





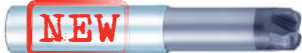











- NEW** HYP-SB-EBD
- NEW** HYP-HS-CRE
- HYP-CR-HI-WEMS
- HYP-CR-HD-WEMS
- HYP-HI-EMS
- HYP-HI-WEMS
- HYP-HP-RESF
- HYP-HP-GDS
- HYP-HPO-GDS
- NEW** HYP-HP-GDN
- HYP-HPO-GDN
- HY-PRO-CARB












Hypro Series Milling and Drilling





<i>Tool</i>	<i>Tool name</i>	<i>Description</i>	<i>Coating</i>	<i>Pages</i>	<i>Condition</i>
 NEW	HYP-SB-EBD	2 Flutes - Ball nose		3	3
 NEW	HYP-HS-CRE	4 Flutes - Corner Radius		4	4
	HYP-CR-HI-WEMS	4 Flutes - Variable lead type		5	6
	HYP-CR-HD-WEMS	4 Flutes - Variable lead type		6	6
	HYP-HI-EMS	4 Flutes - Variable lead type		7	7
	HYP-HI-WEMS	4 Flutes - Variable lead type		7	7
	HYP-HP-RESF	For general roughing		8	8



<i>Tool</i>	<i>Tool name</i>	<i>Description</i>	<i>Coating</i>	<i>Pages</i>	<i>Condition</i>
	HYP-HP-GDS	3D Drilling		9-10	17
	HYP-HPO-GDS	3D Drilling		11-12	17
 NEW	HYP-HP-GDN	5D Drilling		13-14	17
	HYP-HPO-GDN	5D Drilling		15-16	17
	HY-PRO-CARB	Multi-Purpose centering and Chamfering Tool	-	18	19



HIGH PERFORMANCE

- 2 flutes
- Center cutting

HIGH PERFORMANCE

- 2 Schneiden
- Zentrumschneidend

ALTA PRESTAZIONE

- 2 denti
- Taglio al centro

HAUTE PERFORMANCE

- 2 lèvres
- Coupe au centre

HIGH PERFORMANCE

- 2 skær
- Borende

HIGH PERFORMANCE

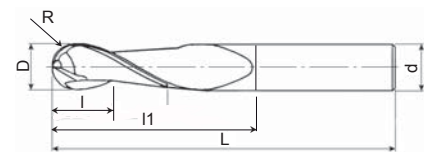
- 2 skär
- Borrande

ALTO RENDIMENTO

- 2 labios
- Corte central

ВЫСОКАЯ ПРОИЗВОДИТЕЛЬНОСТЬ

- 2 режущих кромки
- Режущий центр



EDP	D	R	L	l	l1	d	Z	Stock	Price
NEW 48350030	3	1,5	57	4,0	9,0	6	2	●	
NEW 48350040	4	2,0	57	5,0	12,0	6	2	●	
NEW 48350050	5	2,5	57	6,0	15,0	6	2	●	
NEW 48350060	6	3,0	57	7,0	18,0	6	2	●	
NEW 48350080	8	4,0	63	9,0	24,0	8	2	●	
NEW 48350100	10	5,0	72	11,0	30,0	10	2	●	
NEW 48351200	12	6,0	83	13,0	36,0	12	2	●	



HYP-SB-EBD Geometry



Long cutting edge

X > Y

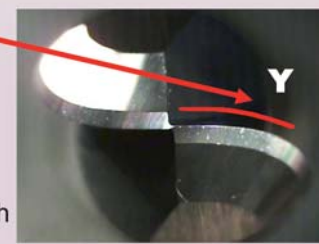
Less torque
Less heat build-up
Better surface finish
Long tool life

Standard Geometry

Short cutting edge

X > Y

Normal torque
Normal heat build-up
Average surface finish
Standard tool life



CONDITIONS CONDITIONS CONDITIONS CONDITIONS CONDITIONS CONDITIONS

Center cutting - Zentrumschneidend - Taglio al centro - Coupe au centre
Borende - Borrande - Corte central - Режущий центр

HYP-SB-EBD

Ø	Cu							30~35 HRC							35~42 HRC							42~55 HRC						
	Z	Vc (m/min.)	fz (mm)	ap (mm)	ae (mm)	n (min ⁻¹)	F. (mm/min.)	Z	Vc (m/min.)	fz (mm)	ap (mm)	ae (mm)	n (min ⁻¹)	F. (mm/min.)	Z	Vc (m/min.)	fz (mm)	ap (mm)	ae (mm)	n (min ⁻¹)	F. (mm/min.)	Z	Vc (m/min.)	fz (mm)	ap (mm)	ae (mm)	n (min ⁻¹)	F. (mm/min.)
3	2	300	0,045	0,15	0,60	31.847	2866	2	280	0,045	0,15	0,60	29.724	2675	2	260	0,045	0,15	0,60	27.601	2484	2	240	0,045	0,15	0,60	25.478	2293
4	2	300	0,060	0,20	0,80	23.885	2866	2	280	0,060	0,20	0,80	22.293	2675	2	260	0,060	0,20	0,80	20.701	2484	2	240	0,060	0,20	0,80	19.108	2293
5	2	300	0,075	0,25	1,00	19.108	2866	2	280	0,075	0,25	1,00	17.834	2675	2	260	0,075	0,25	1,00	16.561	2484	2	240	0,075	0,25	1,00	15.287	2293
6	2	300	0,090	0,30	1,20	15.924	2866	2	280	0,090	0,30	1,20	14.862	2675	2	260	0,090	0,30	1,20	13.800	2484	2	240	0,090	0,30	1,20	12.739	2293
8	2	300	0,120	0,40	1,60	11.943	2866	2	280	0,120	0,40	1,60	11.146	2675	2	260	0,120	0,40	1,60	10.350	2484	2	240	0,120	0,40	1,60	9.554	2293
10	2	300	0,150	0,50	2,00	9.554	2866	2	2080	0,150	0,50	2,00	8.917	2675	2	260	0,150	0,50	2,00	8.280	2484	2	240	0,150	0,50	2,00	7.643	2293
12	2	300	0,180	0,60	2,40	7.962	2866	2	280	0,180	0,60	2,40	7.431	2675	2	260	0,180	0,60	2,40	6.900	2484	2	240	0,180	0,60	2,40	6.369	2293

Applications - Anwendungen - Applicazioni - Applications - Applikation - Applikation - Aplicaciones - Применение

~40 HRC	~45 HRC	~55 HRC	~60 HRC	~65 HRC	SUS ~35 HRC	GG-GGG ~350 HB
⊙	⊙	⊙	⊙	○		⊙
Cu	Al	Graphite	Ti	HRS	Plast.	



HYPRO

- 4 flutes
- Corner radius

HYPRO

- 4 Schneiden
- Mehrschneider mit Eckenradius

HYPRO

- 4 denti
- Frese toriche

HYPRO

- 4 lèvres
- Fraise à rayon

HYPRO

- 4 skær
- hjørneradius

HYPRO

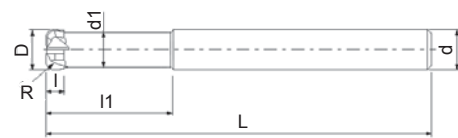
- 4 skär
- Hömradius

HYPRO

- 4 labio
- Vertice radio

HYPRO

- 4 режущих кромки
- Концевые фрезы с радиусом



EDP	D	R	L	l1	l	d1	d	Z	Stock	Price
NEW 48340060	6	1,5	57	24	2,5	5,0	6	4	●	
NEW 48340080	8	2,0	63	32	3,5	7,0	8	4	●	
NEW 48340100	10	2,0	72	40	4,0	9,0	10	4	●	
NEW 48340120	12	3,0	83	48	5,0	11,0	12	4	●	

CONDITIONS CONDITIONS CONDITIONS CONDITIONS CONDITIONS

Low speed, high feed milling - Fräsen mit niedrige Geschwindigkeit, hohe Vorschub - Fresatura bassa velocità, alta avanzamento -
 Fraisage vitesse basse, avance élevée - Fræsning lav hastighed, høj tilspænding- High Speed Milling - Fresado a alta velocidad HSM - Високоскоростное фрезер

