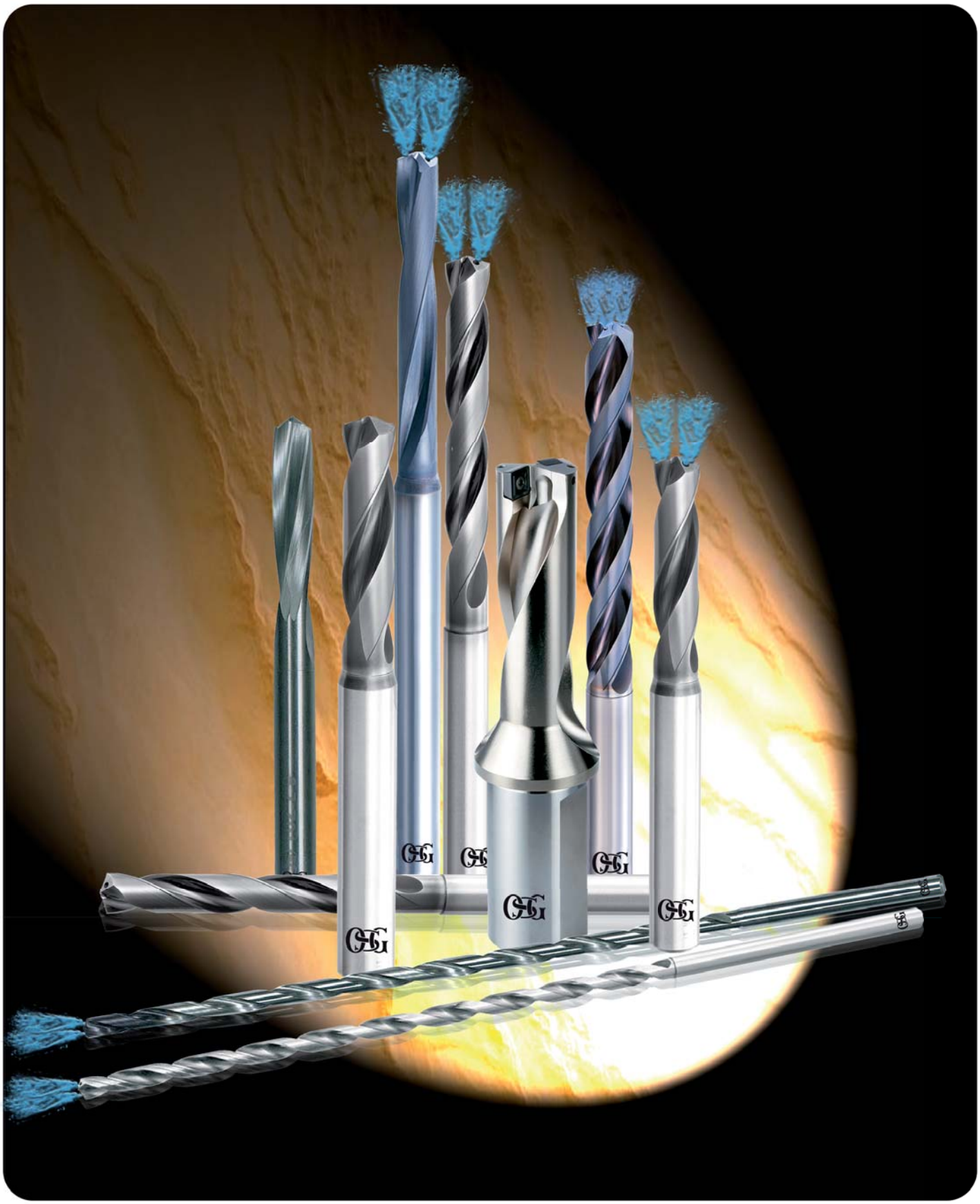
PRODUCT INFORMATION

PAT.P.

TOKO-TON SPIRIT 70th Anniversary

DRILL SERIES

- NEW WD-2D/(4D)
- NEW TRS-HO-3D/5D
- New Name WDO-3D/5D/10D
- NEW WDO-15D/20D/30D
- Limited Supply FTO-GDXL
  CAO-GDXL
- NEW WH70-DRL
- NEW WH(O)55-5D
- NEW PHP



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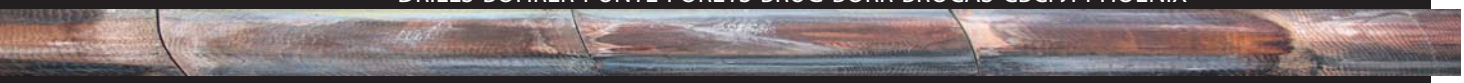
NAME	SPECIFICATION	
DRILLING SOLID CARBIDE		
WD-2D NEW	General purpose, 2D type Per applicazioni generali, 2D foratura	Allgemeine Anwendungen, für 2D bohren Applications générales, forage 2D
WD-4D NEW	General purpose, 4D type Per applicazioni generali, 4D foratura	Allgemeine Anwendungen, für 4D bohren Applications générales, forage 4D
TRS-HO-3D NEW	Coolant through, 3 flutes, high feed drill, 3D type Con foro di lubrificazione, 3 eliche, alto avanzamento, 3 D	Innenkühlung , 3 Schneiden , Hochleistungsbohrer , 3xD Arrosage interne, 3 levres, perçage haute vitesse, perçage 3D
TRS-HO-5D NEW	Coolant through, 3 flutes, high feed drill, 5D type Con foro di lubrificazione, 3 eliche, alto avanzamento, 5 D	Innenkühlung , 3 Schneiden , Hochleistungsbohrer , 5xD Arrosage interne, 3 levres, perçage haute vitesse, perçage 5D
WDO-3D New Name	Coolant through for 3D type Fori di lubrificazione centrali, 3D foratura	VHM - Bohrer, mit innerer Kühlmittelzufuhr für 3D bohren Avec arrosage central, forage 3D
WDO-5D New Name	Coolant through for 5D type Fori di lubrificazione centrali, 5D foratura	VHM - Bohrer, mit innerer Kühlmittelzufuhr für 5D bohren Avec arrosage central, forage 5D
WDO-10D New Name	Coolant through, extra long non-step drill,10D Con foro di lubrificazione, extra lunga senza step 10 D	Innengekühlter Tieflochbohrer, 10xD , Bohren ohne Step Arrosage interne, foret extra long 10D sans débourage
WDO-15D NEW	Coolant through, extra long non-step drill,15D Con foro di lubrificazione, extra lunga senza step 15 D	Innengekühlter Tieflochbohrer, 15xD , Bohren ohne Step Arrosage interne, foret extra long 15D sans débourage
WDO-20D NEW	Coolant through, extra long non-step drill,20D Con foro di lubrificazione, extra lunga senza step 20 D	Innengekühlter Tieflochbohrer, 20xD , Bohren ohne Step Arrosage interne, foret extra long 20D sans débourage
WDO-30D NEW	Coolant through, extra long non-step drill,30D Con foro di lubrificazione, extra lunga senza step 30 D	Innengekühlter Tieflochbohrer, 30xD , Bohren ohne Step Arrosage interne, foret extra long 30D sans débourage
FTO-GDXL Limited Supply	Coolant through, extra long non-step drill Serie extra lunga-con fori di lubrificazione-alta velocità senza step	VHM Tieflochbohrer,mit innerer Kühlmittelzufuhr,extra lange Ausführung, für Tiefbohrungen in einem Step Type extra long, avec trous d'huile.Forage profond sans débourage
CAO-GDXL	Coolant through, extra long non-step drilling in Cu & Al Fori di lubrificazione,serie extra lunga senza step-per fori profondità su Cu, Al	VHM Tieflochbohrer, für die Bearbeitung von Cu und Al in einem Step,mit innerer Kühlmittelzufuhr Avec trous d'huile, forage profond sans débourrage dans Cu, Al
WH70-DRL NEW	For hard materials up to 72 HRC Per materiali con durezza fino a 72 HRC	Für gehärtete Materialien bis 72 HRC Für gehärtete Materialien bis 72 HRC
WH55-5D NEW	For hard materials up to 55 HRC Per materiali con durezza fino a 55 HRC	Für gehärtete Materialien bis 55 HRC Pour des matériaux durs jusqu'à 55 HRC
WHO55-5D NEW	For hard materials up to 55 HRC Per materiali con durezza fino a 55 HRC	Für gehärtete Materialien bis 55 HRC Für gehärtete Materialien bis 55 HRC
PHOENIX		
PHP NEW	3 x D High Performance Indexable Drill, 2 flutes 3 xD alta performance punta ad inserti	3 x D Hochleistungswendeplattenbohrer Foret à plaquettes amovibles 3D haute performance



SPECIFICATION

Universalt for 2D boring	Allround för 2D	Range 2~12
Empleo general, para taladrado 2D	Сверло длиной 2D с каналами для СОЖ	Page 8
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For hårde materialer op til 55 HRC	För hårda material upp till 55 HRC	Range 3,3~12
Para materiales duros hasta 55 HRC	Для закаленных сталей < 55 HRC	Page 23
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Production Table by Drill Diameter

Standard stock item

Special order item

L/D Ø	2D	3D	4D	5D	10D	15D	20D	30D	35D	40D	45D	50D
2												
2,1												
2,2												
2,3												
2,3												
2,4												
2,5												
2,6												
2,7												
2,8							64					
2,9							67					
3							69					
3,1								102				
3,2								106				
3,3								109				
3,4								112				
3,5								116				
3,6								119				
3,7								122				
3,8								125				
3,9								129				
4								140				
4,1									156			
4,2									160			
4,3									163			
4,4									167			
4,5									171			
4,6									175			
4,7									179			
4,8									182			
4,9									186			
5									215			
5,1									194			
5,2									198			
5,3									201			
5,4									205			
5,5									209			
5,6									213			
5,7									217			
5,8									220			
5,9									224			
6									228			
6,1									232			
6,2									236			

L/D Ø	2D	3D	4D	5D	10D	15D	20D	30D	35D	40D	45D	50D
6,3									239			
6,4									243			
6,5									247			
6,6									251			
6,7									255			
6,8									258			
6,9									262			
7									266			
7,1									270			
7,2									274			
7,3									277			
7,4									281			
7,5									285			
7,6									289			
7,7									293			
7,8									296			
7,9									300			
8									304			
8,1									308			
8,2									312			
8,3									315			
8,4									319			
8,5									323			
8,6									327			
8,7									331			
8,8									334			
8,9									338			
9									342			
9,1								300				
9,2								304				
9,3								307				
9,4								310				
9,5								314				
9,6								317				
9,7								320				
9,8								323				
9,9								327				
10								330				
10,1							283					
10,2							286					
10,3							288					
10,4							291					
10,5							294					
10,6							297					

The values in the table indicate the maximum possible flute lenghts

Production Table by Drill Diameter

Standard stock item

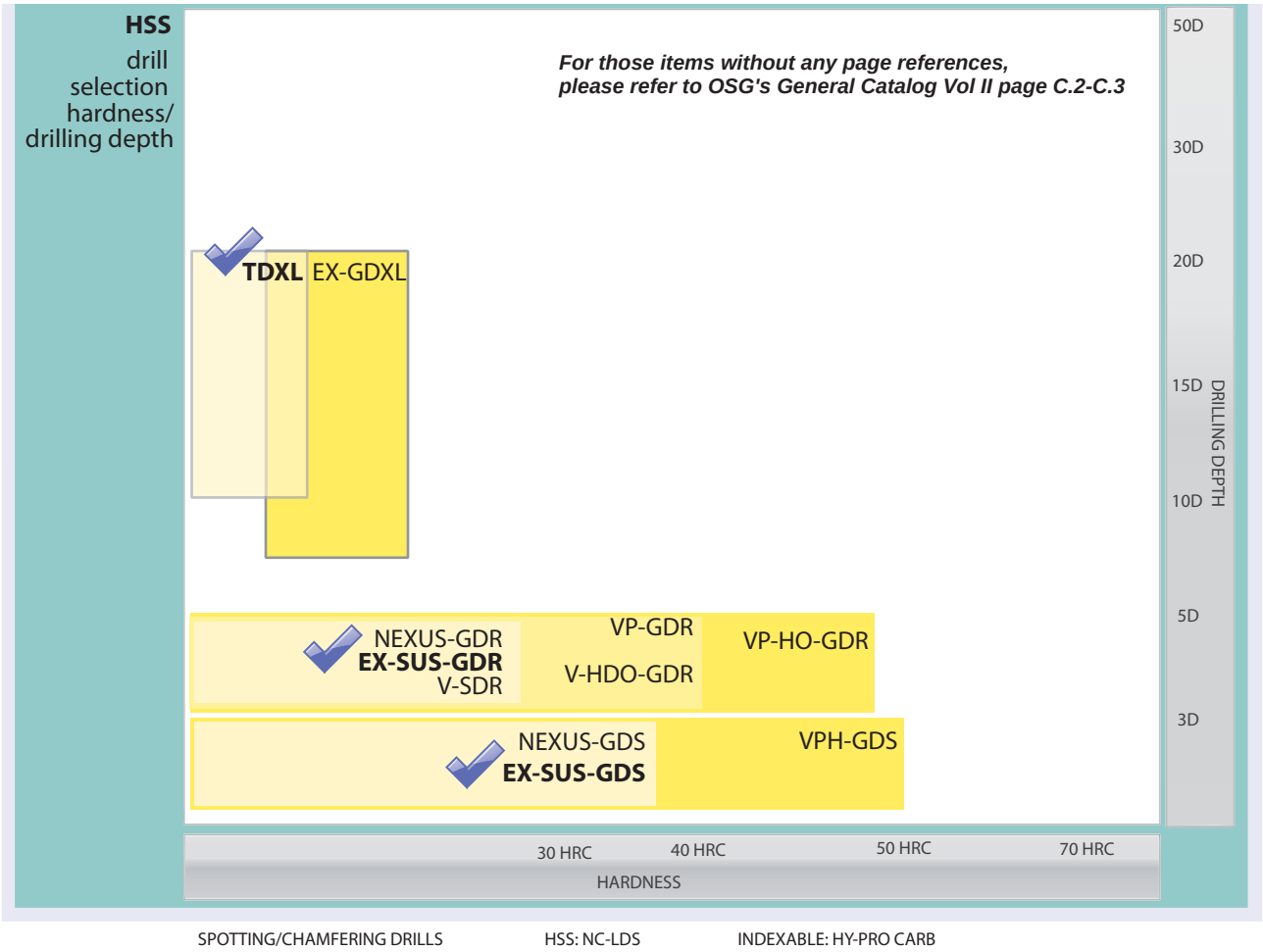
Special order item

L/D / Ø	2D	3D	4D	5D	10D	15D	20D	30D	35D	40D	45D	50D
10,7							300					
10,8							302					
10,9							305					
11							308					
11,1							311					
11,2							314					
11,3							316					
11,4							319					
11,5							322					
11,6							325					
11,7							328					
11,8							330					
11,9							333					
12							336					
12,1							278					
12,2							281					
12,3							283					
12,4							285					
12,5							288					
12,6							290					
12,7							292					
12,8							294					
12,9							297					
13							299					
13,1							301					
13,2							304					
13,3							306					
13,4							308					
13,5							311					
13,6							313					
13,7							315					
13,8							317					
13,9							320					
14							322					
14,1							324					
14,2							327					
14,3							329					
14,4							331					
14,5							334					
14,6							336					
14,7							338					
14,8							340					
14,9							343					
15							345					

