




Drilling Tool



Drilling Tool

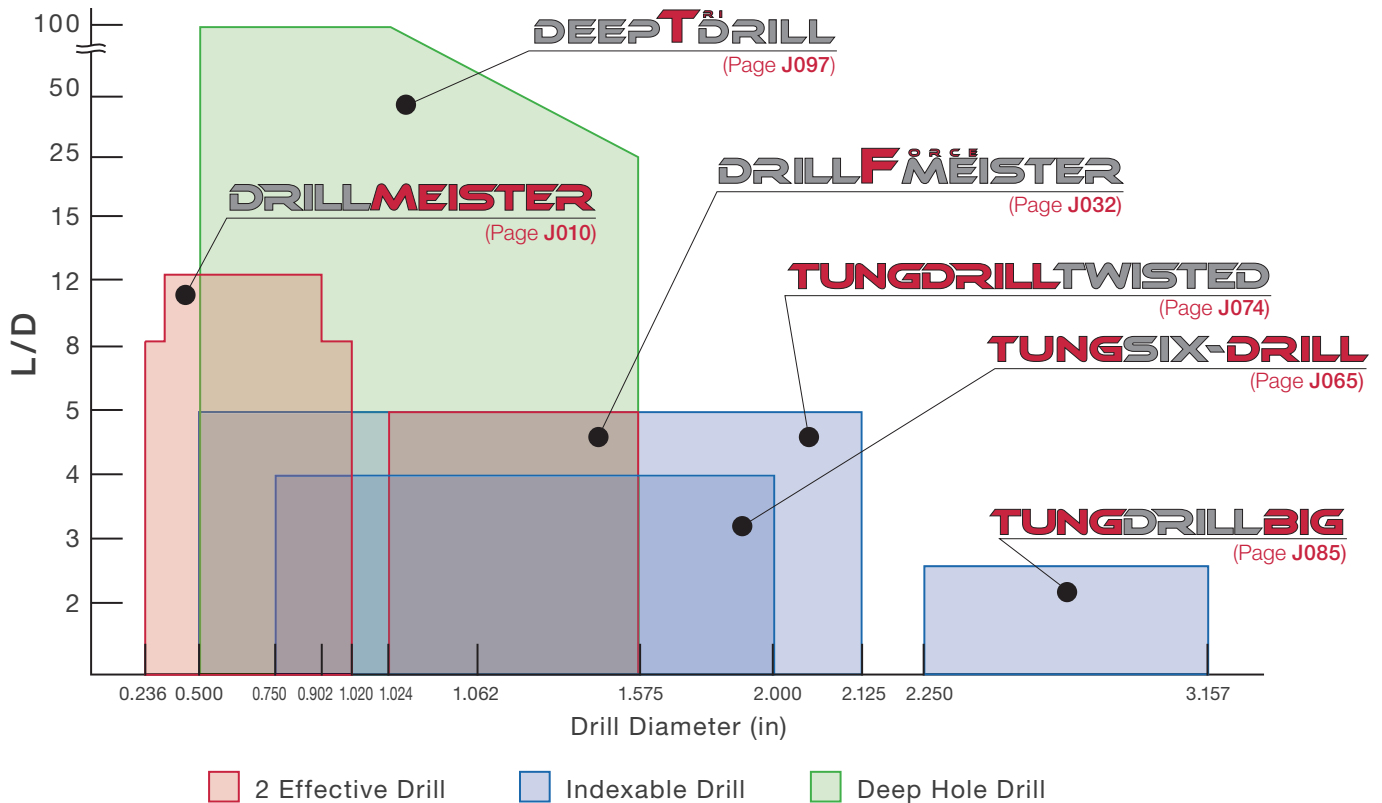
		Inch	Metric
	2 Effective Drill	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	J006, J009 J010 - J061		
	Indexable Drill	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	J006 J063 - J092		
	Deep Hole Drill	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
	J007 J094 - J158		

Basic Selection of Drilling Tools

Application ranges of drilling tools

Indexable & Head-Changeable Drills

Inch



Hole diameter tolerance*

Inch

TUNGSIX-DRILL

L/D	Tool diameter	Hole diameter tolerance*
2	ø0.750 - ø1.062	+ 0.014 / 0
3	ø0.750 - ø1.062	+ 0.014 / 0
4	ø0.750 - ø2.000	+ 0.014 / 0

TUNGDRILLTWISTED

L/D	Tool diameter	Hole diameter tolerance*
2	ø0.500 - ø0.625	+ 0.010 / 0
	ø0.687 - ø2.125	+ 0.012 / 0
3	ø0.500 - ø0.625	+ 0.010 / 0
	ø0.687 - ø2.125	+ 0.012 / 0
4	ø0.500 - ø0.625	+ 0.016 / 0
	ø0.687 - ø2.125	+ 0.018 / 0
5	ø0.500 - ø0.625	+ 0.016 / 0
	ø0.687 - ø2.125	+ 0.018 / 0

DRILLMEISTER

L/D	Tool diameter	Hole diameter tolerance*
1.5	ø0.236 - ø1.020	+ 0.0020 / 0
3	ø0.236 - ø1.020	+ 0.0020 / 0
5	ø0.236 - ø0.783	+ 0.0024 / 0
	ø0.787 - ø1.020	+ 0.0026 / 0
8	ø0.276 - ø0.783	+ 0.0030 / 0
	ø0.787 - ø1.020	+ 0.0033 / 0
12	ø0.315 - ø0.705	+ 0.0031 / 0
	ø0.709 - ø0.902	+ 0.0037 / 0

DRILLFMEISTER

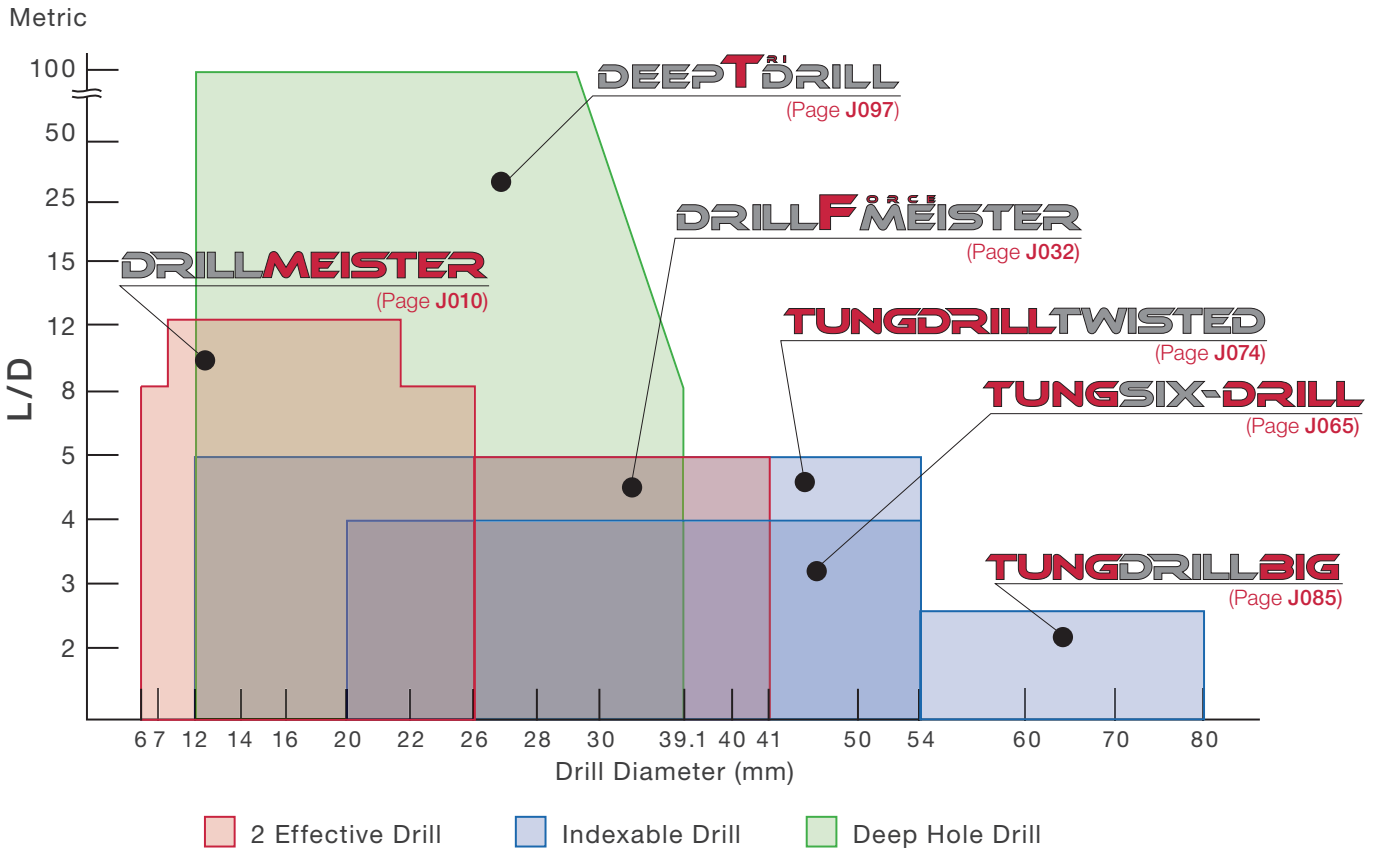
L/D	Tool diameter	Hole diameter tolerance*
3	ø1.024 - ø1.142	+ 0.0020 / 0
	ø1.181 - ø1.575	+ 0.0024 / 0
5	ø1.024 - ø1.142	+ 0.0020 / 0
	ø1.181 - ø1.575	+ 0.0024 / 0

DEEPTÖDRILL

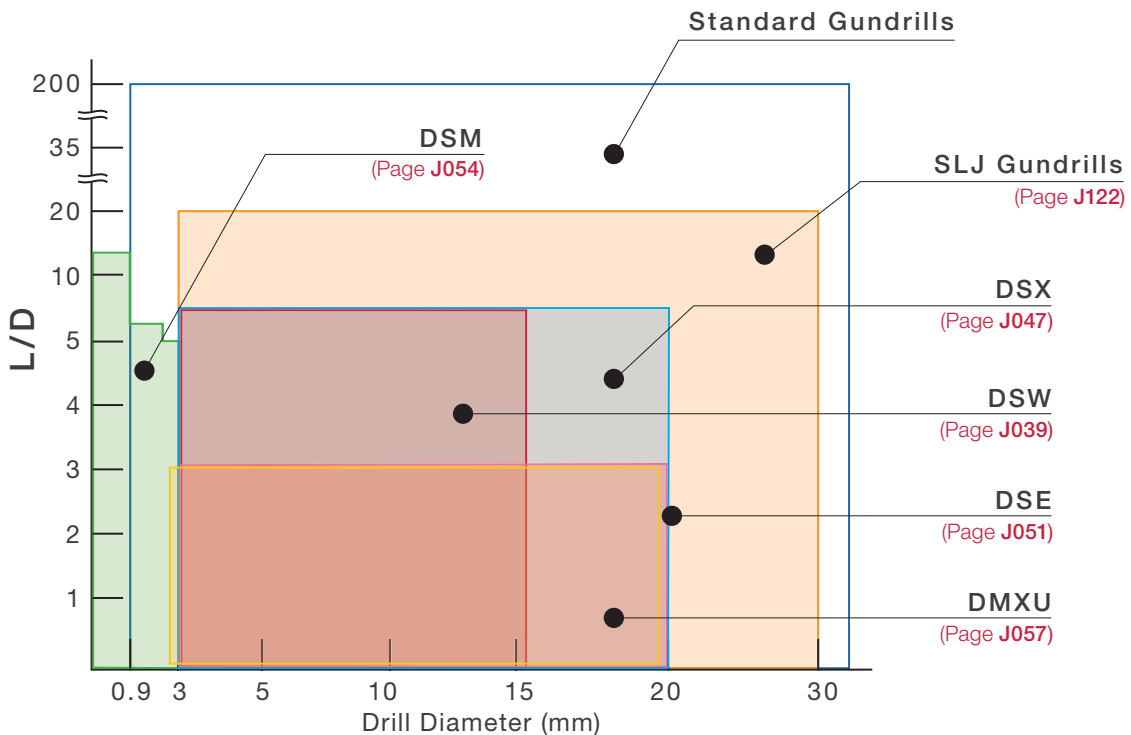
L/D	Tool diameter	Hole diameter tolerance*
10	ø0.630 - ø1.500	+ 0.002 / - 0.004
15	ø0.500 - ø1.500	+ 0.002 / - 0.004
25	ø0.500 - ø1.500	+ 0.002 / - 0.004

*Just for reference

Indexable & Head-Changeable Drills




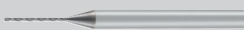









Solid Drills, Brazed Carbide Drills










General drilling - Quick Guide

★ : First choice
☆ : Second choice

Application	Tool diameter	L/D	Tool series	Appearance	IT class	Effective Cutting edge	Coolant supply	Workpiece material						Page
								P	M	K	N	S	H	
General drilling	ø0.394" - ø1.020" (ø6 mm - ø25.9 mm)	1.5 3 5 8 12	DRILLMEISTER Head changeable drill TIDU / TIDC / TIDCF		9 - 10	2	Int.	★	★	★	☆	★	★	J010 - J031
	ø1.024" - ø1.614" (ø26 mm - ø41 mm)	3 5	DRILLMEISTER Head changeable drill TISU		9 - 10	2	Int.	★	★	★	☆	★	★	J032 - J037
	ø3 mm - ø12 mm	3 5 8	SOLIDDRILL DSW		9 - 10	2	Int. / Ext.	★	★	★	☆	★	☆	J039 - J045
	ø0.1 mm - ø3 mm	5 10 15	SOLIDDRILL GIGAMINI DRILL DSM/DSM-CP		9 - 10	2	Ext.	★	★	★	☆	☆	☆	J054 - J056
	13/64" - 21/32" (ø3 mm - ø10 mm)	3 5 8	SOLIDDRILL GIGAJET DRILL DSXU / DSX		9 - 10	2	Int.	★	★	★	☆	☆	☆	J046 - J050
	ø3 mm - ø10 mm	2 3	SOLIDDRILL GIGAPOWER DRILL DSE		9 - 10	2	Ext.	★	☆	☆	☆	★	☆	J051 - J053
	#34" - 25/32"	2 3	SOLIDDRILL DMXU		9 - 10	2	Ext.	★	☆			★	☆	J057 - J059
	ø0.203" - ø0.625" (ø5 mm - ø16 mm)	5 8	SOLIDDRILL FDCU / FDC		9 - 10	2	Int.			★	★			J060 - J061
	ø0.750" - ø2.000"	2 3 4	TUNGDRILL Indexable Drill TDSU		11 -	1	Int.	★	★	★	☆	★	★	J064 - J073
	ø0.500" - ø2.125"	2 3 4 5	TUNGDRILL Indexable Drill TDXU		11 -	1	Int.	★	★	★	☆	★	★	J074 - J084
ø2.250" - ø3.157"	2	TUNGDRILL Indexable Drill TDB - TDSU / TDXU		11 -	1	Int.	★	★	★	☆	★	★	J085 - J091	

Deep drilling - Quick Guide

★ : First choice
☆ : Second choice

Application	Tool diameter	L/D	Tool series	Appearance	IT class	Effective Cutting edge	Coolant supply	Workpiece material						Page
								P	M	K	N	S	H	
Deep drilling	8 10 15 20 25 0.500" - 1.500" (0.12 mm - 0.39.1 mm)		DEEPTDRILL Head changeable deep drill MCTR/MCTRCH TRLG/TRLGCH		10	1	Int.	★	★	★	☆	★	★	J096 - J121
	Length ≤ 1650 mm (for gundrill machines)		GUNDRILL Brazed gundrill SLJ		7 - 8	1	Int.	★	★	★	☆	☆	☆	J122
	016 mm - 028 mm	-	TRI-FINE Indexable BTA drill FNTR		10	1	Int.	★	★	★	☆	★	☆	J128 - J131
	025 mm - 065 mm	-	FINE-BEAM Indexable BTA drill FNBM		10	1	Int.	★	★	★	☆	★	★	J132 - J137
	038 mm - 0106.99 mm	-	UNIDEX Indexable BTA drill KUSTS/KUDTS		10	1	Int.	★	★	★	☆	★	☆	J138 - J143
	08 mm - 065 mm	-	Brazed BTA drill MBU/UTE/BTU		9	1	Int.	★	★	★	☆	★	☆	J144 - J156
	030 mm - 063 mm	6 - 14	HF drill Head changeable deep drill HF		10	1	Int.	★	★	★	☆	★	★	J157 - J158

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index



2 Effective Drill

Head changeable drill



DRILLMEISTER

Head changeable drill series



ø0.236" - ø1.020" (ø6 mm - ø25.9 mm) / L/D = 1.5, 3, 5, 8, 12
 ※ L/D = 12 : ø0.472" - ø0.488" (ø8 mm - ø22.9 mm)

J009 - J031

Inch Metric



DRILL FORCE MEISTER

Two cutting edges for productivity in large diameter drilling



ø1.024" - ø1.614" (ø26 mm - ø41 mm) / L/D = 3, 5

J032 - J037

Inch Metric

Solid Drill



SOLIDDRILL

High performance solid carbide drill

J038 - J061

Inch Metric



DSW



ø3 mm - ø12 mm / L/D = 3, 5, 8

J039 - J045

Inch Metric



DSXU / DSX

13/64" - 21/32" (ø3 mm - ø10 mm) / L/D = 3, 5, 8

J046 - J050

Inch Metric



DSE

ø3 mm - ø10 mm / L/D = 2, 3

J051 - J053

Inch Metric



DSM / DSM-CP

ø0.1 mm - ø3 mm / L/D = 5, 10, 15

J054 - J056

Inch Metric



DMXU

#34" - 25/32" / L/D = 2, 3

J057 - J059

Inch Metric



FDCU / FDC



ø0.203" - ø0.625" (ø5 mm - ø16 mm) / L/D = 5, 8

J060 - J061

Inch Metric

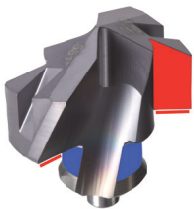


Changeable head system for easy operation

High accuracy, rigidity, and productivity

- Unique clamping structure provides high repeatability and reliability
- One-action head changing reduces tool set up time
- No re-grinding cost and reduced tool inventory requirements

Drill head

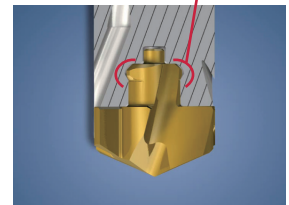


Drill body



- Contact area that supports the drill head against cutting force
- Contact area that maintains the accurate drill position

Groove to prevent the head from falling off

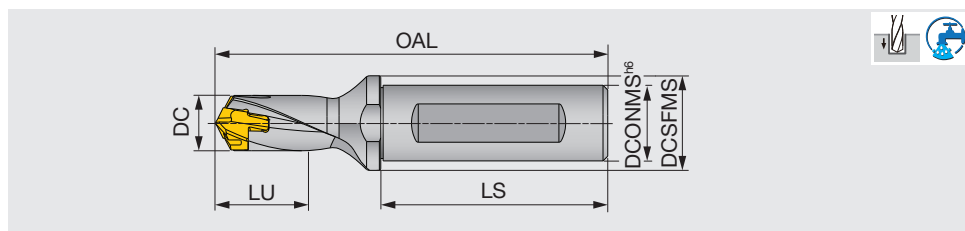


Increased body durability

- The new clamping mechanism greatly reduces the damage on cutting edges due to less holding power as seen with the competitors, which leads to long tool life.
- The unique clamping design prevents the head from falling off.



Reference pages: **J010 - J031**, Technical reference → **L073 - L074**



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TIDU0394F0625-1.5	0.394 - 0.429	0.625	0.787	0.591	1.890	3.118	3.142	10	DM*100 - DM*109
TIDU0433F0625-1.5	0.433 - 0.468	0.625	0.787	0.669	1.890	3.193	3.217	11	DM*110 - DM*119
TIDU0472F0625-1.5	0.472 - 0.508	0.625	0.787	0.709	1.890	3.268	3.292	12	DM*120 - DM*129
TIDU0512F0625-1.5	0.512 - 0.547	0.625	0.787	0.787	1.890	3.350	3.381	13	DM*130 - DM*139
TIDU0551F0625-1.5	0.551 - 0.587	0.625	0.787	0.827	1.890	3.508	3.539	14	DM*140 - DM*149
TIDU0591F0750-1.5	0.591 - 0.625	0.750	0.984	0.906	1.969	3.787	3.822	15	DM*150 - DM*159
TIDU0630F0750-1.5	0.630 - 0.665	0.750	0.984	0.945	1.969	3.909	3.948	16	DM*160 - DM*169
TIDU0669F0750-1.5	0.669 - 0.705	0.750	0.984	1.024	1.969	4.031	4.07	17	DM*170 - DM*179
TIDU0709F1000-1.5	0.709 - 0.744	1.000	1.260	1.063	2.205	4.390	4.433	18	DM*180 - DM*189
TIDU0748F1000-1.5	0.748 - 0.783	1.000	1.260	1.142	2.205	4.508	4.551	19	DM*190 - DM*199
TIDU0787F1000-1.5	0.787 - 0.823	1.000	1.260	1.181	2.205	4.630	-	20	DMP200 - DMP209
TIDU0827F1000-1.5	0.827 - 0.862	1.000	1.260	1.240	2.205	4.752	-	21	DMP210 - DMP219
TIDU0866F1000-1.5	0.866 - 0.902	1.000	1.260	1.299	2.205	4.874	-	22	DMP220 - DMP229
TIDU0906F1250-1.5	0.906 - 0.941	1.250	1.654	1.358	2.362	5.150	-	23	DMP230 - DMP239
TIDU0945F1250-1.5	0.945 - 0.980	1.250	1.654	1.417	2.362	5.272	-	24	DMP240 - DMP249
TIDU0984F1250-1.5	0.984 - 1.020	1.250	1.654	1.476	2.362	5.394	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø0.394 - ø1.020	+0.0020 / 0

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

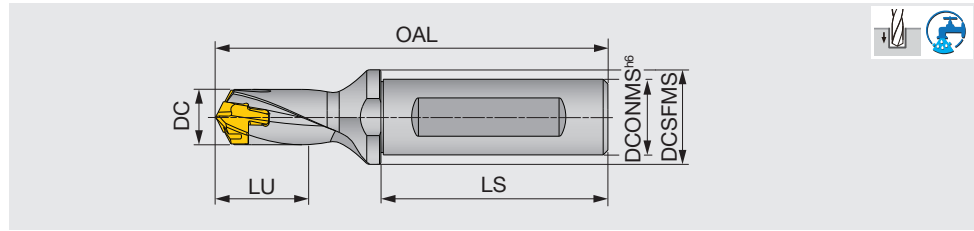
*Just for reference

SPARE PARTS



Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

Reference pages: Head → **J024 - J029**
 Standard cutting conditions → **J030**



Metric	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TID060F12-1.5	6 - 6.4	12	16	10.1	45	68	-	6	DMP060 - DMP064
TID065F12-1.5	6.5 - 6.9	12	16	11.2	45	69.1	-	6	DMP065 - DMP069
TID070F12-1.5	7 - 7.4	12	16	12.3	45	70.1	-	7	DMP070 - DMP074
TID075F12-1.5	7.5 - 7.9	12	16	12.7	45	70.9	-	7	DMP075 - DMP079
TID080F12-1.5	8 - 8.9	12	16	13.5	45	72.4	-	8	DMP080 - DMP089
TID090F12-1.5	9 - 9.9	12	16	15.6	45	74.3	-	9	DMP090 - DMP099
TID100F16-1.5	10 - 10.9	16	20	16.8	48	79.2	79.8	10	DM*100 - DM*109
TID110F16-1.5	11 - 11.9	16	20	19	48	81.1	81.7	11	DM*110 - DM*119
TID120F16-1.5	12 - 12.9	16	20	20.2	48	83	83.6	12	DM*120 - DM*129
TID130F16-1.5	13 - 13.9	16	20	22.4	48	85.1	85.9	13	DM*130 - DM*139
TID140F16-1.5	14 - 14.9	16	20	23.5	48	89.1	89.9	14	DM*140 - DM*149
TID150F20-1.5	15 - 15.9	20	25	25.7	50	96.2	97.1	15	DM*150 - DM*159
TID160F20-1.5	16 - 16.9	20	25	26.9	50	99.3	100.3	16	DM*160 - DM*169
TID170F20-1.5	17 - 17.9	20	25	29.1	50	102.4	103.4	17	DM*170 - DM*179
TID180F25-1.5	18 - 18.9	25	32	30.3	56	111.5	112.6	18	DM*180 - DM*189
TID190F25-1.5	19 - 19.9	25	32	32.5	56	114.5	115.6	19	DM*190 - DM*199
TID200F25-1.5	20 - 20.9	25	32	33.6	56	117.6	-	20	DMP200 - DMP209
TID210F25-1.5	21 - 21.9	25	32	35.8	56	120.7	-	21	DMP210 - DMP219
TID220F25-1.5	22 - 22.9	25	32	37	56	123.8	-	22	DMP220 - DMP229
TID230F32-1.5	23 - 23.9	32	42	39.2	60	130.8	-	23	DMP230 - DMP239
TID240F32-1.5	24 - 24.9	32	42	40.4	60	133.9	-	24	DMP240 - DMP249
TID250F32-1.5	25 - 25.9	32	42	42.5	60	137	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø6 - ø25.9	+0.05 / 0

