

RCH-COATED SOLID CARBIDE
DREAM DRILL X without COOLANT HOLES (3XD)

SERIES
NEW DTX404

- ▶ Upgraded coating for higher Tool Life in various materials
- ▶ Soft cutting action and reduced axial forces; Easy to Recondition
- ▶ Good self-centering even at low feed rates and unstable situations
- ▶ Excellent Chip breaking and chip evacuation



DIN 6539 CARBIDE 30° h6 h7 140° RCH Coating p.40

STUB
3 × D

Unit : mm				Unit : mm			
EDP No.	Drill Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Flute Length	Overall Length
RCH-Coating	D1=D2	L1	L2	RCH-Coating	D1=D2	L1	L2
DTX404030	3.0	16	46	DTX404058	5.8	28	66
DTX404031	3.1	18	49	DTX404059	5.9	28	66
DTX404032	3.2	18	49	DTX404060	6.0	28	66
DTX404033	3.3	18	49	DTX404061	6.1	31	70
DTX404034	3.4	20	52	DTX404062	6.2	31	70
DTX404035	3.5	20	52	DTX404063	6.3	31	70
DTX404036	3.6	20	52	DTX404064	6.4	31	70
DTX404037	3.7	20	52	DTX404065	6.5	31	70
DTX404038	3.8	22	55	DTX404066	6.6	31	70
DTX404039	3.9	22	55	DTX404067	6.7	31	70
DTX404040	4.0	22	55	DTX404068	6.8	34	74
DTX404041	4.1	22	55	DTX404069	6.9	34	74
DTX404042	4.2	22	55	DTX404070	7.0	34	74
DTX404043	4.3	24	58	DTX404071	7.1	34	74
DTX404044	4.4	24	58	DTX404072	7.2	34	74
DTX404045	4.5	24	58	DTX404073	7.3	34	74
DTX404046	4.6	24	58	DTX404074	7.4	34	74
DTX404047	4.7	24	58	DTX404075	7.5	34	74
DTX404048	4.8	26	62	DTX404076	7.6	37	79
DTX404049	4.9	26	62	DTX404077	7.7	37	79
DTX404050	5.0	26	62	DTX404078	7.8	37	79
DTX404051	5.1	26	62	DTX404079	7.9	37	79
DTX404052	5.2	26	62	DTX404080	8.0	37	79
DTX404053	5.3	26	62	DTX404081	8.1	37	79
DTX404054	5.4	28	66	DTX404082	8.2	37	79
DTX404055	5.5	28	66	DTX404083	8.3	37	79
DTX404056	5.6	28	66	DTX404084	8.4	37	79
DTX404057	5.7	28	66	DTX404085	8.5	37	79

▶ Other shank types are available on your request.

▶ 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	21	22	23	24	25
HRc	13	25	28	32	30	29	32	38	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	180	260	160	250	130
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	42	43	44
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

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STUB
3 × D

Unit : mm				Unit : mm			
EDP No.	Drill Diameter	Flute Length	Overall Length	EDP No.	Drill Diameter	Flute Length	Overall Length
RCH-Coating	D1=D2	L1	L2	RCH-Coating	D1=D2	L1	L2
DTX404086	8.6	40	84	DTX404170	17.0	60	119
DTX404087	8.7	40	84	DTX404175	17.5	62	123
DTX404088	8.8	40	84	DTX404180	18.0	62	123
DTX404089	8.9	40	84	DTX404185	18.5	64	127
DTX404090	9.0	40	84	DTX404190	19.0	64	127
DTX404091	9.1	40	84	DTX404195	19.5	66	131
DTX404092	9.2	40	84	DTX404200	20.0	66	131
DTX404093	9.3	40	84				
DTX404094	9.4	40	84				
DTX404095	9.5	40	84				
DTX404096	9.6	43	89				
DTX404097	9.7	43	89				
DTX404098	9.8	43	89				
DTX404099	9.9	43	89				
DTX404100	10.0	43	89				
DTX404102	10.2	43	89				
DTX404105	10.5	43	89				
DTX404110	11.0	47	95				
DTX404115	11.5	47	95				
DTX404120	12.0	51	102				
DTX404130	13.0	51	102				
DTX404135	13.5	54	107				
DTX404140	14.0	54	107				
DTX404145	14.5	56	111				
DTX404150	15.0	56	111				
DTX404155	15.5	58	115				
DTX404160	16.0	58	115				
DTX404165	16.5	60	119				

▶ Other shank types are available on your request.