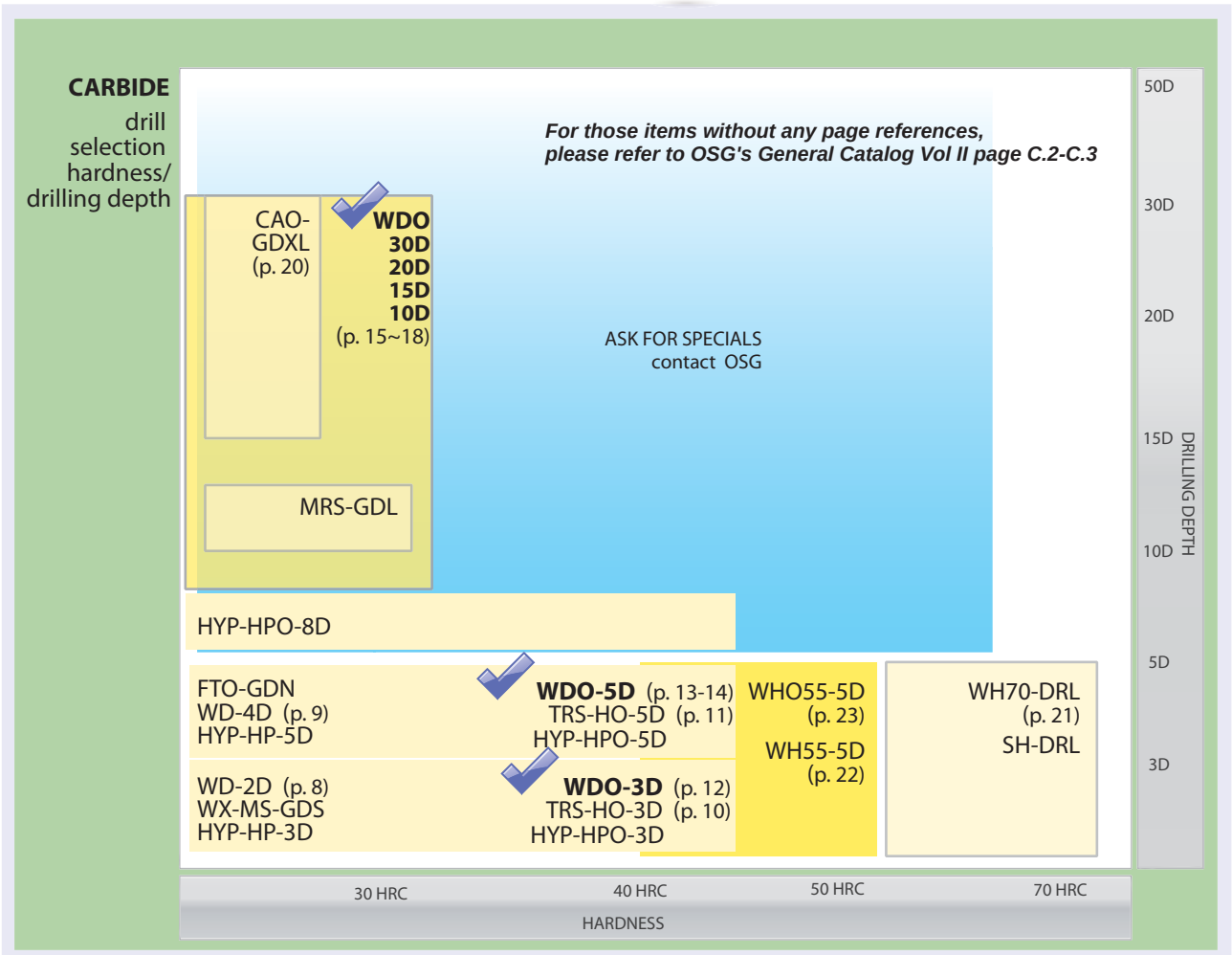
L/D / Ø	2D	3D	4D	5D	10D	15D	20D	30D	35D	40D	45D	50D
15,1						272						
15,2						274						
15,3						275						
15,4						277						
15,5						279						
15,6						281						
15,7						283						
15,8						284						
15,9						286						
16						288						
16,5						297						
17						306						
17,5						315						
18						324						
18,5												
19												
19,5												
20												
20,5												
21												
21,5												
22												
22,5												
23												
23,5												
24												
24,5												
25												
25,5												
26												
26,5												
27												
28												
29												
30												
31												
32												
33												
34												
35												
36												
37												
38												
39												
40												

The values in the table indicate the maximum possible flute lenghts

Drill Product Map



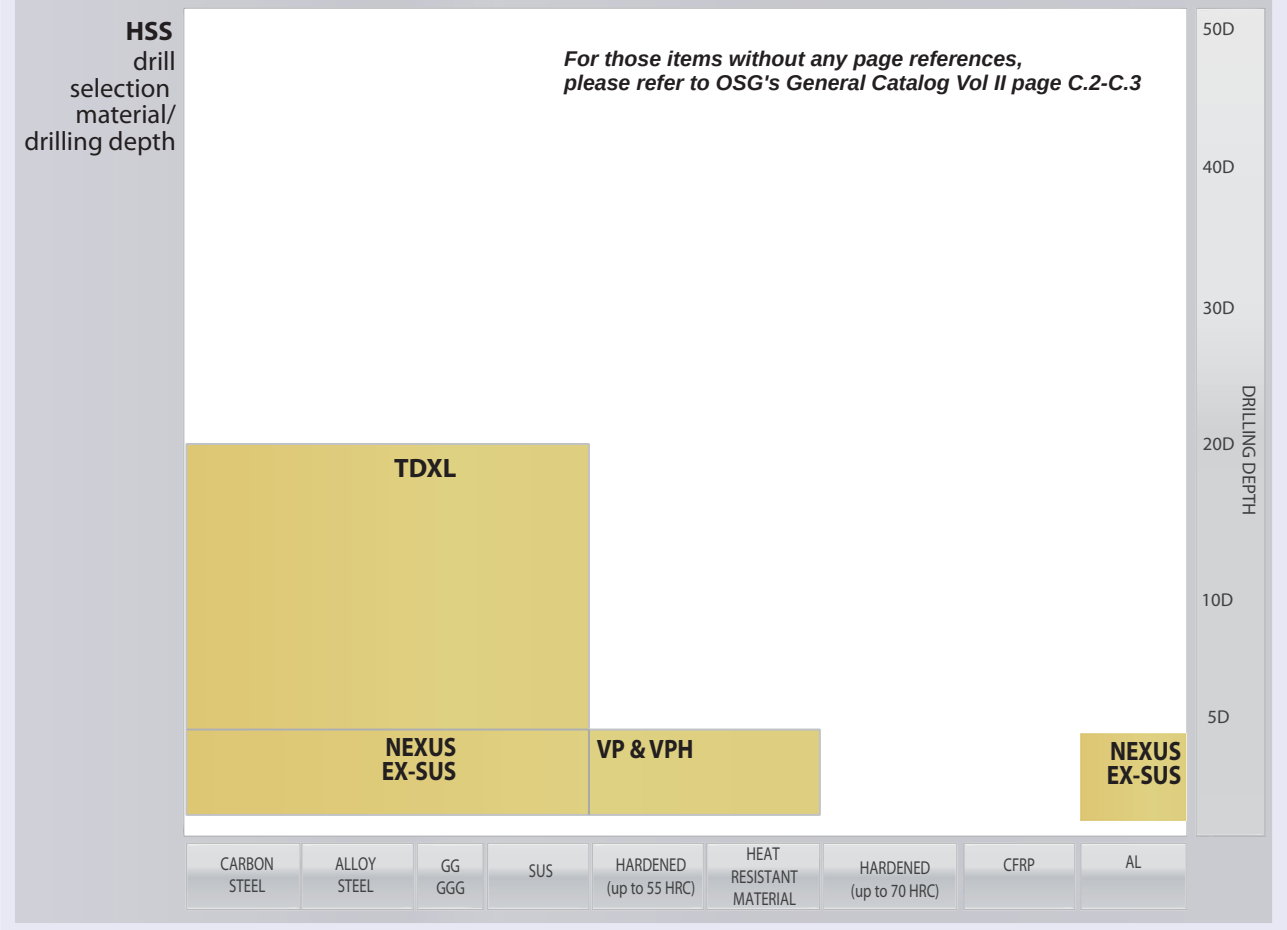
SPOTTING/CHAMFERING DRILLS HSS: NC-LDS INDEXABLE: HY-PRO CARB

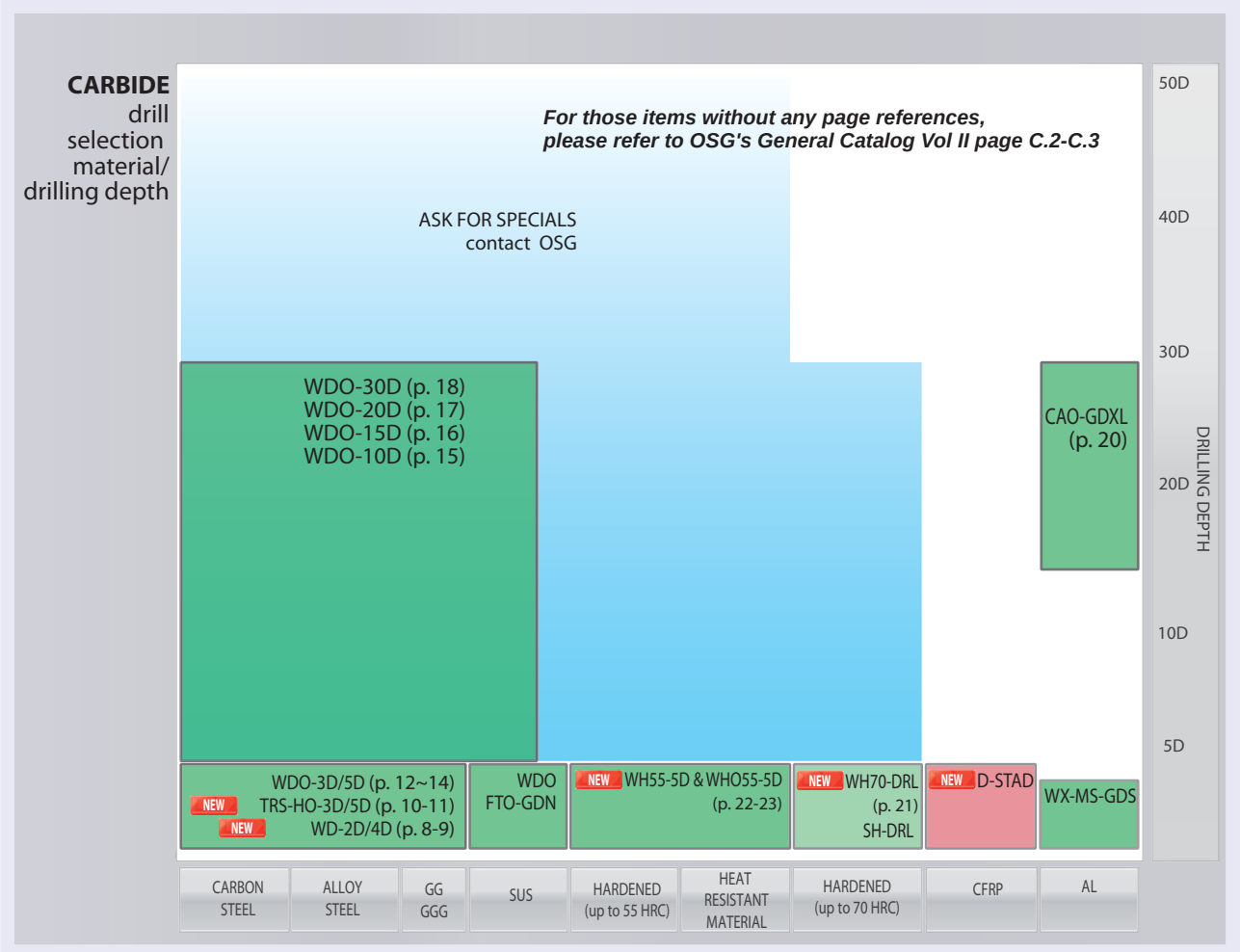


SPOTTING/CHAMFERING DRILLS CARBIDE: FX-LDS
CARBIDE: HYP-LDS INDEXABLE: HY-PRO-CARB

OSG's 1st choice
recommended

Drill Product Map





WD-2D

HIGH PERFORMANCE
- General purpose 2D drill

HIGH PERFORMANCE
- 2D Bohrer-Allgemeine Anwendungen

ALTA PRESTAZIONE
- 2D senza fori raccomandato per applicazioni generali

HAUTE PERFORMANCE
- Foret 2D application générale

HIGH PERFORMANCE
- Universalt 2D bor

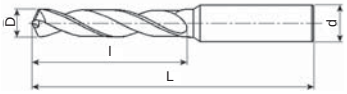
HIGH PERFORMANCE
- Allround 2D

ALTAS PRESTACIONES
- Broca 2D empleo general

Высокая производительность
- Многоцелевое сверло 2D

AVAILABLE MARCH 2012

CARBIDE | WDI | 30° | FIT | 140° | h8 | min-1 p.27



EDP	D	L	l	d	Stock	Price
3320200	2	62	14	4	●	
3320250	2,5	62	14	4	●	
3320260	2,6	62	14	4	●	
3320300	3	66	20	4	●	
3320330	3,3	66	20	4	●	
3320340	3,4	66	20	4	●	
3320350	3,5	66	20	4	●	
3320400	4	66	24	4	●	
3320420	4,2	66	24	6	●	
3320430	4,3	66	24	6	●	
3320450	4,5	66	24	6	●	
3320500	5	66	28	6	●	
3320510	5,1	66	28	6	●	
3320520	5,2	66	28	6	●	
3320550	5,5	66	28	6	●	
3320600	6	66	28	6	●	

EDP	D	L	l	d	Stock	Price
3320680	6,8	79	34	8	●	
3320690	6,9	79	34	8	●	
3320700	7	79	34	8	●	
3320800	8	79	41	8	●	
3320850	8,5	89	47	10	●	
3320860	8,6	89	47	10	●	
3320880	8,8	89	47	10	●	
3320900	9	89	47	10	●	
3320950	9,5	89	47	10	●	
3321000	10	89	47	10	●	
3321030	10,3	102	55	12	●	
3321040	10,4	102	55	12	●	
3321050	10,5	102	55	12	●	
3321080	10,8	102	55	12	●	
3321100	11	102	55	12	●	
3321200	12	102	55	12	●	

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**	**Tiall**	**Inc**
○	○	◎						

● Delivery from stock
○ Available on short notice

WD-4D

HIGH PERFORMANCE
- General purpose 4D drill

HIGH PERFORMANCE
- 4D Bohrer-Allgemeine Anwendungen

ALTA PRESTAZIONE
- 4D senza fori raccomandato per applicazioni generali

HAUTE PERFORMANCE
- Foret 4D application générale

HIGH PERFORMANCE
- Universalt 4D bor

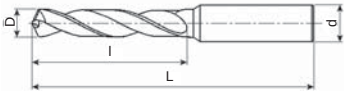
HIGH PERFORMANCE
- Allround 4D

ALTAS PRESTACIONES
- Broca 4D empleo general

Высокая производительность
- Многоцелевое сверло 4D

AVAILABLE MARCH 2012

CARBIDE | WDI | 30° | FIT | 140° | h8 | min⁻¹ p.27



EDP	D	L	l	d	Stock	Price
3322200	2	66	20	4	●	
3322250	2,5	66	20	4	●	
3322260	2,6	66	20	4	●	
3322300	3	74	28	4	●	
3322330	3,3	74	28	4	●	
3322340	3,4	74	28	4	●	
3322350	3,5	74	28	4	●	
3322400	4	74	36	4	●	
3322420	4,2	74	36	6	●	
3322430	4,3	74	36	6	●	
3322450	4,5	74	36	6	●	
3322500	5	82	44	6	●	
3322510	5,1	82	44	6	●	
3322520	5,2	82	44	6	●	
3322550	5,5	82	44	6	●	
3322600	6	82	44	6	●	
3322680	6,8	91	53	8	●	
3322690	6,9	91	53	8	●	
3322700	7	91	53	8	●	
3322800	8	91	53	8	●	
3322850	8,5	103	61	10	●	
3322860	8,6	103	61	10	●	
3322880	8,8	103	61	10	●	
3322900	9	103	61	10	●	

EDP	D	L	l	d	Stock	Price
3322950	9,5	103	61	10	●	
3323000	10	103	61	10	●	
3323030	10,3	118	71	12	●	
3323040	10,4	118	71	12	●	
3323050	10,5	118	71	12	●	
3323100	11	118	71	12	●	
3323200	12	118	71	12	●	
3323250	12,5	124	77	13	●	
3323300	13	124	77	14	●	
3323350	13,5	124	77	14	●	
3323400	14	124	77	14	●	
3323450	14,5	133	83	16	●	
3323500	15	133	83	16	●	
3323550	15,5	133	83	16	●	
3323600	16	133	83	16	●	
3323650	16,5	143	93	18	●	
3323700	17	143	93	18	●	
3323750	17,5	143	93	18	●	
3323800	18	143	93	18	●	
3323850	18,5	153	101	20	●	
3323900	19	153	101	20	●	
3323950	19,5	153	101	20	●	
3324000	20	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**	**Tiall**	**Inc**
○	○	◎						

