000-3505-92GW32	2,5 x D – 3,5 x D	30,0 – 35,05	127	92	57,9	1/8"	32	-	-

Verschlusschraube 20906-G1/8
Grub screw 20906-G1/8
Tappo filettato 20906-G1/8

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

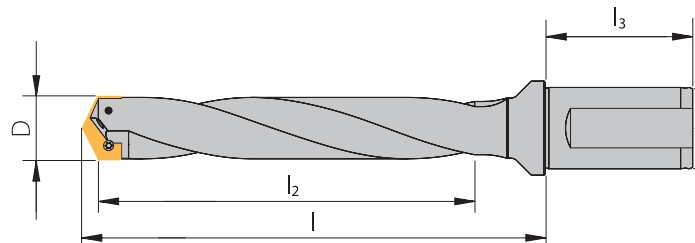
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

M

Ø 24,41 mm – 35,05 mm

3,5 x D – 16,5 x D



Klikk på bildet for å komme til skjæroversikt



* Gewinde G 1/4"
Thread
Filetato -W

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HM2441-3505-137SPW32	3,5 x D – 5,5 x D	24,41 – 35,05	183,0	137	57,9	-	32	-	-
HM2441-3505-137SPW32-W	3,5 x D – 5,5 x D	24,41 – 35,05	183,0	137	57,9	-	32	G 1/4"	-
HM2441-3505-187SPW32	5 x D – 7,5 x D	24,41 – 35,05	233,8	187	57,9	-	32	-	-
HM2441-3505-187SPW32-W	5 x D – 7,5 x D	24,41 – 35,05	233,8	187	57,9	-	32	G 1/4"	-
HM2441-3505-238SPW32	6,5 x D – 9,5 x D	24,41 – 35,05	285,0	238	57,9	-	32	-	-
HM2441-3505-289SPW32	8 x D – 11,5 x D	24,41 – 35,05	335,4	289	57,9	-	32	-	-
HM2441-3505-289SPW32-W	8 x D – 11,5 x D	24,41 – 35,05	335,4	289	57,9	-	32	G 1/4"	-
HM2441-3505-410SPW32	11,5 x D – 16,5 x D	24,41 – 35,05	456,5	410	57,9	-	32	-	-

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

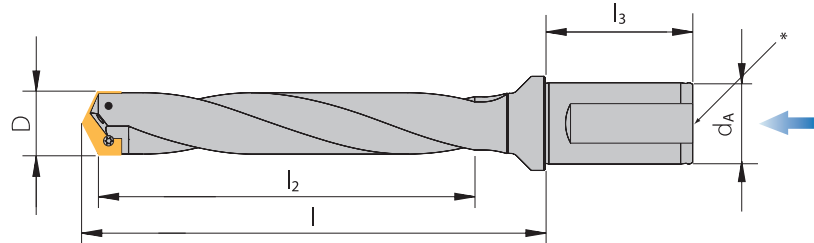
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

O

Ø 30,0 mm – 35,05 mm

3,5 x D – 11,5 x D



Klikk på bildet for å komme til skjæroversikt



* Gewinde G 1/4*
Thread
Filetato -W

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HO3000-3505-137SPW32	3,5 x D – 5,5 x D	30,0 – 35,05	183	137	57,9	-	32	-	-
HO3000-3505-187SPW32	5 x D – 7,5 x D	30,0 – 35,05	233,8	187	57,9	-	32	-	-
HO3000-3505-289SPW32	8 x D – 11,5 x D	30,0 – 35,05	335,4	289	57,9	-	32	-	-

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

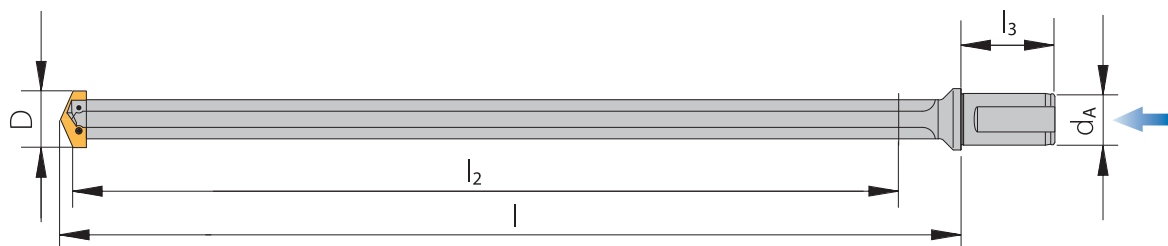
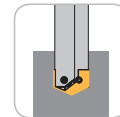
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

M

Ø 24,41 mm – 35,05 mm

14,5 x D – 28 x D



Klikk på bildet for å komme til skjæroversikt



Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HM2441-3505-511GW32	14,5 x D – 20,5 x D	24,41 – 35,05	557,7	511	57,9	-	32	-	-
HM2441-3505-692GW32	19,5 x D – 28 x D	24,41 – 35,05	738,7	692	57,9	-	32	-	-

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.

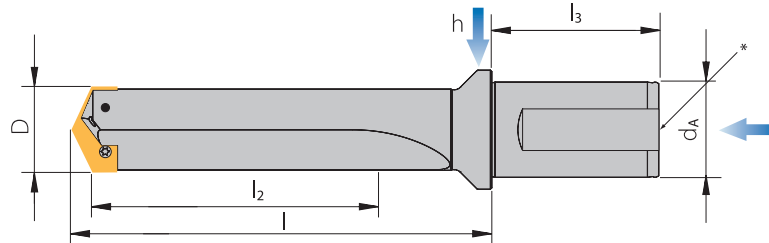
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

Q

Ø 34,37 mm – 47,8 mm

1,5 x D – 3,5 x D



Klikk på bildet for å komme til skjæroversikt



* Gewinde G 1/4"
Thread
Filetato -W

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HQ3437-4780-76GW40	1,5 x D – 2 x D	34,37 – 47,8	129,8	76	70,1	1/4"	40	-	-
HQ3437-4780-76GW40-W	1,5 x D – 2 x D	34,37 – 47,8	129,8	76	70,1	-	40	-	G 1/4"
HQ3437-4780-121GW40	2,5 x D – 3,5 x D	34,37 – 47,8	177,8	121	70,1	-	40	-	-
HQ3437-4780-121GW40-W	2,5 x D – 3,5 x D	34,37 – 47,8	177,8	121	70,1	-	40	-	G 1/4"

Verschlusschraube 20906-G1/8
Grub screw 20906-G1/8
Tappo filetato 20906-G1/8

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

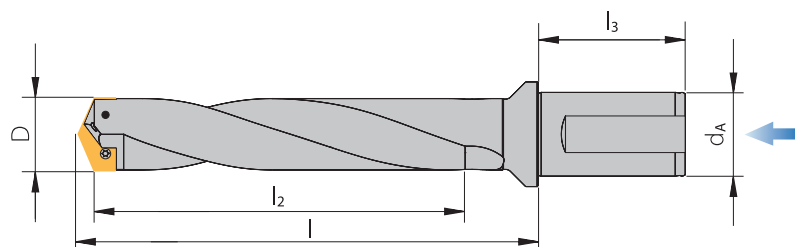
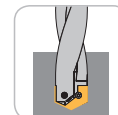
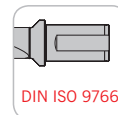
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

Q

Ø 34,37 mm – 47,8 mm

3 x D – 6 x D



Klikk på bildet for å komme til skjæroversikt



Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HQ3437-4780-165SPW40	3 x D – 4,5 x D	34,37 – 47,8	222,3	165	70,1	-	40	-	-
HQ3437-4780-165SPW40-W	3 x D – 4,5 x D	34,37 – 47,8	222,3	165	70,1	-	40	-	G 1/4"
HQ3437-4780-210SPW40	4 x D – 6 x D	34,37 – 47,8	266,7	210	70,1	-	40	-	-
HQ3437-4780-210SPW40-W	4 x D – 6 x D	34,37 – 47,8	266,7	210	70,1	-	40	-	G 1/4"

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

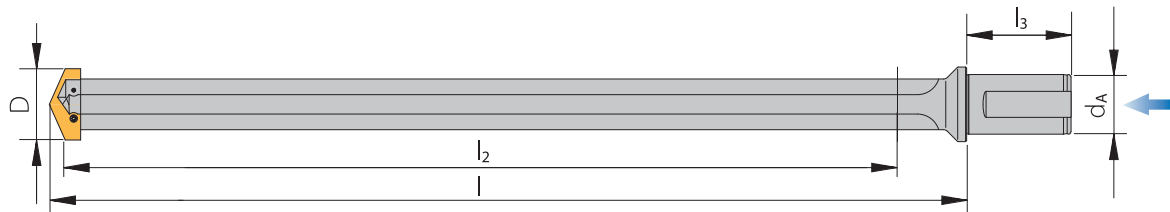
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

Q

Ø 34,37 mm – 47,8 mm
7 x D – 22,5 x D



Trägerwerkzeug / Drill holder / Corpo punta

Klick på bildet for å komme til skjærversikt



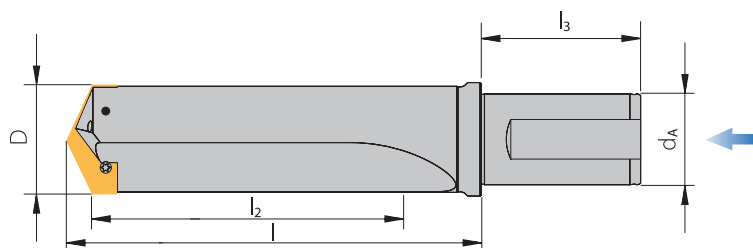
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HQ3437-4780-349GW40	7 x D – 10 x D	34,37 – 47,8	406,4	349	70,1	-	40	-	-
HQ3437-4780-558GW40	11,5 x D – 16 x D	34,37 – 47,8	615,9	558	70,1	-	40	-	-
HQ3437-4780-787GW40	16 x D – 22,5 x D	34,37 – 47,8	844,5	787	70,1	-	40	-	-

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

S

Ø 46,99 mm – 65,28 mm
1,5 x D – 2,5 x D



Klick på bildet for å komme til skjærversikt



Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HS4699-6528-130GW40	1,5 x D – 2,5 x D	46,99 – 65,28	184,2	130	70,1	-	40	-	-
HS4699-6528-130GW40-W	1,5 x D – 2,5 x D	46,99 – 65,28	184,2	130	70,1	-	40	-	G 1/4"

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!
Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

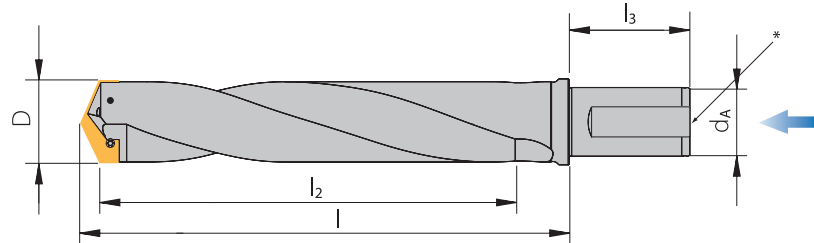
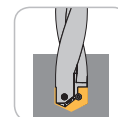
Accessori corpo a pagina 94 – 95.
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

S

Ø 46,99 mm – 65,28 mm

3,5 x D – 4,5 x D



Klick på bildet for å komme til skjæroversikt



* Gewinde G 1/4"
Thread
Filetato -W

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HS4699-6528-232SPW40	3,5 x D – 4,5 x D	46,99 – 65,28	285,8	232	70,1	-	40	-	-
HS4699-6528-232SPW40-W	3,5 x D – 4,5 x D	46,99 – 65,28	285,8	232	70,1	-	40	-	G 1/4"

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

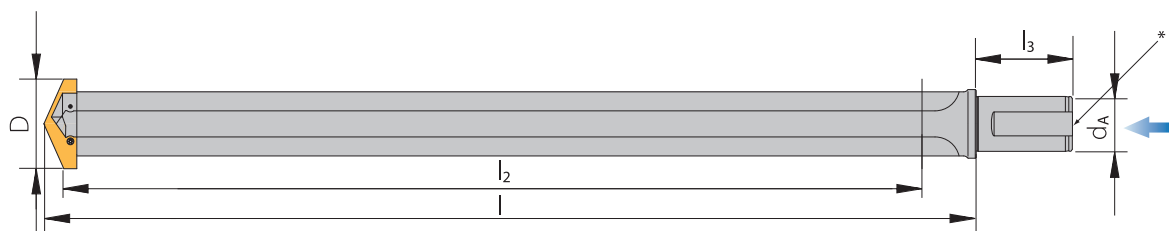
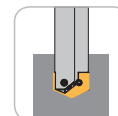
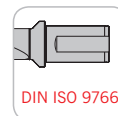
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

S

Ø 46,99 mm – 65,28 mm

6 x D – 18,5 x D



Klick på bildet for å komme til skjæroversikt



* Gewinde G 1/4"
Thread
Filetato -W

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	h	d _A	MK	Gewinde Thread Filetato
HS4699-6528-422GW40	6 x D – 8,5 x D	46,99 – 65,28	476,3	422	70,1	-	40	-	-
HS4699-6528-422GW40-W	6 x D – 8,5 x D	46,99 – 65,28	476,3	422	70,1	-	40	-	G 1/4"
HS4699-6528-625GW40	9,5 x D – 13 x D	46,99 – 65,28	679,5	625	70,1	-	40	-	-
HS4699-6528-879GW40	13 x D – 18,5 x D	46,99 – 65,28	933,5	879	70,1	-	40	-	-

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

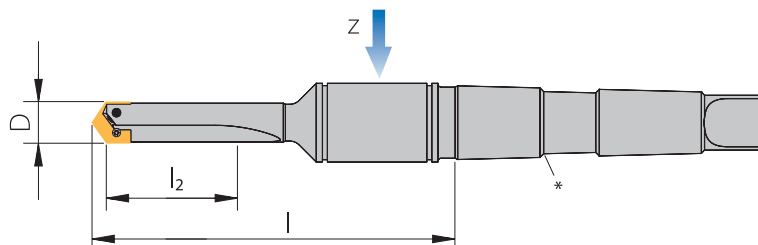
Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.

Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

A
Ø 9,5 mm – 11,07 mm
2,5 x D – 3 x D



Klikk på skjæret for å
komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

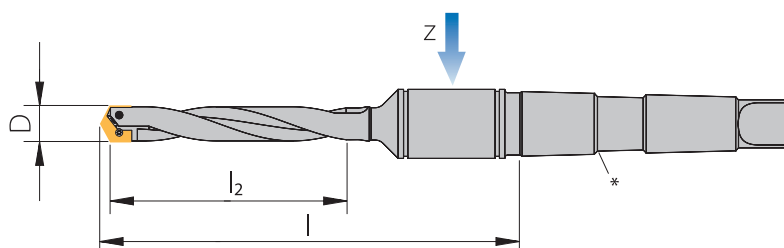
Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HA950-1107-32GMK2	2,5 x D – 3 x D	9,5 – 11,07	88	32	-	-	2KDA	MK2

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

A
Ø 9,5 mm – 11,07 mm
5 x D – 11,5 x D



Klikk på skjæret for å
komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HA950-1107-60SPMK2	5 x D – 6 x D	9,5 – 11,07	116,7	60	-	-	2KDA	MK2
HA950-1107-111SPMK2	10 x D – 11,5 x D	9,5 – 11,07	167,4	111	-	-	2KDA	MK2

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.
Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

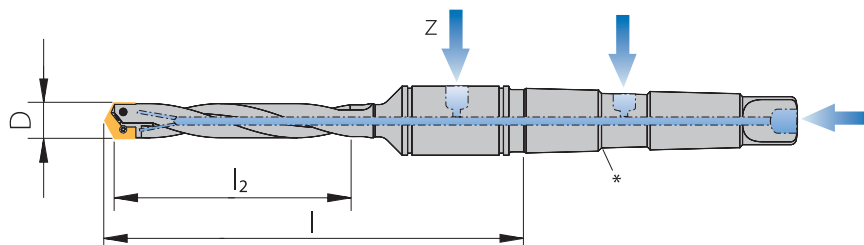
Holder accessories see page 94 – 95.
Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

A

Ø 9,5 mm – 11,07 mm
10 x D – 11,5 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

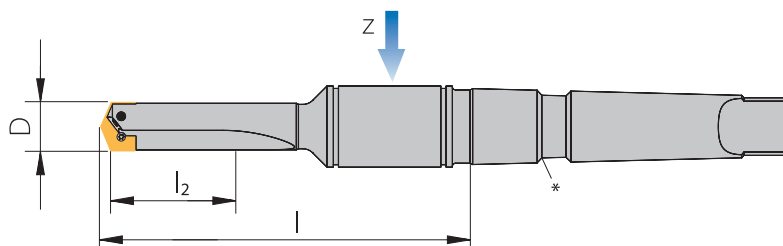
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HA950-1107-111SPMK2-G	10 x D – 11,5 x D	9,5 – 11,07	167,4	111	-	-	2KDA	MK2

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

C

Ø 11,1 mm – 12,95 mm
2 x D – 2,5 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HC1110-1295-32GMK2	2 x D – 2,5 x D	11,1 – 12,95	88	32	-	-	2KDA	MK2

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.

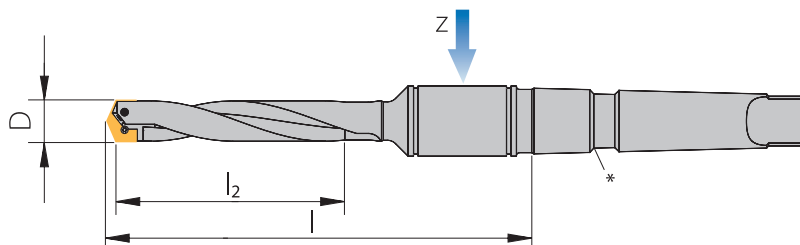
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

C

Ø 11,1 mm – 12,95 mm

4,5 x D – 10 x D



Klikk på skjæret for å komme til skjærversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HC1110-1295-60SPMK2	4,5 x D – 5 x D	11,1 – 12,95	116,7	60	-	-	2KDA	MK2
HC1110-1295-111SPMK2	8,5 x D – 10 x D	11,1 – 12,95	167,4	111	-	-	2KDA	MK2

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

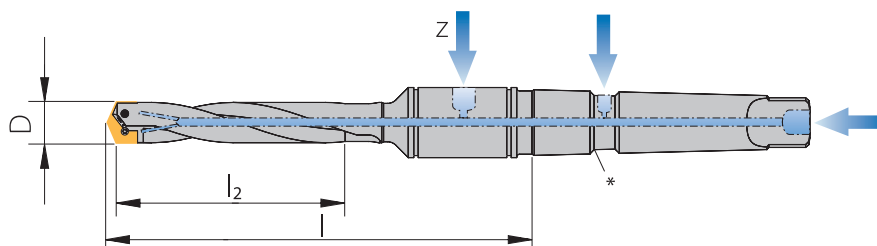
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

C

Ø 11,1 mm – 12,95 mm

8,5 x D – 10 x D



Klikk på skjæret for å komme til skjærversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HC1110-1295-111SPMK2-G	8,5 x D – 10 x D	11,1 – 12,95	167,4	111	-	-	2KDA	MK2

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

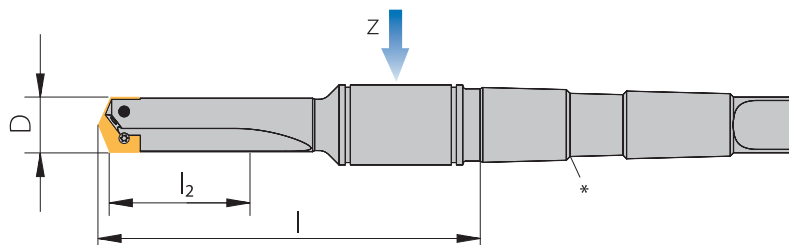
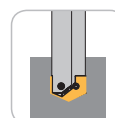
Accessori corpo a pagina 94 – 95.

Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

E

Ø 12,98 mm – 17,65 mm
1,5 x D – 2,5 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

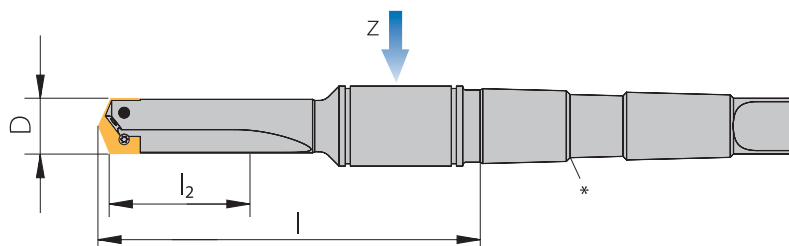
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HE1298-1765-35GMK2	1,5 x D – 2,5 x D	12,98 – 17,65	92,4	35	-	-	2KDA	MK2

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

G

Ø 15,5 mm – 17,65 mm
1,5 x D – 2 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HG1550-1765-35GMK2	1,5 x D – 2 x D	15,5 – 17,65	92,4	35	-	-	2KDA	MK2

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

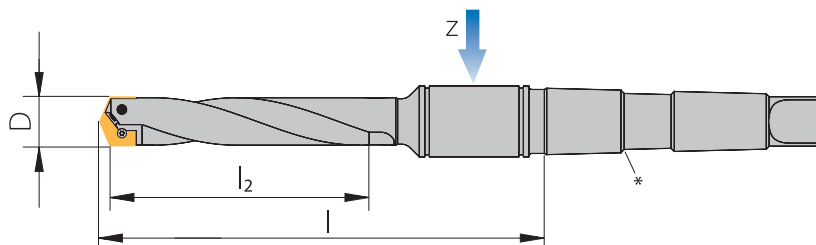
Accessori corpo a pagina 94 – 95.

Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

E

Ø 12,98 mm – 17,65 mm
3,5 x D – 13,5 x D



Klick på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

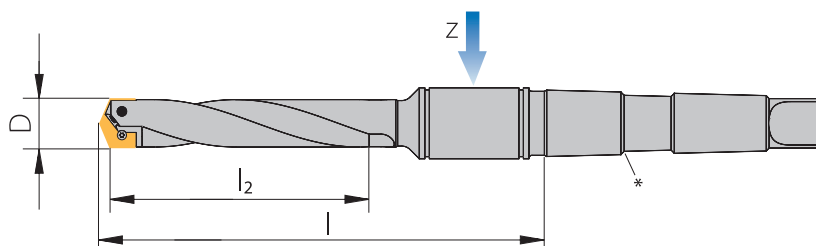
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HE1298-1765-64SPMK2	3,5 x D – 4,5 x D	12,98 – 17,65	121	64	-	-	2KDA	MK2
HE1298-1765-114SPMK2	6 x D – 8,5 x D	12,98 – 17,65	171,8	114	-	-	2KDA	MK2
HE1298-1765-178SPMK2	10 x D – 13,5 x D	12,98 – 17,65	235,8	178	-	-	2KDA	MK2

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

G

Ø 15,5 mm – 17,65 mm
3,5 x D – 11 x D



Klick på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HG1550-1765-64SPMK2	3,5 x D – 4 x D	15,5 – 17,65	121	64	-	-	2KDA	MK2
HG1550-1765-114SPMK2	6 x D – 7 x D	15,5 – 17,65	171,8	114	-	-	2KDA	MK2
HG1550-1765-178SPMK2	10 x D – 11 x D	15,5 – 17,65	235,8	178	-	-	2KDA	MK2

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!
Holder accessories see page 94 – 95.

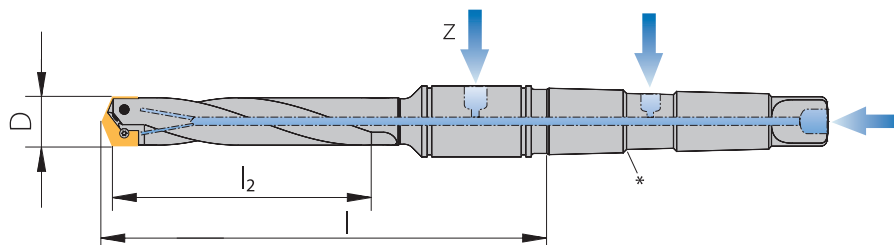
Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

E

Ø 12,98 mm – 17,65 mm
6 x D – 8,5 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

1

Trägerwerkzeug / Drill holder / Corpo punta

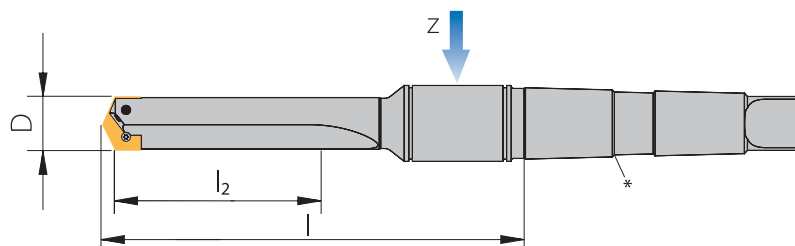
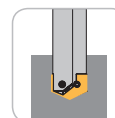
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HE1298-1765-114SPMK2-G	6 x D – 8,5 x D	12,98 – 17,65	171,8	114	-	-	2KDA	MK2

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

I

Ø 17,53 mm – 24,38 mm
2,5 x D – 3,5 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HI1753-2438-70GMK3	2,5 x D – 3,5 x D	17,53 – 24,38	142,5	70	-	-	3KDA	MK3

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

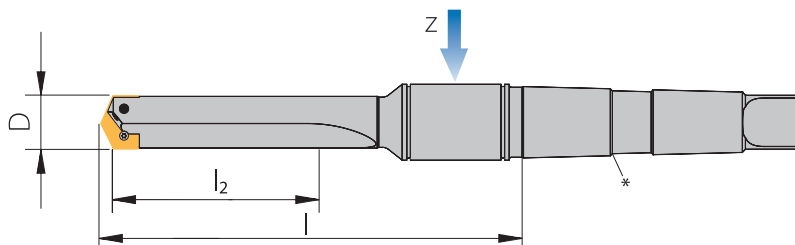
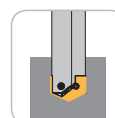
Accessori corpo a pagina 94 – 95.

Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

K

Ø 22,0 mm – 24,38 mm
2,5 x D – 3 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

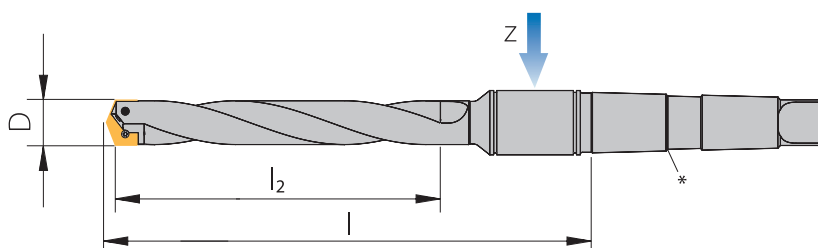
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HK2200-2438-70GMK3	2,5 x D – 3 x D	22,0 – 24,38	142,5	70	-	-	3KDA	MK3

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

I

Ø 17,53 mm – 24,38 mm
4,5 x D – 15,5 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HI1753-2438-121SPMK3	4,5 x D – 6,5 x D	17,53 – 24,38	193,9	121	-	-	3KDA	MK3
HI1753-2438-172SPMK3	7 x D – 9,5 x D	17,53 – 24,38	244,1	172	-	-	3KDA	MK3
HI1753-2438-273SPMK3	11 x D – 15,5 x D	17,53 – 24,38	345,7	273	-	-	3KDA	MK3

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.
Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

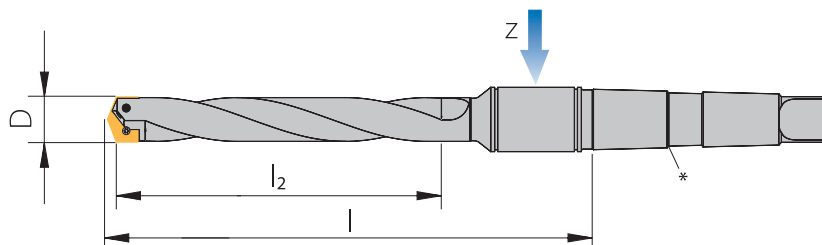
Holder accessories see page 94 – 95.
Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

K

Ø 22,0 mm – 24,38 mm
4,5 x D – 12 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

1

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HK2200-2438-121SPMK3	4,5 x D – 5,5 x D	22,0 – 24,38	193,9	121	-	-	3KDA	MK3
HK2200-2438-172SPMK3	7 x D – 7,5 x D	22,0 – 24,38	244,1	172	-	-	3KDA	MK3
HK2200-2438-273SPMK3	11 x D – 12 x D	22,0 – 24,38	345,7	273	-	-	3KDA	MK3

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

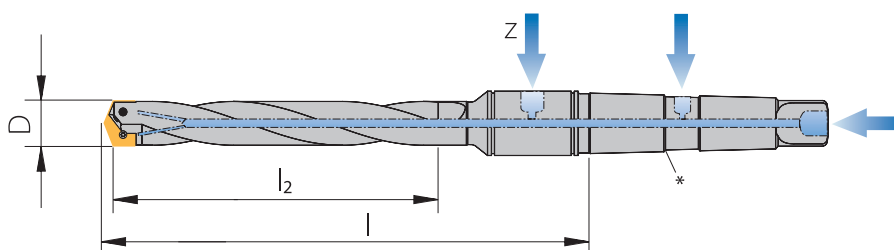
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

I

Ø 17,53 mm – 24,38 mm
2,5 x D – 9,5 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HI1753-2438-70GMK3-G	2,5 x D – 3,5 x D	17,53 – 24,38	142,5	70	-	-	3KDA	MK3
HI1753-2438-121SPMK3-G	4,5 x D – 6,5 x D	17,53 – 24,38	193,9	121	-	-	3KDA	MK3
HI1753-2438-172SPMK3-G	7 x D – 9,5 x D	17,53 – 24,38	244,1	172	-	-	3KDA	MK3

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

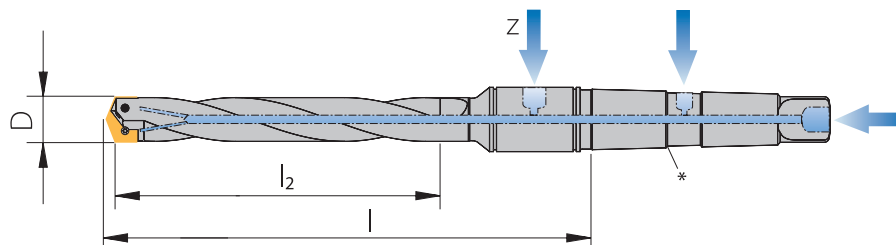
Accessori corpo a pagina 94 – 95.

Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

K

Ø 22,0 mm – 24,38 mm
4,5 x D – 7,5 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 297
Cono Morse (MK) secondo DIN ISO 297

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HK2200-2438-121SPMK3-G	4,5 x D – 5,5 x D	22,0 – 24,38	193,9	121	-	-	3KDA	MK3
HK2200-2438-172SPMK3-G	7 x D – 7,5 x D	22,0 – 24,38	244,1	172	-	-	3KDA	MK3

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

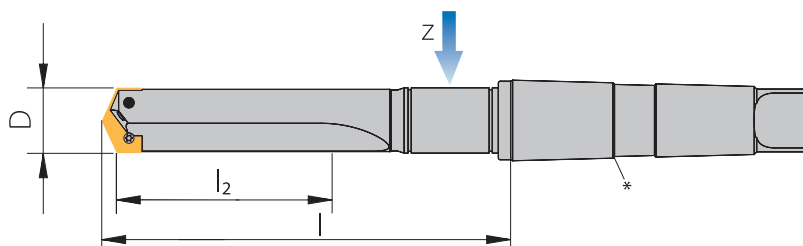
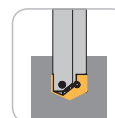
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

M

Ø 24,41 mm – 35,05 mm
2 x D – 3,5 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 297
Cono Morse (MK) secondo DIN ISO 297

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HM2441-3505-86GMK4	2 x D – 3,5 x D	24,41 – 35,05	160,4	86	-	-	3KDA	MK4

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.
Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

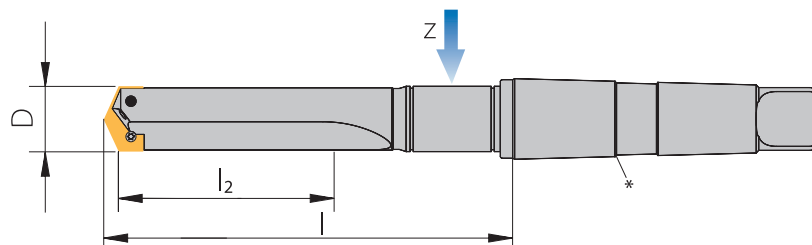
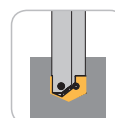
Holder accessories see page 94 – 95.
Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

O

Ø 30,0 mm – 35,05 mm
2 x D – 3,5 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

1

Trägerwerkzeug / Drill holder / Corpo punta

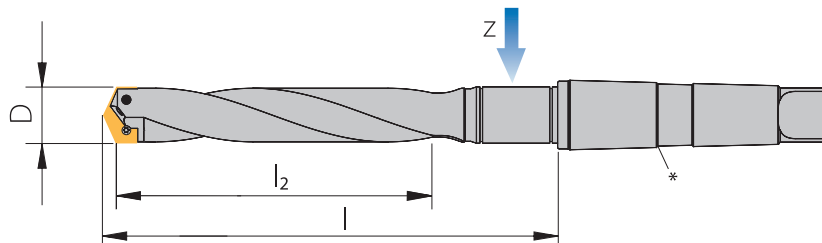
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HO3000-3505-86GMK4	2 x D – 3,5 x D	30,0 – 35,05	167,6	86	-	-	4KDA	MK4

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

M

Ø 24,41 mm – 35,05 mm
3,5 x D – 11,5 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HM2441-3505-137SPMK4	3,5 x D – 5,5 x D	24,41 – 35,05	211,2	137	-	-	3KDA	MK4
HM2441-3505-188SPMK4	5 x D – 7,5 x D	24,41 – 35,05	262	188	-	-	3KDA	MK4
HM2441-3505-289SPMK4	8 x D – 11,5 x D	24,41 – 35,05	363,6	289	-	-	3KDA	MK4

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

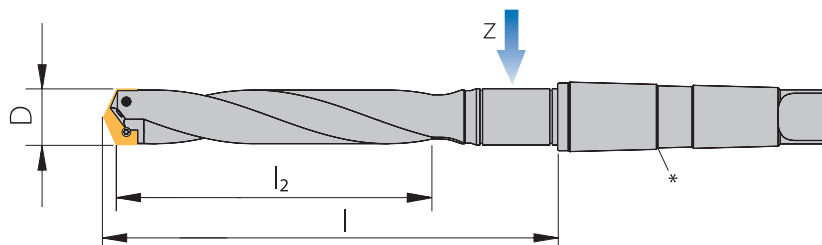
Accessori corpo a pagina 94 – 95.

Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

O

Ø 30,0 mm – 35,05 mm
3,5 x D – 11,5 x D



Klikk på skjæret for å komme til skjærversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

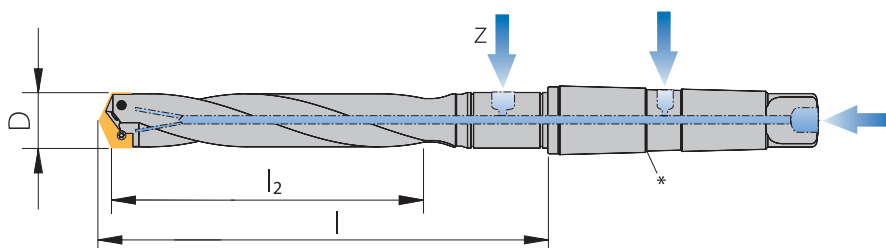
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HO3000-3505-137SPMK4	3,5 x D – 5,5 x D	30,0 – 35,05	218,4	137	-	-	4KDA	MK4
HO3000-3505-188SPMK4	5 x D – 7,5 x D	30,0 – 35,05	269,4	188	-	-	4KDA	MK4
HO3000-3505-289SPMK4	8 x D – 11,5 x D	30,0 – 35,05	370,8	289	-	-	4KDA	MK4

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

M

Ø 24,41 mm – 35,05 mm
2 x D – 7,5 x D



Klikk på skjæret for å komme til skjærversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HM2441-3505-86GMK4-G	2 x D – 3,5 x D	24,41 – 35,05	160,4	86	-	-	3KDA	MK4
HM2441-3505-137SPMK4-G	3,5 x D – 5,5 x D	24,41 – 35,05	211,2	137	-	-	3KDA	MK4
HM2441-3505-188SPMK4-G	5 x D – 7,5 x D	24,41 – 35,05	262	188	-	-	3KDA	MK4

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!
Holder accessories see page 94 – 95.

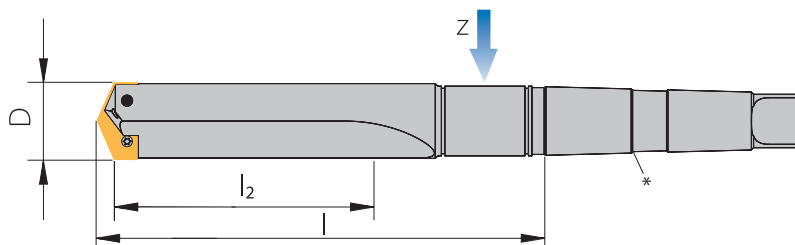
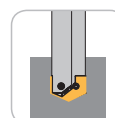
Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

Q

Ø 34,37 mm – 47,8 mm
2,5 x D – 3,5 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

1

Trägerwerkzeug / Drill holder / Corpo punta

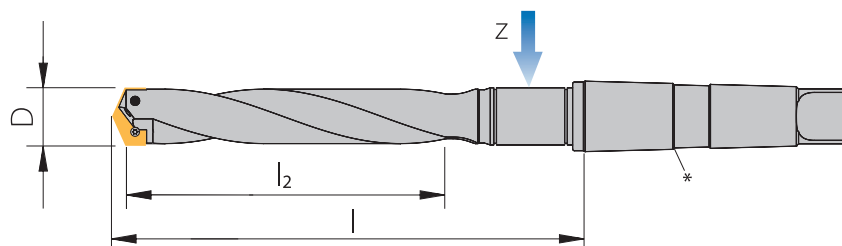
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HQ3437-4780-121GMK4	2,5 x D – 3,5 x D	34,37 – 47,8	206,4	121	-	-	4KDA	MK4

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

Q

Ø 34,37 mm – 47,8 mm
3 x D – 6 x D



Klikk på skjæret for å komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HQ3437-4780-165SPMK4	3 x D – 4,5 x D	34,37 – 47,8	250,9	165	-	-	4KDA	MK4
HQ3437-4780-210SPMK4	4 x D – 6 x D	34,37 – 47,8	295,3	210	-	-	4KDA	MK4

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

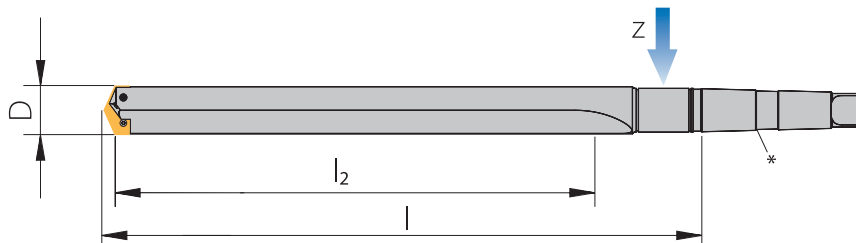
Accessori corpo a pagina 94 – 95.

Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

Q

Ø 34,37 mm – 47,8 mm
7 x D – 22,5 x D



Klikk på skjæret for å
komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

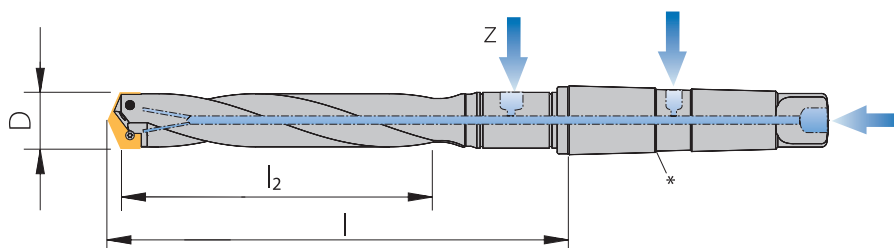
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HQ3437-4780-349GMK4	7 x D – 10 x D	34,37 – 47,8	435	349	-	-	4KDA	MK4
HQ3437-4780-558GMK4	11,5 x D – 16 x D	34,37 – 47,8	644,6	558	-	-	4KDA	MK4
HQ3437-4780-787GMK4	16 x D – 22,5 x D	34,37 – 47,8	873,2	787	-	-	4KDA	MK4

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

Q

Ø 34,37 mm – 47,8 mm
3 x D – 4,5 x D



Klikk på skjæret for å
komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HQ3437-4780-165SPMK4-G	3 x D – 4,5 x D	34,37 – 47,8	250,9	165	-	-	4KDA	MK4

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.
Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

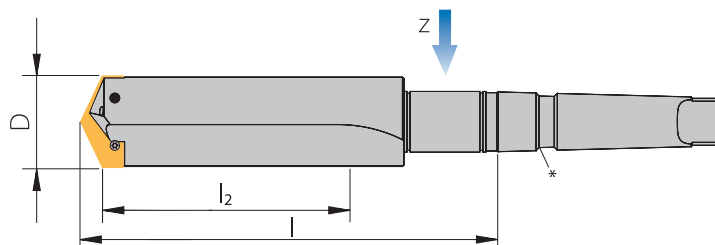
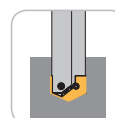
Holder accessories see page 94 – 95.
Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

S

Ø 46,99 mm – 65,28 mm
1,5 x D – 2,5 x D



Klikk på skjæret for å
komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

1

Trägerwerkzeug / Drill holder / Corpo punta

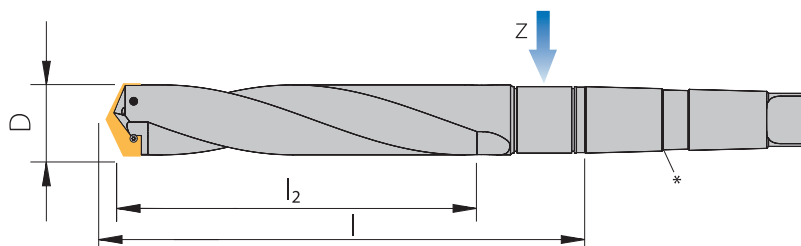
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HS4699-6528-130GMK5	1,5 x D – 2,5 x D	46,99 – 65,28	219,1	130	-	-	5KDA	MK5

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

S

Ø 46,99 mm – 65,28 mm
3,5 x D – 4,5 x D



Klikk på skjæret for å
komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HS4699-6528-232SPMK5	3,5 x D – 4,5 x D	46,99 – 65,28	320,7	232	-	-	5KDA	MK5

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

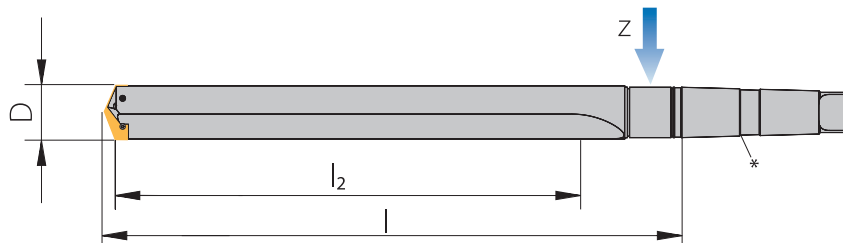
Accessori corpo a pagina 94 – 95.

Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

S

Ø 46,99 mm – 65,28 mm
6 x D – 18 x D



Klikk på skjæret for å
komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

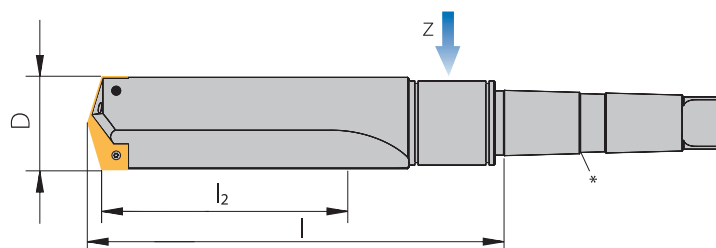
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HS4699-6528-422GMK5	6 x D – 8,5 x D	46,99 – 65,28	511,2	422	-	-	5KDA	MK5
HS4699-6528-625GMK5	9,5 x D – 13 x D	46,99 – 65,28	714,4	625	-	-	5KDA	MK5
HS4699-6528-879GMK5	13 x D – 18,5 x D	46,99 – 65,28	968,4	879	-	-	5KDA	MK5

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

U

Ø 62,38 mm – 89,08 mm
1,5 x D – 2,5 x D



Klikk på skjæret for å
komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HU6238-8908-172GMK5	1,5 x D – 2,5 x D	62,38 – 89,08	287,3	172	-	-	6KDA	MK5

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.
Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

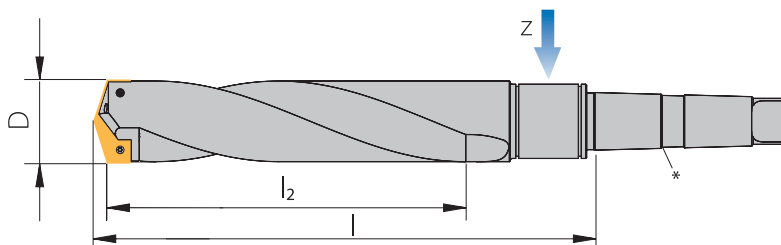
Holder accessories see page 94 – 95.
Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

U

Ø 62,38 mm – 89,08 mm
3 x D – 4 x D



Klikk på skjæret for å
komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

1

Trägerwerkzeug / Drill holder / Corpo punta

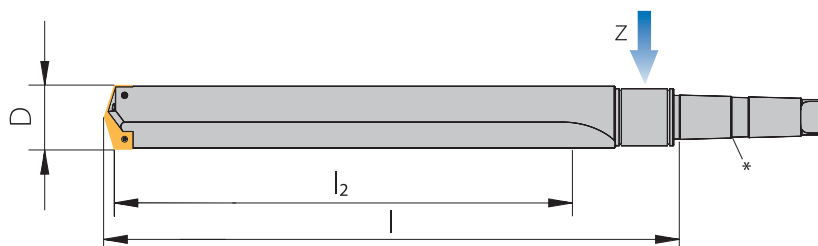
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HU6238-8908-273SPMK5	3 x D – 4 x D	62,38 – 89,08	388,9	273	-	-	6KDA	MK5

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

U

Ø 62,38 mm – 89,08 mm
5 x D – 14 x D



Klikk på skjæret for å
komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HU6238-8908-464GMK5	5 x D – 7 x D	62,38 – 89,08	579,4	464	-	-	6KDA	MK5
HU6238-8908-660GMK5	7 x D – 10,5 x D	62,38 – 89,08	776,2	660	-	-	6KDA	MK5
HU6238-8908-889GMK5	9,5 x D – 14 x D	62,38 – 89,08	1004,8	889	-	-	6KDA	MK5

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

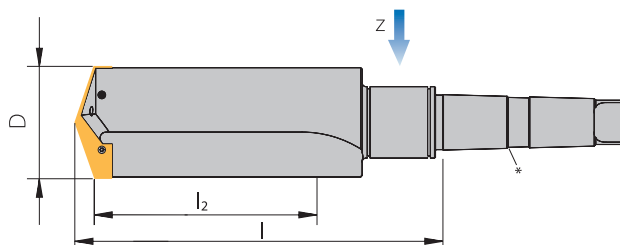
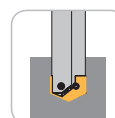
Accessori corpo a pagina 94 – 95.

Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

W

Ø 87,76 mm – 114,48 mm
1,5 x D – 2 x D



Klikk på skjæret for å
komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

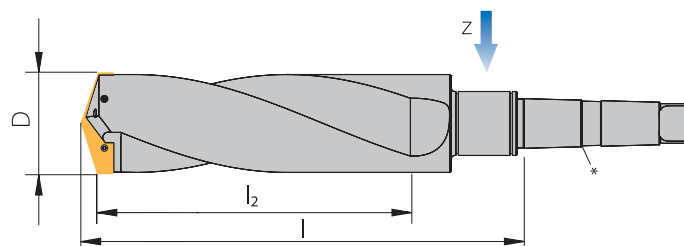
Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HW8776-11400-172GMK5	1,5 x D – 2 x D	87,76 – 114,48	296,8	172	-	-	6KDA	MK5

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Serie / Series / Serie

W

Ø 87,76 mm – 114,48 mm
2 x D – 3 x D



Klikk på skjæret for å
komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HW8776-11400-273SPMK5	2 x D – 3 x D	87,76 – 114,48	398,5	273	-	-	6KDA	MK5

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.
INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.
NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.
Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

Holder accessories see page 94 – 95.
Remark: Please see the application guidelines for this holder on page 109!

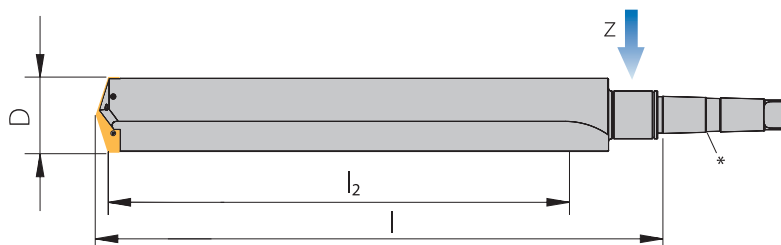
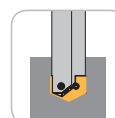
Accessori corpo a pagina 94 – 95.
Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie / Series / Serie

W

Ø 87,76 mm – 114,48 mm

4,5 x D – 10,5 x D



Klick på skjæret for å
komme til skjæroversikt



* Morsekegel (MK) nach DIN ISO 296
Taper shank (MK) to DIN ISO 296
Cono Morse (MK) secondo DIN ISO 296

Trägerwerkzeug / Drill holder / Corpo punta

Bezeichnung Designation Articolo	Bohrtiefe Drill depth Profondità foratura	D	l	l ₂	l ₃	d _A	z	MK
HW8776-11400-556GMK5	4,5 x D – 6 x D	87,76 – 114,48	681	556	-	-	6KDA	MK5
HW8776-11400-685GMK5	6 x D – 7,5 x D	87,76 – 114,48	811,2	685	-	-	6KDA	MK5
HW8776-11400-939GMK5	8 x D – 10,5 x D	87,76 – 114,48	1065,2	939	-	-	6KDA	MK5

HINWEIS: Trägerwerkzeuge werden mit Klemmschrauben, 2 Ersatzschrauben und Schlüssel geliefert.

INFORMATION: Holders will be supplied with clamping screws, 2 spare screws and key.

NOTA: L'utensile é fornito completo di 1 vite, 2 viti di ricambio e 1 chiave.

Zubehör für Bohrer siehe Seite 94 – 95.

Hinweis: Beachten Sie bitte die Anwendungshinweise zu diesen Haltern ab Seite 109!

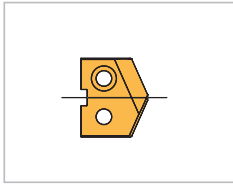
Holder accessories see page 94 – 95.

Remark: Please see the application guidelines for this holder on page 109!

Accessori corpo a pagina 94 – 95.

Attenzione: Note di utilizzo per questo tipo di utensile a pagina 109!

Serie/Series/Serie **A**



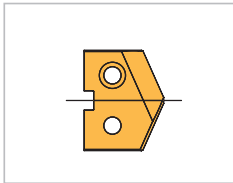
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75 – 76

Lieferbar in den Durchmessern von 9,5 mm bis 11 mm und den Sorten HSS5, HSS8, AK10, AK20 und AP40. Unbeschichtet und beschichtet (TiCN und TiAlN) erhältlich. Weitere Durchmesser, Sorten und Beschichtungen auf Anfrage.

Available in diameter 9.5 mm up to 11 mm. Grades HSS5, HSS8, AK10, AK20 and AP40. Uncoated and coated (TiCN and TiAlN). Other diameters, grades and coatings on request.

Disponibile da diametro 9,5 mm a diametro 11 mm. Gradi HSS5, HSS8, AK10, AK20 e AP40. Rivestiti e non rivestiti (TiCN e TiAlN). Diametri, gradi e rivestimenti diversi da quelli a catalogo disponibili su richiesta.

Serie/Series/Serie **C**



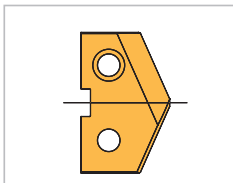
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76 – 77

Lieferbar in den Durchmessern von 11,5 mm bis 12,8 mm und den Sorten HSS5, HSS8, AK10, AK20 und AP40. Unbeschichtet und beschichtet (TiCN und TiAlN) erhältlich. Weitere Durchmesser, Sorten und Beschichtungen auf Anfrage.

Available in diameter 11.5 mm up to 12.8 mm. Grades HSS5, HSS8, AK10, AK20 and AP40. Uncoated and coated (TiCN and TiAlN). Other diameters, grades and coatings on request.

Disponibile da diametro 11,5 mm a diametro 12,8 mm. Gradi HSS5, HSS8, AK10, AK20 e AP40. Rivestiti e non rivestiti (TiCN e TiAlN). Diametri, gradi e rivestimenti diversi da quelli a catalogo disponibili su richiesta.

Serie/Series/Serie **E+G**



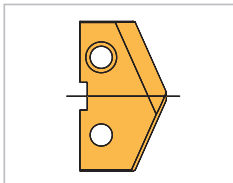
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Pagina
78 – 80

Lieferbar in den Durchmessern von 13 mm bis 17,5 mm und den Sorten HSS5, HSS8, AK10, AK20 und AP40. Unbeschichtet und beschichtet (TiCN und TiAlN) erhältlich. Weitere Durchmesser, Sorten und Beschichtungen auf Anfrage.

Available in diameter 13 mm up to 17.5 mm. Grades HSS5, HSS8, AK10, AK20 and AP40. Uncoated and coated (TiCN and TiAlN). Other diameters, grades and coatings on request.

Disponibile da diametro 13 mm a diametro 17,5 mm. Gradi HSS5, HSS8, AK10, AK20 e AP40. Rivestiti e non rivestiti (TiCN e TiAlN). Diametri, gradi e rivestimenti diversi da quelli a catalogo disponibili su richiesta.

Serie/Series/Serie **I+K**



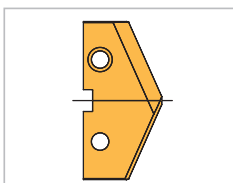
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81 – 83

Lieferbar in den Durchmessern von 17,8 mm bis 24 mm und den Sorten HSS, HSS5, HSS8, AK10, AK20 und AP40. Unbeschichtet und beschichtet (TiCN und TiAlN) erhältlich. Weitere Durchmesser, Sorten und Beschichtungen auf Anfrage.

Available in diameter 17.8 mm up to 24 mm. Grades HSS, HSS5, HSS8, AK10, AK20 and AP40. Uncoated and coated (TiCN and TiAlN). Other diameters, grades and coatings on request.

Disponibile da diametro 17,8 mm a diametro 24 mm. Gradi HSS, HSS5, HSS8, AK10, AK20 e AP40. Rivestiti e non rivestiti (TiCN e TiAlN). Diametri, gradi e rivestimenti diversi da quelli a catalogo disponibili su richiesta.

Serie/Series/Serie **M+O**



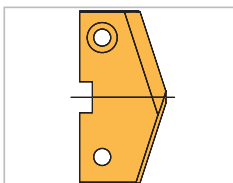
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84 – 87

Lieferbar in den Durchmessern von 24,5 mm bis 35 mm und den Sorten HSS, HSS5, HSS8, AK10, AK20 und AP40. Unbeschichtet und beschichtet (TiCN und TiAlN) erhältlich. Weitere Durchmesser, Sorten und Beschichtungen auf Anfrage.

Available in diameter 24.5 mm up to 35 mm. Grades HSS, HSS5, HSS8, AK10, AK20 and AP40. Uncoated and coated (TiCN and TiAlN). Other diameters, grades and coatings on request.

Disponibile da diametro 24,5 mm a diametro 35 mm. Gradi HSS, HSS5, HSS8, AK10, AK20 e AP40. Rivestiti e non rivestiti (TiCN e TiAlN). Diametri, gradi e rivestimenti diversi da quelli a catalogo disponibili su richiesta.

Serie/Series/Serie **Q**



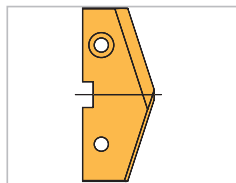
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88 – 89

Lieferbar in den Durchmessern von 36 mm bis 47 mm und den Sorten HSS, HSS5, AK20 und AP40. TiAlN beschichtet. Weitere Durchmesser, Sorten und Beschichtungen auf Anfrage.

Available in diameter 36 mm up to 47 mm. Grades HSS, HSS5, AK20 and AP40. TiAlN coated. Other diameters, grades and coatings on request.

Disponibile da diametro 36 mm a diametro 47 mm. Gradi HSS, HSS5, AK20 e AP40. Rivestiti TiAlN. Diametri, gradi e rivestimenti diversi da quelli a catalogo disponibili su richiesta.

Serie/Series/Serie **S**



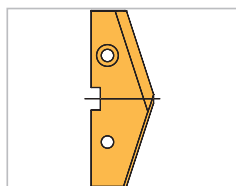
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90 – 91

Lieferbar in den Durchmessern von 48 mm bis 65 mm und den Sorten HSS und HSS5. TiAIN beschichtet. Weitere Durchmesser, Sorten und Beschichtungen auf Anfrage.

Available in diameter 48 mm up to 65 mm. Grades HSS und HSS5. TiAIN coated. Other diameters, grades and coatings on request.

Disponibile da diametro 48 mm a diametro 65 mm. Gradi HSS e HSS5. Rivestiti TiAIN. Diametri, gradi e rivestimenti diversi da quelli a catalogo disponibili su richiesta.

Serie/Series/Serie **U**



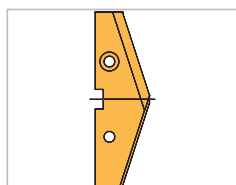
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92

Lieferbar in den Durchmessern von 66 mm bis 89 mm und den Sorten HSS und HSS5. TiAIN beschichtet. Weitere Durchmesser, Sorten und Beschichtungen auf Anfrage.

Available in diameter 66 mm up to 89 mm. Grades HSS und HSS5. TiAIN coated. Other diameters, grades and coatings on request.

Disponibile da diametro 66 mm a diametro 89 mm. Gradi HSS e HSS5. Rivestiti TiAIN. Diametri, gradi e rivestimenti diversi da quelli a catalogo disponibili su richiesta.

Serie/Series/Serie **W**



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93

Lieferbar in den Durchmessern von 90 mm bis 114 mm und den Sorten HSS und HSS5. TiAIN beschichtet. Weitere Durchmesser, Sorten und Beschichtungen auf Anfrage.

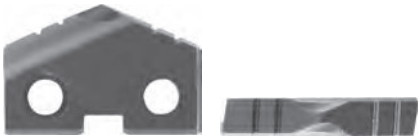
Available in diameter 90 mm up to 114 mm. Grades HSS und HSS5. TiAIN coated. Other diameters, grades and coatings on request.

Disponibile da diametro 90 mm a diametro 114 mm. Gradi HSS e HSS5. Rivestiti TiAIN. Diametri, gradi e rivestimenti diversi da quelli a catalogo disponibili su richiesta.

1

Universelle Geometrie für die Bearbeitung aller gängigen Werkstoffe. Mit Eckenschutz-fase für hohe Standzeiten. Dank der ausge-spitzen Schneide sind die Schneideinsätze selbstzentrierend und haben eine geringe Tendenz zum Verlaufen.

Lieferbarer Durchmesserbereich
von **9,5 mm bis 114 mm**
Bestellbeispiel: **PE14 HSS5/TiAIN**



Universal geometry for drilling most common materials. With corner chamfer for better tool life. The drill point geometry makes the insert self-centering providing good hole straightness.

Available in diameter range
9.5 mm to 114 mm
Ordering example: **PE14 HSS5/TiAIN**

Geometria da applicazione universale. Prima scelta per lavorabilità di qualsiasi materiale non trattato termicamente e a qualsiasi profondità di foratura. Bordo rinforzato per una maggiore durata e tagliente affilato per un migliore controllo truciolo.

Disponibile con gamma diametri
da **9,5 mm a 114 mm**
Esempio d'ordine: **PE14 HSS5/TiAIN**

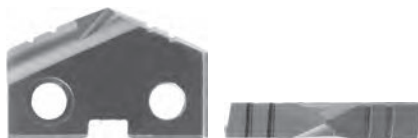
-AS

Unsere Geometrie „-AS“ mit speziell entwickelter Ausspitzung steht Ihnen in beschichteter (HSS5 und AK20 TiAIN) Variante zur Auswahl.

Nutzen Sie die Vorteile:

- reduzierte Vorschubkraft
- besseres Anbohrverhalten
- geringeres Verlaufen
- erste Wahl für tiefe Bohrungen
- reduziert Ausbrüche bei Durchgangsbohrungen

Lieferbarer Durchmesserbereich
von **9,5 mm bis 35 mm**
Bestellbeispiel: **PE14-AS HSS5/TiAIN**



-AS

The „-AS“ geometry with especially developed edge is available in coated (HSS5 and AK20 TiAIN).

Advantages:

- lighter cutting action
- better pre-drilling ability
- improved straightness
- first choice for deep holes
- reduces outbreaks in throughholes

Available in diameter range
9.5 mm to 35 mm
Ordering example: **PE14-AS HSS5/TiAIN**

-AS

La geometria „-AS“ con tagliente appositamente sviluppato è disponibile rivestita (HSS5 o nuda AK20 TiAIN).

Vantaggi:

- ridotte forze di taglio
- ottimo centraggio nei pre-fori
- migliore rettilineità del foro
- prima scelta per fori profondi
- ridotta rottura in uscita dai fori passanti

Disponibile con gamma diametri
da **9,5 mm a 35 mm**
Esempio d'ordine: **PE14-AS HSS5/TiAIN**

-F Flachbohrmesser

Erweitern Sie mit den Flachbohrmessern „-F“ die Einsatzmöglichkeiten des SHARK-Drill®. Diese schnittige Geometrie mit Spanbrechern, sowie Eckenschutzfasen, lässt Sie (nur durch den Tausch der Bohrplatte) mit dem SHARK-Drill® nun auch Bohrungsgrundbearbeitungen oder Schraubensenkungen fertigen.

Lieferbarer Durchmesserbereich
von **9,5 mm bis 47 mm**
Bestellbeispiel: **PE14-F HSS5/TiAIN**



-F for flat bottom

Increase the usage of the SHARK-Drill® with the flat bottom inserts. With only the change of an insert the SHARK-Drill® now also drills flat-bottom holes as well as screw counterbores.

Available in diameter range
9.5 mm to 47 mm
Ordering example: **PE14-F HSS5/TiAIN**

-F a fondo piano

Ampliate l'uso delle punte SHARK-Drill® con gli inserti con fondo piano. Con un semplice cambio di un inserto le punte SHARK-Drill® realizzeranno fori a fondo piatto, oltre a barenature o lamature.

Disponibile con gamma diametri
da **9,5 mm a 47 mm**
Esempio d'ordine: **PE14-F HSS5/TiAIN**

Beschichtet / Coated / Rivestito

AK10 TiAlN

PVD-Mehrlagenbeschichtung, Substrat K10 + TiAlN
Ausgestattet mit einer speziellen Geometrie zur Bearbeitung von Grauguss (GG). Vergrößerte Eckenfasen und der verstärkte Schneidkeil, in Verbindung mit der TiAlN-Beschichtung, erzielen höchste Standzeiten in diesen Materialien. Im Bohrbereich nur unter stabilen Schnittbedingungen einzusetzen.

*PVD-multilayer coating, substrate K10 + TiAlN
Designed with a special geometry for drilling grey and white cast iron. Extended corner clips and stronger main cutting edge combined with the TiAlN coating offers maximum tool life in these materials. Use in strong and stabile cutting environment.*

Rivestimento PVD-multistrato, substrato K10 + TiAlN
Inserto costruito appositamente per la foratura di ghise grigie e acciai a truciolo corto. Profilo tagliente irrobustito e smusso maggiorato abbinato ad un idoneo rivestimento TiAlN per una ottimizzata applicazione su questi materiali. Da utilizzare in condizioni di massima stabilità e rigidità.

AK20 TiAlN

PVD-Mehrlagenbeschichtung, Substrat K20 + TiAlN
K20 Hartmetall mit höherer Zähigkeit als AK10. Zur Bearbeitung sämtlicher Gusswerkstoffe, NE-Metalle, Titan- und Titanlegierungen. Ebenfalls einsetzbar im Stahlbereich bis ca. 5 – 7xD unter stabilen Schnittbedingungen.

*PVD-multilayer coating, substrate K20 + TiAlN
K20 Carbide Grade with higher toughness as AK10 for machining all cast iron materials, nonferrous metals, Titanium and Titanium Alloys. Up to 3xD under best conditions also in steel possible. Only for usage in a stable cutting environment up to 5/7xD.*

Rivestimento PVD-multistrato, substrato K20 + TiAlN
Grado di metallo duro K20 con maggiore tenacità di AK10 idoneo alla lavorazione di materiale da fusione, materiali non ferrosi, Titanio leghe di Titanio. Per foratura di acciaio, in ottimali condizioni di lavoro può essere utilizzato anche fino a 3xD. Per materiali più essere impiegato anche fino a 5/7xD in ottime condizioni di lavoro.

AP40 TiAlN

PVD-Mehrlagenbeschichtung, Substrat P40 + TiAlN
P40 Hartmetall. Zur Bearbeitung von Stählen und, mit Einschränkungen, auch von rostfreien Stählen. Für eine HM-Sorte verhältnismäßig zäh. Einsatz bis ca. 5 – 7xD unter stabilen Schnittbedingungen.