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

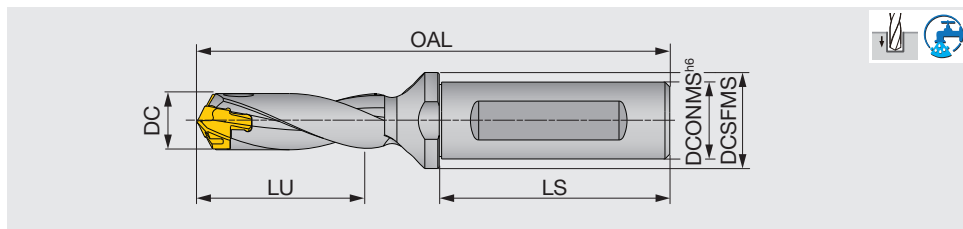
*Just for reference

SPARE PARTS



Designation	Clamping key
TID060-090	K-TID6-9.99
TID100-190	K-TID10-19.99
TID200-250	K-TID20-26.99





Inch	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TIDU0394F0625-3	0.394 - 0.409	0.625	0.787	1.181	1.890	3.709	3.733	10	DM*100 - DM*104
TIDU0413F0625-3	0.413 - 0.429	0.625	0.787	1.260	1.890	3.768	3.792	10	DM*105 - DM*109
TIDU0433F0625-3	0.433 - 0.449	0.625	0.787	1.299	1.890	3.843	3.867	11	DM*110 - DM*114
TIDU0453F0625-3	0.453 - 0.469	0.625	0.787	1.378	1.890	3.902	3.926	11	DM*115 - DM*119
TIDU0472F0625-3	0.472 - 0.488	0.625	0.787	1.417	1.890	3.976	4.000	12	DM*120 - DM*124
TIDU0492F0625-3	0.492 - 0.508	0.625	0.787	1.457	1.890	4.035	4.059	12	DM*125 - DM*129
TIDU0512F0625-3	0.512 - 0.528	0.625	0.787	1.535	1.890	4.118	4.149	13	DM*130 - DM*134
TIDU0532F0625-3	0.532 - 0.547	0.625	0.787	1.614	1.890	4.177	4.208	13	DM*135 - DM*139
TIDU0551F0625-3	0.551 - 0.567	0.625	0.787	1.654	1.890	4.335	4.366	14	DM*140 - DM*144
TIDU0571F0625-3	0.571 - 0.587	0.625	0.787	1.732	1.890	4.394	4.425	14	DM*145 - DM*149
TIDU0591F0750-3	0.591 - 0.626	0.750	0.984	1.772	1.969	4.673	4.708	15	DM*150 - DM*159
TIDU0630F0750-3	0.630 - 0.665	0.750	0.984	1.890	1.969	4.854	4.893	16	DM*160 - DM*169
TIDU0669F0750-3	0.669 - 0.705	0.750	0.984	2.008	1.969	5.035	5.074	17	DM*170 - DM*179
TIDU0709F1000-3	0.709 - 0.744	1.000	1.260	2.126	2.205	5.453	5.496	18	DM*180 - DM*189
TIDU0748F1000-3	0.748 - 0.783	1.000	1.260	2.244	2.205	5.630	5.673	19	DM*190 - DM*199
TIDU0787F1000-3	0.787 - 0.823	1.000	1.260	2.362	2.205	5.811	-	20	DMP200 - DMP209
TIDU0827F1000-3	0.827 - 0.862	1.000	1.260	2.480	2.205	5.992	-	21	DMP210 - DMP219
TIDU0866F1000-3	0.866 - 0.902	1.000	1.260	2.598	2.205	6.173	-	22	DMP220 - DMP229
TIDU0906F1250-3	0.906 - 0.941	1.250	1.654	2.718	2.362	6.508	-	23	DMP230 - DMP239
TIDU0945F1250-3	0.945 - 0.980	1.250	1.654	2.835	2.362	6.689	-	24	DMP240 - DMP249
TIDU0984F1250-3	0.984 - 1.020	1.250	1.654	2.953	2.362	6.870	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø0.394 - ø1.020	+0.0020 / 0

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

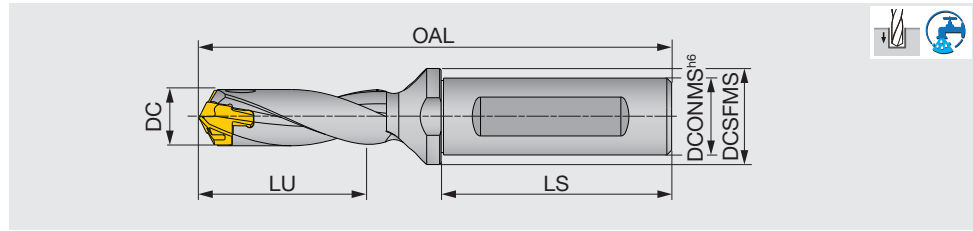
*Just for reference



SPARE PARTS

Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

Reference pages: Head → **J024 - J029**
Standard cutting conditions → **J030**



Metric	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TID060F12-3	6 - 6.4	12	16	19.1	45	77	-	6	DMP060 - DMP064
TID065F12-3	6.5 - 6.9	12	16	21.2	45	78.8	-	6	DMP065 - DMP069
TID070F12-3	7 - 7.4	12	16	22.3	45	80.6	-	7	DMP070 - DMP074
TID075F12-3	7.5 - 7.9	12	16	24.4	45	82.1	-	7	DMP075 - DMP079
TID080F12-3	8 - 8.4	12	16	25.5	45	84.4	-	8	DMP080 - DMP084
TID085F12-3	8.5 - 8.9	12	16	27.5	45	85.9	-	8	DMP085 - DMP089
TID090F12-3	9 - 9.4	12	16	28.6	45	87.8	-	9	DMP090 - DMP094
TID095F12-3	9.5 - 9.9	12	16	30.7	45	89.3	-	9	DMP095 - DMP099
TID100F16-3	10 - 10.4	16	20	31.8	48	94.2	94.8	10	DM*100 - DM*104
TID105F16-3	10.5 - 10.9	16	20	33.9	48	95.7	96.3	10	DM*105 - DM*109
TID110F16-3	11 - 11.4	16	20	35	48	97.6	98.2	11	DM*110 - DM*114
TID115F16-3	11.5 - 11.9	16	20	37.1	48	99.1	99.7	11	DM*115 - DM*119
TID120F16-3	12 - 12.4	16	20	38.2	48	101	101.6	12	DM*120 - DM*124
TID125F16-3	12.5 - 12.9	16	20	39.3	48	102.5	103.1	12	DM*125 - DM*129
TID130F16-3	13 - 13.4	16	20	41.4	48	104.6	105.4	13	DM*130 - DM*134
TID135F16-3	13.5 - 13.9	16	20	43.5	48	106.1	106.9	13	DM*135 - DM*139
TID140F16-3	14 - 14.4	16	20	44.5	48	110.1	110.9	14	DM*140 - DM*144
TID145F16-3	14.5 - 14.9	16	20	46.6	48	111.6	112.4	14	DM*145 - DM*149
TID150F20-3	15 - 15.9	20	25	47.7	50	118.7	119.6	15	DM*150 - DM*159
TID160F20-3	16 - 16.9	20	25	50.9	50	123.3	124.3	16	DM*160 - DM*169
TID170F20-3	17 - 17.9	20	25	54.1	50	127.9	128.9	17	DM*170 - DM*179
TID180F25-3	18 - 18.9	25	32	57.3	56	138.5	139.6	18	DM*180 - DM*189
TID190F25-3	19 - 19.9	25	32	60.5	56	143	144.1	19	DM*190 - DM*199
TID200F25-3	20 - 20.9	25	32	63.6	56	147.6	-	20	DMP200 - DMP209
TID210F25-3	21 - 21.9	25	32	66.8	56	152.2	-	21	DMP210 - DMP219
TID220F25-3	22 - 22.9	25	32	70	56	156.8	-	22	DMP220 - DMP229
TID230F32-3	23 - 23.9	32	42	73.2	60	165.3	-	23	DMP230 - DMP239
TID240F32-3	24 - 24.9	32	42	76.4	60	169.9	-	24	DMP240 - DMP249
TID250F32-3	25 - 25.9	32	42	79.5	60	174.5	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø6 - ø25.9	+0.05 / 0

*Just for reference

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)



SPARE PARTS

Designation	Clamping key
TID060-095	K-TID6-9.99
TID100-190	K-TID10-19.99
TID200-250	K-TID20-26.99

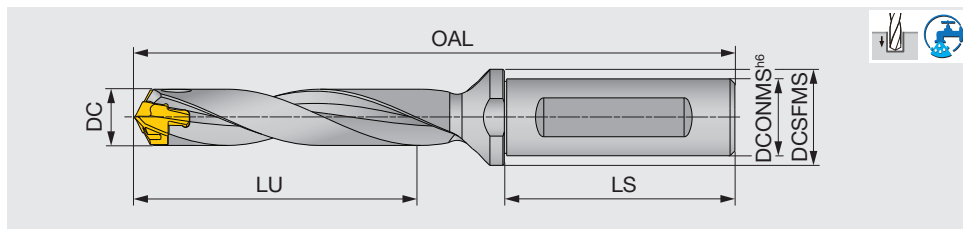
Reference pages: Head → **J024 - J029**
Standard cutting conditions → **J030**



DRILLMEISTER

TIDU L/D=5

Head changeable drill



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TIDU0394F0625-5	0.394 - 0.409	0.625	0.787	1.969	1.890	4.575	4.599	10	DM*100 - DM*104
TIDU0413F0625-5	0.413 - 0.429	0.625	0.787	2.087	1.890	4.791	4.815	10	DM*105 - DM*109
TIDU0433F0625-5	0.433 - 0.449	0.625	0.787	2.165	1.890	4.984	5.008	11	DM*110 - DM*114
TIDU0453F0625-5	0.453 - 0.469	0.625	0.787	2.283	1.890	5.201	5.225	11	DM*115 - DM*119
TIDU0472F0625-5	0.472 - 0.488	0.625	0.787	2.362	1.890	5.394	5.418	12	DM*120 - DM*124
TIDU0492F0625-5	0.492 - 0.508	0.625	0.787	2.441	1.890	5.571	5.595	12	DM*125 - DM*129
TIDU0512F0625-5	0.512 - 0.528	0.625	0.787	2.559	1.890	5.811	5.842	13	DM*130 - DM*134
TIDU0532F0625-5	0.532 - 0.547	0.625	0.787	2.677	1.890	6.028	6.059	13	DM*135 - DM*139
TIDU0551F0625-5	0.551 - 0.567	0.625	0.787	2.756	1.890	6.307	6.338	14	DM*140 - DM*144
TIDU0571F0625-5	0.571 - 0.587	0.625	0.787	2.874	1.890	6.524	6.555	14	DM*145 - DM*149
TIDU0591F0750-5	0.591 - 0.626	0.750	0.984	2.953	1.969	6.839	6.874	15	DM*150 - DM*159
TIDU0630F0750-5	0.630 - 0.665	0.750	0.984	3.150	1.969	7.295	7.334	16	DM*160 - DM*169
TIDU0669F0750-5	0.669 - 0.705	0.750	0.984	3.346	1.969	7.752	7.791	17	DM*170 - DM*179
TIDU0709F1000-5	0.709 - 0.744	1.000	1.260	3.543	2.205	8.209	8.252	18	DM*180 - DM*189
TIDU0748F1000-5	0.748 - 0.783	1.000	1.260	3.740	2.205	8.661	8.704	19	DM*190 - DM*199
TIDU0787F1000-5	0.787 - 0.823	1.000	1.260	3.937	2.205	2.723	-	20	DMP200 - DMP209
TIDU0827F1000-5	0.827 - 0.862	1.000	1.260	4.134	2.205	7.646	-	21	DMP210 - DMP219
TIDU0866F1000-5	0.866 - 0.902	1.000	1.260	4.331	2.205	7.906	-	22	DMP220 - DMP229
TIDU0906F1250-5	0.906 - 0.941	1.250	1.654	4.528	2.362	8.319	-	23	DMP230 - DMP239
TIDU0945F1250-5	0.945 - 0.980	1.250	1.654	4.724	2.362	8.579	-	24	DMP240 - DMP249
TIDU0984F1250-5	0.984 - 1.020	1.250	1.654	4.921	2.362	8.839	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø0.394 - ø0.705	+0.0024 / 0
ø0.709 - ø1.020	+0.0026 / 0

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

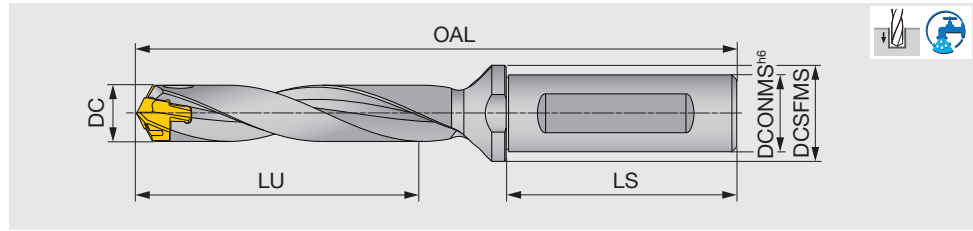
*Just for reference

SPARE PARTS



Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

Reference pages: Head → **J024 - J029**
 Standard cutting conditions → **J030**



Metric	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TID060F12-5	6 - 6.4	12	16	31.1	45	89	-	6	DMP060 - DMP064
TID065F12-5	6.5 - 6.9	12	16	34.2	45	91.8	-	6	DMP065 - DMP069
TID070F12-5	7 - 7.4	12	16	36.3	45	94.6	-	7	DMP070 - DMP074
TID075F12-5	7.5 - 7.9	12	16	39.4	45	97.1	-	7	DMP075 - DMP079
TID080F12-5	8 - 8.4	12	16	41.5	45	100.4	-	8	DMP080 - DMP084
TID085F12-5	8.5 - 8.9	12	16	44.5	45	102.9	-	8	DMP085 - DMP089
TID090F12-5	9 - 9.4	12	16	46.6	45	105.8	-	9	DMP090 - DMP094
TID095F12-5	9.5 - 9.9	12	16	49.7	45	108.3	-	9	DMP095 - DMP099
TID100F16-5	10 - 10.4	16	20	51.8	48	114.2	114.8	10	DM*100 - DM*104
TID105F16-5	10.5 - 10.9	16	20	54.9	48	116.7	117.3	10	DM*105 - DM*109
TID110F16-5	11 - 11.4	16	20	57	48	119.6	120.2	11	DM*110 - DM*114
TID115F16-5	11.5 - 11.9	16	20	60.1	48	122.1	122.7	11	DM*115 - DM*119
TID120F16-5	12 - 12.4	16	20	62.2	48	125	125.6	12	DM*120 - DM*124
TID125F16-5	12.5 - 12.9	16	20	64.3	48	127.5	128.1	12	DM*125 - DM*129
TID130F16-5	13 - 13.4	16	20	67.4	48	130.6	131.4	13	DM*130 - DM*134
TID135F16-5	13.5 - 13.9	16	20	70.5	48	133.1	133.9	13	DM*135 - DM*139
TID140F16-5	14 - 14.4	16	20	72.5	48	138.2	139	14	DM*140 - DM*144
TID145F16-5	14.5 - 14.9	16	20	75.6	48	140.7	141.5	14	DM*145 - DM*149
TID150F20-5	15 - 15.9	20	25	77.7	50	148.7	149.6	15	DM*150 - DM*159
TID160F20-5	16 - 16.9	20	25	82.9	50	155.3	156.3	16	DM*160 - DM*169
TID170F20-5	17 - 17.9	20	25	88.1	50	161.9	162.9	17	DM*170 - DM*179
TID180F25-5	18 - 18.9	25	32	93.3	56	174.5	175.6	18	DM*180 - DM*189
TID190F25-5	19 - 19.9	25	32	98.5	56	181	182.1	19	DM*190 - DM*199
TID200F25-5	20 - 20.9	25	32	103.6	56	187.6	-	20	DMP200 - DMP209
TID210F25-5	21 - 21.9	25	32	108.8	56	194.2	-	21	DMP210 - DMP219
TID220F25-5	22 - 22.9	25	32	114	56	200.8	-	22	DMP220 - DMP229
TID230F32-5	23 - 23.9	32	42	119.2	60	211.3	-	23	DMP230 - DMP239
TID240F32-5	24 - 24.9	32	42	124.4	60	217.9	-	24	DMP240 - DMP249
TID250F32-5	25 - 25.9	32	42	129.5	60	224.5	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø6 - ø17.9	+0.06 / 0
ø18 - ø25.9	+0.065 / 0

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

*Just for reference

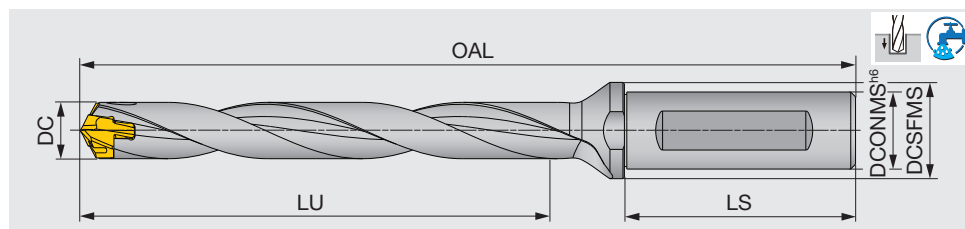


SPARE PARTS

Designation	Clamping key
TID060-095	K-TID6-9.99
TID100-190	K-TID10-19.99
TID200-250	K-TID20-26.99

Reference pages: Head → **J024 - J029**
Standard cutting conditions → **J030**





Inch	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TIDU0394F0625-8	0.394 - 0.409	0.625	0.787	3.150	1.890	5.677	5.701	10	DM*100 - DM*104
TIDU0413F0625-8	0.413 - 0.429	0.625	0.787	3.307	1.890	5.835	5.859	10	DM*105 - DM*109
TIDU0433F0625-8	0.433 - 0.449	0.625	0.787	3.465	1.890	6.008	6.032	11	DM*110 - DM*114
TIDU0453F0625-8	0.453 - 0.469	0.625	0.787	3.622	1.890	6.165	6.189	11	DM*115 - DM*119
TIDU0472F0625-8	0.472 - 0.488	0.625	0.787	3.780	1.890	6.339	6.363	12	DM*120 - DM*124
TIDU0492F0625-8	0.492 - 0.508	0.625	0.787	3.937	1.890	6.496	6.52	12	DM*125 - DM*129
TIDU0512F0625-8	0.512 - 0.528	0.625	0.787	4.094	1.890	6.677	6.708	13	DM*130 - DM*134
TIDU0532F0625-8	0.532 - 0.547	0.625	0.787	4.252	1.890	6.835	6.866	13	DM*135 - DM*139
TIDU0551F0625-8	0.551 - 0.567	0.625	0.787	4.409	1.890	7.091	7.122	14	DM*140 - DM*144
TIDU0571F0625-8	0.571 - 0.587	0.625	0.787	4.567	1.890	7.252	7.283	14	DM*145 - DM*149
TIDU0591F0750-8	0.591 - 0.626	0.750	0.984	4.724	1.969	7.626	7.661	15	DM*150 - DM*159
TIDU0630F0750-8	0.630 - 0.665	0.750	0.984	5.039	1.969	8.004	8.043	16	DM*160 - DM*169
TIDU0669F0750-8	0.669 - 0.705	0.750	0.984	5.354	1.969	8.382	8.421	17	DM*170 - DM*179
TIDU0709F1000-8	0.709 - 0.744	1.000	1.260	5.669	2.205	8.996	9.039	18	DM*180 - DM*189
TIDU0748F1000-8	0.748 - 0.783	1.000	1.260	5.984	2.205	9.370	9.413	19	DM*190 - DM*199
TIDU0787F1000-8	0.787 - 0.823	1.000	1.260	6.299	2.205	9.748	-	20	DMP200 - DMP209
TIDU0827F1000-8	0.827 - 0.862	1.000	1.260	6.614	2.205	10.126	-	21	DMP210 - DMP219
TIDU0866F1000-8	0.866 - 0.902	1.000	1.260	6.929	2.205	10.504	-	22	DMP220 - DMP229
TIDU0906F1250-8	0.906 - 0.941	1.250	1.654	7.244	2.362	11.035	-	23	DMP230 - DMP239
TIDU0945F1250-8	0.945 - 0.980	1.250	1.654	7.559	2.362	11.413	-	24	DMP240 - DMP249
TIDU0984F1250-8	0.984 - 1.020	1.250	1.654	7.874	2.362	11.791	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø0.394 - ø0.705	+0.0030 / 0
ø0.709 - ø1.020	+0.0033 / 0

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

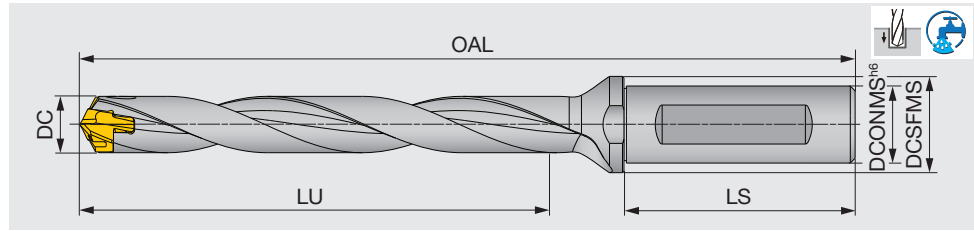
*Just for reference

SPARE PARTS



Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

Reference pages: Head → **J024 - J029**
 Standard cutting conditions → **J030**



Metric	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TID070F12-8	7 - 7.4	12	16	57.3	45	115.6	-	7	DMP070 - DMP074
TID075F12-8	7.5 - 7.9	12	16	61.4	45	119.6	-	7	DMP075 - DMP079
TID080F12-8	8 - 8.4	12	16	65.5	45	124.4	-	8	DMP080 - DMP084
TID085F12-8	8.5 - 8.9	12	16	69.5	45	128.4	-	8	DMP085 - DMP089
TID090F12-8	9 - 9.4	12	16	73.6	45	132.8	-	9	DMP090 - DMP094
TID095F12-8	9.5 - 9.9	12	16	77.7	45	136.8	-	9	DMP095 - DMP099
TID100F16-8	10 - 10.4	16	20	81.8	48	144.2	144.8	10	DM*100 - DM*104
TID105F16-8	10.5 - 10.9	16	20	85.9	48	148.2	148.8	10	DM*105 - DM*109
TID110F16-8	11 - 11.4	16	20	90	48	152.6	153.2	11	DM*110 - DM*114
TID115F16-8	11.5 - 11.9	16	20	94.1	48	156.6	157.2	11	DM*115 - DM*119
TID120F16-8	12 - 12.4	16	20	98.2	48	161	161.6	12	DM*120 - DM*124
TID125F16-8	12.5 - 12.9	16	20	102.3	48	165	165.6	12	DM*125 - DM*129
TID130F16-8	13 - 13.4	16	20	106.4	48	169.6	170.4	13	DM*130 - DM*134
TID135F16-8	13.5 - 13.9	16	20	110.5	48	173.6	174.4	13	DM*135 - DM*139
TID140F16-8	14 - 14.4	16	20	114.5	48	180.1	180.9	14	DM*140 - DM*144
TID145F16-8	14.5 - 14.9	16	20	118.6	48	184.2	185	14	DM*145 - DM*149
TID150F20-8	15 - 15.9	20	25	122.7	50	193.7	194.6	15	DM*150 - DM*159
TID160F20-8	16 - 16.9	20	25	130.9	50	203.3	204.3	16	DM*160 - DM*169
TID170F20-8	17 - 17.9	20	25	139.1	50	212.9	213.9	17	DM*170 - DM*179
TID180F25-8	18 - 18.9	25	32	147.3	56	228.5	229.6	18	DM*180 - DM*189
TID190F25-8	19 - 19.9	25	32	155.5	56	238	239.1	19	DM*190 - DM*199
TID200F25-8	20 - 20.9	25	32	163.6	56	247.6	-	20	DMP200 - DMP209
TID210F25-8	21 - 21.9	25	32	171.8	56	257.2	-	21	DMP210 - DMP219
TID220F25-8	22 - 22.9	25	32	180	56	266.8	-	22	DMP220 - DMP229
TID230F32-8	23 - 23.9	32	42	188.2	60	280.3	-	23	DMP230 - DMP239
TID240F32-8	24 - 24.9	32	42	196.4	60	289.9	-	24	DMP240 - DMP249
TID250F32-8	25 - 25.9	32	42	204.5	60	299.5	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø7 - ø17.9	+0.07 / 0
ø18 - ø25.9	+0.085 / 0

