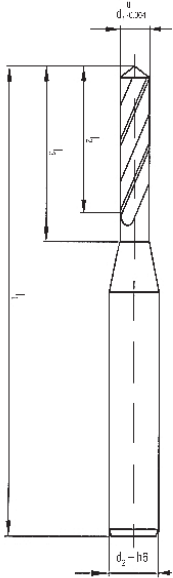


4361VS03..

Schaft/tige/shank: 3.0 mm
 Ø 0.10 - 1.50 mm



Einheitspreis:
 Prix unitaire:
 Unit price:
 11.20 CHF/
 Stck/pce./pce.
 Minimalmenge
 cde.minimale/
 minimum order:
 10Stück/pce./pce.

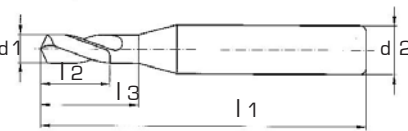
Hartmetallbohrer m. ver- *Mèches en MD monobl.* Carbide twist drills with
 stärkt.Zylinderschaft 3mm à *queue renforcée 3mm* reinforced shank 3mm

- Schaft abgesetzt- mehr Zähigkeit,
- Schaftdurchmesser: 3.0 mm Länge: 38 mm, Spitzen< 130 °
- SUBMICRON Hartmetall < 0.4 µ
- 4-Flächenanschliff geeignet für folgende Materialien: INOX, Stahl u. Stahllegierungen, Titan, Aluminium, Kupfer
- Queue renforcée p.meilleure tenacité
- diam.de la queue: 3.0 mm longueur: 38 mm ,angle de pointe 130 °
- MD : ULTRA SUBMICRON < 0.4 Micron
- affûtage 4 faces, matériaux: Aciers, aciers inoxydables, titane, aluminium, cuivre
- Shank stepped-higher toughness
- Shank-diam.: 3.0 mm Total length: 38 mm, Head< 130 °
- Carbide grade SUBMICRON < 0.4 µ
- Grinding type „4-planes“ materials: Stainless steels (INOX), steel and steel alloys, titanium, aluminium, copper

d1	l2	l1	d2	d1	l2	l1	d2	d1	l2	l1	d2	d1	l2	l1	d2	d1	l2	l1	d2
+0			h6	+0			h6	+0			h6	+0			h6	+0			h6
-0.004				-0.004				-0.004				-0.004				-0.004			4.361VS0311
0.10	0.5	38	3.0	0.48	2.7	38	3.0	0.87	5.7	38	3.0	1.25	8.2	38	3.0	1.63	9.2	38	3.0
0.11	0.5	38	3.0	0.49	3.2	38	3.0	0.88	5.7	38	3.0	1.26	8.2	38	3.0	1.64	9.2	38	3.0
0.12	0.5	38	3.0	0.50	3.2	38	3.0	0.89	5.7	38	3.0	1.27	8.2	38	3.0	1.65	9.2	38	3.0
0.13	0.8	38	3.0	0.51	3.2	38	3.0	0.90	5.7	38	3.0	1.28	8.2	38	3.0	1.66	9.2	38	3.0
0.14	0.8	38	3.0	0.52	3.2	38	3.0	0.91	5.7	38	3.0	1.29	8.2	38	3.0	1.67	9.2	38	3.0
0.15	0.8	38	3.0	0.53	3.2	38	3.0	0.92	5.7	38	3.0	1.30	8.2	38	3.0	1.68	9.2	38	3.0
0.16	0.8	38	3.0	0.54	3.6	38	3.0	0.93	5.7	38	3.0	1.31	9.2	38	3.0	1.69	9.2	38	3.0
0.17	1.1	38	3.0	0.55	3.6	38	3.0	0.94	5.7	38	3.0	1.32	9.2	38	3.0	1.70	9.2	38	3.0
0.18	1.1	38	3.0	0.56	3.6	38	3.0	0.95	5.7	38	3.0	1.33	9.2	38	3.0	1.71	9.2	38	3.0
0.19	1.1	38	3.0	0.57	3.6	38	3.0	0.96	6.5	38	3.0	1.34	9.2	38	3.0	1.72	9.2	38	3.0
0.20	1.5	38	3.0	0.58	3.6	38	3.0	0.97	6.5	38	3.0	1.35	9.2	38	3.0	1.73	9.2	38	3.0
0.21	1.5	38	3.0	0.59	3.6	38	3.0	0.98	6.5	38	3.0	1.36	9.2	38	3.0	1.74	9.2	38	3.0
0.22	1.5	38	3.0	0.60	3.6	38	3.0	0.99	6.5	38	3.0	1.37	9.2	38	3.0	1.75	9.2	38	3.0
0.23	1.5	38	3.0	0.61	3.9	38	3.0	1.00	6.5	38	3.0	1.38	9.2	38	3.0	1.76	9.2	38	3.0
0.24	1.5	38	3.0	0.62	3.9	38	3.0	1.01	6.5	38	3.0	1.39	9.2	38	3.0	1.77	9.2	38	3.0
0.25	1.9	38	3.0	0.63	3.9	38	3.0	1.02	6.5	38	3.0	1.40	9.2	38	3.0	1.78	9.2	38	3.0
0.26	1.9	38	3.0	0.64	3.9	38	3.0	1.03	6.5	38	3.0	1.41	9.2	38	3.0	1.79	9.2	38	3.0
0.27	1.9	38	3.0	0.65	3.9	38	3.0	1.04	6.5	38	3.0	1.42	9.2	38	3.0	1.80	9.2	38	3.0
0.28	1.9	38	3.0	0.66	3.9	38	3.0	1.05	6.5	38	3.0	1.43	9.2	38	3.0	1.81	9.2	38	3.0
0.29	1.9	38	3.0	0.67	3.9	38	3.0	1.06	7.3	38	3.0	1.44	9.2	38	3.0	1.82	9.2	38	3.0
0.30	1.8	38	3.0	0.68	4.5	38	3.0	1.07	7.3	38	3.0	1.45	9.2	38	3.0	1.83	9.2	38	3.0
0.31	1.8	38	3.0	0.69	4.5	38	3.0	1.08	7.3	38	3.0	1.46	9.2	38	3.0	1.84	9.2	38	3.0
0.32	1.8	38	3.0	0.70	4.5	38	3.0	1.09	7.3	38	3.0	1.47	9.2	38	3.0	1.85	9.2	38	3.0
0.33	1.8	38	3.0	0.71	4.5	38	3.0	1.10	7.3	38	3.0	1.48	9.2	38	3.0	1.86	9.2	38	3.0
0.34	1.8	38	3.0	0.72	4.5	38	3.0	1.11	7.3	38	3.0	1.49	9.2	38	3.0	1.87	9.2	38	3.0
0.35	2.2	38	3.0	0.73	4.5	38	3.0	1.12	7.3	38	3.0	1.50	9.2	38	3.0	1.88	9.2	38	3.0
0.36	2.2	38	3.0	0.74	4.5	38	3.0	1.13	7.3	38	3.0	1.51	9.2	38	3.0	1.89	9.2	38	3.0
0.37	2.2	38	3.0	0.75	4.5	38	3.0	1.14	7.3	38	3.0	1.52	9.2	38	3.0	1.90	9.2	38	3.0
0.38	2.2	38	3.0	0.76	5.0	38	3.0	1.15	7.3	38	3.0	1.53	9.2	38	3.0	1.91	9.2	38	3.0
0.39	2.7	38	3.0	0.77	5.0	38	3.0	1.16	8.2	38	3.0	1.54	9.2	38	3.0	1.92	9.2	38	3.0
0.40	2.7	38	3.0	0.78	5.0	38	3.0	1.17	8.2	38	3.0	1.55	9.2	38	3.0	1.93	9.2	38	3.0
0.41	2.7	38	3.0	0.79	5.0	38	3.0	1.18	8.2	38	3.0	1.56	9.2	38	3.0	1.94	9.2	38	3.0
0.42	2.7	38	3.0	0.80	5.0	38	3.0	1.19	8.2	38	3.0	1.57	9.2	38	3.0	1.95	9.2	38	3.0
0.43	2.7	38	3.0	0.81	5.0	38	3.0	1.20	8.2	38	3.0	1.58	9.2	38	3.0	1.96	9.2	38	3.0
0.44	2.7	38	3.0	0.82	5.0	38	3.0	1.21	8.2	38	3.0	1.59	9.2	38	3.0	1.97	9.2	38	3.0
0.45	2.7	38	3.0	0.83	5.0	38	3.0	1.22	8.2	38	3.0	1.60	9.2	38	3.0	1.98	9.2	38	3.0
0.46	2.7	38	3.0	0.84	5.0	38	3.0	1.23	8.2	38	3.0	1.61	9.2	38	3.0	1.99	9.2	38	3.0
0.47	2.7	38	3.0	0.85	5.0	38	3.0	1.24	8.2	38	3.0	1.62	9.2	38	3.0	2.00	9.2	38	3.0
				0.86	5.7	38	3.0												