TRS-HO-3D

HIGH PERFORMANCE
- Coolant through, 3 flutes, high feed drilling, for 3XD drilling

HIGH PERFORMANCE
- Innenkühlung , 3 Schneiden , Hochleistungsbohrer , 3xD

ALTA PRESTAZIONE
- Con foro di lubrificazione, 3 eliche, alto avanzamento, 3 D

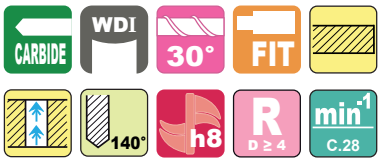
HAUTE PERFORMANCE
- Arrosage interne, 3 lèvres, perçage haute vitesse, perçage 3D

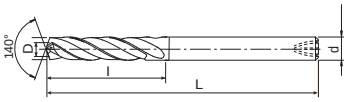
HIGH PERFORMANCE
- Indvendig køling, 3 skær, high feed boring, 3D

HIGH PERFORMANCE
- Kylkanalsborr med 3-skär, hög matning, 3xD

ALTAS PRESTACIONES
- Refrigeración interna, 3 labios, para gran avance, tipo 3D

Высокая производительность
- Трехзубые сверла с внутренними каналами и высокой подачей, 3D





EDP	D	L	l	d	Stock	Price
8660500	5	80	25	5	●	
8660510	5,1	82	26	6	●	
8660540	5,4	82	27	6	●	
8660580	5,8	82	29	6	●	
8660600	6	82	30	6	●	
8660650	6,5	88	33	7	●	
8660680	6,8	88	34	7	●	
8660700	7	88	35	7	●	
8660710	7,1	94	36	8	●	
8660760	7,6	94	38	8	●	
8660800	8	94	40	8	●	
8660810	8,1	101	41	9	●	
8660820	8,2	101	41	9	●	
8660830	8,3	101	42	9	●	
8660840	8,4	101	42	9	●	
8660850	8,5	101	43	9	●	
8660860	8,6	101	43	9	●	
8660870	8,7	101	44	9	●	
8660880	8,8	101	44	9	●	
8660890	8,9	101	45	9	●	
8660900	9	101	45	9	●	
8660910	9,1	106	46	10	●	
8660920	9,2	106	46	10	●	
8660930	9,3	106	47	10	●	
8660940	9,4	106	47	10	●	
8660950	9,5	106	48	10	●	

EDP	D	L	l	d	Stock	Price
8660960	9,6	106	48	10	●	
8660970	9,7	106	49	10	●	
8660980	9,8	106	49	10	●	
8660990	9,9	106	50	10	●	
8661000	10	106	50	10	●	
8661020	10,2	113	51	11	●	
8661030	10,3	113	52	11	●	
8661040	10,4	113	52	11	●	
8661050	10,5	113	53	11	●	
8661080	10,8	113	54	11	●	
8661100	11	113	55	11	●	
8661110	11,1	120	56	12	●	
8661120	11,2	120	56	12	●	
8661180	11,8	120	59	12	●	
8661190	11,9	120	60	12	●	
8661200	12	120	60	12	●	
8661250	12,5	128	63	13	●	
8661300	13	128	65	13	●	
8661350	13,5	134	68	14	●	
8661400	14	134	70	14	●	
8661450	14,5	140	73	15	●	
8661500	15	140	75	15	●	
8661600	16	145	80	16	●	
8661700	17	150	85	17	●	
8661800	18	155	90	18	●	

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	Tiall	Inc
	◎	◎					○	

● Delivery from stock
○ Available on short notice

TRS-HO-5D

HIGH PERFORMANCE
- Coolant through, 3 flutes, high feed drilling, for 5XD drilling

HIGH PERFORMANCE
- Innenkühlung , 3 Schneiden , Hochleistungsbohrer , 5xD

ALTA PRESTAZIONE
- Con foro di lubrificazione, 3 eliche, alto avanzamento, 5 D

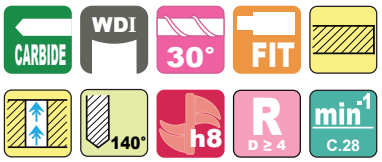
HAUTE PERFORMANCE
- Arrosage interne, 3 lèvres, perçage haute vitesse, perçage 5D

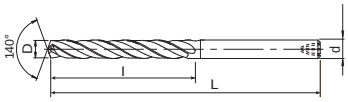
HIGH PERFORMANCE
- Indvendig køling, 3 skær, high feed boring, 5D

HIGH PERFORMANCE
- Kylkanalsborr med 3-skär, hög matning, 5xD

ALTAS PRESTACIONES
- Refrigeración interna, 3 labios, para gran avance, tipo 5D

Высокая производительность
- Трехзубые сверла с внутренними каналами и высокой подачей, 5D





EDP	D	L	l	d	Stock	Price
8662500	5	95	45	5	●	
8662510	5,1	100	41	6	●	
8662520	5,2	100	42	6	●	
8662550	5,5	100	44	6	●	
8662580	5,8	100	47	6	●	
8662600	6	100	48	6	●	
8662620	6,2	109	50	7	●	
8662650	6,5	109	52	7	●	
8662680	6,8	109	55	7	●	
8662690	6,9	109	56	7	●	
8662700	7	109	56	7	●	
8662710	7,1	118	57	8	●	
8662730	7,3	118	59	8	●	
8662750	7,5	118	60	8	●	
8662760	7,6	118	61	8	●	
8662800	8	118	64	8	●	
8662820	8,2	128	66	9	●	
8662850	8,5	128	68	9	●	
8662880	8,8	128	71	9	●	
8662900	9	128	72	9	●	
8662950	9,5	136	76	10	●	
8662960	9,6	136	77	10	●	

EDP	D	L	l	d	Stock	Price
8662980	9,8	136	79	10	●	
8663000	10	136	80	10	●	
8663030	10,3	146	83	11	●	
8663040	10,4	146	84	11	●	
8663050	10,5	146	84	11	●	
8663080	10,8	146	87	11	●	
8663100	11	146	88	11	●	
8663110	11,1	156	89	12	●	
8663200	12	156	96	12	●	
8663250	12,5	167	100	13	●	
8663300	13	167	104	13	●	
8663350	13,5	176	108	14	●	
8663400	14	176	112	14	●	
8663450	14,5	185	116	15	●	
8663500	15	185	120	15	●	
8663550	15,5	193	124	16	●	
8663600	16	193	128	16	●	
8663700	17	201	136	17	●	
8663750	17,5	209	140	18	●	
8663800	18	209	144	18	●	
8663850	18,5	217	148	19	●	

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	Tiall	Inc
	◎	◎					○	

● Delivery from stock
○ Available on short notice

WDO-3D

HIGH PERFORMANCE
- Coolant through

3 D drilling

HIGH PERFORMANCE
- Mit innerer Kühlmittelzufuhr

3 D Bohren

ALTA PRESTAZIONE
- Fori di lubrificazione centrali

3 D foratura

HAUTE PERFORMANCE
- Avec arrosage central

Forage 3 D

HIGH PERFORMANCE
- Kølekanaler

3 D boring

HIGH PERFORMANCE
- Kylkanaler

3 D borrning

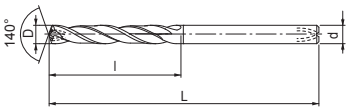
ALTAS PRESTACIONES
- Refrigeración interna

Taladrado 3 D

Высокая производительность
- С каналами для СОЖ

Сверление глубиной 3 D

CARBIDE | WDI | 30° | FIT | h8 | min⁻¹ p.28



EDP	D	L	l	d	Stock	Price
8630280	2,8	66	17	3	●	
8630290	2,9	66	18	3	●	
8630300	3,0	66	18	3	●	
8630310	3,1	74	19	4	●	
8630320	3,2	74	20	4	●	
8630330	3,3	74	20	4	●	
8630340	3,4	74	21	4	●	
8630350	3,5	74	21	4	●	
8630360	3,6	74	22	4	●	
8630370	3,7	74	23	4	●	
8630380	3,8	74	23	4	●	
8630390	3,9	74	24	4	●	
8630400	4,0	74	24	4	●	
8630410	4,1	80	25	5	●	
8630420	4,2	80	26	5	●	
8630430	4,3	80	26	5	●	
8630440	4,4	80	27	5	●	
8630450	4,5	80	27	5	●	
8630460	4,6	80	28	5	●	
8630470	4,7	80	29	5	●	
8630480	4,8	80	29	5	●	
8630490	4,9	80	30	5	●	
8630500	5,0	80	25	5	●	
8630510	5,1	82	26	6	●	
8630520	5,2	82	26	6	●	
8630530	5,3	82	27	6	●	
8630540	5,4	82	27	6	●	
8630550	5,5	82	28	6	●	
8630560	5,6	82	28	6	●	
8630570	5,7	82	29	6	●	
8630580	5,8	82	29	6	●	
8630590	5,9	82	30	6	●	
8630600	6,0	82	30	6	●	
48152061	6,1	88	31	8	●	
48152062	6,2	88	31	8	●	
48152063	6,3	88	32	8	●	
48152064	6,4	88	32	8	●	
48152065	6,5	88	33	8	●	
48152066	6,6	88	33	8	●	
48152067	6,7	88	34	8	●	
48152068	6,8	88	34	8	●	
48152069	6,9	88	35	8	●	
48152070	7,0	88	35	8	●	
8630710	7,1	94	36	8	●	
8630720	7,2	94	36	8	●	
8630730	7,3	94	37	8	●	
8630740	7,4	94	37	8	●	
8630750	7,5	94	38	8	●	
8630760	7,6	94	38	8	●	
8630770	7,7	94	39	8	●	
8630780	7,8	94	39	8	●	
8630790	7,9	94	40	8	●	
8630800	8,0	94	40	8	●	
48152081	8,1	101	41	10	●	

EDP	D	L	l	d	Stock	Price
48152082	8,2	101	41	10	●	
48152083	8,3	101	42	10	●	
48152084	8,4	101	42	10	●	
48152085	8,5	101	43	10	●	
48152086	8,6	101	43	10	●	
48152087	8,7	101	43	10	●	
48152088	8,8	101	44	10	●	
48152089	8,9	101	45	10	●	
48152090	9,0	101	45	10	●	
8630910	9,1	106	46	10	●	
8630920	9,2	106	46	10	●	
8630930	9,3	106	47	10	●	
8630940	9,4	106	47	10	●	
8630950	9,5	106	48	10	●	
8630960	9,6	106	48	10	●	
8630970	9,7	106	49	10	●	
8630980	9,8	106	49	10	●	
8630990	9,9	106	50	10	●	
8631000	10.0	106	50	10	●	
48152101	10,1	113	51	12	●	
48152102	10,2	113	51	12	●	
48152103	10,3	113	52	12	●	
48152104	10,4	113	52	12	●	
48152105	10,5	113	53	12	●	
48152106	10,6	113	53	12	●	
48152107	10,7	113	54	12	●	
48152108	10,8	113	54	12	●	
48152109	10,9	113	55	12	●	
48152110	11,0	113	55	12	●	
8631110	11,1	120	56	12	●	
8631120	11,2	120	56	12	●	
8631130	11,3	120	57	12	●	
8631140	11,4	120	57	12	●	
8631150	11,5	120	58	12	●	
8631160	11,6	120	58	12	●	
8631170	11,7	120	59	12	●	
8631180	11,8	120	59	12	●	
8631190	11,9	120	60	12	●	
8631200	12,0	120	60	12	●	
48152125	12,5	128	63	14	●	
48152130	13,0	128	65	14	●	
8631350	13,5	134	68	14	●	
8631400	14,0	134	70	14	●	
48152145	14,5	140	73	16	●	
48152150	15,0	140	75	16	●	
8631550	15,5	145	78	16	●	
8631600	16,0	145	80	16	●	
48152165	16,5	150	83	18	●	
48152170	17,0	150	85	18	●	
8631750	17,5	155	88	18	●	
8631800	18,0	155	90	18	●	
48152185	18,5	160	93	20	●	
48152190	19,0	160	95	20	●	
8631950	19,5	165	98	20	●	
8632000	20,0	165	100	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**	**Tiall**	**Inc**
○	◎	◎	○		○	○	◎	

● Delivery from stock
○ Available on short notice

WDO-5D

HIGH PERFORMANCE
- Coolant through

5 D drilling

HIGH PERFORMANCE
- Mit innerer Kühlmittelzufuhr

5 D Bohren

ALTA PRESTAZIONE
- Fori di lubrificazione centrali

5 D foratura

HAUTE PERFORMANCE
- Avec arrosage central

Forage 5 D

HIGH PERFORMANCE
- Kølekanaler

5 D boring

HIGH PERFORMANCE
- Kylkanaler

5 D borrning

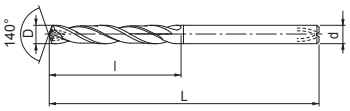
ALTAS PRESTACIONES
- Refrigeración interna

Taladrado 5 D

Высокая производительность
- С каналами для СОЖ

Сверление глубиной 5 D

CARBIDE | WDI | 30° | FIT | h8 | min⁻¹ p.28



EDP	D	L	l	d	Stock	Price	EDP	D	L	l	d	Stock	Price
8632280	2,80	78	26	3	●		8632760	7,60	118	61	8	●	
8632290	2,90	78	27	3	○		8632770	7,70	118	62	8	●	
8632300	3,00	78	27	3	●		8632780	7,80	118	63	8	●	
8632310	3,10	86	28	4	●		8632790	7,90	118	64	8	●	
8632320	3,20	86	29	4	●		8632800	8,00	118	64	8	●	
8632330	3,30	86	30	4	●		48153081	8,10	128	65	10	●	
8632340	3,40	86	31	4	●		48153082	8,20	128	66	10	●	
8632350	3,50	86	32	4	●		48153083	8,30	128	67	10	●	
8632360	3,60	86	33	4	●		48153084	8,40	128	68	10	●	
8632366	3,66	86	33	4	○		48153085	8,50	128	68	10	●	
8632368	3,68	86	34	4	○		48153086	8,60	128	69	10	●	
8632370	3,70	86	34	4	●		48153087	8,70	128	70	10	●	
8632380	3,80	86	35	4	●		48153088	8,80	128	71	10	●	
8632390	3,90	86	36	4	●		48153089	8,90	128	72	10	●	
8632400	4,00	86	36	4	●		48153090	9,00	128	72	10	●	
8632410	4,10	95	37	5	●		8632910	9,10	136	73	10	●	
8632420	4,20	95	38	5	●		8632920	9,20	136	74	10	●	
8632430	4,30	95	39	5	●		8632930	9,30	136	75	10	●	
8632440	4,40	95	40	5	●		8632940	9,40	136	76	10	●	
8632450	4,50	95	41	5	●		8632950	9,50	136	76	10	●	
8632460	4,60	95	42	5	●		8632960	9,60	136	77	10	●	
8632462	4,62	95	42	5	○		8632970	9,70	136	78	10	●	
8632464	4,64	95	42	5	○		8632980	9,80	136	79	10	●	
8632470	4,70	95	43	5	●		8632990	9,90	136	80	10	●	
8632480	4,80	95	44	5	●		8633000	10,00	136	80	10	●	
8632490	4,90	95	45	5	●		48153101	10,10	146	81	12	●	
8632500	5,00	95	45	5	●		48153102	10,20	146	82	12	●	
8632510	5,10	100	41	6	●		48153103	10,30	146	83	12	●	
8632520	5,20	100	42	6	●		48153104	10,40	146	84	12	●	
8632530	5,30	100	43	6	●		48153105	10,50	146	84	12	●	
8632540	5,40	100	44	6	●		48153106	10,60	146	85	12	●	
8632550	5,50	100	44	6	●		48153107	10,70	146	86	12	●	
8632560	5,60	100	45	6	●		48153108	10,80	146	87	12	●	
8632570	5,70	100	46	6	●		48153109	10,90	146	88	12	●	
8632580	5,80	100	47	6	●		48153110	11,00	146	88	12	●	
8632590	5,90	100	48	6	●		8633110	11,10	156	89	12	●	
8632600	6,00	100	48	6	●		8633120	11,20	156	90	12	●	
48153061	6,10	109	49	8	●		8633130	11,30	156	91	12	●	
48153062	6,20	109	50	8	●		8633140	11,40	156	92	12	●	
48153063	6,30	109	51	8	●		8633150	11,50	156	92	12	●	
48153064	6,40	109	52	8	●		8633160	11,60	156	93	12	●	
48153065	6,50	109	52	8	●		8633170	11,70	156	94	12	●	
48153066	6,60	109	53	8	●		8633180	11,80	156	95	12	●	
48153067	6,70	109	54	8	●		8633190	11,90	156	96	12	●	
48153068	6,80	109	55	8	●		8633200	12,00	156	96	12	●	
48153069	6,90	109	56	8	●		48153125	12,50	167	100	14	●	
48153070	7,00	109	56	8	●		48153130	13,00	167	104	14	●	
8632710	7,10	118	57	8	●		8633350	13,50	176	108	14	●	
8632720	7,20	118	58	8	●		8633400	14,00	176	112	14	●	
8632730	7,30	118	59	8	●		48153145	14,50	185	116	16	●	
8632740	7,40	118	60	8	●		48153150	15,00	185	120	16	●	
8632750	7,50	118	60	8	●		8633550	15,50	193	124	16	●	

