



Leading Through Innovation



SOLID CARBIDE, HSS & HSS-E

CENTER DRILLS

ZENTRIERBOHRER

- For General Purpose
- Für allgemeine Anwendungen



SELECTION GUIDE



SERIES

D5303	DV303	DV333
CARBIDE	HSS-E	HSS-E
FORM A	FORM A	FORM A
D1.0	D0.5	D1.6
D6.3	D6.3	D6.3
310	311	311

TOOL MATERIAL

TYPE

SIZE MIN

SIZE MAX

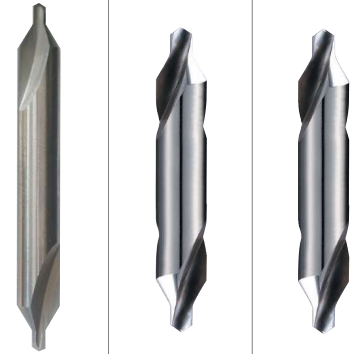
PAGE

SURFACE TREATMENT

Bright

SOLID CARBIDE, HSS & HSS-E CENTER DRILLS

For General Purpose



Please visit globalyg1.com/mat for material search

◎ : Excellent ○ : Good

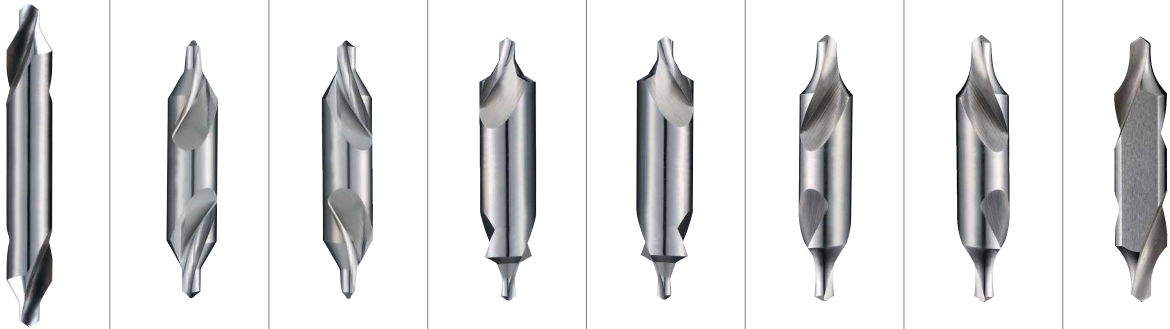
Recommended cutting conditions : P.317

ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc				
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		Ferritic	130		○	○	○	
20	Malleable cast iron	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		Non Metallic Materials	Duroplastic, Fiber Reinforced Plastic					
	30			Rubber, Wood, etc.					
S	31	Heat Resistant Super Alloys	Fe Based Annealed	200	15				
	32		Cured	280	30				
	33		Annealed	250	25				
	34	Titanium Alloys	Ni or Co Based Cured	350	38				
	35		Cast	320	34				
	36		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					



DV334	D1303	D1343	D1313	D1353	D1363	D1373	DV383
HSS-E	HSS	HSS	HSS	HSS	HSS	HSS	HSS-E
FORM A	FORM A	FORM A	FORM B	FORM B	FORM R	FORM R	FORM R
D1.0	D0.5	D0.5	D1.0	D2.0	D0.5	D0.8	D1.6
D5.0	D10.0	D8.0	D6.3	D6.3	D8.0	D5.0	D6.3
312	313	313	314	314	315	315	316

Bright



⊙	⊙	⊙	⊙	⊙	⊙	⊙	⊙	1
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								41

