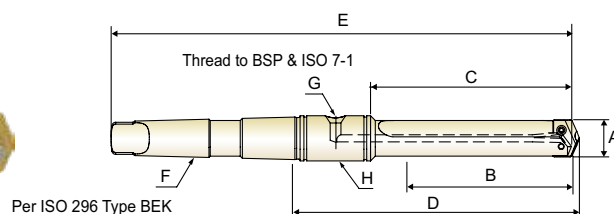


TAPER SHANK HOLDERS

● HALTER MIT MORSEKEGEL

● Porte-plaquette à queue cône morse

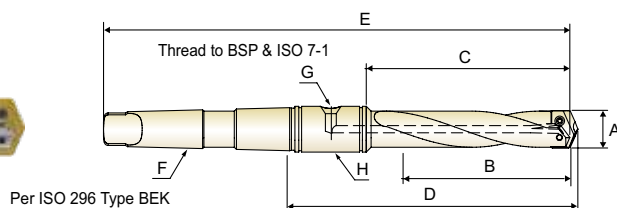
● PUNTE CON ATTACCO CM



SHORT LENGTH - Straight Flute (Metric)

Series	EDP No.	Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	MT	Pipe Tap	RCA
		A	B	C	D	E	F	G	H
Y	ZY0STSMT02M	9.5 ~ 11.0	31.8	51.5	88.0	160.3	#2	1/16	PR120190
Z	ZZ0STSMT02M	11.5 ~ 12.5	31.8	51.5	88.0	160.3	#2	1/16	PR120190
0	Z00STSMT02M	13.0 ~ 17.5	35.0	55.5	92.4	164.3	#2	1/16	PR120190
0.5	Z05STSMT02M	15.5 ~ 17.5	35.0	55.5	92.4	164.3	#2	1/16	PR120190
1	Z10STSMT03M	18.0 ~ 24.0	69.8	98.4	142.5	232.5	#3	1/8	PR120254
1.5	Z15STSMT03M	22.0 ~ 24.0	69.8	98.4	142.5	232.5	#3	1/8	PR120254
2	Z20STSMT04M	25.0 ~ 35.0	85.7	114.3	160.4	273.8	#4	1/8	PR120254
2.5	Z25STSMT04M	30.0 ~ 35.0	85.7	114.3	167.6	281.0	#4	1/4	PR120317
3	Z30STSMT04M	36.0 ~ 47.0	120.6	152.4	206.4	319.1	#4	1/4	PR120317
4	Z40STSMT05M	48.0 ~ 65.0	130.1	165.1	219.1	363.5	#5	1/4	PR120444
5	Z50STSMT05M	64.0 ~ 88.0	171.5	215.9	287.3	430.2	#5	1/2	PR120571
7	Z70STSMT05M	90.0 ~ 114.0	171.5	225.4	296.8	439.7	#5	1/2	PR120571

► You can also apply RCA(Rotary Coolant Adapter) for internal cooling. (See page 324)



INTERMEDIATE LENGTH - Helical Flute (Metric)

Series	EDP No.	Drill Insert Range	Max. Drill Depth	Body Length	Ref. Length	Overall Length	MT	Pipe Tap	RCA
		A	B	C	D	E	F	G	H
1	Z10ITHMT03M	18.0 ~ 24.0	120.7	149.2	193.3	283.3	#3	1/8	PR120254
1.5	Z15ITHMT03M	22.0 ~ 24.0	120.7	149.2	193.3	283.3	#3	1/8	PR120254
2	Z20ITHMT04M	25.0 ~ 35.0	136.5	165.1	211.2	324.6	#4	1/8	PR120254
2.5	Z25ITHMT04M	30.0 ~ 35.0	136.5	165.1	218.4	331.8	#4	1/4	PR120317
3	Z30ITHMT04M	36.0 ~ 47.0	165.1	196.9	250.9	363.6	#4	1/4	PR120317

► You can also apply RCA(Rotary Coolant Adapter) for internal cooling. (See page 324)

SELECTION GUIDE

HOLEMAKING
TOOLSPlease visit
globalyg1.com/mat
for material search

SURFACE TREATMENT

INSERTS & HOLDERS
SPADE DRILLSFor General Machines and Drilling Large Diameters
Longer Tool Life and High Productivity