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

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◎	◎	◎	◎	◎	○	○		◎
SKD	GG	GGG	Cu	Al	AC	Ti	Tiall	Inc
○	◎	◎	○		○	○	◎	

● Delivery from stock
○ Available on short notice

WDO-5D

HIGH PERFORMANCE
- Coolant through

5 D drilling

HIGH PERFORMANCE
- Mit innerer Kühlmittelzufuhr

5 D Bohren

ALTA PRESTAZIONE
- Fori di lubrificazione centrali

5 D foratura

HAUTE PERFORMANCE
- Avec arrosage central

Forage 5 D

HIGH PERFORMANCE
- Kølekanaler

5 D boring

HIGH PERFORMANCE
- Kylkanaler

5 D borrning

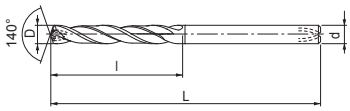
ALTAS PRESTACIONES
- Refrigeración interna

Taladrado 5 D

Высокая производительность
- С каналами для СОЖ

Сверление глубиной 5 D

CARBIDE | WDI | 30° | FIT | h8 | min⁻¹ p.28



EDP	D	L	l	d	Stock	Price
8633600	16,00	193	128	16	●	
48153165	16,50	201	132	18	●	
48153170	17,00	201	136	18	●	
8633750	17,50	209	140	18	●	
8633800	18,00	209	144	18	●	

EDP	D	L	l	d	Stock	Price
48153185	18,50	217	148	20	●	
48153190	19,00	217	152	20	●	
8633950	19,50	225	156	20	●	
8634000	20,00	225	160	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**	**Tiall**	**Inc**
○	◎	◎	○		○	○	◎	

● Delivery from stock
○ Available on short notice

WDO-10D

HIGH PERFORMANCE
- For deep drilling in steel

Extra long non step drilling 10 D

HIGH PERFORMANCE
- Zum Tiefbohren im Stahl

Extra länge Ohne Step 10 D

ALTA PRESTAZIONE
- Forature profonde

Extra lunga foratura continua 10 D

HAUTE PERFORMANCE
- Pour le forage profond dans l'acier

Extra long forage en continu 10 D

HIGH PERFORMANCE
- For dyb boring i stål

Ekstra lang boring uden udspåning 10 D

HIGH PERFORMANCE
- Step fri borrning i stål

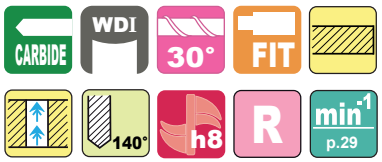
Extra lång step fri borrning 10 D

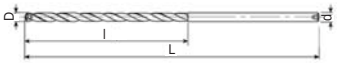
ALTAS PRESTACIONES
- Para taladrado profundo en acero

Extra-larga taladrado ininterrumpido 10 D

Высокая производительность
- Для глубокого сверления в стали

Непрерывное сверление глубиной 10 D





EDP	D	L	l	d	Stock	Price	EDP	D	L	l	d	Stock	Price
48149020	2,0	75	26	3	●		48149071	7,1	155	100	8	●	
48149021	2,1	75	33	3	●		48149072	7,2	155	100	8	●	
48149022	2,2	75	33	3	●		48149073	7,3	155	100	8	●	
48149023	2,3	75	33	3	●		48149074	7,4	155	100	8	●	
48149024	2,4	75	33	3	●		48149075	7,5	155	100	8	●	
48149025	2,5	75	33	3	●		48149076	7,6	155	105	8	●	
48149026	2,6	90	40	3	●		48149077	7,7	155	105	8	●	
48149027	2,7	90	40	3	●		48149078	7,8	155	105	8	●	
48149028	2,8	90	40	3	●		48149079	7,9	155	105	8	●	
48149029	2,9	90	40	3	●		48149080	8,0	155	105	8	●	
48149030	3,0	90	40	3	●		48149081	8,1	165	110	10	●	
48149031	3,1	100	45	4	●		48149082	8,2	165	110	10	●	
48149032	3,2	100	45	4	●		48149083	8,3	165	110	10	●	
48149033	3,3	100	45	4	●		48149084	8,4	165	110	10	●	
48149034	3,4	100	50	4	●		48149085	8,5	165	110	10	●	
48149035	3,5	100	50	4	●		48149086	8,6	165	115	10	●	
48149036	3,6	100	50	4	●		48149087	8,7	165	115	10	●	
48149037	3,7	100	50	4	●		48149088	8,8	165	115	10	●	
48149038	3,8	100	50	4	●		48149089	8,9	165	115	10	●	
48149039	3,9	100	50	4	●		48149090	9,0	165	115	10	●	
48149040	4,0	100	50	4	●		48149091	9,1	190	125	10	●	
48149041	4,1	115	55	6	●		48149092	9,2	190	125	10	●	
48149042	4,2	115	55	6	●		48149093	9,3	190	125	10	●	
48149043	4,3	115	60	6	●		48149094	9,4	190	125	10	●	
48149044	4,4	115	60	6	●		48149095	9,5	190	125	10	●	
48149045	4,5	115	60	6	●		48149096	9,6	190	130	10	●	
48149046	4,6	115	60	6	●		48149097	9,7	190	130	10	●	
48149047	4,7	115	65	6	●		48149098	9,8	190	130	10	●	
48149048	4,8	115	65	6	●		48149099	9,9	190	130	10	●	
48149049	4,9	115	65	6	●		48149100	10,0	190	130	10	●	
48149050	5,0	115	65	6	●		48149101	10,1	205	140	12	●	
48149051	5,1	128	70	6	●		48149102	10,2	205	140	12	●	
48149052	5,2	128	70	6	●		48149103	10,3	205	140	12	●	
48149053	5,3	128	70	6	●		48149104	10,4	205	140	12	●	
48149054	5,4	128	78	6	●		48149105	10,5	205	140	12	●	
48149055	5,5	128	78	6	●		48149106	10,6	205	140	12	●	
48149056	5,6	128	78	6	●		48149107	10,7	205	140	12	●	
48149057	5,7	128	78	6	●		48149108	10,8	205	145	12	●	
48149058	5,8	128	78	6	●		48149109	10,9	205	145	12	●	
48149059	5,9	128	78	6	●		48149110	11,0	205	145	12	●	
48149060	6,0	128	78	6	●		48149111	11,1	215	155	12	●	
48149061	6,1	140	87	8	●		48149112	11,2	215	155	12	●	
48149062	6,2	140	87	8	●		48149113	11,3	215	155	12	●	
48149063	6,3	140	87	8	●		48149114	11,4	215	155	12	●	
48149064	6,4	140	87	8	●		48149115	11,5	215	155	12	●	
48149065	6,5	140	87	8	●		48149116	11,6	215	155	12	●	
48149066	6,6	140	87	8	●		48149117	11,7	215	155	12	●	
48149067	6,7	140	87	8	●		48149118	11,8	215	155	12	●	
48149068	6,8	140	90	8	●		48149119	11,9	215	155	12	●	
48149069	6,9	140	90	8	●		48149120	12,0	215	155	12	●	
48149070	7,0	140	90	8	●								

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	Tiall	Inc
	◎	◎						

● Delivery from stock
○ Available on short notice

WDO-15D

HIGH PERFORMANCE
- For deep drilling in steel

Extra long non step drilling 15 D

HIGH PERFORMANCE
- Zum Tiefbohren im Stahl

Extra länge Ohne Step 15 D

ALTA PRESTAZIONE
- Forature profonde

Extra lunga foratura continua 15 D

HAUTE PERFORMANCE
- Pour le forage profond dans l'acier

Extra long forage en continu 15 D

HIGH PERFORMANCE
- For dyb boring i stål

Ekstra lang boring uden udspåning 15 D

HIGH PERFORMANCE
- Step fri borrning i stål

Extra lång step fri borrning 15 D

ALTAS PRESTACIONES
- Para taladrado profundo en acero

Extra-larga taladrado ininterrumpido 15 D

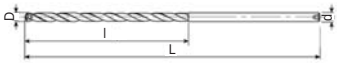
Высокая производительность
- Для глубокого сверления в стали

Непрерывное сверление глубиной 15 D

AVAILABLE FEBRUARY 2012

CARBIDE | WDI | 30° | FIT | 140°

Ø3 -0.005~-0.024 | Ø3,1~Ø6 -0.01~-0.032 | Ø6,1~Ø10 -0.015~-0.04 | Ø10,1~Ø12 -0.02~-0.05 | R | min⁻¹ p.29



EDP	D	L	l	d	Stock	Price
48150030	3,0	105	55	3	●	
48150031	3,1	125	60	4	○	
48150032	3,2	125	60	4	○	
48150033	3,3	125	60	4	○	
48150034	3,4	125	65	4	○	
48150035	3,5	125	65	4	●	
48150036	3,6	125	65	4	○	
48150037	3,7	125	65	4	○	
48150038	3,8	125	75	4	○	
48150039	3,9	125	75	4	○	
48150040	4,0	125	75	4	●	
48150041	4,1	140	75	6	○	
48150042	4,2	140	75	6	○	
48150043	4,3	140	85	6	○	
48150044	4,4	140	85	6	○	
48150045	4,5	140	85	6	●	
48150046	4,6	140	85	6	○	
48150047	4,7	140	85	6	○	
48150048	4,8	140	90	6	○	
48150049	4,9	140	90	6	○	
48150050	5,0	140	90	6	●	
48150051	5,1	160	95	6	○	
48150052	5,2	160	95	6	○	
48150053	5,3	160	95	6	○	
48150054	5,4	160	110	6	○	
48150055	5,5	160	110	6	●	
48150056	5,6	160	110	6	○	
48150057	5,7	160	110	6	○	
48150058	5,8	160	110	6	○	
48150059	5,9	160	110	6	○	
48150060	6,0	160	110	6	●	
48150061	6,1	175	120	8	○	
48150062	6,2	175	120	8	○	
48150063	6,3	175	120	8	○	
48150064	6,4	175	120	8	○	
48150065	6,5	175	120	8	●	
48150066	6,6	175	120	8	○	
48150067	6,7	175	120	8	○	
48150068	6,8	175	125	8	○	
48150069	6,9	175	125	8	○	
48150070	7,0	175	125	8	●	
48150071	7,1	195	135	8	○	
48150072	7,2	195	135	8	○	
48150073	7,3	195	135	8	○	
48150074	7,4	195	135	8	○	
48150075	7,5	195	135	8	●	
48150076	7,6	195	145	8	○	
48150077	7,7	195	145	8	○	
48150078	7,8	195	145	8	○	
48150079	7,9	195	145	8	○	
48150080	8,0	195	145	8	●	
48150081	8,1	210	155	10	○	
48150082	8,2	210	155	10	○	
48150083	8,3	210	155	10	○	
48150084	8,4	210	155	10	○	
48150085	8,5	210	155	10	●	
48150086	8,6	210	160	10	○	
48150087	8,7	210	160	10	○	
48150088	8,8	210	160	10	○	
48150089	8,9	210	160	10	○	
48150090	9,0	210	160	10	●	
48150091	9,1	240	170	10	○	
48150092	9,2	240	170	10	○	
48150093	9,3	240	170	10	○	
48150094	9,4	240	170	10	○	
48150095	9,5	240	170	10	○	
48150096	9,6	240	180	10	○	
48150097	9,7	240	180	10	○	
48150098	9,8	240	180	10	○	
48150099	9,9	240	180	10	○	
48150100	10,0	240	180	10	●	
48150101	10,1	260	190	12	○	
48150102	10,2	260	190	12	○	
48150103	10,3	260	190	12	○	
48150104	10,4	260	190	12	○	
48150105	10,5	260	190	12	○	
48150106	10,6	260	190	12	○	
48150107	10,7	260	200	12	○	
48150108	10,8	260	200	12	○	
48150109	10,9	260	200	12	○	
48150110	11,0	260	200	12	●	
48150111	11,1	280	210	12	○	
48150112	11,2	280	210	12	○	
48150113	11,3	280	210	12	○	
48150114	11,4	280	210	12	○	
48150115	11,5	280	210	12	○	
48150116	11,6	280	210	12	○	
48150117	11,7	280	210	12	○	
48150118	11,8	280	210	12	○	
48150119	11,9	280	215	12	○	
48150120	12,0	280	215	12	●	

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	Tiall	Inc
	◎	◎						

● Delivery from stock
○ Available on short notice

WDO-20D

HIGH PERFORMANCE
- For deep drilling in steel

Extra long non step drilling 20 D

HIGH PERFORMANCE
- Zum Tiefbohren im Stahl

Extra länge Ohne Step 20 D

ALTA PRESTAZIONE
- Forature profonde

Extra lunga foratura continua 20 D

HAUTE PERFORMANCE
- Pour le forage profond dans l'acier

Extra long forage en continu 20 D

HIGH PERFORMANCE
- For dyb boring i stål

Ekstra lang boring uden udspåning 20 D

HIGH PERFORMANCE
- Step fri borrning i stål

Extra lång step fri borrning 20 D

ALTAS PRESTACIONES
- Para taladrado profundo en acero

Extra-larga taladrado ininterrumpido 20 D

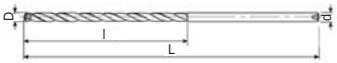
Высокая производительность
- Для глубокого сверления в стали

Непрерывное сверление глубиной 20 D

AVAILABLE FEBRUARY 2012

CARBIDE | WDI | 30° | FIT | 140°

Ø3 -0.005~-0.024 | Ø3,1~Ø6 -0.01~-0.032 | Ø6,1~Ø10 -0.015~-0.04 | Ø10,1~Ø12 -0.02~-0.05 | R | min-1 p.29