i-ONE DRILLS

i-DREAM DRILLS

DREAM DRILLS -GENERAL

DREAM DRILLS -HIGH FEED

DREAM DRILLS -FLAT BOTTOM

DREAM DRILLS -INOX

DREAM DRILLS -ALU

DREAM DRILLS -CFRP

DREAM DRILLS -MQL

DREAM DRILLS for HIGH HARDENED STEELS

GENERAL CARBIDE DRILLS

MULTI-1 DRILLS

HPD DRILLS

GOLD-P DRILLS

SUPER-GP DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

REAMERS

COUNTER SINKS

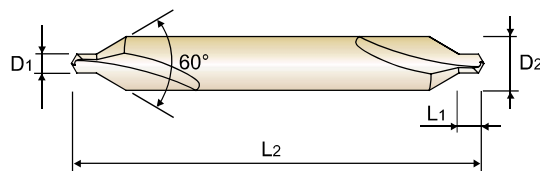
COUNTER





CARBIDE, CENTER DRILLS / FORM A

- VOLLHARTMETALL, ZENTRIERBOHRER / FORM A
- Forets carbure à centrer / Forme A
- PUNTE A CENTRARE IN MD / FORMA A

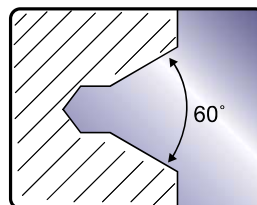


DIN 333
CARBIDE
h8
k12
120°
P.317

FORM A (60°)

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Pilot Length	Overall Length
	D1	D2	L1	L2
D5303010	1.0	3.15	1.3	31.5
D5303912	1.25	3.15	1.6	31.5
D5303016	1.6	4	2	35.5
D5303020	2.0	5	2.5	40
D5303025	2.5	6.3	3.1	45
D5303931	3.15	8	3.9	50
D5303040	4.0	10	5	56
D5303050	5.0	12.5	6.3	63
D5303063	6.3	16	8	71



◎ : Excellent ○ : Good

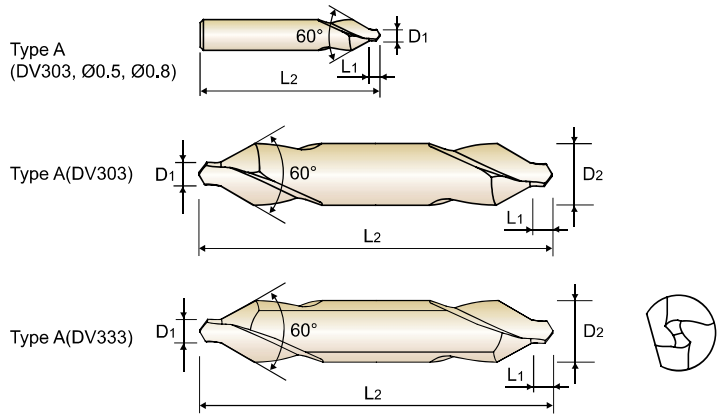
ISO Material Description	P										M			K							
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	◎			◎						○			◎	○	○			○	

ISO Material Description	N									S						H						
	Aluminum-wrought alloy			Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials			Heat Resistant Super Alloys						Titanium Alloys		Hardened steel	Chilled Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	
HRc											15	30	25	38	34			55	60	42	55	
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550	
Recommended																						



HSS-E, CENTER DRILLS / FORM A

- HSS-EX, ZENTRIERBOHRER / FORM A
- Forets HSS-EX à centrer / Forme A
- PUNTE A CENTRARE PER TORNII IN HSS-EX / FORMA A



FORM A (60°)

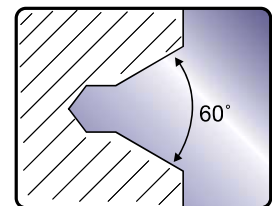
EDP No.	Drill Diameter	Shank Diameter	Pilot Length	Overall Length
	D1	D2	L1	L2
DV303005	0.5	3.15	0.8	25
DV303008	0.8	3.15	1.1	25
DV303010	1.0	3.15	1.3	31.5
DV303912	1.25	3.15	1.6	31.5
DV303016	1.6	4	2	35.5
DV303020	2.0	5	2.5	40
DV303025	2.5	6.3	3.1	45
DV303931	3.15	8	3.9	50
DV303040	4.0	10	5	56
DV303050	5.0	12.5	6.3	63
DV303063	6.3	16	8	71

► Under 1.0mm : Single End

FORM A (60°), FLAT

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Pilot Length	Overall Length
	D1	D2	L1	L2
DV333016	1.6	4	2	35.5
DV333020	2.0	5	2.5	40
DV333025	2.5	6.3	3.1	45
DV333931	3.15	8	3.9	50
DV333040	4.0	10	5	56
DV333050	5.0	12.5	6.3	63
DV333063	6.3	16	8	71