*PVD-multilayer coating, substrate P40 + TiAlN
P40 Carbide grade for machining steel and with restriction also stainless steel. It is our toughest carbide grade. Only for usage in a stable cutting-environment up to 5/7xD.*

Rivestimento PVD-multistrato, substrato P40 + TiAlN
Metallo duro grado P40 per lavorare acciaio e limitatamente anche acciai inox. Questo è il nostro grado di metallo duro più tenace. Solo per utilizzo in stabili condizioni di lavorazione fino a 5/7xD.

HSS TiN

PVD-Mehrlagenbeschichtung, HSS + TiN
HSS ohne Co-Gehalt. Unsere zähste Sorte. Sehr gute Verschleißerkennung durch die TiN Beschichtung. Geeignet für die Bearbeitung von Nichteisenmetallen. Auch unter ungünstigen Bearbeitungsbedingungen.

*PVD-multilayer coating, HSS + TiN
HSS without Co content, our toughest Grade. TiN coating make it easier to recognise wear. The best grade for poor machining conditions. The best grade for poor basic conditions.*

Rivestimento PVD-multistrato, HSS + TiN
HSS senza contenuto di Co. è il grado HSS più tenace. Il rivestimento TiN permette di monitorare l'usura del tagliente. Il grado migliore per condizioni di lavoro sfavorevoli o per un utilizzo generico.

HSS TiAlN

PVD-Mehrlagenbeschichtung, HSS + TiAlN
HSS ohne Co-Gehalt. Unsere zähste Sorte. Erhöhte Verschleißfestigkeit und Temperaturbeständigkeit durch die PVD-Mehrlagenbeschichtung. Geeignet für die Bearbeitung von Stahl und rostfreiem Stahl. Auch unter ungünstigen Bedingungen.

*PVD-multilayer coating, HSS + TiAlN
HSS without Co content, our toughest Grade. Due to PVD multilayer coating improved wear and temperature resistance. The best grade for poor basic conditions.*

Rivestimento PVD-multistrato, HSS + TiAlN
HSS senza contenuto di Co è il grado HSS più tenace. Il rivestimento multistrato PVD ne aumenta la vita tagliente grazie alla resistenza all'usura ed alle alte temperature. Il grado migliore per condizioni di lavoro sfavorevoli.

Beschichtet / Coated / Rivestito

HSS5 TiAIN

PVD-Mehrlagenbeschichtung,
HSS5 + TiAIN
HSS mit 5 % Co-Gehalt. Zähigkeit und Verschleißfestigkeit in einem ausgewogenen Verhältnis. Lieferbar im Durchmesserbereich 9,5 mm–114 mm.

PVD-multilayer coating,
HSS5 + TiAIN
HSS with 5 % cobalt contents, stock item from 9.5 mm–114 mm. Often the most universal grade. Excellent combination of toughness and wear resistance.

Rivestimento PVD-multistrato,
HSS + TiAIN
HSS con 5 % di contenuto di Co. A magazzino articoli disponibili da Ø 9,5 mm a Ø 114 mm. E' il grado più universale. Tenacità e resistenza all' usura in giusta combinazione.

HSS8 TiAIN

PVD-Mehrlagenbeschichtung,
HSS8 + TiAIN
HSS mit 8 % Co-Gehalt. Durch die sehr hohe Verschleißfestigkeit erzielt diese Sorte bei stabilen Bedingungen die besten Standzeitergebnisse unter den HSS-Sorten. Lieferbar im Durchmesserbereich 9,5 mm–35 mm.

PVD-multilayer coating,
HSS8 + TiAIN
HSS with 8 % cobalt content. Because of the high wear resistance, this grade offers the best tool life of all the HSS grades especially under stable machining conditions. Stock item from 9.5 mm–35 mm.

Rivestimento PVD-multistrato,
HSS8 + TiAIN
HSS con 8 % di contenuto di Cobalto. Grazie alla elevata resistenza all'usura, questa qualità offre la migliore vita in-serbo die tutti i gradi HSS dove le condizioni di lavoro sono ottimali. A magazzino articoli disponibili da Ø 9,5 mm a Ø 35 mm.

HSS8 TiCN

PVD-Mehrlagenbeschichtung,
HSS8 + TiCN
HSS mit 8 % Co-Gehalt. Sehr hohe Verschleißfestigkeit. Lieferbar im Durchmesserbereich 9,5 mm–35 mm. TiCN-Beschichtung für geringere Aufbauschneidenbildung in NE-Metallen. Gute Resultate bei vergüteten Stählen und größeren Bohrtiefen.

PVD-multilayer coating,
HSS8 + TiCN
HSS with 8 % cobalt contents, stock item from 9.5 mm–35 mm. TiCN coating has less tendency to "bulid up edge" in non-ferrous metals. Good results in hardened and tempered steels also for deeper drill depths.

Rivestimento PVD-multistrato,
HSS8 + TiCN
HSS con 8 % di contenuto di Cobalto, disponibile da Dia 9,5 mm–35 mm. Il rivestimento TiCN molto più duro del rivestimento TiAIN offre una maggiore resistenza all'usura e una limitata tendenza alla formazione del tagliente di riporto. Idoneo anche per lavorare acciai duri oppure su fori profondi.

Unbeschichtet / Uncoated / Non rivestito

AK20

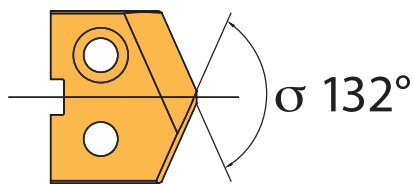
K20 Hartmetall mit höherer Zähigkeit als AK10. Zur Bearbeitung sämtlicher Gusswerkstoffe, NE-Metalle, Titan und Titan-Legierungen. Geringere Neigung zur Aufbauschneidenbildung im NE-Bereich. Im Bohrbereich nur unter stabilen Schnittbedingungen einzusetzen.

K20 Carbide Grade with higher toughness as AK10 for machining all cast iron materials, non-ferrous metals, Titanium and Titanium Alloys. Less tendency for build-up edges in non-ferrous metals. Only for usage in a stable cutting-environment.

Metallo duro grado K20 con maggiore tenacità rispetto ad AK10 per la lavorazione di tutte le ghise e materiali non ferrosi, Titanio e leghe di Titanio, materiali induriti fino a 55 HRC. Minore tendenza alla creazione del tagliente di riporto nei materiali non ferrosi. Solo per uso in stabili condizioni di lavorazione.

Serie / Series / Serie

A



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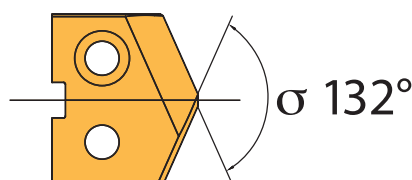


Schneidplatten / Inserts / Inserti

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito									unbeschichtet uncoated non rivestito		
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20		
PA9.5	9,5	0,3740"		●	●	●				●	●	●	●		
PA9.53	9,53	0,3750"	3/8							●					
PA9.8	9,8	0,3860"		●	●	●				●	●	●	●		
PA9.92	9,92	0,3906"	25/64			●				●					
PA10	10,0	0,3937"		●	●	●				●	●	●	●		
PA10.2	10,2	0,4016"		●	●	●				●	●	●	●		
PA10.32	10,32	0,4060"	13/32							●					
PA10.5	10,5	0,4134"		●	●	●				●	●	●	●		
PA10.72	10,72	0,4220"	27/64							●					
PA10.8	10,8	0,4252"		●	●	●				●	●	●	●		
PA11	11,0	0,4331"		●	●	●				●	●	●	●		
Kleinste Verpackungseinheit: 2 Stück Packed in two's = minimum quantity Confezione da 2 pezzi = Quantitativo minimo di acquisto															
● Hauptanwendung Main Application Applicazione principale ○ Nebenanwendung Secondary application Applicazione secondaria				P		○	●				●	●	●		
				M				○			●	●	○		
				K	●	●							○		●
				N		●								●	●
				S		○	○	●				○	●		
				H											

Serie / Series / Serie

A



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holderen



Schneidplatten / Inserts / Inserti

AS Geometrie / Geometry / Geometria

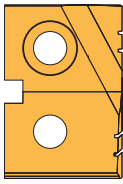
Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito									unbeschichtet uncoated non rivestito	
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20	
PA9.5-AS	9,5	0,3740"			●					●				
PA9.8-AS	9,8	0,3860"			●					●				
PA10-AS	10,0	0,3937"			●					●				
PA10.2-AS	10,2	0,4016"			●					●				
PA10.5-AS	10,5	0,4134"			●					●				
PA10.8-AS	10,8	0,4252"			●					●				
PA11-AS	11,0	0,4331"			●					●				
Kleinste Verpackungseinheit: 2 Stück Packed in two's = minimum quantity Confezione da 2 pezzi = Quantitativo minimo di acquisto “-AS” geometry not available for the US market.	● Hauptanwendung Main Application Applicazione principale ○ Nebenanwendung Secondary application Applicazione secondaria			P	○					●				
				M							●			
				K		●								
				N		●								
				S		○					○			
				H										

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie
A



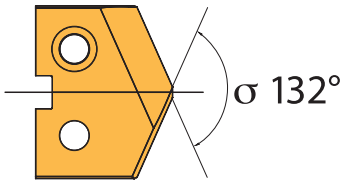
Klikk på ikonet
fo å komme til
holderen



Schneidplatten / Inserts / Inserti
F Geometrie / Geometry / Geometria

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito								unbeschichtet uncoated non rivestito	
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20
PA9.5-F	9,5	0,3740"								●			
PA9.8-F	9,8	0,3860"								●			
PA10-F	10,0	0,3937"								●			
PA10.2-F	10,2	0,4016"								●			
PA10.5-F	10,5	0,4134"								●			
PA10.8-F	10,8	0,4252"								●			
PA11-F	11,0	0,4331"								●			
Kleinste Verpackungseinheit: 2 Stück Packed in two's = minimum quantity Confezione da 2 pezzi = Quantitativo minimo di acquisto				☒ Hauptanwendung Main Application Applicazione principale									
				P								●	
				M								●	
				☐ Nebenanwendung Secondary application Applicazione secondaria									
				K									
				N									
				S								○	
				H									

Serie / Series / Serie
C



Klikk på ikonet
fo å komme til
holderen



Schneidplatten / Inserts / Inserti

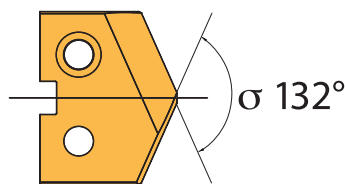
Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito								unbeschichtet uncoated non rivestito					
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20				
PC11.11	11,11	0,4375"	7/16							●							
PC11.5	11,5	0,4528"		●	●	●				●	●	●	●				
PC11.51	11,51	0,4530"	29/64							●							
PC11.55	11,55	0,4547"			●												
PC11.8	11,8	0,4646"				●											
PC11.91	11,91	0,4690"	15/32							●							
PC12	12,0	0,4724"		●	●	●			●	●	●	●	●				
PC12.3	12,3	0,4844"	31/64							●							
PC12.5	12,5	0,4921"		●	●	●				●	●	●	●				
PC12.7	12,7	0,5000"	1/2							●							
PC12.8	12,8	0,5039"		●	●	●				●	●	●	●				
Kleinste Verpackungseinheit: 2 Stück <i>Packed in two's = minimum quantity</i> Confezione da 2 pezzi = Quantitativo minimo di acquisto				● Hauptanwendung <i>Main Application</i> Applicazione principale													
				P								○	●	●	●		
				M									●	●	●	○	
				○ Nebenanwendung <i>Secondary application</i> Applicazione secondaria								●	●		○	●	●
				K													
				N									●			●	●
				S								○	○	●			
				H													

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie C



Klikk på ikonet
fo å komme til
holderen



Schneidplatten / Inserts / Inserti AS Geometrie / Geometry / Geometria

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito								unbeschichtet uncoated non rivestito	
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20
PC11.5-AS	11,5	0,4528"			●					●			
PC12-AS	12,0	0,4724"			●					●			
PC12.5-AS	12,5	0,4921"			●					●			
PC12.8-AS	12,8	0,5039"			●					●			
Kleinste Verpackungseinheit: 2 Stück Packed in two's = minimum quantity Confezione da 2 pezzi = Quantitativo minimo di acquisto “-AS” geometry not available for the US market.				● Hauptanwendung Main Application Applicazione principale	P	○				●			
				○ Nebenanwendung Secondary application Applicazione secondaria	M				●				
					K	●							
					N	●							
					S	○				○			
					H								

Serie / Series / Serie C



Klikk på ikonet
fo å komme til
holderen



Schneidplatten / Inserts / Inserti F Geometrie / Geometry / Geometria

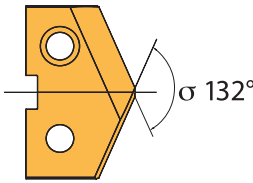
Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito									unbeschichtet uncoated non rivestito	
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20	
PC11.5-F	11,5	0,4528"									●			
PC12-F	12,0	0,4724"									●			
PC12.5-F	12,5	0,4921"									●			
PC12.8-F	12,8	0,5039"									●			
Kleinste Verpackungseinheit: 2 Stück <i>Packed in two's = minimum quantity</i> Confezione da 2 pezzi = Quantitativo minimo di acquisto				● Hauptanwendung <i>Main Application</i> Applicazione principale	P						●			
					M						●			
				○ Nebenanwendung <i>Secondary application</i> Applicazione secondaria	K									
					N									
					S						○			
					H									

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie
E + G



Klikk på ikonet
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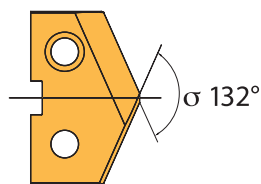
Schneidplatten / Inserts / Inserti

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito								unbeschichtet uncoated non rivestito	
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20
PE13	13,0	0,5118"		●	●	●				●	●	●	●
PE13.1	13,1	0,5156"	33/64		●					●			
PE13.15	13,15	0,5177"									●		
PE13.49	13,49	0,5310"	17/32							●			
PE13.5	13,5	0,5315"		●	●	●				●	●	●	●
PE13.8	13,8	0,5433"		●	●	●				●	●	●	●
PE14	14,0	0,5512"		●	●	●			●	●	●	●	●
PE14.29	14,29	0,5626"	9/16							●			
PE14.3	14,3	0,5630"			●								
PE14.5	14,5	0,5709"		●	●	●				●	●	●	●
PE14.68	14,68	0,5779"	37/64							●			
PE14.8	14,8	0,5827"		●	●	●				●	●	●	●
PE15	15,0	0,5906"		●	●	●				●	●	●	●
PE15.08	15,08	0,5940"	19/32							●			
PE15.2	15,2	0,5984"								●			
PE15.5*	15,5	0,6102"		●	●	●				●	●	●	●
PE15.8*	15,8	0,6220"		●	●	●				●	●	●	●
PE15.88*	15,88	0,6252"	5/8							●			
PE16*	16,0	0,6299"		●	●	●			●	●	●	●	●
PE16.05*	16,05	0,6319"							●				
PE16.1*	16,1	0,6339"				●			●				
PE16.27*	16,27	0,6406"	41/64							●	●		
PE16.3*	16,3	0,6417"			●								
PE16.5*	16,5	0,6496"		●	●	●				●	●	●	●
PE16.67*	16,67	0,6563"	21/32							●			
PE16.8*	16,8	0,6614"		●	●	●				●	●	●	●
PE17*	17,0	0,6693"		●	●	●				●	●	●	●
PE17.46*	17,46	0,6870"	11/16							●			
PE17.5*	17,5	0,6890"		●	●	●				●	●	●	●
PE17.86*	17,86	0,7030"								●			
* Schneidplatten passend für Halter der Serie E und G * Inserts for use in holders serie E and G * Inserto per corpi serie E e G				● Hauptanwendung Main Application Applicazione principale									
Kleinste Verpackungseinheit: 2 Stück Packed in two's = minimum quantity Confezione da 2 pezzi = Quantitativo minimo di acquisto				○ Nebenanwendung Secondary application Applicazione secondaria									
				P	○	●			●	●	●	●	
				M		○			●	●	●	○	
				K	●	●					○		●
				N		●						●	●
				S		○			○	○	●		
				H									

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie
E + G

Klikk på ikonet
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Schneidplatten / Inserts / Inserti
AS Geometrie / Geometry / Geometria

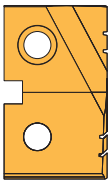
Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito									unbeschichtet uncoated non rivestito
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20
PE13-AS	13,0	0,5118"			●					●			
PE13.5-AS	13,5	0,5315"			●					●			
PE13.8-AS	13,8	0,5433"			●					●			
PE14-AS	14,0	0,5512"			●					●			
PE14.5-AS	14,5	0,5709"			●					●			
PE14.8-AS	14,8	0,5827"			●					●			
PE15-AS	15,0	0,5906"			●					●			
PE15.5-AS*	15,5	0,6102"			●					●			
PE15.8-AS*	15,8	0,6220"			●					●			
PE16-AS*	16,0	0,6299"			●					●			
PE16.5-AS*	16,5	0,6496"			●					●			
PE16.8-AS*	16,8	0,6614"			●					●			
PE17-AS*	17,0	0,6693"			●					●			
PE17.5-AS*	17,5	0,6890"			●					●			
* Schneidplatten passend für Halter der Serie E und G * Inserts for use in holders serie E and G * Inserto per corpi serie E e G Kleinste Verpackungseinheit: 2 Stück Packed in two's = minimum quantity Confezione da 2 pezzi = Quantitativo minimo di acquisto “AS” geometry not available for the US market.				● Hauptanwendung Main Application Applicazione principale ○ Nebenanwendung Secondary application Applicazione secondaria									
				P	○						●		
				M							●		
				K	●								
				N	●								
				S	○						○		
				H									

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

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Serie / Series / Serie
E + G

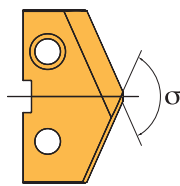


Klikk på ikonet
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Schneidplatten / Inserts / Inserti
F Geometrie / Geometry / Geometria

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito								unbeschichtet uncoated non rivestito			
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20		
PE13-F	13,0	0,5118"								●					
PE13.5-F	13,5	0,5315"								●					
PE13.8-F	13,8	0,5433"								●					
PE14-F	14,0	0,5512"								●					
PE14.5-F	14,5	0,5709"								●					
PE14.8-F	14,8	0,5827"								●					
PE15-F	15,0	0,5906"								●					
PE15.5-F*	15,5	0,6102"								●					
PE15.8-F*	15,8	0,6220"								●					
PE16-F*	16,0	0,6299"								●					
PE16.5-F*	16,5	0,6496"							●	●					
PE16.8-F*	16,8	0,6614"								●					
PE17-F*	17,0	0,6693"								●					
PE17.5-F*	17,5	0,6890"								●					
* Schneidplatten passend für Halter der Serie E und G * Inserts for use in holders serie E and G * Inserto per corpi serie E e G Kleinste Verpackungseinheit: 2 Stück Packed in two's = minimum quantity Confezione da 2 pezzi = Quantitativo minimo di acquisto				● Hauptanwendung Main Application Applicazione principale											
				○ Nebenanwendung Secondary application Applicazione secondaria											
				P									●	●	
				M									●	●	
				K											
				N											
				S									○	○	
				H											

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!
Remark: Other none standard diameters are available upon request.
Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie
I + K

Klikk på ikonet
fo å komme til
holderen



Schneidplatten / Inserts / Inserti

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito										unbeschichtet uncoated non rivestito
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20	
PI17.5	17,5	0,6890"									●			
PI17.8	17,8	0,7008"		●	●	●			●	●	●	●	●	
PI17.86	17,86	0,7030"	45/64							●				
PI18	18,0	0,7087"		●	●	●		●		●	●	●	●	
PI18.26	18,26	0,7190"	23/32							●				
PI18.5	18,5	0,7283"		●	●	●				●	●	●	●	
PI18.65	18,65	0,7343"	47/64							●				
PI18.8	18,8	0,7402"		●	●	●				●	●	●	●	
PI19	19,0	0,7480"		●	●	●		●		●	●	●	●	
PI19.05	19,05	0,7500"	3/4							●		●		
PI19.45	19,45	0,7660"	49/64							●				
PI19.5	19,5	0,7677"		●	●	●		●		●	●	●	●	
PI19.8	19,8	0,7795"		●	●	●	●			●	●	●	●	
PI19.84	19,84	0,7811"	25/32							●				
PI19.95	19,95	0,7854"					●							
PI20	20,0	0,7874"		●	●	●	●	●		●	●	●	●	
PI20.15	20,15	0,7933"					●							
PI20.2	20,2	0,7953"					●							
PI20.5	20,5	0,8071"		●	●	●	●			●	●	●	●	
PI20.64	20,64	0,8130"	13/16							●				
PI20.7	20,7	0,8150"		●	●	●				●	●	●	●	
PI21	21,0	0,8268"		●	●	●		●		●	●	●	●	
PI21.43	21,43	0,8437"	27/32							●				
PI21.5	21,5	0,8465"		●	●	●				●	●	●	●	
PI21.7	21,7	0,8543"		●	●	●				●	●	●	●	
PI21.95	21,95	0,8642"					●							
PI22*	22,0	0,8661"		●	●	●	●	●		●	●	●	●	
PI22.23*	22,23	0,8750"	7/8				●			●				
PI22.4*	22,4	0,8819"						●						
PI22.5*	22,5	0,8858"		●	●	●				●	●	●	●	
PI22.62*	22,62	0,8906"								●				
PI22.7*	22,7	0,8937"		●	●	●				●	●	●	●	
PI23*	23,0	0,9055"		●	●	●				●	●	●	●	
PI23.02*	23,02	0,9060"	29/32							●				
PI23.42*	23,42	0,9220"	59/64							●				
PI23.5*	23,5	0,9252"		●	●	●		●		●	●	●	●	
PI23.7*	23,7	0,9331"		●	●	●				●	●	●	●	
PI23.81*	23,81	0,9370"	15/16							●				
PI24*	24,0	0,9449"		●	●	●		●		●	●	●	●	
PI24.21*	24,21	0,9531"							●					

* Schneidplatten passend für Halter der Serie I und K
* Inserts for use in holders serie I and K
* Inserto per corpi serie I e K

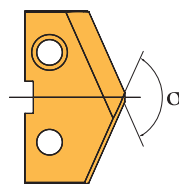
● Hauptanwendung
Main Application
Applicazione principale
○ Nebenanwendung
Secondary application
Applicazione secondaria

P		○	●	●	●	●	●	●	●	●	●	●	
M			○	○	○	●	●	●	●	●	○		
K	●	●									○		●
N		●										●	●
S		○						○	○	●			
H													

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie
I + K

Klikk på ikonet
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holderen

Schneidplatten / Inserts / Inserti
AS Geometrie / Geometry / Geometria

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito									unbeschichtet uncoated non rivestito
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20
PI17.8-AS	17,8	0,7008"			●					●			
PI18-AS	18,0	0,7087"			●					●			
PI18.5-AS	18,5	0,7283"			●					●			
PI18.8-AS	18,8	0,7402"			●					●			
PI19-AS	19,0	0,7480"			●					●			
PI19.5-AS	19,5	0,7677"			●					●			
PI19.8-AS	19,8	0,7795"			●					●			
PI20-AS	20,0	0,7874"			●					●			
PI20.5-AS	20,5	0,8071"			●					●			
PI20.7-AS	20,7	0,8150"			●					●			
PI21-AS	21,0	0,8268"			●					●			
PI21.5-AS	21,5	0,8465"			●					●			
PI21.7-AS	21,7	0,8543"			●					●			
PI22-AS*	22,0	0,8661"			●					●			
PI22.5-AS*	22,5	0,8858"			●					●			
PI22.7-AS*	22,7	0,8937"			●					●			
PI23-AS*	23,0	0,9055"			●					●			
PI23.5-AS*	23,5	0,9252"			●					●			
PI23.7-AS*	23,7	0,9331"			●					●			
PI24-AS*	24,0	0,9449"			●					●			

* Schneidplatten passend für Halter der Serie I und K

* Inserts for use in holders serie I and K

* Inserto per corpi serie I e K

"-AS" geometry not available for the US market.

