



Leading Through Innovation



HSS-PM

MULTI-1 DRILLS

MULTI-1 BOHRER

- Premium HSS-PM Drills
For Wide Range of Applications Particularly Stainless Steels and Titanium
- HSS-PM Bohrer
Für ein breites Anwendungsspektrum, insbesondere Edelstahl und Titan

SELECTION GUIDE



SERIES

TOOL MATERIAL

LENGTH

SIZE MIN

SIZE MAX

PAGE

SURFACE TREATMENT

CDRA03

CDRA04

HSS-PM

STUB

JOBBER

D1.0

D2.0

D13.0

D13.0

171

174

TiAIN

HSS-PM

MULTI-1 DRILLS

Premium HSS-PM Drills

for Wide Range of Applications Particularly Stainless Steels and Titanium

Please visit
globalyg1.com/mat
for material search

◎ : Excellent ○ : Good

(Recommended cutting conditions : P.177)



ISO	VDI 3323	Material Description	Composition / Structure / Heat Treatment	HB	HRc	CDRA03	CDRA04
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		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		Ferritic	160	3		
	18	Nodular cast iron	Pearlitic	250	25		
	19		Ferritic	130			
N	20	Malleable cast iron	Pearlitic	230	21		
	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				
S	30	Non Metallic Materials	Rubber, Wood, etc.				
	31	Heat Resistant Super Alloys	Fe Based Annealed	200	15		
	32		Cured	280	30		
	33		Annealed	250	25		
	34		Ni or Co Based Cured	350	38		
	35		Cast	320	34		
	36	Titanium Alloys	Pure Titanium	400 Rm		○	○
H	37		Alpha + Beta Alloys Hardened	1050 Rm			
	38	Hardened steel	Hardened	550	55		
	39		Hardened	630	60		
	40	Chilled Cast Iron	Cast	400	42		
	41	Hardened Cast Iron	Hardened	550	55		

MULTI-1 DRILLS

CDRA03 SERIES

HSS-PM, MULTI-1 DRILLS

HSS-PM MULTI-1 BOHRER

Forets MULTI-1 HSS-PM Premium, série extra-courte

PUNTA GAMBO CILINDRICO MULTI-1, HSS-PM

STUB

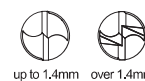
EXTRA KURZ

EXTRA-COURTE

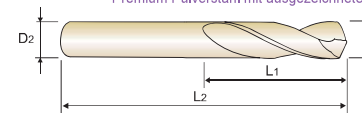
EXTRA CORTA

- Application : Structural steels, Carbon steels, Alloy steels, Pre-hardened steels, Mold steels, Stainless steels, Hardened steels(HRc30~45), Cast iron, Aluminum alloys, Nonferrous alloys, Titanium.
- Advantage : Point shape to maximize self-centering, Flute design for the best chip evacuation, Premium powder materials with excellent toughness.

- Anwendung : Baustähle, Kohlenstoffstähle, legierte Stähle, vorgehärtete Stähle, Formstähle, rostfreie Stähle, gehärtete Stähle (HRc 30~45), Gusseisen, Aluminiumlegierungen, Nichteisen Legierungen, Titan.
- Vorteile : Maximale Selbstzentrierung durch besonderen Spitzenanschliff, Bohrergeometrie für optimale Spanabfuhr, Premium Pulverstahl mit ausgezeichneter Zähigkeit.



up to 1.4mm over 1.4mm



up to 1.0mm over 1.0mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAIN	D1	D2	L1	L2
CDRA03010	1.0	3	6	38
CDRA03011	1.1	3	7	39
CDRA03012	1.2	3	8	40
CDRA03013	1.3	3	8	40
CDRA03014	1.4	3	9	41
CDRA03015	1.5	3	9	41
CDRA03016	1.6	3	10	42
CDRA03017	1.7	3	10	42
CDRA03018	1.8	3	11	43
CDRA03019	1.9	3	11	43
CDRA03020	2.0	3	12	44
CDRA03021	2.1	3	12	44
CDRA03022	2.2	3	13	45
CDRA03023	2.3	3	13	45
CDRA03024	2.4	3	14	46
CDRA03025	2.5	3	14	46
CDRA03026	2.6	3	14	46
CDRA03027	2.7	3	16	48
CDRA03028	2.8	3	16	48
CDRA03029	2.9	3	16	48
CDRA03030	3.0	3	16	48
CDRA03031	3.1	4	18	50
CDRA03032	3.2	4	18	50
CDRA03033	3.3	4	18	50