◎ : Excellent ○ : Good

ISO Material Description	P										M				K						
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	21	21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	○			◎	○					○			◎	○	○		○		

ISO Material Description	N					S										H					
	Aluminum-wrought alloy		Aluminum-cast, alloyed		Copper and Copper Alloys (Bronze / Brass)	Non Metallic Materials	Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron					
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended																					

i-ONE DRILLS

i-DREAM DRILLS

DREAM DRILLS -GENERAL

DREAM DRILLS -HIGH FEED

DREAM DRILLS -FLAT BOTTOM

DREAM DRILLS -INOX

DREAM DRILLS -ALU

DREAM DRILLS -CFRP

DREAM DRILLS -MQL

DREAM DRILLS for HIGH HARDENED STEELS

GENERAL CARBIDE DRILLS

MULTI-1 DRILLS

HPD DRILLS

GOLD-P DRILLS

SUPER-GP DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

REAMERS

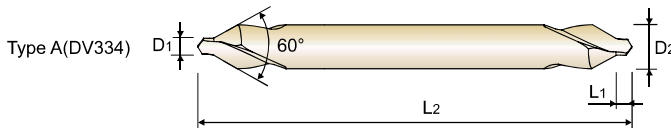
COUNTER SINKS

COUNTER



HSS-E, CENTER DRILLS EXTRA LONG / FORM A

- HSS-EX, ZENTRIERBOHRER / FORM A
- Forets HSS-EX à centrer / Forme A, série extra-longue
- PUNTE A CENTRARE PER TORNII IN HSS-EX / FORMA A

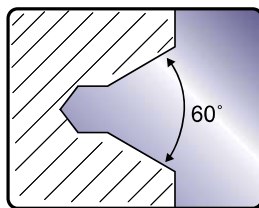


HSS-E
h8
k12
120°
P.318

EXTRA LONG / FORM A (60°)

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Pilot Length	Overall Length
	D1	D2	L1	L2
DV334010	1.0	4	1.3	120
DV334016	1.6	5	2	120
DV334020	2.0	6	2.5	120
DV334025	2.5	8	3.1	120
DV334931	3.15	10	3.9	120
DV334040	4.0	12	5	120
DV334050	5.0	14	6.3	120



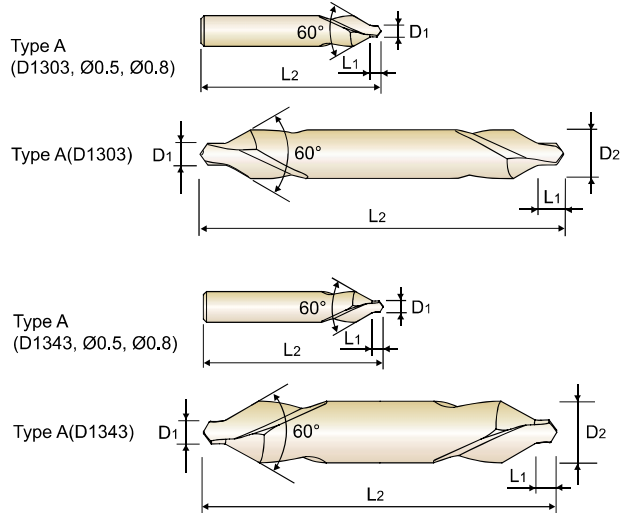
◎ : Excellent ○ : Good

ISO Material Description	P										M			K							
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel			Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25		21	
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	
Recommended	◎	◎	○			◎	○					○			◎	○	○		○		
ISO Material Description	N										S						H				
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys						Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended																					



HSS, CENTER DRILLS / FORM A

- HSS, ZENTRIERBOHRER / FORM A
- Forets HSS à centrer / Forme A
- PUNTE A CENTRARE PER TORNII IN HSS / FORMA A



FORM A (60°)