◎ : Excellent ○ : Good

Recommended cutting conditions : p.A375

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment		HB	HRc	TIN / TiCN / TiAIN		
P	1	Non-alloy steel	About 0.15% C	Annealed	125		○	◎	◎
	2		About 0.45% C	Annealed	190	13	○	◎	◎
	3		About 0.45% C	Quenched & Tempered	250	25	○	◎	◎
	4		About 0.75% C	Annealed	270	28	○	◎	◎
	5		About 0.75% C	Quenched & Tempered	300	32			
	6	Low alloy steel		Annealed	180	10	○	◎	◎
	7			Quenched & Tempered	275	29	○	◎	◎
	8			Quenched & Tempered	300	32		○	◎
	9			Quenched & Tempered	350	38		○	◎
	10	High alloyed steel, and tool steel		Annealed	200	15		○	◎
	11			Quenched & Tempered	325	35		○	◎
M	12	Stainless steel	Ferritic / Martensitic	Annealed	200	15	◎	○	
	13		Martensitic	Quenched & Tempered	240	23	◎	○	
	14		Austenitic		180	10	◎	○	
K	15	Grey cast iron	Pearlitic / ferritic		180	10	◎	○	○
	16		Pearlitic (Martensitic)		260	26	○	◎	◎
	17	Nodular cast iron	Ferritic		160	3	◎	○	○
	18		Pearlitic		250	25	○	◎	◎
	19	Malleable cast iron	Ferritic		130		◎	○	○
	20		Pearlitic		230	21	○	◎	◎
N	21	Aluminum-wrought alloy	Not Curable		60		◎	○	○
	22		Curable Hardened		100		◎	○	○
	23	Aluminum-cast, alloyed	≤ 12% Si, Not Curable		75				
	24		≤ 12% Si, Curable Hardened		90				
	25		> 12% Si, Not Curable		130				
	26	Copper and Copper Alloys (Bronze / Brass)	Cutting Alloys, PB>1%		110				
	27		CuZn, CuSnZn (Brass)		90		◎	○	○
	28		CuSn, lead-free copper and electrolytic copper		100				
	29		Duroplastic, Fiber Reinforced Plastic						
	30	Non Metallic Materials	Rubber, Wood, etc.						
S	31	Heat Resistant Super Alloys	Fe Based	Annealed	200	15		◎	◎
	32			Cured	280	30		○	◎
	33		Ni or Co Based	Annealed	250	25		○	◎
	34			Cured	350	38		○	◎
	35			Cast	320	34		○	◎
	36	Titanium Alloys	Pure Titanium		400 Rm				
	37		Alpha + Beta Alloys	Hardened	1050 Rm				
H	38	Hardened steel		Hardened	550	55		○	◎
	39			Hardened	630	60			
	40	Chilled Cast Iron		Cast	400	42			
	41	Hardened Cast Iron		Hardened	550	55			

TAPER SHANK



TAPER SHANK HOLDERS - INCH/METRIC

A364

FLANGED SHANK



FLANGED STRAIGHT SHANK HOLDERS - INCH/METRIC

A364

STRAIGHT SHANK



STRAIGHT SHANK HOLDERS - INCH

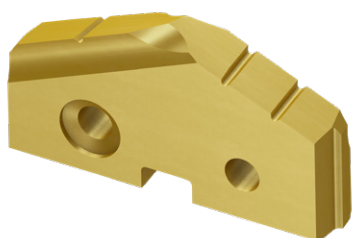
A382

A301

PRODUCT FEATURES

SPADE DRILLS (Standard, SM-Point)

Reference page : p.A299 - p.A380



Standard-Point

Standard Point
and Neutral Rake Angle for
Stable Cutting
Self Centering
Chip Breaking
Rigidity on Center