◎ : 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	21	22	23	24	25
HRc	13	25	28	32	30	29	32	38	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
HB	125	190	250	270	300	180	275	300	350	200	325	200	240	180	180	260	160	250	130	230	180	260	160	250	130
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	42	43	44
HRc	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
HB	60	100	75	90	130	110	90	100			200	280	250	350	320	400 Rm	1050 Rm	550	630	400	550	550	630	400
Recommended	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎	◎

DTX404, DTX423, DTX424 SERIES

without COOLANT HOLES

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

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)					
					1.0	2.0	3.0	4.0	5.0	6.0
P	2	Non-alloy steel	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	22280	11140	10610	7960	6370	5310
	3	Non-alloy steel	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	22280	11140	10610	7960	6370	5310
	4	Non-alloy steel	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	22280	11140	10610	7960	6370	5310
	5	Non-alloy steel	60	RPM	19100	9550	8490	6370	5090	4240
				FEED	0.03-0.05	0.05-0.07	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
RPM				19100	9550	8490	6370	5090	4240	
6	Low alloy steel	70	RPM	22280	11140	10610	7960	6370	5310	
			FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
			RPM	19100	9550	8490	6370	5090	4240	
7	Low alloy steel	60	RPM	19100	9550	8490	6370	5090	4240	
			FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
			RPM	19100	9550	8490	6370	5090	4240	
8	Low alloy steel	60	RPM	19100	9550	8490	6370	5090	4240	
			FEED	0.02-0.04	0.03-0.05	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18	
			RPM	9550	4770	4240	3180	2550	2120	
9	Low alloy steel	30	RPM	9550	4770	4240	3180	2550	2120	
			FEED	0.02-0.04	0.03-0.05	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16	
			RPM	15920	7960	7430	5570	4460	3710	
10	High alloyed steel, and tool steel	50	RPM	15920	7960	7430	5570	4460	3710	
			FEED	0.03-0.05	0.05-0.07	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18	
			RPM	9550	4770	4240	3180	2550	2120	
11	High alloyed steel, and tool steel	30	RPM	9550	4770	4240	3180	2550	2120	
			FEED	0.02-0.04	0.03-0.05	0.03-0.08	0.05-0.11	0.08-0.14	0.10-0.16	
			RPM	15920	7960	7430	5570	4460	3710	
M	12	Stainless steel	50	RPM	15920	7960	7430	5570	4460	3710
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
M	13	Stainless steel	35	RPM	11140	5570	4770	3580	2860	2390
				FEED	0.02-0.04	0.03-0.05	0.04-0.10	0.07-0.13	0.10-0.16	0.12-0.18
K	15	Grey cast iron	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.04-0.06	0.04-0.06	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
	16	Grey cast iron	65	RPM	20690	10350	8490	6370	5090	4240
				FEED	0.04-0.06	0.04-0.06	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
	17	Nodular cast iron	70	RPM	22280	11140	10610	7960	6370	5310
				FEED	0.04-0.06	0.04-0.06	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
	18	Nodular cast iron	50	RPM	15920	7960	7430	5570	4460	3710
				FEED	0.04-0.06	0.04-0.06	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
	19	Malleable cast iron	60	RPM	19100	9550	8490	6370	5090	4240
				FEED	0.04-0.06	0.04-0.06	0.08-0.14	0.12-0.18	0.15-0.22	0.20-0.26
20	Malleable cast iron	50	RPM	15920	7960	7430	5570	4460	3710	
			FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22	
H	38	Hardened steel	20	RPM	6370	3180	2650	1990	1590	1330
				FEED	0.01-0.02	0.01-0.03	0.01-0.03	0.01-0.04	0.02-0.05	0.03-0.06