EDP No.	Drill Diameter		Shank Diameter		Pilot Length		Overall Length	
	D1	D2	D2	D2	L1	L2	L2	L2
D1303005	0.5	3.15	3.15	3.15	0.8	25	25	25
D1303008	0.8	3.15	3.15	3.15	1.1	25	25	25
D1303010	1.0	3.15	3.15	3.15	1.3	31.5	31.5	31.5
D1303912	1.25	3.15	3.15	3.15	1.6	31.5	31.5	31.5
D1303016	1.6	4	4	4	2	35.5	35.5	35.5
D1303020	2.0	5	5	5	2.5	40	40	40
D1303025	2.5	6.3	6.3	6.3	3.1	45	45	45
D1303931	3.15	8	8	8	3.9	50	50	50
D1303040	4.0	10	10	10	5	56	56	56
D1303050	5.0	12.5	12.5	12.5	6.3	63	63	63
D1303063	6.3	16	16	16	8	71	71	71
D1303080	8.0	20	20	20	10.1	80	80	80
D1303100	10.0	25	25	25	12.8	100	100	100

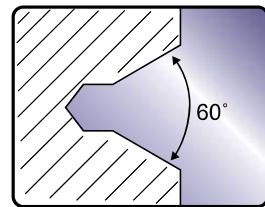
► Under 1.0mm : Single End

LEFT HELIX / FORM A (60°)

Unit : mm

EDP No.	Drill Diameter		Shank Diameter		Pilot Length		Overall Length	
	D1	D2	D2	D2	L1	L2	L2	L2
D1343005	0.5	3.15	3.15	3.15	0.8	25	25	25
D1343008	0.8	3.15	3.15	3.15	1.1	25	25	25
D1343010	1.0	3.15	3.15	3.15	1.3	31.5	31.5	31.5
D1343912	1.25	3.15	3.15	3.15	1.6	31.5	31.5	31.5
D1343016	1.6	4	4	4	2	35.5	35.5	35.5
D1343020	2.0	5	5	5	2.5	40	40	40
D1343025	2.5	6.3	6.3	6.3	3.1	45	45	45
D1343931	3.15	8	8	8	3.9	50	50	50
D1343040	4.0	10	10	10	5	56	56	56
D1343050	5.0	12.5	12.5	12.5	6.3	63	63	63
D1343063	6.3	16	16	16	8	71	71	71
D1343080	8.0	20	20	20	10.1	80	80	80

► Under 1.0mm : Single End



© : Excellent ○ : Good

ISO Material Description	P										M				K										
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel				Grey cast iron		Nodular cast iron		Malleable cast iron		
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
HRc	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	130	230	130	230	130
Recommended	◎	◎	○	○	○	◎	○	○	○	○	○	○	○	○	◎	○	○	○	○	○	○	○	○	○	○

ISO Material Description	N										S						H							
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys						Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron			
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
HRc	60	100	75	90	130	110	90	100			15	30	25	38	34	400Rm	1050Rm	550	630	400	550	550	630	400
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎



i-ONE DRILLS

i-DREAM DRILLS

DREAM DRILLS -GENERAL

DREAM DRILLS -HIGH FEED

DREAM DRILLS -FLAT BOTTOM

DREAM DRILLS -INOX

DREAM DRILLS -ALU

DREAM DRILLS -CFRP

DREAM DRILLS -MQL

DREAM DRILLS for HIGH HARDENED STEELS

GENERAL CARBIDE DRILLS

MULTI-1 DRILLS

HPD DRILLS

GOLD-P DRILLS

SUPER-GP DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

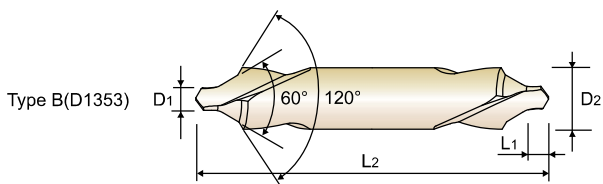
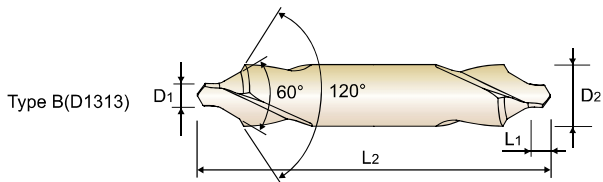
REAMERS