4354NV130..

Schaft/tige/shank: 1.50 mm
 Ø 0.10 - 1.00 / 0.01mm
 Ø 1.05 - 1.50 / 0.05mm



HM Kleinst NC-Anbohrer *Micro-foret à pointer CN NC* carbide micro drill

130° Spitzenwinkel, d1+0.005 mm Angle de la pointe: 130 °, d1 130° Head angle, d1+0.005 mm
 Für Stahl, INOX, Messing, ALU- Für: Stainless steels (INOX), steel, brass & aluminium alloys
 Legierungen laiton, alliages ALU

d1	l2	l3	l1	d2	Art.Nr.	d1	l2	l3	l1	d2	Art.Nr.	d1	l2	l3	l1	d2	Art.Nr.	d1	l2	l3	l1	d2	Art.Nr.
+0				h6	no.cat.	+0				h6	no.cat.	+0				h6	no.cat.	+0				h6	no.cat.
+0.005					CHF	+0.005					CHF	+0.005					CHF	+0.005					CHF
0.05	0.35	0.55	30	1.5	21.00	0.32	0.90	1.20	30	1.5	7.90	0.58	1.00	1.80	30	1.5	7.90	0.84	1.5	2.5	30	1.5	7.90
0.06	0.35	0.55	30	1.5	21.00	0.33	0.90	1.20	30	1.5	7.90	0.59	1.00	1.80	30	1.5	7.90	0.85	1.5	2.5	30	1.5	7.90
0.07	0.35	0.55	30	1.5	21.00	0.34	0.90	1.20	30	1.5	7.90	0.60	1.2	2.0	30	1.5	7.90	0.86	1.5	2.5	30	1.5	7.90
0.08	0.35	0.55	30	1.5	21.00	0.35	0.90	1.20	30	1.5	7.90	0.61	1.2	2.0	30	1.5	7.90	0.87	1.5	2.5	30	1.5	7.90
0.09	0.35	0.55	30	1.5	21.00	0.36	0.90	1.20	30	1.5	7.90	0.62	1.2	2.0	30	1.5	7.90	0.88	1.5	2.5	30	1.5	7.90
0.10	0.35	0.55	30	1.5	11.80	0.37	0.90	1.20	30	1.5	7.90	0.63	1.2	2.0	30	1.5	7.90	0.89	1.5	2.5	30	1.5	7.90
0.11	0.35	0.55	30	1.5	11.80	0.38	0.90	1.20	30	1.5	7.90	0.64	1.2	2.0	30	1.5	7.90	0.90	1.6	2.6	30	1.5	7.90
0.12	0.35	0.55	30	1.5	11.80	0.39	0.90	1.20	30	1.5	7.90	0.65	1.2	2.0	30	1.5	7.90	0.91	1.6	2.6	30	1.5	7.90
0.13	0.40	0.60	30	1.5	11.80	0.40	0.90	1.60	30	1.5	7.90	0.66	1.2	2.0	30	1.5	7.90	0.92	1.6	2.6	30	1.5	7.90
0.14	0.40	0.60	30	1.5	11.80	0.41	0.90	1.60	30	1.5	7.90	0.67	1.2	2.0	30	1.5	7.90	0.93	1.6	2.6	30	1.5	7.90
0.15	0.40	0.60	30	1.5	11.80	0.42	0.90	1.60	30	1.5	7.90	0.68	1.2	2.0	30	1.5	7.90	0.94	1.6	2.6	30	1.5	7.90
0.16	0.40	0.60	30	1.5	11.80	0.43	0.90	1.60	30	1.5	7.90	0.69	1.2	2.0	30	1.5	7.90	0.95	1.6	2.6	30	1.5	7.90
0.17	0.40	0.60	30	1.5	11.80	0.44	0.90	1.60	30	1.5	7.90	0.70	1.5	2.5	30	1.5	7.90	0.96	1.6	2.6	30	1.5	7.90
0.18	0.40	0.60	30	1.5	11.80	0.45	0.90	1.60	30	1.5	7.90	0.71	1.5	2.5	30	1.5	7.90	0.97	1.6	2.6	30	1.5	7.90
0.19	0.40	0.60	30	1.5	11.80	0.46	0.90	1.60	30	1.5	7.90	0.72	1.5	2.5	30	1.5	7.90	0.98	1.6	2.6	30	1.5	7.90
0.20	0.60	0.90	30	1.5	7.90	0.47	0.90	1.60	30	1.5	7.90	0.73	1.5	2.5	30	1.5	7.90	0.99	1.6	2.6	30	1.5	7.90
0.21	0.60	0.90	30	1.5	7.90	0.48	0.90	1.60	30	1.5	7.90	0.74	1.5	2.5	30	1.5	7.90	1.00	2.0	3.2	25	1.5	7.90
0.22	0.60	0.90	30	1.5	7.90	0.49	0.90	1.60	30	1.5	7.90	0.75	1.5	2.5	30	1.5	7.90	1.05	2.0	3.2	25	1.5	7.90
0.23																							

Karosseriebohrer ein-/doppelseitig

- Rechtsschneidend mit Zylinderschaft nach Werknorm
- HSS-Co, Spitzenwinkel 118°, Spiralwinkel 35°
- Hauptanwendung: Für geringe Bohrtiefen vorwiegend für Blechbearbeitung (Karosseriebau)

Forets carosserie une-/double taille

- Coupe à droite, queue cylindrique selon norme usine
- angle de la pointe 118°, hélice 35°
- application principale: pour le perçage de tôles minces (Carrosserie)

Twist drills for sheet metal work one-/double sided

- right hand, cylindrical shank factory standard
- head angle 118°, helix 35°
- main application: for drilling into thin sheet metals(car bodies)

4354DS/ES..