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

*Just for reference

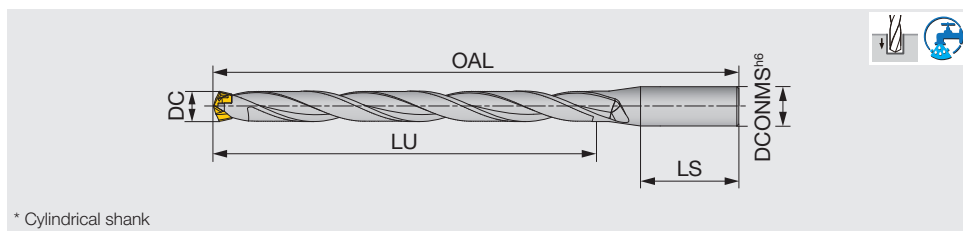


SPARE PARTS

Designation	Clamping key
TID060-095	K-TID6-9.99
TID100-190	K-TID10-19.99
TID200-250	K-TID20-26.99

Reference pages: Head → **J024 - J029**
Standard cutting conditions → **J030**





Inch	DC	DCONMS	LU	LS	OAL		Pocket size	Head
					DMP	DMC		
TIDU0472R0625-12	0.472 - 0.488	0.625	5.669	1.890	8.228	8.252	12	DM*120 - DM*124
TIDU0492R0625-12	0.492 - 0.508	0.625	5.906	1.890	8.465	8.489	12	DM*125 - DM*129
TIDU0512R0625-12	0.512 - 0.528	0.625	6.142	1.890	8.701	8.732	13	DM*130 - DM*134
TIDU0532R0625-12	0.531 - 0.547	0.625	6.378	1.890	8.937	8.968	13	DM*135 - DM*139
TIDU0551R0625-12	0.551 - 0.567	0.625	6.614	1.890	9.291	9.322	14	DM*140 - DM*144
TIDU0571R0625-12	0.571 - 0.587	0.625	6.850	1.890	9.528	9.559	14	DM*145 - DM*149
TIDU0591R0750-12	0.591 - 0.626	0.750	7.087	1.969	10.000	10.035	15	DM*150 - DM*159
TIDU0630R0750-12	0.630 - 0.665	0.750	7.559	1.969	10.512	10.551	16	DM*160 - DM*169
TIDU0669R0750-12	0.669 - 0.705	0.750	8.031	1.969	11.063	11.102	17	DM*170 - DM*179
TIDU0709R1000-12	0.709 - 0.744	1.000	8.504	2.205	11.811	11.854	18	DM*180 - DM*189
TIDU0748R1000-12	0.748 - 0.783	1.000	8.976	2.205	12.362	12.405	19	DM*190 - DM*199
TIDU0787R1000-12	0.787 - 0.823	1.000	9.449	2.205	12.874	-	20	DMP200 - DM*209
TIDU0827R1000-12	0.827 - 0.862	1.000	9.921	2.205	13.425	-	21	DMP210 - DM*219
TIDU0866R1000-12	0.866 - 0.902	1.000	10.394	2.205	13.976	-	22	DMP220 - DM*229

Tool diameter	Hole diameter tolerance*
ø0.472 - ø0.705	+0.0031 / 0
ø0.709 - ø0.902	+0.0037 / 0

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

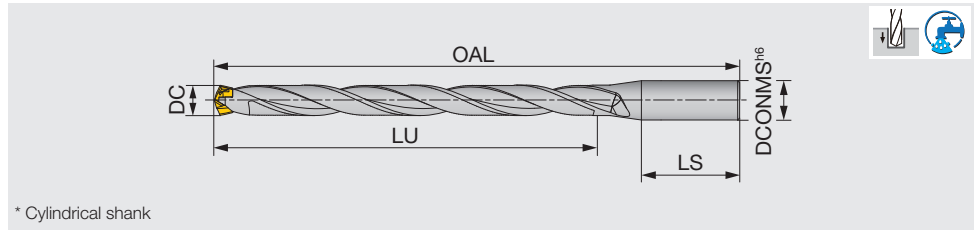
*Just for reference

SPARE PARTS



Designation	Clamping key
TIDU472-0748, TID120-190	K-TID10-19.99
TIDU0787-0866, TID200-220	K-TID20-26.99

Reference pages: Head → **J024 - J029**
 Standard cutting conditions → **J030**



Metric	DC	DCONMS	LU	LS	OAL		Pocket size	Head
					DMP	DMC		
TID080R12-12	8 - 8.4	12	97.5	45	156.4	-	8	DM*080-DM*084
TID085R12-12	8.5 - 8.9	12	103.5	45	162.4	-	8	DM*085-DM*089
TID090R12-12	9 - 9.4	12	109.6	45	168.8	-	9	DM*090-DM*094
TID095R12-12	9.5 - 9.9	12	115.7	45	174.8	-	9	DM*095-DM*099
TID100R16-12	10 - 10.4	16	121.8	48	184.2	184.8	10	DM*100-DM*104
TID105R16-12	10.5 - 10.9	16	127.9	48	190.2	190.8	10	DM*105-DM*109
TID110R16-12	11 - 11.4	16	134.0	48	196.6	197.2	11	DM*110-DM*114
TID115R16-12	11.5 - 11.9	16	140.1	48	202.6	203.2	11	DM*115-DM*119
TID120R16-12	12 - 12.4	16	146.2	48	209	209.6	12	DM*120 - DM*124
TID125R16-12	12.5 - 12.9	16	152.3	48	215	215.6	12	DM*125 - DM*129
TID130R16-12	13 - 13.4	16	158.4	48	221.6	222.4	13	DM*130 - DM*134
TID135R16-12	13.5 - 13.9	16	164.5	48	227.6	228.4	13	DM*135 - DM*139
TID140R16-12	14 - 14.4	16	170.5	48	236.2	237	14	DM*140 - DM*144
TID145R16-12	14.5 - 14.9	16	176.6	48	242.2	243	14	DM*145 - DM*149
TID150R20-12	15 - 15.9	20	182.7	50	253.7	254.6	15	DM*150 - DM*159
TID160R20-12	16 - 16.9	20	194.9	50	267.3	268.3	16	DM*160 - DM*169
TID170R20-12	17 - 17.9	20	207.1	50	280.9	281.9	17	DM*170 - DM*179
TID180R25-12	18 - 18.9	25	219.3	56	300.5	301.6	18	DM*180 - DM*189
TID190R25-12	19 - 19.9	25	231.5	56	314	315.1	19	DM*190 - DM*199
TID200R25-12	20 - 20.9	25	243.6	56	327.6	-	20	DM*200 - DM*209
TID210R25-12	21 - 21.9	25	255.8	56	341.2	-	21	DM*210 - DM*219
TID220R25-12	22 - 22.9	25	268	56	354.8	-	22	DM*220 - DM*229

Tool diameter	Hole diameter tolerance*
ø8 - ø17.9	+0.08 / 0
ø18 - ø22.9	+0.095 / 0

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

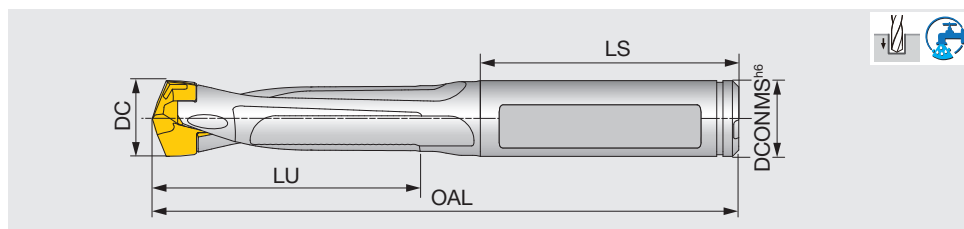
*Just for reference

SPARE PARTS



Designation	Clamping key
TID100-190	K-TID10-19.99
TID200-220	K-TID20-26.99

Reference pages: Head → **J024 - J029**
Standard cutting conditions → **J030**



Metric	DC	DCONMS	LU	LS	OAL		Pocket size	Head
					DMP	DMC		
TIDC100C10-3	10 - 10.4	10	31.8	41	86.1	86.7	10	DM*100 - DM*104
TIDC105C11-3	10.5 - 10.9	11	33.4	41	87.6	88.2	10	DM*105 - DM*109
TIDC110C11-3	11 - 11.4	11	35	41	89.5	90.1	11	DM*110 - DM*114
TIDC115C12-3	11.5 - 11.9	12	36.6	41	91	91.6	11	DM*115 - DM*119
TIDC120C12-3	12 - 12.4	12	38.2	41	92.8	93.4	12	DM*120 - DM*124
TIDC125C13-3	12.5 - 12.9	13	39.8	46	98.3	98.9	12	DM*125 - DM*129
TIDC130C13-3	13 - 13.4	13	41.4	47	102.4	103.2	13	DM*130 - DM*134
TIDC135C14-3	13.5 - 13.9	14	43	43	99.9	100.7	13	DM*135 - DM*139
TIDC140C14-3	14 - 14.4	14	44.5	44	103	103.8	14	DM*140 - DM*144
TIDC145C15-3	14.5 - 14.9	15	46.1	45	105.5	106.3	14	DM*145 - DM*149
TIDC150C15-3	15 - 15.9	15	47.7	45	107.5	108.4	15	DM*150 - DM*159
TIDC160C16-3	16 - 16.9	16	50.9	48	117.5	118.5	16	DM*160 - DM*169
TIDC170C17-3	17 - 17.9	17	54.1	48	119.7	120.7	17	DM*170 - DM*179
TIDC180C18-3	18 - 18.9	18	57.3	48	123.3	124.4	18	DM*180 - DM*189
TIDC190C19-3	19 - 19.9	19	60.5	54	132.4	133.5	19	DM*190 - DM*199

Tool diameter	Hole diameter tolerance*
ø10 - ø19.9	+0.05 / 0

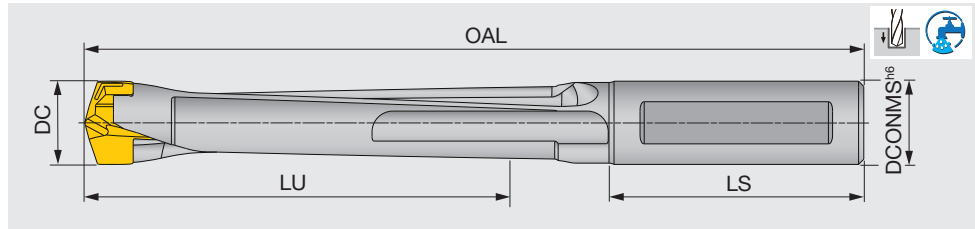
An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

*Just for reference

SPARE PARTS



Designation	Clamping key
TIDC100-190	K-TID10-19.99



Metric	DC	DCONMS	LU	LS	OAL		Pocket size	Head
					DMP	DMC		
TIDC100C10-5	10 - 10.4	10	51.8	41	106.1	106.7	10	DM*100 - DM*104
TIDC105C11-5	10.5 - 10.9	11	54.4	41	108.6	109.2	10	DM*105 - DM*109
TIDC110C11-5	11 - 11.4	11	57	41	111.5	112.1	11	DM*110 - DM*114
TIDC115C12-5	11.5 - 11.9	12	59.6	41	114	114.6	11	DM*115 - DM*119
TIDC120C12-5	12 - 12.4	12	62.2	41	116.8	117.4	12	DM*120 - DM*124
TIDC125C13-5	12.5 - 12.9	13	64.8	46	124.3	124.9	12	DM*125 - DM*129
TIDC130C13-5	13 - 13.4	13	67.4	47	128.4	129.2	13	DM*130 - DM*134
TIDC135C14-5	13.5 - 13.9	14	70	43	126.9	127.7	13	DM*135 - DM*139
TIDC140C14-5	14 - 14.4	14	72.5	44	131	131.8	14	DM*140 - DM*144
TIDC145C15-5	14.5 - 14.9	15	75.1	45	134.5	135.3	14	DM*145 - DM*149
TIDC150C15-5	15 - 15.9	15	77.7	45	137.5	138.4	15	DM*150 - DM*159
TIDC160C16-5	16 - 16.9	16	82.9	48	149.5	150.5	16	DM*160 - DM*169
TIDC170C17-5	17 - 17.9	17	88.1	48	153.7	154.7	17	DM*170 - DM*179
TIDC180C18-5	18 - 18.9	18	93.3	48	159.3	160.4	18	DM*180 - DM*189
TIDC190C19-5	19 - 19.9	19	98.5	54	170.4	171.5	19	DM*190 - DM*199

Tool diameter	Hole diameter tolerance*
ø10 - ø19.9	+0.05 / 0

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

*Just for reference

SPARE PARTS

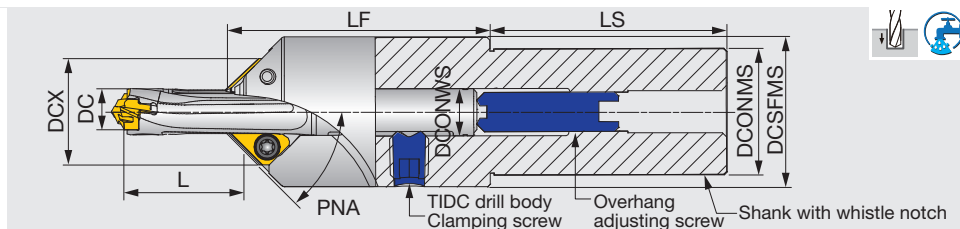


Designation	Clamping key
TIDC100-190	K-TID10-19.99

Reference pages: Head → **J024 - J029**
Standard cutting conditions → **J030**



Chamfering adapter



Inch	DC	DCONMS	DCSFMS	DCX	LF	LS	L* L/D = 3	L* L/D = 5	Drill body	DCONWS
TIDCF100-WU1.00-.394-.409	0.374 - 0.409	1.000	0.984	0.980	2.650	2.560	0.571 - 1.252	1.248 - 2.039	TIDC100C10-...	0.394
TIDCF110-WU1.00-.413-.449	0.413 - 0.449	1.000	0.984	1.020	2.650	2.560	0.618 - 1.311	1.228 - 2.134	TIDC105C11-..., TIDC110C11-...	0.433
TIDCF120-WU1.00-.453-.488	0.453 - 0.488	1.000	1.496	1.060	2.650	2.210	0.638 - 1.390	1.343 - 2.256	TIDC115C12-..., TIDC120C12-...	0.472
TIDCF130-WU1.00-.492-.528	0.492 - 0.528	1.000	1.496	1.100	2.650	2.560	0.594 - 1.447	1.331 - 2.339	TIDC125C13-..., TIDC130C13-...	0.512
TIDCF140-WU1.25-.531-.567	0.531 - 0.567	1.250	1.496	1.120	2.650	2.560	0.650 - 1.484	1.441 - 2.425	TIDC135C14-..., TIDC140C14-...	0.551
TIDCF150-WU1.25-.571-.626	0.571 - 0.626	1.250	1.496	1.160	2.650	2.560	0.634 - 1.559	1.563 - 2.551	TIDC145C15-..., TIDC150C15-...	0.591
TIDCF160-WU1.25-.630-.665	0.630 - 0.665	1.250	1.496	1.200	2.650	2.560	0.689 - 1.634	1.681 - 2.677	TIDC160C16-...	0.630
TIDCF170-WU1.25-.669-.705	0.669 - 0.705	1.250	1.496	1.240	2.650	2.560	0.697 - 1.689	1.630 - 2.768	TIDC170C17-...	0.669
TIDCF180-WU1.25-.709-.744	0.709 - 0.744	1.250	1.496	1.280	2.650	2.560	0.713 - 1.772	1.764 - 2.878	TIDC180C18-...	0.709
TIDCF190-WU1.25-.748-.783	0.748 - 0.783	1.250	1.496	1.320	2.950	2.560	0.756 - 1.756	1.732 - 2.909	TIDC190C19-...	0.748

Metric	DC	DCONMS	DCSFMS	DCX	LF	LS	L* L/D = 3	L* L/D = 5	Drill body	DCONWS
TIDCF100-W32	10 - 10.4	32	38	24.9	67.3	60	14.5 - 31.8	31.7 - 51.8	TIDC100C10-...	10
TIDCF110-W32	10.5 - 10.9	32	38	25.9	67.3	60	15.7 - 33.3	31.2 - 54.2	TIDC105C11-...	11
TIDCF110-W32	11 - 11.4	32	38	25.9	67.3	60	16.2 - 35.3	34.1 - 57.3	TIDC110C11-...	11
TIDCF120-W32	11.5 - 11.9	32	38	26.9	67.3	60	15.1 - 36.7	33.8 - 59.4	TIDC115C12-...	12
TIDCF120-W32	12 - 12.4	32	38	26.9	67.3	60	16.5 - 37.7	36.6 - 61.6	TIDC120C12-...	12
TIDCF130-W32	12.5 - 12.9	32	38	27.9	67.3	60	16.1 - 39.6	39.7 - 64.8	TIDC125C13-...	13
TIDCF130-W32	13 - 13.4	32	38	27.9	67.3	60	17.5 - 41.5	42.7 - 68	TIDC130C13-...	13
TIDCF140-W32	13.5 - 13.9	32	38	28.4	67.3	60	17.7 - 42.9	41.4 - 70.3	TIDC135C14-...	14
TIDCF140-W32	14 - 14.4	32	38	28.4	67.3	60	18.1 - 45	44.8 - 73.1	TIDC140C14-...	14
TIDCF150-W32	14.5 - 14.9	32	38	29.4	67.3	60	19.2 - 44.6	44 - 73.9	TIDC145C15-...	15
TIDCF150-W32	15 - 15.9	32	38	29.4	67.3	60	19.7 - 47.4	47.6 - 80.7	TIDC150C15-...	15
TIDCF160-W32	16 - 16.9	32	38	30.4	67.3	60	19.5 - 55.3	57 - 87.5	TIDC160C16-...	16
TIDCF170-W32	17 - 17.9	32	38	31.4	67.3	60	21.4 - 54.9	55.9 - 88.5	TIDC170C17-...	17
TIDCF180-W32	18 - 18.9	32	38	32.4	67.3	60	24.2 - 65.2	60 - 93	TIDC180C18-...	18
TIDCF190-W32	19 - 19.9	32	38	33.4	75	60	28.5 - 62.3	67 - 100	TIDC190C19-...	19

L* is the dimension when using 45° chamfering insert.

SPARE PARTS

Designation	Clamping screw	Grip	Overhang adjusting screw	Clamping screw of TIDC drill body	Torx bit	Wrench
TIDCF	SR14-544/S	SW6-SD	SRM10X10DIN916	SRM10X1.5S	BT15S	HW5.0

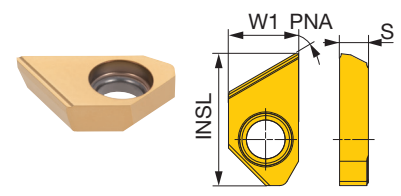
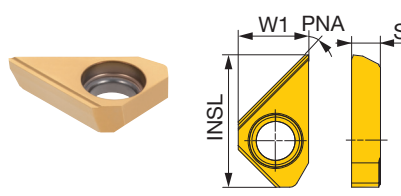
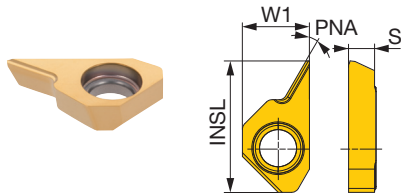
Recommended clamping torque: SR14-544/S = 3.54 lbf-ft, 4.8 N-m

CHAMFERING INSERT

XHGT-30A

XHGR-45A

XHGR-60A



P	Steel	★									
M	Stainless	★									
K	Cast iron	★									
N	Non-ferrous	☆									
S	Superalloys	★									
H	Hard materials	★									

★ : First choice
☆ : Second choice

Designation	INSL (mm)	W1 (mm)	S (mm)	Coated								Chamfering angle PNA	Maximum width of chamfer ** (mm)	
				GH730										
XHGT090300-30A	16.00	8.5	3.3	●									30°	1.5
XHGR090300-45A	16.00	8.5	3.3	●									45°	6
XHGR090300-60A	16.00	8.5	3.3	●									60°	3.5

**Please reduce the feed rate to half when chamfering over 60% of maximum width of chamfer.

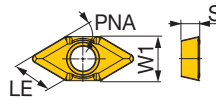
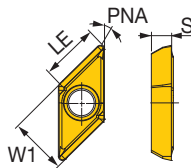
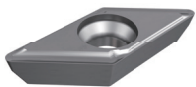
● : Line up
2 pieces per package

INSERT FOR SPECIAL CHAMFERING ADAPTERS

AOMT...