EDP	D	L	l	d	Stock	Price
48200030	3,0	120	70	3	●	
48200031	3,1	140	80	4	○	
48200032	3,2	140	80	4	○	
48200033	3,3	140	80	4	○	
48200034	3,4	140	85	4	○	
48200035	3,5	140	85	4	●	
48200036	3,6	140	85	4	○	
48200037	3,7	140	85	4	○	
48200038	3,8	140	90	4	○	
48200039	3,9	140	90	4	○	
48200040	4,0	140	90	4	●	
48200041	4,1	165	100	6	○	
48200042	4,2	165	100	6	○	
48200043	4,3	165	110	6	○	
48200044	4,4	165	110	6	○	
48200045	4,5	165	110	6	●	
48200046	4,6	165	110	6	○	
48200047	4,7	165	110	6	○	
48200048	4,8	165	115	6	○	
48200049	4,9	165	115	6	○	
48200050	5,0	165	115	6	●	
48200051	5,1	190	120	6	○	
48200052	5,2	190	120	6	○	
48200053	5,3	190	120	6	○	
48200054	5,4	190	140	6	○	
48200055	5,5	190	140	6	●	
48200056	5,6	190	140	6	○	
48200057	5,7	190	140	6	○	
48200058	5,8	190	140	6	○	
48200059	5,9	190	140	6	○	
48200060	6,0	190	140	6	●	
48200061	6,1	210	155	8	○	
48200062	6,2	210	155	8	○	
48200063	6,3	210	155	8	○	
48200064	6,4	210	155	8	○	
48200065	6,5	210	155	8	●	
48200066	6,6	210	155	8	○	
48200067	6,7	210	155	8	○	
48200068	6,8	210	160	8	○	
48200069	6,9	210	160	8	○	
48200070	7,0	210	160	8	●	
48200071	7,1	230	170	8	○	
48200072	7,2	230	170	8	○	
48200073	7,3	230	170	8	○	
48200074	7,4	230	170	8	○	
48200075	7,5	230	170	8	●	

EDP	D	L	l	d	Stock	Price
48200076	7,6	230	180	8	○	
48200077	7,7	230	180	8	○	
48200078	7,8	230	180	8	○	
48200079	7,9	230	180	8	○	
48200080	8,0	230	180	8	●	
48200081	8,1	260	195	8	○	
48200082	8,2	260	195	10	○	
48200083	8,3	260	195	10	○	
48200084	8,4	260	195	10	○	
48200085	8,5	260	195	10	●	
48200086	8,6	260	210	10	○	
48200087	8,7	260	210	10	○	
48200088	8,8	260	210	10	○	
48200089	8,9	260	210	10	○	
48200090	9,0	260	210	10	●	
48200091	9,1	290	220	10	○	
48200092	9,2	290	220	10	○	
48200093	9,3	290	220	10	○	
48200094	9,4	290	220	10	○	
48200095	9,5	290	220	10	○	
48200096	9,6	290	230	10	○	
48200097	9,7	290	230	10	○	
48200098	9,8	290	230	10	○	
48200099	9,9	290	230	10	○	
48200100	10,0	290	230	10	●	
48200101	10,1	310	250	12	○	
48200102	10,2	310	250	12	○	
48200103	10,3	310	250	12	○	
48200104	10,4	310	250	12	○	
48200105	10,5	310	250	12	○	
48200106	10,6	310	250	12	○	
48200107	10,7	310	250	12	○	
48200108	10,8	310	250	12	○	
48200109	10,9	310	250	12	○	
48200110	11,0	310	250	12	●	
48200111	11,1	330	270	12	○	
48200112	11,2	330	270	12	○	
48200113	11,3	330	270	12	○	
48200114	11,4	330	270	12	○	
48200115	11,5	330	270	12	○	
48200116	11,6	330	270	12	○	
48200117	11,7	330	270	12	○	
48200118	11,8	330	270	12	○	
48200119	11,9	330	270	12	○	
48200120	12,0	330	270	12	●	

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	Tiall	Inc
	◎	◎						

● Delivery from stock
○ Available on short notice

WDO-30D

HIGH PERFORMANCE
- For deep drilling in steel

Extra long non step drilling 30 D

HIGH PERFORMANCE
- Zum Tiefbohren im Stahl

Extra länge Ohne Step 30 D

ALTA PRESTAZIONE
- Forature profonde

Extra lunga foratura continua 30 D

HAUTE PERFORMANCE
- Pour le forage profond dans l'acier

Extra long forage en continu 30 D

HIGH PERFORMANCE
- For dyb boring i stål

Ekstra lang boring uden udspåning 30 D

HIGH PERFORMANCE
- Step fri borrning i stål

Extra lång step fri borrning 30 D

ALTAS PRESTACIONES
- Para taladrado profundo en acero

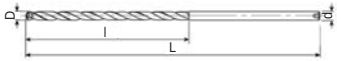
Extra-larga taladrado ininterrumpido 30 D

Высокая производительность
- Для глубокого сверления в стали

Непрерывное сверление глубиной 30 D

AVAILABLE FEBRUARY 2012

CARBIDE | WDI | 30° | FIT | 140° | Ø3,5 ~ Ø6 -0.01~ -0.032 | Ø6,1 ~ Ø10 -0.015~ -0.04 | R | min⁻¹ p.29



EDP	D	L	l	d	Stock	Price
48300035	3,5	185	116	4	●	
48200036	3,6	185	116	4	○	
48300037	3,7	185	116	4	○	
48300038	3,8	185	132	4	○	
48300039	3,9	185	132	4	○	
48300040	4,0	185	132	4	●	
48300041	4,1	215	140	6	○	
48300042	4,2	215	140	6	○	
48300043	4,3	215	150	6	○	
48300044	4,4	215	150	6	○	
48300045	4,5	215	150	6	●	
48300046	4,6	215	150	6	○	
48300047	4,7	215	150	6	○	
48300048	4,8	215	165	6	○	
48300049	4,9	215	165	6	○	
48300050	5,0	215	165	6	●	
48300051	5,1	250	180	6	○	
48300052	5,2	250	180	6	○	
48300053	5,3	250	180	6	○	
48300054	5,4	250	200	6	○	
48300055	5,5	250	200	6	●	
48300056	5,6	250	200	6	○	
48300057	5,7	250	200	6	○	
48300058	5,8	250	200	6	○	
48300059	5,9	250	200	6	○	
48300060	6,0	250	200	6	●	
48300061	6,1	280	215	8	○	
48300062	6,2	280	215	8	○	
48300063	6,3	280	215	8	○	
48300064	6,4	280	215	8	○	
48300065	6,5	280	215	8	●	
48300066	6,6	280	215	8	○	
48300067	6,7	280	215	8	○	

EDP	D	L	l	d	Stock	Price
48300068	6,8	280	230	8	○	
48300069	6,9	280	230	8	○	
48300070	7,0	280	230	8	●	
48300071	7,1	315	250	8	○	
48300072	7,2	315	250	8	○	
48300073	7,3	315	250	8	○	
48300074	7,4	315	250	8	○	
48300075	7,5	315	250	8	●	
48300076	7,6	315	265	8	○	
48300077	7,7	315	265	8	○	
48300078	7,8	315	265	8	○	
48300079	7,9	315	265	8	○	
48300080	8,0	315	265	8	●	
48300081	8,1	350	280	10	○	
48300082	8,2	350	280	10	○	
48300083	8,3	350	280	10	○	
48300084	8,4	350	280	10	○	
48300085	8,5	350	280	10	●	
48300086	8,6	350	300	10	○	
48300087	8,7	350	300	10	○	
48300088	8,8	350	300	10	○	
48300089	8,9	350	300	10	○	
48300090	9,0	350	300	10	●	
48300091	9,1	390	315	10	○	
48300092	9,2	390	315	10	○	
48300093	9,3	390	315	10	○	
48300094	9,4	390	315	10	○	
48300095	9,5	390	315	10	○	
48300096	9,6	390	330	10	○	
48300097	9,7	390	330	10	○	
48300098	9,8	390	330	10	○	
48300099	9,9	390	330	10	○	
48300100	10,0	390	330	10	●	

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	Tiall	Inc
	◎	◎						

● Delivery from stock
○ Available on short notice

FTO-GDXL

HIGH PERFORMANCE
- For deep drilling in steel

Extra long non step drilling
15 D, 20 D, 30 D

HIGH PERFORMANCE
- Zum Tiefbohren im Stahl

Extra länge Ohne Step
15 D,20D, 30 D

ALTA PRESTAZIONE
- Forature profonde

Extra lunga foratura continua
15 D, 20 D, 30 D

HAUTE PERFORMANCE
- Pour le forage profond dans l'acier

Extra long forage en continu
15 D, 20 D, 30 D

HIGH PERFORMANCE
- For dyb boring i stål

Ekstra lang boring uden udspåning
15 D, 20 D, 30 D

HIGH PERFORMANCE
- Step fri borrning i stål

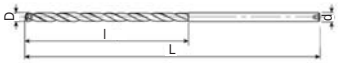
Extra lång step fri borrning
15 D, 20 D, 30 D

ALTAS PRESTACIONES
- Para taladrado profundo en acero

Extra-larga taladrado ininterrumpido
15 D, 20 D, 30 D

Высокая производительность
- Для глубокого сверления в стали

Непрерывное сверление глубиной
15 D, 20 D, 30 D



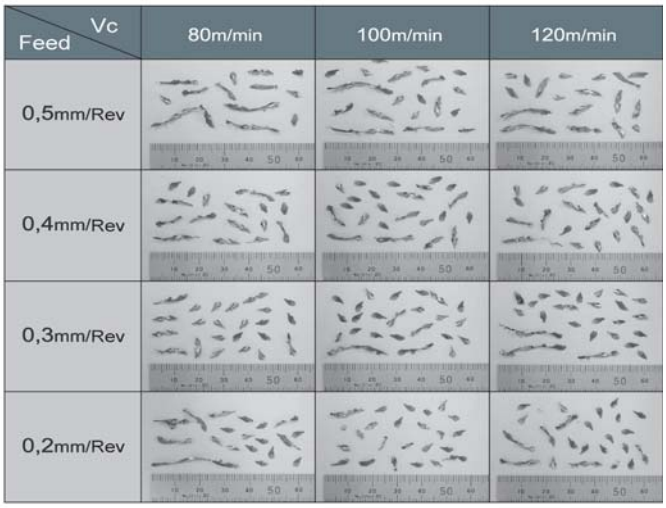
	EDP	D	L	l	d	Stock	Price
15 XD	8568130	3,0x15D	95	55	3	○	
	8568140	4,0x15D	115	75	4	○	
	8568150	5,0x15D	135	90	5	○	
	8568160	6,0x15D	155	110	6	○	
20 XD	8568340	4,0x20D	130	90	4	○	
	8568345	4,5x20D	160	110	5	○	
	8568350	5,0x20D	160	115	5	○	
	8568355	5,5x20D	185	140	6	○	
	8568360	6,0x20D	185	140	6	○	
30 XD	8568450	5,0x30D	215	165	5	○	
	8568460	6,0x30D	230	180	6	○	

	EDP	D	L	l	d	Stock	Price
15 XD	8568170	7,0x15D	175	125	7	○	
	8568180	8,0x15D	195	145	8	○	
	8568185	8,5x15D	210	155	9	○	
	8568200	10,0x15D	240	180	10	○	
20 XD	8568370	7,0x20D	210	160	7	○	
	8568380	8,0x20D	230	180	8	○	
	8568400	10,0x20D	290	230	10	○	
30 XD	8568480	8,0x30D	315	265	8	○	

Chip Shapes

Exellent chip evacuation due to specially developed geometry and wide chip room.

Tool	FTO-GDXL
Dimensions	D = 5 mm l = 115 mm L = 165 mm
Work Material	42CrMo4
Feed	0,2 ~ 0,5mm/rev
Depth to drill	100mm (Blind Hole)
Coolant	Emulsion
Machine	Vertical Machining Center



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	Tiall	Inc
	◎	◎						

● Delivery from stock
○ Available on short notice

CAO-GDXL

HIGH PERFORMANCE
- For deep drilling in Cu & Al alloys

Extra long non step drilling 15 D,20 D, 30 D

HIGH PERFORMANCE
- Zum Tiefbohren in Kupfer und Aluminium sowie Al-Legierungen

Extra länge Ohne Step 15 D, 20 D, 30 D

ALTA PRESTAZIONE
- Forature profonde per Cu & leghe di alluminio

Extra lunga foratura continua 15 D,20 D, 30 D

HAUTE PERFORMANCE
- Pour le forage profond dans Cu & alliages Al

Extra long forage en continu 15 D, 20 D, 30 D

HIGH PERFORMANCE
- Dyb boring i Cu & Al legering

Extra lang boring uden udspåning 15 D, 20 D, 30 D

HIGH PERFORMANCE
- For djup borrning i Cu. och Al.

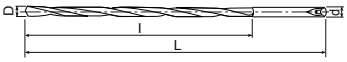
Extra lång step fri borrning 15 D, 20 D, 30 D

ALTAS PRESTACIONES
- Para taladrado profundo en cobre y aluminio aleados

Extra-larga taladrado ininterrumpido 15 D, 20 D, 30 D

Высокая производительность
- Для глубокого сверления медных и алюминиевых сплавов

Непрерывное сверление глубиной 15 D, 20 D, 30 D



	EDP	D	L	l	d	Stock	Price
15 XD	8567130	3,0x15D	105	55	3	●	
	8567140	4,0x15D	125	75	4	●	
	8567150	5,0x15D	140	90	5	●	
	8567160	6,0x15D	160	110	6	●	
	8567165	6,5x15D	175	120	7	●	
20 XD	8567340	4,0x20D	140	90	4	●	
	8567345	4,5x20D	165	110	5	●	
	8567350	5,0x20D	165	115	5	●	
	8567355	5,5x20D	190	140	6	●	
	8567360	6,0x20D	190	140	6	●	
30 XD	8567450	5,0x30D	215	165	5	●	
	8567455	5,5x30D	250	200	6	●	
	8567460	6,0x30D	250	200	6	●	

	EDP	D	L	l	d	Stock	Price
15 XD	8567170	7,0x15D	175	125	7	●	
	8567180	8,0x15D	195	145	8	●	
	8567190	9,0x15D	210	160	9	●	
	8567200	10,0x15D	240	180	10	●	
20 XD	8567370	7,0x20D	210	160	7	●	
	8567380	8,0x20D	230	180	8	●	
	8567390	9,0x20D	260	210	9	●	
	8567400	10,0x20D	290	230	10	●	
30 XD	8567470	7,0x30D	280	230	7	●	
	8567480	8,0x30D	315	265	8	●	

Non-step drilling using MQL Coolant of Aluminium Alloy up to 20 X D

This drill can drill in aluminium using mist coolant. There was less welding and it was able to achieve stable drilling.