● Hauptanwendung
Main Application
Applicazione principale

○ Nebenanwendung
Secondary application
Applicazione secondaria

P	○	●	
M		●	
K	●		
N	●		
S	○	○	
H			

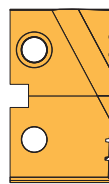
Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie

I + K

Klikk på ikonet
fo å komme til
holderen

Schneidplatten / Inserts / Inserti

F Geometrie / Geometry / Geometria

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito									unbeschichtet uncoated non rivestito
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20
PI17.8-F	17,8	0,7008"								●			
PI18-F	18,0	0,7087"								●			
PI18.5-F	18,5	0,7283"								●			
PI18.8-F	18,8	0,7402"								●			
PI19-F	19,0	0,7480"								●			
PI19.5-F	19,5	0,7677"								●			
PI19.8-F	19,8	0,7795"								●			
PI20-F	20,0	0,7874"								●			
PI20.5-F	20,5	0,8071"								●			
PI20.7-F	20,7	0,8150"								●			
PI21-F	21,0	0,8268"								●			
PI21.5-F	21,5	0,8465"								●			
PI21.7-F	21,7	0,8543"								●			
PI22-F*	22,0	0,8661"								●			
PI22.5-F*	22,5	0,8858"								●			
PI22.7-F*	22,7	0,8937"								●			
PI23-F*	23,0	0,9055"								●			
PI23.5-F*	23,5	0,9252"								●			
PI23.7-F*	23,7	0,9331"								●			
PI24-F*	24,0	0,9449"								●			

* Schneidplatten passend für Halter der Serie I und K

* Inserts for use in holders serie I and K

* Inserto per corpi serie I e K

● Hauptanwendung

Main Application

Applicazione principale

○ Nebenanwendung

Secondary application

Applicazione secondaria

P

M

K

N

S

H

●

●

○

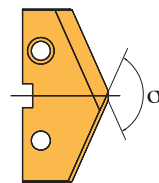
Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie

M + O

Klikk på ikonet
fo å komme til
holderen

Schneidplatten / Inserts / Inserti

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito										unbeschichtet uncoated non rivestito
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20	
PM24.5	24,5	0,9646"		●	●	●				●	●	●	●	
PM24.61	24,61	0,9688"	31/32	●			●			●				
PM24.7	24,7	0,9724"					●							
PM24.85	24,85	0,9783"					●							
PM24.95	24,95	0,9823"					●							
PM25	25,0	0,9843"	63/64	●	●	●	●	●		●	●	●	●	
PM25.4	25,4	1,0000"	1							●				
PM25.5	25,5	1,0040"		●	●	●				●	●	●	●	
PM25.7	25,7	1,0118"								●				
PM25.8	25,8	1,0157"	1 1/64							●				
PM26	26,0	1,0236"		●	●	●	●	●		●	●	●	●	
PM26.19	26,19	1,0313"	1 1/32				●	●						
PM26.5	26,5	1,0433"		●	●	●				●	●	●	●	
PM26.6	26,6	1,0472"					●							
PM26.7	26,7	1,0512"					●							
PM26.8	26,8	1,0551"			●									
PM26.99	26,99	1,0630"								●				
PM27	27,0	1,0630"	1 1/16	●	●	●	●	●		●	●	●	●	
PM27.4	27,4	1,0787"						●						
PM27.5	27,5	1,0827"		●	●	●	●			●	●	●	●	
PM27.7	27,7	1,0906"					●							
PM27.78	27,78	1,0938"	1 3/32				●	●						
PM27.8	27,8	1,0945"					●							
PM28	28,0	1,1024"		●	●	●	●	●		●	●	●	●	
PM28.3	28,3	1,1141"					●							
PM28.5	28,5	1,1220"		●	●	●				●	●	●	●	
PM28.58	28,58	1,1252"	1 1/8							●				
PM29	29,0	1,1417"		●	●	●	●	●		●	●	●	●	
PM29.37	29,37	1,1563"	1 5/32				●							
PM29.5	29,5	1,1614"		●	●	●	●			●	●	●	●	
PM29.9	29,9	1,1772"					●							
PM30*	30,0	1,1811"		●	●	●	●	●		●	●	●	●	
PM30.16*	30,16	1,1874"	1 3/16							●				
PM30.5*	30,5	1,2007"		●	●	●		●		●	●	●	●	
PM30.7*	30,7	1,2087"								●				
PM30.96*	30,96	1,2190"	1 7/32							●				
PM31*	31,0	1,2205"		●	●	●	●	●		●	●	●	●	
PM31.5*	31,5	1,2402"		●	●	●				●	●	●	●	

* Schneidplatten passend für Halter der Serie M und O

* Inserts for use in holders serie M and O

* Inserto per corpi serie M e O

● Hauptanwendung

Main Application

Applicazione principale

○ Nebenanwendung

Secondary application

Applicazione secondaria

P		○	●	●	●	●	●	●	●	●	●	●	●
M			○	○	○	○	○	○	○	○	○	○	○
K	●	●									○		●
N		●										●	●
S		○							○	●			
H													

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.



Klikk på ikonet
fo å komme til
holderen

Schneidplatten / Inserts / Inserti

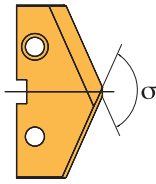
Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito								unbeschichtet uncoated non rivestito			
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20		
PM31.7	31,7	1,2480"					●								
PM31.75*	31,75	1,2500"	1 1/4				●	●		●					
PM32*	32,0	1,2598"		●	●	●	●	●		●	●	●	●		
PM32.5*	32,5	1,2795"		●	●	●		●		●	●	●	●		
PM32.54*	32,54	1,2813"	1 9/32				●								
PM33*	33,0	1,2992"		●	●	●		●		●	●	●	●		
PM33.34*	33,34	1,3130"	1 5/16							●					
PM33.5*	33,5	1,3189"		●	●	●				●	●	●	●		
PM33.7*	33,7	1,3268"											●		
PM34*	34,0	1,3386"		●	●	●	●	●		●	●	●	●		
PM34.13*	34,13	1,3438"	1 11/32				●	●		●					
PM34.5*	34,5	1,3583"		●		●	●			●	●	●	●		
PM34.7*	34,7	1,3661"								●					
PM34.93*	34,93	1,3752"	1 3/8							●					
PM35*	35,0	1,3780"		●	●	●	●	●		●	●	●	●		
* Schneidplatten passend für Halter der Serie M und O * Inserts for use in holders serie M and O * Inserto per corpi serie M e O															
● Hauptanwendung Main Application Applicazione principale ○ Nebenanwendung Secondary application Applicazione secondaria				P	○	●	●	●		●	●	●			
				M			○	○	○		●	●	○		
				K	●	●							○		●
				N		●								●	●
				S		○							○	●	
				H											

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie
M + O



Klikk på ikonet
fo å komme til
holderen



Schneidplatten / Inserts / Inserti
AS Geometrie / Geometry / Geometria

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito								unbeschichtet uncoated non rivestito	
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20
PM24.5-AS	24,5	0,9646"			●					●			
PM25-AS	25,0	0,9843"	63/64		●					●			
PM25.5-AS	25,5	1,0040"			●					●			
PM26-AS	26,0	1,0236"			●					●			
PM26.5-AS	26,5	1,0433"			●					●			
PM27-AS	27,0	1,0630"	1 1/16		●					●			
PM27.5-AS	27,5	1,0827"			●					●			
PM28-AS	28,0	1,1024"			●					●			
PM28.5-AS	28,5	1,1220"			●					●			
PM29-AS	29,0	1,1417"			●					●			
PM29.5-AS	29,5	1,1614"			●					●			
PM30-AS*	30,0	1,1811"			●					●			
PM30.5-AS*	30,5	1,2007"			●					●			
PM31-AS*	31,0	1,2205"			●					●			
PM31.5-AS*	31,5	1,2402"			●					●			
PM32-AS*	32,0	1,2598"			●					●			
PM32.5-AS*	32,5	1,2795"			●					●			
PM33-AS*	33,0	1,2992"			●					●			
PM33.5-AS*	33,5	1,3189"			●					●			
PM34-AS*	34,0	1,3386"			●					●			
PM34.5-AS*	34,5	1,3583			●					●			
PM35-AS*	35,0	1,3780"			●					●			
* Schneidplatten passend für Halter der Serie M und O * Inserts for use in holders serie M and O * Inserto per corpi serie M e O				● Hauptanwendung Main Application Applicazione principale				P				○	
								M					
"AS" geometry not available for the US market.				○ Nebenanwendung Secondary application Applicazione secondaria				K				●	
								N				●	
								S				○	
								H					

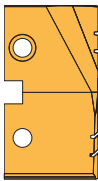
Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie

M + O



Klikk på ikonet
fo å komme til
holderen

Schneidplatten / Inserts / Inserti

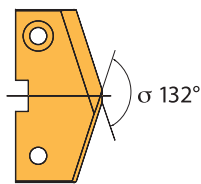
F Geometrie / Geometry / Geometria

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito									unbeschichtet uncoated non rivestito	
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiAlN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20	
PM24.5-F	24,5	0,9646"									●			
PM25-F	25,0	0,9843"	63/64								●			
PM25.5-F	25,5	1,0040"									●			
PM26-F	26,0	1,0236"									●			
PM26.5-F	26,5	1,0433"									●			
PM27-F	27,0	1,0630"	1 1/16								●			
PM27.5-F	27,5	1,0827"									●			
PM28-F	28,0	1,1024"									●			
PM28.5-F	28,5	1,1220"									●			
PM29-F	29,0	1,1417"									●			
PM29.5-F	29,5	1,1614"									●			
PM30-F*	30,0	1,1811"									●			
PM30.5-F*	30,5	1,2007"									●			
PM31-F*	31,0	1,2205"									●			
PM31.5-F*	31,5	1,2402"									●			
PM31.75-F*	31,75	1,2500"	1 1/4								●			
PM32-F*	32,0	1,2598"									●			
PM32.5-F*	32,5	1,2795"									●			
PM33-F*	33,0	1,2992"									●			
PM33.5-F*	33,5	1,3189"									●			
PM34-F*	34,0	1,3386"									●			
PM34.5-F*	34,5	1,3583									●			
PM35-F*	35,0	1,3780"									●			
* Schneidplatten passend für Halter der Serie M und O * Inserts for use in holders serie M and O * Inserto per corpi serie M e O				● Hauptanwendung Main Application Applicazione principale										
				○ Nebenanwendung Secondary application Applicazione secondaria										
				P									●	
				M									●	
				K										
				N										
				S									○	
				H										

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!
 Remark: Other none standard diameters are available upon request.
 Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie

Q

Klikk på ikonet
fo å komme til
holderen

Schneidplatten / Inserts / Inserti

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito									unbeschichtet uncoated non rivestito
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20
PQ35	35,0	1,3780"								●			
PQ35.7	35,7	1,4005"						●					
PQ35.72	35,72	1,4063"	1 13/32							●			
PQ36	36,0	1,4173"			●	●	●	●		●			
PQ36.5	36,5	1,4370"				●							
PQ36.51	36,51	1,4375"	1 7/16				●						
PQ37	37,0	1,4567"			●	●		●		●			
PQ37.5	37,5	1,4764"								●			
PQ38	38,0	1,4961"			●	●		●		●			
PQ38.1	38,1	1,5000"	1 1/5							●			
PQ38.5	38,5	1,5157"								●			
PQ38.89	38,89	1,5311"	1 17/32							●			
PQ39	39,0	1,5354"			●	●	●	●		●			
PQ39.5	39,5	1,5551"								●			
PQ39.69	39,69	1,5625"	1 9/16				●	●					
PQ40	40,0	1,5748"			●	●		●		●			
PQ41	41,0	1,6142"			●	●		●		●			
PQ41.28	41,28	1,6250"	1 5/8							●			
PQ41.5	41,5	1,6339"								●			
PQ42	42,0	1,6535"			●	●	●	●		●			
PQ42.07	42,07	1,6563"	1 21/32				●						
PQ42.3	42,3	1.6654"								●			
PQ42.5	42,5	1,6732"					●	●					
PQ42.86	42,86	1,6875"	1 11/16				●						
PQ43	43,0	1,6929"			●	●	●			●			
PQ43.33	43,33	1,7059"								●			
PQ44	44,0	1,7323"			●	●		●		●			
PQ44.45	44,45	1,7500"	1 3/4							●			
PQ45	45,0	1,7717"			●	●		●		●			
PQ45.24	45,24	1,7811"	1 25/32							●			
PQ46	46,0	1,8110"			●	●		●		●			
PQ46.83	46,83	1,8438"	1 27/32				●	●					
PQ47	47,0	1,8504"			●	●	●	●		●			
PQ47.62	47,62	1,8748"								●			
● Hauptanwendung Main Application Applicazione principale ○ Nebenanwendung Secondary application Applicazione secondaria				P	○	●	●	●		●			
				M		○	○	○		●			
				K	●								
				N	●								
				S	○						○		
				H									

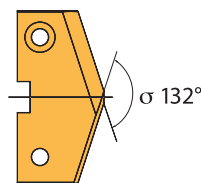
Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie

Q

Klikk på ikonet
fo å komme til
holderen

Schneidplatten / Inserts / Inserti

AS Geometrie / Geometry / Geometria

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito								unbeschichtet uncoated non rivestito		
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiAlN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20	
PQ38-AS	38,0	1,4961"								●				
PQ39-AS	39,0	1,5354"								●				
PQ40-AS	40,0	1,5748"								●				
PQ41-AS	41,0	1,6142"								●				
PQ42-AS	42,0	1,6535"								●				
PQ43-AS	43,0	1,6929"								●				
PQ44-AS	44,0	1,7323"								●				
PQ45-AS	45,0	1,7717"								●				
"AS" geometry not available for the US market.														
● Hauptanwendung Main Application Applicazione principale ○ Nebenanwendung Secondary application Applicazione secondaria			P							●				
			M							●				
			K											
			N											
			S							○				
			H											

Serie / Series / Serie

Q



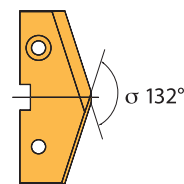
Schneidplatten / Inserts / Inserti

F Geometrie / Geometry / Geometria

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito									unbeschichtet uncoated non rivestito	
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20	
PQ36-F	36,0	1,4173"								●				
PQ37-F	37,0	1,4567"								●				
PQ38-F	38,0	1,4961"								●				
PQ39-F	39,0	1,5354"								●				
PQ40-F	40,0	1,5748"								●				
PQ41-F	41,0	1,6142"								●				
PQ42-F	42,0	1,6535"								●				
PQ43-F	43,0	1,6929"								●				
PQ44-F	44,0	1,7323"								●				
PQ45-F	45,0	1,7717"								●				
PQ46-F	46,0	1,8110"								●				
PQ47-F	47,0	1,8504"								●				
● Hauptanwendung Main Application Applicazione principale ○ Nebenanwendung Secondary application Applicazione secondaria			P							●				
			M							●				
			K											
			N											
			S								○			
			H											

Serie / Series / Serie

S



Schneidplatten / Inserts / Inserti

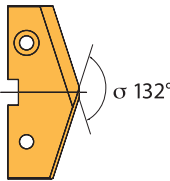
Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito									unbeschichtet uncoated non rivestito			
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20			
PS48	48,0	1,8898"						●		●						
PS49	49,0	1,9291"					●	●		●						
PS49.21	49,21	1,9375"	1 15/16				●	●								
PS50	50,0	1,9685"						●		●						
PS50.8	50,8	2,0000"	2							●						
PS51	51,0	2,0079"						●		●						
PS52	52,0	2,0472"	2 3/64					●		●						
PS52.5	52,5	2,0669"								●						
PS53	53,0	2,0866"						●		●						
PS53.98	53,98	2,1252"	2 1/8							●						
PS54	54,0	2,1260"						●		●						
PS55	55,0	2,1654"								●						
PS56	56,0	2,2047"					●	●		●						
PS57	57,0	2,2441"						●		●						
PS57.15	57,15	2,2500"	2 1/4							●						
PS58	58,0	2,2835"						●		●						
PS59	59,0	2,3228"								●						
PS60	60,0	2,3622"					●			●						
PS61	61,0	2,4016"								●						
PS62	62,0	2,4409"					●			●						
PS63	63,0	2,4803"						●		●						
PS63.50	63,5	2,5000"	2 1/2							●						
PS64	64,0	2,5197"					●			●						
PS65	65,0	2,5591"						●		●						
● Hauptanwendung Main Application Applicazione principale ○ Nebenanwendung Secondary application Applicazione secondaria P M K N S H							●	●		●						
							○	○		●						
													○			

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie
S



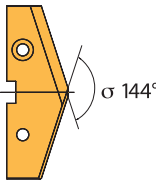
Schneidplatten / Inserts / Inserti
AS Geometrie / Geometry / Geometria

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito								unbeschichtet uncoated non rivestito	
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20
PS60-AS	60,0	2,3622"						●					
"AS" geometry not available for the US market.				● Hauptanwendung Main Application Applicazione principale		P		●					
						M		○					
				○ Nebenanwendung Secondary application Applicazione secondaria		K							
						N							
						S							
						H							

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!
Remark: Other none standard diameters are available upon request.
Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie

U



Schneidplatten / Inserts / Inserti

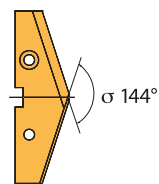
Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito									unbeschichtet uncoated non rivestito
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20
PU66	66,0	2,5984"									●		
PU66.68	66,68	2,6252"	2 5/8								●		
PU67	67,0	2,6378"						●			●		
PU67.47	67,47	2,6563"	2 21/32								●		
PU68	68,0	2,6772"						●			●		
PU69	69,0	2,7165"									●		
PU69.85	69,85	2,7500"	2 3/4								●		
PU70	70,0	2,7559"						●			●		
PU71	71,0	2,7953"									●		
PU71.44	71,44	2,8126"									●		
PU72	72,0	2,8346"						●			●		
PU73	73,0	2,8740"						●			●		
PU74	74,0	2,9134"						●			●		
PU75	75,0	2,9528"									●		
PU76	76,0	2,9921"						●			●		
PU76.2	76,2	3,0000"	3								●		
PU77	77,0	3,0315"									●		
PU77.78	77,78	3,0620"									●		
PU78	78,0	3,0709"					●	●			●		
PU79	79,0	3,1102"						●			●		
PU80	80,0	3,1496"						●			●		
PU81	81,0	3,1890"									●		
PU82	82,0	3,2283"									●		
PU82.55	82,55	3,2500"									●		
PU83	83,0	3,2677"									●		
PU84	84,0	3,3071"									●		
PU84.93	84,93	3,3437"	3 11/32								●		
PU85	85,0	3,3465"									●		
PU86	86,0	3,3858"									●		
PU87	87,0	3,4252"									●		
PU88	88,0	3,4646"									●		
PU88.9	88,9	3,5000"	3 1/2								●		
PU89	89,0	3,5039"									●		

● Hauptanwendung Main Application Applicazione principale	P		●	●	●		
	M		○	○	●		
○ Nebenanwendung Secondary application Applicazione secondaria	K						
	N						
	S				○		
	H						

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Serie / Series / Serie
W

Schneidplatten / Inserts / Inserti

Bezeichnung Designation Articolo	Durchmesser Diameter Diametro			beschichtet coated rivestito									unbeschichtet uncoated non rivestito
	[mm]	[decimal]	[inch]	AK10 TiAlN	AK20 TiAlN	AP40 TiAlN	HSS TiN	HSS TiAlN	HSS 5 TiN	HSS 5 TiAlN	HSS 8 TiAlN	HSS 8 TiCN	AK 20
PW90	90,0	3,5433"						●		●			
PW91	91,0	3,5827"					●	●		●			
PW92	92,0	3,6221"						●		●			
PW93	93,0	3,6614"						●		●			
PW94	94,0	3,7008"						●		●			
PW95	95,0	3,7402"						●		●			
PW95.25	95,25	3.7500"								●			
PW96	96,0	3,7795"						●		●			
PW97	97,0	3,8189"						●		●			
PW98	98,0	3,8583"						●		●			
PW98.43	98,43	3,8725"	3 7/8							●			
PW99	99,0	3,8976"						●		●			
PW100	100,0	3,9370"	3 15/16					●		●			
PW101	101,0	3,9764"						●		●			
PW101.6	101,6	4,0000"	4							●			
PW102	102,0	4,0157"	4 1/64					●		●			
PW103	103,0	4,0551"						●		●			
PW104	104,0	4,0945"	4 3/32					●		●			
PW104.75	104,75	4,1240"	4 1/8							●			
PW105	105,0	4,1339"						●		●			
PW106	106,0	4,1732"						●		●			
PW107	107,0	4,2126"						●		●			
PW108	108,0	4,2520"						●		●			
PW109	109,0	4,2913"						●		●			
PW110	110,0	4,3307"						●		●			
PW111	111,0	4,3701"						●		●			
PW111.13	111,13	4.3752"					●						
PW112	112,0	4,4094"						●		●			
PW112.71	112,71	4,4374"	4 7/16							●			
PW113	113,0	4,4408"						●		●			
PW114	114,0	4,4882"						●		●			
● Hauptanwendung Main Application Applicazione principale				P			●	●		●			
				M			○	○		●			
○ Nebenanwendung Secondary application Applicazione secondaria				K									
				N									
				S						○			
				H									

Hinweis: Zwischenabmessungen, die hier nicht aufgeführt sind, schleifen und beschichten wir Ihnen ab 5 Stück ohne Mehrpreis!