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAIN	D1	D2	L1	L2
CDRA03034	3.4	4	20	52
CDRA03035	3.5	4	20	52
CDRA03036	3.6	4	20	52
CDRA03037	3.7	4	20	52
CDRA03038	3.8	4	22	54
CDRA03039	3.9	4	22	54
CDRA03040	4.0	4	22	54
CDRA03041	4.1	6	22	66
CDRA03042	4.2	6	22	66
CDRA03043	4.3	6	24	68
CDRA03044	4.4	6	24	68
CDRA03045	4.5	6	24	68
CDRA03046	4.6	6	24	68
CDRA03047	4.7	6	24	68
CDRA03048	4.8	6	26	70
CDRA03049	4.9	6	26	70
CDRA03050	5.0	6	26	70
CDRA03051	5.1	6	26	70
CDRA03052	5.2	6	26	70
CDRA03053	5.3	6	26	70
CDRA03054	5.4	6	28	72
CDRA03055	5.5	6	28	72
CDRA03056	5.6	6	28	72
CDRA03057	5.7	6	28	72

► NEXT PAGE

◎ : Excellent ○ : Good

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



MULTI-1 DRILLS

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PUNTA GAMBO CILINDRICO MULTI-1, HSS-PM

STUB

EXTRA KURZ

EXTRA-COURTE

EXTRA CORTA

- Application : Structural steels, Carbon steels, Alloy steels, Pre-hardened steels, Mold steels, Stainless steels, Hardened steels(HRc30~45), Cast iron, Aluminum alloys, Nonferrous alloys, Titanium.
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- Anwendung : Baustähle, Kohlenstoffstähle, legierte Stähle, vorgehärtete Stähle, Formstähle, rostfreie Stähle, gehärtete Stähle (HRc 30~45), Gusseisen, Aluminiumlegierungen, Nichteisen Legierungen, Titan.
- Vorteile : Maximale Selbstzentrierung durch besonderen Spitzenanschiff Bohrergeometrie für optimale Spanabfuhr. Premium Pulverstahl mit ausgezeichnete Zähigkeit.



EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAIN	D1	D2	L1	L2
CDRA03058	5.8	6	28	72
CDRA03059	5.9	6	28	72
CDRA03060	6.0	6	28	72
CDRA03061	6.1	8	31	75
CDRA03062	6.2	8	31	75
CDRA03063	6.3	8	31	75
CDRA03064	6.4	8	31	75
CDRA03065	6.5	8	31	75
CDRA03066	6.6	8	31	75
CDRA03067	6.7	8	31	75
CDRA03068	6.8	8	34	78
CDRA03069	6.9	8	34	78
CDRA03070	7.0	8	34	78
CDRA03071	7.1	8	34	78
CDRA03072	7.2	8	34	78
CDRA03073	7.3	8	34	78
CDRA03074	7.4	8	34	78
CDRA03075	7.5	8	34	78
CDRA03076	7.6	8	37	81
CDRA03077	7.7	8	37	81
CDRA03078	7.8	8	37	81
CDRA03079	7.9	8	37	81
CDRA03080	8.0	8	37	81
CDRA03081	8.1	10	37	87

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAIN	D1	D2	L1	L2
CDRA03082	8.2	10	37	87
CDRA03083	8.3	10	37	87
CDRA03084	8.4	10	37	87
CDRA03085	8.5	10	37	87
CDRA03086	8.6	10	40	90
CDRA03087	8.7	10	40	90
CDRA03088	8.8	10	40	90
CDRA03089	8.9	10	40	90
CDRA03090	9.0	10	40	90
CDRA03091	9.1	10	40	90
CDRA03092	9.2	10	40	90
CDRA03093	9.3	10	40	90
CDRA03094	9.4	10	40	90
CDRA03095	9.5	10	40	90
CDRA03096	9.6	10	43	93
CDRA03097	9.7	10	43	93
CDRA03098	9.8	10	43	93
CDRA03099	9.9	10	43	93
CDRA03100	10.0	10	43	93
CDRA03101	10.1	12	43	100
CDRA03102	10.2	12	43	100
CDRA03103	10.3	12	43	100
CDRA03104	10.4	12	43	100
CDRA03105	10.5	12	43	100