HYP-HS-CRE

	GG		30-38 HRC SKT • SKD • NAK55 • HPM1 30-38 HRC		38-45 HRC - SUS SUS304 • SKD • NAK80 • HPM50 38-45 HRC		45-55 HRC 45-55 HRC		55-60 HRC - HRS 55-60 HRC																					
	S _c (min ⁻¹)	F _c (mm/min)	S _c (min ⁻¹)	F _c (mm/min)	S _c (min ⁻¹)	F _c (mm/min)	S _c (min ⁻¹)	F _c (mm/min)	S _c (min ⁻¹)	F _c (mm/min)																				
6 X R 1,50	5.300	6.300	4.250	4.600	3.700	4.000	2.650	2.600	1.600	1.050																				
8 X R 2,00	4.000	6.300	3.200	4.600	2.800	4.000	2.000	2.600	1.200	1.050																				
10 X R 2,00	3.200	6.300	2.550	4.600	2.250	4.000	1.600	2.600	955	1.050																				
12 X R 3,00	2.650	6.300	2.100	4.600	1.850	4.000	1.350	2.600	795	1.050																				
Maximum cutting depth 					<table border="1"> <tr><th>a_a</th><th>a_r</th></tr> <tr><td>0,1xR</td><td>0,3D</td></tr> </table>		a _a	a _r	0,1xR	0,3D	<table border="1"> <tr><th>a_e</th><th>a_r</th></tr> <tr><td>R ≤ 2</td><td>0,1 x R</td></tr> <tr><td>2 < R</td><td>0,2 mm</td></tr> <tr><td></td><td>0,3D</td></tr> </table>		a _e	a _r	R ≤ 2	0,1 x R	2 < R	0,2 mm		0,3D	<table border="1"> <tr><th>a_e</th><th>a_r</th></tr> <tr><td>R ≤ 2</td><td>0,05 x R</td></tr> <tr><td>2 < R</td><td>0,1 mm</td></tr> <tr><td></td><td>0,3D</td></tr> </table>		a _e	a _r	R ≤ 2	0,05 x R	2 < R	0,1 mm		0,3D
	a _a	a _r																												
0,1xR	0,3D																													
a _e	a _r																													
R ≤ 2	0,1 x R																													
2 < R	0,2 mm																													
	0,3D																													
a _e	a _r																													
R ≤ 2	0,05 x R																													
2 < R	0,1 mm																													
	0,3D																													

Applications - Anwendungen - Applicazioni - Applications - Applikation - Applikation - Aplicaciones - Применение

~40 HRC	~45 HRC	~55 HRC	~60 HRC	~65 HRC	SUS ~35 HRC	GG-GGG ~350 HB
⊙	⊙	⊙	⊙	○		⊙
Cu	Al	Graphite	Ti	HRS	Plast.	



HYPRO
 ■ 4 flutes
 ■ Variable lead type

HYPRO
 ■ 4 Schneiden
 ■ Variabler Führung

HYPRO
 ■ 4 denti
 ■ Passo variabile

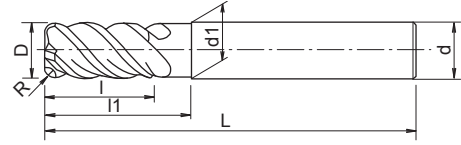
HYPRO
 ■ 4 lèvres
 ■ Hélice variable

HYPRO
 ■ 4 skær
 ■ Variabel helix

HYPRO
 ■ 4 skär
 ■ Variabel helix

HYPRO
 ■ 4 labios
 ■ Introduce la helice variable

HYPRO
 ■ 4 режущих кромки
 ■ С переменным углом наклона витков



EDP	D	R	L	l	l1	d1	d	Stock	Price
4832004011	4	0,5	57	11	-	-	6	●	
4832005011	5	0,5	57	13	-	-	6	●	
4832006011	6	0,5	57	13	20	5,8	6	●	
4832006012	6	1,0	57	13	20	5,8	6	●	
4832006013	6	1,5	57	13	20	5,8	6	●	
4832006014	6	2,0	57	13	20	5,8	6	●	
4832008011	8	0,5	63	19	25	7,8	8	●	
4832008012	8	1,0	63	19	25	7,8	8	●	
4832008013	8	1,5	63	19	25	7,8	8	●	
4832008014	8	2,0	63	19	25	7,8	8	●	
4832010011	10	0,5	72	22	30	9,8	10	●	
4832010012	10	1,0	72	22	30	9,8	10	●	
4832010013	10	1,5	72	22	30	9,8	10	●	
4832010014	10	2,0	72	22	30	9,8	10	●	
4832010016	10	3,0	72	22	30	9,8	10	●	
4832012011	12	0,5	83	26	38	11,8	12	●	
4832012012	12	1,0	83	26	38	11,8	12	●	
4832012013	12	1,5	83	26	38	11,8	12	●	
4832012014	12	2,0	83	26	38	11,8	12	●	
4832012016	12	3,0	83	26	38	11,8	12	●	
4832016011	16	0,5	92	32	45	15,8	16	●	
4832016012	16	1,0	92	32	45	15,8	16	●	
4832016014	16	2,0	92	32	45	15,8	16	●	
4832016016	16	3,0	92	32	45	15,8	16	●	
4832016018	16	4,0	92	32	45	15,8	16	●	
4832020012	20	1,0	104	38	60	19,8	20	●	
4832020014	20	2,0	104	38	60	19,8	20	●	
4832020016	20	3,0	104	38	60	19,8	20	●	
4832020018	20	4,0	104	38	60	19,8	20	●	
4832020020	20	5,0	104	38	60	19,8	20	●	

Applications - Anwendungen - Applicazioni - Applications - Applikation - Applikation - Aplicaciones - Применение

~40 HRC	~45 HRC	~55 HRC	~60 HRC	~65 HRC	SUS ~35 HRC	GG-GGG ~350 HB
◎	◎	○			◎	◎
Cu	Al	Graphite	Ti	HRS	Plast.	
			◎	◎		



HYPRO
 ■ 4 flutes
 ■ Variable lead type

HYPRO
 ■ 4 Schneiden
 ■ Variabler Führung

HYPRO
 ■ 4 denti
 ■ Passo variabile

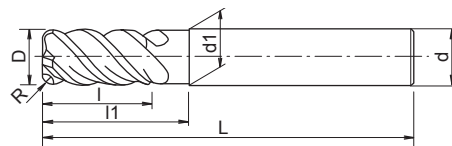
HYPRO
 ■ 4 lèvres
 ■ Hélice variable

HYPRO
 ■ 4 skær
 ■ Variabel helix

HYPRO
 ■ 4 skär
 ■ Variabel helix

HYPRO
 ■ 4 labios
 ■ Introduce la helice variable

HYPRO
 ■ 4 режущих кромки
 ■ едставляем фрезу с переменным углом наклона витков



EDP	D	R	L	l	l1	d1	d	Stock	Price
4833006010	6	0,25	57	13	20	5,8	6	●	
4833008010	8	0,25	63	19	25	7,8	8	●	
4833010010	10	0,25	72	22	30	9,8	10	●	
4833012010	12	0,25	83	26	38	11,8	12	●	
4833016010	16	0,25	92	32	45	15,8	16	●	
4833020010	20	0,25	104	38	60	19,8	20	●	

CONDITIONS CONDITIONS CONDITIONS CONDITIONS CONDITIONS

Side milling - Konturfräsen - Contornatura - Contournage
 Sidefræsning - Valsfræsning - Contorneado - Боковое фрезерование

HYP-CR-HI-WEMS/HYP-CR-HD-WEMS

Ø	Low carbon - Alloy - Tool Steel									GG-GGG-GTW			Stainless steel			Aluminium - Mg			Titane		
	HB 150-250			HRC 20-30			HRC 30-40			>HB 180			HRC20			Non - alloyed			HRC 40-50		
	500-800 N/mm			800-1000 N/mm			1000-1300 N/mm			Non - alloyed			400-700 N/mm ²			Non - alloyed					
	160			120			100			140			50			180			65		
	Fz	S=n	F=Vf	Fz	S=n	F=Vf	Fz	S=n	F=Vf	Fz	S=n	F=Vf	Fz	S=n	F=Vf	Fz	S=n	F=Vf	Fz	S=n	F=Vf
4,0	0,035	12.730	1.790	0,030	9.550	1.150	0,030	7.960	960	0,035	11.150	1.570	0,030	3.980	480	0,035	14.330	2.010	0,025	5.180	520
6,0	0,040	8.490	1.360	0,035	6.370	900	0,035	5.310	750	0,040	7.430	1.190	0,035	2.660	380	0,040	9.550	1.530	0,027	3.450	380
8,0	0,070	6.370	1.790	0,065	4.780	1.250	0,065	3.980	1040	0,070	5.580	1.570	0,065	1.990	520	0,070	7.170	2.010	0,031	2.590	330
10,0	0,100	5.090	2.040	0,080	3.820	1.230	0,080	3.190	1030	0,100	4.460	1.790	0,080	1.600	520	0,100	5.730	2.300	0,038	2.070	320
12,0	0,120	4.240	2.040	0,100	3.190	1.280	0,100	2.660	1070	0,120	3.720	1.790	0,100	1.330	540	0,120	4.780	2.300	0,045	1.730	320
16,0	0,130	3.180	1.660	0,120	2.390	1.150	0,120	1.990	960	0,130	2.790	1.460	0,120	1.000	480	0,130	3.590	1.870	0,052	1.300	280
20,0	0,150	2.550	1.530	0,120	1.910	920	0,120	1.600	770	0,150	2.230	1.340	0,120	800	390	0,150	2.870	1.730	0,059	1.040	250

Max. cutting depth	ap x d with F(fz) Correction		ap Fakt.		ap Fakt.		ap Fakt.	
	ae = 1 x d	ae = 0,5 x d	ae = 0,2 x d	ae = 0,2 x d	ae = 0,2 x d	ae = 0,2 x d	ae = 0,2 x d	
	0,5	1,0	0,5	1,2	0,5	1,3	0,5	1,3
	1,0	0,7	1,0	1,0	1,0	1,2	1,0	1,2
	1,5	0,5	1,5	0,7	1,5	0,7	1,5	0,7
	2,0	0,3	2,0	0,5	2,0	0,5	2,0	0,8

The above stated application data are as per RED marked parameters.