Size	6 x 20D
Work material	A6061
Depth of Hole	120mm (Blind)
Coolant	MQL
Machine	Vertical Machining Center

■ After 400 holes

Drilling Speed	Feed Rate	Cutting Edge	Margin	Flute Face	Chip
130m/min	0,12mm/rev				
Wear Amount		0,030mm	0,068mm	0,227mm	
Drilling Speed	Feed Rate	Cutting Edge	Margin	Flute Face	Chip
200m/min	0,12mm/rev				
Wear Amount		0,059mm	0,078mm	0,146mm	

1mm

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	Tiall	Inc
			○	○	◎			

● Delivery from stock
○ Available on short notice

WH70-DRL

HIGH PERFORMANCE
- For hardened material up to 70 HRC

HIGH PERFORMANCE
- Für gehärtete Materialien bis 70 HRC

ALTA PRESTAZIONE
- Per acciai temprati fino a 70 HRC

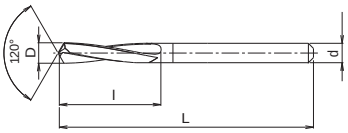
HAUTE PERFORMANCE
- Pour matériaux spérieur à 70 HRC

HIGH PERFORMANCE
- For hærdede materialer op til 70 HRC

HIGH PERFORMANCE
- För härdat stål upp till 70HRC

ALTAS PRESTACIONES
- Para aceros templados hasta 70 HRC

Высокая производительность
- Для закаленных материалов до 70 HRC



EDP	D	L	l	d	Stock	Price
3318200	2	42	12	3	●	
3318210	2,1	42	12	3	●	
3318220	2,2	43	13	3	●	
3318230	2,3	43	13	3	●	
3318240	2,4	44	14	3	●	
3318250	2,5	44	14	3	●	
3318260	2,6	44	14	3	●	
3318270	2,7	46	16	3	●	
3318280	2,8	46	16	3	●	
3318290	2,9	46	16	3	●	
3318300	3	46	16	3	●	
3318310	3,1	48	18	4	●	
3318320	3,2	48	18	4	●	
3318330	3,3	48	18	4	●	
3318340	3,4	50	20	4	●	
3318350	3,5	50	20	4	●	
3318360	3,6	50	20	4	●	
3318370	3,7	50	20	4	●	
3318380	3,8	52	22	4	●	
3318390	3,9	52	22	4	●	
3318400	4	52	22	4	●	
3318410	4,1	68	25	5	○	
3318420	4,2	68	25	5	●	
3318430	4,3	68	28	5	○	
3318440	4,4	68	28	5	○	
3318450	4,5	68	28	5	●	
3318460	4,6	68	28	5	○	
3318470	4,7	68	28	5	○	
3318480	4,8	68	32	5	○	
3318490	4,9	68	32	5	○	
3318500	5	68	32	5	●	
3318510	5,1	74	32	6	●	
3318520	5,2	74	32	6	●	
3318530	5,3	74	32	6	●	
3318540	5,4	74	35	6	●	
3318550	5,5	74	35	6	●	
3318560	5,6	74	35	6	●	
3318570	5,7	74	35	6	●	
3318580	5,8	74	35	6	●	
3318590	5,9	74	35	6	●	
3318600	6	74	35	6	●	
3318610	6,1	83	40	7	○	
3318620	6,2	83	40	7	○	
3318630	6,3	83	40	7	○	
3318640	6,4	83	40	7	○	
3318650	6,5	83	40	7	●	
3318660	6,6	83	40	7	○	
3318670	6,7	83	40	7	○	
3318680	6,8	83	45	7	●	
3318690	6,9	83	45	7	○	
3318700	7	83	45	7	●	

EDP	D	L	l	d	Stock	Price
3318710	7,1	94	45	8	○	
3318720	7,2	94	45	8	○	
3318730	7,3	94	45	8	○	
3318740	7,4	94	45	8	○	
3318750	7,5	94	45	8	●	
3318760	7,6	94	50	8	○	
3318770	7,7	94	50	8	○	
3318780	7,8	94	50	8	○	
3318790	7,9	94	50	8	○	
3318800	8	94	50	8	●	
3318810	8,1	101	50	9	○	
3318820	8,2	101	50	9	●	
3318830	8,3	101	50	9	○	
3318840	8,4	101	50	9	○	
3318850	8,5	101	50	9	●	
3318860	8,6	101	57	9	○	
3318870	8,7	101	57	9	●	
3318880	8,8	101	57	9	○	
3318890	8,9	101	57	9	○	
3318900	9	101	57	9	●	
3318910	9,1	106	57	10	○	
3318920	9,2	106	57	10	○	
3318930	9,3	106	57	10	○	
3318940	9,4	106	57	10	○	
3318950	9,5	106	57	10	●	
3318960	9,6	106	63	10	○	
3318970	9,7	106	63	10	○	
3318980	9,8	106	63	10	○	
3318990	9,9	106	63	10	○	
3319000	10	106	63	10	●	
3319010	10,1	113	63	11	○	
3319020	10,2	113	63	11	○	
3319030	10,3	113	63	11	●	
3319040	10,4	113	63	11	○	
3319050	10,5	113	63	11	●	
3319060	10,6	113	63	11	○	
3319070	10,7	113	71	11	○	
3319080	10,8	113	71	11	●	
3319090	10,9	113	71	11	●	
3319100	11	113	71	11	●	
3319110	11,1	120	71	12	○	
3319120	11,2	120	71	12	○	
3319130	11,3	120	71	12	○	
3319140	11,4	120	71	12	○	
3319150	11,5	120	71	12	●	
3319160	11,6	120	71	12	○	
3319170	11,7	120	71	12	○	
3319180	11,8	120	71	12	○	
3319190	11,9	120	76	12	○	
3319200	12	120	76	12	●	

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	Tiall	Inc

● Delivery from stock
○ Available on short notice

WH55-5D

HIGH PERFORMANCE
- For hardened material up to 55 HRC

5D drilling

HIGH PERFORMANCE
- Für gehärtete Materialien bis 55 HRC

5D Bohren

ALTA PRESTAZIONE
- Per acciai temprati fino a 55 HRC

5D foratura

HAUTE PERFORMANCE
- Pour matériaux spérieur à 55 HRC

Forage 5D

HIGH PERFORMANCE
- For hærdede materialer op til 55 HRC

5D boring

HIGH PERFORMANCE
- För härdat stål upp till 55HRC

5D borrning

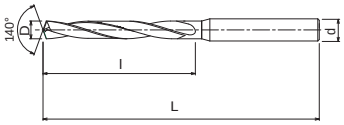
ALTAS PRESTACIONES
- Para aceros templados hasta 55 HRC

Taladrado 5D

Высокая производительность
- Для закаленных материалов до 55 HRC

Сверление 5D

CARBIDE | WDI | 12°~20° | FIT | h8 | min⁻¹ p.27



EDP	D	L	l	d	Stock	Price
32210500	5	90	50	6	●	
32210550	5,5	97	57	6	●	
32210600	6	97	57	6	●	
32210635	6,35	106	66	8	●	
32210650	6,5	106	66	8	●	
32210680	6,8	106	66	8	●	
32210700	7	116	76	8	●	
32210750	7,5	116	76	8	●	
32210780	7,8	116	76	8	●	
32210800	8	116	76	8	●	
32210850	8,5	131	87	10	●	
32210900	9	131	87	10	●	
32210950	9,5	139	95	10	●	
32210952	9,52	139	95	10	●	
32211000	10	139	95	10	●	

EDP	D	L	l	d	Stock	Price
32211020	10,2	155	106	12	●	
32211050	10,5	155	106	12	●	
32211100	11	155	106	12	●	
32211150	11,5	163	114	12	●	
32211200	12	163	114	12	●	
32211250	12,5	182	133	14	●	
32211270	12,7	182	133	14	●	
32211300	13	182	133	14	●	
32211350	13,5	182	133	14	●	
32211400	14	182	133	14	●	
32211450	14,5	204	152	16	●	
32211500	15	204	152	16	●	
32211550	15,5	204	152	16	●	
32211600	16	204	152	16	●	

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	Tiall	Inc

● Delivery from stock
○ Available on short notice

WHO55-5D

HIGH PERFORMANCE
- For hardened material up to 55 HRC

5D drilling

HIGH PERFORMANCE
- Für gehärtete Materialien bis 55 HRC

5D Bohren

ALTA PRESTAZIONE
- Per acciai temprati fino a 55 HRC

5D foratura

HAUTE PERFORMANCE
- Pour matériaux spérieur à 55 HRC

Forage 5D

HIGH PERFORMANCE
- For hærdede materialer op til 55 HRC

5D boring

HIGH PERFORMANCE
- För härdat stål upp till 55HRC

5D borrning

ALTAS PRESTACIONES
- Para aceros templados hasta 55 HRC

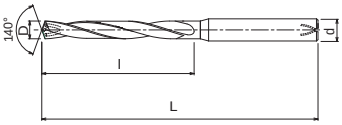
Taladrado 5D

Высокая производительность
- Для закаленных материалов до 55 HRC

Сверление 5D

AVAILABLE DECEMBER 2011

CARBIDE | WDI | 12°~20° | FIT | h8 | min⁻¹ p.27



EDP	D	L	l	d	Stock	Price
3316330	3,3	78	32	6	●	
3316340	3,4	78	32	6	●	
3316349	3,49	78	32	6	●	
3316350	3,5	78	32	6	●	
3316360	3,6	78	34	6	●	
3316370	3,7	78	34	6	●	
3316380	3,8	78	36	6	●	
3316390	3,9	78	36	6	●	
3316400	4	78	36	6	●	
3316410	4,1	88	38	6	●	
3316415	4,15	88	38	6	●	
3316420	4,2	88	38	6	●	
3316430	4,3	88	41	6	●	
3316440	4,4	88	41	6	●	
3316450	4,5	88	41	6	●	
3316460	4,6	88	43	6	●	
3316470	4,7	88	43	6	●	
3316480	4,8	88	45	6	●	
3316490	4,9	88	45	6	●	
3316500	5	88	45	6	●	
3316510	5,1	92	42	6	●	
3316520	5,2	92	42	6	●	
3316530	5,3	92	44	6	●	
3316540	5,4	92	44	6	●	
3316550	5,5	92	44	6	●	
3316556	5,56	92	46	6	●	
3316560	5,6	92	46	6	●	

EDP	D	L	l	d	Stock	Price
3316570	5,7	92	46	6	●	
3316580	5,8	92	48	6	●	
3316590	5,9	92	48	6	●	
3316600	6	92	48	6	●	
3316650	6,5	102	52	8	●	
3316680	6,8	102	56	8	●	
3316700	7	102	56	8	●	
3316750	7,5	118	60	8	●	
3316780	7,8	118	64	8	●	
3316800	8	118	64	8	●	
3316850	8,5	128	68	10	●	
3316858	8,58	128	70	10	●	
3316870	8,7	128	70	10	●	
3316880	8,8	128	72	10	●	
3316900	9	128	72	10	●	
3316950	9,5	136	76	10	●	
3316980	9,8	136	80	10	●	
3316997	9,97	136	80	10	●	
3317000	10	136	80	10	●	
3317030	10,3	146	84	12	●	
3317050	10,5	146	84	12	●	
3317080	10,8	146	88	12	●	
3317100	11	146	88	12	●	
3317150	11,5	156	92	12	●	
3317156	11,56	156	94	12	●	
3317180	11,8	156	96	12	●	
3317200	12	156	96	12	●	

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	Tiall	Inc
								◎

● Delivery from stock
○ Available on short notice

PHP

HIGH PERFORMANCE
- Drill
- 2 flutes

HIGH PERFORMANCE
- Bohrer
- 2 Schneiden

ALTA PRESTAZIONE
- Foratura
- 2 denti

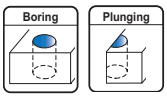
HAUTE PERFORMANCE
- Foret
- 2 lèvres

HIGH PERFORMANCE
- Boring
- 2 skær

HIGH PERFORMANCE
- Borr
- 2 skär

ALTO RENDIMIENTO
- Taladrado
- 2 labios

ВЫСОКАЯ ПРОИЗВОДИТЕЛЬНОСТЬ
- Сверло
- 2-зуба



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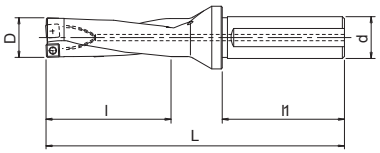
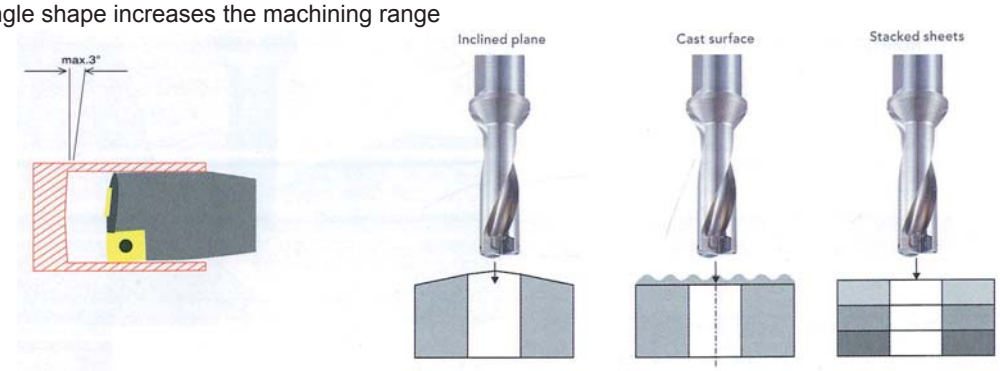


EDP	Designation	D	L	l	l1	d	Appl. Inserts	Stock	Price
7800100	PHP140FS20M04-3D	14	116	42	50	20		●	
7800101	PHP145FS20M04-3D	14,5	119	45	50	20		●	
7800102	PHP150FS20M04-3D	15	119	45	50	20	①	●	
7800103	PHP155FS20M04-3D	15,5	122	48	50	20		●	
7800104	PHP160FS20M04-3D	16	122	48	50	20		●	
7800105	PHP165FS20M05-3D	16,5	125	51	50	20		●	
7800106	PHP170FS20M05-3D	17	125	51	50	20	②	●	
7800107	PHP175FS25M05-3D	17,5	134	54	56	25		●	
7800108	PHP180FS25M05-3D	18	134	54	56	25		●	
7800109	PHP185FS25M06-3D	18,5	137	57	56	25		●	
7800110	PHP190FS25M06-3D	19	137	57	56	25		●	
7800111	PHP195FS25M06-3D	19,5	140	60	56	25	③	●	
7800112	PHP200FS25M06-3D	20	140	60	56	25		●	
7800113	PHP205FS25M06-3D	20,5	143	63	56	25		●	
7800114	PHP210FS25M07-3D	21	143	63	56	25		●	
7800115	PHP215FS25M07-3D	21,5	146	66	56	25		●	
7800116	PHP220FS25M07-3D	22	146	66	56	25		●	
7800117	PHP225FS25M07-3D	22,5	149	69	56	25	④	●	
7800118	PHP230FS25M07-3D	23	149	69	56	25		●	
7800119	PHP235FS32M07-3D	23,5	156	72	60	32		●	
7800120	PHP240FS32M07-3D	24	156	72	60	32		●	
7800121	PHP245FS32M08-3D	24,5	159	75	60	32		●	
7800122	PHP250FS32M08-3D	25	159	75	60	32		●	
7800123	PHP255FS32M08-3D	25,5	162	78	60	32		●	
7800124	PHP260FS32M08-3D	26	162	78	60	32	⑤	●	
7800125	PHP265FS32M08-3D	26,5	165	81	60	32		●	
7800126	PHP270FS32M08-3D	27	165	81	60	32		●	
7800127	PHP280FS32M08-3D	28	168	84	60	32		●	
7800128	PHP290FS32M10-3D	29	171	87	60	32		●	
7800130	PHP300FS32M10-3D	30	179	90	60	32	⑥	●	
7800131	PHP310FS32M10-3D	31	182	93	60	32		●	
7800132	PHP320FS32M10-3D	32	185	96	60	32		●	
7800133	PHP330FS40M10-3D	33	196	99	68	40		○	
7800134	PHP340FS40M10-3D	34	199	102	68	40		○	
7800135	PHP350FS40M12-3D	35	202	105	68	40		○	
7800136	PHP360FS40M12-3D	36	205	108	68	40	⑦	○	
7800137	PHP370FS40M12-3D	37	218	111	68	40		○	
7800138	PHP380FS40M12-3D	38	221	114	68	40		○	
7800139	PHP390FS40M12-3D	39	224	117	68	40		○	
7800140	PHP400FS40M12-3D	40	227	120	68	40		○	

Point angle shape increases the machining range



● Delivery from stock
○ Available on short notice

PHP

Applicable insert for PHP drill

Wendeplatten, Bohrer PHP

Inserti applicabili per punta PHP

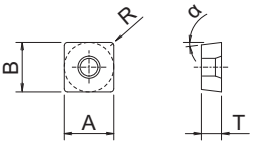
Choix de plaquettes pour le perçage

Anvendelige skær til PHP bor

Utbytbara vändskär för korthålsborr

Plaquitas para broca PHP

Сменные пластинки для PHP сверла



	Designation	Nb. of Cutting edges	Appl. Cutter Dia.	Insert Size A X B	T	α	R	Grade of coated Materials XP9040	XP9025	Price
1	SCMT042204-DM	4	14 ~16	4,8x 4,8	2,2	7°	0,4	7818001	7817001	
2	SCMT052404-DM	4	16,5~18	5,4x 5,4	2,4	7°	0,4	7818002	7817002	
3	SCMT062806-DM	4	18,5~20,5	6,2x 6,2	2,8	7°	0,6	7818003	7817003	
4	SCMT073206-DM	4	21 ~24	7,2x 7,2	3,2	7°	0,6	7818004	7817004	
5	SCMT083608-DM	4	24,5~28	8,6x 8,6	3,6	7°	0,8	7818005	7817005	
6	SCMT104208-DM	4	29 ~34	10 x10	4,2	7°	0,8	7818006	7817006	
7	SCMT125008-DM	4	35 ~40	12,3x12,3	5	7°	0,8	7818007	7817007	

■ Recommanded Materials by Applications

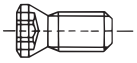
◉ First recommended material
○ Second recommended material