► NEXT PAGE

ISO Material Description VDI 3323 HRc Recommended	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				
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22			
		13	25	28	32	10	29	32	38	15	35	15	23	10	10	26	3	25	21	19	20	230			
	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	200	280			
	◎	◎	○			◎	○				○	◎	◎	○	○	○									
ISO Material Description VDI 3323 HRc Recommended	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					
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41				
											15	16	20	25	38	34	55	60	42	50	55				
	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550				
	◎	◎	○																						



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STUB

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- Vorteile : Maximale Selbstzentrierung durch besonderen Spitzenanschiff Bohrergeometrie für optimale Spanabfuhr. Premium Pulverstahl mit ausgezeichnete Zähigkeit.



EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAIN	D1	D2	L1	L2
CDRA03106	10.6	12	43	100
CDRA03107	10.7	12	47	104
CDRA03108	10.8	12	47	104
CDRA03109	10.9	12	47	104
CDRA03110	11.0	12	47	104
CDRA03111	11.1	12	47	104
CDRA03112	11.2	12	47	104
CDRA03113	11.3	12	47	104
CDRA03114	11.4	12	47	104
CDRA03115	11.5	12	47	104
CDRA03116	11.6	12	47	104
CDRA03117	11.7	12	47	104
CDRA03118	11.8	12	47	104

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAIN	D1	D2	L1	L2
CDRA03119	11.9	12	51	108
CDRA03120	12.0	12	51	108
CDRA03121	12.1	12	51	108
CDRA03122	12.2	12	51	108
CDRA03123	12.3	12	51	108
CDRA03124	12.4	12	51	108
CDRA03125	12.5	12	51	108
CDRA03126	12.6	12	51	108
CDRA03127	12.7	12	51	108
CDRA03128	12.8	12	51	108
CDRA03129	12.9	12	51	108
CDRA03130	13.0	12	51	108

◎ : Excellent ○ : Good																																				
ISO	P										M					K																				
Material Description	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	26	27	28	29	30						
HRc	125	130	250	270	300	180	275	300	350	200	325	200	240	180	260	160	250	130	230	200	280	250	350	320	400Rm	1050Rm	550	630	400	550						
Recommended	◎	◎	○			◎	○							◎		○																				
ISO	N										S										H															
Material Description	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	45	46	47	48	49	50						
HRc	60	100	75	90	130	110	90	100			200	280	250	350	320	400Rm	1050Rm	550	630	400	550	550	630	400	550	550	630	400	550	550						
Recommended	◎	◎	○																																	

STUB

EXTRA KURZ

EXTRA-COURTE

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TiAIN	D1	D2	L1	L2
CDRA03106	10.6	12	43	100
CDRA03107	10.7	12	47	104
CDRA03108	10.8	12	47	104
CDRA03109	10.9	12	47	104
CDRA03110	11.0	12	47	104
CDRA03111	11.1	12	47	104
CDRA03112	11.2	12	47	104
CDRA03113	11.3	12	47	104
CDRA03114	11.4	12	47	104
CDRA03115	11.5	12	47	104
CDRA03116	11.6	12	47	104
CDRA03117	11.7	12	47	104
CDRA03118	11.8	12	47	104

ISO	P										M										K									
Material Description	Non-alloy steel										Low alloy steel										High alloyed steel and tool steel									

MULTI-1 DRILLS

CDRA04 SERIES

HSS-PM, MULTI-1 DRILLS

HSS-PM MULTI-1 BOHRER

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PUNTA GAMBO CILINDRICO MULTI-1, HSS-PM

JOBBER

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Bohrergeometrie für optimale Spanabfuhr.
Premium Pulverstahl mit ausgezeichneter Zähigkeit.