Applications - Anwendungen - Applicazioni - Applications - Applikation - Aplicaciones - Применения

~40 HRC	~45 HRC	~55 HRC	~60 HRC	~65 HRC	SUS ~35 HRC	GG-GGG ~350 HB
⊙	⊙	○	⊙	⊙	⊙	⊙
Cu	Al	Graphite	Ti	HRS	Plast.	



- HYPRO**
- 4 flutes
 - Variable lead type

- HYPRO**
- 4 Schneiden
 - Variabler Führung

- HYPRO**
- 4 denti
 - Passo variabile

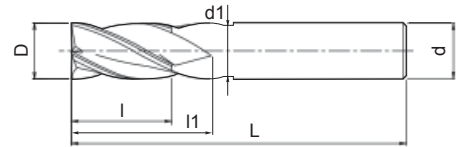
- HYPRO**
- 4 lèvres
 - Hélice variable

- HYPRO**
- 4 skær
 - Variabel helix

- HYPRO**
- 4 skär
 - Variabel helix

- HYPRO**
- 4 labios
 - Introduce la helice variable

- HYPRO**
- 4 режущих кромки
 - С переменным углом наклона витков



EDP	Type	D	L	l	l1	d1	d	Stock	Price
48320040	HYP-HI-EMS	4	57	11	-	-	6	●	
48320050	HYP-HI-EMS	5	57	13	-	-	6	●	
48320060	HYP-HI-EMS	6	57	13	20	5,8	6	●	
48320080	HYP-HI-EMS	8	63	19	25	7,8	8	●	
48320100	HYP-HI-EMS	10	72	22	30	9,8	10	●	
48320120	HYP-HI-EMS	12	83	26	38	11,8	12	●	
48320160	HYP-HI-EMS	16	92	32	45	15,8	16	●	
48320200	HYP-HI-EMS	20	104	38	60	19,8	20	●	
483200401	HYP-HI-WEMS	4	57	11	-	-	6	●	
483200501	HYP-HI-WEMS	5	57	13	-	-	6	●	
483200601	HYP-HI-WEMS	6	57	13	20	5,8	6	●	
483200801	HYP-HI-WEMS	8	63	19	25	7,8	8	●	
483201001	HYP-HI-WEMS	10	72	22	30	9,8	10	●	
483201201	HYP-HI-WEMS	12	83	26	38	11,8	12	●	
483201601	HYP-HI-WEMS	16	92	32	45	15,8	16	●	
483202001	HYP-HI-WEMS	20	104	38	60	19,8	20	●	

CONDITIONS CONDITIONS CONDITIONS CONDITIONS CONDITIONS

Slotting - Nutenfräsen - Per scanalature profonde - Rainurage
 Sporfærnsning - Spårfräsning - Ranurado - Фрезерование пазов

HYP-HI-EMS/WEMS



Ø	Low carbon - Alloy - Tool Steel									GG-GGG-GTW			Stainless steel			Aluminium - Mg		
	HB 150-250			HRC 20-30			HRC 30-40			>HB 180			HRC20					
	500-800 N/mm			800-1000 N/mm			1000-1300 N/mm			Non - alloyed			400-700 N/mm ²			Non - alloyed		
	160			120			100			140			50			180		
	Fz	S=n	F=Vf	Fz	S=n	F=Vf	Fz	S=n	F=Vf	Fz	S=n	F=Vf	Fz	S=n	F=Vf	Fz	S=n	F=Vf
4,0	0,035	12.730	1.790	0,030	9.550	1.150	0,030	7.960	960	0,035	11.150	1.570	0,030	3.980	480	0,035	14.330	2.010
6,0	0,040	8.490	1.360	0,035	6.370	900	0,035	5.310	750	0,040	7.430	1.190	0,035	2.660	380	0,040	9.550	1.530
8,0	0,070	6.370	1.790	0,065	4.780	1.250	0,065	3.980	1040	0,070	5.580	1.570	0,065	1.990	520	0,070	7.170	2.010
10,0	0,100	5.090	2.040	0,080	3.820	1.230	0,080	3.190	1030	0,100	4.460	1.790	0,080	1.600	520	0,100	5.730	2.300
12,0	0,120	4.240	2.040	0,100	3.190	1.280	0,100	2.660	1070	0,120	3.720	1.790	0,100	1.330	540	0,120	4.780	2.300
16,0	0,130	3.180	1.660	0,120	2.390	1.150	0,120	1.990	960	0,130	2.790	1.460	0,120	1.000	480	0,130	3.590	1.870
20,0	0,150	2.550	1.530	0,120	1.910	920	0,120	1.600	770	0,150	2.230	1.340	0,120	800	390	0,150	2.870	1.730

Max. cutting depth	ap x d with F(z) Correction			ap Fakt.			ap Fakt.			ap Fakt.					
	ae = 1 x d	ae = 0,5 x d	ae = 0,2 x d	0,5	1,0	1,5	2,0	0,5	1,0	1,5	2,0	0,5	1,0	1,5	2,0
	1,0	0,7	0,5	1,0	0,7	0,5	0,3	1,0	0,7	0,5	0,3	1,0	0,7	0,5	0,3

The above stated application data are as per RED marked parameters.

Applications - Anwendungen - Applicazioni - Applications - Applikation - Applikation - Aplicaciones - Применение

~40 HRC	~45 HRC	~55 HRC	~60 HRC	~65 HRC	SUS ~35 HRC	GG-GGG ~350 HB
⊙	⊙	○	⊙	⊙	⊙	⊙
Cu	Al	Graphite	Ti	HRS	Plast.	



HYP
■ For general roughing

HYPG
■ Für Schruppen

HYP
■ Per sgrossatura

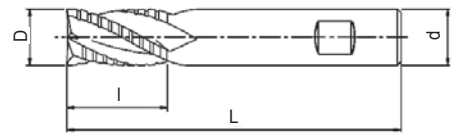
HYP
■ Pour ébauche

HYP
■ Til skrubfræsning

HYP
■ För skrubfræsning

HYP
■ Para desbaste

HYP
■ Для черновой обработки



EDP	D	L	l	d	Z _Δ	Stock	Price	EDP	D	L	l	d	Z _Δ	Stock	Price
48624060	6	64	19	6	4	●		48625160	16	89	32	16	5	●	
48624080	8	64	21	8	4	●		48626200	20	102	38	20	6	●	
48624100	10	70	22	10	4	●		48626250	25	102	38	25	6	●	
48624120	12	76	25	12	4	●									

CONDITIONS CONDITIONS CONDITIONS CONDITIONS CONDITIONS

Side milling - Konturfräsen - Contornatura - Contourage
Sidefræsning - Valsfræsning - Contorneado - Боковое фрезерование

HYP-HP-RESF

Ø	GG GG-GGG		C≤0,2% S55C • SS400 ~750N/mm2		SCM - SKD SKD • SKS • SNCM ~30 HRC		30~38 HRC NAK55 • HPMI • SKT 30~38 HRC		38~45 HRC - SUS SUS304 • X210CR12 • X40CRMOV51 38~45 HRC	
	S _c (min ⁻¹)	F _c (mm/min.)	S _c (min ⁻¹)	F _c (mm/min.)	S _c (min ⁻¹)	F _c (mm/min.)	S _c (min ⁻¹)	F _c (mm/min.)	S _c (min ⁻¹)	F _c (mm/min.)
6	4.200	585	4.200	585	3.700	370	2.900	230	2.650	210
8	3.150	565	3.150	565	2.750	350	2.150	230	1.950	210
10	2.500	500	2.500	500	2.200	350	1.750	230	1.550	210
12	2.100	500	2.100	500	1.850	330	1.450	230	1.300	210
16	1.550	400	1.550	400	1.350	320	1.050	230	995	210
20	1.250	375	1.250	375	1.100	320	875	240	795	220