Inserts are all sold 10 pieces per package

Inserts Grades	Chip Breaker	Coolant	P	M	K	N	S
XP9040	DM	yes	◉	◉		◉	○
XC9025	DM	yes	○	○	◉	○	

DM : Center cutting Type Drill

Accessories



Clamping Screw

EDP	Designation	Appl. Inserts	Stock	Price
7808100	FS18538 (Torx 6)	① SCMT042204-DM	●	
7808102	FS20540 (Torx 6)	② SCMT052404-DM	●	
7808104	FS22550 (Torx 7)	③ SCMT062806-DM	●	
7808108	FS25560 (Torx 8)	④ SCMT073206-DM	●	
7808110	FS30573 (Torx 8)	⑤ SCMT083608-DM	●	
7808111	FS35572 (Torx 15)	⑥ SCMT104208-DM	●	
7808113	FS45510 (Torx 20)	⑦ SCMT125008-DM	○	

Wrench

EDP	Designation	Appl. Inserts	Stock	Price
7808203	T6-D (Torx 6)	① SCMT042204-DM ② SCMT052404-DM	●	
7808204	T7-D (Torx 7)	③ SCMT062806-DM -	●	
7808205	T8-D (Torx 8)	④ SCMT073206-DM ⑤ SCMT083608-DM	●	
7808208	T15-D (Torx 15)	⑥ SCMT104208-DM -	●	
7808209	T20-D (Torx 20)	⑦ SCMT125008-DM -	○	

Cutting Conditions

PHP

	Work Material	Tensil Strength・Hardness	Drilling Speed Vc (m/min)	Feed Rate (mm/rev)			
				ø14~ø20.5	ø21~ø28	ø29~ø34	ø35~ø40
P	Mild Steels·Carbon Steels CK 15 St. 52-3	~180HB	200 (150 ~ 250)	0,09 (0,06 ~ 0,13)	0,13 (0,10 ~ 0,18)	0,18 (0,13 ~ 0,21)	0,25 (0,20 ~ 0,27)
	Carbon Steels·Alloy Steels Cf 53 42CrMo4	~280HB	160 (100 ~ 220)	0,09 (0,06 ~ 0,13)	0,13 (0,10 ~ 0,18)	0,18 (0,13 ~ 0,21)	0,25 (0,20 ~ 0,27)
	Die Steels X40CrMoV5 1	~280HB	140 (80 ~ 180)	0,08 (0,05 ~ 0,12)	0,12 (0,06 ~ 0,15)	0,14 (0,09 ~ 0,18)	0,15 (0,10 ~ 0,20)
M	Stainless Steels (SUS304 - SUS420)	~250HB	150 (100 ~ 180)	0,08 (0,05 ~ 0,12)	0,10 (0,06 ~ 0,12)	0,15 (0,10 ~ 0,17)	0,18 (0,15 ~ 0,20)
K	Cast Iron GG 25	~350N/mm²	150 (100 ~ 180)	0,09 (0,06 ~ 0,13)	0,13 (0,10 ~ 0,18)	0,18 (0,13 ~ 0,21)	0,25 (0,20 ~ 0,27)
	Ductile Cast Iron GGG 40	~800N/mm²	130 (80 ~ 150)	0,09 (0,06 ~ 0,13)	0,12 (0,08 ~ 0,16)	0,16 (0,1 ~ 0,20)	0,20 (0,15 ~ 0,25)
N	Aluminum Alloys	~13%Si	220 (100 ~ 800)	0,09 (0,06 ~ 0,20)	0,13 (0,10 ~ 0,25)	0,18 (0,13 ~ 0,30)	0,25 (0,20 ~ 0,35)
S	Heat Resistant Alloys(Wet) (Inconel 718)	–	30 (15 ~ 50)	0,04 (0,02 ~ 0,06)	0,06 (0,03 ~ 0,10)	0,08 (0,04 ~ 0,12)	0,10 (0,06 ~ 0,14)
	Titanium Alloy(Wet) (Ti-6Al-4V)	–	60 (30 ~ 100)	0,06 (0,04 ~ 0,08)	0,08 (0,06 ~ 0,12)	0,10 (0,08 ~ 0,15)	0,12 (0,10 ~ 0,15)

■ Recommended Materials by Application

◎ First recommended material
○ Second recommended material

Inserts Grades	Chip Breaker	Use of Coolant	P	M	K	N	S
XP9040	DM	Yes	◎	◎		◎	○
XC9025	DM	Yes	○	○	◎	○	

DM:Center Cutting Type Drill

Cutting Conditions

WH55-5D

	SKD61 Special Alloy Steels ■ Hardened Steels Prehardened Steels 40 ~ 45 HRC		DAC55, DH31S, SKD61, SKD11, STAVAX 45 ~ 50 HRC		DAC55, DH31S, SKD61, SKD11, STAVAX 50 ~ 56 HRC	
Vc	35 ~ 35 m/min		80 ~ 120 m/min		60 ~ 90 m/min	
Ø	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)
2	6.400	0,02 ~ 0,04	4.000	0,02 ~ 0,04	4.000	0,02 ~ 0,04
3	4.200	0,03 ~ 0,06	2.700	0,03 ~ 0,06	2.700	0,03 ~ 0,06
4	3.200	0,04 ~ 0,08	2.000	0,04 ~ 0,08	2.000	0,04 ~ 0,08
5	2.500	0,05 ~ 0,10	1.600	0,05 ~ 0,10	1.600	0,05 ~ 0,10
6	2.100	0,06 ~ 0,12	1.300	0,06 ~ 0,12	1.300	0,06 ~ 0,12
7	1.800	0,07 ~ 0,14	1.100	0,07 ~ 0,14	1.100	0,07 ~ 0,14
8	1.600	0,08 ~ 0,16	1.000	0,08 ~ 0,16	1.000	0,08 ~ 0,16
9	1.400	0,09 ~ 0,18	900	0,09 ~ 0,18	900	0,09 ~ 0,18
10	1.300	0,10 ~ 0,20	800	0,10 ~ 0,20	800	0,10 ~ 0,20
11	1.150	0,11 ~ 0,22	720	0,11 ~ 0,22	720	0,11 ~ 0,22
12	1.100	0,12 ~ 0,24	700	0,12 ~ 0,24	700	0,12 ~ 0,24

WHO55-5D

	SKD61 Special Alloy Steels ■ Hardened Steels ■ Prehardened Steels 40 ~ 45 HRC		DAC55, DH31S, SKD61, SKD11, STAVAX 45 ~ 50 HRC		DAC55, DH31S, SKD61, SKD11, STAVAX 50 ~ 56 HRC		Inconel 38 ~ 43 HRC	
Vc	35 ~ 35 m/min		20 ~ 30 m/min		20 ~ 30 m/min		10 ~ 30 m/min	
Ø	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)
3,3	3.900	0,033 ~ 0,066	2.400	0,033 ~ 0,066	2.400	0,033 ~ 0,066	1.900	0,033 ~ 0,066
4	3.200	0,04 ~ 0,08	2.000	0,04 ~ 0,08	2.000	0,04 ~ 0,08	1.600	0,04 ~ 0,08
5	2.500	0,05 ~ 0,10	1.600	0,05 ~ 0,10	1.600	0,05 ~ 0,10	1.300	0,05 ~ 0,10
6	2.100	0,06 ~ 0,12	1.300	0,06 ~ 0,12	1.300	0,06 ~ 0,12	1.100	0,06 ~ 0,12
7	1.800	0,07 ~ 0,14	1.100	0,07 ~ 0,14	1.100	0,07 ~ 0,14	900	0,07 ~ 0,14
8	1.600	0,08 ~ 0,16	1.000	0,08 ~ 0,16	1.000	0,08 ~ 0,16	800	0,08 ~ 0,16
9	1.400	0,09 ~ 0,18	900	0,09 ~ 0,18	900	0,09 ~ 0,18	700	0,09 ~ 0,18
10	1.300	0,10 ~ 0,20	800	0,10 ~ 0,20	800	0,10 ~ 0,20	600	0,10 ~ 0,20
11	1.150	0,11 ~ 0,22	720	0,11 ~ 0,22	720	0,11 ~ 0,22	600	0,11 ~ 0,22

WD-2D/WD-4D

	C<0,35% (C<0,35%) St40 ■ SCM ~710 N/mm²		C≥0,35% (C≥0,35%) CK50 ~1060 N/mm²		Special Alloy SUJ2		SUS Serie SUS300 Serie SUS400		Hardened Steel SKD61 43 HRC		Hardened Steel 43 ~ 48 HRC		GG GG25 ~ 350 N/mm²		GGG GGG40 ~ 500 N/mm²	
Vc	63 ~ 100 m/min		63 ~ 100 m/min		50 ~ 71 m/min		25 ~ 40 m/min		40 ~ 63 m/min		32 ~ 45 m/min		63 ~ 100 m/min		50 ~ 80 m/min	
Ø	S (min⁻¹)	F (mm/rev)	S (min⁻¹)	F (mm/rev)	S (min⁻¹)	F (mm/rev)	S (min⁻¹)	F (mm/rev)	S (min⁻¹)	F (mm/rev)	S (min⁻¹)	F (mm/rev)	S (min⁻¹)	F (mm/rev)	S (min⁻¹)	F (mm/rev)
2	11.000	0,06~0,08	11.000	0,06~0,08	9.000	0,06~0,08	4.700	0,06~0,08	7.600	0,06~0,08	6.000	0,06~0,08	12.000	0,06~0,08	10.000	0,06~0,08
3	8.000	0,09~0,12	8.000	0,09~0,12	6.000	0,09~0,12	3.200	0,09~0,12	5.000	0,09~0,12	4.000	0,09~0,12	8.000	0,09~0,12	6.900	0,09~0,12
4	6.300	0,10~0,15	6.300	0,10~0,15	4.750	0,10~0,15	2.400	0,10~0,15	3.800	0,10~0,15	3.000	0,10~0,15	6.300	0,10~0,15	5.200	0,10~0,15
5	5.000	0,12~0,18	5.000	0,12~0,18	3.800	0,12~0,18	1.900	0,12~0,18	3.000	0,12~0,18	2.450	0,12~0,18	5.000	0,12~0,18	4.100	0,12~0,18
6	4.200	0,14~0,20	4.200	0,14~0,20	3.200	0,14~0,20	1.600	0,14~0,20	2.550	0,14~0,20	2.050	0,14~0,20	4.200	0,14~0,20	3.450	0,14~0,20
8	3.200	0,16~0,24	3.200	0,16~0,24	2.400	0,16~0,24	1.200	0,16~0,24	1.900	0,16~0,24	1.550	0,16~0,24	3.200	0,16~0,24	2.600	0,16~0,24
10	2.550	0,18~0,27	2.550	0,18~0,27	1.900	0,18~0,27	950	0,18~0,27	1.550	0,18~0,27	1.250	0,18~0,27	2.600	0,18~0,27	2.100	0,18~0,27
12	2.100	0,20~0,30	2.100	0,20~0,30	1.600	0,20~0,30	800	0,20~0,30	1.300	0,20~0,30	1.050	0,20~0,30	2.200	0,20~0,30	1.750	0,20~0,30
14	1.800	0,22~0,35	1.800	0,22~0,35	1.350	0,22~0,35	700	0,22~0,35	1.100	0,22~0,35	880	0,22~0,35	1.800	0,22~0,35	1.500	0,22~0,35
16	1.600	0,25~0,36	1.600	0,25~0,36	1.200	0,25~0,36	600	0,25~0,36	950	0,25~0,36	770	0,25~0,36	1.600	0,25~0,36	1.300	0,25~0,36
18	1.400	0,28~0,38	1.400	0,28~0,38	1.050	0,28~0,38	530	0,28~0,38	850	0,28~0,38	680	0,28~0,38	1.400	0,28~0,38	1.200	0,28~0,38
20	1.300	0,30~0,40	1.300	0,30~0,40	960	0,30~0,40	480	0,30~0,40	760	0,30~0,40	610	0,30~0,40	1.300	0,30~0,40	1.050	0,30~0,40

Cutting Conditions

TRS-HO-3D/5D

	Mild Steels - Low Carbon Steels SS400 ■ S10C ■ ~150HB ~500 N/mm²		Carbon Steels S35C ■ S50C ■ ~210HB ~710 N/mm²		Alloys Steels SCM ■ SCr ■ SNCM ■ 16~28HRC 710~900 N/mm²	
Vc	80 ~ 120 m/min		80 ~ 120 m/min		60 ~ 90 m/min	
Ø	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)
5	6.400	0,18 ~ 0,25	6.400	0,18 ~ 0,25	4.800	0,18 ~ 0,25
6	5.300	0,21 ~ 0,30	5.300	0,21 ~ 0,30	4.000	0,21 ~ 0,30
7	4.500	0,25 ~ 0,35	4.500	0,25 ~ 0,35	3.400	0,25 ~ 0,35
8	4.000	0,28 ~ 0,40	4.000	0,28 ~ 0,40	3.000	0,28 ~ 0,40
9	3.500	0,32 ~ 0,45	3.500	0,32 ~ 0,45	2.700	0,32 ~ 0,45
10	3.200	0,35 ~ 0,50	3.200	0,35 ~ 0,50	2.400	0,35 ~ 0,50
11	2.900	0,39 ~ 0,55	2.900	0,39 ~ 0,55	2.200	0,39 ~ 0,50
12	2.700	0,42 ~ 0,60	2.700	0,42 ~ 0,60	2.000	0,42 ~ 0,54
13	2.400	0,46 ~ 0,65	2.400	0,46 ~ 0,65	1.800	0,46 ~ 0,59
14	2.300	0,49 ~ 0,70	2.300	0,49 ~ 0,70	1.700	0,49 ~ 0,63
16	2.000	0,48 ~ 0,72	2.000	0,48 ~ 0,72	1.500	0,48 ~ 0,64
18	1.800	0,54 ~ 0,81	1.800	0,54 ~ 0,81	1.300	0,54 ~ 0,72

TRS-HO-3D/5D

	Alloys Steels SCM ■ SCr ■ SNCM ■ 28~35HRC 900~1100 N/mm²		Cast Iron FC250 ~350 N/mm²		Ductile Cast Iron FCD450 ■ FCD600 400~600 N/mm²	
Vc	60 ~ 90 m/min		80 ~ 120 m/min		60 ~ 100 m/min	
Ø	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)
5	4.800	0,18 ~ 0,25	6.400	0,18 ~ 0,30	5.100	0,18 ~ 0,25
6	4.000	0,21 ~ 0,30	5.300	0,21 ~ 0,36	4.200	0,21 ~ 0,30
7	3.400	0,25 ~ 0,35	4.500	0,25 ~ 0,42	3.600	0,25 ~ 0,35
8	3.000	0,28 ~ 0,40	4.000	0,28 ~ 0,48	3.200	0,28 ~ 0,40
9	2.700	0,32 ~ 0,45	3.500	0,32 ~ 0,54	2.800	0,32 ~ 0,45
10	2.400	0,35 ~ 0,50	3.200	0,35 ~ 0,60	2.500	0,35 ~ 0,50
11	2.200	0,39 ~ 0,50	2.900	0,39 ~ 0,66	2.300	0,39 ~ 0,55
12	2.000	0,42 ~ 0,54	2.700	0,42 ~ 0,72	2.100	0,42 ~ 0,60
13	1.800	0,46 ~ 0,59	2.400	0,46 ~ 0,78	2.000	0,46 ~ 0,65
14	1.700	0,49 ~ 0,63	2.300	0,49 ~ 0,84	1.800	0,49 ~ 0,70
16	1.500	0,48 ~ 0,64	2.000	0,56 ~ 0,80	1.600	0,48 ~ 0,72
18	1.300	0,54 ~ 0,72	1.800	0,63 ~ 0,90	1.400	0,54 ~ 0,81