P.177

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TAiN	D1	D2	L1	L2
CDRA04020	2.0	3	24	56
CDRA04021	2.1	3	24	56
CDRA04022	2.2	3	25	56
CDRA04023	2.3	3	25	56
CDRA04024	2.4	3	30	61
CDRA04025	2.5	3	30	61
CDRA04026	2.6	3	30	61
CDRA04027	2.7	3	33	64
CDRA04028	2.8	3	33	64
CDRA04029	2.9	3	33	64
CDRA04030	3.0	3	33	64
CDRA04031	3.1	4	36	68
CDRA04032	3.2	4	36	68
CDRA04033	3.3	4	36	68
CDRA04034	3.4	4	39	71
CDRA04035	3.5	4	39	71
CDRA04036	3.6	4	39	71
CDRA04037	3.7	4	39	71
CDRA04038	3.8	4	43	75
CDRA04039	3.9	4	43	75
CDRA04040	4.0	4	43	75
CDRA04041	4.1	6	43	85
CDRA04042	4.2	6	43	85
CDRA04043	4.3	6	47	89

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TAiN	D1	D2	L1	L2
CDRA04044	4.4	6	47	89
CDRA04045	4.5	6	47	89
CDRA04046	4.6	6	47	89
CDRA04047	4.7	6	47	89
CDRA04048	4.8	6	52	94
CDRA04049	4.9	6	52	94
CDRA04050	5.0	6	52	94
CDRA04051	5.1	6	52	94
CDRA04052	5.2	6	52	94
CDRA04053	5.3	6	52	94
CDRA04054	5.4	6	57	99
CDRA04055	5.5	6	57	99
CDRA04056	5.6	6	57	99
CDRA04057	5.7	6	57	99
CDRA04058	5.8	6	57	99
CDRA04059	5.9	6	57	99
CDRA04060	6.0	6	57	99
CDRA04061	6.1	8	63	107
CDRA04062	6.2	8	63	107
CDRA04063	6.3	8	63	107
CDRA04064	6.4	8	63	107
CDRA04065	6.5	8	63	107
CDRA04066	6.6	8	63	107
CDRA04067	6.7	8	63	107

Unit : mm

► NEXT PAGE

◎ : Excellent ○ : Good																																		
ISO	P										M					K																		
Material Description	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	26	27	28						
HRC	13	25	28	32	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	200	280	250	350	320	400Rm	1050Rm	550						
Recommended	◎	◎	○			◎	○							◎	○																			
ISO	N										S										H													
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					Copper and Copper Alloys (Bronze / Brass)					Non Metallic Materials					Heat Resistant Super Alloys					Titanium Alloys					Hardened Steel		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	45	46	47	48	49	50				
HRC	60	100	75	90	130	110	90	100			15	30	25	38	34	400Rm	1050Rm	550	630	400	550	550	630	400	550	550	630	400	550	550				
Recommended	◎	◎	○																															

◎ : Excellent ○ : Good

MULTI-1 DRILLS

CDRA04 SERIES

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JOBBER

KURZ

COURTE

CORTA

- **Application** : Structural steels, Carbon steels, Alloy steels, Pre-hardened steels, Mold steels, Stainless steels, Hardened steels(HRC30~45), Cast iron, Aluminum alloys, Nonferrous alloys, Titanium.
- **Advantage** : Point shape to maximize self-centering. Flute design for the best chip evacuation. Premium powder materials with excellent toughness.

- **Anwendung** : Baustähle, Kohlenstoffstähle, legierte Stähle, vorgehärtete Stähle, Formstähle, rostfreie Stähle, gehärtete Stähle (HRC 30~45), Gusseisen, Aluminiumlegierungen, Nichteisen Legierungen, Titan.
- **Vorteile** : Maximale Selbstzentrierung durch besonderen Spitzenanschiff
Bohrergeometrie für optimale Spanabfuhr.
Premium Pulverstahl mit ausgezeichneter Zähigkeit.