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)							
					8.0	10.0	12.0	14.0	16.0	18.0	20.0	
P	2	Non-alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590	
				FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
				RPM	3980	3180	2650	2270	1990	1770	1590	
	3	Non-alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590	
				FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
				RPM	3980	3180	2650	2270	1990	1770	1590	
	4	Non-alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590	
				FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32	
				RPM	3180	2550	2120	1820	1590	1410	1270	
	5	Non-alloy steel	80	RPM	3180	2550	2120	1820	1590	1410	1270	
				FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32	
RPM				3980	3180	2650	2270	1990	1770	1590		
6	Low alloy steel	100	RPM	3980	3180	2650	2270	1990	1770	1590		
			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
			RPM	3180	2550	2120	1820	1590	1410	1270		
7	Low alloy steel	80	RPM	3180	2550	2120	1820	1590	1410	1270		
			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
			RPM	3180	2550	2120	1820	1590	1410	1270		
8	Low alloy steel	80	RPM	3180	2550	2120	1820	1590	1410	1270		
			FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32		
			RPM	1590	1270	1060	910	800	710	640		
9	Low alloy steel	40	RPM	1590	1270	1060	910	800	710	640		
			FEED	0.12-0.18	0.13-0.19	0.14-0.20	0.15-0.21	0.16-0.22	0.17-0.25	0.18-0.28		
			RPM	2790	2230	1860	1590	1390	1240	1110		
10	High alloyed steel, and tool steel	70	RPM	2790	2230	1860	1590	1390	1240	1110		
			FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32		
			RPM	1590	1270	1060	910	800	710	640		
11	High alloyed steel, and tool steel	40	RPM	1590	1270	1060	910	800	710	640		
			FEED	0.12-0.18	0.13-0.19	0.14-0.20	0.15-0.21	0.16-0.22	0.17-0.25	0.18-0.28		
			RPM	2790	2230	1860	1590	1390	1240	1110		
M	12	Stainless steel	70	RPM	2790	2230	1860	1590	1390	1240	1110	
				FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
M	13	Stainless steel	45	RPM	1790	1430	1190	1020	900	800	720	
				FEED	0.14-0.20	0.15-0.23	0.17-0.25	0.18-0.26	0.19-0.27	0.20-0.30	0.22-0.32	
K	15	Grey cast iron	100	RPM	3980	3180	2650	2270	1990	1770	1590	
				FEED	0.22-0.28	0.25-0.33	0.27-0.35	0.29-0.37	0.31-0.39	0.32-0.42	0.34-0.44	
	16	Grey cast iron	80	RPM	3180	2550	2120	1820	1590	1410	1270	
				FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
	17	Nodular cast iron	100	RPM	3980	3180	2650	2270	1990	1770	1590	
				FEED	0.22-0.28	0.25-0.33	0.27-0.35	0.29-0.37	0.31-0.39	0.32-0.42	0.34-0.44	
	18	Nodular cast iron	70	RPM	2790	2230	1860	1590	1390	1240	1110	
				FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40	
	19	Malleable cast iron	80	RPM	3180	2550	2120	1820	1590	1410	1270	
				FEED	0.22-0.28	0.25-0.33	0.27-0.35	0.29-0.37	0.31-0.39	0.32-0.42	0.34-0.44	
20	Malleable cast iron	70	RPM	2790	2230	1860	1590	1390	1240	1110		
			FEED	0.18-0.24	0.19-0.27	0.21-0.29	0.23-0.31	0.25-0.33	0.28-0.38	0.30-0.40		
H	38	Hardened steel	25	RPM	990	800	660	570	500	440	400	
				FEED	0.03-0.06	0.04-0.07	0.04-0.08	0.05-0.09	0.05-0.09	0.05-0.10	0.05-0.10	

► Recommend to reduce the feed rate as following **Feed 100%** : DTX404(3×D), DTX423(3×D), DTX424(5×D)

DTX406, DTX408, DTX421 SERIES

with COOLANT HOLES

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

ISO	VDI 3323	Material Description	Vc	Parameter	Drill Diameter (mm)					
					1.0	2.0	3.0	4.0	5.0	6.0
P	2	Non-alloy steel	80	RPM	25460	12730	11670	8750	7000	5840
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	25460	12730	11670	8750	7000	5840
	3	Non-alloy steel	80	RPM	25460	12730	11670	8750	7000	5840
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	25460	12730	11670	8750	7000	5840
	4	Non-alloy steel	80	RPM	25460	12730	11670	8750	7000	5840
				FEED	0.03-0.05	0.05-0.07	0.06-0.12	0.08-0.14	0.14-0.20	0.16-0.22
				RPM	25460	12730	11670	8750	7000	5840
	5									

NEW
DREAM DRILL X

New Coating Technology "RCH-Coating"

Combining the major benefits of TiAlN and AlCrN into a new 'Nano Layered Multilayer' coating generation provides unique advantages such as:



Extreme Wear Resistance

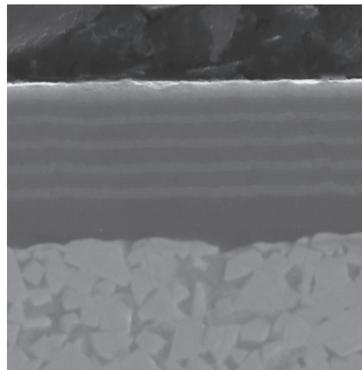


High Heat Endurance



Chipping Protection

↑ Tool Life
compared to Normal TiAlN coated drills
20 to 50%

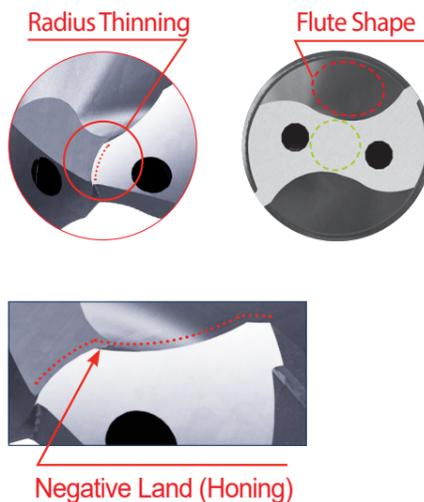


Nano Layered Multilayer
Carbide

At insufficient coolant conditions where higher temperatures occur, **RCH-Coating** allows with its very high temperature stability for great tool life results.

FEATURES & BENEFITS

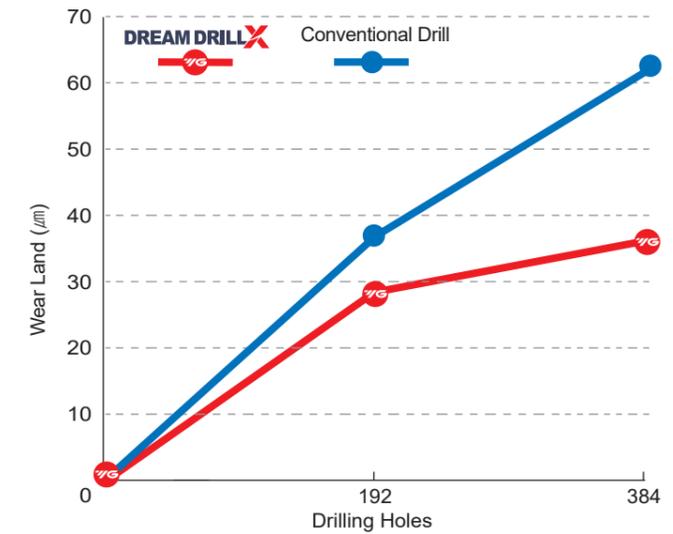
- **Universal Point Grinding**
Soft cutting action and reduced axial forces; Easy to Recondition
- **Radius Thinning**
Provides very good self centering even at low feed rates and unstable situations
- **Tailored Flute Design**
Excellent chip breaking and evacuation
- **Edge Preparation**
Maximizing tool life in various materials



CASE STUDY

► **SOLID CARBIDE DREAM DRILL X with Coolant Holes**

CUTTING CONDITION	
Work Material	• DIN : C45 • AISI : 1045 • JIS : S45C (HRc20)
Drill Diameter(mm)	Ø10.0
Cutting Speed	109.99 m/min.
Feed	0.23 mm/rev
Drilling Depth	40mm
Coolant	Internal Cooling Wet Cut (9% Emulsion)
Machine	Vertical Machine

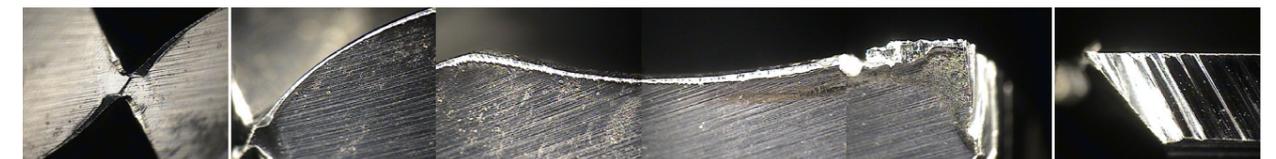


DREAM DRILL X



Total Drilling 384 Holes

Conventional Drill



Total Drilling 384 Holes

► **SOLID CARBIDE DREAM DRILL X with Coolant Holes**

CUTTING CONDITION	
Work Material	• DIN : GGG40 • AISI : 60-40-18 • JIS : FCD400
Drilling Diameter(mm)	Ø8.5
Cutting Speed	112m/min
Feed	0.33mm/rev.
Drilling Depth	18mm
Coolant	Internal Cooling
Machine	Machining Center (Horizontal)