AOMT**-C45

AOMT**-N-**-DT



P	Steel	★									
M	Stainless	★									
K	Cast iron	★									
N	Non-ferrous	☆									
S	Superalloys	★									
H	Hard materials	★									

★ : First choice
☆ : Second choice

Designation	W1 (mm)	S (mm)	Coated								LE (mm)	Chamfering angle PNA	
			GH730										
AOMT060204-C45	0.223	0.077	●									0.177	45°
AOMT030204-N-30DT	0.157	0.063	●									0.157	30°
AOMT030204-N-45DT	0.110	0.063	●									0.157	45°

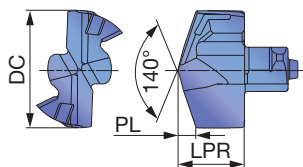
● : Line up

Grade
Insert
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index

A
B
C
D
E
F
G
H
I
J
K
L
M

DRILL HEAD

DMP General purpose



Tool diameter (Inch)	ø0.236" - ø0.705"	ø0.709" - ø1.020"
Head diameter tolerance	+0.0007" / 0	+0.0008" / 0
Tool diameter (mm)	ø6 - ø17.9	ø18 - ø25.9
Head diameter tolerance	+0.018 / 0	+0.021 / 0

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	★	★
H	Hard materials	★	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated		PL (mm)	SSC	Pocket Size	Body
				AH725	AH9130				
DMP060	0.236	6	4	●		1.09	6	6	TID*060...
DMP061	0.240	6.1	4	●		1.11	6	6	TID*060...
DMP062	0.244	6.2	4	●		1.13	6	6	TID*060...
DMP063	0.248	6.3	4	●		1.14	6	6	TID*060...
DMP064	0.252	6.4	4	●		1.16	6	6	TID*060...
DMP065	0.256	6.5	4.3	●		1.27	6	6	TID*065...
DMP066	0.260	6.6	4.3	●		1.29	6	6	TID*065...
DMP067	0.264	6.7	4.3	●		1.31	6	6	TID*065...
DMP068	0.268	6.8	4.3	●		1.33	6	6	TID*065...
DMP069	0.272	6.9	4.3	●		1.34	6	6	TID*065...
DMP070	0.276	7	4.6	●		1.03	7	7	TID*070...
DMP071	0.280	7.1	4.6	●		1.05	7	7	TID*070...
DMP072	0.283	7.2	4.6	●		1.07	7	7	TID*070...
DMP073	0.287	7.3	4.6	●		1.08	7	7	TID*070...
DMP074	0.291	7.4	4.6	●		1.1	7	7	TID*070...
DMP075	0.295	7.5	4.6	●		1.12	7	7	TID*075...
DMP076	0.299	7.6	4.6	●		1.14	7	7	TID*075...
DMP077	0.303	7.7	4.6	●		1.16	7	7	TID*075...
DMP078	0.307	7.8	4.6	●		1.18	7	7	TID*075...
DMP079	0.311	7.9	4.6	●		1.19	7	7	TID*075...
DMP080	0.315	8	5.4	●		1.2	8	8	TID*080...
DMP081	0.319	8.1	5.4	●		1.22	8	8	TID*080...
DMP082	0.323	8.2	5.4	●		1.24	8	8	TID*080...
DMP083	0.327	8.3	5.4	●		1.25	8	8	TID*080...
DMP084	0.331	8.4	5.4	●		1.27	8	8	TID*080...
DMP085	0.335	8.5	5.4	●		1.29	8	8	TID*085...
DMP086	0.339	8.6	5.4	●		1.31	8	8	TID*085...
DMP087	0.343	8.7	5.4	●		1.33	8	8	TID*085...
DMP088	0.346	8.8	5.4	●		1.35	8	8	TID*085...
DMP089	0.350	8.9	5.4	●		1.36	8	8	TID*085...
DMP090	0.354	9	5.8	●		1.37	9	9	TID*090...
DMP091	0.358	9.1	5.8	●		1.39	9	9	TID*090...
DMP092	0.362	9.2	5.8	●		1.41	9	9	TID*090...
DMP093	0.366	9.3	5.8	●		1.42	9	9	TID*090...
DMP094	0.370	9.4	5.8	●		1.44	9	9	TID*090...
DMP095	0.374	9.5	5.8	●		1.46	9	9	TID*095...
DMP096	0.378	9.6	5.8	●		1.48	9	9	TID*095...
DMP097	0.382	9.7	5.8	●		1.5	9	9	TID*095...
DMP098	0.386	9.8	5.8	●		1.52	9	9	TID*095...
DMP099	0.390	9.9	5.8	●		1.53	9	9	TID*095...
DMP100	0.394	10	6.05	●	●	1.47	10	10	TID*100...
DMP101	0.398	10.1	6.05	●		1.49	10	10	TID*100...
DMP102	0.402	10.2	6.05	●		1.51	10	10	TID*100...
DMP103	0.406	10.3	6.05	●		1.52	10	10	TID*100...
DMP104	0.409	10.4	6.05	●		1.54	10	10	TID*100...

● : Line up

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	★	★
H	Hard materials	★	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated		PL (mm)	SSC	Pocket Size	Body
				AH725	AH9130				
DMP105	0.413	10.5	6.05	●	●	1.56	10	10	TID*105...
DMP106	0.417	10.6	6.05	●		1.58	10	10	TID*105...
DMP107	0.421	10.7	6.05	●		1.6	10	10	TID*105...
DMP108	0.425	10.8	6.05	●	●	1.62	10	10	TID*105...
DMP109	0.429	10.9	6.05	●		1.63	10	10	TID*105...
DMP110	0.433	11	6.45	●	●	1.67	11	11	TID*110...
DMP111	0.437	11.1	6.45	●		1.69	11	11	TID*110...
DMP112	0.441	11.2	6.45	●		1.71	11	11	TID*110...
DMP113	0.445	11.3	6.45	●		1.72	11	11	TID*110...
DMP114	0.449	11.4	6.45	●		1.74	11	11	TID*110...
DMP115	0.453	11.5	6.45	●	●	1.76	11	11	TID*115...
DMP116	0.457	11.6	6.45	●		1.78	11	11	TID*115...
DMP117	0.461	11.7	6.45	●		1.8	11	11	TID*115...
DMP118	0.465	11.8	6.45	●		1.82	11	11	TID*115...
DMP119	0.469	11.9	6.45	●		1.83	11	11	TID*115...
DMP120	0.472	12	6.8	●	●	1.82	12	12	TID*120...
DMP121	0.476	12.1	6.8	●		1.84	12	12	TID*120...
DMP122	0.480	12.2	6.8	●		1.86	12	12	TID*120...
DMP123	0.484	12.3	6.8	●		1.87	12	12	TID*120...
DMP124	0.488	12.4	6.8	●		1.89	12	12	TID*120...
DMP125	0.492	12.5	6.8	●	●	1.91	12	12	TID*125...
DMP126	0.496	12.6	6.8	●	●	1.93	12	12	TID*125...
DMP127	0.500	12.7	6.8	●		1.95	12	12	TID*125...
DMP128	0.504	12.8	6.8	●		1.97	12	12	TID*125...
DMP129	0.508	12.9	6.8	●		1.98	12	12	TID*125...
DMP130	0.512	13	7.4	●	●	1.96	13	13	TID*130...
DMP131	0.516	13.1	7.4	●		1.98	13	13	TID*130...
DMP132	0.520	13.2	7.4	●		2	13	13	TID*130...
DMP133	0.524	13.3	7.4	●		2.01	13	13	TID*130...
DMP134	0.528	13.4	7.4	●		2.03	13	13	TID*130...
DMP135	0.531	13.5	7.4	●	●	2.05	13	13	TID*135...
DMP136	0.535	13.6	7.4	●		2.07	13	13	TID*135...
DMP137	0.539	13.7	7.4	●		2.09	13	13	TID*135...
DMP138	0.543	13.8	7.4	●	●	2.11	13	13	TID*135...
DMP139	0.547	13.9	7.4	●		2.12	13	13	TID*135...
DMP140	0.551	14	7.95	●	●	2.12	14	14	TID*140...
DMP141	0.555	14.1	7.95	●		2.14	14	14	TID*140...
DMP142	0.559	14.2	7.95	●	●	2.16	14	14	TID*140...
DMP143	0.563	14.3	7.95	●		2.17	14	14	TID*140...
DMP144	0.567	14.4	7.95	●		2.19	14	14	TID*140...
DMP145	0.571	14.5	7.95	●	●	2.21	14	14	TID*145...
DMP146	0.575	14.6	7.95	●		2.23	14	14	TID*145...
DMP147	0.579	14.7	7.95	●		2.25	14	14	TID*145...
DMP148	0.583	14.8	7.95	●		2.27	14	14	TID*145...
DMP149	0.587	14.9	7.95	●		2.28	14	14	TID*145...
DMP150	0.591	15	8.53	●	●	2.27	15	15	TID*150...
DMP151	0.594	15.1	8.53	●		2.29	15	15	TID*150...
DMP152	0.598	15.2	8.53	●	●	2.31	15	15	TID*150...
DMP153	0.602	15.3	8.53	●		2.32	15	15	TID*150...
DMP154	0.606	15.4	8.53	●		2.34	15	15	TID*150...
DMP155	0.610	15.5	8.53	●	●	2.36	15	15	TID*150...
DMP156	0.614	15.6	8.53	●		2.38	15	15	TID*150...
DMP157	0.618	15.7	8.53	●		2.4	15	15	TID*150...
DMP158	0.622	15.8	8.53	●	●	2.42	15	15	TID*150...
DMP159	0.626	15.9	8.53	●		2.43	15	15	TID*150...
DMP160	0.630	16	9.1	●	●	2.42	16	16	TID*160...
DMP161	0.634	16.1	9.1	●		2.44	16	16	TID*160...

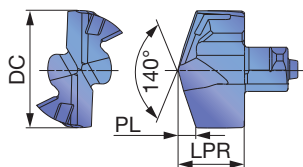
ø6 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

● : Line up

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Endmill
Drilling Tool
Tooling System
User's Guide
Index



DMP General purpose



Tool diameter (Inch)	ø0.236" - ø0.705"	ø0.709" - ø1.020"
Head diameter tolerance	+0.0007" / 0	+0.0008" / 0
Tool diameter (mm)	ø6 - ø17.9	ø18 - ø25.9
Head diameter tolerance	+0.018 / 0	+0.021 / 0

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	★	★
H	Hard materials	★	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated		PL (mm)	SSC	Pocket Size	Body
				AH725	AH9130				
DMP162	0.638	16.2	9.1	●		2.46	16	16	TID*160...
DMP163	0.642	16.3	9.1	●		2.47	16	16	TID*160...
DMP164	0.646	16.4	9.1	●		2.49	16	16	TID*160...
DMP165	0.650	16.5	9.1	●	●	2.51	16	16	TID*160...
DMP166	0.654	16.6	9.1	●		2.53	16	16	TID*160...
DMP1666	0.656	16.66	9.1	●		2.54	16	16	TID*160...
DMP167	0.657	16.7	9.1	●		2.55	16	16	TID*160...
DMP168	0.661	16.8	9.1	●		2.57	16	16	TID*160...
DMP169	0.665	16.9	9.1	●		2.58	16	16	TID*160...
DMP170	0.669	17	9.7	●	●	2.59	17	17	TID*170...
DMP171	0.673	17.1	9.7	●		2.61	17	17	TID*170...
DMP172	0.677	17.2	9.7	●		2.63	17	17	TID*170...
DMP173	0.681	17.3	9.7	●		2.64	17	17	TID*170...
DMP174	0.685	17.4	9.7	●		2.66	17	17	TID*170...
DMP175	0.689	17.5	9.7	●	●	2.68	17	17	TID*170...
DMP176	0.693	17.6	9.7	●		2.7	17	17	TID*170...
DMP177	0.697	17.7	9.7	●		2.72	17	17	TID*170...
DMP178	0.701	17.8	9.7	●		2.74	17	17	TID*170...
DMP179	0.705	17.9	9.7	●		2.75	17	17	TID*170...
DMP180	0.709	18	10.3	●	●	2.73	18	18	TID*180...
DMP181	0.713	18.1	10.3	●		2.75	18	18	TID*180...
DMP182	0.717	18.2	10.3	●		2.77	18	18	TID*180...
DMP183	0.720	18.3	10.3	●		2.78	18	18	TID*180...
DMP184	0.724	18.4	10.3	●		2.8	18	18	TID*180...
DMP185	0.728	18.5	10.3	●	●	2.82	18	18	TID*180...
DMP186	0.732	18.6	10.3	●		2.84	18	18	TID*180...
DMP187	0.736	18.7	10.3	●		2.86	18	18	TID*180...
DMP188	0.740	18.8	10.3	●		2.88	18	18	TID*180...
DMP189	0.744	18.9	10.3	●		2.89	18	18	TID*180...
DMP190	0.748	19	10.8	●	●	2.88	19	19	TID*190...
DMP1905	0.750	19.05	10.8	●		2.89	19	19	TID*190...
DMP191	0.752	19.1	10.8	●		2.9	19	19	TID*190...
DMP192	0.756	19.2	10.8	●		2.92	19	19	TID*190...
DMP193	0.760	19.3	10.8	●		2.93	19	19	TID*190...
DMP194	0.764	19.4	10.8	●		2.93	19	19	TID*190...
DMP1946	0.766	19.46	10.8	●		2.96	19	19	TID*190...
DMP195	0.768	19.5	10.8	●	●	2.97	19	19	TID*190...
DMP196	0.772	19.6	10.8	●		2.99	19	19	TID*190...
DMP197	0.776	19.7	10.8	●		3.01	19	19	TID*190...
DMP198	0.780	19.8	10.8	●		3.03	19	19	TID*190...
DMP1984	0.781	19.84	10.8	●		3.03	19	19	TID*190...
DMP199	0.783	19.9	10.8	●		3.04	19	19	TID*190...
DMP200	0.787	20	11.4	●		3.02	20	20	TID*200...
DMP201	0.791	20.1	11.4	●		3.04	20	20	TID*200...
DMP202	0.795	20.2	11.4	●		3.06	20	20	TID*200...
DMP203	0.799	20.3	11.4	●		3.07	20	20	TID*200...
DMP204	0.803	20.4	11.4	●		3.09	20	20	TID*200...

● : Line up

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	★	★
H	Hard materials	★	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated		PL (mm)	SSC	Pocket Size	Body
				AH725	AH9130				
DMP205	0.807	20.5	11.4	●		3.11	20	20	TID*200...
DMP206	0.811	20.6	11.4	●		3.13	20	20	TID*200...
DMP207	0.815	20.7	11.4	●		3.15	20	20	TID*200...
DMP208	0.819	20.8	11.4	●		3.17	20	20	TID*200...
DMP209	0.823	20.9	11.4	●		3.18	20	20	TID*200...
DMP210	0.827	21	11.98	●		3.18	21	21	TID*210...
DMP211	0.831	21.1	11.98	●		3.2	21	21	TID*210...
DMP212	0.835	21.2	11.98	●		3.22	21	21	TID*210...
DMP213	0.839	21.3	11.98	●		3.23	21	21	TID*210...
DMP214	0.843	21.4	11.98	●		3.25	21	21	TID*210...
DMP215	0.846	21.5	11.98	●		3.27	21	21	TID*210...
DMP216	0.850	21.6	11.98	●		3.29	21	21	TID*210...
DMP217	0.854	21.7	11.98	●		3.31	21	21	TID*210...
DMP218	0.858	21.8	11.98	●		3.33	21	21	TID*210...
DMP219	0.862	21.9	11.98	●		3.34	21	21	TID*210...
DMP220	0.866	22	12.56	●		3.32	22	22	TID*220...
DMP221	0.870	22.1	12.56	●		3.34	22	22	TID*220...
DMP222	0.874	22.2	12.56	●		3.36	22	22	TID*220...
DMP223	0.878	22.3	12.56	●		3.37	22	22	TID*220...
DMP224	0.882	22.4	12.56	●		3.39	22	22	TID*220...
DMP225	0.886	22.5	12.56	●		3.41	22	22	TID*220...
DMP226	0.890	22.6	12.56	●		3.43	22	22	TID*220...
DMP227	0.894	22.7	12.56	●		3.45	22	22	TID*220...
DMP228	0.898	22.8	12.56	●		3.47	22	22	TID*220...
DMP229	0.902	22.9	12.56	●		3.48	22	22	TID*220...
DMP230	0.906	23	13.13	●		3.46	23	23	TID*230...
DMP231	0.909	23.1	13.13	●		3.48	23	23	TID*230...
DMP232	0.913	23.2	13.13	●		3.5	23	23	TID*230...
DMP233	0.917	23.3	13.13	●		3.51	23	23	TID*230...
DMP234	0.921	23.4	13.13	●		3.53	23	23	TID*230...
DMP235	0.925	23.5	13.13	●		3.55	23	23	TID*230...
DMP236	0.929	23.6	13.13	●		3.57	23	23	TID*230...
DMP237	0.933	23.7	13.13	●		3.59	23	23	TID*230...
DMP238	0.937	23.8	13.13	●		3.61	23	23	TID*230...
DMP239	0.941	23.9	13.13	●		3.62	23	23	TID*230...
DMP240	0.945	24	13.7	●		3.62	24	24	TID*240...
DMP241	0.949	24.1	13.7	●		3.64	24	24	TID*240...
DMP242	0.953	24.2	13.7	●		3.66	24	24	TID*240...
DMP243	0.957	24.3	13.7	●		3.67	24	24	TID*240...
DMP244	0.961	24.4	13.7	●		3.69	24	24	TID*240...
DMP245	0.965	24.5	13.7	●		3.71	24	24	TID*240...
DMP246	0.969	24.6	13.7	●		3.73	24	24	TID*240...
DMP247	0.972	24.7	13.7	●		3.75	24	24	TID*240...
DMP248	0.976	24.8	13.7	●		3.77	24	24	TID*240...
DMP249	0.980	24.9	13.7	●		3.78	24	24	TID*240...
DMP250	0.984	25	14.3	●		3.8	25	25	TID*250...
DMP251	0.988	25.1	14.3	●		3.82	25	25	TID*250...
DMP252	0.992	25.2	14.3	●		3.84	25	25	TID*250...
DMP253	0.996	25.3	14.3	●		3.85	25	25	TID*250...
DMP254	1.000	25.4	14.3	●		3.87	25	25	TID*250...
DMP255	1.004	25.5	14.3	●		3.89	25	25	TID*250...
DMP256	1.008	25.6	14.3	●		3.91	25	25	TID*250...
DMP257	1.012	25.7	14.3	●		3.92	25	25	TID*250...
DMP258	1.016	25.8	14.3	●		3.95	25	25	TID*250...
DMP259	1.020	25.9	14.3	●		3.96	25	25	TID*250...

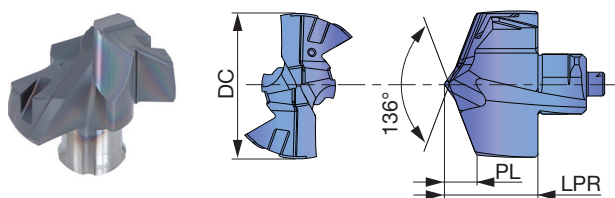
ø10 - ø19.9 = 2 pieces per package

● : Line up

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index



DMC High precision machining



Tool diameter (inch)	ø0.394" - ø0.705"	ø0.709" - ø0.783"
Head diameter tolerance	+0.0007" / 0	+0.0008" / 0
Tool diameter (mm)	ø10 - ø17.9	ø18 - ø19.9
Head diameter tolerance	+0.018 / 0	+0.021 / 0

P Steel	★									
M Stainless	★									
K Cast iron	★									
N Non-ferrous	☆									
S Superalloys	★									
H Hard materials	★									

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated								PL (mm)	SSC	Pocket Size	Body
				AH9130											
DMC100	0.394	10	6.67	●								2.09	10	10	TID*100...
DMC101	0.398	10.1	6.67	●								2.11	10	10	TID*100...
DMC102	0.402	10.2	6.67	●								2.13	10	10	TID*100...
DMC103	0.406	10.3	6.67	●								2.15	10	10	TID*100...
DMC104	0.409	10.4	6.67	●								2.17	10	10	TID*100...
DMC105	0.413	10.5	6.67	●								2.19	10	10	TID*105...
DMC106	0.417	10.6	6.67	●								2.21	10	10	TID*105...
DMC107	0.421	10.7	6.67	●								2.23	10	10	TID*105...
DMC108	0.425	10.8	6.67	●								2.25	10	10	TID*105...
DMC109	0.429	10.9	6.67	●								2.27	10	10	TID*105...
DMC110	0.433	11	7.1	●								2.32	11	11	TID*110...
DMC111	0.437	11.1	7.1	●								2.34	11	11	TID*110...
DMC112	0.441	11.2	7.1	●								2.36	11	11	TID*110...
DMC113	0.445	11.3	7.1	●								2.38	11	11	TID*110...
DMC114	0.449	11.4	7.1	●								2.4	11	11	TID*110...
DMC115	0.453	11.5	7.1	●								2.42	11	11	TID*115...
DMC116	0.457	11.6	7.1	●								2.44	11	11	TID*115...
DMC117	0.461	11.7	7.1	●								2.46	11	11	TID*115...
DMC118	0.465	11.8	7.1	●								2.48	11	11	TID*115...
DMC119	0.469	11.9	7.1	●								2.5	11	11	TID*115...
DMC120	0.472	12	7.43	●								2.45	12	12	TID*120...
DMC121	0.476	12.1	7.43	●								2.47	12	12	TID*120...
DMC122	0.480	12.2	7.43	●								2.49	12	12	TID*120...
DMC123	0.484	12.3	7.43	●								2.51	12	12	TID*120...
DMC124	0.488	12.4	7.43	●								2.53	12	12	TID*120...
DMC125	0.492	12.5	7.43	●								2.55	12	12	TID*125...
DMC126	0.496	12.6	7.43	●								2.57	12	12	TID*125...
DMC127	0.500	12.7	7.43	●								2.59	12	12	TID*125...
DMC128	0.504	12.8	7.43	●								2.61	12	12	TID*125...
DMC129	0.508	12.9	7.43	●								2.63	12	12	TID*125...
DMC130	0.512	13	8.15	●								2.71	13	13	TID*130...
DMC131	0.516	13.1	8.15	●								2.73	13	13	TID*130...
DMC132	0.520	13.2	8.15	●								2.75	13	13	TID*130...
DMC133	0.524	13.3	8.15	●								2.77	13	13	TID*130...
DMC134	0.528	13.4	8.15	●								2.79	13	13	TID*130...
DMC135	0.531	13.5	8.15	●								2.81	13	13	TID*135...
DMC136	0.535	13.6	8.15	●								2.83	13	13	TID*135...
DMC137	0.539	13.7	8.15	●								2.85	13	13	TID*135...
DMC138	0.543	13.8	8.15	●								2.87	13	13	TID*135...
DMC139	0.547	13.9	8.15	●								2.89	13	13	TID*135...
DMC140	0.551	14	8.76	●								2.93	14	14	TID*140...
DMC141	0.555	14.1	8.76	●								2.95	14	14	TID*140...
DMC142	0.559	14.2	8.76	●								2.97	14	14	TID*140...
DMC143	0.563	14.3	8.76	●								2.99	14	14	TID*140...
DMC144	0.567	14.4	8.76	●								3.01	14	14	TID*140...
DMC145	0.571	14.5	8.76	●								3.03	14	14	TID*145...
DMC146	0.575	14.6	8.76	●								3.05	14	14	TID*145...

● : Line up

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated								PL (mm)	SSC	Pocket Size	Body
				AH9130											
DMC147	0.579	14.7	8.76	●								3.07	14	14	TID*145...
DMC148	0.583	14.8	8.76	●								3.09	14	14	TID*145...
DMC149	0.587	14.9	8.76	●								3.11	14	14	TID*145...
DMC150	0.591	15	9.44	●								3.18	15	15	TID*150...
DMC151	0.594	15.1	9.44	●								3.2	15	15	TID*150...
DMC152	0.598	15.2	9.44	●								3.22	15	15	TID*150...
DMC153	0.602	15.3	9.44	●								3.24	15	15	TID*150...
DMC154	0.606	15.4	9.44	●								3.26	15	15	TID*150...
DMC155	0.610	15.5	9.44	●								3.28	15	15	TID*150...
DMC156	0.614	15.6	9.44	●								3.3	15	15	TID*150...
DMC157	0.618	15.7	9.44	●								3.32	15	15	TID*150...
DMC158	0.622	15.8	9.44	●								3.34	15	15	TID*150...
DMC159	0.626	15.9	9.44	●								3.36	15	15	TID*150...
DMC160	0.630	16	10.07	●								3.39	16	16	TID*160...
DMC161	0.634	16.1	10.07	●								3.41	16	16	TID*160...
DMC162	0.638	16.2	10.07	●								3.43	16	16	TID*160...
DMC163	0.642	16.3	10.07	●								3.45	16	16	TID*160...
DMC164	0.646	16.4	10.07	●								3.47	16	16	TID*160...
DMC165	0.650	16.5	10.07	●								3.49	16	16	TID*160...
DMC166	0.654	16.6	10.07	●								3.51	16	16	TID*160...
DMC167	0.657	16.7	10.07	●								3.53	16	16	TID*160...
DMC168	0.661	16.8	10.07	●								3.55	16	16	TID*160...
DMC169	0.665	16.9	10.07	●								3.57	16	16	TID*160...
DMC170	0.669	17	10.68	●								3.57	17	17	TID*170...
DMC171	0.673	17.1	10.68	●								3.59	17	17	TID*170...
DMC172	0.677	17.2	10.68	●								3.61	17	17	TID*170...
DMC173	0.681	17.3	10.68	●								3.63	17	17	TID*170...
DMC174	0.685	17.4	10.68	●								3.65	17	17	TID*170...
DMC175	0.689	17.5	10.68	●								3.67	17	17	TID*170...
DMC176	0.693	17.6	10.68	●								3.69	17	17	TID*170...
DMC177	0.697	17.7	10.68	●								3.71	17	17	TID*170...
DMC178	0.701	17.8	10.68	●								3.73	17	17	TID*170...
DMC179	0.705	17.9	10.68	●								3.75	17	17	TID*170...
DMC180	0.709	18	11.35	●								3.78	18	18	TID*180...
DMC181	0.713	18.1	11.35	●								3.8	18	18	TID*180...
DMC182	0.717	18.2	11.35	●								3.82	18	18	TID*180...
DMC183	0.720	18.3	11.35	●								3.84	18	18	TID*180...
DMC184	0.724	18.4	11.35	●								3.86	18	18	TID*180...
DMC185	0.728	18.5	11.35	●								3.88	18	18	TID*180...
DMC186	0.732	18.6	11.35	●								3.9	18	18	TID*180...
DMC187	0.736	18.7	11.35	●								3.92	18	18	TID*180...
DMC188	0.740	18.8	11.35	●								3.94	18	18	TID*180...
DMC189	0.744	18.9	11.35	●								3.96	18	18	TID*180...
DMC190	0.748	19	11.91	●								3.99	19	19	TID*190...
DMC191	0.752	19.1	11.91	●								4.01	19	19	TID*190...
DMC192	0.756	19.2	11.91	●								4.03	19	19	TID*190...
DMC193	0.760	19.3	11.91	●								4.05	19	19	TID*190...
DMC194	0.764	19.4	11.91	●								4.07	19	19	TID*190...
DMC195	0.768	19.5	11.91	●								4.09	19	19	TID*190...
DMC196	0.772	19.6	11.91	●								4.11	19	19	TID*190...
DMC197	0.776	19.7	11.91	●								4.13	19	19	TID*190...
DMC198	0.780	19.8	11.91	●								4.15	19	19	TID*190...
DMC199	0.783	19.9	11.91	●								4.17	19	19	TID*190...