COUNTER SINKS

COUNTER

HSS, CENTER DRILLS / FORM B

- HSS, ZENTRIERBOHRER / FORM B
- Forets HSS à centrer / Forme B
- PUNTE A CENTRARE PER TORNII IN HSS / FORMA B



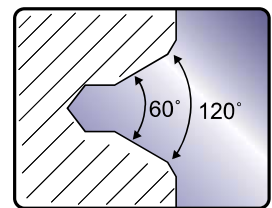
FORM B (60° + 120°)

EDP No.	Drill Diameter	Shank Diameter	Pilot Length	Overall Length
	D1	D2	L1	L2
D1313010	1.0	4	1.3	35.5
D1313912	1.25	5	1.6	40
D1313016	1.6	6.3	2	45
D1313020	2.0	8	2.5	50
D1313025	2.5	10	3.1	55
D1313931	3.15	11.2	3.9	60
D1313040	4.0	14	5	67
D1313050	5.0	18	6.3	75
D1313063	6.3	20	8	80

LEFT HELIX / FORM B (60° + 120°)

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Pilot Length	Overall Length
	D1	D2	L1	L2
D1353020	2.0	8	2.5	50
D1353025	2.5	10	3.1	55
D1353931	3.15	11.2	3.9	60
D1353040	4.0	14	5	67
D1353063	6.3	20	8	80



◎ : Excellent ○ : Good

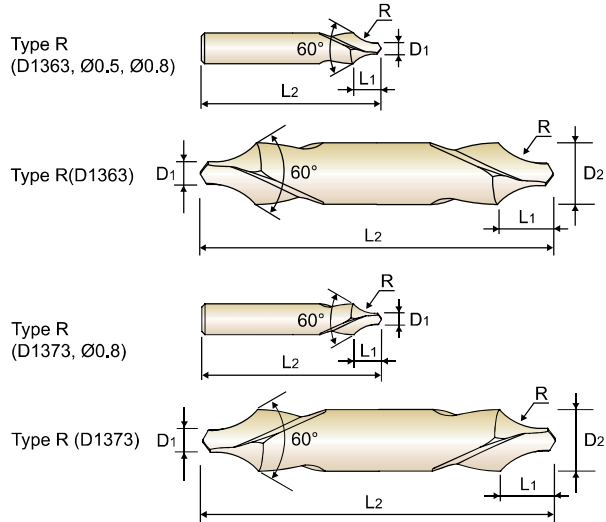
ISO Material Description	P										M				K					
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel		Stainless steel		Grey cast iron		Nodular cast iron		Malleable cast iron	
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
HRc	13	25	28	32	30	10	29	32	38	15	35	15	23	10	10	26	3	25	3	21
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○			◎	○					○			◎	○	○		○	

ISO Material Description	N									S							H				
	Aluminum- wrought alloy			Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials	Heat Resistant Super Alloys					Titanium Alloys		Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended																					



HSS, CENTER DRILLS / FORM R

- HSS, ZENTRIERBOHRER / FORM R
- Forets HSS à centrer / Forme R
- PUNTE A CENTRARE PER TORNII IN HSS / FORMA R



DIN 333
HSS
h8
k12
120°
P.318

FORM R

EDP No.	Drill Diameter	Shank Diameter	Pilot Length (Include Radius)	Overall Length	Radius
	D1	D2	L1	L2	R
D1363005	0.5	3.15	2.12	25	1.25
D1363008	0.8	3.15	2.65	25	2
D1363010	1.0	3.15	3	31.5	2.5
D1363912	1.25	3.15	3.35	31.5	3.15
D1363016	1.6	4	4.25	35.5	4
D1363020	2.0	5	5.3	40	5
D1363025	2.5	6.3	6.7	45	6.3
D1363931	3.15	8	8.5	50	8
D1363040	4.0	10	10.6	56	10
D1363050	5.0	12.5	13.2	63	12.5
D1363063	6.3	16	17	71	16
D1363080	8.0	20	21.2	80	20