Slotting - Nutenfräsen - Per scanalature profonde - Rainurage
Spørfræsning - Spårfræsning - Ranurado - Фрезерование пазов

HYP-HP-RESF

Ø	GG GG-GGG		C≤0,2% S55C • SS400 ~750N/mm2		SCM - SKD SKD • SKS • SNCM ~30 HRC		30~38 HRC NAK55 • HPMI • SKT 30~38 HRC		38~45 HRC - SUS SUS304 • X210CR12 • X40CRMOV51 38~45 HRC	
	S _c (min ⁻¹)	F _c (mm/min.)	S _c (min ⁻¹)	F _c (mm/min.)	S _c (min ⁻¹)	F _c (mm/min.)	S _c (min ⁻¹)	F _c (mm/min.)	S _c (min ⁻¹)	F _c (mm/min.)
6	3.150	315	3.150	315	2.650	265	2.300	180	2.100	165
8	2.350	300	2.350	300	1.950	250	1.750	175	1.550	155
10	1.900	300	1.900	300	1.550	245	1.400	165	1.250	150
12	1.550	280	1.550	280	1.300	235	1.150	160	1.050	145
16	1.150	280	1.150	280	995	235	875	140	795	125
20	955	280	955	280	795	235	700	140	635	125
25	700	245	700	245	640	225	510	125	460	115

Applications - Anwendungen - Applicazioni - Applications - Applikation - Applikation - Aplicaciones - Применение

~40 HRC	~45 HRC	~55 HRC	~60 HRC	~65 HRC	SUS ~35 HRC	GG-GGG ~350 HB
⊙	⊙				○	○
Cu	Al	Graphite	Ti	HRS	Plast.	



HIGH PERFORMANCE

■ General purpose 3D drill

3 D drilling

HIGH PERFORMANCE

■ 3D Bohrer-Allgemeine Anwendungen

3 D Bohren

ALTA PRESTAZIONE

■ Con 3D fori raccomandato per applicazioni generali

3 D foratura

HAUTE PERFORMANCE

■ Foret 3D application générale

Forage 3 D

HIGH PERFORMANCE

■ Universalt 3D bor

3 D boring

HIGH PERFORMANCE

■ Allround 3 D

3 D borring

ALTAS PRESTACIONES

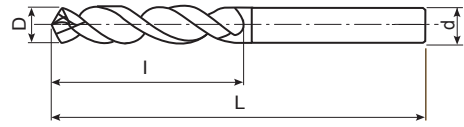
■ Broca 3D empleo general

Taladrado 3 D

Высокая производительность

■ Многоцелевое сверло 3D

Сверление глубиной 3D



EDP	D	L	l	d	Stock	Price	l	EDP	D	L	l	d	Stock	Price
30200300	3,0	62	20	6	●			30200790	7,9	79	41	8	●	
30200310	3,1	62	20	6	●			30200800	8,0	79	41	8	●	
30200320	3,2	62	20	6	●			30200810	8,1	79	41	10	●	
30200330	3,3	62	20	6	●			30200820	8,2	79	41	10	●	
30200340	3,4	62	20	6	●			30200830	8,3	79	41	10	●	
30200350	3,5	62	20	6	●			30200840	8,4	89	47	10	●	
30200360	3,6	62	20	6	●			30200850	8,5	89	47	10	●	
30200370	3,7	62	20	6	●			30200860	8,6	89	47	10	●	
30200380	3,8	66	24	6	●			30200870	8,7	89	47	10	●	
30200390	3,9	66	24	6	●			30200880	8,8	89	47	10	●	
30200400	4,0	66	24	6	●			30200890	8,9	89	47	10	●	
30200410	4,1	66	24	6	●			30200900	9,0	89	47	10	●	
30200420	4,2	66	24	6	●			30200910	9,1	89	47	10	●	
30200430	4,3	66	24	6	●			30200920	9,2	89	47	10	●	
30200440	4,4	66	24	6	●			30200930	9,3	89	47	10	●	
30200450	4,5	66	24	6	●			30200940	9,4	89	47	10	●	
30200460	4,6	66	24	6	●			30200950	9,5	89	47	10	●	
30200470	4,7	66	24	6	●			30200960	9,6	89	47	10	●	
30200480	4,8	66	28	6	●			30200970	9,7	89	47	10	●	
30200490	4,9	66	28	6	●			30200980	9,8	89	47	10	●	
30200500	5,0	66	28	6	●			30200990	9,9	89	47	10	●	
30200510	5,1	66	28	6	●			30201000	10,0	89	47	10	●	
30200520	5,2	66	28	6	●			30201010	10,1	89	47	12	●	
30200530	5,3	66	28	6	●			30201020	10,2	102	55	12	●	
30200540	5,4	66	28	6	●			30201030	10,3	102	55	12	●	
30200550	5,5	66	28	6	●			30201040	10,4	102	55	12	●	
30200560	5,6	66	28	6	●			30201050	10,5	102	55	12	●	
30200570	5,7	66	28	6	●			30201060	10,6	102	55	12	●	
30200580	5,8	66	28	6	●			30201070	10,7	102	55	12	●	
30200590	5,9	66	28	6	●			30201080	10,8	102	55	12	●	
30200600	6,0	66	28	6	●			30201090	10,9	102	55	12	●	
30200610	6,1	79	34	8	●			30201100	11,0	102	55	12	●	
30200620	6,2	79	34	8	●			30201110	11,1	102	55	12	●	
30200630	6,3	79	34	8	●			30201120	11,2	102	55	12	●	
30200640	6,4	79	34	8	●			30201130	11,3	102	55	12	●	
30200650	6,5	79	34	8	●			30201140	11,4	102	55	12	●	
30200660	6,6	79	34	8	●			30201150	11,5	102	55	12	●	
30200670	6,7	79	34	8	●			30201160	11,6	102	55	12	●	
30200680	6,8	79	34	8	●			30201170	11,7	102	55	12	●	
30200690	6,9	79	34	8	●			30201180	11,8	102	55	12	●	
30200700	7,0	79	34	8	●			30201190	11,9	102	55	12	●	
30200710	7,1	79	34	8	●			30201200	12,0	102	55	12	●	
30200720	7,2	79	41	8	●			30201250	12,5	107	60	14	●	
30200730	7,3	79	41	8	●			30201300	13,0	107	60	14	●	
30200740	7,4	79	41	8	●			30201350	13,5	107	60	14	●	
30200750	7,5	79	41	8	●			30201400	14,0	107	60	14	●	
30200760	7,6	79	41	8	●			30201450	14,5	115	65	16	●	
30200770	7,7	79	41	8	●			30201500	15,0	115	65	16	●	
30200780	7,8	79	41	8	●			30201550	15,5	115	65	16	●	





HIGH PERFORMANCE

■ General purpose 3D drill

3 D drilling

HIGH PERFORMANCE

■ 3D Bohrer-Allgemeine Anwendungen

3 D Bohren

ALTA PRESTAZIONE

■ Con 3D fori raccomandato per applicazioni generali

3 D foratura

HAUTE PERFORMANCE

■ Foret 3D application générale

Forage 3 D

HIGH PERFORMANCE

■ Universalt 3D bor

3 D boring

HIGH PERFORMANCE

■ Allround 3 D

3 D borring

ALTAS PRESTACIONES

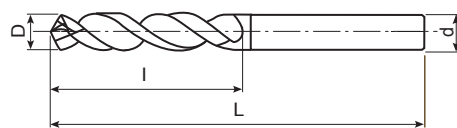
■ Broca 3D empleo general

Taladrado 3 D

Высокая производительность

■ Многоцелевое сверло 3D

Сверление глубиной 3D



EDP	D	L	l	d	Stock	Price	EDP	D	L	l	d	Stock	Price
30201600	16,0	116	65	16	●		30201850	18,5	131	79	20	●	
30201650	16,5	123	73	18	●		30201900	19,0	131	79	20	●	
30201700	17,0	123	73	18	●		30201950	19,5	131	79	20	●	
30201750	17,5	123	73	18	●		30202000	20,0	131	79	20	●	
30201800	18,0	123	73	18	●								

Applications - Anwendungen - Applicazioni - Applications - Applikation - Applikation - Aplicaciones - Применение

Cs<0.2%	0.25<C<0.4%	C≥0.45%	SCM	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	SUS
○	◎	◎	◎	◎	○			○
SKD	GG	GGG	Cu	Al	AC	Ti	TiAl	Inl
○	◎	◎						