● : Line up

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Endmill
Drilling Tool
Tooling System
User's Guide
Index



STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed Vc (sfm)	Feed: f (ipr)						
			DC (in)						
			ø0.236 - ø0.311	ø0.315 - 0.390	ø0.394 - ø0.469	ø0.472 - ø0.547	ø0.551 - ø0.626	ø0.630 - ø0.783	ø0.787 - ø1.020
P	Low carbon steel (C < 0.3) 1018, 1020, 1026, etc.	262 - 459	0.004 - 0.005	0.005 - 0.010	0.006 - 0.011	0.007 - 0.012	0.008 - 0.014	0.010 - 0.018	0.010 - 0.018
	High carbon steel (C > 0.3) 1045, 1055, etc.	230 - 394	0.004 - 0.005	0.005 - 0.010	0.006 - 0.011	0.007 - 0.012	0.008 - 0.014	0.010 - 0.018	0.010 - 0.018
	Low alloy steel 5120, etc.	230 - 394	0.003 - 0.005	0.004 - 0.010	0.006 - 0.011	0.006 - 0.013	0.007 - 0.014	0.009 - 0.016	0.010 - 0.018
	Alloy steel 4140, 8620, etc.	131 - 295	0.003 - 0.005	0.004 - 0.010	0.006 - 0.011	0.006 - 0.013	0.007 - 0.014	0.009 - 0.016	0.010 - 0.018
M	Stainless steel 304SS, 316SS, 17-4PH, etc.	98 - 230	0.003 - 0.004	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.006 - 0.009	0.006 - 0.010	0.007 - 0.012
K	Gray cast iron Class 25, Class 30, etc.	262 - 591	0.005 - 0.007	0.006 - 0.012	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.022	0.014 - 0.024
	Ductile cast iron 60-40-18, 60-55-06, etc.	262 - 459	0.005 - 0.007	0.006 - 0.012	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.022	0.014 - 0.024
N	Aluminum alloys 6061, 7075, etc.	262 - 722	0.004 - 0.008	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.020	0.016 - 0.024	0.020 - 0.030
S	Titanium alloys Ti-6Al-4V, etc.	66 - 164	0.002 - 0.003	0.002 - 0.005	0.003 - 0.006	0.004 - 0.011	0.005 - 0.008	0.006 - 0.009	0.007 - 0.011
	Nickel-based alloys	66 - 164	0.002 - 0.003	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.005 - 0.009	0.006 - 0.009
H	Hardened steel	66 - 164	0.002 - 0.003	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.009	0.006 - 0.010

Cutting conditions in the above table show standard cutting conditions.

Cutting conditions may change due to the rigidity and power of the machine and the workpiece material.

Machined hole diameter may change depending upon the rigidity of the machine tool or cutting conditions.

In case of L/D = 8,12 drill, the recommended range of cutting speeds and feeds is between the minimum and median values listed above.

CLAMPING KEY FOR MEASURING UN-CLAMPING TORQUE

To check drill body duration, measure un-clamping torque by using a torque-driver

Recommended value of un-clamping torque that means usable limit of a drill body shown in below table.

Clamping key for measuring
un-clamping torque:

KHS-TID10-19.99



* The clamping key
can be used with
general torque
drivers.

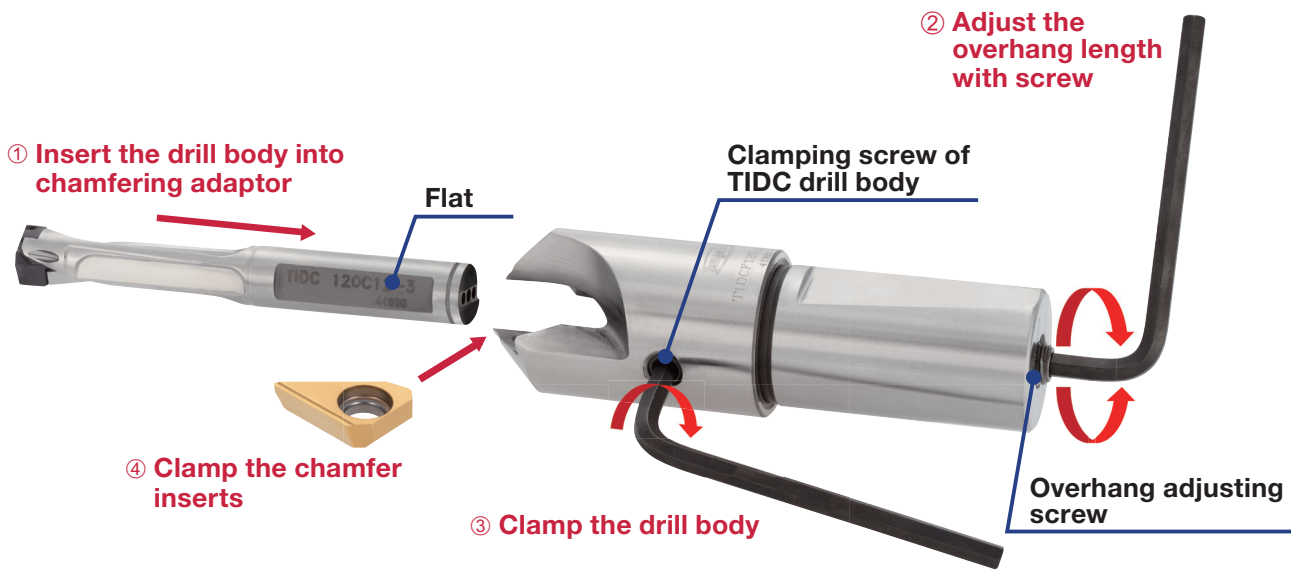


Head Designation	Recommended value of un-clamping torque that means usable limit of a drill body	
	(N·m)	(cN·m)
DM*100-109	0.2	20
DM*110-119	0.2	20
DM*120-129	0.25	25
DM*130-139	0.25	25
DM*140-149	0.3	30
DM*150-159	0.3	30
DM*160-169	0.35	35
DM*170-179	0.35	35
DM*180-189	0.4	40
DM*190-199	0.4	40

HOW TO MOUNT THE TIDC DRILL BODY INTO THE CHAMFER ADAPTOR

The overhang length of the drill can be changed by the adjusting screw at the bottom of the adaptor.

The rear end of the drill body must be in contact with the adjusting screw as the screw supports the drill against thrust force when drilling.



Procedure

- ① Place the TIDC drill body into the chamfer adaptor without chamfer inserts.
- ② Adjust the overhang length of the drill body with the adjusting screw at the bottom of the adaptor.
- ③ Adjust the position of the drill body so that the drill body is fixed at the flat and tighten the clamping screw of the drill body. This aligns the flutes of the TIDC drill body with the chamfer inserts.
- ④ To clamp the chamfer inserts, tighten the clamping screw of the insert while pushing the insert into the insert pocket.

Notice

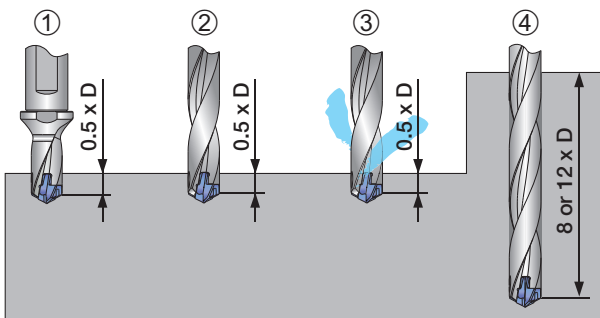
Before removing the drill body from the adaptor, chamfer inserts must be unclamped. The overhang adjusting screw can be handled from the top of the adaptor with flat blade screwdriver. In this way, the overhang length of the drill body can be adjusted after the adaptor is positioned on the drill shank.

PARTS

Clamping screw of TIDC drill body	Overhang adjusting screw	Wrench	Chamfering Insert screw	Wrench	
				Torx bit	Grip
SRM10x10DIN916	SRM10x1.5S	HW5.0	SR14-544/S ***	BT15S	SW6-SD

*** SR14-544/S : 5 pieces per package

CAUTION FOR USING DRILLS WITH L/D = 8 & 12



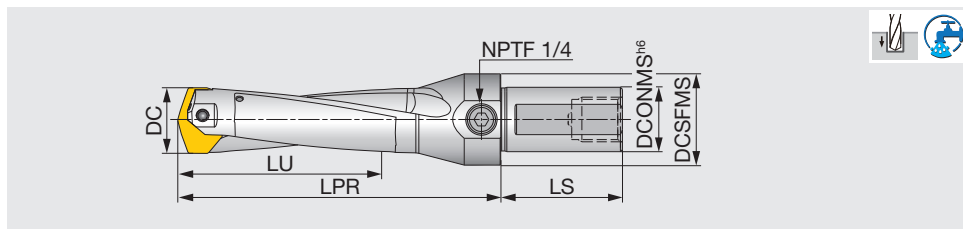
- ① Drill a pilot hole in the depth of 0.5 x D.
The same head diameter should be used for a pilot hole and a deep hole.
- ② Rotate the drill at a low speed, such as 100 min⁻¹, and feed it slowly into the pilot hole until the drill reaches several millimeters from the bottom.
- ③ Supply the coolant and rotate the drill at the recommended speed.
- ④ Drill the required depth under the recommended cutting conditions.

Note: In case of making L/D= 8 & 12 depth hole without a pilot hole, DMC type head should be used.

DRILL FORCE MEISTER

TISU L/D=3

Head indexable drill



Inch	DCN	DCX	DCONMS	DCSFMS	LU	LPR	LS	Pocket size	Head
TISU1024F1250-3	1.024	1.059	1.250	1.772	3.257	5.315	2.362	26	SMP26*
TISU1063F1250-3	1.063	1.098	1.250	1.772	3.382	5.453	2.362	27	SMP27*
TISU1102F1250-3	1.102	1.138	1.250	1.772	3.508	5.606	2.362	28	SMP28*
TISU1142F1250-3	1.142	1.177	1.250	1.772	3.633	5.744	2.362	29	SMP29*
TISU1181F1250-3	1.181	1.217	1.250	1.772	3.758	5.894	2.362	30	SMP30*
TISU1220F1250-3	1.220	1.256	1.250	1.772	3.883	6.031	2.362	31	SMP31*
TISU1260F1500-3	1.260	1.295	1.500	2.165	4.009	6.378	2.677	32	SMP32*
TISU1299F1500-3	1.299	1.335	1.500	2.165	4.134	6.516	2.677	33	SMP33*
TISU1339F1500-3	1.339	1.374	1.500	2.165	4.260	6.654	2.677	34	SMP34*
TISU1378F1500-3	1.378	1.413	1.500	2.165	4.385	6.807	2.677	35	SMP35*
TISU1417F1500-3	1.417	1.453	1.500	2.165	4.510	6.945	2.677	36	SMP36*
TISU1457F1500-3	1.457	1.492	1.500	2.165	4.635	7.083	2.677	37	SMP37*
TISU1496F1500-3	1.496	1.531	1.500	2.165	4.760	7.240	2.677	38	SMP38*
TISU1535F1500-3	1.535	1.571	1.500	2.165	4.885	7.378	2.677	39	SMP39*
TISU1575F1500-3	1.575	1.614	1.500	2.165	5.011	7.516	2.677	40	SMP40*

Tool diameter	Hole diameter tolerance*
ø1.024 - ø1.177	+0.0020 / 0
ø1.181 - ø1.614	+0.0024 / 0

*Just for reference

SPARE PARTS

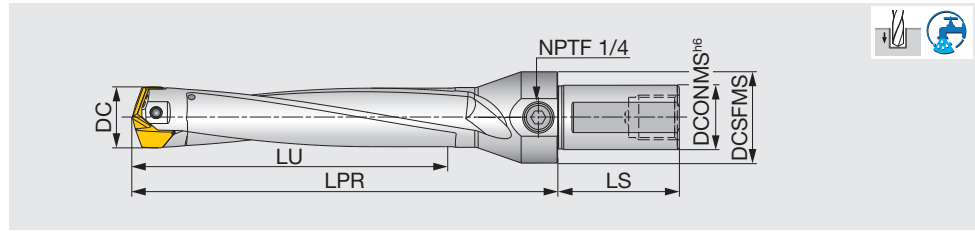


Designation	Clamping screw	Wrench		Screw for side port	Plug*
		Torx bit	Grip		
TISU1024F1250-3	TS50230D3	BLDT20/S7	H-TB2W	NPTF1/4	SL32IN
TISU1063F1250-3	TS50230D3	BLDT20/S7	H-TB2W	NPTF1/4	SL32IN
TISU1102F1250-3	TS50250D35	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1142F1250-3	TS50250D35	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1181F1250-3	TS60265D4	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1220F1250-3	TS60265D4	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1260F1500-3	TS60285D42	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1299F1500-3	TS60285D42	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1339F1500-3	TS60285D42	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1378F1500-3	TS60320D5	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1417F1500-3	TS60320D5	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1457F1500-3	TS60320D5	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1496F1500-3	TS80340D6	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1535F1500-3	TS80340D6	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1575F1500-3	TS80340D6	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN

*Optional part
Inner thread size: NPTF1/4

Recommended clamping torque : TS50230D3= 3.69 lb-ft, 5 N-m, TS50250D35= 4.06 lb-ft, 5.5N-m, TS60265D4= 4.43 lb-ft, 6N-m, TS60285D42= 4.43 lb-ft, 6N-m, TS60320D5= 4.43 lb-ft, 6N-m, TS80340D6= 5.16 lb-ft, 7N-m

Reference pages: Head → **J034 - J035**
Standard cutting conditions → **J035**



Inch	DCN	DCX	DCONMS	DCSFMS	LU	LPR	LS	Pocket size	Head
TISU1024F1250-5	1.024	1.059	1.250	1.772	5.304	7.362	2.362	26	SMP26*
TISU1063F1250-5	1.063	1.098	1.250	1.772	5.508	7.579	2.362	27	SMP27*
TISU1102F1250-5	1.102	1.138	1.250	1.772	5.713	7.811	2.362	28	SMP28*
TISU1142F1250-5	1.142	1.177	1.250	1.772	5.917	8.028	2.362	29	SMP29*
TISU1181F1250-5	1.181	1.217	1.250	1.772	6.121	8.256	2.362	30	SMP30*
TISU1220F1250-5	1.220	1.256	1.250	1.772	6.324	8.472	2.362	31	SMP31*
TISU1260F1500-5	1.260	1.295	1.500	2.165	6.528	8.898	2.677	32	SMP32*
TISU1299F1500-5	1.299	1.335	1.500	2.165	6.732	9.114	2.677	33	SMP33*
TISU1339F1500-5	1.339	1.374	1.500	2.165	6.937	9.331	2.677	34	SMP34*
TISU1378F1500-5	1.378	1.413	1.500	2.165	7.141	9.563	2.677	35	SMP35*
TISU1417F1500-5	1.417	1.453	1.500	2.165	7.345	9.780	2.677	36	SMP36*
TISU1457F1500-5	1.457	1.492	1.500	2.165	7.548	9.996	2.677	37	SMP37*
TISU1496F1500-5	1.496	1.531	1.500	2.165	7.752	10.232	2.677	38	SMP38*
TISU1535F1500-5	1.535	1.571	1.500	2.165	7.956	10.449	2.677	39	SMP39*
TISU1575F1500-5	1.575	1.614	1.500	2.165	8.161	10.665	2.677	40	SMP40*

Tool diameter	Hole diameter tolerance*
ø1.024 - ø1.177	+0.0030 / 0
ø1.181 - ø1.614	+0.0035 / 0

*Just for reference

SPARE PARTS



Designation	Clamping screw	Torx bit	Wrench	Grip	Screw for side port	Plug*
TISU1024F1250-5	TS50230D3	BLDT20/S7	H-TB2W	H-TB2W	NPTF1/4	SL32IN
TISU1063F1250-5	TS50230D3	BLDT20/S7	H-TB2W	H-TB2W	NPTF1/4	SL32IN
TISU1102F1250-5	TS50250D35	BLDT25/S7	H-TB2W	H-TB2W	NPTF1/4	SL32IN
TISU1142F1250-5	TS50250D35	BLDT25/S7	H-TB2W	H-TB2W	NPTF1/4	SL32IN
TISU1181F1250-5	TS60265D4	BLDT25/S7	H-TB2W	H-TB2W	NPTF1/4	SL32IN
TISU1220F1250-5	TS60265D4	BLDT25/S7	H-TB2W	H-TB2W	NPTF1/4	SL32IN
TISU1260F1500-5	TS60285D42	BLDT25/S7	H-TB2W	H-TB2W	NPTF1/4	SL38IN
TISU1299F1500-5	TS60285D42	BLDT25/S7	H-TB2W	H-TB2W	NPTF1/4	SL38IN
TISU1339F1500-5	TS60285D42	BLDT25/S7	H-TB2W	H-TB2W	NPTF1/4	SL38IN
TISU1378F1500-5	TS60320D5	BLDT25/S7	H-TB2W	H-TB2W	NPTF1/4	SL38IN
TISU1417F1500-5	TS60320D5	BLDT25/S7	H-TB2W	H-TB2W	NPTF1/4	SL38IN
TISU1457F1500-5	TS60320D5	BLDT25/S7	H-TB2W	H-TB2W	NPTF1/4	SL38IN
TISU1496F1500-5	TS80340D6	BLDT25/S7	H-TB2W	H-TB2W	NPTF1/4	SL38IN
TISU1535F1500-5	TS80340D6	BLDT25/S7	H-TB2W	H-TB2W	NPTF1/4	SL38IN
TISU1575F1500-5	TS80340D6	BLDT25/S7	H-TB2W	H-TB2W	NPTF1/4	SL38IN

*Optional part
Inner thread size: NPTF1/4

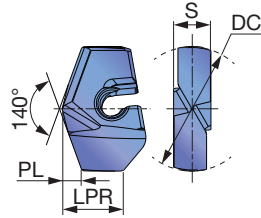
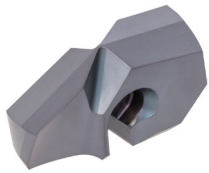
Recommended clamping torque : TS50230D3= 3.69 lb-ft, 5 N-m, TS50250D35= 4.06 lb-ft, 5.5N-m, TS60265D4= 4.43 lb-ft, 6N-m, TS60285D42= 4.43 lb-ft, 6N-m, TS60320D5= 4.43 lb-ft, 6N-m, TS80340D6= 5.16 lb-ft, 7N-m

Reference pages: Head → **J034 - J035**
Standard cutting conditions → **J035**



DRILL HEAD

SMP



Tool diameter	Head diameter tolerance
ø1.024 - ø1.142	+0.0006" / -0.0006"
ø1.181 - ø1.575	+0.0006" / -0.0008"

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	S (in)	Coated										LPR (in)	PL (in)	Pocket Size	Body		
				AH725															
SMP260	1.024	26	0.295	●												0.457	0.186	26	TIS260F32-*
SMP261	1.028	26.1	0.295	●												0.457	0.187	26	TIS260F32-*
SMP265	1.043	26.5	0.295	●												0.457	0.190	26	TIS260F32-*
SMP267	1.051	26.7	0.295	●												0.457	0.191	26	TIS260F32-*
SMP270	1.063	27	0.295	●												0.437	0.193	27	TIS270F32-*
SMP271	1.067	27.1	0.295	●												0.437	0.194	27	TIS270F32-*
SMP272	1.071	27.2	0.295	●												0.437	0.195	27	TIS270F32-*
SMP275	1.083	27.5	0.295	●												0.437	0.197	27	TIS270F32-*
SMP280	1.102	28	0.315	●												0.461	0.201	28	TIS280F32-*
SMP281	1.106	28.1	0.315	●												0.461	0.201	28	TIS280F32-*
SMP285	1.122	28.5	0.315	●												0.461	0.204	28	TIS280F32-*
SMP286	1.126	28.6	0.315	●												0.461	0.205	28	TIS280F32-*
SMP290	1.142	29	0.315	●												0.445	0.208	29	TIS290F32-*
SMP291	1.146	29.1	0.315	●												0.445	0.209	29	TIS290F32-*
SMP295	1.161	29.5	0.315	●												0.445	0.211	29	TIS290F32-*
SMP296	1.165	29.6	0.315	●												0.445	0.212	29	TIS290F32-*
SMP300	1.181	30	0.335	●												0.555	0.215	30	TIS300F32-*
SMP301	1.185	30.1	0.335	●												0.555	0.216	30	TIS300F32-*
SMP302	1.189	30.2	0.335	●												0.555	0.217	30	TIS300F32-*
SMP303	1.193	30.3	0.335	●												0.555	0.217	30	TIS300F32-*
SMP305	1.201	30.5	0.335	●												0.555	0.219	30	TIS300F32-*
SMP308	1.213	30.8	0.335	●												0.555	0.221	30	TIS300F32-*
SMP310	1.220	31	0.335	●												0.539	0.222	31	TIS310F32-*
SMP311	1.224	31.1	0.335	●												0.539	0.223	31	TIS310F32-*
SMP315	1.240	31.5	0.335	●												0.539	0.226	31	TIS310F32-*
SMP318	1.252	31.8	0.335	●												0.539	0.228	31	TIS310F32-*
SMP320	1.260	32	0.354	●												0.571	0.229	32	TIS320F40-*
SMP321	1.264	32.1	0.354	●												0.571	0.230	32	TIS320F40-*
SMP325	1.280	32.5	0.354	●												0.571	0.233	32	TIS320F40-*
SMP328	1.291	32.8	0.354	●												0.571	0.235	32	TIS320F40-*
SMP330	1.299	33	0.354	●												0.555	0.237	33	TIS330F40-*
SMP331	1.303	33.1	0.354	●												0.555	0.237	33	TIS330F40-*
SMP333	1.311	33.3	0.354	●												0.555	0.239	33	TIS330F40-*
SMP335	1.319	33.5	0.354	●												0.555	0.240	33	TIS330F40-*
SMP340	1.339	34	0.354	●												0.539	0.244	34	TIS340F40-*
SMP341	1.343	34.1	0.354	●												0.539	0.244	34	TIS340F40-*
SMP345	1.358	34.5	0.354	●												0.539	0.247	34	TIS340F40-*
SMP349	1.374	34.9	0.354	●												0.539	0.250	34	TIS340F40-*
SMP350	1.378	35	0.394	●												0.654	0.251	35	TIS350F40-*
SMP351	1.382	35.1	0.394	●												0.654	0.252	35	TIS350F40-*
SMP355	1.398	35.5	0.394	●												0.654	0.254	35	TIS350F40-*
SMP360	1.417	36	0.394	●												0.394	0.258	36	TIS360F40-*
SMP361	1.421	36.1	0.394	●												0.394	0.259	36	TIS360F40-*
SMP365	1.437	36.5	0.394	●												0.394	0.261	36	TIS360F40-*
SMP366	1.441	36.6	0.394	●												0.394	0.262	36	TIS360F40-*
SMP370	1.457	37	0.394	●												0.394	0.265	37	TIS370F40-*