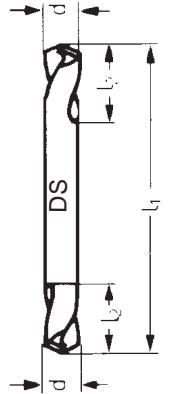
Mengenrabatt 10 % ab 100 Stück/Durchm.
Volume discount 10 % from 100 pcs./ diam.

Remise de quantité 10 % dès 100 pcs./diam.

4.354ES115		Best.Nr./order no.		
d[mm]	I2	CHF	no.cde.	CHF
3.25	10	49	4354ES. 0325	1.80
3.30	10	49	4354ES. 0330	1.80
4.10	13	55	4354ES. 0410	2.30
4.90	13	62	4354ES. 0490	3.00



4.354DS115		Best.Nr./order no.		
d[mm]	I2	I1	no.cde.	CHF
2.50	10	43	4354DS. 0250	4.90
3.20	10	49	4354DS. 0320	4.40
3.30	10	49	4354DS. 0330	4.40
4.10	13	55	4354DS. 0410	4.90
4.20	13	55	4354DS. 0420	4.90
4.50	13	58	4354DS. 0450	4.90
4.90	13	62	4354DS. 0490	9.10
5.00	13	62	4354DS. 0500	6.10
5.70	19	66	4354DS. 0570	8.30
6.50	19	70	4354DS. 0650	9.00



Schweisspunktbohrer

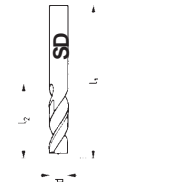
- Rechtsschneidend mit Zylinderschaft, Spannfläche bei 4.354SDW, nach Werknorm
- HSS, Spitzenwinkel 180°, Spiralwinkel 35°
- Hauptanwendung: Entfernen der Schweiss-punkte vorwiegend für Blechbearbeitung (Karosseriebau)

Forets soudage par points

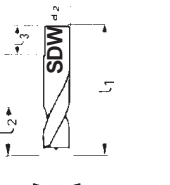
- Coupe à droite, queue cylindrique 4.354SDW avec mêplat, selon norme usine
- angle de la pointe 180°, hélice 35°
- application principale: pour éliminer les points de soudage (carrosserie)

Twist drills for welding points 4354SD/SDW..

- right hand with cylindrical shank, flats on 4.354SDW, according factory standard
- from HSS, head angle 180°, helix angle 35°
- main application: Elimination of the welding poits preferably in the field of sheet metal working (car bodies)



4.354SDW115		Best.Nr./order no.				
d[mm]	I2	I1	I3	d2	no.cde.	CHF
6.00	25	63			4354SD. 0600	12.90
8.00	34	76			4354SD. 0800	19.30
8.00	15	40	10	7.5	4354SDW. 0800	26.30



Kurzer Spiralbohrer mit abgesetz.Schaft Ø 9.8/12.7 mm

- Rechtsschneidend mit Zylinderschaft
- Ø 9.8/12.7mm, HSS, nach Werknorm
- Spitzenwinkel 118° (d≥20), 130° (d<20mm), Spiralwinkel 30° Hauptanwendung: Stahl und Gusseisen

Mèches courtes à queue Ø 9.8/12.7mm

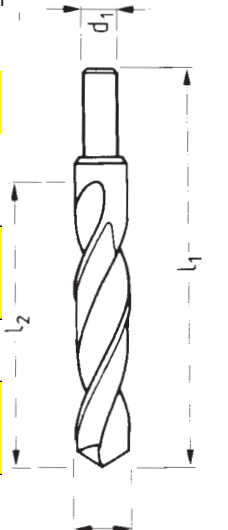
- coupe à droite, queue cylindrique Ø 9.8/12.7mm selon norme usine,
- angle de la pointe 118° (d ≥20), 130° (d < 20mm) hélice 30°
- application principale: pour aciers et fontes

Short twist drills with stepped shank Ø 9.8/12.7mm

- right hand with cylindrical shank 9.8/12.7mm, HSS, factory standard
- head angle 118° (d≥20), 130° (d<20mm), helix angle 30°
- main application: steel and cast iron

4350EK..

4.350EK115		Bst.Nr./order no.					Bst.Nr./order no.				
d[mm]	I2	I1	d1	no.cde.	CHF	d[mm]	I2	I1	d1	no.cde.	CHF
10.50	59.00	108	9.8	4350EK.1050	29.90	17.00	93	150	12.7	4350EK.1700	47.60
11.00	65.00	116	9.8	4350EK.1100	30.70	17.50	93	150	12.7	4350EK.1750	51.40
11.50	65.00	116	9.8	4350EK.1150	34.00	18.00	93	150	12.7	4350EK.1800	56.70
12.00	71.00	125	9.8	4350EK.1200	34.70	18.50	93	150	12.7	4350EK.1850	61.20
12.50	71.00	125	9.8	4350EK.1250	32.70	19.00	93	150	12.7	4350EK.1900	55.80
13.00	71.00	125	9.8	4350EK.1300	37.20	19.50	93	150	12.7	4350EK.1950	77.20
13.50	84.00	139	9.8	4350EK.1350	39.00	20.00	93	150	12.7	4350EK.2000	75.40
14.00	84.00	139	9.8	4350EK.1400	37.30	21.00	76	152	12.7	4350EK.2100	60.70
14.50	88.00	145	9.8	4350EK.1450	47.20	22.00	76	152	12.7	4350EK.2200	68.90
15.00	88.00	145	9.8	4350EK.1500	42.70	23.00	76	152	12.7	4350EK.2300	81.30
15.50	93.00	150	9.8	4350EK.1550	44.30	24.00	76	152	12.7	4350EK.2400	83.70
16.00	93.00	150	9.8	4350EK.1600	45.90	25.00	76	152	12.7	4350EK.2500	88.60
16.50	93.00	150	12.7	4350EK.1650	46.20						