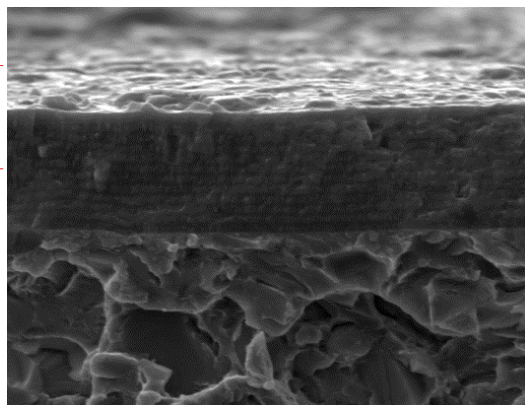


SM-Point

Multiple Web Thinning for and Radius Back Face
for Increased Cutting Speed and Feed
Wide Chip Space
Good Self-Centering
Less Tool Lead-off
Reduction in bell mouthing



Multi Layers
Carbide



Multi layered 'H'-coating

Micro Grain Carbide Insert

Outstanding Productivity & Reliability

H - Coating

(Upgraded AlCrN-Based : **Multi-Layer coating**)

- Higher worn-out resistance and Lower friction
- Higher Cutting Speed and Feed
- Improved drill Hole Quality

Special features of SM-Point Spade Drill

This new "Hybrid Point" combines the strength of the standard point with additional "Web Thinning".

This new point increases stability, reduces thrust, improves centering and allows increased speeds and feeds.

Multiple thinning form at the bottom of the large thinning.

- The optimum thinning for the difference from the cutting speed, the cutting quantity and the cutting load according to the distance from the drill point to the cutting edge.

Radius back face

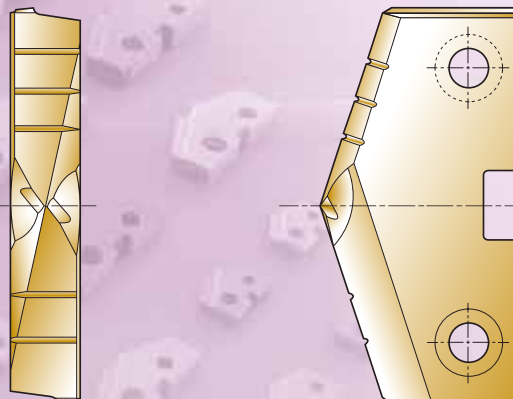
- Wide chip space

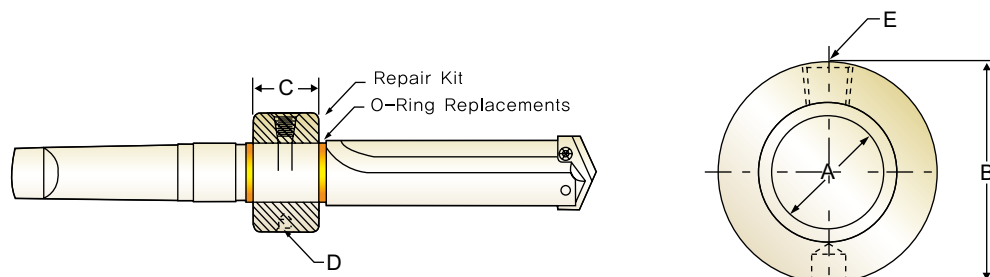
Multiple web thinning with the cutting edge of small web thinning.

- Good self-centering
- Less tool lead off
- Reduction in bell mouthing, thrust
- Increased stability

Four-facet point

- Self-centering
- Less thrust force




HOLDER ACCESSORIES
ROTARY COOLANT ADAPTER (RCA) AND ACCESSORIES

Inch

Item No.	I.D.	O.D.	Length	Thread for Driving Rod	Pipe Tap	RCA Repair Kit Item No.	RCA O-Ring Replacements Item No.
	A	B	C	D	E		
PR110048	3/4	1-3/4	7/8	5/16-NC	◆1/8	PR210048	PR310048
PR110100	1	2-1/8	1-1/8	5/16-NC	◆1/8	PR210100	PR310100
PR110116	1-1/4	2-1/2	1-3/8	3/8-NC	◆1/4	PR210116	PR310116
PR110148	1-3/4	3	1-3/8	3/8-NC	◆1/4	PR210148	PR310148
PR110216	2-1/4	3-3/4	1-3/4	1/2-NC	◆1/2	PR210216	PR310216