● : Line up

P	Steel	★																		
M	Stainless	★																		
K	Cast iron	★																		
N	Non-ferrous	☆																		
S	Superalloys	★																		
H	Hard materials	★																		

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	S (in)	Coated							LPR (in)	PL (in)	Pocket Size	Body
				AH725										
SMP371	1.461	37.1	0.394	●							0.394	0.266	37	TIS370F40-*
SMP375	1.476	37.5	0.394	●							0.394	0.269	37	TIS370F40-*
SMP380	1.496	38	0.413	●							0.413	0.272	38	TIS380F40-*
SMP381	1.500	38.1	0.413	●							0.413	0.273	38	TIS380F40-*
SMP385	1.516	38.5	0.413	●							0.413	0.276	38	TIS380F40-*
SMP388	1.528	38.8	0.413	●							0.413	0.278	38	TIS380F40-*
SMP390	1.535	39	0.413	●							0.413	0.280	39	TIS390F40-*
SMP391	1.539	39.1	0.413	●							0.413	0.280	39	TIS390F40-*
SMP395	1.555	39.5	0.413	●							0.413	0.283	39	TIS390F40-*
SMP397	1.563	39.7	0.413	●							0.413	0.284	39	TIS390F40-*
SMP398	1.567	39.8	0.413	●							0.413	0.285	39	TIS390F40-*
SMP400	1.575	40	0.413	●							0.413	0.287	40	TIS400F40-*
SMP401	1.579	40.1	0.413	●							0.413	0.287	40	TIS400F40-*
SMP405	1.594	40.5	0.413	●							0.413	0.290	40	TIS400F40-*
SMP410	1.614	41	0.413	●							0.413	0.294	40	TIS380F40-*

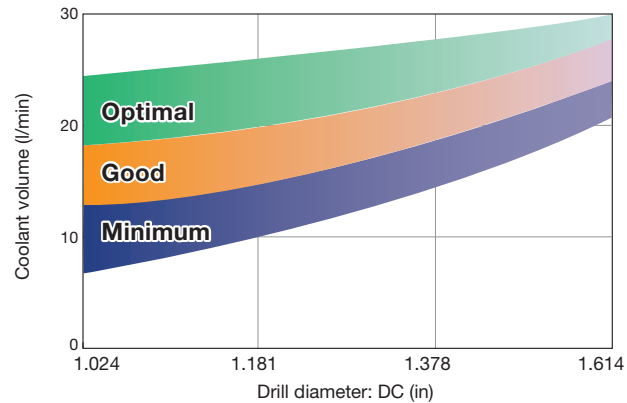
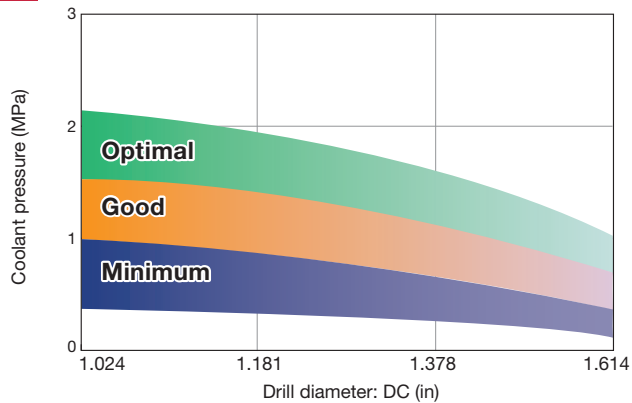
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed Vc (sfm)	Feed: f (ipr)		
			DC (in)		
			1.024" - 1.177"	1.181" - 1.403"	1.417" - 1.614"
P	Low carbon steels 1015, etc.	262 - 459	0.008 - 0.020	0.008 - 0.020	0.010 - 0.022
	Carbon steels, Alloy steels 1055, 4140, etc.	262 - 427	0.008 - 0.020	0.008 - 0.020	0.010 - 0.022
	Prehardened steels NAK80, PX5, etc.	164 - 328	0.008 - 0.020	0.008 - 0.020	0.010 - 0.022
M	Stainless steels S30400, etc.	131 - 262	0.006 - 0.012	0.006 - 0.012	0.008 - 0.014
K	Gray cast irons No.250B, No.300B, etc.	262 - 591	0.010 - 0.022	0.010 - 0.022	0.012 - 0.024
	Ductile cast irons 60-40-15, 80-55-06, etc.	262 - 459	0.010 - 0.022	0.010 - 0.022	0.012 - 0.024
N	Non ferrous materials	328 - 656	0.016 - 0.024	0.016 - 0.024	0.020 - 0.028
S	Heat-resistant alloy Inconel718, etc.	66 - 164	0.004 - 0.008	0.004 - 0.008	0.004 - 0.010
	Titanium alloys Ti-6Al-4V, etc.	66 - 164	0.004 - 0.008	0.004 - 0.008	0.004 - 0.010
H	Hardened materials	66 - 197	0.004 - 0.008	0.004 - 0.008	0.004 - 0.010



RECOMMENDED COOLANT PRESSURE AND VOLUME



HOW TO CHANGE DRILL HEAD

To unclamp rotate the screw 3-5 times counter-clockwise.

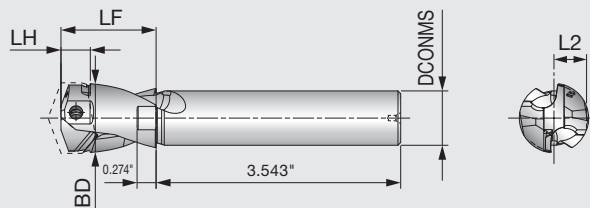
No need to remove the screw from the body.



- Please change the screw to new one when the screw does not rotate smoothly

DRILL FÖRCE MEISTER

Regrinding holder



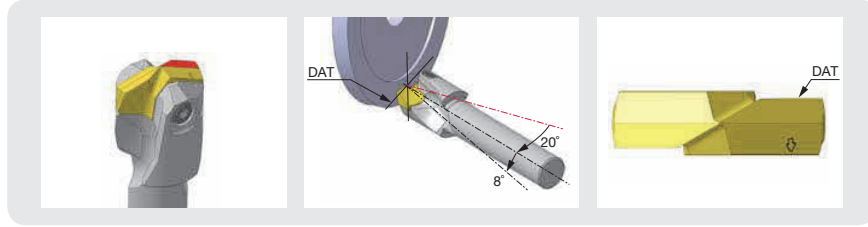
Inch	DCONMS	BD	LF	LH	L2	Head
SMP260-279-GH	0.787	1.004	1.378	0.425	0.472	SMP260 - SMP279
SMP280-299-GH	0.787	1.083	1.378	0.425	0.512	SMP280 - SMP299
SMP300-319-GH	0.787	1.161	1.378	0.512	0.551	SMP300 - SMP319
SMP320-349-GH	0.787	1.240	1.378	0.512	0.591	SMP320 - SMP349
SMP350-379-GH	0.787	1.358	1.575	0.579	0.650	SMP350 - SMP379
SMP380-410-GH	0.787	1.476	1.575	0.594	0.709	SMP380 - SMP410

1 Clamping

- Assemble the drill head on the regrinding holder or shortest standard holder (3xD)
- Set-up the drill head in the machine : Total run-out must be less than 0.0008"

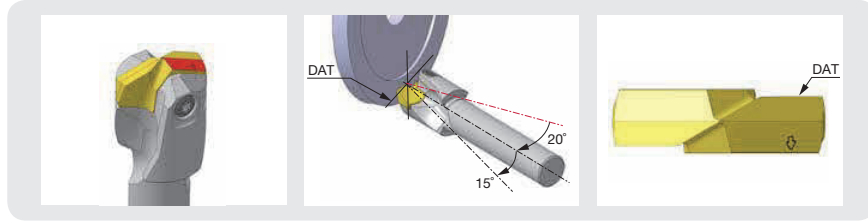
2 Grinding the 1st clearance angle

- Set the drill for point angle (140°) and 1st clearance angle (8°)



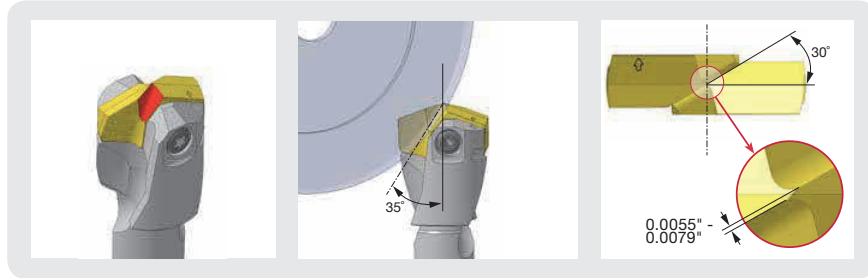
3 Grinding the 2nd clearance angle

- Set the drill for 2nd clearance angle (15°)



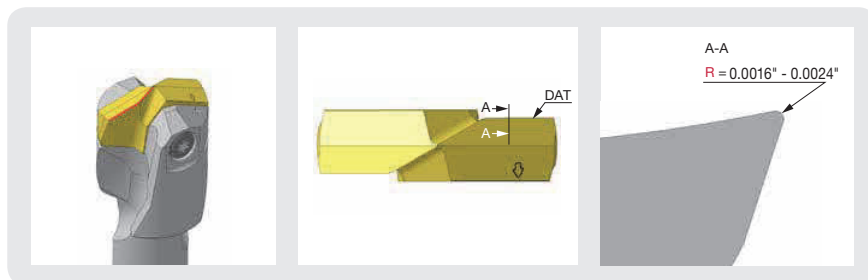
4 Grinding the chisel (Thinning)

- Set the drill for thinning angle (35°) with reference to drill axis and angle (30°) with reference to radial axis
- Keep the chisel thickness (0.0055" - 0.0079") and the thinning point must be over the center line



5 Edge preparation (Honing)

- Cutting edges should have honing by sand or brush (0.0016" - 0.0024")
- You can also use a diamond hand lapper for edge preparation



Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Miniature Tool

Milling Cutter

Endmill

Drilling Tool

Tooling System

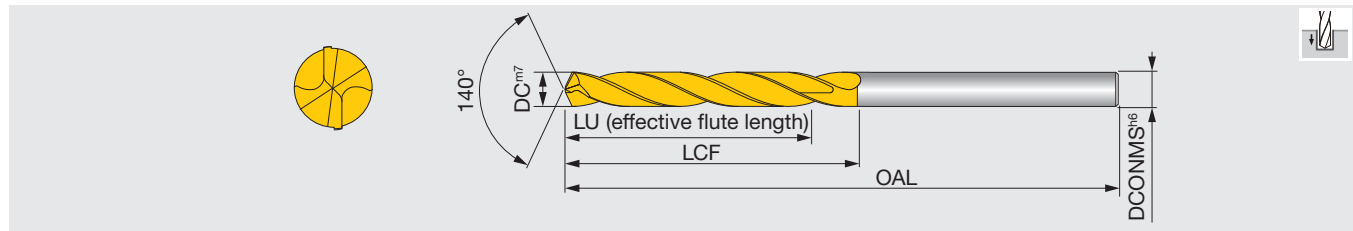
User's Guide

Index

SOLIDDRILL Quick Guide

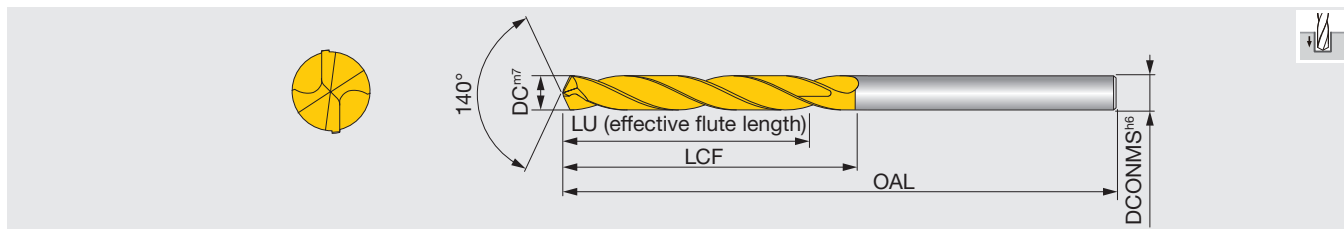


Series	DC	L/D	Point angle	Oil hole	Coated	Coated without	Description	P	M	K	N	S	H	See page
								Steel	Stainless	Cast iron	Non-ferrous	Superalloys	Hard materials	
DSW	ø3 mm - ø12 mm	3, 5, 8	140	With Without	●		Shank size: DIN Standard	●	●	●	●	●	●	J039 - J045
DSXU DSX	13/64" - 21/32" (ø3 mm - ø10 mm)	3, 5, 8	130	With	●		Shank size: 1 mm increments	●	●	●	●	●	●	J046 - J050
DSE	ø3 mm - ø10 mm	2, 3	140	Without	●		For drilling thin plates with low cutting force Shank size: Same as the drill diameter	●	●	●	●	●	●	J051 - J053
DSM DSM-CP	ø0.1 mm - ø3 mm	5, 10, 15	140 90 & 140	Without	●		Micro solid drill with ø3 mm shanks DSM-CP: Centering drill for DSM	●	●	●	●	●	●	J054 - J056
DMXU	#34" - 25/32"	2, 3	130	Without	●		Shank size: Same as the drill diameter	●	●	●	●	●	●	J057 - J059
FDCU FDC	ø0.203" - ø0.625" (ø5 mm - ø16 mm)	5, 8	135	With		●	Drills for reaming at high feed with straight flute			●	●			J060 - J061



Metric	DC	AH725	DCONMS	LU	LCF	OAL	Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-014-06DE3	3	●	6	14	20	62	DSW076-029-08DE3	7.6	●	8	29	41	79
DSW031-014-06DE3	3.1	●	6	14	20	62	DSW077-029-08DE3	7.7	●	8	29	41	79
DSW032-014-06DE3	3.2	●	6	14	20	62	DSW078-029-08DE3	7.8	●	8	29	41	79
DSW033-014-06DE3	3.3	●	6	14	20	62	DSW079-029-08DE3	7.9	●	8	29	41	79
DSW034-014-06DE3	3.4	●	6	14	20	62	DSW080-029-08DE3	8	●	8	29	41	79
DSW035-014-06DE3	3.5	●	6	14	20	62	DSW081-035-10DE3	8.1	●	10	35	47	89
DSW036-014-06DE3	3.6	●	6	14	20	62	DSW082-035-10DE3	8.2	●	10	35	47	89
DSW037-014-06DE3	3.7	●	6	14	20	62	DSW083-035-10DE3	8.3	●	10	35	47	89
DSW038-017-06DE3	3.8	●	6	17	24	66	DSW084-035-10DE3	8.4	●	10	35	47	89
DSW039-017-06DE3	3.9	●	6	17	24	66	DSW085-035-10DE3	8.5	●	10	35	47	89
DSW040-017-06DE3	4	●	6	17	24	66	DSW086-035-10DE3	8.6	●	10	35	47	89
DSW041-017-06DE3	4.1	●	6	17	24	66	DSW087-035-10DE3	8.7	●	10	35	47	89
DSW042-017-06DE3	4.2	●	6	17	24	66	DSW088-035-10DE3	8.8	●	10	35	47	89
DSW043-017-06DE3	4.3	●	6	17	24	66	DSW089-035-10DE3	8.9	●	10	35	47	89
DSW044-017-06DE3	4.4	●	6	17	24	66	DSW090-035-10DE3	9	●	10	35	47	89
DSW045-017-06DE3	4.5	●	6	17	24	66	DSW091-035-10DE3	9.1	●	10	35	47	89
DSW046-017-06DE3	4.6	●	6	17	24	66	DSW092-035-10DE3	9.2	●	10	35	47	89
DSW047-017-06DE3	4.7	●	6	17	24	66	DSW093-035-10DE3	9.3	●	10	35	47	89
DSW048-020-06DE3	4.8	●	6	20	28	66	DSW094-035-10DE3	9.4	●	10	35	47	89
DSW049-020-06DE3	4.9	●	6	20	28	66	DSW095-035-10DE3	9.5	●	10	35	47	89
DSW050-020-06DE3	5	●	6	20	28	66	DSW096-035-10DE3	9.6	●	10	35	47	89
DSW051-020-06DE3	5.1	●	6	20	28	66	DSW097-035-10DE3	9.7	●	10	35	47	89
DSW052-020-06DE3	5.2	●	6	20	28	66	DSW098-035-10DE3	9.8	●	10	35	47	89
DSW053-020-06DE3	5.3	●	6	20	28	66	DSW099-035-10DE3	9.9	●	10	35	47	89
DSW054-020-06DE3	5.4	●	6	20	28	66	DSW100-035-10DE3	10	●	10	35	47	89
DSW055-020-06DE3	5.5	●	6	20	28	66	DSW101-040-12DE3	10.1	●	12	40	55	102
DSW056-020-06DE3	5.6	●	6	20	28	66	DSW102-040-12DE3	10.2	●	12	40	55	102
DSW057-020-06DE3	5.7	●	6	20	28	66	DSW103-040-12DE3	10.3	●	12	40	55	102
DSW058-020-06DE3	5.8	●	6	20	28	66	DSW104-040-12DE3	10.4	●	12	40	55	102
DSW059-020-06DE3	5.9	●	6	20	28	66	DSW105-040-12DE3	10.5	●	12	40	55	102
DSW060-020-06DE3	6	●	6	20	28	66	DSW106-040-12DE3	10.6	●	12	40	55	102
DSW061-024-08DE3	6.1	●	8	24	34	79	DSW107-040-12DE3	10.7	●	12	40	55	102
DSW062-024-08DE3	6.2	●	8	24	34	79	DSW108-040-12DE3	10.8	●	12	40	55	102
DSW063-024-08DE3	6.3	●	8	24	34	79	DSW109-040-12DE3	10.9	●	12	40	55	102
DSW064-024-08DE3	6.4	●	8	24	34	79	DSW110-040-12DE3	11	●	12	40	55	102
DSW065-024-08DE3	6.5	●	8	24	34	79	DSW111-040-12DE3	11.1	●	12	40	55	102
DSW066-024-08DE3	6.6	●	8	24	34	79	DSW112-040-12DE3	11.2	●	12	40	55	102
DSW067-024-08DE3	6.7	●	8	24	34	79	DSW113-040-12DE3	11.3	●	12	40	55	102
DSW068-024-08DE3	6.8	●	8	24	34	79	DSW114-040-12DE3	11.4	●	12	40	55	102
DSW069-024-08DE3	6.9	●	8	24	34	79	DSW115-040-12DE3	11.5	●	12	40	55	102
DSW070-024-08DE3	7	●	8	24	34	79	DSW116-040-12DE3	11.6	●	12	40	55	102
DSW071-029-08DE3	7.1	●	8	29	41	79	DSW117-040-12DE3	11.7	●	12	40	55	102
DSW072-029-08DE3	7.2	●	8	29	41	79	DSW118-040-12DE3	11.8	●	12	40	55	102
DSW073-029-08DE3	7.3	●	8	29	41	79	DSW119-040-12DE3	11.9	●	12	40	55	102
DSW074-029-08DE3	7.4	●	8	29	41	79	DSW120-040-12DE3	12	●	12	40	55	102
DSW075-029-08DE3	7.5	●	8	29	41	79							

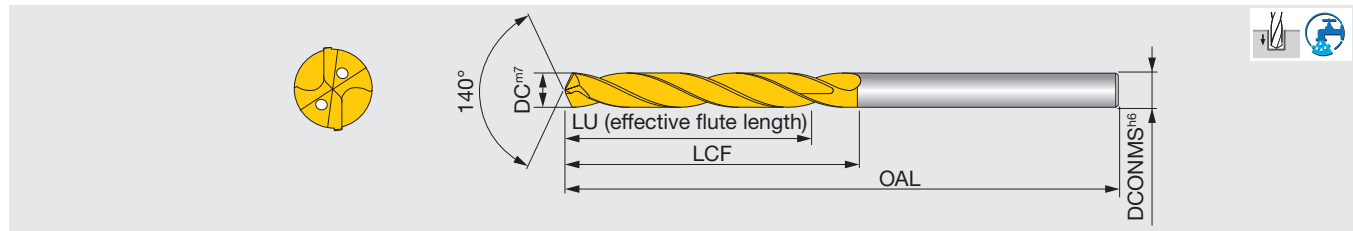
● : Line up



Metric	DC	AH725	DCONMS	LU	LCF	OAL	Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-023-06DE5	3	●	6	23	28	66	DSW076-043-08DE5	7.6	●	8	43	53	91
DSW031-023-06DE5	3.1	●	6	23	28	66	DSW077-043-08DE5	7.7	●	8	43	53	91
DSW032-023-06DE5	3.2	●	6	23	28	66	DSW078-043-08DE5	7.8	●	8	43	53	91
DSW033-023-06DE5	3.3	●	6	23	28	66	DSW079-043-08DE5	7.9	●	8	43	53	91
DSW034-023-06DE5	3.4	●	6	23	28	66	DSW080-043-08DE5	8	●	8	43	53	91
DSW035-023-06DE5	3.5	●	6	23	28	66	DSW081-049-10DE5	8.1	●	10	49	61	103
DSW036-023-06DE5	3.6	●	6	23	28	66	DSW082-049-10DE5	8.2	●	10	49	61	103
DSW037-023-06DE5	3.7	●	6	23	28	66	DSW083-049-10DE5	8.3	●	10	49	61	103
DSW038-029-06DE5	3.8	●	6	29	36	74	DSW084-049-10DE5	8.4	●	10	49	61	103
DSW039-029-06DE5	3.9	●	6	29	36	74	DSW085-049-10DE5	8.5	●	10	49	61	103
DSW040-029-06DE5	4	●	6	29	36	74	DSW086-049-10DE5	8.6	●	10	49	61	103
DSW041-029-06DE5	4.1	●	6	29	36	74	DSW087-049-10DE5	8.7	●	10	49	61	103
DSW042-029-06DE5	4.2	●	6	29	36	74	DSW088-049-10DE5	8.8	●	10	49	61	103
DSW043-029-06DE5	4.3	●	6	29	36	74	DSW089-049-10DE5	8.9	●	10	49	61	103
DSW044-029-06DE5	4.4	●	6	29	36	74	DSW090-049-10DE5	9	●	10	49	61	103
DSW045-029-06DE5	4.5	●	6	29	36	74	DSW091-049-10DE5	9.1	●	10	49	61	103
DSW046-029-06DE5	4.6	●	6	29	36	74	DSW092-049-10DE5	9.2	●	10	49	61	103
DSW047-029-06DE5	4.7	●	6	29	36	74	DSW093-049-10DE5	9.3	●	10	49	61	103
DSW048-035-06DE5	4.8	●	6	35	44	82	DSW094-049-10DE5	9.4	●	10	49	61	103
DSW049-035-06DE5	4.9	●	6	35	44	82	DSW095-049-10DE5	9.5	●	10	49	61	103
DSW050-035-06DE5	5	●	6	35	44	82	DSW096-049-10DE5	9.6	●	10	49	61	103
DSW051-035-06DE5	5.1	●	6	35	44	82	DSW097-049-10DE5	9.7	●	10	49	61	103
DSW052-035-06DE5	5.2	●	6	35	44	82	DSW098-049-10DE5	9.8	●	10	49	61	103
DSW053-035-06DE5	5.3	●	6	35	44	82	DSW099-049-10DE5	9.9	●	10	49	61	103
DSW054-035-06DE5	5.4	●	6	35	44	82	DSW100-049-10DE5	10	●	10	49	61	103
DSW055-035-06DE5	5.5	●	6	35	44	82	DSW101-056-12DE5	10.1	●	12	56	71	118
DSW056-035-06DE5	5.6	●	6	35	44	82	DSW102-056-12DE5	10.2	●	12	56	71	118
DSW057-035-06DE5	5.7	●	6	35	44	82	DSW103-056-12DE5	10.3	●	12	56	71	118
DSW058-035-06DE5	5.8	●	6	35	44	82	DSW104-056-12DE5	10.4	●	12	56	71	118
DSW059-035-06DE5	5.9	●	6	35	44	82	DSW105-056-12DE5	10.5	●	12	56	71	118
DSW060-035-06DE5	6	●	6	35	44	82	DSW106-056-12DE5	10.6	●	12	56	71	118
DSW061-043-08DE5	6.1	●	8	43	53	91	DSW107-056-12DE5	10.7	●	12	56	71	118
DSW062-043-08DE5	6.2	●	8	43	53	91	DSW108-056-12DE5	10.8	●	12	56	71	118
DSW063-043-08DE5	6.3	●	8	43	53	91	DSW109-056-12DE5	10.9	●	12	56	71	118
DSW064-043-08DE5	6.4	●	8	43	53	91	DSW110-056-12DE5	11	●	12	56	71	118
DSW065-043-08DE5	6.5	●	8	43	53	91	DSW111-056-12DE5	11.1	●	12	56	71	118
DSW066-043-08DE5	6.6	●	8	43	53	91	DSW112-056-12DE5	11.2	●	12	56	71	118
DSW067-043-08DE5	6.7	●	8	43	53	91	DSW113-056-12DE5	11.3	●	12	56	71	118
DSW068-043-08DE5	6.8	●	8	43	53	91	DSW114-056-12DE5	11.4	●	12	56	71	118
DSW069-043-08DE5	6.9	●	8	43	53	91	DSW115-056-12DE5	11.5	●	12	56	71	118
DSW070-043-08DE5	7	●	8	43	53	91	DSW116-056-12DE5	11.6	●	12	56	71	118
DSW071-043-08DE5	7.1	●	8	43	53	91	DSW117-056-12DE5	11.7	●	12	56	71	118
DSW072-043-08DE5	7.2	●	8	43	53	91	DSW118-056-12DE5	11.8	●	12	56	71	118
DSW073-043-08DE5	7.3	●	8	43	53	91	DSW119-056-12DE5	11.9	●	12	56	71	118
DSW074-043-08DE5	7.4	●	8	43	53	91	DSW120-056-12DE5	12	●	12	56	71	118
DSW075-043-08DE5	7.5	●	8	43	53	91							