HIGH PERFORMANCE
 ■ General purpose 3D drill
3D drilling

HIGH PERFORMANCE
 ■ 3D Bohrer-Allgemeine Anwendungen
3D Bohren

ALTA PRESTAZIONE
 ■ Con 3D fori raccomandato per applicazioni generali
3D foratura

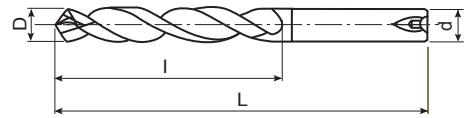
HAUTE PERFORMANCE
 ■ Foret 3D application générale
Forage 3D

HIGH PERFORMANCE
 ■ Universalt 3D bor
3D boring

HIGH PERFORMANCE
 ■ Allround 3 D
3D borring

ALTAS PRESTACIONES
 ■ Broca 3D empleo general
Taladrado 3D

Высокая производительность
 ■ Многоцелевое сверло 3D
Сверление глубиной 3D



EDP	D	L	l	d	Stock	Price	EDP	D	L	l	d	Stock	Price
30210300	3,0	62	20	6	●		30210790	7,9	79	41	8	●	
30210310	3,1	62	20	6	●		30210800	8,0	79	41	8	●	
30210320	3,2	62	20	6	●		30210810	8,1	79	41	10	●	
30210330	3,3	62	20	6	●		30210820	8,2	79	41	10	●	
30210340	3,4	62	20	6	●		30210830	8,3	79	41	10	●	
30210350	3,5	62	20	6	●		30210840	8,4	89	47	10	●	
30210360	3,6	62	20	6	●		30210850	8,5	89	47	10	●	
30210370	3,7	62	20	6	●		30210860	8,6	89	47	10	●	
30210380	3,8	62	20	6	●		30210870	8,7	89	47	10	●	
30210390	3,9	62	20	6	●		30210880	8,8	89	47	10	●	
30210400	4,0	66	24	6	●		30210890	8,9	89	47	10	●	
30210410	4,1	66	24	6	●		30210900	9,0	89	47	10	●	
30210420	4,2	66	24	6	●		30210910	9,1	89	47	10	●	
30210430	4,3	66	24	6	●		30210920	9,2	89	47	10	●	
30210440	4,4	66	24	6	●		30210930	9,3	89	47	10	●	
30210450	4,5	66	24	6	●		30210940	9,4	89	47	10	●	
30210460	4,6	66	24	6	●		30210950	9,5	89	47	10	●	
30210470	4,7	66	24	6	●		30210960	9,6	89	47	10	●	
30210480	4,8	66	28	6	●		30210970	9,7	89	47	10	●	
30210490	4,9	66	28	6	●		30210980	9,8	89	47	10	●	
30210500	5,0	66	28	6	●		30210990	9,9	89	47	10	●	
30210510	5,1	66	28	6	●		30211000	10,0	89	47	10	●	
30210520	5,2	66	28	6	●		30211010	10,1	89	47	12	●	
30210530	5,3	66	28	6	●		30211020	10,2	102	55	12	●	
30210540	5,4	66	28	6	●		30211030	10,3	102	55	12	●	
30210550	5,5	66	28	6	●		30211040	10,4	102	55	12	●	
30210560	5,6	66	28	6	●		30211050	10,5	102	55	12	●	
30210570	5,7	66	28	6	●		30211060	10,6	102	55	12	●	
30210580	5,8	66	28	6	●		30211070	10,7	102	55	12	●	
30210590	5,9	66	28	6	●		30211080	10,8	102	55	12	●	
30210600	6,0	66	28	6	●		30211090	10,9	102	55	12	●	
30210610	6,1	79	34	8	●		30211100	11,0	102	55	12	●	
30210620	6,2	79	34	8	●		30211110	11,1	102	55	12	●	
30210630	6,3	79	34	8	●		30211120	11,2	102	55	12	●	
30210640	6,4	79	34	8	●		30211130	11,3	102	55	12	●	
30210650	6,5	79	34	8	●		30211140	11,4	102	55	12	●	
30210660	6,6	79	34	8	●		30211150	11,5	102	55	12	●	
30210670	6,7	79	34	8	●		30211160	11,6	102	55	12	●	
30210680	6,8	79	34	8	●		30211170	11,7	102	55	12	●	
30210690	6,9	79	34	8	●		30211180	11,8	102	55	12	●	
30210700	7,0	79	34	8	●		30211190	11,9	102	55	12	●	
30210710	7,1	79	34	8	●		30211200	12,0	102	55	12	●	
30210720	7,2	79	41	8	●		30211250	12,5	107	60	14	●	
30210730	7,3	79	41	8	●		30211300	13,0	107	60	14	●	
30210740	7,4	79	41	8	●		30211350	13,5	107	60	14	●	
30210750	7,5	79	41	8	●		30211400	14,0	107	60	14	●	
30210760	7,6	79	41	8	●		30211450	14,5	115	65	16	●	
30210770	7,7	79	41	8	●		30211500	15,0	115	65	16	●	
30210780	7,8	79	41	8	●		30211550	15,5	115	65	16	●	



HIGH PERFORMANCE
 ■ General purpose 3D drill
3D drilling

HIGH PERFORMANCE
 ■ 3D Bohrer-Allgemeine Anwendungen
3D Bohren

ALTA PRESTAZIONE
 ■ Con 3D fori raccomandato per applicazioni generali
3D foratura

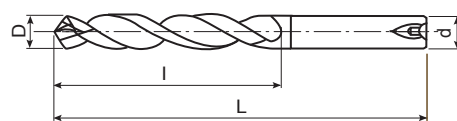
HAUTE PERFORMANCE
 ■ Foret 3D application générale
Forage 3D

HIGH PERFORMANCE
 ■ Universalt 3D bor
3D boring

HIGH PERFORMANCE
 ■ Allround 3 D
3D borring

ALTAS PRESTACIONES
 ■ Broca 3D empleo general
Taladrado 3D

Высокая производительность
 ■ Многоцелевое сверло 3D
Сверление глубиной 3D



EDP	D	L	l	d	Stock	Price	EDP	D	L	l	d	Stock	Price
30211600	16,0	115	65	16	●		30211850	18,5	131	73	20	●	
30211650	16,5	123	73	18	●		30211900	19,0	131	79	20	●	
30211700	17,0	123	73	18	●		30211950	19,5	131	79	20	●	
30211750	17,5	123	73	18	●		30212000	20,0	131	79	20	●	
30211800	18,0	123	73	18	●								

Applications - Anwendungen - Applicazioni - Applications - Applikation - Applikation - Aplicaciones - Применение

Cs≤0.2%	0.25<C≤0.4%	C≥0.45%	SCM	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	SUS
○	⊙	⊙	⊙	⊙	○			○
SKD	GG	GGG	Cu	Al	AC	Ti	TiAl	Inl
○	⊙	⊙						



HIGH PERFORMANCE

■ General purpose 5D drill

5D drilling

HIGH PERFORMANCE

■ 5D Bohrer-Allgemeine Anwendungen

5D Bohren

ALTA PRESTAZIONE

■ Con 5D fori raccomandato per applicazioni generali

5D foratura

HAUTE PERFORMANCE

■ Foret 5D application générale

Forage 5D

HIGH PERFORMANCE

■ Universalt 5D bor

5D boring

HIGH PERFORMANCE

■ Allround 5D

5D borring

ALTAS PRESTACIONES

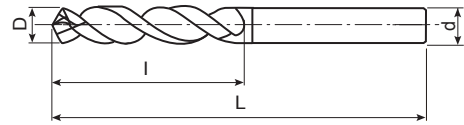
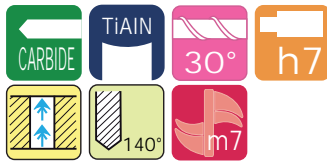
■ Broca 5D empleo general