Remark: Other none standard diameters are available upon request.

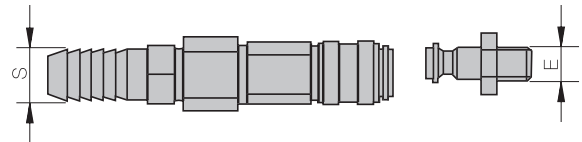
Attenzione: Misure non indicate sono disponibili senza incremento prezzo per minimo 5pz.

Halter und Zubehör / Holder accessories / Accessori corpi

Bezeichnung Designation Articolo	Passend zu Haltern der Serien Used on the holder series Utilizzati sui corpi serie	1 Schnellkupplung Fast action coupling Attacco rapido	2 Kühlmitteladapter Rotary coolant adapters Anello refrigerante	3 Stützstange Solid steady bar Barra anti rotazione
2KDA	A - C - E - G	SK-2KDA	R-2KDA	SS-2KDA
3KDA	I - K - M	SK-3KDA	R-3KDA	SS-3KDA
4KDA	O - Q	SK-4KDA	R-4KDA	SS-4KDA
5KDA	S	SK-5KDA	R-5KDA	SS-5KDA
6KDA	U - W	SK-6KDA	R-6KDA	SS-6KDA

1 Schnellkupplung

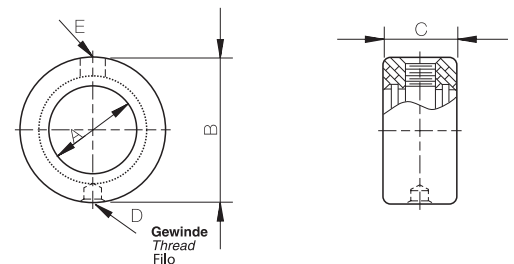
Fast action coupling
Attacco rapido



Bezeichnung Designation Articolo	Norm. Rohr-Gewinde E Norm pipe thread Filetto GAS	Schlauch- Ø S Hose Ø S Tubo Ø S
SK-2KDA	1/8"	9 mm
SK-3KDA	1/8"	9 mm
SK-4KDA	1/4"	9 mm
SK-5KDA	1/4"	12 mm
SK-6KDA	1/2"	12 mm

2 Kühlmitteladapter

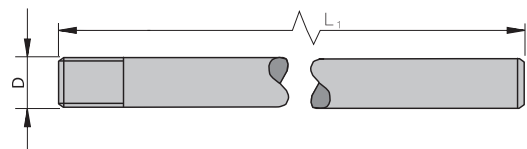
Rotary coolant adapter
Anello refrigerante



Bezeichnung Designation Articolo	A	B	C	D	E
R-2KDA	19,05	44,45	22,23	M8	1/8"
R-3KDA	25,40	53,97	28,57	M8	1/8"
R-4KDA	31,75	63,50	34,92	M10	1/4"
R-5KDA	44,45	76,20	34,92	M10	1/4"
R-6KDA	57,15	95,27	44,45	M12	1/2"

3 Stützstange

Solid steady bar
Barra anti rotazione



Bezeichnung Designation Articolo	Gewindegröße Thread size Filetto	L ₁ [mm]
SS-2KDA	M8	250
SS-3KDA	M8	250
SS-4KDA	M10	250
SS-5KDA	M10	250
SS-6KDA	M12	250

Schrauben und Schraubendreher / Screws and Screwdrivers / Chiavi e Viti

Bezeichnung Designation Articolo	für Ø-Bereich Drill Range used with Campo serie	Torx Schraubendreher Screwdriver Torx Chiave Torx	Anzugsmoment Torque Momento seraggio	Schrauben Screws Vite
A	9,5–11,0	T5107	0,6 Nm	AS 0011
C	11,5–12,8	T5107	0,6 Nm	AS 0011
E	13,0–17,5	T5108	1,3 Nm	AS 0012
G	15,5–17,5	T5108	1,3 Nm	AS 0018
I	17,8–24,0	T5109	2,2 Nm	AS 0013
K	22,0–24,0	T5109	2,2 Nm	AS 0019
M	24,5–35,0	T5115	5,1 Nm	AS 0014
O	30,0–35,0	T5115	5,1 Nm	AS 0014
Q	36,0–47,0	T5120	6,2 Nm	AS 0015
S	48,0–65,0	T5120	6,2 Nm	AS 0015
U	66,0–89,0	T5125	8,1 Nm	AS 0016
W	90,0–114,0	T5125	8,1 Nm	AS 0016

Hinweis: Drehmoment-Schraubendreher siehe Seite 281.

Remark: For torque screwdrivers see page 281.

Nota: Chiavi dianamomentriche a pagina 281.



HSS inserts

ISO	Material		Tensile strength (N/mm ²)	Cutting speed V _c		Series A, C 9.5 – 12.53 (mm/rev)	Series E, G 12.98 – 17.53 (mm/rev)	Series I, K 17.53 – 24.38 (mm/rev)	Series M, O 24.41 – 35.00 (mm/rev)	Series Q 35.00 – 47.8 (mm/rev)	Series S 47.85 – 65.00 (mm/rev)	Series U, W 66.00 – 114.48 (mm/rev)
				TiCN (m/min)	TiAlN (m/min)							
P	Unalloyed steel and cast steel e. G. 9SMn28; 9SMnPb28; 10SPb20		up to 500	80	86	0.18	0.25	0.33	0.41	0.51	0.58	0.7
			500 - 850	64	73	0.15	0.25	0.33	0.41	0.51	0.58	0.7
	Structural steel e. G. St33; St37-2; St44-2; St52; St60		350 - 500	55	60	0.15	0.25	0.3	0.35	0.45	0.52	0.65
			500 - 850	45	51	0.13	0.23	0.25	0.3	0.4	0.47	0.6
			850 - 1200	40	43	0.1	0.2	0.23	0.25	0.35	0.43	0.5
	None- and low alloy steel as well as carbon steel and case hardened steel e. G. C15; C22; 20Mn5; Ck45		bis 450	64	74	0.15	0.23	0.3	0.38	0.47	0.58	0.7
			450 - 750	60	70	0.13	0.2	0.25	0.36	0.45	0.52	0.6
			750 - 900	55	65	0.13	0.2	0.25	0.36	0.45	0.52	0.6
			900 - 1100	51	60	0.1	0.18	0.23	0.3	0.4	0.47	0.55
	Alloys steel e. G. 42CrMo4; 16MnCr5; 36CrNiMo4 14NiCrMo13-4; Ck75; Ck101; 17CrNiMo8, 35CrMo4; 41Cr4; 50MnSi4		bis 600	60	65	0.15	0.2	0.25	0.36	0.42	0.47	0.55
			600 - 800	55	60	0.13	0.2	0.25	0.36	0.42	0.47	0.55
			800 - 950	51	55	0.13	0.18	0.25	0.36	0.42	0.47	0.55
			950 - 110	47	51	0.1	0.15	0.23	0.3	0.37	0.42	0.5
			1100 - 1250	45	48	0.08	0.15	0.23	0.3	0.37	0.42	0.5
	High alloys steel e. G. 41CrAlMo7; 36CrNiMo4; 32NiCrMo14-5		600 - 1000	30	35	0.13	0.18	0.23	0.25	0.35	0.42	0.5
			1000 - 1200	25	27	0.1	0.13	0.23	0.25	0.35	0.42	0.5
			1200 - 1350	20	22	0.08	0.11	0.2	0.23	0.3	0.4	0.45
	Tool steel e. G. C75W; 102Cr6; 105WCr6; X153CrMoV12		500 - 700	32	35	0.1	0.15	0.2	0.25	0.3	0.35	0.41
			700 - 950	25	28	0.1	0.15	0.2	0.25	0.3	0.35	0.41
M	Stainless steel and cast steel	austenitic and austenitic/ferritic	450 - 610	30	33	0.09	0.19	0.2	0.29	0.37	0.42	0.52
		chilled	610 - 930	25	29	0.09	0.16	0.19	0.25	0.3	0.37	0.47
K	Cast iron e. G. GG25; GG40	pearlitic, ferritic	500 - 700	61	70	0.16	0.29	0.37	0.47	0.57	0.65	0.72
		pearlitic, martensitic	700 - 850	45	50	0.14	0.19	0.24	0.3	0.37	0.44	0.52
			850 - 1100	38	42	0.11	0.16	0.19	0.24	0.29	0.37	0.42
	Cast iron with nodular graphite e. G. GGG50	ferritic	540	50	57	0.16	0.22	0.3	0.4	0.45	0.5	0.6
		pearlitic	850	45	50	0.13	0.17	0.22	0.28	0.35	0.45	0.5
N	Malleable cast iron e. G. GTS70	ferritic	450	50	57	0.16	0.22	0.3	0.4	0.45	0.5	0.6
		pearlitic	780	45	50	0.13	0.17	0.22	0.28	0.35	0.45	0.5
	Aluminium alloys, long chipping e. G. AlMgSiPb; AlCuMg1; AlMgSi1	not heat treatable	200	210	250	0.12	0.17	0.28	0.34	0.56	0.65	0.65
		heat treatable, heat-treated	335	125	140	0.2	0.34	0.4	0.45	0.57	0.65	0.65
	Casted aluminium alloys e. G. G-AlSi10Mg; G-ALSi12	≤ 12 % Si, hardened	250	200	240	0.2	0.33	0.41	0.48	0.56	0.64	0.64
		≤ 12 % Si, heat treatable, hardened	300	160	190	0.2	0.33	0.41	0.48	0.56	0.64	0.64
		≤ 12 % Si, not heat treatable	450	140	160	0.18	0.3	0.38	0.45	0.56	0.64	0.64
	Copper and copper alloys (brass / bronze)	Lead alloys, Pb > 1 %	370	102	117	0.18	0.3	0.4	0.5	0.6	0.7	0.75
		Brass, bronze	300	123	138	0.19	0.3	0.42	0.52	0.62	0.72	0.76
		Aluminium bronze	500	68	77	0.16	0.29	0.37	0.47	0.57	0.67	0.72
		Copper and electrolyte copper	200	46	51	0.06	0.09	0.16	0.21	0.26	0.36	0.41
	Non-ferrous materials	Duroplastics	The cutting datas are depending on the available coolant supply. Starting datas are the same as aluminium alloys, long chipping. Air coolant is recommended.									
		Re- inforced plastics										
		Hard rubber										
S	High temperature resistant alloys e. G. Inconell, Hasteloy, Nimonic, Waspaloy, Monel	Fe-alloyed annealed	700	12	13	0.08	0.17	0.21	0.25	0.3	0.35	0.35
		heat - treated	980	-	-	-	-	-	-	-	-	-
		Ni- or annealed	850	12	13	0.08	0.17	0.21	0.25	0.3	0.35	0.35
		Co based casting	1100	-	-	-	-	-	-	-	-	-
		heat - treated	1230	8	11	0.08	0.14	0.19	0.21	0.26	0.32	0.32
H	Titanium alloys / Titan e. G. Ti99,5; Ti Al6V4; TiCu2	Pure titan	500 - 700	13	15	0.09	0.19	0.21	0.25	0.31	0.37	0.4
			700 - 1050	12	15	0.09	0.16	0.19	0.2	0.26	0.31	0.31
	Hardened steel	hardened and tempered	1020 - 1365	22	30	0.09	0.16	0.2	0.24	0.3	0.42	0.47
	Hard cast iron	hardened and tempered	1365 - 1850	13	15	0.06	0.13	0.19	0.2	0.26	0.3	0.4
	Hardened cast iron	casting	1365	-	-	0.08	0.15	0.2	0.23	0.3	0.38	0.43
	Hardened cast iron	hardened and tempered	2090	-	-	-	-	-	-	-	-	-

Please note that the recommended cutting datas are a starting reference point in combination with the coolant figures on page 103 in the catalogue "Drillsystem SHARK-Drill®". Also important is that the basic conditions are on an average. For technical support please contact our application engineers.

Carbide inserts

ISO	Material		Tensile strength [N/mm²]	Cutting speed V _c		Serie A, C 9.5–12.53 [mm/rev]	Serie E, G 12.98–17.53 [mm/rev]	Serie I, K 17.53–24.38 [mm/rev]	Serie M, O 24.41–35.00 [mm/rev]	Serie Q 35.00–47.8 [mm/rev]	
				TiCN [m/min]	TiAlN [m/min]						
P	Unalloyed steel and cast steel e. G. 9SMn28; 9SMnPb28; 10SPb20		up to 500	115	125	0.15	0.21	0.28	0.35	0.43	
			500 - 850	90	105	0.13	0.21	0.28	0.35	0.43	
	Structual steel e. G. St33; St37-2; St44-2; St52; St60		350 - 500	85	95	0.13	0.21	0.26	0.3	0.38	
			500 - 850	68	75	0.11	0.2	0.21	0.26	0.34	
			850 - 1200	62	70	0.09	0.17	0.2	0.21	0.3	
	None- and low alloy steel as well as carbon steel and case hardened steel e. G. C15; C22; 20Mn5; Ck45		bis 450	110	120	0.13	0.2	0.26	0.32	0.4	
			450 - 750	85	95	0.11	0.17	0.21	0.31	0.38	
			750 - 900	70	85	0.11	0.17	0.21	0.31	0.38	
			900 - 1100	60	70	0.09	0.15	0.2	0.26	0.34	
	Alloys steel e. G. 42CrMo4; 16MnCr5; 36CrNiMo4 14NiCrMo13-4; Ck75; Ck101; 17CrNiMo8; 35CrMo4; 41Cr4; 50MnSi4		bis 600	90	100	0.13	0.17	0.21	0.31	0.36	
			600 - 800	80	90	0.11	0.17	0.21	0.31	0.36	
			800 - 950	70	85	0.11	0.15	0.21	0.31	0.36	
			950 - 110	67	75	0.09	0.13	0.2	0.26	0.31	
			1100 - 1250	60	65	0.07	0.13	0.2	0.26	0.31	
	High alloys steel e. G. 41CrAlMo7; 36CrNiMo4; 32NiCrMo14-5		600 - 1000	55	60	0.11	0.15	0.2	0.21	0.3	
			1000 - 1200	50	55	0.09	0.11	0.2	0.21	0.3	
			1200 - 1350	44	50	0.07	0.09	0.17	0.2	0.26	
	Tool steel e. G. C75W; 102Cr6; 105WCr6; X153CrMoV12		500 - 700	60	65	0.09	0.13	0.17	0.21	0.26	
			700 - 950	45	50	0.09	0.13	0.17	0.21	0.26	
M	Stainless steel and cast steel	austenitic and austenitic/ferritic	450 - 610	58	65	0.09	0.16	0.19	0.24	0.3	
		chilled	610 - 930	44	50	0.09	0.14	0.16	0.2	0.25	
K	Cast iron e. G. GG25; GG40	pearlitic, ferritic	500 - 700	103	123	0.14	0.2	0.26	0.37	0.45	
		pearlitic, martensitic	700 - 850	80	95	0.1	0.16	0.19	0.26	0.37	
			850 - 1100	70	84	0.1	0.14	0.16	0.22	0.32	
	Cast iron with nodular graphite e. G. GGG50	ferritic	540	100	120	0.12	0.17	0.2	0.29	0.45	
		pearlitic	850	75	95	0.1	0.14	0.18	0.26	0.37	
	Malleable cast iron e. G. GTS70	ferritic	450	105	125	0.12	0.17	0.2	0.29	0.4	
		pearlitic	780	78	97	0.1	0.14	0.18	0.26	0.37	
N	Aluminium alloys, long chipping e. G. AlMgSiPb; AlCuMg1; AMgSi1		not heat treatable	200	410	450	0.1	0.17	0.27	0.33	0.38
			heat treatable, heat-treated	335	275	305	0.12	0.29	0.37	0.52	0.6
	Casted aluminium alloys e. G. G-ALSi10Mg; G-ALSi12	≤ 12 % Si, hardened	250	400	450	0.2	0.31	0.4	0.48	0.5	
		≤ 12 % Si, heat treatable, hardened	300	350	380	0.2	0.3	0.4	0.48	0.5	
		≤ 12 % Si, not heat treatable	450	250	280	0.18	0.28	0.36	0.46	0.48	
	Copper and copper alloys (brass / bronze)	Lead alloys, Pb > 1 %	370	130	145	0.15	0.23	0.28	0.38	0.45	
		Brass, bronze	300	160	185	0.16	0.24	0.29	0.39	0.45	
		Aluminium bronze	500	100	110	0.14	0.2	0.26	0.37	0.42	
		Copper and electrolyte copper	200	100	120	0.05	0.09	0.1	0.16	0.25	
	Non-ferrous materials	Duroplastics	The cutting datas are depending on the available coolant supply. Starting datas are the same as aluminium alloys, long chipping. Air coolant is recommended.								
		Re- inforced plastics									
Hard rubber											
S	High temperature resistant alloys e. G. Inconell, Hasteloy, Nimonic, Waspaloy, Monel	Fe-alloyed annealed	700	29	32	0.08	0.16	0.2	0.24	0.3	
		heat - treated	980	–	–	–	–	–	–	–	
		Ni- or annealed	850	29	32	0.08	0.16	0.2	0.24	0.3	
		Co based casting	1100	–	–	–	–	–	–	–	
		heat - treated	1230	21	25	0.08	0.12	0.16	0.18	0.25	
Titanium alloys / Titan e. G. Ti99,5; Ti Al6V4; TiCu2	Pure titan	500 - 700	33	39	0.09	0.16	0.19	0.24	0.3		
		700 - 1050	29	34	0.09	0.14	0.16	0.22	0.28		
H	Hardened steel	hardened and tempered	1020 - 1365	40	44	0.09	0.14	0.22	0.25	0.32	
		hardened and tempered	1365 - 1850	24	26	0.06	0.11	0.16	0.22	0.27	
	Hard cast iron	casting	1365	30	35	0.07	0.12	0.18	0.22	0.27	
	Hardened cast iron	hardened and tempered	2090	–	–	–	–	–	–	–	

Please note that the recommended cutting datas are a starting reference point in combination with the coolant figures on page 103 in the catalogue "Drillsystem SHARK-Drill®". Also important is that the basic conditions are on an average. For technical support please contact our application engineers.