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EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TAiN	D1	D2	L1	L2
CDRA04068	6.8	8	69	113
CDRA04069	6.9	8	69	113
CDRA04070	7.0	8	69	113
CDRA04071	7.1	8	69	113
CDRA04072	7.2	8	69	113
CDRA04073	7.3	8	69	113
CDRA04074	7.4	8	69	113
CDRA04075	7.5	8	69	113
CDRA04076	7.6	8	75	119
CDRA04077	7.7	8	75	119
CDRA04078	7.8	8	75	119
CDRA04079	7.9	8	75	119
CDRA04080	8.0	8	75	119
CDRA04081	8.1	10	75	125
CDRA04082	8.2	10	75	125
CDRA04083	8.3	10	75	125
CDRA04084	8.4	10	75	125
CDRA04085	8.5	10	75	125
CDRA04086	8.6	10	81	131
CDRA04087	8.7	10	81	131
CDRA04088	8.8	10	81	131
CDRA04089	8.9	10	81	131
CDRA04090	9.0	10	81	131
CDRA04091	9.1	10	81	131

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TAiN	D1	D2	L1	L2
CDRA04092	9.2	10	81	131
CDRA04093	9.3	10	81	131
CDRA04094	9.4	10	81	131
CDRA04095	9.5	10	81	131
CDRA04096	9.6	10	87	137
CDRA04097	9.7	10	87	137
CDRA04098	9.8	10	87	137
CDRA04099	9.9	10	87	137
CDRA04100	10.0	10	87	137
CDRA04101	10.1	12	87	144
CDRA04102	10.2	12	87	144
CDRA04103	10.3	12	87	144
CDRA04104	10.4	12	87	144
CDRA04105	10.5	12	87	144
CDRA04106	10.6	12	87	144
CDRA04107	10.7	12	94	151
CDRA04108	10.8	12	94	151
CDRA04109	10.9	12	94	151
CDRA04110	11.0	12	94	151
CDRA04111	11.1	12	94	151
CDRA04112	11.2	12	94	151
CDRA04113	11.3	12	94	151
CDRA04114	11.4	12	94	151
CDRA04115	11.5	12	94	151

Unit : mm

► NEXT PAGE

◎: Excellent ○: Good																												
ISO	P										M					K												
Material Description	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	26	27	28
HRC	125	130	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	200	280	250	350	320	400	210	230
Recommended	◎	◎	○			◎		○						◎	○													
ISO	N										S																	
Material Description	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	45	46	47	48
HRC	60	100	75	90	130	110	90	100			15	20	280	250	350	320	400Rm	1050Rm	550	630	400	550	550	630	400	550	550	630
Recommended	◎	◎	○																									

◎ : Excellent ○ : Good

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CDRA04 SERIES

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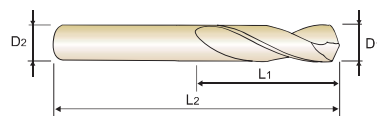
COURTE

PUNTA GAMBO CILINDRICO MULTI-1, HSS-PM

CORTA

- **Application** : Structural steels, Carbon steels, Alloy steels, Pre-hardened steels, Mold steels, Stainless steels, Hardened steels(HRC30~45), Cast iron, Aluminum alloys, Nonferrous alloys, Titanium.
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- **Vorteile** : Maximale Selbstzentrierung durch besonderen Spitzenanschliff. Bohrergeometrie für optimale Spanabfuhr. Premium Pulverstahl mit ausgezeichnete Zähigkeit.



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Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2
CDRA04116	11.6	12	94	151
CDRA04117	11.7	12	94	151
CDRA04118	11.8	12	94	151
CDRA04119	11.9	12	101	158
CDRA04120	12.0	12	101	158
CDRA04121	12.1	12	101	158
CDRA04122	12.2	12	101	158
CDRA04123	12.3	12	101	158

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2
CDRA04124	12.4	12	101	158
CDRA04125	12.5	12	101	158
CDRA04126	12.6	12	101	158
CDRA04127	12.7	12	101	158
CDRA04128	12.8	12	101	158
CDRA04129	12.9	12	101	158
CDRA04130	13.0	12	101	158

◎ : Excellent ○ : Good

ISO	P										M	K			
Material Description	Non-alloy steel					Low alloy 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
HRC	13	25	28	32	30	180	275	300	350	200	325	200	240	180	10
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	10
Recommended	◎	◎	○			◎	○			○	◎	○			

ISO	N										S	H			
Material Description	Aluminum-wrought alloy					Aluminum-cast, alloyed					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
HRC	13	25	28	32	30	180	275	300	350	200	325	200	240	180	10
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	10
Recommended	◎	◎	○			◎	○			○	◎	○			