● : Line up

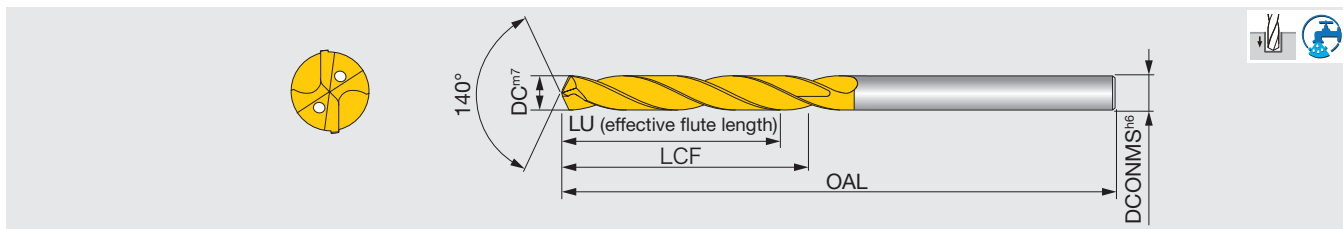
Reference pages: Standard cutting conditions → J044



Metric	DC	AH725	DCONMS	LU	LCF	OAL	Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-023-06DI5	3	●	6	23	28	66	DSW076-043-08DI5	7.6	●	8	43	53	91
DSW031-023-06DI5	3.1	●	6	23	28	66	DSW077-043-08DI5	7.7	●	8	43	53	91
DSW032-023-06DI5	3.2	●	6	23	28	66	DSW078-043-08DI5	7.8	●	8	43	53	91
DSW033-023-06DI5	3.3	●	6	23	28	66	DSW079-043-08DI5	7.9	●	8	43	53	91
DSW034-023-06DI5	3.4	●	6	23	28	66	DSW080-043-08DI5	8	●	8	43	53	91
DSW035-023-06DI5	3.5	●	6	23	28	66	DSW081-049-10DI5	8.1	●	10	49	61	103
DSW036-023-06DI5	3.6	●	6	23	28	66	DSW082-049-10DI5	8.2	●	10	49	61	103
DSW037-023-06DI5	3.7	●	6	23	28	66	DSW083-049-10DI5	8.3	●	10	49	61	103
DSW038-029-06DI5	3.8	●	6	29	36	74	DSW084-049-10DI5	8.4	●	10	49	61	103
DSW039-029-06DI5	3.9	●	6	29	36	74	DSW085-049-10DI5	8.5	●	10	49	61	103
DSW040-029-06DI5	4	●	6	29	36	74	DSW086-049-10DI5	8.6	●	10	49	61	103
DSW041-029-06DI5	4.1	●	6	29	36	74	DSW087-049-10DI5	8.7	●	10	49	61	103
DSW042-029-06DI5	4.2	●	6	29	36	74	DSW088-049-10DI5	8.8	●	10	49	61	103
DSW043-029-06DI5	4.3	●	6	29	36	74	DSW089-049-10DI5	8.9	●	10	49	61	103
DSW044-029-06DI5	4.4	●	6	29	36	74	DSW090-049-10DI5	9	●	10	49	61	103
DSW045-029-06DI5	4.5	●	6	29	36	74	DSW091-049-10DI5	9.1	●	10	49	61	103
DSW046-029-06DI5	4.6	●	6	29	36	74	DSW092-049-10DI5	9.2	●	10	49	61	103
DSW047-029-06DI5	4.7	●	6	29	36	74	DSW093-049-10DI5	9.3	●	10	49	61	103
DSW048-035-06DI5	4.8	●	6	35	44	82	DSW094-049-10DI5	9.4	●	10	49	61	103
DSW049-035-06DI5	4.9	●	6	35	44	82	DSW095-049-10DI5	9.5	●	10	49	61	103
DSW050-035-06DI5	5	●	6	35	44	82	DSW096-049-10DI5	9.6	●	10	49	61	103
DSW051-035-06DI5	5.1	●	6	35	44	82	DSW097-049-10DI5	9.7	●	10	49	61	103
DSW052-035-06DI5	5.2	●	6	35	44	82	DSW098-049-10DI5	9.8	●	10	49	61	103
DSW053-035-06DI5	5.3	●	6	35	44	82	DSW099-049-10DI5	9.9	●	10	49	61	103
DSW054-035-06DI5	5.4	●	6	35	44	82	DSW100-049-10DI5	10	●	10	49	61	103
DSW055-035-06DI5	5.5	●	6	35	44	82	DSW101-056-12DI5	10.1	●	12	56	71	118
DSW056-035-06DI5	5.6	●	6	35	44	82	DSW102-056-12DI5	10.2	●	12	56	71	118
DSW057-035-06DI5	5.7	●	6	35	44	82	DSW103-056-12DI5	10.3	●	12	56	71	118
DSW058-035-06DI5	5.8	●	6	35	44	82	DSW104-056-12DI5	10.4	●	12	56	71	118
DSW059-035-06DI5	5.9	●	6	35	44	82	DSW105-056-12DI5	10.5	●	12	56	71	118
DSW060-035-06DI5	6	●	6	35	44	82	DSW106-056-12DI5	10.6	●	12	56	71	118
DSW061-043-08DI5	6.1	●	8	43	53	91	DSW107-056-12DI5	10.7	●	12	56	71	118
DSW062-043-08DI5	6.2	●	8	43	53	91	DSW108-056-12DI5	10.8	●	12	56	71	118
DSW063-043-08DI5	6.3	●	8	43	53	91	DSW109-056-12DI5	10.9	●	12	56	71	118
DSW064-043-08DI5	6.4	●	8	43	53	91	DSW110-056-12DI5	11	●	12	56	71	118
DSW065-043-08DI5	6.5	●	8	43	53	91	DSW111-056-12DI5	11.1	●	12	56	71	118
DSW066-043-08DI5	6.6	●	8	43	53	91	DSW112-056-12DI5	11.2	●	12	56	71	118
DSW067-043-08DI5	6.7	●	8	43	53	91	DSW113-056-12DI5	11.3	●	12	56	71	118
DSW068-043-08DI5	6.8	●	8	43	53	91	DSW114-056-12DI5	11.4	●	12	56	71	118
DSW069-043-08DI5	6.9	●	8	43	53	91	DSW115-056-12DI5	11.5	●	12	56	71	118
DSW070-043-08DI5	7	●	8	43	53	91	DSW116-056-12DI5	11.6	●	12	56	71	118
DSW071-043-08DI5	7.1	●	8	43	53	91	DSW117-056-12DI5	11.7	●	12	56	71	118
DSW072-043-08DI5	7.2	●	8	43	53	91	DSW118-056-12DI5	11.8	●	12	56	71	118
DSW073-043-08DI5	7.3	●	8	43	53	91	DSW119-056-12DI5	11.9	●	12	56	71	118
DSW074-043-08DI5	7.4	●	8	43	53	91	DSW120-056-12DI5	12	●	12	56	71	118
DSW075-043-08DI5	7.5	●	8	43	53	91							

● : Line up





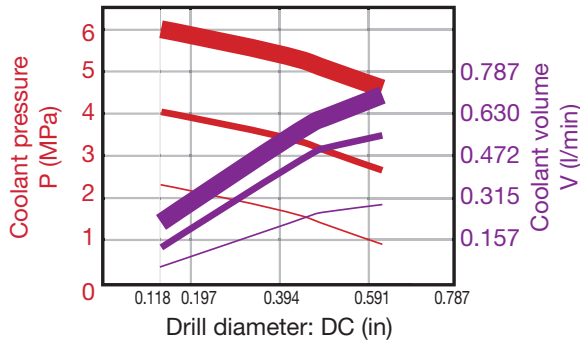
Metric	DC	AH725	DCONMS	LU	LCF	OAL	Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-029-06DI8	3	●	6	29	34	72	DSW076-064-08DI8	7.6	●	8	64	76	114
DSW031-029-06DI8	3.1	●	6	29	34	72	DSW077-064-08DI8	7.7	●	8	64	76	114
DSW032-029-06DI8	3.2	●	6	29	34	72	DSW078-064-08DI8	7.8	●	8	64	76	114
DSW033-029-06DI8	3.3	●	6	29	34	72	DSW079-064-08DI8	7.9	●	8	64	76	114
DSW034-029-06DI8	3.4	●	6	29	34	72	DSW080-064-08DI8	8	●	8	64	76	114
DSW035-029-06DI8	3.5	●	6	29	34	72	DSW081-080-10DI8	8.1	●	10	80	95	142
DSW036-029-06DI8	3.6	●	6	29	34	72	DSW082-080-10DI8	8.2	●	10	80	95	142
DSW037-029-06DI8	3.7	●	6	29	34	72	DSW083-080-10DI8	8.3	●	10	80	95	142
DSW038-036-06DI8	3.8	●	6	36	43	81	DSW084-080-10DI8	8.4	●	10	80	95	142
DSW039-036-06DI8	3.9	●	6	36	43	81	DSW085-080-10DI8	8.5	●	10	80	95	142
DSW040-036-06DI8	4	●	6	36	43	81	DSW086-080-10DI8	8.6	●	10	80	95	142
DSW041-036-06DI8	4.1	●	6	36	43	81	DSW087-080-10DI8	8.7	●	10	80	95	142
DSW042-036-06DI8	4.2	●	6	36	43	81	DSW088-080-10DI8	8.8	●	10	80	95	142
DSW043-036-06DI8	4.3	●	6	36	43	81	DSW089-080-10DI8	8.9	●	10	80	95	142
DSW044-036-06DI8	4.4	●	6	36	43	81	DSW090-080-10DI8	9	●	10	80	95	142
DSW045-036-06DI8	4.5	●	6	36	43	81	DSW091-080-10DI8	9.1	●	10	80	95	142
DSW046-036-06DI8	4.6	●	6	36	43	81	DSW092-080-10DI8	9.2	●	10	80	95	142
DSW047-036-06DI8	4.7	●	6	36	43	81	DSW093-080-10DI8	9.3	●	10	80	95	142
DSW048-048-06DI8	4.8	●	6	48	57	95	DSW094-080-10DI8	9.4	●	10	80	95	142
DSW049-048-06DI8	4.9	●	6	48	57	95	DSW095-080-10DI8	9.5	●	10	80	95	142
DSW050-048-06DI8	5	●	6	48	57	95	DSW096-080-10DI8	9.6	●	10	80	95	142
DSW051-048-06DI8	5.1	●	6	48	57	95	DSW097-080-10DI8	9.7	●	10	80	95	142
DSW052-048-06DI8	5.2	●	6	48	57	95	DSW098-080-10DI8	9.8	●	10	80	95	142
DSW053-048-06DI8	5.3	●	6	48	57	95	DSW099-080-10DI8	9.9	●	10	80	95	142
DSW054-048-06DI8	5.4	●	6	48	57	95	DSW100-080-10DI8	10	●	10	80	95	142
DSW055-048-06DI8	5.5	●	6	48	57	95							
DSW056-048-06DI8	5.6	●	6	48	57	95							
DSW057-048-06DI8	5.7	●	6	48	57	95							
DSW058-048-06DI8	5.8	●	6	48	57	95							
DSW059-048-06DI8	5.9	●	6	48	57	95							
DSW060-048-06DI8	6	●	6	48	57	95							
DSW061-064-08DI8	6.1	●	8	64	76	114							
DSW062-064-08DI8	6.2	●	8	64	76	114							
DSW063-064-08DI8	6.3	●	8	64	76	114							
DSW064-064-08DI8	6.4	●	8	64	76	114							
DSW065-064-08DI8	6.5	●	8	64	76	114							
DSW066-064-08DI8	6.6	●	8	64	76	114							
DSW067-064-08DI8	6.7	●	8	64	76	114							
DSW068-064-08DI8	6.8	●	8	64	76	114							
DSW069-064-08DI8	6.9	●	8	64	76	114							
DSW070-064-08DI8	7	●	8	64	76	114							
DSW071-064-08DI8	7.1	●	8	64	76	114							
DSW072-064-08DI8	7.2	●	8	64	76	114							
DSW073-064-08DI8	7.3	●	8	64	76	114							
DSW074-064-08DI8	7.4	●	8	64	76	114							
DSW075-064-08DI8	7.5	●	8	64	76	114							

● : Line up

Reference pages: Standard cutting conditions → **J045**

Recommended coolant pressure and volume for internal coolant supply:

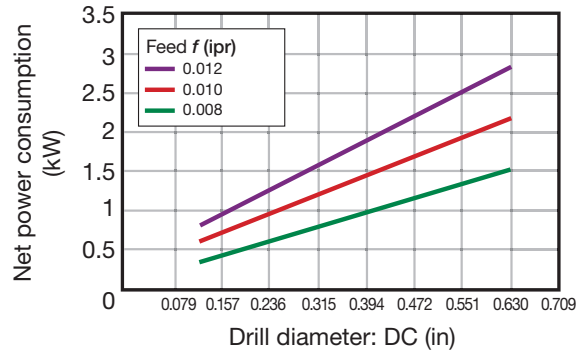
The following graph is a reference guide for pressure and volume. Values should be adjusted according to work material and actual chip evacuation.



- █ : Ideal pressure
- █ : Enough pressure
- █ : Minimum pressure
- █ : Ideal volume
- █ : Enough volume
- █ : Minimum volume

Reference for required spindle power:

The required spindle power may vary depending on the type of work material or hardness. A spindle with sufficient power should be used when referring to the below graph.



Work material : Alloy steel (SNCM439)
Cutting speed : $V_c = 328$ sfm

Designation system

DSW 088 - 035 - 10 - D E 3

1 Series	DSW Series name of solid drill
-----------------	---------------------------------------

2 Drill diameter DC (mm)	088 $\phi 8.8$
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3 Effective flute length LU (mm)	035 35
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4 Shank diameter DCONMS (mm)	10 $\phi 10$
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5 DIN 6535 - Form HA	
-----------------------------	--

6 Coolant Supply	
E	External (without coolant hole)
I	Internal (with coolant hole)

7 Drilling depth	3
Approximate value of L/D ratio.	
Caution: Code may be different from the actual length. This is dependent upon the tool diameter.	

Caution: "Effective flute length" shows the maximum flute length for effective chip evacuation. The actual drilling depth may be shorter than described depending on the work material or cutting conditions.

STANDARD CUTTING CONDITIONS

DSW-DE (External supply)

ISO	Workpiece material	Brinell hardness (HB)	Cutting speed: Vc (sfm)			Feed: f (ipr)		
			∅0.118 ~ ∅0.236	∅0.236 ~ ∅0.394	∅0.394 ~ ∅0.630	∅0.118 ~ ∅0.236	∅0.236 ~ ∅0.394	∅0.394 ~ ∅0.630
P	Low carbon steels (C < 0.3) 1018, 1020, 1026, etc.	~ 180	131 - 328	197 - 394	197 - 427	0.006 - 0.012	0.006 - 0.014	0.008 - 0.020
	Carbon steels (C > 0.3) 1045, 1055, etc.	180 ~ 300	131 - 295	164 - 394	197 - 427	0.006 - 0.012	0.006 - 0.014	0.008 - 0.016
	High alloy steels 4140, 8620, etc.	250 ~ 350	131 - 262	164 - 328	164 - 328	0.004 - 0.008	0.006 - 0.012	0.006 - 0.014
M	Stainless steels 304SS, 316SS, 17-4 PH, etc.	~ 200	66 - 131	98 - 164	98 - 197	0.002 - 0.008	0.004 - 0.010	0.004 - 0.012
K	Gray cast irons Class 25, Class 30, etc.	~ 200	131 - 295	164 - 312	164 - 328	0.006 - 0.012	0.008 - 0.016	0.008 - 0.020
	Ductile cast irons 65-40-18, 60-55-06, etc.	~ 300	98 - 262	131 - 295	148 - 295	0.004 - 0.012	0.008 - 0.016	0.008 - 0.016
N	Aluminum alloys 6061, 7075, etc.	-	131 - 295	164 - 328	164 - 328	0.006 - 0.012	0.008 - 0.016	0.008 - 0.020
S	Titanium alloys Ti-6Al-4V, etc	-	66 - 131	66 - 131	66 - 131	0.004 - 0.008	0.006 - 0.010	0.006 - 0.016
	Heat-resistant alloys, Inconel Inconel 718, etc.	250 ~	33 - 98	33 - 98	33 - 98	0.001 - 0.003	0.002 - 0.004	0.003 - 0.005
H	High hardened steels	~ 40HRC	66 - 131	66 - 131	66 - 131	0.002 - 0.006	0.002 - 0.006	0.002 - 0.008

The cutting parameters shown in the table are merely a starting guideline for general machining. Values should be varied depending on the power or rigidity of the machine to be used. Optimum conditions should be selected depending on the actual chip control or damage on edges. When using the smaller diameter tools in each range, set the feed "f" to the lower recommended values.

The coolant supply is critical for the provision of stable machining conditions and enhanced tool life. A large coolant volume should be supplied, especially when drilling difficult-to-cut materials. When drilling stainless steel with low machinability such as austenitic stainless steel with a depth deeper than L/D = 3, a pecking cycle or internal coolant supply is recommended.

DSW-DI (Internal supply)

ISO	Workpiece material	Brinell hardness (HB)	Cutting speed: Vc (sfm)			Feed: f (ipr)		
			ø0.118 ~ ø0.236	ø0.236 ~ ø0.394	ø0.394 ~ ø0.630	ø0.118 ~ ø0.236	ø0.236 ~ ø0.394	ø0.394 ~ ø0.630
P	Low carbon steels (C < 0.3) 1018, 1020, 1026, etc.	~ 180	230 - 459	262 - 525	295 - 623	0.006 - 0.012	0.006 - 0.014	0.008 - 0.020
	Carbon steels (C > 0.3) 1045, 1055, etc.	180 ~ 300	164 - 427	230 - 525	262 - 558	0.006 - 0.012	0.006 - 0.014	0.008 - 0.016
	High alloy steels 4140, 8620, etc.	250 ~ 350	131 - 328	197 - 459	197 - 525	0.004 - 0.008	0.006 - 0.012	0.006 - 0.014
M	Stainless steels 304SS, 316SS, 17-4 PH, etc.	~ 200	82 - 246	164 - 328	164 - 394	0.002 - 0.008	0.004 - 0.010	0.004 - 0.012
K	Gray cast irons Class 25, Class 30, etc.	~ 200	262 - 459	328 - 525	328 - 591	0.006 - 0.012	0.008 - 0.016	0.008 - 0.020
	Ductile cast irons 65-40-18, 60-55-06, etc.	~ 300	230 - 459	262 - 492	262 - 558	0.004 - 0.012	0.008 - 0.016	0.008 - 0.018
N	Aluminum alloys 6061, 7075, etc.	-	197 - 656	197 - 656	197 - 656	0.006 - 0.012	0.008 - 0.016	0.008 - 0.020
S	Titanium alloys Ti-6Al-4V, etc	-	66 - 197	98 - 262	98 - 262	0.004 - 0.008	0.004 - 0.010	0.006 - 0.016
	Heat-resistant alloys, Inconel Inconel 718, etc.	250 ~	33 - 98	33 - 131	33 - 131	0.001 - 0.003	0.002 - 0.004	0.003 - 0.006
H	High hardened steels	~ 40HRC	66 - 164	98 - 197	98 - 197	0.002 - 0.006	0.002 - 0.006	0.002 - 0.008

The cutting parameters shown in the table are merely a starting guideline for general machining. Values should be varied depending on the power or rigidity of the machine to be used. Optimum conditions should be selected depending on the actual chip control or damage on edges.

When using the smaller diameter tools in each range, set the feed "f" to the lower recommended values.

Oil holes that become blocked may cause drill breakages. A filter to prevent the circulation of chips must be used on the coolant supply system.