Taladrado 5D

Высокая производительность

■ Многоцелевое сверло 5D

Сверление глубиной 5D



EDP	D	L	l	d	Stock	Price	l	EDP	D	L	l	d	Stock	Price
NEW 31200300	3,0	66	28	6	●			NEW 31200690	6,9	91	53	8	●	
NEW 31200310	3,1	66	28	6	●			NEW 31200700	7,0	91	53	8	●	
NEW 31200317	3,17 (1/8)	66	28	6	●			NEW 31200710	7,1	91	53	8	●	
NEW 31200320	3,2	66	28	6	●			NEW 31200714	7,14 (9/32)	91	53	8	●	
NEW 31200330	3,3	66	28	6	●			NEW 31200720	7,2	91	53	8	●	
NEW 31200340	3,4	66	28	6	●			NEW 31200730	7,3	91	53	8	●	
NEW 31200350	3,5	66	28	6	●			NEW 31200740	7,4	91	53	8	●	
NEW 31200357	3,57 (9/64)	66	28	6	●			NEW 31200750	7,5	91	53	8	●	
NEW 31200360	3,6	66	28	6	●			NEW 31200754	7,54 (19/64)	91	53	8	●	
NEW 31200370	3,7	66	28	6	●			NEW 31200760	7,6	91	53	8	●	
NEW 31200380	3,8	74	36	6	●			NEW 31200770	7,7	91	53	8	●	
NEW 31200390	3,9	74	36	6	●			NEW 31200780	7,8	91	53	8	●	
NEW 31200397	3,97 (5/32)	74	36	6	●			NEW 31200790	7,9	91	53	8	●	
NEW 31200400	4,0	74	36	6	●			NEW 31200794	7,94 (5/16)	91	53	8	●	
NEW 31200410	4,1	74	36	6	●			NEW 31200800	8,0	91	53	8	●	
NEW 31200420	4,2	74	36	6	●			NEW 31200810	8,1	103	61	8	●	
NEW 31200430	4,3	74	36	6	●			NEW 31200820	8,2	103	61	10	●	
NEW 31200437	4,37 (11/64)	74	36	6	●			NEW 31200830	8,3	103	61	10	●	
NEW 31200440	4,4	74	36	6	●			NEW 31200833	8,33 (21/64)	103	61	10	●	
NEW 31200450	4,5	74	36	6	●			NEW 31200840	8,4	103	61	10	●	
NEW 31200460	4,6	74	36	6	●			NEW 31200850	8,5	103	61	10	●	
NEW 31200470	4,7	82	44	6	●			NEW 31200860	8,6	103	61	10	●	
NEW 31200476	4,76 (3/16)	82	44	6	●			NEW 31200870	8,7	103	61	10	●	
NEW 31200480	4,8	82	44	6	●			NEW 31200873	8,73 (11/32)	103	61	10	●	
NEW 31200490	4,9	82	44	6	●			NEW 31200880	8,8	103	61	10	●	
NEW 31200500	5,0	82	44	6	●			NEW 31200890	8,9	103	61	10	●	
NEW 31200510	5,1	82	44	6	●			NEW 31200900	9,0	103	61	10	●	
NEW 31200516	5,16 (13/64)	82	44	6	●			NEW 31200910	9,1	103	61	10	●	
NEW 31200520	5,2	82	44	6	●			NEW 31200913	9,13 (23/64)	103	61	10	●	
NEW 31200530	5,3	82	44	6	●			NEW 31200920	9,2	103	61	10	●	
NEW 31200540	5,4	82	44	6	●			NEW 31200930	9,3	103	61	10	●	
NEW 31200550	5,5	82	44	6	●			NEW 31200940	9,4	103	61	10	●	
NEW 31200556	5,56 (7/32)	82	44	6	●			NEW 31200950	9,5	103	61	10	●	
NEW 31200560	5,6	82	44	6	●			NEW 31200952	9,52 (3/8)	103	61	10	●	
NEW 31200570	5,7	82	44	6	●			NEW 31200960	9,6	103	61	10	●	
NEW 31200580	5,8	82	44	6	●			NEW 31200970	9,7	103	61	10	●	
NEW 31200590	5,9	82	44	6	●			NEW 31200980	9,8	103	61	10	●	
NEW 31200595	5,95 (15/64)	82	44	6	●			NEW 31200990	9,9	103	61	10	●	
NEW 31200600	6,0	82	44	6	●			NEW 31200992	9,92 (25/64)	103	61	10	●	
NEW 31200610	6,1	91	53	8	●			NEW 31201000	10,0	103	61	10	●	
NEW 31200620	6,2	91	53	8	●			NEW 31201010	10,1	118	71	12	●	
NEW 31200630	6,3	91	53	8	●			NEW 31201020	10,2	118	71	12	●	
NEW 31200635	6,35 (1/4)	91	53	8	●			NEW 31201030	10,3	118	71	12	●	
NEW 31200640	6,4	91	53	8	●			NEW 31201032	10,32 (13/32)	118	71	12	●	
NEW 31200650	6,5	91	53	8	●			NEW 31201040	10,4	118	71	12	●	
NEW 31200660	6,6	91	53	8	●			NEW 31201050	10,5	118	71	12	●	
NEW 31200670	6,7	91	53	8	●			NEW 31201060	10,6	118	71	12	●	
NEW 31200675	6,75 (17/64)	91	53	8	●			NEW 31201070	10,7	118	71	12	●	
NEW 31200680	6,8	91	53	8	●			NEW 31201072	10,72 (27/64)	118	71	12	●	



HIGH PERFORMANCE

■ General purpose 5D drill

5D drilling

HIGH PERFORMANCE

■ 5D Bohrer-Allgemeine Anwendungen

5D Bohren

ALTA PRESTAZIONE

■ Con 5D fori raccomandato per applicazioni generali

5D foratura

HAUTE PERFORMANCE

■ Foret 5D application générale

Forage 5D

HIGH PERFORMANCE

■ Universalt 5D bor

5D boring

HIGH PERFORMANCE

■ Allround 5D

5D borring

ALTAS PRESTACIONES

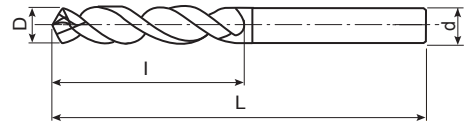
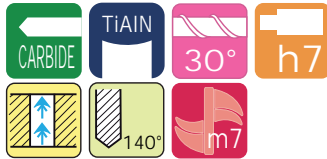
■ Broca 5D empleo general

Taladrado 5D

Высокая производительность

■ Многоцелевое сверло 5D

Сверление глубиной 5D



EDP	D	L	l	d	Stock	Price	EDP	D	L	l	d	Stock	Price
NEW 31201080	10,8	118	71	12	●		NEW 31201270	12,7 (1/2)	124	77	14	●	
NEW 31201090	10,9	118	71	12	●		NEW 31201300	13,0	124	77	14	●	
NEW 31201100	11,0	118	71	12	●		NEW 31201350	13,5	124	77	14	●	
NEW 31201110	11,1	118	71	12	●		NEW 31201400	14,0	124	77	14	●	
NEW 31201111	11,11 (7/16)	118	71	12	●		NEW 31201429	14,29 (9/16)	133	83	16	●	
NEW 31201120	11,2	118	71	12	●		NEW 31201450	14,5	133	83	16	●	
NEW 31201130	11,3	118	71	12	●		NEW 31201500	15,0	133	83	16	●	
NEW 31201140	11,4	118	71	12	●		NEW 31201550	15,5	133	83	16	●	
NEW 31201150	11,5	118	71	12	●		NEW 31201587	15,87 (5/8)	133	83	16	●	
NEW 31201151	11,51 (29/64)	118	71	12	●		NEW 31201600	16,0	133	93	18	●	
NEW 31201160	11,6	118	71	12	●		NEW 31201650	16,5	143	93	18	●	
NEW 31201170	11,7	118	71	12	●		NEW 31201700	17,0	143	93	18	●	
NEW 31201180	11,8	118	71	12	●		NEW 31201750	17,5	143	93	18	●	
NEW 31201190	11,9	118	71	12	●		NEW 31201800	18,0	143	93	18	●	
NEW 31201191	11,91 (15/32)	118	71	12	●		NEW 31201850	18,5	153	101	20	●	
NEW 31201200	12,0	118	71	12	●		NEW 31201900	19,0	153	101	20	●	
NEW 31201230	12,3 (31/64)	124	77	14	●		NEW 31201950	19,5	153	101	20	●	
NEW 31201250	12,5	124	77	14	●		NEW 31202000	20,0	153	101	20	●	

Applications - Anwendungen - Applicazioni - Applications - Applikation - Applikation - Aplicaciones - Применения

C≤0.2%	0.25<C≤0.4%	C≥0.45%	SCM	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	SUS
○	⊙	⊙	⊙	⊙	○			○
SKD	GG	GGG	Cu	Al	AC	Ti	TiAl	Inl
○	⊙	⊙						



HIGH PERFORMANCE

- General purpose 5D drill

5D drilling

HIGH PERFORMANCE

- 5D Bohrer-Allgemeine Anwendungen

5D Bohren

ALTA PRESTAZIONE

- Con 5D fori raccomandato per applicazioni generali

5D foratura

HAUTE PERFORMANCE

- Foret 5D application générale

Forage 5D

HIGH PERFORMANCE

- Universalt 5D bor

5D boring

HIGH PERFORMANCE

- Allround 5D

5D borring

ALTAS PRESTACIONES

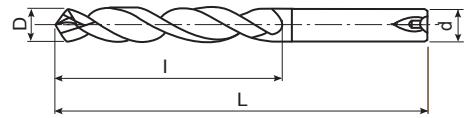
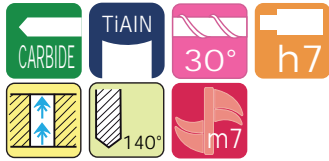
- Broca 5D empleo general