Metric

Item No.	I.D.	O.D.	Length	Thread for Driving Rod	Pipe Tap	RCA Repair Kit Item No.	RCA O-Ring Replacements Item No.
	A	B	C	D	E		
PR120190	19.05	44.45	22.23	M8 × 1.25	◆1/8	PR220190	PR320190
PR120254	25.40	53.97	28.57	M8 × 1.25	◆1/8	PR220254	PR320254
PR120317	31.75	63.50	34.92	M10 × 1.5	◆1/4	PR220317	PR320317
PR120444	44.45	76.20	34.92	M10 × 1.5	◆1/4	PR220444	PR320444
PR120571	57.15	95.27	44.45	M12 × 1.75	◆1/2	PR220571	PR320571

◆ Thread to BSP & ISO 7-1

TORX SCREWS

Holder Series	Item No.	TORX Hand Driver	Drill Range Used With	
			Inch	Metric
Y	J07Y0010	J05Y0070	3/8 ~ 27/64	9.5 mm ~ 11.0 mm
Z	J07Z0110		7/16 ~ 1/2	11.5 mm ~ 12.5 mm
0	J0800210		33/64 ~ 11/16	13.0 mm ~ 17.5 mm
0.5	J0805310	J0500080	39/64 ~ 11/16	15.5 mm ~ 17.5 mm
1	J0910410	J0510090	45/64 ~ 15/16	18.0 mm ~ 24.0 mm
1.5	J0915510		55/64 ~ 15/16	22.0 mm ~ 24.0 mm
2	J1520610		31/32 ~ 1-3/8	25.0 mm ~ 35.0 mm
2.5	J1525710	J0520150	1-3/16 ~ 1-3/8	30.0 mm ~ 35.0 mm
3,4	J2030810	J0530200	1-13/32 ~ 2-9/16	36.0 mm ~ 65.0 mm
5 ~ 8	J2550910	J0550250	2-1/2 ~ 4-1/2	64.0 mm ~ 114.0 mm

** Note : Replacement screws sold in packages(10 screws per package)

SPADE DRILL HSS-M4

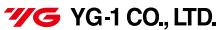
ISO	VDI 3323	Material Description	Vc(m/min)			Feed(mm/rev)						
			TiN	TiCN	TiAlN	Ø9.5-12.5	Ø13-17.5	Ø18-24	Ø25-35	Ø36-47	Ø48-65	Ø66-114
P	1	Non-alloy steel	54	67	75	0.15	0.22	0.28	0.37	0.46	0.56	0.67
	2		49	58	69	0.13	0.19	0.24	0.34	0.43	0.50	0.57
	3		45	56	63	0.13	0.19	0.23	0.34	0.43	0.50	0.58
	4		45	56	63	0.13	0.19	0.23	0.34	0.43	0.50	0.58
	6	Low alloy steel	45	56	58	0.13	0.20	0.24	0.36	0.42	0.46	0.55
	7		41	50	56	0.13	0.16	0.23	0.35	0.41	0.44	0.55
M	12	Stainless steel	20	23	29	0.12	0.18	0.20	0.24	0.30	0.36	0.46
	13		20	23	29	0.12	0.18	0.20	0.24	0.30	0.36	0.46
	14		24	29	34	0.14	0.20	0.23	0.26	0.36	0.41	0.50
K	15	Grey cast iron	48	58	70	0.14	0.26	0.35	0.45	0.56	0.64	0.68
	16		29	35	41	0.10	0.15	0.16	0.23	0.28	0.35	0.40
	17	Nodular cast iron	48	58	70	0.14	0.26	0.35	0.45	0.56	0.64	0.68
	18		35	44	52	0.13	0.17	0.23	0.3	0.35	0.43	0.50
	19	Malleable cast iron	52	64	75	0.16	0.30	0.40	0.49	0.59	0.69	0.75
	20		35	44	52	0.13	0.17	0.23	0.30	0.35	0.43	0.50
N	21	Aluminum-wrought alloy	187	229	244	0.19	0.33	0.41	0.50	0.54	0.64	0.70
	22		92	137	137	0.19	0.33	0.41	0.46	0.54	0.64	0.70
	27	Copper and Copper Alloys (Bronze / Brass)	95	128	142	0.19	0.31	0.43	0.53	0.64	0.74	0.79