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CDRA03, CDRA04 SERIES MULTI-1 DRILLS

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

ISO	VDI 3323	Material Description	Vc (m/min)	Parameter	Drill Diameter (mm)							
					2.0	3.0	4.0	5.0	6.0	8.0	10.0	12.0
P	1	Non-alloy steel	40	RPM FEED	6370 0.03~0.06	4240 0.08~0.12	3180 0.09~0.15	2550 0.12~0.18	2120 0.14~0.20	1590 0.18~0.24	1270 0.18~0.28	1060 0.20~0.30
	2		35	RPM FEED	5570 0.03~0.06	3710 0.08~0.12	2790 0.09~0.15	2230 0.12~0.18	1860 0.14~0.20	1390 0.18~0.24	1110 0.18~0.28	930 0.20~0.30
	3		35	RPM FEED	5570 0.03~0.06	3710 0.08~0.12	2790 0.09~0.15	2230 0.12~0.18	1860 0.14~0.20	1390 0.18~0.24	1110 0.18~0.28	930 0.20~0.30
	4											
	5											
	6	Low alloy steel	35	RPM FEED	5570 0.03~0.06	3710 0.08~0.12	2790 0.09~0.15	2230 0.12~0.18	1860 0.14~0.20	1390 0.18~0.24	1110 0.18~0.28	930 0.20~0.30
	7		30	RPM FEED	4770 0.03~0.05	3180 0.06~0.10	2390 0.07~0.13	1910 0.10~0.16	1590 0.12~0.18	1190 0.14~0.20	950 0.14~0.24	800 0.16~0.26
	8											
	9	High alloyed steel, and tool steel										
	10											
	11											
M	12	Stainless steel	20	RPM FEED	3180 0.03~0.07	2120 0.05~0.09	1590 0.06~0.12	1270 0.09~0.15	1060 0.12~0.18	800 0.18~0.24	640 0.20~0.30	530 0.26~0.36
	13											
	14		15	RPM FEED	2390 0.02~0.05	1590 0.03~0.07	1190 0.04~0.10	950 0.06~0.12	800 0.07~0.13	600 0.10~0.20	480 0.12~0.22	400 0.14~0.24
K	15	Grey cast iron	40	RPM FEED	6370 0.04~0.10	4240 0.07~0.13	3180 0.09~0.15	2550 0.12~0.18	2120 0.13~0.19	1590 0.18~0.24	1270 0.20~0.30	1060 0.22~0.32
	16	Nodular cast iron										
	17											
	18											
	19	Malleable cast iron										
	20											
N	21	Aluminum-wrought alloy	90	RPM FEED	14320 0.13~0.17	9550 0.23~0.27	7160 0.27~0.33	5730 0.33~0.39	4770 0.40~0.46	3580 0.45~0.51	2860 0.51~0.61	2390 0.63~0.73
	22	Aluminum-cast, alloyed	90	RPM FEED	14320 0.13~0.17	9550 0.23~0.27	7160 0.27~0.33	5730 0.33~0.39	4770 0.40~0.46	3580 0.45~0.51	2860 0.51~0.61	2390 0.63~0.73
	23		80	RPM FEED	12730 0.13~0.17	8490 0.23~0.27	6370 0.27~0.33	5090 0.33~0.39	4240 0.40~0.46	3180 0.45~0.51	2550 0.51~0.61	2120 0.63~0.73
	24		70	RPM FEED	11140 0.10~0.14	7430 0.15~0.19	5570 0.20~0.26	4460 0.24~0.30	3710 0.28~0.34	2790 0.30~0.36	2230 0.34~0.44	1860 0.36~0.46
	25	Copper and Copper Alloys (Bronze / Brass)										
	26											
	27											
	28	Non Metallic Materials										
	29											
	30											
S	31	Heat Resistant Super Alloys										
	32											
	33											
	34											
	35											
	36	Titanium Alloys	5	RPM FEED	800 0.02~0.05	530 0.03~0.07	400 0.04~0.08	320 0.06~0.12	270 0.07~0.13	200 0.09~0.15	160 0.12~0.22	130 0.14~0.24
	37											
H	38	Hardened steel										
	39	Chilled Cast Iron										
	40											
	41	Hardened Cast Iron										

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