Taladrado 5D

Высокая производительность

- Многоцелевое сверло 5D

Сверление глубиной 5D



EDP	D	L	l	d	Stock	Price	EDP	D	L	l	d	Stock	Price
30220300	3,0	66	28	6	●		30220690	6,9	91	53	8	●	
30220310	3,1	66	28	6	●		30220700	7,0	91	53	8	●	
30220317	3,17 (1/8)	66	28	6	●		30220710	7,1	91	53	8	●	
30220320	3,2	66	28	6	●		30220714	7,14 (9/32)	91	53	8	●	
30220330	3,3	66	28	6	●		30220720	7,2	91	53	8	●	
30220340	3,4	66	28	6	●		30220730	7,3	91	53	8	●	
30220350	3,5	66	28	6	●		30220740	7,4	91	53	8	●	
30220357	3,57 (9/64)	66	28	6	●		30220750	7,5	91	53	8	●	
30220360	3,6	66	28	6	●		30220754	7,54 (19/64)	91	53	8	●	
30220370	3,7	66	28	6	●		30220760	7,6	91	53	8	●	
30220380	3,8	74	36	6	●		30220770	7,7	91	53	8	●	
30220390	3,9	74	36	6	●		30220780	7,8	91	53	8	●	
30220397	3,97 (5/32)	74	36	6	●		30220790	7,9	91	53	8	●	
30220400	4,0	74	36	6	●		30220794	7,94 (5/16)	91	53	8	●	
30220410	4,1	74	36	6	●		30220800	8,0	91	53	8	●	
30220420	4,2	74	36	6	●		30220810	8,1	103	61	8	●	
30220430	4,3	74	36	6	●		30220820	8,2	103	61	10	●	
30220437	4,37 (11/64)	74	36	6	●		30220830	8,3	103	61	10	●	
30220440	4,4	74	36	6	●		30220833	8,33 (21/64)	103	61	10	●	
30220450	4,5	74	36	6	●		30220840	8,4	103	61	10	●	
30220460	4,6	74	36	6	●		30220850	8,5	103	61	10	●	
30220470	4,7	82	44	6	●		30220860	8,6	103	61	10	●	
30220476	4,76 (3/16)	82	44	6	●		30220870	8,7	103	61	10	●	
30220480	4,8	82	44	6	●		30220873	8,73 (11/32)	103	61	10	●	
30220490	4,9	82	44	6	●		30220880	8,8	103	61	10	●	
30220500	5,0	82	44	6	●		30220890	8,9	103	61	10	●	
30220510	5,1	82	44	6	●		30220900	9,0	103	61	10	●	
30220516	5,16 (13/64)	82	44	6	●		30220910	9,1	103	61	10	●	
30220520	5,2	82	44	6	●		30220913	9,13 (23/64)	103	61	10	●	
30220530	5,3	82	44	6	●		30220920	9,2	103	61	10	●	
30220540	5,4	82	44	6	●		30220930	9,3	103	61	10	●	
30220550	5,5	82	44	6	●		30220940	9,4	103	61	10	●	
30220556	5,56 (7/32)	82	44	6	●		30220950	9,5	103	61	10	●	
30220560	5,6	82	44	6	●		30220952	9,52 (3/8)	103	61	10	●	
30220570	5,7	82	44	6	●		30220960	9,6	103	61	10	●	
30220580	5,8	82	44	6	●		30220970	9,7	103	61	10	●	
30220590	5,9	82	44	6	●		30220980	9,8	103	61	10	●	
30220595	5,95 (15/64)	82	44	6	●		30220990	9,9	103	61	10	●	
30220600	6,0	82	44	6	●		30220992	9,92 (25/64)	103	61	10	●	
30220610	6,1	91	53	8	●		30221000	10,0	103	61	10	●	
30220620	6,2	91	53	8	●		30221010	10,1	118	71	12	●	
30220630	6,3	91	53	8	●		30221020	10,2	118	71	12	●	
30220635	6,35 (1/4)	91	53	8	●		30221030	10,3	118	71	12	●	
30220640	6,4	91	53	8	●		30221032	10,32 (13/32)	118	71	12	●	
30220650	6,5	91	53	8	●		30221040	10,4	118	71	12	●	
30220660	6,6	91	53	8	●		30221050	10,5	118	71	12	●	
30220670	6,7	91	53	8	●		30221060	10,6	118	71	12	●	
30220675	6,75 (17/64)	91	53	8	●		30221070	10,7	118	71	12	●	
30220680	6,8	91	53	8	●		30221072	10,72 (27/64)	118	71	12	●	





HIGH PERFORMANCE

■ General purpose 5D drill

5D drilling

HIGH PERFORMANCE

■ 5D Bohrer-Allgemeine Anwendungen

5D Bohren

ALTA PRESTAZIONE

■ Con 5D fori raccomandato per applicazioni generali

5D foratura

HAUTE PERFORMANCE

■ Foret 5D application générale

Forage 5D

HIGH PERFORMANCE

■ Universalt 5D bor

5D boring

HIGH PERFORMANCE

■ Allround 5D

5D borring

ALTAS PRESTACIONES

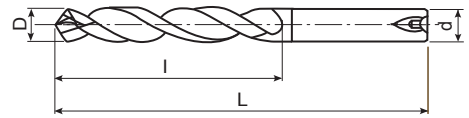
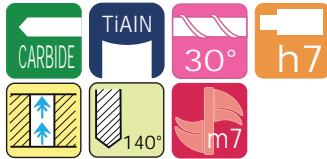
■ Broca 5D empleo general

Taladrado 5D

Высокая производительность

■ Многоцелевое сверло 5D

Сверление глубиной 5D



EDP	D	L	l	d	Stock	Price	EDP	D	L	l	d	Stock	Price
30221080	10,8	118	71	12	●		30221270	12,7 (1/2)	124	77	14	●	
30221090	10,9	118	71	12	●		30221300	13,0	124	77	14	●	
30221100	11,0	118	71	12	●		30221350	13,5	124	77	14	●	
30221110	11,1	118	71	12	●		30221400	14,0	124	77	14	●	
32221111	11,11 (7/16)	118	71	12	●		30221429	14,29 (9/16)	133	83	16	●	
30221120	11,2	118	71	12	●		30221450	14,5	133	83	16	●	
30221130	11,3	118	71	12	●		30221500	15,0	133	83	16	●	
30221140	11,4	118	71	12	●		30221550	15,5	133	83	16	●	
30221150	11,5	118	71	12	●		30221587	15,87 (5/8)	133	83	16	●	
30221151	11,51 (29/64)	118	71	12	●		30221600	16,0	133	83	16	●	
30221160	11,6	118	71	12	●		30221650	16,5	143	93	18	●	
30221170	11,7	118	71	12	●		30221700	17,0	143	93	18	●	
30221180	11,8	118	71	12	●		30221750	17,5	143	93	18	●	
30221190	11,9	118	71	12	●		30221800	18,0	143	93	18	●	
30221191	11,91 (15/32)	118	71	12	●		30221850	18,5	153	101	20	●	
30221200	12,0	118	71	12	●		30221900	19,0	153	101	20	●	
30221230	12,3 (31/64)	124	77	14	●		30221950	19,5	153	101	20	●	
30221250	12,5	124	77	14	●		30222000	20,0	153	101	20	●	

Applications - Anwendungen - Applicazioni - Applications - Applikation - Applikation - Aplicaciones - Применение

C≤0.2%	0.25<C≤0.4%	C≥0.45%	SCM	~35 HRC	35-45 HRC	45-50 HRC	50-70 HRC	SUS
○	◎	◎	◎	◎	○			○
SKD	GG	GGG	Cu	Al	AC	Ti	TiAl	Inl
○	◎	◎						

CONDITIONS CONDITIONS CONDITIONS CONDITIONS CONDITIONS CONDITIONS


Standard drilling - Standard Bohren - Foratura standard - Perçage standard
 Standard boring - Standard borning - Taladrado estándar - Стандартное сверление

HYP-HP-GDS(N) / HYP-HPO-GDS(N)