**4351INOX..
DIN 338, VA**

INOX Spiralbohrer

- Rechtsschneidend & Zylinderschaft
- HSS-Co, Typ VA, nach Norm DIN 338 / ISO 235
- Spitzwinkel 130°, Drallwinkel 35°
- Hauptanwendung: Schwer zerspanbare Werkstoffe wie nichtrostende und hitzebeständige Stähle

Mengenrabatt 10 %

ab 10 Stück/Durchm. bis 9.5mm und ab 5 Stück ab 9.6mm

Forets INOX

- Coupe à droite à queue cylindr.
- HSS-Co, type VA, selon Norm DIN 338 / ISO 235
- Angle de la pointe 130°, hélice 35°
- Application principale: alliages difficile à machiner comme acier inox. et de hautes températures

Remise de quantité 10 %

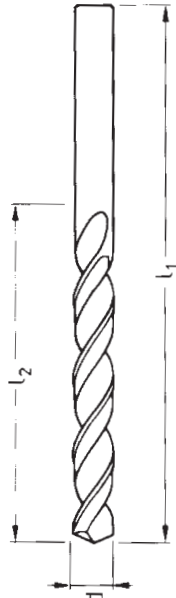
dès 10 pcs./diam. jusqu'à 9.5mm et dès 5 pcs. dès 9.6mm

Twist drills for stainless steels

- Right hand & cylindrical shank
- HSS-Co, type VA, according standard DIN 338 / ISO 235
- Head angle 130°, helix angle 35°
- Main application: difficult materials to machine e.g. stainless steels & high temperature steels

Volume discount 10 %

from 10 pcs./diam. til 9.5mm & from 5 pcs. from 9.6mm upwards



d[mm]	I2	I1	Best.Nr. no.cde. order no.	Katalog catalogue CHF	Aktion action promotion CHF
1,00	12	34	4351INOX.0100	9,20	5,70
1,10	14	36	4351INOX.0110	8,20	5,30
1,20	16	38	4351INOX.0120	8,20	5,30
1,30	16	38	4351INOX.0130	8,20	5,30
1,40	18	40	4351INOX.0140	8,20	5,30
1,50	18	40	4351INOX.0150	8,50	5,40
1,55	18	40	4351INOX.0155	5,70	4,70
1,60	20	43	4351INOX.0160	11,90	7,60
1,70	20	43	4351INOX.0170	12,30	7,90
1,80	22	46	4351INOX.0180	7,70	4,80
1,90	22	46	4351INOX.0190	7,70	4,80
2,00	24	49	4351INOX.0200	7,40	4,70
2,10	24	49	4351INOX.0210	7,30	4,70
2,20	27	53	4351INOX.0220	6,90	4,50
2,30	27	53	4351INOX.0230	7,30	4,70
2,40	30	57	4351INOX.0240	8,00	5,20
2,50	30	57	4351INOX.0250	6,90	4,50
2,60	30	57	4351INOX.0260	8,10	5,20
2,70	33	61	4351INOX.0270	7,60	4,70
2,80	33	61	4351INOX.0280	7,70	4,80
2,90	33	61	4351INOX.0290	7,70	4,80
3,00	33	61	4351INOX.0300	5,40	3,70
3,10	36	65	4351INOX.0310	7,30	4,60
3,20	36	65	4351INOX.0320	7,30	4,60
3,30	36	65	4351INOX.0330	6,90	4,40
3,40	39	70	4351INOX.0340	8,90	5,70
3,50	39	70	4351INOX.0350	8,50	5,40
3,60	39	70	4351INOX.0360	8,70	5,50
3,70	39	70	4351INOX.0370	7,10	4,60
3,80	43	75	4351INOX.0380	9,20	5,70
3,90	43	75	4351INOX.0390	8,10	5,20
4,00	43	75	4351INOX.0400	6,70	4,50
4,10	43	75	4351INOX.0410	7,00	4,30

d[mm]	I2	I1	Best.Nr. no.cde. order no.	Katalog catalogue CHF	Aktion action promotion CHF
4,20	43	75	4351INOX.0420	7,00	4,50
4,30	47	80	4351INOX.0430	7,40	4,70
4,40	47	80	4351INOX.0440	7,40	4,70
4,50	47	80	4351INOX.0450	7,10	4,60
4,60	47	80	4351INOX.0460	9,60	6,10
4,70	47	80	4351INOX.0470	9,60	6,10
4,80	52	86	4351INOX.0480	8,80	5,60
4,90	52	86	4351INOX.0490	8,80	5,60
5,00	52	86	4351INOX.0500	8,00	5,00
5,10	52	86	4351INOX.0510	8,20	5,30
5,20	52	86	4351INOX.0520	9,60	6,20
5,30	52	86	4351INOX.0530	10,80	6,80
5,40	57	93	4351INOX.0540	10,80	6,80
5,50	57	93	4351INOX.0550	8,60	5,50
5,60	57	93	4351INOX.0560	10,30	6,60
5,70	57	93	4351INOX.0570	11,70	7,40
5,80	57	93	4351INOX.0580	11,70	7,40
5,90	57	93	4351INOX.0590	11,70	7,40
6,00	57	93	4351INOX.0600	8,90	5,70
6,10	63	101	4351INOX.0610	12,30	7,70
6,20	63	101	4351INOX.0620	12,30	7,70
6,30	63	101	4351INOX.0630	13,80	8,70
6,40	63	101	4351INOX.0640	13,80	8,70
6,50	63	101	4351INOX.0650	8,90	5,70
6,60	63	101	4351INOX.0660	17,00	10,90
6,70	63	101	4351INOX.0670	14,90	9,60
6,80	69	109	4351INOX.0680	12,70	8,00
6,90	69	109	4351INOX.0690	12,70	8,00
7,00	69	109	4351INOX.0700	11,90	7,60
7,10	69	109	4351INOX.0710	15,90	10,20
7,20	69	109	4351INOX.0720	15,90	10,20
7,30	69	109	4351INOX.0730	15,90	10,20
7,40	69	109	4351INOX.0740	15,90	10,20

