



HSS-PM, MULTI-1 DRILLS

JOBBER

- 🇩🇪 HSS-PM MULTI-1 BOHRER
- 🇫🇷 Forets MULTI-1 HSS-PM Premium, série courte
- 🇮🇹 PUNTA GAMBO CILINDRICO MULTI-1, HSS-PM

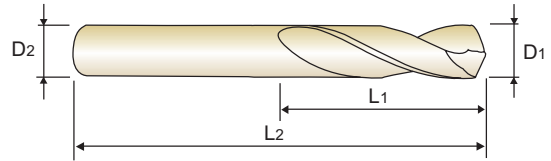
KURZ
COURTE
CORTA

► **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 Spitzenanschliff
Bohrergeometrie für optimale Spanabfuhr.
Premium Pulverstahl mit ausgezeichneter Zähigkeit.



HSS PM
30°
h6
h7
135°
P.177

Unit : mm

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	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
TiAlN	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

► NEXT PAGE

◎ : Excellent ○ : Good

ISO	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	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	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	◎	◎	○	○												○					

Y/G MULTI-1 DRILLS

CDRA04 SERIES

HSS-PM, MULTI-1 DRILLS

JOBBER

- 🇩🇪 HSS-PM MULTI-1 BOHRER
- 🇫🇷 Forets MULTI-1 HSS-PM Premium, série courte
- 🇮🇹 PUNTA GAMBO CILINDRICO MULTI-1, HSS-PM

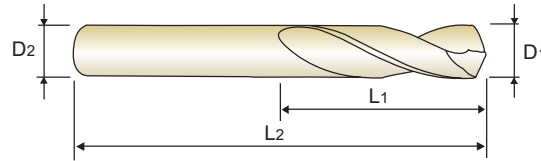
**KURZ
COURTE
CORTA**

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HSS PM
30°
h6
h7
135°
P.177

EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Shank Diameter	Flute Length	Overall Length
TiAlN	D1	D2	L1	L2	TiAlN	D1	D2	L1	L2
CDRA04068	6.8	8	69	113	CDRA04092	9.2	10	81	131
CDRA04069	6.9	8	69	113	CDRA04093	9.3	10	81	131
CDRA04070	7.0	8	69	113	CDRA04094	9.4	10	81	131
CDRA04071	7.1	8	69	113	CDRA04095	9.5	10	81	131
CDRA04072	7.2	8	69	113	CDRA04096	9.6	10	87	137
CDRA04073	7.3	8	69	113	CDRA04097	9.7	10	87	137
CDRA04074	7.4	8	69	113	CDRA04098	9.8	10	87	137
CDRA04075	7.5	8	69	113	CDRA04099	9.9	10	87	137
CDRA04076	7.6	8	75	119	CDRA04100	10.0	10	87	137
CDRA04077	7.7	8	75	119	CDRA04101	10.1	12	87	144
CDRA04078	7.8	8	75	119	CDRA04102	10.2	12	87	144
CDRA04079	7.9	8	75	119	CDRA04103	10.3	12	87	144
CDRA04080	8.0	8	75	119	CDRA04104	10.4	12	87	144
CDRA04081	8.1	10	75	125	CDRA04105	10.5	12	87	144
CDRA04082	8.2	10	75	125	CDRA04106	10.6	12	87	144
CDRA04083	8.3	10	75	125	CDRA04107	10.7	12	94	151
CDRA04084	8.4	10	75	125	CDRA04108	10.8	12	94	151
CDRA04085	8.5	10	75	125	CDRA04109	10.9	12	94	151
CDRA04086	8.6	10	81	131	CDRA04110	11.0	12	94	151
CDRA04087	8.7	10	81	131	CDRA04111	11.1	12	94	151
CDRA04088	8.8	10	81	131	CDRA04112	11.2	12	94	151
CDRA04089	8.9	10	81	131	CDRA04113	11.3	12	94	151
CDRA04090	9.0	10	81	131	CDRA04114	11.4	12	94	151
CDRA04091	9.1	10	81	131	CDRA04115	11.5	12	94	151

► NEXT PAGE

◎ : Excellent ○ : Good

ISO	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	
Material Description	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
VDI 3323																				
HRc	13	25	28	32	32	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	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		
Material Description	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41
VDI 3323																					
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-PM, MULTI-1 DRILLS

JOBBER

HSS-PM MULTI-1 BOHRER

KURZ

Forets MULTI-1 HSS-PM Premium, série courte

COURTE

PUNTA GAMBO CILINDRICO MULTI-1, HSS-PM

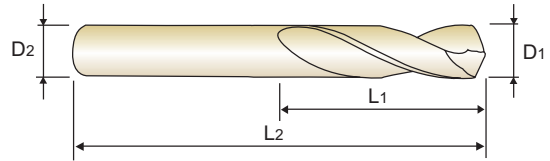
CORTA

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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					
	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	10	29	32	38	15	35	15	23	10	10	26	3	25			
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230
Recommended	◎	◎	○		◎	○					○		◎	○	○					

ISO	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	◎	◎	○	○												○					

MULTI-1 DRILLS

RECOMMENDED CUTTING CONDITIONS EMPHOHLENE SCHNEIDPARAMETER

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