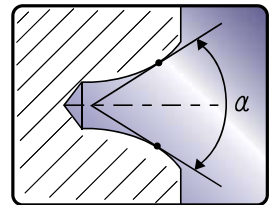
► Under 1.0mm : Single End

LEFT HELIX / FORM R

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Pilot Length (Include Radius)	Overall Length	Radius
	D1	D2	L1	L2	R
D1373008	0.8	3.15	2.65	25	2
D1373010	1.0	3.15	3	31.5	2.5
D1373912	1.25	3.15	3.35	31.5	3.15
D1373016	1.6	4	4.25	35.5	4
D1373020	2.0	5	5.3	40	5
D1373025	2.5	6.3	6.7	45	6.3
D1373931	3.15	8	8.5	50	8
D1373040	4.0	10	10.6	56	10
D1373050	5.0	12.5	13.2	63	12.5

► Under 1.0mm : Single End



© : Excellent ○ : Good

ISO Material Description	P										M				K								
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel				Stainless steel				Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20			
HRc	13	25	28	32	30	29	32	38	35	15	35	15	23	10	10	26	3	25	21	21			
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230			
Recommended	◎	◎	○			◎	○					○			◎	○	○		○				

ISO Material Description	N								S								H				
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials	Heat Resistant Super Alloys				Titanium Alloys				Hardened steel	Chilled Cast Iron	Hardened Cast Iron	
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
HRc											15	30	25	38	34			55	60	42	55
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550
Recommended																					

i-ONE DRILLS

i-DREAM DRILLS

DREAM DRILLS -GENERAL

DREAM DRILLS -HIGH FEED

DREAM DRILLS -FLAT BOTTOM

DREAM DRILLS -INOX

DREAM DRILLS -ALU

DREAM DRILLS -CFRP

DREAM DRILLS -MQL

DREAM DRILLS for HIGH HARDENED STEELS

GENERAL CARBIDE DRILLS

MULTI-1 DRILLS

HPD DRILLS

GOLD-P DRILLS

SUPER-GP DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

REAMERS

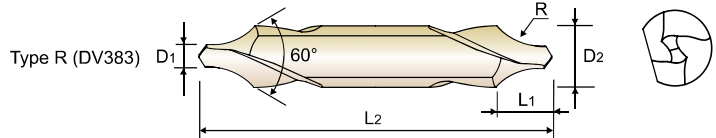
COUNTER SINKS

COUNTER



HSS-E, CENTER DRILLS / FORM R

- HSS-EX, ZENTRIERBOHRER / FORM R
- Forets HSS-EX à centrer / Forme R
- PUNTE A CENTRARE PER TORNII IN HSS-EX / FORMA R

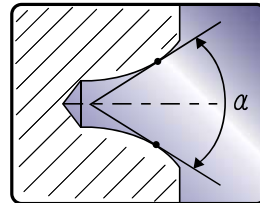


DIN 333
HSS-E
h8
k12
120°
P.318

FORM R / FLAT

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Pilot Length (Include Radius)	Overall Length	Radius
	D1	D2	L1	L2	R
DV383016	1.6	4	4.25	35.5	4
DV383020	2.0	5	5.3	40	5
DV383025	2.5	6.3	6.7	45	6.3
DV383931	3.15	8	8.5	50	8
DV383040	4.0	10	10.6	56	10
DV383050	5.0	12.5	13.2	63	12.5
DV383063	6.3	16	17	71	16



◎ : Excellent ○ : Good

ISO Material Description	P										M				K							
	Non-alloy steel					Low alloy steel					High alloyed steel, and tool steel			Stainless steel				Grey cast iron		Nodular cast iron		Malleable cast iron
VDI 3323	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
HRC	13	25	28	32	30	30	32	38	38	40	42	45	48	50	50	52	55	58	60	62		
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230		
Recommended	◎	◎	○			◎	○					○			◎	○	○		○			

ISO Material Description	N										S						H						
	Aluminum-wrought alloy		Aluminum-cast, alloyed			Copper and Copper Alloys (Bronze / Brass)			Non Metallic Materials		Heat Resistant Super Alloys						Titanium Alloys		Hardened steel		Chilled Cast Iron		Hardened Cast Iron
VDI 3323	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41		
HRC											15	30	25	38	34			55	60	42	55		
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550		
Recommended																							