► The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
 Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.

i-ONE
DRILLSi-DREAM
DRILLSDREAM
DRILLS
-PRODREAM
DRILLS
-GENERALDREAM
DRILLS
-HIGH FEEDDREAM
DRILLS
-FLAT BOTTOMDREAM
DRILLS
-INOXDREAM
DRILLS
-ALUDREAM
DRILLS
-MQLDREAM DRILLS
for HIGH
HARDENED STEELSGENERAL
CARBIDE
DRILLSMULTI-1
DRILLSHPD
DRILLSGOLD-P
DRILLSSUPER-GP
DRILLSSTRAIGHT
SHANK
DRILLSTAPER SHANK
DRILLSNC-
SPOTTING
DRILLSCENTER
DRILLSSPADE
DRILLS

REAMERS

COUNTER
SINKSCOUNTER
BORESTECHNICAL
DATA

CARBIDE													
HSS							RECOMMENDED CUTTING CONDITIONS EMPFOHLENE SCHNEIDKONDITIONEN						
SPADE DRILL HSS-T15													
i-ONE DRILLS	ISO	VDI 3323	Material Description	Vc(m/min)			Feed(mm/rev)						
i-DREAM DRILLS				TiN	TiCN	TiAlN	Ø9.5-12.5	Ø13-17.5	Ø18-24	Ø25-35	Ø36-47	Ø48-65	Ø66-114
DREAM DRILLS -PRO	P	1	Non-alloy steel	54	67	75	0.15	0.22	0.28	0.37	0.46	0.56	0.67
DREAM DRILLS -GENERAL		2		49	58	69	0.13	0.19	0.24	0.34	0.43	0.50	0.57
DREAM DRILLS -HIGH FEED		3		45	56	63	0.13	0.19	0.23	0.34	0.43	0.50	0.58
		4		45	56	63	0.13	0.19	0.23	0.34	0.43	0.50	0.58
DREAM DRILLS -FLAT BOTTOM		6	Low alloy steel	45	56	58	0.13	0.20	0.24	0.36	0.42	0.46	0.55
		7		41	50	56	0.13	0.16	0.23	0.35	0.41	0.44	0.55
DREAM DRILLS -INOX		8		39	47	53	0.09	0.15	0.22	0.28	0.38	0.41	0.50
		9		36	43	46	0.08	0.15	0.21	0.27	0.38	0.40	0.51
DREAM DRILLS -ALU		10	High alloyed steel, and tool steel	25	34	36	0.08	0.17	0.20	0.24	0.30	0.37	0.39
		11		19	27	29	0.08	0.14	0.18	0.19	0.25	0.29	0.34
DREAM DRILLS -MQL	M	12	Stainless steel	20	23	29	0.12	0.18	0.20	0.24	0.30	0.36	0.46
		13		20	23	29	0.12	0.18	0.20	0.24	0.30	0.36	0.46
14		24		29	34	0.14	0.20	0.23	0.26	0.36	0.41	0.50	
DREAM DRILLS for HIGH HARDENED STEELS	K	15	Grey cast iron	48	58	70	0.14	0.26	0.35	0.45	0.56	0.64	0.68
		16		29	35	41	0.10	0.15	0.16	0.23	0.28	0.35	0.40
17		Nodular cast iron	48	58	70	0.14	0.26	0.35	0.45	0.56	0.64	0.68	
18			35	44	52	0.13	0.17	0.23	0.30	0.35	0.43	0.50	
GENERAL CARBIDE DRILLS		19	Malleable cast iron	52	64	75	0.16	0.30	0.40	0.49	0.59	0.69	0.75
				20	35	44	52	0.13	0.17	0.23	0.30	0.35	0.43
MULTI-1 DRILLS	N	21	Aluminum-wrought alloy	187	229	244	0.19	0.33	0.41	0.50	0.54	0.64	0.70
22		92		137	137	0.19	0.33	0.41	0.46	0.54	0.64	0.70	
HPD DRILLS		27		95	128	142	0.19	0.31	0.43	0.53	0.64	0.74	0.79
GOLD-P DRILLS	S	31	Heat Resistant Super Alloys	9	11	12	0.08	0.17	0.20	0.24	0.30	0.37	0.39
		32		8	9	11	0.08	0.14	0.18	0.19	0.25	0.29	0.34
33		8		9	11	0.08	0.14	0.18	0.19	0.25	0.29	0.34	
34		8		9	11	0.08	0.14	0.18	0.19	0.25	0.29	0.34	
35		8		9	11	0.08	0.14	0.18	0.19	0.25	0.29	0.34	
STRAIGHT SHANK DRILLS	H	38	Hardened steel	20	23	29	0.12	0.18	0.20	0.24	0.30	0.36	0.46
TAPER SHANK DRILLS	► The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points. Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.												
NC-SPOTTING DRILLS													
CENTER DRILLS													
SPADE DRILLS													
REAMERS													
COUNTER SINKS													
COUNTER BORES													
TECHNICAL DATA													
A376 phone:+82-32-526-0909, www.yg1.kr, E-mail:yg1@yg1.kr													
													