d[mm]	I2	I1	Best.Nr. no.cde. order no.	Katalog catalogue CHF	Aktion action promotion CHF
7,50	69	109	4351INOX.0750	14,90	9,60
7,60	75	117	4351INOX.0760	17,80	11,30
7,70	75	117	4351INOX.0770	17,80	11,30
7,80	75	117	4351INOX.0780	17,80	11,30
7,90	75	117	4351INOX.0790	19,60	12,40
8,00	75	117	4351INOX.0800	14,40	8,90
8,10	75	117	4351INOX.0810	19,50	12,30
8,20	75	117	4351INOX.0820	17,80	11,30
8,30	75	117	4351INOX.0830	17,80	11,30
8,40	75	117	4351INOX.0840	16,60	10,40
8,50	75	117	4351INOX.0850	21,20	13,60
8,60	81	125	4351INOX.0860	20,10	12,70
8,70	81	125	4351INOX.0870	20,70	13,10
8,80	81	125	4351INOX.0880	22,40	14,20
8,90	81	125	4351INOX.0890	22,40	14,20
9,00	81	125	4351INOX.0900	20,60	12,90
9,10	81	125	4351INOX.0910	27,00	17,00
9,20	81	125	4351INOX.0920	27,00	17,00
9,30	81	125	4351INOX.0930	27,40	17,30
9,40	81	125	4351INOX.0940	27,40	17,30
9,50	81	125	4351INOX.0950	24,20	15,20
9,60	87	133	4351INOX.0960	27,50	17,30
9,70	87	133	4351INOX.0970	27,50	17,30
9,80	87	133	4351INOX.0980	26,90	17,00
9,90	87	133	4351INOX.0990	29,80	18,80
10,00	87	133	4351INOX.1000	23,20	14,60
10,20	87	133	4351INOX.1020	26,90	17,00
10,50	87	133	4351INOX.1050	29,90	18,90
11,00	94	142	4351INOX.1100	30,10	19,00
11,50	94	142	4351INOX.1150	33,20	21,10
12,00	101	151	4351INOX.1200	38,20	24,20
12,50	101	151	4351INOX.1250	41,20	25,90
13,00	101	151	4351INOX.1300	42,20	26,80

**4351..
DIN 338, W**

ALU-Spiralbohrer

- Rechtsschneid. & Zylinderschaft
- HSS-Co, Typ W, nach Norm DIN 338 / ISO 235
- Spitzwinkel 130°, Drallwinkel 35°
- Hauptanwendung: langspannende, weiche Werkstoffe, z.B. Al-, AlSi-, Kupfer-, Zink-Legierungen, Kunststoffe weich etc.

Mengenrabatt 10 %

ab 10 Stück/Durchm. bis 9.5mm und ab 5 Stück ab 9.6mm

Forets ALU

- Coupe à droite & queue cylindr.
- HSS-Co, type W, selon Norm DIN 338 / ISO 235
- Angle de la pointe 130°, hélice 35°
- Application principale: métaux légers, alliages d'aluminium, cuivre et plastique doux

Remise de quantité 10 %

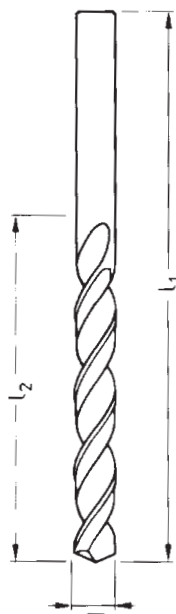
dès 10 pcs./diam. jusqu'à 9.5mm et dès 5 pcs. dès 9.6mm

Twist drills f. aluminium

- right hand & cylindrical shank
- HSS-Co, type W, according standard DIN 338 / ISO 235
- Head angle 130°, helix angle 35°
- Main application: long chip producing soft materials, e.g. Al-, AlSi-, copper-, zinc-alloys, soft plastic materials etc.

Volume discount 10 %

from 10 pcs./diam. til 9.5mm & from 5 pcs. from 9.6mm upwards



d[mm]	I2	I1	Best.Nr. no.cde. order no.	Katalog catalogue CHF	Aktion action promotion CHF
1,00	12	34	4351.0100	17,10	10,90
1,10	14	36	4351.0110	16,40	10,30
1,20	16	38	4351.0120	16,40	10,30
1,30	16	38	4351.0130	15,50	9,80
1,40	18	40	4351.0140	15,80	10,10
1,50	18	40	4351.0150	16,40	10,30
1,60	20	43	4351.0160	14,40	8,90
1,70	20	43	4351.0170	14,70	9,50
1,80	22	46	4351.0180	14,60	9,50
1,90	22	46	4351.0190	14,60	9,50
2,00	24	49	4351.0200	11,90	7,60
2,10	24	49	4351.0210	13,90	8,70
2,20	27	53	4351.0220	14,00	8,80
2,30	27	53	4351.0230	13,70	8,60
2,40	30	57	4351.0240	14,40	8,90
2,50	30	57	4351.0250	6,40	4,10
2,60	30	57	4351.0260	6,70	4,30
2,70	33	61	4351.0270	6,80	4,40
2,80	33	61	4351.0280	7,00	4,50
2,90	33	61	4351.0290	7,00	4,50
3,00	33	61	4351.0300	5,00	3,10
3,10	36	65	4351.0310	6,70	4,30
3,20	36	65	4351.0320	6,70	4,30
3,30	36	65	4351.0330	8,20	5,30

d[mm]	I2	I1	Best.Nr. no.cde. order no.	Katalog catalogue CHF	Aktion action promotion CHF
3,40	39	70	4351.0340	8,20	5,30
3,50	39	70	4351.0350	7,70	4,80
3,60	39	70	4351.0360	8,00	5,00
3,70	39	70	4351.0370	8,00	5,00
3,80	43	75	4351.0380	8,40	5,30
3,90	43	75	4351.0390	7,30	4,70
4,00	43	75	4351.0400	6,10	3,90
4,10	43	75	4351.0410	6,50	4,10
4,20	43	75	4351.0420	6,50	4,10
4,30	43	75	4351.0430	6,50	4,10
4,40	47	80	4351.0440	6,80	4,40
4,50	47	80	4351.0450	6,80	4,40
4,60	47	80	4351.0460	6,60	4,10
4,70	47	80	4351.0470	8,50	5,40
4,80	52	86	4351.0480	8,50	5,40
4,90	52	86	4351.0490	8,10	5,20
5,00	52	86	4351.0500	8,50	5,40
5,10	52	86	4351.0510	7,10	4,60
5,20	52	86	4351.0520	7,60	4,70
5,30	52	86	4351.0530	7,60	4,70
5,40	57	93	4351.0540	9,80	6,20
5,50	57	93	4351.0550	9,60	6,10
5,60	57	93	4351.0560	7,90	5,00

d[mm]	I2	I1	Best.Nr. no.cde. order no.	Katalog catalogue CHF	Aktion action promotion CHF
5,70	57	93	4351.0570	10,50	6,80
5,80	57	93	4351.0580	10,50	6,80
5,90	57	93	4351.0590	10,50	6,80
6,00	57	93	4351.0600	8,20	5,30
6,10	63	101	4351.0610	11,30	7,10
6,20	63	101	4351.0620	11,20	7,00
6,30	63	101	4351.0630	12,50	8,00
6,40	63	101	435		

Kurze Spiralbohrer, UFL

Forets série courte, UFL

Short twist drills, UFL

- HSS-Co, Typ UFL mit grossen Spannuten, rechtsscheidend mit Zylinderschaft
- Blanke Ausführung, Norm DIN 338
- Spitzenwinkel 130°, Drallwinkel 35°
- Hauptanwendung: Stahl u. langspannende Werkstoffe wie Kupfer und rostfreie Stähle bis ca. 1000N/mm², bei grösseren Bohrtiefen auch für kurzspannende Werkstoffe