Flat bottom inserts

ISO	Material		Tensile strength [N/mm ²]	Cutting speed V _c		Serie A, C 9.5–12.53 [mm/rev]	Serie E, G 12.98–17.53 [mm/rev]	Serie I, K 17.53–24.38 [mm/rev]	Serie M, O 24.41–35.00 [mm/rev]	Serie Q 35.00–47.8 [mm/rev]
				TiCN [m/min]	TiAlN [m/min]					
P	Unalloyed steel and cast steel e. G. 9SMn28; 9SMnPb28; 10SPb20		up to 500	–	69	0.14	0.2	0.26	0.33	0.41
			500 - 850	–	58	0.12	0.2	0.26	0.33	0.41
	Structural steel e. G. St33; St37-2; St44-2; St52; St60		350 - 500	–	48	0.12	0.2	0.24	0.28	0.36
			500 - 850	–	41	0.1	0.18	0.2	0.24	0.32
			850 - 1200	–	34	0.08	0.16	0.18	0.2	0.28
	None- and low alloy steel as well as carbon steel and case hardened steel e. G. C15; C22; 20Mn5; Ck45		bis 450	–	59	0.12	0.18	0.24	0.3	0.38
			450 - 750	–	56	0.1	0.16	0.2	0.29	0.36
			750 - 900	–	52	0.1	0.16	0.2	0.29	0.36
			900 - 1100	–	48	0.08	0.14	0.18	0.24	0.32
	Alloys steel e. G. 42CrMo4; 16MnCr5; 36CrNiMo4 14NiCrMo13-4; Ck75; Ck101; 17CrNiMo8; 35CrMo4; 41Cr4; 50MnSi4		bis 600	–	52	0.12	0.16	0.2	0.29	0.34
			600 - 800	–	48	0.1	0.16	0.2	0.29	0.34
			800 - 950	–	44	0.1	0.14	0.2	0.29	0.34
			950 - 110	–	41	0.08	0.12	0.18	0.24	0.3
			1100 - 1250	–	38	0.06	0.12	0.18	0.24	0.3
	High alloys steel e. G. 41CrAlMo7; 36CrNiMo4; 32NiCrMo14-5		600 - 1000	–	28	0.1	0.14	0.18	0.2	0.28
			1000 - 1200	–	22	0.08	0.1	0.18	0.2	0.28
			1200 - 1350	–	18	0.06	0.09	0.16	0.18	0.24
	Tool steel e. G. C75W; 102Cr6; 105WCr6; X153CrMoV12		500 - 700	–	28	0.08	0.12	0.16	0.2	0.24
			700 - 950	–	22	0.08	0.12	0.16	0.2	0.24
M	Stainless steel and cast steel	austenitic and austenitic/ferritic	450 - 610	–	26	0.14	0.19	0.2	0.25	0.29
		chilled	610 - 930	–	23	0.1	0.15	0.19	0.22	0.25
K	Cast iron e. G. GG25; GG40	pearlitic, ferritic	500 - 700	–	60	0.14	0.24	0.3	0.42	0.46
		pearlitic, martensitic	700 - 850	–	47	0.1	0.15	0.2	0.25	0.3
			850 - 1100	–	38	0.1	0.12	0.15	0.2	0.25
	Cast iron with nodular graphite e. G. GGG50	ferritic	540	–	58	0.14	0.24	0.29	0.4	0.45
		pearlitic	850	–	47	0.1	0.16	0.19	0.24	0.3
N	Malleable cast iron e. G. GTS70	ferritic	450	–	66	0.14	0.24	0.29	0.4	0.45
		pearlitic	780	–	47	0.1	0.16	0.19	0.24	0.3
	Aluminium alloys, long chipping e. G. AlMgSiPb; AlCuMg1; AlMgSi1	not heat treatable	200	–	230	0.18	0.29	0.37	0.44	0.5
		heat treatable, heat-treated	335	–	120	0.19	0.29	0.37	0.42	0.45
	Casted aluminium alloys e. G. G-AlSi10Mg; G-ALSi12	≤ 12 % Si, hardened	250	–	210	0.17	0.29	0.37	0.44	0.5
		≤ 12 % Si, heat treatable, hardened	300	–	160	0.17	0.29	0.37	0.43	0.47
		≤ 12 % Si, not heat treatable	450	–	120	0.17	0.29	0.37	0.42	0.45
	Copper and copper alloys (brass / bronze)	Lead alloys, Pb > 1 %	370	–	70	0.16	0.26	0.38	0.45	0.5
		Brass, bronze	300	–	68	0.15	0.25	0.37	0.44	0.49
		Aluminium bronze	500	–	60	0.14	0.24	0.3	0.42	0.45
		Copper and electrolyte copper	200	–	45	0.06	0.09	0.16	0.2	0.3
S	Non-ferrous materials	Duroplastics	The cutting datas are depending on the available coolant supply. Starting datas are the same as aluminium alloys, long chipping. Air coolant is recommended.							
		Re- inforced plastics								
		Hard rubber								
S	High temperature resistant alloys e. G. Inconel, Hasteloy, Nimonic, Waspaloy, Monel	Fe-alloyed annealed	700	–	10	0.08	0.14	0.17	0.22	0.27
		heat - treated	980	–	–	–	–	–	–	–
		Ni- or annealed	850	–	9	0.08	0.13	0.15	0.19	0.25
		Co based casting	1100	–	–	–	–	–	–	–
		heat - treated	1230	–	8	0.07	0.12	0.14	0.17	0.22
H	Titanium alloys / Titan e. G. Ti99,5; Ti Al6V4; TiCu2	Pure titan	500 - 700	–	15	0.09	0.15	0.19	0.24	0.25
			700 - 1050	–	12	0.09	0.14	0.15	0.19	0.23
H	Hardened steel	hardened and tempered	1020 - 1365	–	20	0.09	0.14	0.19	0.2	0.24
		hardened and tempered	1365 - 1850	–	13	0.09	0.1	0.15	0.19	0.2
	Hard cast iron	casting	1365	–	18	0.09	0.12	0.16	0.19	0.22
	Hardened cast iron	hardened and tempered	2090	–	–	–	–	–	–	–

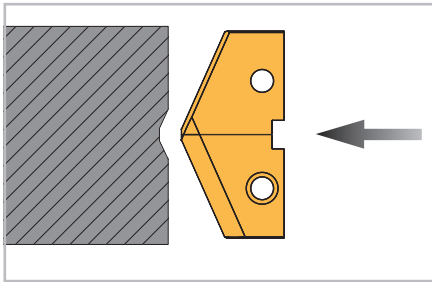
Please note that the recommended cutting datas are a starting reference point in combination with the coolant figures on page 103 in the catalogue "Drillsystem SHARK-Drill®". Also important is that the basic conditions are on an average. For technical support please contact our application engineers.

ISO	Material	Coolant pressure [bar] flow rate [litre/min]	HSS inserts							HM inserts				
			Series A, C 9.5–12.95	Series E, G 12.98–17.53	Series I, K 17.53–24.38	Series M, O 24.41–35.00	Series Q 35.00–47.80	Series S 47.85–65.00	Series U, W 66.00–114.48	Series A, C 9.5–12.95	Series E, G 12.98–17.53	Series I, K 17.53–24.38	Series M, O 24.41–35.00	Series Q 35.00–47.80
P	Unalloyed steel and cast steel	[bar] [litre/min]	12 10	6 10	7 16	6 27	5 45	3 114	3 144	12 10	7 11	7 17	7 30	7 60
	Structural steel	[bar] [litre/min]	11 9	6 10	6 16	5 23	5 45	3 114	3 144	12 10	7 11	6 16	6 27	5 47
	None- and low alloy steel as well as carbon steel and case hardened steel	[bar] [litre/min]	11 9	4 11	4 12	2 19	2 30	2 87	2 98	11 9	4 10	4 12	4 19	3 40
	Alloys steel	[bar] [litre/min]	12 9	6 10	5 14	4 23	4 38	2 98	2 117	15 11	10 13	10 22	9 34	7.5 56
	High alloys steel	[bar] [litre/min]	11 9	5 8	4 12	2 20	2 30	2 87	2 98	15 11	5 12	4 13	4 20	3 40
	Tool steel	[bar] [litre/min]	11 10	4 8	4 12	3 20	2 30	2 87	2 98	15 11	5 12	4 13	3 20	3 37
M	Stainless steel and cast steel	[bar] [litre/min]	12 10	6 10	5 14	4 23	4 38	2 98	2 117	15 11	10 13	10 22	9 34	9 70
K	Cast iron	[bar] [litre/min]	11 9	5 9	4 13	3 19	2 34	2 98	2 106	11 9	5 9	5 12	5 19	4 49
	Cast iron with nodular graphite	[bar] [litre/min]	11 9	5 9	4 13	3 19	2 34	2 98	2 106	11 9	5 9	5 12	5 19	4 49
	Malleable cast iron	[bar] [litre/min]	11 9	5 9	4 13	3 19	2 34	2 98	2 106	11 9	5 9	5 13	5 19	4 49
N	Aluminium alloys, long chipping	[bar] [litre/min]	15 10	12 14	16 23	11 34	9 61	4 125	4 159	22 13	19 17	19 28	17 45	14 77
	Casted aluminium alloys	[bar] [litre/min]	15 10	12 14	16 23	11 34	9 61	4 125	4 159	22 13	19 17	19 28	17 45	14 77
	Copper and copper alloys (brass / bronze)	[bar] [litre/min]	13 10	8 11	10 20	8 30	7 53	4 125	4 167	14 10	10 13	10 21	10 34	10 75
	Non-ferrous materials	[bar] [litre/min]	Air coolant is recommended.											
S	High temperature resistant alloys	[bar] [litre/min]	11 9	4 11	4 12	2 19	2 30	2 87	2 98	18 10	11 11	10 12	10 19	9 62
	Titanium alloys / Titan	[bar] [litre/min]	11 9	5 9	4 12	2 19	2 30	2 98	2 125	18 10	11 11	10 16	10 27	9 62
H	Hardened steel	[bar] [litre/min]	11 9	4 11	4 12	2 19	2 30	2 87	2 98	11 9	4 10	4 12	3 19	3 37
	Hard cast iron	[bar] [litre/min]	11 9	4 11	4 12	2 19	2 30	2 87	2 98	11 9	4 10	4 12	3 19	3 37
	Hardened cast iron	[bar] [litre/min]	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –	– –

These recommendations produce optimum tool life and chip evacuation. With lower values, wear and chip evacuation should receive attention. If necessary the speeds and feeds must be reduced.

Information: Please note that the coolant figures are recommendations for a drilling depth to 8xD. With longer drills multiply the recommended datas as follows; 8 to 12xD multiply by 1.3; 12 to 20xD multiply by 2.0; over 20xD multiply by 3.0

Anbohren oder Zentrieren / Sport drill / Foro di centraggio



Die Bohrplatte unseres „SHARK-Drill®“-Bohrers sind stark ausgespitzt, sodass ein Anzentrieren erst ab 8xD Bohrtiefe erforderlich ist.

The inserts for our “SHARK-Drill®” got a self-centering point. To spot the hole is only required when you drill deeper than 8xD.

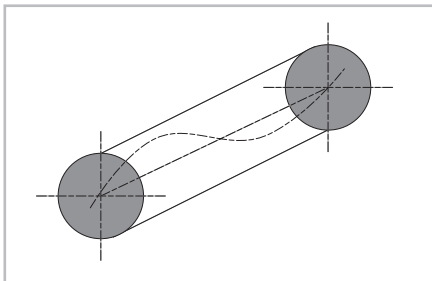
Gli inserti del sistema “SHARK-Drill®” possono eseguire anche il foro da centro. Eseguire un foro da centro è suggerito per fori con profondità superiore a 8xD o in condizioni di centraggio difficili.

Achtung: Spitzen ✂ der Bohrplatten:
bis Ø 65 mm = 132°
bis Ø 114 mm = 144°
Der Zentrierbohrer muss einen gleichen oder größeren Spitzenwinkel haben.

Attention: Point ✂ inserts:
up to Ø 65 mm = 132°
up to Ø 114 mm = 144°
The spot drill must have the same or a bigger spot.

Attenzione: Inserti con cuspid:
fino a Ø 65 mm = 132°
fino a Ø 114 mm = 144°
Il foro da centro deve avere identico o maggiore angolo di cuspid.

Verlaufen des Bohrers / Holder deflection / Deviazione del foro



Das „Verlaufen“ des Bohrers ist von mehreren Faktoren abhängig:

The run out of the drill is depending on several issues:

La deviazione dell'utensile dipende da diversi fattori:

- Werkstückspannung
- Werkzeugspannung
- Homogenität des Materials
- Durchmesser/Bohrtiefenverhältnis

- Component clamping
- Tool clamping
- Material
- Diameter / depth ratio

- Staffaggio del pezzo
- Serraggio dell'utensile
- Materiale
- Rapporto Diametro / Profondità

Spanbruch bei zähen Materialien / Chipping in tough materials / Evacuazione in materiali difficili



Viele Stähle mit hohen Cr- und Ni- Anteilen können allein durch die Spanbrecher und Spanformer nicht gebrochen werden. Es hilft einzig (aber zuverlässig) ein Spanzyklus:

Many steels with high Cr and Ni content can only be drilled with a peck cycle:

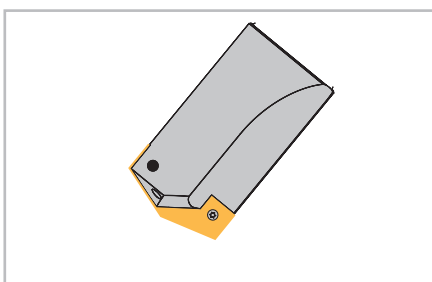
Molti materiali con elevato contenuto di Cr e Ni, possono venire forati solamente con cicli di scarico truciolo:

- Rückzugweg 0,1 mm bleibt immer gleich!
- Bohrerweg so anpassen, dass Späne problemlos ausgespült werden!

- 0.1 mm back is always the same
- Drill depth in the peck cycle should not be too long (coolant must float out the chips)

- 0,1 mm di ritorno è il valore suggerito
- La profondità di ogni foratura del ciclo non deve mai essere troppo lunga (il refrigerante deve far evacuare il truciolo)

Niedriger Kühlmitteldruck / Low coolant pressure / Bassa pressione del refrigerante



Bei niedrigem Kühlmitteldruck müssen die Schnittwerte nach unten korrigiert werden. Das Kühlmittel ist bei diesem Werkzeug für die Spanabführung sehr wichtig. Ohne innere Kühlmittelzufuhr ist die Funktion nur bis 1,5xD Bohrtiefe gewährleistet.

With low coolant supply, speeds and feeds must be reduced. Internal coolant supply is necessary over 1.5xD drill depth.

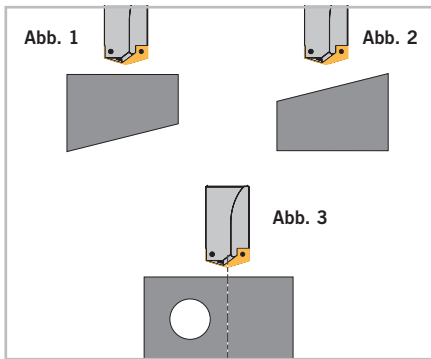
Con basse pressioni del refrigerante, velocità ed avanzamenti vanno ridotti. Per forature superiori a 1,5xD è indispensabile l'adduzione interna del refrigerante.

Achtung:
Je mehr Kühlmitteldruck und -menge umso besser!

Attention:
High coolant pressure and volume give better results.

Attenzione:
Pressione e portata elevate del refrigerante offrono sempre risultati migliori.

Unterbrochener Schnitt oder schräges Anbohren / Interrupted cutting / Taglio interrotto



Unterbrochener Schnitt oder schräges Anbohren wird nicht empfohlen, da die Abstützung der Bohrerplatte nur relativ gering ist!

Abb. 1+2: Unter Reduzierung der Schnittwerte bis $\angle 7^\circ$ teils möglich.
Abb. 3: Fast unmöglich! Besprechen Sie mit uns Ihren Anwendungsfall, wir versuchen eine Lösung zu finden!

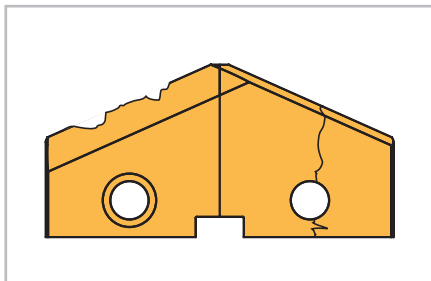
Interrupted cutting is not recommended. Due lead of you may get damaged holders, excessive lead wear, oversize holes.

*Pic. 1+2: By reduction speed, it may possible up to $\angle 7^\circ$.
Pic. 3: Nearly impossible. Please call our Application Helpline. We try to find a solution.*

Il taglio interrotto non è consigliato. Questo perché si possono danneggiare i portautensili, usurare precocemente gli inserti ed i fori possono risultare maggiori.

Fig. 1+2: Riducendo la velocità, possibile fino a $\angle 7^\circ$. Fig. 3: Non possibile. Chiamare il supporto tecnico per una soluzione.

Ausbrüche an der Bohrplatte / Fracture of inserts / Rotture di inserti

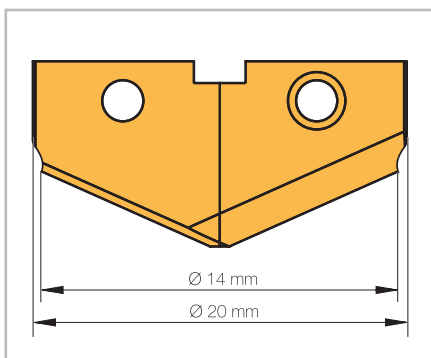


Bricht die Bohrplatte aus oder zerbricht völlig, so ist die gewählte Qualität zu hart für die Anwendung. Stellen Sie auf eine zähere Qualität um (z. B. von Hartmetall auf HSS) oder ändern Sie etwas an den Rahmenbedingungen (wenn möglich unterbrochenen Schnitt vermeiden). Hartmetall nur unter stabilen Rahmenbedingungen einsetzen.

When the insert fracture, the Quality (Grade) is too brittle for the Application. Please use a tougher grade (for example: from Carbide to HSS) or change the cutting environment. Use Carbide only when workholding is stable and the drill depth is $< 5 \times D$. Also a high quality machine is necessary.

Quando l'inserto si frattura significa che la qualità che si sta utilizzando (grado) è troppo fragile per l'applicazione che si sta eseguendo. Utilizzare un grado più tenace (per esempio sostituire la cuspide in metallo duro con una in HSS) o modificare le condizioni di taglio. Utilizzare le cuspidi di foratura in metallo duro solamente quando il sistema di staffaggio è stabile e la profondità di foratura è $< 5 \times D$. E' anche necessario lavorare con una macchina utensile di qualità elevata.

Ausbrennen der Platte (HSS) / Accelerated insert wear / Precoce usura degli inserti



Bsp.: Bohren in C45 mit PI20 HSS5 / TiAlN: n = 850 U/min f = 0,25 mm
E.g.: C45 with PI20 HSS5 / TiAlN: rev = 850 1/min f = 0.25 mm/rev
Es.: C45 con PI20 HSS5 / TiAlN: n = 850 U/min f = 0,25 mm/giro

$$V_c = \frac{n \times \pi \times D}{1000} = \frac{850 \times \pi \times 14}{1000} = 37 \text{ m/min}$$

somit für Ø 20 mm
for dia. 20 mm
per Ø 20 mm

$$n = \frac{37 \times 1000}{\pi \times D} = 588 \text{ U/min}$$

d.h.: Eine Drehzahl von 588 U/min wäre für Ø 20 mm unter den gegebenen Bedingungen (Kühlmittel, Material, Aufspannung) die „richtige“ Drehzahl.

i.e.: 588 rev/min would have been the right speed in this application.

p.e.: 588 g/min è la velocità corretta a cui deve girare la punta per questa applicazione.

Wenn die Platte in dieser Art und Weise verschlissen ist, war entweder der Kühlmittel- druck zu gering oder der Werkstoff wurde falsch eingeschätzt. Sofern möglich, verwenden Sie eine härtere Sorte. Da an der Bohrer- spitze kein Verschleiß zu sehen ist, war der Vorschub korrekt aber die Drehzahl bei den gegebenen Rahmenbedingungen zu hoch.

Anhand des Ø 14 mm im Beispiel, der bei der angewandten Drehzahl noch „stehen“ bleibt, kann man für den Ø 20 mm die richtige Dreh- zahl zurückrechnen.

On the drill insert is no wear, that shows the feedrate was ok, the revolutions are too high in this cutting environment.

With the dia. 14 mm in the example, the rest dia, you can calculate back, what would have been the correct speed for the original dia. 20 mm.

Se sugli inserti sono presenti segni di usura significa che si sta lavorando con una velocità di avanza-mento adatta ma con velocità di taglio troppo elevata per queste condizioni di lavoro.

Dall' esempio si può capire che al momento si sta lavorando con una velocità di taglio appropriata per un dia. 14 mm e non per un dia. 20 mm.

RECOMMENDATIONS FOR ...

... SHARK-Drill® (extra) short to standard holder

In order to obtain a problem free machining with the drills, the following has proven successful:

- 1) Check and possibly adjust coolant pressure (see page 103).
- 2) Immediately after the first cut we suggest a chip breaking and cutting data review. The target should be short and easily removable swarf.
- 3) Measure the hole and check that tolerance is acceptable.
- 4) During the machining always ensure that the swarf is short and removed from the hole. Otherwise a pecking cycle may be required.

Always select shortest possible drill!

Important: Carbide inserts only suitable up to approx. 6 – 7 x D.

Swarf control – The following recommendations have also proved advantageous:

- Monitor swarf control.
- If not yet at maximum feed rate potential, an increase in feed rate can lead to better chip breaking.
- If none of these changes are successful it may be necessary to insert a pecking cycle.

For many materials in the stainless steel area, but also others, it may not always be possible to achieve acceptable chip breaking simply by adjusting V_c and f . In such cases a pecking cycle will be needed. This should only be a small peck cycle of approx 0.1 mm.

A pecking cycle where the tool is removed out of the hole is not recommended. As a rule take increments of approx 10 % of the drill diameter (e.g. 20 mm diameter = 2 mm peck depth).

RECOMMENDATIONS FOR ...

... the extended SHARK-Drill®

In order to obtain a problem free machining with the drills, the following has proven successful:

- 1) Pilot drilling (approx. 1 x D) with same diameter. The drill point should be same or larger than SHARK-Drill® insert. Other start options:
 - Centering with 132 degree drill point (up to 65 mm).
 - Centering with 144 degree drill point (from 64 – 114 mm).
 - Careful penetration (approx 50 % of recommended feed rate) until full diameter is achieved.

- 2) Chip breaking and cutting data optimizing before starting. Target is short and easy to evacuate swarf. Modify cutting data as below:

	8 – 11 x D	12 – 14 x D
V_c [m/min]	0.9	0.58
f [mm/U]	x	0.9

- 3) Check the coolant pressure and flow rate. The coolant pressure (see page 103) can be adjusted using the following formula: SHARK-Drill® (8 – 11 x D) x 1.3 / (12 – 14 x D) x 1.5.
- 4) Measure the hole and check that tolerance is acceptable.
- 5) Increase cutting data to previously established data and finish drilling, making sure that the swarf remains short and leaving the hole problem free. Otherwise a peck cycle may be required.

Always select shortest possible drill!

Attention: Carbide inserts are not recommended.

Swarf control – The following recommendations have also proved advantageous:

- Monitor swarf control.
- If not yet at maximum feed rate potential, an increase in feed rate can lead to better chip breaking.
- If none of these changes are successful it may be necessary to insert a pecking cycle.

For many materials in the stainless steel area, but also others, it may not always be possible to achieve acceptable chip breaking simply by adjusting V_c and f . In such cases a pecking cycle will be needed. This should only be a small peck cycle of approx 0.1 mm.

A pecking cycle where the tool is removed out of the hole is not recommended. As a rule take increments of approx 10 % of the drill diameter (e.g. 20 mm diameter = 2 mm peck depth).

RECOMMENDATIONS FOR ...

... the extreme long SHARK-Drill®

In order to obtain a problem free machining with the drills, the following has proven successful:

- 1) Pilot drilling (approx. 1 x D) with same diameter. The drill point should be same or larger than SHARK-Drill® insert.
Other start options:
 - Centering with 132 degree drill point (up to 65 mm) – careful penetration (approx. 50 % of recommended feed rate) until full diameter is achieved.
 - Centering with 144 degree drill point (from 64 – 114 mm) – careful penetration (approx. 50 % of recommended feed rate) until full diameter is achieved.
- 2) Swarf control and cutting data optimizing should be performed before full depth drilling, we suggest using the pilot drill. The target short and easily evacuated swarf.
- 3) Check the coolant pressure and flow rate. The coolant pressure (see page 103) can be adjusted using the following formula: SHARK-Drill® $(20 - 24 \times D) \times 2.0 / (25 - 32 \times D) \times 3.0$.
- 4) The cutting data should also be modified depending on drill depth:

	20 – 24 x D	25 – 32 x D
V_c [m/min]	0.80	0.75
f [mm/U]	0.80	0.80
- 5) With the long drill stationary or penetration with 10 – 20 rev./min.
- 6) Increase cutting data to previously established data and finish drilling, making sure that the swarf remains short and leaving the hole problem free. Otherwise a peck cycle may be required.
- 7) When reaching the depth required stop the spindle or reduce to 10 – 20 rev./min and feed out the drill.
- 8) Note that the extra long and extreme long drills do deflect.