SPADE DRILL HSS-M48

ISO	VDI 3323	Material Description	Vc(m/min)			Feed(mm/rev)						
			TiN	TiCN	TiAlN	Ø9.5-12.5	Ø13-17.5	Ø18-24	Ø25-35	Ø36-47	Ø48-65	Ø66-114
P	1	Non-alloy steel	54	67	75	0.15	0.22	0.28	0.37	0.46	0.56	0.67
	2		49	58	69	0.13	0.19	0.24	0.34	0.43	0.50	0.57
	3		45	56	63	0.13	0.19	0.23	0.34	0.43	0.50	0.58
	4		45	56	63	0.13	0.19	0.23	0.34	0.43	0.50	0.58
	6	Low alloy steel	45	56	58	0.13	0.20	0.24	0.36	0.42	0.46	0.55
	7		41	50	56	0.13	0.16	0.23	0.35	0.41	0.44	0.55
	8		39	47	53	0.09	0.15	0.22	0.28	0.38	0.41	0.50
	9		36	43	46	0.08	0.15	0.21	0.27	0.38	0.40	0.51
	10	High alloyed steel, and tool steel	25	34	36	0.08	0.17	0.20	0.24	0.30	0.37	0.39
	11		19	27	29	0.08	0.14	0.18	0.19	0.25	0.29	0.34
K	15	Grey cast iron	48	58	70	0.14	0.26	0.35	0.45	0.56	0.64	0.68
	16		29	35	41	0.10	0.15	0.16	0.23	0.28	0.35	0.40
	17	Nodular cast iron	48	58	70	0.14	0.26	0.35	0.45	0.56	0.64	0.68
	18		35	44	52	0.13	0.17	0.23	0.30	0.35	0.43	0.50
	19	Malleable cast iron	52	64	75	0.16	0.30	0.40	0.49	0.59	0.69	0.75
	20		35	44	52	0.13	0.17	0.23	0.30	0.35	0.43	0.50
N	21	Aluminum-wrought alloy	187	229	244	0.19	0.33	0.41	0.50	0.54	0.64	0.70
	22		92	137	137	0.19	0.33	0.41	0.46	0.54	0.64	0.70
	27	Copper and Copper Alloys (Bronze / Brass)	95	128	142	0.19	0.31	0.43	0.53	0.64	0.74	0.79
S	31	Heat Resistant Super Alloys	9	11	12	0.08	0.17	0.20	0.24	0.30	0.37	0.39
	32		8	9	11	0.08	0.14	0.18	0.19	0.25	0.29	0.34
	33		8	9	11	0.08	0.14	0.18	0.19	0.25	0.29	0.34
	34		8	9	11	0.08	0.14	0.18	0.19	0.25	0.29	0.34
	35		8	9	11	0.08	0.14	0.18	0.19	0.25	0.29	0.34
H	38	Hardened steel	20	23	29	0.12	0.18	0.20	0.24	0.30	0.36	0.46

► The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.