- HSS-Co, type UFL, grandes rainures de copeaux, cpe. à droite, queue cylindrique.
- exécution blanche, Norm DIN 338,
- Angle de la pointe 130°, hélice 35°
- Application principale: acier et matériaux de copeaux long comme cuivre et acier INOX, jusqu'à 1000N/mm², pour les grandes profondeurs: aussi pour matériaux de copeaux courts

- HSS-Co, type UFL, with big helix grooves for the chips, RH cutting with straight shank
- blanc exéc. according DIN 338
- drill point angle 130°, hélice angle 35°
- main application: steel and long chip materials like copper and stainless steels til aprox.1000N/mm², with bigger drilldepth suitable also for short chip materials

**435020..
DIN 338
UFL**

**NEW
NOUVEAU**

**Mengenrabatt: 10% ab 10 Stück/
Durchm. bis 9.5mm und ab 5 Stück
ab 9.6mm**

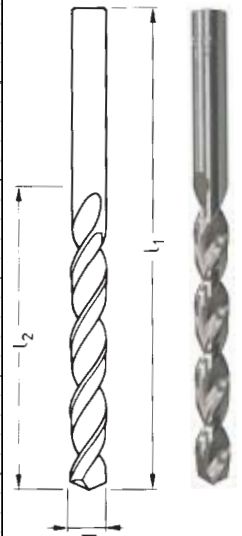
**Remise de quantité: 10% dès 10
pcs./diam. jusqu'à 9.5mm et
dès 5 pcs. dès 9.6mm**

**Volume discount: 10% from 10
pcs./diam. til 9.5mm and from 5
pcs. from 9.6mm onwards**

d [mm]	I2	I1	CHF	Art.Nr./no.cde. order no.
1.5	18	40	8.40	435020.0150
1.6	20	43	7.60	435020.0160
1.7	20	43	7.20	435020.0170
1.8	22	46	7.60	435020.0180
1.9	22	46	7.70	435020.0190
2	24	49	4.50	435020.0200
2.1	24	49	4.90	435020.0210
2.2	27	53	4.90	435020.0220
2.3	27	53	4.60	435020.0230
2.4	30	57	4.80	435020.0240
2.5	30	57	4.50	435020.0250
2.6	30	57	4.80	435020.0260
2.7	33	61	5.00	435020.0270
2.8	33	61	5.00	435020.0280
2.9	33	61	5.00	435020.0290
3	33	61	4.80	435020.0300
3.1	36	65	5.50	435020.0310
3.2	36	65	5.60	435020.0320
3.3	36	65	5.70	435020.0330
3.4	39	70	5.90	435020.0340
3.5	39	70	5.60	435020.0350
3.6	39	70	5.90	435020.0360
3.7	39	70	6.10	435020.0370
3.8	43	75	6.10	435020.0380
3.9	43	75	6.40	435020.0390
4	43	75	6.00	435020.0400
4.1	43	75	6.40	435020.0410
4.2	43	75	6.50	435020.0420
4.3	47	80	7.20	435020.0430
4.4	47	80	7.00	435020.0440
4.5	47	80	7.10	435020.0450
4.6	47	80	7.20	435020.0460
4.7	47	80	7.40	435020.0470

d [mm]	I2	I1	CHF	Art.Nr./no.cde. order no.
4.8	52	80	7.60	435020.0480
4.9	52	80	7.70	435020.0490
5	52	86	7.20	435020.0500
5.1	52	86	8.10	435020.0510
5.2	52	86	8.40	435020.0520
5.3	52	86	8.40	435020.0530
5.4	57	93	10.30	435020.0540
5.5	57	93	9.80	435020.0550
5.6	57	93	10.40	435020.0560
5.7	57	93	10.40	435020.0570
5.8	57	93	10.40	435020.0580
5.9	57	93	10.40	435020.0590
6	57	93	10.20	435020.0600
6.1	63	101	11.60	435020.0610
6.2	63	101	11.60	435020.0620
6.3	63	101	12.90	435020.0630
6.4	63	101	12.90	435020.0640
6.5	63	101	11.20	435020.0650
6.6	63	101	12.80	435020.0660
6.7	63	101	12.80	435020.0670
6.8	69	109	13.10	435020.0680
6.9	69	109	13.70	435020.0690
7	69	109	12.70	435020.0700
7.1	69	109	17.90	435020.0710
7.2	69	109	17.90	435020.0720
7.3	69	109	17.90	435020.0730
7.4	69	109	17.90	435020.0740
7.5	69	109	13.90	435020.0750
7.6	75	117	19.50	435020.0760
7.7	75	117	19.50	435020.0770
7.8	75	117	19.70	435020.0780
7.9	75	117	20.00	435020.0790

d [mm]	I2	I1	CHF	Art.Nr./no.cde. order no.
8	75	117	16.50	435020.0800
8.1	75	117	21.70	435020.0810
8.2	75	117	22.20	435020.0820
8.3	75	117	21.80	435020.0830
8.4	75	117	22.20	435020.0840
8.5	75	117	16.90	435020.0850
8.6	81	125	24.80	435020.0860
8.7	81	125	24.80	435020.0870
8.8	81	125	25.60	435020.0880
8.9	81	125	24.80	435020.0890
9	81	125	20.90	435020.0900
9.1	81	125	28.80	435020.0910
9.2	81	125	28.80	435020.0920
9.3	81	125	28.20	435020.0930
9.4	81	125	28.90	435020.0940
9.5	81	125	21.80	435020.0950
9.6	87	133	29.70	435020.0960
9.7	87	133	29.70	435020.0970
9.8	87	133	31.90	435020.0980
9.9	87	133	33.20	435020.0990
10	87	133	23.90	435020.1000
10.2	87	133	33.50	435020.1020
10.5	87	133	29.90	435020.1050
10.8	94	142	48.60	435020.1080
11	94	142	37.40	435020.1100
11.2	94	142	62.20	435020.1120
11.5	94	142	47.80	435020.1150
11.8	94	142	62.20	435020.1180
12	101	151	46.00	435020.1200
12.2	101	151	91.70	435020.1220
12.5	101	151	62.50	435020.1250
12.8	101	151	96.20	435020.1280
13	101	151	62.50	435020.1300