D5303 SERIES

CARBIDE, CENTER DRILLS

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

ISO	VDI 3323	Material Description	Vc (m/min)	Parameter	Drill Diameter (mm)					
					1.0	2.0	3.0	4.0	5.0	6.0
P	1	Non-alloy steel	50	RPM FEED	15920 0.02-0.04	7960 0.03-0.06	5310 0.04-0.08	3980 0.05-0.09	3180 0.06-0.10	2650 0.07-0.12
	2		40	RPM FEED	12730 0.02-0.04	6370 0.03-0.06	4240 0.04-0.08	3180 0.05-0.09	2550 0.06-0.10	2120 0.07-0.12
	3		30	RPM FEED	9550 0.01-0.03	4770 0.01-0.035	3180 0.015-0.05	2390 0.02-0.06	1910 0.03-0.07	1590 0.04-0.08
	4									
	5									
	6	Low alloy steel	40	RPM FEED	12730 0.02-0.04	6370 0.03-0.06	4240 0.04-0.08	3180 0.05-0.09	2550 0.06-0.10	2120 0.07-0.12
	7		30	RPM FEED	9550 0.01-0.03	4770 0.01-0.035	3180 0.015-0.05	2390 0.02-0.06	1910 0.03-0.07	1590 0.04-0.08
	8									
	9									
	10	High alloyed steel, and tool steel								
	11									
M	12	Stainless steel	20	RPM FEED	6370 0.01-0.03	3180 0.01-0.035	2120 0.015-0.05	1590 0.02-0.06	1270 0.03-0.07	1060 0.04-0.08
	13									
	14									
K	15	Grey cast iron	60	RPM FEED	19100 0.02-0.04	9550 0.03-0.06	6370 0.04-0.08	4770 0.05-0.09	3820 0.06-0.10	3180 0.07-0.12
	16		50	RPM FEED	15920 0.01-0.03	7960 0.01-0.035	5310 0.015-0.05	3980 0.02-0.06	3180 0.03-0.07	2650 0.04-0.08
	17	Nodular cast iron	60	RPM FEED	19100 0.02-0.04	9550 0.03-0.06	6370 0.04-0.08	4770 0.05-0.09	3820 0.06-0.10	3180 0.07-0.12
	18									
	19	Malleable cast iron	40	RPM FEED	12730 0.02-0.04	6370 0.03-0.06	4240 0.04-0.08	3180 0.05-0.09	2550 0.06-0.10	2120 0.07-0.12
	20									
N	21	Aluminum-wrought alloy								
	22									
	23									
	24	Aluminum-cast, alloyed								
	25									
	26									
	27									
	28	Copper and Copper Alloys (Bronze / Brass)								
	29									
	30	Non Metallic Materials								
S	31	Heat Resistant Super Alloys								
	32									
	33									
	34									
	35									
	36	Titanium Alloys								
	37									
H	38	Hardened steel								
	39									
	40	Chilled Cast Iron								
	41	Hardened Cast Iron								