SPADE DRILL CARBIDE-K10

ISO	VDI 3323	Material Description	Vc(m/min)			Feed(mm/rev)				
			TiN	TiCN	TiAlN	Ø9.5~12.5	Ø13~17.5	Ø18~24	Ø25~35	Ø36~47
K	15	Grey cast iron	95	101	125	0.17	0.26	0.32	0.42	0.53
	16		56	70	79	0.13	0.18	0.23	0.28	0.33
	17	Nodular cast iron	95	101	125	0.17	0.26	0.32	0.42	0.53
	18		66	81	93	0.13	0.15	0.28	0.33	0.37
	19	Malleable cast iron	98	125	137	0.18	0.30	0.37	0.46	0.56
	20		66	81	93	0.13	0.15	0.28	0.33	0.37

SPADE DRILL CARBIDE-K20

ISO	VDI 3323	Material Description	Vc(m/min)			Feed(mm/rev)				
			TiN	TiCN	TiAlN	Ø9.5-12.5	Ø13-17.5	Ø18-24	Ø25-35	Ø36-47
P	1	Non-alloy steel	94	110	119	0.20	0.24	0.31	0.42	0.46
	2		76	82	96	0.15	0.22	0.29	0.36	0.40
	3		66	70	84	0.15	0.22	0.28	0.36	0.40
	4		66	70	84	0.15	0.22	0.28	0.36	0.40
	6	Low alloy steel	73	81	88	0.15	0.23	0.29	0.38	0.42
	7		66	73	81	0.15	0.21	0.28	0.37	0.41
	8		62	70	78	0.12	0.20	0.27	0.33	0.40
	9		53	58	64	0.10	0.18	0.23	0.30	0.38
	10		50	56	67	0.09	0.18	0.22	0.28	0.31
	11	High alloyed steel, and tool steel	37	46	50	0.09	0.18	0.22	0.28	0.31
	12	Stainless steel	38	43	47	0.10	0.18	0.20	0.24	0.30
M	13		38	43	47	0.10	0.18	0.20	0.24	0.30
	14		43	49	55	0.12	0.20	0.23	0.27	0.35
K	15	Grey cast iron	95	101	125	0.17	0.26	0.32	0.42	0.53
	16		56	70	79	0.13	0.18	0.23	0.28	0.33
	17	Nodular cast iron	95	101	125	0.17	0.26	0.32	0.42	0.53
	18		66	81	93	0.13	0.15	0.28	0.33	0.37
	19	Malleable cast iron	98	125	137	0.18	0.30	0.37	0.46	0.56
	20		66	81	93	0.13	0.15	0.28	0.33	0.37
N	21	Aluminum-wrought alloy	366	396	427	0.24	0.38	0.45	0.50	0.53
	22		244	290	291	0.22	0.33	0.40	0.45	0.48
	27	Copper and Copper Alloys (Bronze / Brass)	136	168	193	0.15	0.24	0.29	0.39	0.47
S	31	Heat Resistant Super Alloys	50	55	62	0.19	0.19	0.21	0.24	0.30
	32		38	44	46	0.15	0.17	0.20	0.21	0.25
	33		38	44	46	0.15	0.17	0.20	0.21	0.25
	34		38	44	46	0.15	0.17	0.20	0.21	0.25
	35		38	44	46	0.15	0.17	0.20	0.21	0.25
H	38	Hardened steel	38	43	47	0.10	0.18	0.20	0.24	0.30

► The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
 Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.