**Kurze Spiralbohrer, UFL
mit TIN-Beschichtung**

**Forets série courte, UFL
à revêtement TIN**

**Short twist drills, UFL
with TIN-coating**

**Mengenrabatt: 10% ab 3 Stück/
Durchmesser**

**Remise de quantité: 10% dès 3
pcs./diam.**

**Volume discount: 10% from 3
pcs./diameter**

**435025..
DIN 338
UFL TIN**

d [mm]	I2	I1	CHF	Art.Nr./no.cde. order no.
2	24	49	9.00	435025.0200
2.1	24	49	10.00	435025.0210
2.2	27	53	10.50	435025.0220
2.3	27	53	9.80	435025.0230
2.4	30	57	10.30	435025.0240
2.5	30	57	9.70	435025.0250
2.6	30	57	10.30	435025.0260
2.7	33	61	10.20	435025.0270
2.8	33	61	10.40	435025.0280
2.9	33	61	10.30	435025.0290
3	33	61	10.40	435025.0300
3.1	36	65	10.50	435025.0310
3.2	36	65	10.50	435025.0320
3.3	36	65	12.10	435025.0330
3.4	39	70	12.50	435025.0340
3.5	39	70	11.90	435025.0350
3.6	39	70	12.70	435025.0360
3.7	39	70	12.70	435025.0370
3.8	43	75	12.60	435025.0380
3.9	43	75	12.40	435025.0390
4	43	75	12.80	435025.0400
4.1	43	75	13.90	435025.0410
4.2	43	75	14.10	435025.0420
4.3	47	80	14.60	435025.0430
4.4	47	80	14.60	435025.0440
4.5	47	80	14.90	435025.0450
4.6	47	80	14.90	435025.0460
4.7	47	80	14.50	435025.0470
4.8	52	80	7.60	435025.0480
4.9	52	80	7.70	435025.0490
5	52	86	7.20	435025.0500

d [mm]	I2	I1	CHF	Art.Nr./no.cde. order no.
5.1	52	86	17.30	435025.0510
5.2	52	86	16.70	435025.0520
5.3	52	86	17.90	435025.0530
5.4	57	93	19.30	435025.0540
5.5	57	93	19.20	435025.0550
5.6	57	93	19.50	435025.0560
5.7	57	93	18.60	435025.0570
5.8	57	93	20.00	435025.0580
5.9	57	93	19.40	435025.0590
6	57	93	19.30	435025.0600
6.1	63	101	21.80	435025.0610
6.2	63	101	22.10	435025.0620
6.3	63	101	23.60	435025.0630
6.4	63	101	23.80	435025.0640
6.5	63	101	21.40	435025.0650
6.6	63	101	23.60	435025.0660
6.7	63	101	22.60	435025.0670
6.8	69	109	23.50	435025.0680
6.9	69	109	25.10	435025.0690
7	69	109	22.50	435025.0700
7.1	69	109	29.90	435025.0710
7.2	69	109	30.80	435025.0720
7.3	69	109	28.40	435025.0730
7.4	69	109	29.90	435025.0740
7.5	69	109	24.20	435025.0750
7.6	75	117	36.90	435025.0760
7.7	75	117	32.90	435025.0770
7.8	75	117	32.90	435025.0780
7.9	75	117	32.90	435025.0790
8	75	117	29.30	435025.0800
8.1	75	117	37.00	435025.0810

d [mm]	I2	I1	CHF	Art.Nr./no.cde. order no.
8.2	75	117	36.90	435025.0820
8.3	75	117	38.60	435025.0830
8.4	75	117	38.80	435025.0840
8.5	75	117	32.20	435025.0850
8.6	81	125	43.10	435025.0860
8.7	81	125	39.50	435025.0870
8.8	81	125	42.40	435025.0880
8.9	81	125	39.50	435025.0890
9	81	125	32.40	435025.0900
9.1	81	125	48.60	435025.0910
9.2	81	125	48.60	435025.0920
9.3	81	125	48.60	435025.0930
9.4	81	125	48.60	435025.0940
9.5	81	125	36.00	435025.0950
9.6	87	133	48.40	435025.0960
9.7	87	133	48.40	435025.0970
9.8	87	133	48.40	435025.0980
9.9	87	133	53.50	435025.0990
10	87	133	35.10	435025.1000
10.2	87	133	53.30	435025.1020
10.5	87	133	44.80	435025.1050
10.8	94	142	72.30	435025.1080
11	94	142	53.40	435025.1100
11.2	94	142	82.60	435025.1120
11.5	94	142	57.60	435025.1150
11.8	94	142	85.40	435025.1180
12	101	151	70.70	435025.1200
12.2	101	151	100.40	435025.1220
12.5	101	151	91.80	435025.1250
12.8	101	151	118.00	435025.1280
13	101	151	92.80	435025.1300



Spiralbohrer WEDEVAG mit Morsekegel

- Typ N, rechtsschneidend, HSS
- Für lang-bis kurzspanende Werkstoffe, z.B. Stahl bis ca.1000 N/mm², Gusseisen, Temperguss, Sintereisen Elektrolytkupfer, AlSi-Legierungen

Mèches WEDEVAG avec cône morse

- Type N, coupe à droite, HSS
- Application principale: pour des alliages avec des copeaux longs à courts, acier jusqu'à 1000 N/mm², fonte, cuivre, alliages AlSi

Twist drills WEDEVAG with conical shank Morse

- Type N, right hand cutting, HSS
- For long-to short chip materials, e.g. steel up to 1000 N/mm², cast iron, annealed cast, sintered iron, electrolytic copper, AlSi-alloys

4356..
DIN 345
HSS

Mengenrabatt:

10% ab 5 Stück/ Durchmesser

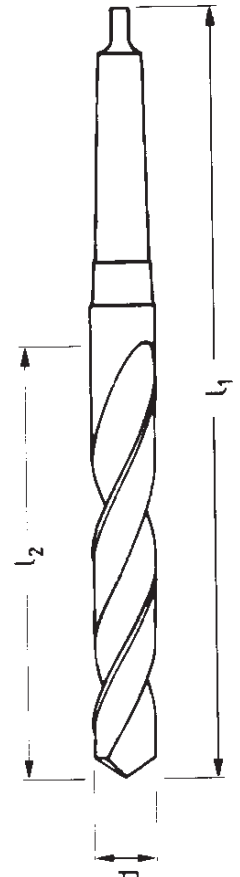
Remise de quantité:

10% dès 5 pièces / diamètre

Volume discount:

10% from 5 pcs./ diameter

d	I2	I1	MK	CHF	d	I2	I1	MK	CHF	d	I2	I1	MK	CHF	d	I2	I1	MK	CHF
5.00	52	133	1	13.30	15.50	120	218	2	38.10	26.00	165	286	3	88.20	42.00	205	354	4	198.10
5.50	57	138	1	13.70	15.75	120	218	2	39.40	26.25	165	286	3	110.70	42.50	205	354	4	205.00
6.00	57	138	1	13.80	16.00	120	218	2	32.80	26.50	165	286	3	96.00	43.00	210	359	4	208.80
6.50	63	144	1	14.30	16.25	125	233	2	41.50	26.75	165	286	3	117.00	43.50	210	359	4	216.20
7.00	69	150	1	15.00	16.50	125	233	2	41.50	27.00	170	291	3	97.40	44.00	210	359	4	216.20
7.50	69	150	1	15.90	16.75	125	233	2	43.10	27.25	170	291	3	117.00	44.50	210	359	4	225.50
7.75	69	150	1	26.40	17.00	125	233	2	35.90	27.50	170	291	3	121.60	45.00	210	359	4	231.30
8.00	75	156	1	16.70	17.25	130	228	2	45.40	28.00	170	291	3	101.40	45.50	215	364	4	321.20
8.25	75	156	1	21.20	17.50	130	228	2	45.40	28.25	170	291	3	123.60	46.00	215	364	4	278.60
8.50	75	156	1	17.20	17.75	130	228	2	47.00	28.50	175	296	3	107.70	46.50	215	364	4	334.40
8.75	75	156	1	22.30	18.00	130	228	2	39.20	28.75	175	296	3	129.20	47.00	215	364	4	290.00
8.80	81	162	1	22.30	18.25	135	233	2	49.50	29.00	175	296	3	107.70	47.50	215	364	4	348.10
9.00	81	162	1	18.10	18.50	135	233	2	41.30	29.25	175	296	3	132.50	48.00	220	369	4	306.00
9.50	81	162	1	18.60	18.75	135	233	2	51.20	29.50	175	296	3	113.90	48.50	220	369	4	367.10
9.75	81	162	1	29.30	19.00	135	233	2	42.80	29.75	175	296	3	136.70	49.00	220	369	4	317.70
9.80	87	168	1	23.70	19.25	140	238	2	45.30	30.00	175	296	3	113.90	49.50	220	369	4	381.40
10.00	87	168	1	18.40	19.50	140	238	2	45.30	30.25	175	296	3	115.90	50.00	220	369	4	329.70
10.20	87	168	1	21.90	19.75	140	238	2	46.80	30.50	180	301	3	120.40	51.00	225	412	5	406.40
10.25	87	168	1	22.70	20.00	140	238	2	46.80	30.75	180	301	3	144.40	52.00	225	412	5	446.20
10.50	87	168	1	22.70	20.25	145	243	2	56.10	31.00	180	301	3	120.40	53.00	225	412	5	384.90
10.75	87	168	1	24.00	20.50	145	243	2	56.10	31.25	180	301	3	144.40	54.00	230	417	5	478.00
10.80	94	175	1	24.00	20.75	145	243	2	58.50	31.50	180	301	3	124.90	55.00	230	417	5	500.50
11.00	94	175	1	24.00	21.00	145	243	2	49.40	31.75	180	301	3	126.90	56.00	230	417	5	430.80
11.20	94	175	1	24.00	21.25	150	248	2	60.30	32.00	185	334	4	133.30	57.00	235	422	5	540.90
11.25	94	175	1	24.70	21.50	150	248	2	63.20	32.50	185	334	4	138.10	58.00	235	422	5	557.90
11.50	94	175	1	24.70	21.75	150	248	2	63.20	33.00	185	334	4	138.10	59.00	235	422	5	479.50
11.75	94	175	1	25.50	22.00	150	248	2**	52.60	33.50	185	334	4	143.10	60.00	235	422	5	592.90
11.80	94	175	1	25.50	22.25	150	248	2	66.00	34.00	190	339	4	145.50	61.00	240	427	5	618.70
12.00	101	182	1	21.80	22.50	155	253	2**	67.20	34.50	190	339	4	153.10	62.00	240	427	5	637.00
12.20	101	182	1	26.20	22.75	155	253	2	67.20	35.00	190	339	4	153.10	63.00	240	427	5	655.60
12.25	101	182	1	27.10	23.00	155	253	2**	56.10	35.50	190	339	4	190.30	64.00	245	432	5	682.90
12.50	101	182	1	27.10	23.25	155	276	3	78.70	36.00	195	344	4	161.00	65.00	245	432	5	702.00
12.75	101	182	1	28.00	23.50	155	276	3	78.70	37.00	195	344	4	170.20	66.00	245	432	5	719.50
13.00	101	182	1**	23.20	23.75	160	281	3	80.00	37.50	195	344	4	204.10	67.00	245	432	5	736.80
13.20	101	182	1	28.00	24.00	160	281	3	80.00	38.00	200	349	4	214.40	68.00	250	437	5	766.40
13.25	101	182	1	29.90	24.25	160	281	3	96.10	38.50	200	349	4	221.80	69.00	250	437	5	782.50
13.50	108	189	1	29.90	24.50	160	281	3	83.60	39.00	200	349	4	184.90	70.00	250	437	5	798.70
13.75	108	189	1	31.00	24.75	160	281	3	83.60	39.50	200	349	4	232.20	71.00	250	437	5	819.40
13.80	108	189	1	31.00	25.00	160	281	3	83.60	40.00	200	349	4	193.40	72.00	255	442	5	846.90
14.00	108	189	1**	25.90	25.25	160	281	3	101.60	40.50	205	354	4	189.50	73.00	255	442	5	864.10
14.25	114	212	2	35.10	25.50	165	286	3	88.20	41.00	205	354	4	189.50	74.00	255	442	5	881.80
14.50	114	212	2	35.10	25.75	165	286	3	105.80	41.50	205	354	4	196.50	75.00	255	442	5	899.40
14.75	114	212	2	36.20															
15.00	114	212	2	30.10															
15.25	120	218	2	38.10															



** cône renforcé Art. 4356VS
** verstärkter Schaft Art. 4356VS

Spiralbohrer mit Morsekegel wie 4356..jedoch in HSS-Co

Mèches à cône morse identi. 4356..mais en HSS-Co(cobalt) like 4356..but in HSS-Co

435610..
DIN 345
HSS-Co

Ø d	I2	I1	MK	CHF	Ø d	I2	I1	MK	CHF	Ø d	I2	I1	MK	CHF	Ø d	I2	I1	MK	CHF
10.00	87	168	1	32.30	15.00	114	212	2	44.50	19.50	140	238	2	68.60	25.00	160	281	3	119.80
10.20	87	168	1	41.00	15.25	120	218	2	53.50	20.00	140	238	2	70.10	25.50	165	286	3	131.80
10.50	87	168	1	39.40	15.50	120	218	2	55.30	20.50	145	243	2	79.60	26.00	165	286	3	131.10
11.00	94	175	1	34.50	16.00	120	218	2	47.40	21.00	145	243	2	81.40	26.50	165	286	3	136.10
11.50	94	175	1	38.00	16.50	125	233	2	58.30	21.50	150	248	2	91.50	27.00	170	291	3	141.80
12.00	101	182	1	33.60	16.75	125	233	2	60.90	22.00	150	248	2	88.90	27.50	170	291	3	145.20
12.50	101	182	1	41.80	17.00	125	233	2	52.20	22.50	155	253	2	98.80	28.00	170	291	3	148.30
13.00	101	182	1	37.80	17.50	130	228	2	64.30	23.00	155	253	2	93.70	28.50	175	296	3	158.10
13.50	108	189	1	46.00	18.00	130	228	2	58.90	23.50	155	276	3	110.70	29.00	175	296	3	161.40
14.00	108	189	1	39.40	18.50	135	233	2	68.60	24.00	160	281	3	112.40	29.50	175	296	3	169.60
14.25	114	212	2	53.50	19.00	135	233	2	64.30	24.50	160	281	3	119.30	30.00	175	296	3	163.00
14.50	114	212	2	49.50															