i-ONE DRILLS

i-DREAM DRILLS

DREAM DRILLS -GENERAL

DREAM DRILLS -HIGH FEED

DREAM DRILLS -FLAT BOTTOM

DREAM DRILLS -INOX

DREAM DRILLS -ALU

DREAM DRILLS -CFRP

DREAM DRILLS -MQL

DREAM DRILLS for HIGH HARDENED STEELS

GENERAL CARBIDE DRILLS

MULTI-1 DRILLS

HPD DRILLS

GOLD-P DRILLS

SUPER-GP DRILLS

STRAIGHT SHANK DRILLS

TAPER SHANK DRILLS

NC-SPOTTING DRILLS

CENTER DRILLS

SPADE DRILLS

REAMERS

COUNTER SINKS

COUNTER





RECOMMENDED CUTTING CONDITIONS
EMPFOLHENE SCHNEIDKONDITIONEN

DV303, DV333, DV334, D1303, D1343, D1313, D1353, D1363, D1373, DV383 SERIES

HSS & HSS-E, CENTER DRILLS

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

- i-ONE DRILLS
- i-DREAM DRILLS
- DREAM DRILLS -GENERAL
- DREAM DRILLS -HIGH FEED
- DREAM DRILLS -FLAT BOTTOM
- DREAM DRILLS -INOX
- DREAM DRILLS -ALU
- DREAM DRILLS -CFRP
- DREAM DRILLS -MQL
- DREAM DRILLS for HIGH HARDENED STEELS
- GENERAL CARBIDE DRILLS
- MULTI-1 DRILLS
- HPD DRILLS
- GOLD-P DRILLS
- SUPER-GP DRILLS
- STRAIGHT SHANK DRILLS
- TAPER SHANK DRILLS
- NC-SPOTTING DRILLS
- CENTER DRILLS
- SPADE DRILLS
- REAMERS
- COUNTER SINKS
- COUNTER

ISO	VDI 3323	Material Description	Vc (m/min)	Parameter	Drill Diameter (mm)							
					1.0	2.0	3.0	4.0	5.0	6.0	8.0	10.0
P	1	Non-alloy steel	40	RPM FEED	12730 0.02-0.04	6370 0.03-0.06	4240 0.04-0.08	3180 0.05-0.09	2550 0.06-0.10	2120 0.07-0.12	1590 0.09-0.15	1270 0.12-0.18
	2		30	RPM FEED	9550 0.02-0.04	4770 0.03-0.06	3180 0.04-0.08	2390 0.05-0.09	1910 0.06-0.10	1590 0.07-0.12	1190 0.09-0.15	950 0.12-0.18
	3		25	RPM FEED	7960 0.01-0.03	3980 0.01-0.035	2650 0.015-0.05	1990 0.02-0.06	1590 0.03-0.07	1330 0.04-0.08	990 0.06-0.12	800 0.08-0.14
	4											
	5											
	6	Low alloy steel	30	RPM FEED	9550 0.02-0.04	4770 0.03-0.06	3180 0.04-0.08	2390 0.05-0.09	1910 0.06-0.10	1590 0.07-0.12	1190 0.09-0.15	950 0.12-0.18
	7		20	RPM FEED	6370 0.01-0.03	3180 0.01-0.035	2120 0.015-0.05	1590 0.02-0.06	1270 0.03-0.07	1060 0.04-0.08	800 0.06-0.12	640 0.08-0.14
	8											
	9											
	10		High alloyed steel, and tool steel									
	11											
M	12	Stainless steel	10	RPM FEED	3180 0.01-0.03	1590 0.01-0.035	1060 0.015-0.05	800 0.02-0.06	640 0.03-0.07	530 0.04-0.08	400 0.06-0.12	320 0.08-0.14
	13											
	14											
K	15	Grey cast iron	40	RPM FEED	12730 0.02-0.04	6370 0.03-0.06	4240 0.04-0.08	3180 0.05-0.09	2550 0.06-0.10	2120 0.07-0.12	1590 0.09-0.15	1270 0.12-0.18
	16		30	RPM FEED	9550 0.01-0.03	4770 0.01-0.035	3180 0.015-0.05	2390 0.02-0.06	1910 0.03-0.07	1590 0.04-0.08	1190 0.06-0.12	950 0.08-0.14
	17	Nodular cast iron	40	RPM FEED	12730 0.02-0.04	6370 0.03-0.06	4240 0.04-0.08	3180 0.05-0.09	2550 0.06-0.10	2120 0.07-0.12	1590 0.09-0.15	1270 0.12-0.18
	18											
	19	Malleable cast iron	25	RPM FEED	7960 0.02-0.04	3980 0.03-0.06	2650 0.04-0.08	1990 0.05-0.09	1590 0.06-0.10	1330 0.07-0.12	990 0.06-0.12	800 0.12-0.18
20												
N	21	Aluminum-wrought alloy										
	22											
	23	Aluminum-cast, alloyed										
	24											
	25											
	26	Copper and Copper Alloys (Bronze / Brass)										
	27											
	28											
	29	Non Metallic Materials										
30												
S	31	Heat Resistant Super Alloys										
	32											
	33											
	34											
	35											
	36	Titanium Alloys										
37												
H	38	Hardened steel										
	39											
H	40	Chilled Cast Iron										
	41	Hardened Cast Iron										



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