SPADE DRILL FLAT BOTTOM HSS-T15

RPM = rev./min.
FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc(m/min)		Feed(mm/rev)			
			TiN	TiAlN	Ø9.5-12.5	Ø13-17.5	Ø18-24	Ø25-35
P	1	Non-alloy steel	54	60	0.12	0.18	0.22	0.30
	2		46	55	0.10	0.15	0.19	0.27
	3		45	50	0.10	0.15	0.18	0.27
	4		42	46	0.08	0.14	0.17	0.22
	6	Low alloy steel	45	46	0.10	0.16	0.19	0.29
	7		40	45	0.10	0.13	0.18	0.28
	8		38	42	0.07	0.12	0.18	0.22
	9		34	37	0.06	0.12	0.17	0.22
	10	High alloyed steel, and tool steel	27	29	0.07	0.12	0.15	0.20
	11		22	23	0.07	0.12	0.15	0.20
M	12	Stainless steel	23	25	0.13	0.15	0.18	0.22
	13		23	25	0.13	0.15	0.18	0.22
	14		26	29	0.17	0.18	0.20	0.23
K	15	Grey cast iron	51	60	0.12	0.21	0.29	0.40
	16		38	48	0.10	0.14	0.20	0.25
	17	Nodular cast iron	51	60	0.12	0.21	0.29	0.40
	18		38	48	0.10	0.14	0.20	0.25
	19	Malleable cast iron	56	66	0.13	0.25	0.35	0.41
	20		38	48	0.10	0.14	0.20	0.25
N	21	Aluminum-wrought alloy	208	213	0.17	0.28	0.36	0.43
	22		112	121	0.17	0.28	0.36	0.41
	27	Copper and Copper Alloys (Bronze / Brass)	48	70	0.15	0.26	0.37	0.45
S	31	Heat Resistant Super Alloys	20	10	0.06	0.14	0.16	0.19
	32		7	9	0.06	0.11	0.14	0.15
	33		7	9	0.06	0.11	0.14	0.15
	34		7	9	0.06	0.11	0.14	0.15
	35		7	9	0.06	0.11	0.14	0.15
H	38	Hardened steel	23	25	0.13	0.15	0.18	0.22

► The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.



SPADE DRILL CARBIDE-P40

 RPM = rev./min.
 FEED = mm/rev.

ISO	VDI 3323	Material Description	Vc(m/min)			Feed(mm/rev)				
			TiN	TiCN	TiAlN	Ø9.5-12.5	Ø13-17.5	Ø18-24	Ø25-35	Ø36-47
P	1	Non-alloy steel	94	110	119	0.20	0.24	0.31	0.42	0.46
	2		76	82	96	0.15	0.22	0.29	0.36	0.40
	3		66	70	84	0.15	0.22	0.28	0.36	0.40
	4		66	70	84	0.15	0.22	0.28	0.36	0.40
	6	Low alloy steel	73	81	88	0.15	0.23	0.29	0.38	0.42
	7		66	73	81	0.15	0.21	0.28	0.37	0.41
	8		62	70	78	0.12	0.20	0.27	0.33	0.40
	9		53	58	64	0.10	0.18	0.23	0.30	0.38
	10	High alloyed steel, and tool steel	50	56	67	0.09	0.18	0.22	0.28	0.31
	11		37	46	50	0.09	0.18	0.22	0.28	0.31
M	12	Stainless steel	38	43	47	0.10	0.18	0.20	0.24	0.30
	13		38	43	47	0.10	0.18	0.20	0.24	0.30
	14		43	49	55	0.12	0.20	0.23	0.27	0.35
K	15	Grey cast iron	95	101	125	0.17	0.26	0.32	0.42	0.53
	16		56	70	79	0.13	0.18	0.23	0.28	0.33
	17	Nodular cast iron	95	101	125	0.17	0.26	0.32	0.42	0.53
	18		66	81	93	0.13	0.15	0.28	0.33	0.37
	19	Malleable cast iron	98	125	137	0.18	0.30	0.37	0.46	0.56
	20		66	81	93	0.13	0.15	0.28	0.33	0.37
N	21	Aluminum-wrought alloy	366	396	427	0.24	0.38	0.45	0.50	0.53
	22		244	290	291	0.22	0.33	0.40	0.45	0.48
	27	Copper and Copper Alloys (Bronze / Brass)	136	168	193	0.15	0.24	0.29	0.39	0.47
S	31	Heat Resistant Super Alloys	50	55	62	0.19	0.19	0.21	0.24	0.30
	32		38	44	46	0.15	0.17	0.20	0.21	0.25
	33		38	44	46	0.15	0.17	0.20	0.21	0.25
	34		38	44	46	0.15	0.17	0.20	0.21	0.25
	35		38	44	46	0.15	0.17	0.20	0.21	0.25
H	38	Hardened steel	38	43	47	0.10	0.18	0.20	0.24	0.30

► The recommendations for speeds, feeds and other parameters presented in this chart are nominal recommendations and should be considered only as good starting points.
 Speed and feed reductions (20% reduction in speed and 10% reduction in feed) are recommended.