WDO-3D/5D

	Carbon Steel S50C		Alloy Steel SCM440		Alloy Steel SCM440 - 30HRC		Cast Iron FC250		Ductile Cast IRON FCD700		Stainless Steels SUS304	
Vc	80 ~ 120 m/min		80 ~ 120 m/min		60 ~ 90 m/min		80 ~ 120 m/min		60 ~ 100 m/min		40 ~ 70 m/min	
Ø	S (min⁻¹)	F (mm/rev)	S (min⁻¹)	F (mm/rev)	S (min⁻¹)	F (mm/rev)	S (min⁻¹)	F (mm/rev)	S (min⁻¹)	F (mm/rev)	S (min⁻¹)	F (mm/rev)
3	10.600	0,06~0,12	10.600	0,06~0,12	7.400	0,06~0,12	10.600	0,06~0,12	8.500	0,06~0,12	6.400	0,06~0,12
4	8.000	0,08~0,16	8.000	0,08~0,16	5.600	0,08~0,16	8.000	0,08~0,16	6.400	0,08~0,16	4.800	0,08~0,16
5	6.400	0,10~0,20	6.400	0,10~0,20	4.500	0,10~0,20	6.400	0,10~0,20	5.100	0,10~0,20	3.800	0,10~0,20
6	5.300	0,12~0,24	5.300	0,12~0,24	3.700	0,12~0,24	5.300	0,12~0,24	4.200	0,12~0,24	3.200	0,12~0,24
7	4.500	0,14~0,26	4.500	0,14~0,26	3.200	0,14~0,26	4.500	0,14~0,26	3.600	0,14~0,26	2.700	0,14~0,26
8	4.000	0,16~0,28	4.000	0,16~0,28	2.800	0,16~0,28	4.000	0,16~0,28	3.200	0,16~0,28	2.400	0,16~0,28
9	3.500	0,18~0,30	3.500	0,18~0,30	2.500	0,18~0,30	3.500	0,18~0,30	2.800	0,18~0,30	2.100	0,18~0,30
10	3.200	0,20~0,30	3.200	0,20~0,30	2.200	0,20~0,30	3.200	0,20~0,30	2.500	0,20~0,30	1.900	0,20~0,30
11	2.900	0,20~0,30	2.900	0,20~0,30	2.000	0,20~0,30	2.900	0,20~0,30	2.300	0,20~0,30	1.700	0,20~0,30
12	2.700	0,21~0,30	2.700	0,21~0,30	1.900	0,21~0,30	2.700	0,21~0,30	2.100	0,21~0,30	1.600	0,21~0,30
13	2.400	0,21~0,33	2.400	0,21~0,33	1.700	0,21~0,33	2.400	0,21~0,33	2.000	0,21~0,33	1.500	0,21~0,33
14	2.300	0,22~0,35	2.300	0,22~0,35	1.600	0,22~0,35	2.300	0,22~0,35	1.800	0,22~0,35	1.400	0,22~0,35
16	2.000	0,25~0,36	2.000	0,25~0,36	1.400	0,25~0,36	2.000	0,25~0,36	1.600	0,25~0,36	1.200	0,25~0,36
18	1.800	0,28~0,38	1.800	0,28~0,38	1.200	0,28~0,38	1.800	0,28~0,38	1.400	0,28~0,38	1.100	0,28~0,38
20	1.600	0,30~0,40	1.600	0,30~0,40	1.100	0,30~0,40	1.600	0,30~0,40	1.300	0,30~0,40	1.000	0,30~0,40

Cutting Conditions

WDO-10D/15D/20D/30D

	Mild Steels Low Carbon Steels SS400 ■ S10C ~ 150HB ~ 500 N/mm²		Carbon Steels S35C ■ S50C ~ 210HB ~ 710 N/mm²		Alloy Steels SCM ■ SCr ■ SNCM 16 ~ 28HRC 710 ~ 900 N/mm²		Cast Iron FC250 ~ 350 N/mm²		Ductile Cast Iron FCD450 FCD600 400 ~ 600 N/mm²		Stainless Steels SUS400 400 ~ 800 N/mm²	
Vc	60 ~ 125 m/min		60 ~ 125 m/min		60 ~ 125 m/min		60 ~ 125 m/min		50 ~ 80 m/min		40 ~ 80 m/min	
Ø	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)
3	7.500	0,06 ~ 0,12	7.500	0,06 ~ 0,12	7.500	0,06 ~ 0,12	7.500	0,06 ~ 0,12	7.500	0,06 ~ 0,12	5.300	0,06 ~ 0,12
4	6.400	0,08 ~ 0,16	6.400	0,08 ~ 0,16	6.400	0,08 ~ 0,16	6.400	0,08 ~ 0,16	5.600	0,08 ~ 0,16	5.000	0,08 ~ 0,16
5	5.800	0,10 ~ 0,20	5.800	0,10 ~ 0,20	5.800	0,10 ~ 0,20	5.800	0,10 ~ 0,20	4.500	0,10 ~ 0,20	4.500	0,10 ~ 0,20
6	4.800	0,12 ~ 0,24	4.800	0,12 ~ 0,24	4.800	0,12 ~ 0,24	4.800	0,12 ~ 0,24	3.800	0,12 ~ 0,24	3.800	0,12 ~ 0,24
8	3.600	0,16 ~ 0,28	3.600	0,16 ~ 0,28	3.600	0,16 ~ 0,28	3.600	0,16 ~ 0,28	2.800	0,16 ~ 0,28	2.800	0,16 ~ 0,28
10	2.900	0,20 ~ 0,35	2.900	0,20 ~ 0,35	2.900	0,20 ~ 0,35	2.900	0,20 ~ 0,35	2.300	0,20 ~ 0,35	2.300	0,20 ~ 0,35
12	2.400	0,24 ~ 0,42	2.400	0,24 ~ 0,42	2.400	0,24 ~ 0,42	2.400	0,24 ~ 0,42	1.900	0,24 ~ 0,42	1.900	0,24 ~ 0,42

FTO-GDXL

	Carbon Steel (C≥0,3%) S50C ■ SCM440 710 ~ 1060 N/mm²		GG FC250 250 ~ 350 N/mm²		GGG FCD700 400 ~ 500 N/mm²		SUS SUS300 SUS400		C≤0,3% SCr420 ■ SCM420 ~710 N/mm²	
Vc	63 ~ 125 m/min		63 ~ 125 m/min		60 ~ 80 m/min		50 ~ 80 m/min		63 ~ 125 m/min	
Ø	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)
3	7.500	0,06~0,12	7.500	0,06~0,12	7.500	0,06~0,12	5.300	0,06~0,12	7.500	0,06~0,12
4	6.400	0,08~0,16	6.400	0,08~0,16	5.600	0,08~0,16	5.000	0,08~0,16	6.400	0,08~0,16
5	5.800	0,10~0,20	5.800	0,10~0,20	4.500	0,10~0,20	4.500	0,10~0,20	5.800	0,10~0,20
6	4.800	0,12~0,24	4.800	0,12~0,24	3.800	0,12~0,24	3.800	0,12~0,24	4.800	0,12~0,24
8	3.600	0,16~0,28	3.600	0,16~0,28	2.800	0,16~0,28	2.800	0,16~0,28	3.600	0,16~0,28
10	2.900	0,20~0,35	2.900	0,20~0,35	2.300	0,20~0,35	2.300	0,20~0,35	2.900	0,20~0,35
12	2.400	0,24~0,42	2.400	0,24~0,42	1.900	0,24~0,42	1.900	0,24~0,42	2.400	0,24~0,42

CAO-GDXL

	AC ADC ■ AC		Al A20... ■ A70...		Al A50... ■ A60...		Cu C1020 ■ C1100		Cu CrCu	
Vc	80 ~ 200 m/min		60 ~ 120 m/min		80 ~ 200 m/min		80 ~ 200 m/min		60 ~ 120 m/min	
Ø	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)
3	12.800	0,09~0,15	10.700	0,09~0,15	12.800	0,06~0,12	12.800	0,06~0,12	10.700	0,05~0,09
4	9.600	0,12~0,20	8.000	0,12~0,20	9.600	0,08~0,16	9.600	0,08~0,16	8.000	0,06~0,10
5	7.700	0,15~0,25	6.400	0,15~0,25	7.700	0,10~0,20	7.700	0,10~0,20	6.400	0,06~0,10
6	6.400	0,18~0,30	5.400	0,18~0,30	6.400	0,12~0,20	6.400	0,12~0,20	5.400	0,06~0,10
8	4.800	0,20~0,40	4.000	0,20~0,40	4.800	0,12~0,25	4.800	0,12~0,25	4.000	0,08~0,15
10	3.900	0,25~0,50	3.200	0,25~0,50	3.900	0,15~0,25	3.900	0,15~0,25	3.200	0,08~0,15

WH70-DRL

	SKD11 ■ SKT ■ SUS440 55 ~ 60HRC		SKH ■ SKD11 ■ SKS 60 ~ 70HRC	
Vc	10 ~ 16 m/min		8 ~ 13 m/min	
Ø	S (min⁻¹)	F (mm/rev.)	S (min⁻¹)	F (mm/rev.)
2	2.000	~ 0,04	1.900	~ 0,04
3	1.330	~ 0,04	1.250	~ 0,04
4	1.000	~ 0,04	950	~ 0,04
5	800	~ 0,04	750	~ 0,04
6	670	~ 0,04	630	~ 0,04
8	500	~ 0,04	480	~ 0,04
10	400	~ 0,04	380	~ 0,04
12	330	~ 0,04	320	~ 0,04
14,1	280	~ 0,04	270	~ 0,04
16,1	250	~ 0,04	240	~ 0,04
17,6	235	~ 0,04	190	~ 0,04

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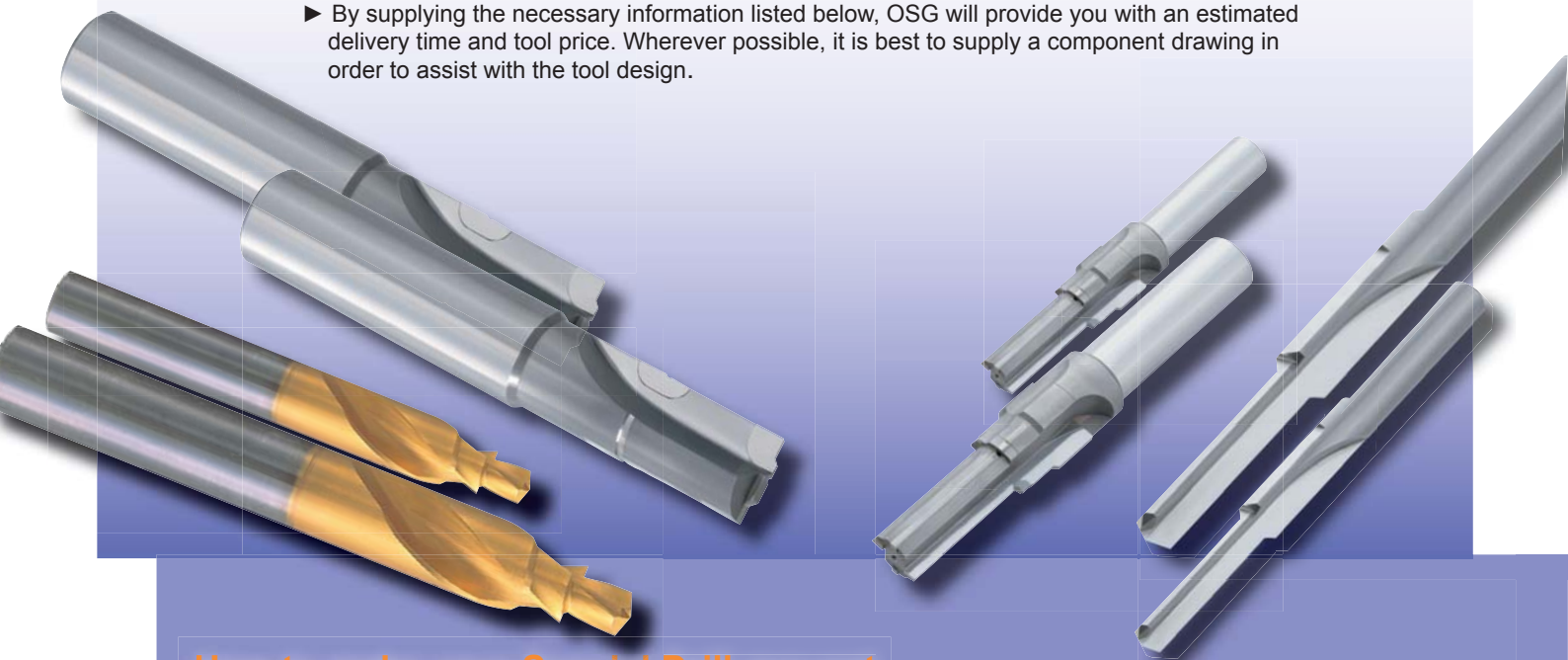

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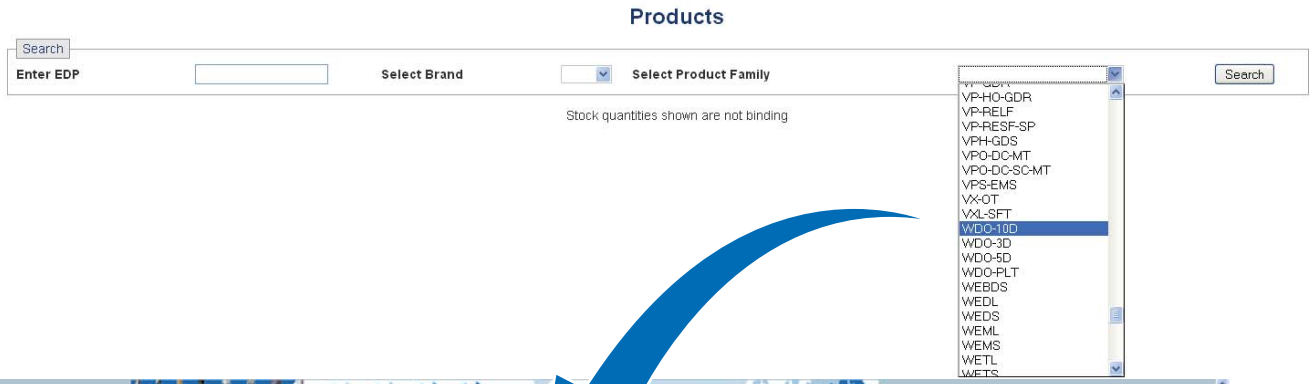

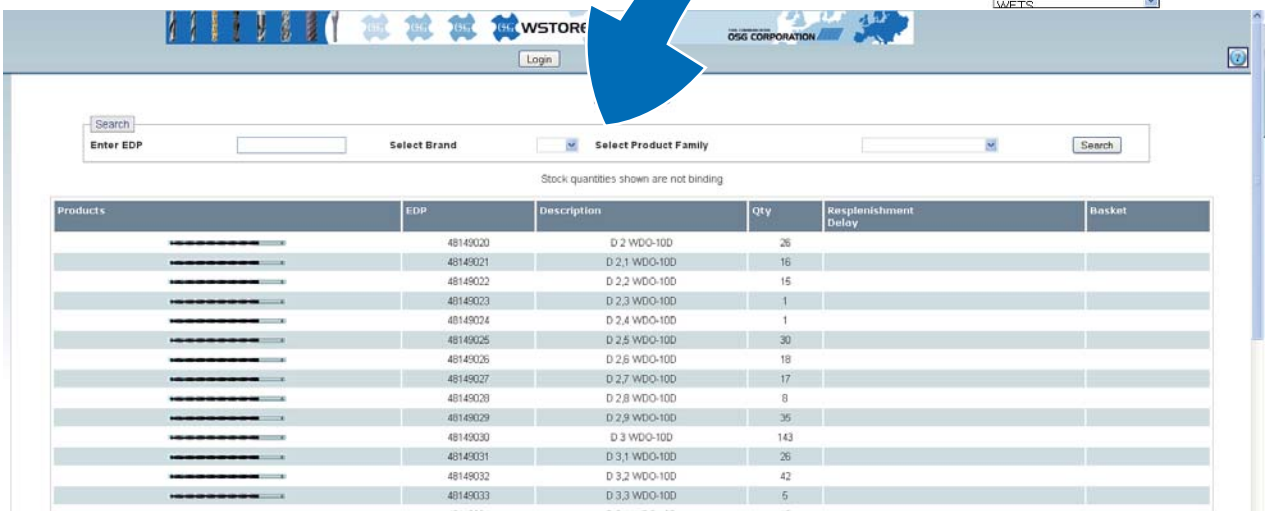

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