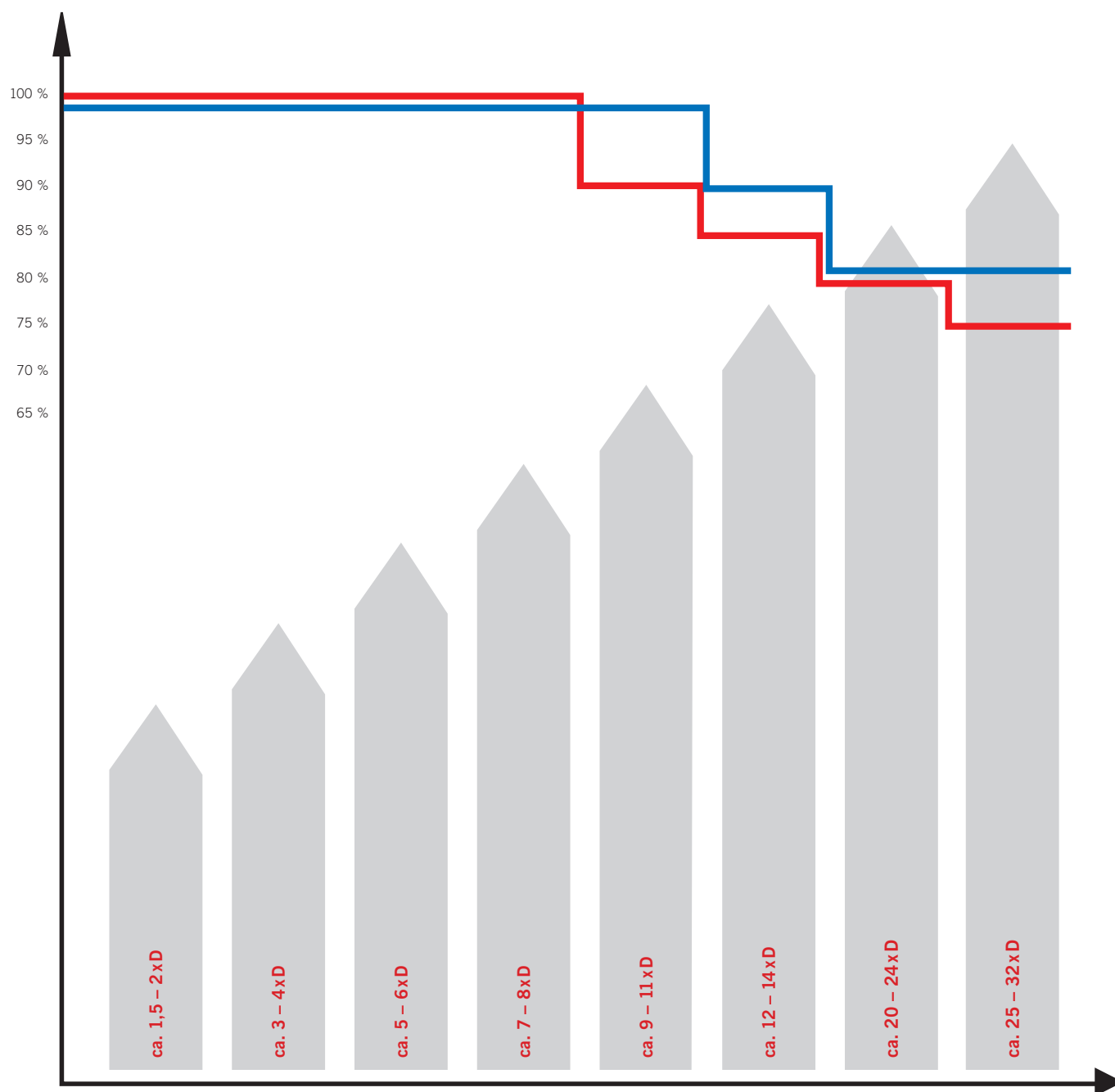
Swarf control – The following recommendations have also proved advantageous:
Up to drill depth of 1 – 2 x D monitor swarf. If the swarf is too long, cutting data should be modified.

For many materials in the stainless steel area, but also others, it may not always be possible to achieve acceptable chip breaking simply by adjusting V_c and f . In such cases a pecking cycle will be needed. This should only be a small peck cycle of approx 0.1 mm.

A pecking cycle where the tool is removed out of the hole is not recommended. As a rule take increments of approx 10 % of the drill diameter (e.g. 20 mm diameter = 2 mm peck depth).

Tipp:

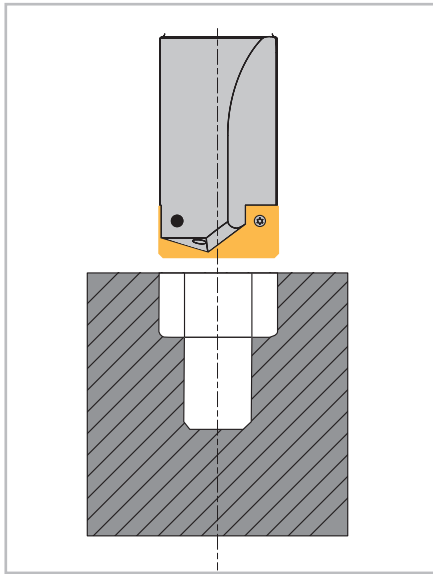
If not yet at maximum feed rate potential, an increase in feed rate can lead to better chip breaking. If none of these changes are successful it may be necessary to insert a pecking cycle.

Schnittwerte-Multiplikator / *Cutting data multiplier* / Fattori di riduzione parametri**1**

- **f** = **Vorschub** / Feed rate / Avanzamento
- **V_c** = **Schnittgeschwindigkeit** / Cutting speed / Velocità di taglio

9 – 11 x D	> V _c x0,90
12 – 14 x D	> V _c x0,85; f x 0,90
20 – 24 x D	> V _c x0,80; f x 0,90
25 – 32 x D	> V _c x0,75; f x 0,80

Für Flatschneidsätze / For flat bottom inserts / Per inserti a fondo piano -F

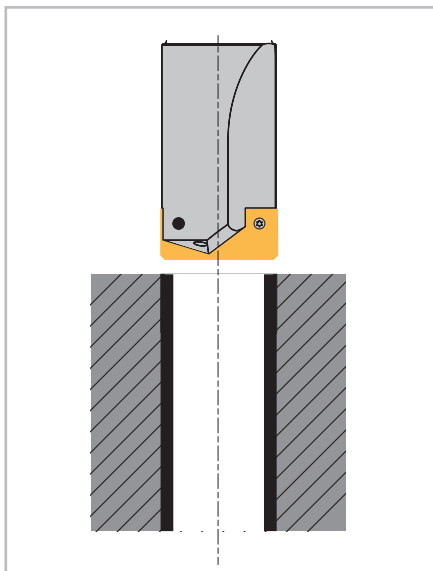


Die Flatschneidersätze sind ausschließlich in HSS5 lieferbar. Eingesetzt werden sie bei der Bohrungsbearbeitung (z. B. für Schraubensenkungen). Es empfiehlt sich maximal Halter der Standardlänge zu verwenden.

The Flat Bottom Inserts are available in grade HSS5 only. The basic application is to drill the bottom of a hole (e.g. for screw countersinks). It is advisable to use holders of the standard length only.

Gli per fori a fondo piano sono disponibili solo nel grado HSS5. La principale applicazione di tali inserti è per la esecuzione del piano sul fondo di fori già eseguiti o per lamature poco profonde (alloggiamento testa vite). E' consigliabile usare corpi più corti possibile.

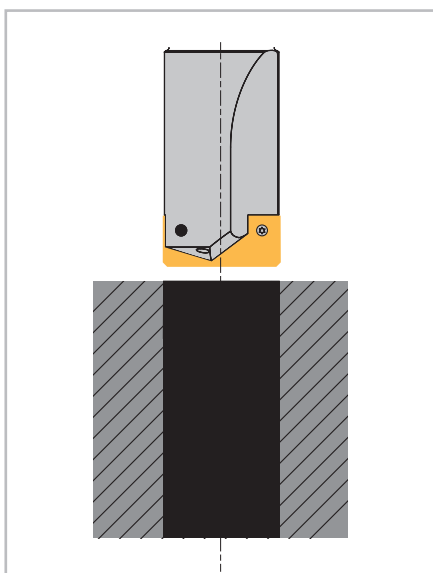
1



Bei der Verwendung zum Aufbohren sollten maximal mittellange Halter verwendet werden. Es ist außerdem darauf zu achten, dass der Durchmesserunterschied (Vorbohrdurchmesser zu Aufbohrdurchmesser) größer als die Eckenschutzfase ist. Die Flucht der aufgebohrten Bohrung entspricht der Flucht der Vorbohrung.

If counterboring only up to intermediate length holders should be used. It is necessary that the difference between the pre-existing hole and the counterbore diameter is bigger than the size of the cornerclips of the insert. The lead is nearly the same than the pre-existing hole.

Nell'utilizzo come barenatura di fori utilizzare corpi punta molto corti. Per un corretto funzionamento fare in modo che il sovrametallo superi la dimensione dello smusso sul tagliente dell'inserto. La rettilineità ottenuta è identica al preforo eseguito.



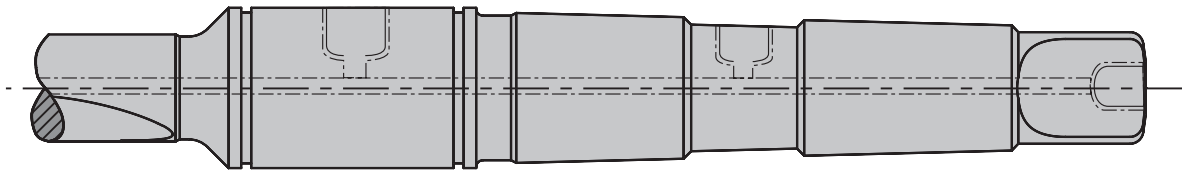
Ins Volle zu bohren funktioniert mit Abstrichen ausschließlich bei einfach zu zerspanenden Werkstoffen wie Aluminium oder Automatenstahl. Der Einsatz wird nur in Verbindung mit kurzen Haltern empfohlen.

To drill into solid it is only possible with limitations and easy to machine workpiece materials (e.g. aluminum and free machining steel). Short length holders should only be used.

L'esecuzione di fori dal pieno è possibile solo per materiali facili da lavorare (alluminio, acciaio non legato). Utilizzare sempre corpi extra corti.

Erweiterte DIN 228 Form BK / Extended DIN 228 form BK / Estensione DIN 228 forma BK

1



Es bestehen 3 Kühlmittelooptionen:

- seitlich über den drehend gelagerten Kühlmittelring
- von hinten durch den Austreiblappen
- in der Mitte des Morsekegels

Im Auslieferungszustand ist das hintere Gewinde am Austreiblappen und das Gewinde am Kühlmittelringsitz durch Verschlusschrauben mit Innensechskant verschlossen. Je nach gewünschter Kühlmittelooption an der Maschine können Sie entsprechend den Kühlmittelfluss bestimmen.

Three coolant options available:

- form the side with coolant ring
- through the shank
- through the morse taper

At first delivery, the tool is set up with a hexagon socket screw for coolant option "through tang". A secound screw close the thread at the rotary coolant ring. According to machine requirements select the coolant supply.

Tre opzioni di refrigerante disponibili:

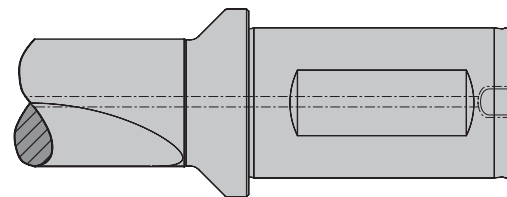
- dal lato con anello refrigerante
- attraverso il corpo
- dal lato del cono

Alla consegna, l'utensile viene fornito per l'uso "attraverso il corpo". Un grano chiude il passaggio per l'anello refrigerante ed un secondo grano chiude il passaggio dal cono. I grani possono venire spostati per l'uso richiesto.

Optional mit DIN ISO9766-Schaft (-W) und rückseitigem Gewinde nach BSP ISO 7-1

Optional with DIN ISO9766 shank (-W) for threaded coolant connection to BSP ISO 7-1

Versione corpi (-W) con foro filettato BSP ISO 7-1



Verschleißfestigkeit und Zähigkeit

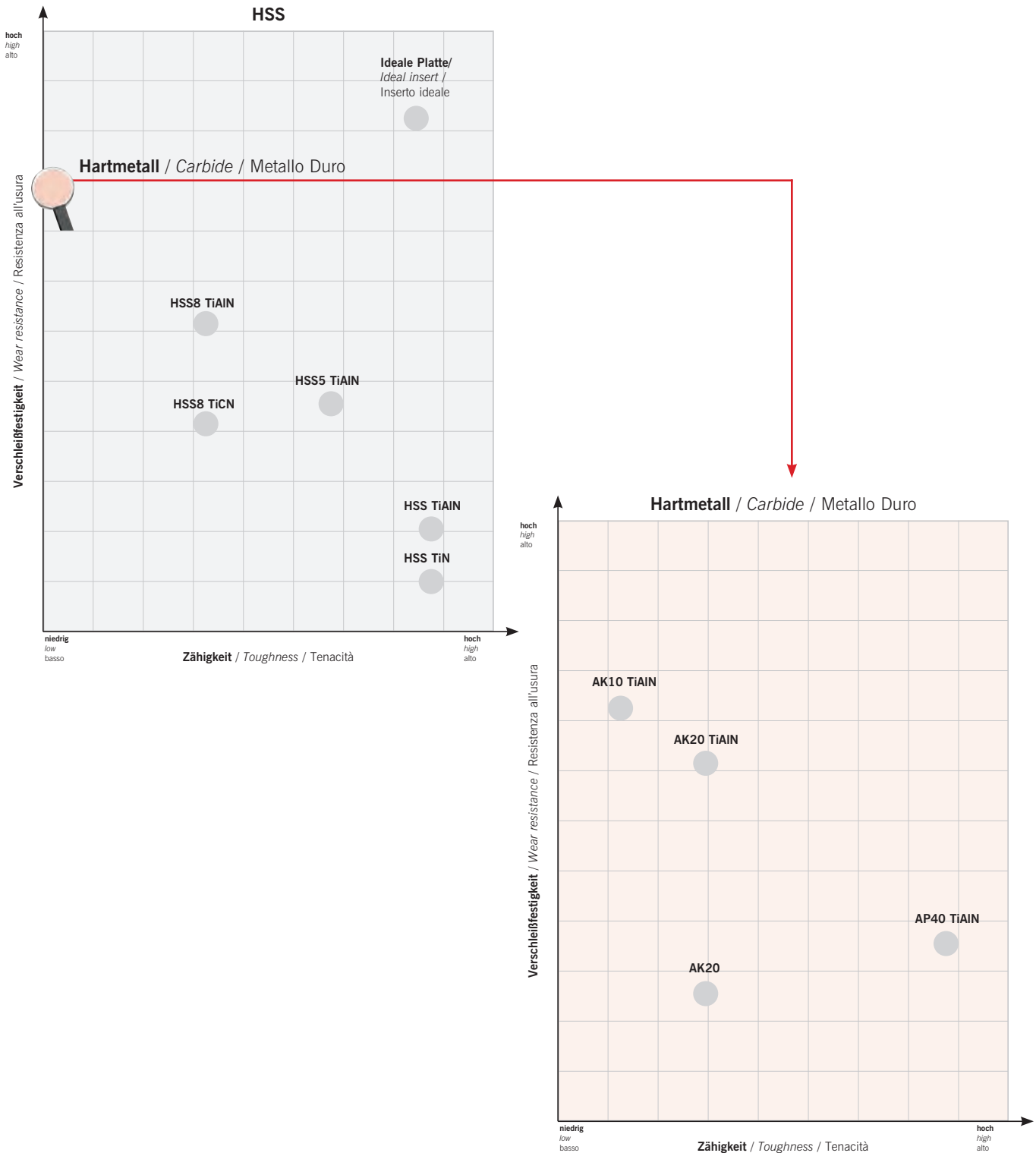
Wear resistance and Toughness

Resistenza all'usura e Tenacità

Hartmetall ist gegenüber den HSS-Sorten sehr verschleißfest, zugleich aber auch bruchempfindlich (siehe Abb.). Daher empfehlen wir den Einsatz von Hartmetallen nur unter stabilen Schnittbedingungen (kurze Bohrtiefen, stabile Spannung, gute Spannbildung).

As you can see, carbide against HSS-grades are very wear resistant, but also brittle. We recommend the use of carbide only under stable cutting conditions (short drill depths, rigid clamping, good chip formation).

Come si può notare I metalli duri rispetto agli HSS hanno molta più resistenza all'usura ma sono più fragili. Si raccomanda l'utilizzo dei metalli duri solamente in abbinamento a stabili condizioni di lavorazione (fori corti, fissaggi rigidi, buona formazione di truciolo).



Langjährige Erfahrung

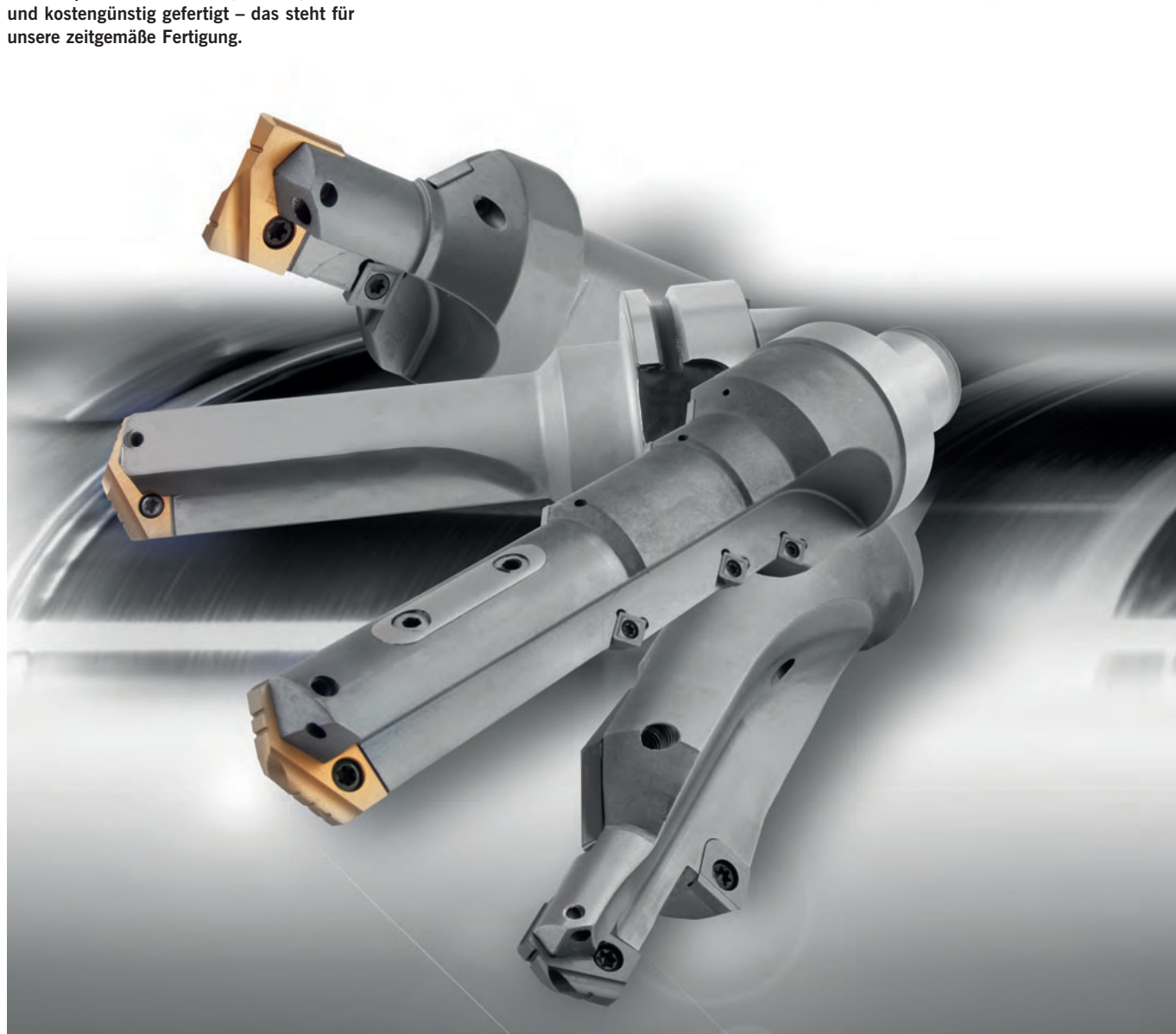
Im Bereich der Sonderwerkzeuge greift ARNO-Werkzeuge auf einen langjährigen Erfahrungsschatz zurück. Viele Unternehmen fertigen mit ARNO-Werkzeuge wesentlich effektiver und kostengünstiger. Ob es sich um Sonderbohrplatten oder komplexe Kombi-Bohrwerkzeuge handelt, speziell gefertigte Sonderwerkzeuge – kundenspezifisch entwickelt, flexibel, schnell und kostengünstig gefertigt – das steht für unsere zeitgemäße Fertigung.

Many years of experience

ARNO-Werkzeuge is using its many years of experience and expertise in special tooling. Many customers have improved efficiency using special inserts, complex combination tools or specific drilling tools. Our promise is fast, flexible and economical special solutions that work.

Tanti anni di esperienza

ARNO-Werkzeuge mette a disposizione i tanti anni di esperienza e perizia nella costruzione di utensili speciali. Molti dei nostri clienti hanno migliorato la loro efficienza tramite l'utilizzo di inserti speciali, complessi utensili combinati o specifici utensili di foratura. La nostra promessa è una veloce, flessibile ed economica soluzione speciale per la vostra applicazione.



Für Fragen stehen wir Ihnen gerne zur Verfügung. Wir unterbreiten Ihnen ein individuelles Angebot ganz nach Ihren Anforderungen.

If you have any questions, please do not hesitate to contact us. We would be pleased to quote according to your specifications.

Per qualsiasi esigenza non esitate a contattarci. Vi preghiamo di chiamarci anche per un preventivo personalizzato in base alle vostre esigenze.

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