	Steel			CU	A5052 / A7075	Al < 13% Si
	< 700 N/mm2	< 850 N/mm2	< 1000 N/mm2			< 130 HB
Vc	100 ~ 150 m/min	80 ~ 120 m/min	70 ~ 110 m/min	50 ~ 90 m/min	60 ~ 110 m/min	120 ~ 220 m/min
Ø	F. (mm/rev.)	F. (mm/rev.)	F. (mm/rev.)	F. (mm/rev.)	F. (mm/rev.)	F. (mm/rev.)
3	0,09 ~ 0,12	0,09 ~ 0,12	0,09 ~ 0,12	0,02 ~ 0,03	0,09 ~ 0,20	0,09 ~ 0,28
4	0,10 ~ 0,15	0,10 ~ 0,15	0,10 ~ 0,15	0,02 ~ 0,04	0,10 ~ 0,24	0,10 ~ 0,38
5	0,12 ~ 0,18	0,12 ~ 0,18	0,12 ~ 0,18	0,03 ~ 0,05	0,12 ~ 0,28	0,12 ~ 0,40
6	0,14 ~ 0,20	0,14 ~ 0,20	0,14 ~ 0,20	0,03 ~ 0,06	0,14 ~ 0,34	0,14 ~ 0,48
8	0,16 ~ 0,24	0,16 ~ 0,24	0,16 ~ 0,24	0,04 ~ 0,08	0,16 ~ 0,38	0,16 ~ 0,53
10	0,18 ~ 0,27	0,18 ~ 0,27	0,18 ~ 0,27	0,05 ~ 0,10	0,18 ~ 0,45	0,18 ~ 0,63
12	0,20 ~ 0,30	0,20 ~ 0,30	0,20 ~ 0,30	0,06 ~ 0,12	0,20 ~ 0,53	0,20 ~ 0,75
14	0,22 ~ 0,35	0,22 ~ 0,35	0,22 ~ 0,35	0,08 ~ 0,16	0,22 ~ 0,57	0,22 ~ 0,81
16	0,25 ~ 0,36	0,25 ~ 0,36	0,25 ~ 0,36	0,10 ~ 0,18	0,25 ~ 0,61	0,25 ~ 0,85
18	0,28 ~ 0,38	0,28 ~ 0,38	0,28 ~ 0,38	0,12 ~ 0,20	0,28 ~ 0,63	0,28 ~ 0,90
20	0,30 ~ 0,40	0,30 ~ 0,40	0,30 ~ 0,40	0,20 ~ 0,28	0,28 ~ 0,68	0,30 ~ 0,98

Standard drilling - Standard Bohren - Foratura standard - Coupe standard
 Standard boring - Standard borning - Taladrado estándar - Стандартное сверление

HYP-HP-GDS(N) / HYP-HPO-GDS(N)

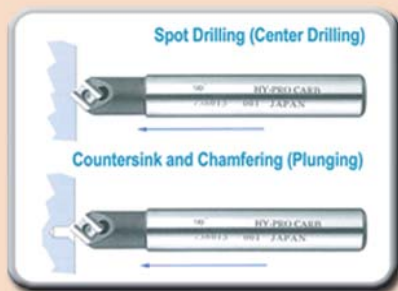
	GG (G)		SUS	High - Alloy Steel	Special Alloys	Hardened Steel
	< 180 HB	< 300 HB	< 820 HB	< 1200 N/mm2	< 30 HRC	< 60 HRC
Vc	150 ~ 200 m/min	100 ~ 150 m/min	40 ~ 50 m/min	50 ~ 60 m/min	15 ~ 25 m/min	15 ~ 25 m/min
Ø	F. (mm/rev.)	F. (mm/rev.)	F. (mm/rev.)	F. (mm/rev.)	F. (mm/rev.)	F. (mm/rev.)
3	0,12 ~ 0,15	0,12 ~ 0,15	0,09 ~ 0,12	0,07 ~ 0,11	0,05 ~ 0,09	0,03 ~ 0,05
4	0,13 ~ 0,18	0,13 ~ 0,18	0,10 ~ 0,15	0,08 ~ 0,13	0,06 ~ 0,10	0,04 ~ 0,06
5	0,15 ~ 0,22	0,15 ~ 0,22	0,12 ~ 0,18	0,10 ~ 0,15	0,08 ~ 0,12	0,05 ~ 0,07
6	0,18 ~ 0,25	0,18 ~ 0,25	0,14 ~ 0,20	0,12 ~ 0,18	0,09 ~ 0,15	0,05 ~ 0,07
8	0,20 ~ 0,30	0,20 ~ 0,30	0,16 ~ 0,24	0,14 ~ 0,22	0,12 ~ 0,20	0,06 ~ 0,08
10	0,23 ~ 0,33	0,23 ~ 0,33	0,18 ~ 0,27	0,15 ~ 0,25	0,13 ~ 0,23	0,07 ~ 0,10
12	0,25 ~ 0,38	0,25 ~ 0,38	0,20 ~ 0,30	0,17 ~ 0,26	0,14 ~ 0,24	0,09 ~ 0,12
14	0,30 ~ 0,43	0,30 ~ 0,43	0,22 ~ 0,35	0,18 ~ 0,30	0,15 ~ 0,26	0,10 ~ 0,13
16	0,35 ~ 0,50	0,35 ~ 0,50	0,25 ~ 0,36	0,20 ~ 0,32	0,16 ~ 0,26	0,10 ~ 0,13
18	0,38 ~ 0,55	0,38 ~ 0,55	0,28 ~ 0,38	0,23 ~ 0,33	0,18 ~ 0,28	0,12 ~ 0,16
20	0,40 ~ 0,63	0,40 ~ 0,63	0,30 ~ 0,40	0,25 ~ 0,35	0,20 ~ 0,30	0,14 ~ 0,18



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-

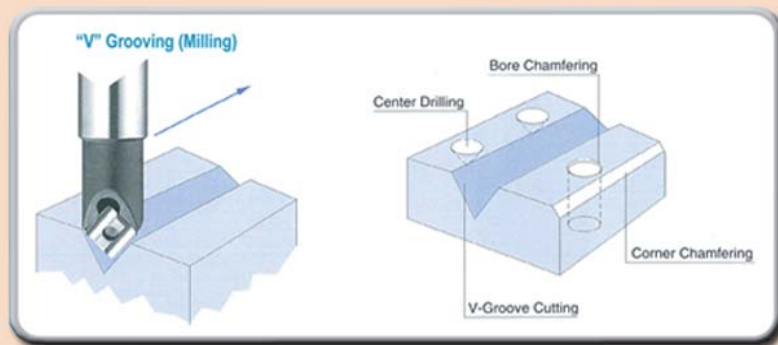
min⁻¹
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Multi Purpose Fonctions :



118°

90°



EDP	Point Angle	D	L	l	d	€
738015	90°	13,5	110	28	16	
738025	118°	16,15	110	28	16	
738055	90°	13,5	200	28	16	
738065	118°	16,15	200	28	16	



EDP	Type	Application	€
73811000	NK1010	Aluminium, Cast Iron	10
73812000	NK2020	Steel	10
73801100	-	L-6 Replacement Screw	

CONDITIONS CONDITIONS CONDITIONS CONDITIONS CONDITIONS CONDITIONS

HY-PRO CARB

Center Drilling & V-Grooving - V - fräsen und zentrieren - Pointage et chanfreinage en V

Centering og V-spors fræsning - Centrerung och V-spårfräsning - Punteado y ramurado en V - Центрирование и фрезерование V-образных канавок

	C≤0,2%	SUS	Die Steels	GG	Al
Grade	NK2020	NK2020	NK2020	NK1010	NK1010
 (rev./min)	3.000	2.000	3.000	3.200	4.000
F (mm/min)	80	50	50	200	150

Chamfer Milling (Down Cut) - Anfasfräsen (Gleichlauf) - Operazione di smussi - Fraisage de chanfreins

Fas fræsning - Fasning (Down Cut) - Fresado de chaflán (corte a favor) - Фрезерование фасок (попутное фрезерование)

	C≤0,2%	SUS	Die Steels	GG	Al
Grade	NK2020	NK2020	NK2020	NK1010	NK1010
 (rev./min)	3.000	2.500	3.000	3.000	4.000
F (mm/min)	200	150	150	200	300



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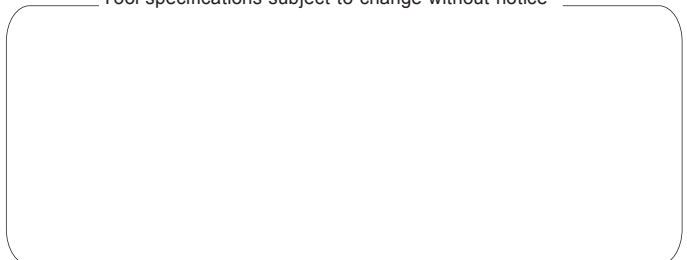
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OSG CORPORATION 

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