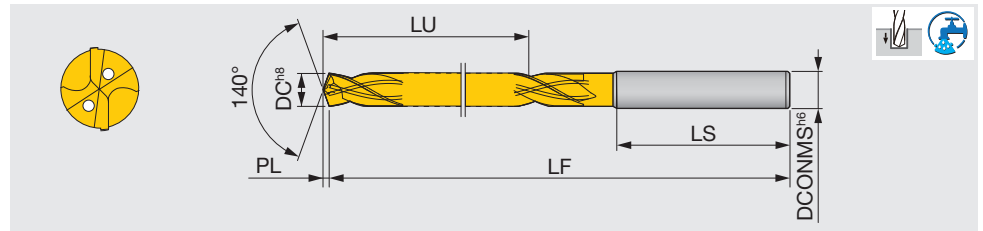
Grade
Insert
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index



GIGAJETDRILL

DSXU-F03, F05

Solid drill, 140° point angle, with coolant hole, L/D = 3, 5, 8, ø0.125" - ø0.781"



L/D = 3

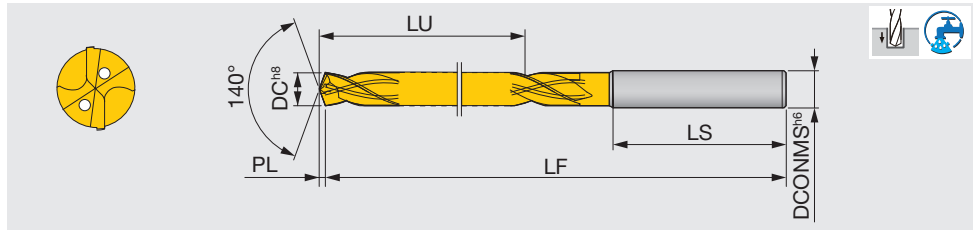
Inch	DC	AH180	DCONMS	LU	LS	LF	PL
*DSXU1250F03	1/8	●	0.156	0.709	1.89	2.80	0.02275
*DSXU1406F03	9/64	●	0.156	0.787	1.89	2.87	0.0256
*DSXU1562F03	5/32	●	0.156	0.787	1.89	2.87	0.0284
DSXU1719F03	11/64	●	0.188	0.906	1.97	3.07	0.0312
DSXU1875F03	3/16	●	0.188	0.984	1.97	3.15	0.34101
DSXU2031F03	13/64	●	0.203	1.137	2.050	3.230	0.037
DSXU2188F03	7/32	●	0.219	1.18	2.05	3.23	0.3981
DSXU2344F03	15/64	●	0.234	1.223	2.050	3.230	0.043
DSXU2500F03	1/4	●	0.25	1.345	2.090	3.390	0.045
DSXU2656F03	17/64	●	0.266	1.428	2.090	3.460	0.048
DSXU2813F03	9/32	●	0.281	1.551	2.130	3.620	0.051
DSXU2969F03	19/64	●	0.297	1.57	2.13	3.70	0.054
DSXU3125F03	5/16	●	0.313	1.627	2.130	3.700	0.057
DSXU3281F03	21/64	●	0.328	1.69	2.17	3.94	0.0597
DSXU3438F03	11/32	●	0.344	1.833	2.170	3.940	0.063
DSXU3594F03	23/64	●	0.359	1.89	2.20	4.17	0.0653
DSXU3750F03	3/8	●	0.375	2.038	2.200	4.170	0.068
DSXU3906F03	25/64	●	0.391	2.041	2.200	4.170	0.071
DSXU4063F03	13/32	●	0.406	2.164	2.400	4.570	0.074
DSXU4219F03	27/64	●	0.422	2.247	2.400	4.570	0.077
DSXU4375F03	7/16	●	0.438	2.360	2.440	4.800	0.080
DSXU4531F03	29/64	●	0.453	2.442	2.440	4.800	0.082
DSXU4688F03	15/32	●	0.469	2.445	2.440	4.800	0.085
DSXU4844F03	31/64	●	0.484	2.648	2.480	5.040	0.088
DSXU5000F03	1/2	●	0.500	2.651	2.480	5.040	0.091
DSXU5156F03	33/64	●	0.516	2.854	2.520	5.280	0.094
DSXU5313F03	17/32	●	0.531	2.857	2.520	5.280	0.097
DSXU5469F03	35/64	●	0.547	2.86	2.520	5.280	0.100
DSXU5625F03	9/16	●	0.563	3.052	2.560	5.510	0.102
DSXU5938F03	19/32	●	0.594	3.258	2.600	5.750	0.108
DSXU6094F03	39/64	●	0.609	3.15	2.60	5.75	0.1108
DSXU6250F03	5/8	●	0.625	3.264	2.600	5.750	0.114
DSXU6562F03	21/32	●	0.656	3.469	2.640	5.980	0.119
DSXU6875F03	11/16	●	0.688	3.665	2.680	6.220	0.125
DSXU7500F03	3/4	●	0.750	3.94	2.76	6.69	0.136

L/D = 5

Inch	DC	AH180	DCONMS	LU	LS	LF	PL
DSXU1250F05	1/8	●	0.156	1.10	1.89	3.19	0.0227
DSXU1406F05	9/64	●	0.156	1.26	1.89	3.35	0.0225
DSXU1562F05	5/32	●	0.156	1.26	1.89	3.35	0.0284
DSXU1719F05	11/64	●	0.188	1.42	1.97	3.58	0.03127
DSXU1875F05	3/16	●	0.188	1.57	1.97	3.70	0.0341
DSXU2031F05	13/64	●	0.203	1.767	2.050	3.780	0.037
DSXU2188F05	7/32	●	0.219	1.93	2.050	3.940	0.040
DSXU2344F05	15/64	●	0.234	1.933	2.050	3.940	0.043
DSXU2500F05	1/4	●	0.25	2.095	2.090	4.130	0.045
DSXU2656F05	17/64	●	0.266	2.248	2.090	4.290	0.048
DSXU2813F05	9/32	●	0.281	2.411	2.130	4.490	0.051
DSXU2969F05	19/64	●	0.297	2.574	2.130	4.650	0.054
DSXU3125F05	5/16	●	0.313	2.577	2.130	4.650	0.057
DSXU3281F05	21/64	●	0.328	2.74	2.170	5.000	0.060
DSXU3438F05	11/32	●	0.344	2.893	2.170	5.000	0.063
DSXU3594F05	23/64	●	0.359	3.055	2.200	5.350	0.065
DSXU3750F05	3/8	●	0.375	3.218	2.200	5.350	0.068
DSXU3906F05	25/64	●	0.391	3.221	2.200	5.350	0.071
DSXU4063F05	13/32	●	0.406	3.384	2.400	5.870	0.074
DSXU4219F05	27/64	●	0.422	3.537	2.400	5.870	0.077
DSXU4375F05	7/16	●	0.438	3.700	2.440	6.220	0.080
DSXU4531F05	29/64	●	0.453	3.862	2.440	6.220	0.082
DSXU4688F05	15/32	●	0.469	3.78	2.44	6.22	0.0852
DSXU4844F05	31/64	●	0.484	4.178	2.480	6.570	0.088
DSXU5000F05	1/2	●	0.500	4.181	2.480	6.570	0.091
DSXU5156F05	33/64	●	0.516	4.504	2.520	6.930	0.094
DSXU5313F05	17/32	●	0.531	4.507	2.520	6.930	0.097
DSXU5469F05	35/64	●	0.547	4.41	2.52	6.93	0.0995
DSXU5625F05	9/16	●	0.563	4.822	2.560	7.280	0.102
DSXU6250F05	5/8	●	0.625	5.154	2.600	7.640	0.114
DSXU6562F05	21/32	●	0.656	5.469	2.640	7.990	0.119

● : Line up

Reference pages: Standard cutting conditions → J050



Metric	DC	AH180	DCONMS	LU	LS	LF	PL	Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0300F03	3	●	3	15.6	48	68	0.55	DSX0760F03	7.6	●	8	41.4	54	94	1.38
DSX0310F03	3.1	●	4	18.6	48	71	0.56	DSX0770F03	7.7	●	8	41.4	54	94	1.40
DSX0320F03	3.2	●	4	18.6	48	71	0.58	DSX0780F03	7.8	●	8	41.4	54	94	1.42
DSX0330F03	3.3	●	4	18.6	48	71	0.60	DSX0790F03	7.9	●	8	41.4	54	94	1.44
DSX0340F03	3.4	●	4	18.6	48	71	0.62	DSX0800F03	8	●	8	41.5	54	94	1.46
DSX0350F03	3.5	●	4	18.6	48	71	0.64	DSX0810F03	8.1	●	9	44.5	55	100	1.47
DSX0360F03	3.6	●	4	20.7	48	73	0.66	DSX0820F03	8.2	●	9	44.5	55	100	1.49
DSX0370F03	3.7	●	4	20.7	48	73	0.67	DSX0830F03	8.3	●	9	44.5	55	100	1.51
DSX0380F03	3.8	●	4	20.7	48	73	0.69	DSX0840F03	8.4	●	9	44.5	55	100	1.53
DSX0390F03	3.9	●	4	20.7	48	73	0.71	DSX0850F03	8.5	●	9	44.6	55	100	1.55
DSX0400F03	4	●	4	20.7	48	73	0.73	DSX0860F03	8.6	●	9	46.6	55	100	1.57
DSX0410F03	4.1	●	5	23.8	50	78	0.75	DSX0870F03	8.7	●	9	46.6	55	100	1.58
DSX0420F03	4.2	●	5	23.8	50	78	0.76	DSX0880F03	8.8	●	9	46.6	55	100	1.60
DSX0430F03	4.3	●	5	23.8	50	78	0.78	DSX0890F03	8.9	●	9	46.6	55	100	1.62
DSX0440F03	4.4	●	5	23.8	50	78	0.80	DSX0900F03	9	●	9	46.6	55	100	1.64
DSX0450F03	4.5	●	5	23.8	50	78	0.82	DSX0910F03	9.1	●	10	49.7	56	106	1.66
DSX0460F03	4.6	●	5	25.8	50	80	0.84	DSX0920F03	9.2	●	10	49.7	56	106	1.67
DSX0470F03	4.7	●	5	25.9	50	80	0.86	DSX0930F03	9.3	●	10	49.7	56	106	1.69
DSX0480F03	4.8	●	5	25.9	50	80	0.87	DSX0940F03	9.4	●	10	49.7	56	106	1.71
DSX0490F03	4.9	●	5	25.9	50	80	0.89	DSX0950F03	9.5	●	10	49.7	56	106	1.73
DSX0500F03	5	●	5	25.9	50	80	0.91	DSX0960F03	9.6	●	10	51.8	56	106	1.75
DSX0510F03	5.1	●	6	28.9	52	82	0.93	DSX0970F03	9.7	●	10	51.8	56	106	1.77
DSX0520F03	5.2	●	6	29	52	82	0.95	DSX0980F03	9.8	●	10	51.8	56	106	1.78
DSX0530F03	5.3	●	6	29	52	82	0.96	DSX0990F03	9.9	●	10	51.8	56	106	1.80
DSX0540F03	5.4	●	6	29	52	82	0.98	DSX1000F03	10	●	10	51.8	56	106	1.82
DSX0550F03	5.5	●	6	29	52	82	1.00								
DSX0560F03	5.6	●	6	31	52	82	1.02								
DSX0570F03	5.7	●	6	31	52	82	1.04								
DSX0580F03	5.8	●	6	31.1	52	82	1.06								
DSX0590F03	5.9	●	6	31.1	52	82	1.07								
DSX0600F03	6	●	6	31.1	52	82	1.09								
DSX0610F03	6.1	●	7	34.1	53	86	1.11								
DSX0620F03	6.2	●	7	34.1	53	86	1.13								
DSX0630F03	6.3	●	7	34.2	53	86	1.15								
DSX0640F03	6.4	●	7	34.2	53	86	1.16								
DSX0650F03	6.5	●	7	34.2	53	86	1.18								
DSX0660F03	6.6	●	7	36.2	53	88	1.20								
DSX0670F03	6.7	●	7	36.2	53	88	1.22								
DSX0680F03	6.8	●	7	36.2	53	88	1.24								
DSX0690F03	6.9	●	7	36.3	53	88	1.26								
DSX0700F03	7	●	7	36.3	53	88	1.27								
DSX0710F03	7.1	●	8	39.3	54	92	1.29								
DSX0720F03	7.2	●	8	39.3	54	92	1.31								
DSX0730F03	7.3	●	8	39.3	54	92	1.33								
DSX0740F03	7.4	●	8	39.4	54	92	1.35								
DSX0750F03	7.5	●	8	39.4	54	92	1.36								

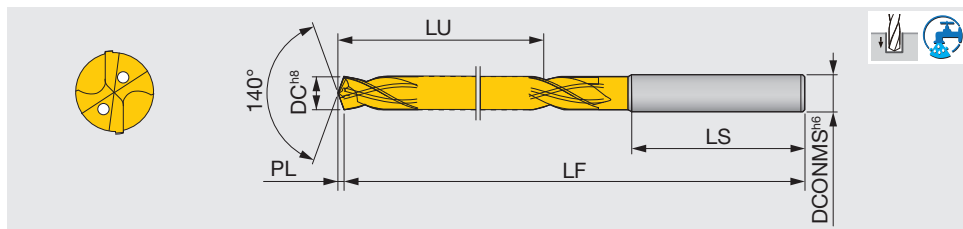
● : Line up



GIGAJETDRILL

DSX-F05

Solid drill, 140° point angle, with coolant hole, L/D = 5, ø3 - ø10 mm

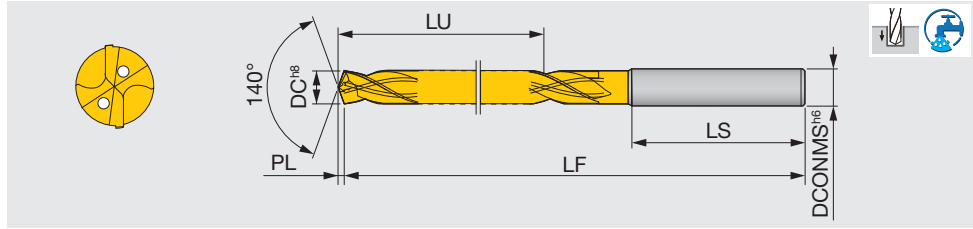


Metric	DC	AH180	DCONMS	LU	LS	LF	PL	Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0300F05	3	●	3	24.6	48	77	0.55	DSX0760F05	7.6	●	8	65.4	54	118	1.38
DSX0310F05	3.1	●	4	28.6	48	81	0.56	DSX0770F05	7.7	●	8	65.4	54	118	1.4
DSX0320F05	3.2	●	4	28.6	48	81	0.58	DSX0780F05	7.8	●	8	65.4	54	118	1.42
DSX0330F05	3.3	●	4	28.6	48	81	0.6	DSX0790F05	7.9	●	8	65.4	54	118	1.44
DSX0340F05	3.4	●	4	28.6	48	81	0.62	DSX0800F05	8	●	8	65.5	54	118	1.46
DSX0350F05	3.5	●	4	28.6	48	81	0.64	DSX0810F05	8.1	●	9	69.5	55	127	1.47
DSX0360F05	3.6	●	4	32.7	48	85	0.66	DSX0820F05	8.2	●	9	69.5	55	127	1.49
DSX0370F05	3.7	●	4	32.7	48	85	0.67	DSX0830F05	8.3	●	9	69.5	55	127	1.51
DSX0380F05	3.8	●	4	32.7	48	85	0.69	DSX0840F05	8.4	●	9	69.5	55	127	1.53
DSX0390F05	3.9	●	4	32.7	48	85	0.71	DSX0850F05	8.5	●	9	69.6	55	127	1.55
DSX0400F05	4	●	4	32.7	48	85	0.73	DSX0860F05	8.6	●	9	73.6	55	127	1.57
DSX0410F05	4.1	●	5	36.8	50	91	0.75	DSX0870F05	8.7	●	9	73.6	55	127	1.58
DSX0420F05	4.2	●	5	36.8	50	91	0.76	DSX0880F05	8.8	●	9	73.6	55	127	1.6
DSX0430F05	4.3	●	5	36.8	50	91	0.78	DSX0890F05	8.9	●	9	73.6	55	127	1.62
DSX0440F05	4.4	●	5	36.8	50	91	0.8	DSX0900F05	9	●	9	73.6	55	127	1.64
DSX0450F05	4.5	●	5	36.8	50	91	0.82	DSX0910F05	9.1	●	10	77.7	56	136	1.66
DSX0460F05	4.6	●	5	40.8	50	94	0.84	DSX0920F05	9.2	●	10	77.7	56	136	1.67
DSX0470F05	4.7	●	5	40.9	50	94	0.86	DSX0930F05	9.3	●	10	77.7	56	136	1.69
DSX0480F05	4.8	●	5	40.9	50	94	0.87	DSX0940F05	9.4	●	10	77.7	56	136	1.71
DSX0490F05	4.9	●	5	40.9	50	94	0.89	DSX0950F05	9.5	●	10	77.7	56	136	1.73
DSX0500F05	5	●	5	40.9	50	94	0.91	DSX0960F05	9.6	●	10	81.8	56	136	1.75
DSX0510F05	5.1	●	6	44.9	52	96	0.93	DSX0970F05	9.7	●	10	81.8	56	136	1.77
DSX0520F05	5.2	●	6	45	52	96	0.95	DSX0980F05	9.8	●	10	81.8	56	136	1.78
DSX0530F05	5.3	●	6	45	52	96	0.96	DSX0990F05	9.9	●	10	81.8	56	136	1.8
DSX0540F05	5.4	●	6	45	52	96	0.98	DSX1000F05	10	●	10	81.8	56	136	1.82
DSX0550F05	5.5	●	6	45	52	96	1								
DSX0560F05	5.6	●	6	49	52	100	1.02								
DSX0570F05	5.7	●	6	49	52	100	1.04								
DSX0580F05	5.8	●	6	49.1	52	100	1.06								
DSX0590F05	5.9	●	6	49.1	52	100	1.07								
DSX0600F05	6	●	6	49.1	52	100	1.09								
DSX0610F05	6.1	●	7	53.1	53	105	1.11								
DSX0620F05	6.2	●	7	53.1	53	105	1.13								
DSX0630F05	6.3	●	7	53.2	53	105	1.15								
DSX0640F05	6.4	●	7	53.2	53	105	1.16								
DSX0650F05	6.5	●	7	53.2	53	105	1.18								
DSX0660F05	6.6	●	7	57.2	53	109	1.2								
DSX0670F05	6.7	●	7	57.2	53	109	1.22								
DSX0680F05	6.8	●	7	57.2	53	109	1.24								
DSX0690F05	6.9	●	7	57.3	53	109	1.26								
DSX0700F05	7	●	7	57.3	53	109	1.27								
DSX0710F05	7.1	●	8	61.3	54	114	1.29								
DSX0720F05	7.2	●	8	61.3	54	114	1.31								
DSX0730F05	7.3	●	8	61.3	54	114	1.33								
DSX0740F05	7.4	●	8	61.4	54	114	1.35								
DSX0750F05	7.5	●	8	61.4	54	114	1.36								

● : Line up

Reference pages: Standard cutting conditions → J050

Solid drill, 140° point angle, with coolant hole, L/D = 8, ø3 - ø10 mm



Metric	DC	AH180	DCONMS	LU	LS	LF	PL	Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0300F08	3	●	3	33.6	48	86	0.55	DSX0760F08	7.6		8	89.4	54	142	1.38
DSX0310F08	3.1		4	39.6	48	92	0.56	DSX0770F08	7.7		8	89.4	54	142	1.4
DSX0320F08	3.2		4	39.6	48	92	0.58	DSX0780F08	7.8		8	89.4	54	142	1.42
DSX0330F08	3.3		4	39.6	48	92	0.6	DSX0790F08	7.9		8	89.4	54	142	1.44
DSX0340F08	3.4		4	39.6	48	92	0.62	DSX0800F08	8	●	8	89.5	54	142	1.46
DSX0350F08	3.5	●	4	39.6	48	92	0.64	DSX0810F08	8.1		9	95.5	55	154	1.47
DSX0360F08	3.6		4	44.7	48	97	0.66	DSX0820F08	8.2		9	95.5	55	154	1.49
DSX0370F08	3.7		4	44.7	48	97	0.67	DSX0830F08	8.3	●	9	95.5	55	154	1.51
DSX0380F08	3.8		4	44.7	48	97	0.69	DSX0840F08	8.4		9	95.5	55	154	1.53
DSX0390F08	3.9		4	44.7	48	97	0.71	DSX0850F08	8.5	●	9	95.6	55	154	1.55
DSX0400F08	4	●	4	44.7	48	97	0.73	DSX0860F08	8.6		9	100.6	55	154	1.57
DSX0410F08	4.1		5	50.8	50	105	0.75	DSX0870F08	8.7		9	100.6	55	154	1.58
DSX0420F08	4.2		5	50.8	50	105	0.76	DSX0880F08	8.8		9	100.6	55	154	1.6
DSX0430F08	4.3		5	50.8	50	105	0.78	DSX0890F08	8.9		9	100.6	55	154	1.62
DSX0440F08	4.4		5	50.8	50	105	0.8	DSX0900F08	9	●	9	100.6	55	154	1.64
DSX0450F08	4.5	●	5	50.8	50	105	0.82	DSX0910F08	9.1		10	106.7	56	166	1.66
DSX0460F08	4.6		5	55.8	50	110	0.84	DSX0920F08	9.2		10	106.7	56	166	1.67
DSX0470F08	4.7		5	55.9	50	110	0.86	DSX0930F08	9.3		10	106.7	56	166	1.69
DSX0480F08	4.8		5	55.9	50	110	0.87	DSX0940F08	9.4		10	106.7	56	166	1.71
DSX0490F08	4.9		5	55.9	50	110	0.89	DSX0950F08	9.5	●	10	106.7	56	166	1.73
DSX0500F08	5	●	5	55.9	50	110	0.91	DSX0960F08	9.6		10	111.8	56	166	1.75
DSX0510F08	5.1	●	6	61.9	52	113	0.93	DSX0970F08	9.7		10	111.8	56	166	1.77
DSX0520F08	5.2		6	62	52	113	0.95	DSX0980F08	9.8		10	111.8	56	166	1.78
DSX0530F08	5.3		6	62	52	113	0.96	DSX0990F08	9.9		10	111.8	56	166	1.8
DSX0540F08	5.4		6	62	52	113	0.98	DSX1000F08	10	●	10	111.8	56	166	1.82
DSX0550F08	5.5	●	6	62	52	113	1								
DSX0560F08	5.6		6	67	52	118	1.02								
DSX0570F08	5.7		6	67	52	118	1.04								
DSX0580F08	5.8		6	67.1	52	118	1.06								
DSX0590F08	5.9		6	67.1	52	118	1.07								
DSX0600F08	6	●	6	67.1	52	118	1.09								
DSX0610F08	6.1		7	73.1	53	125	1.11								
DSX0620F08	6.2		7	73.1	53	125	1.13								
DSX0630F08	6.3		7	73.2	53	125	1.15								
DSX0640F08	6.4		7	73.2	53	125	1.16								
DSX0650F08	6.5	●	7	73.2	53	125	1.18								
DSX0660F08	6.6		7	78.2	53	130	1.2								
DSX0670F08	6.7		7	78.2	53	130	1.22								
DSX0680F08	6.8		7	78.2	53	130	1.24								
DSX0690F08	6.9		7	78.3	53	130	1.26								
DSX0700F08	7	●	7	78.3	53	130	1.27								
DSX0710F08	7.1		8	84.3	54	137	1.29								
DSX0720F08	7.2		8	84.3	54	137	1.31								
DSX0730F08	7.3		8	84.3	54	137	1.33								
DSX0740F08	7.4		8	84.4	54	137	1.35								
DSX0750F08	7.5	●	8	84.4	54	137	1.36								

● : Line up

Reference pages: Standard cutting conditions → J050





STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Cutting speed: Vc (sfm)			Feed: f (ipr)		
			ø0.118 ~ ø0.236	ø0.236 ~ ø0.394	ø0.394 ~ ø0.787	ø0.118 ~ ø0.236	ø0.236 ~ ø0.394	ø0.394 ~ ø0.787
P	Mild steels, Low carbon steels 1018, 1020, 1026, etc.	< 180HB	230 - 459	262 - 525	295 - 623	0.006 - 0.010	0.008 - 0.014	0.010 - 0.016
	Carbon steels, Alloy steels 1045, 1055, etc.	180 ~ 300HB	164 - 427	230 - 525	262 - 558	0.006 - 0.010	0.008 - 0.014	0.010 - 0.016
	High alloy steels, etc. 4140, 8620, etc.	250 ~ 350HB	131 - 328	197 - 459	197 - 525	0.004 - 0.008	0.006 - 0.012	0.006 - 0.012
M	Stainless steels 304SS, 316SS, 17-4 PH, etc.	< 200HB	98 - 230	164 - 328	164 - 394	0.004 - 0.008	0.004 - 0.010	0.006 - 0.014
K	Gray cast irons Class 25, Class 30, etc.	< 200HB	262 - 459	328 - 525	328 - 591	0.006 - 0.014	0.008 - 0.016	0.010 - 0.020
	Ductile cast irons 60-40-18, 60-55-06, etc.	< 300HB	230 - 459	262 - 492	262 - 558	0.006 - 0.014	0.008 - 0.016	0.010 - 0.018
N	Aluminum alloys 6061, 7075, etc.	-	262 - 525	328 - 591	328 - 623	0.006 - 0.014	0.008 - 0.018	0.010 - 0.024
S	Titanium alloys Ti-6Al-4V, etc.	-	82 - 197	98 - 262	98 - 262	0.004 - 0.008	0.004 - 0.010	0.006 - 0.014
	Heat-resistant alloys Inconel, etc.	250HB <	33 - 98	33 - 131	33 - 131	0.001 - 0.004	0.002 - 0.006	0.004 - 0.010
H	High hardened steels	< 40HRC	66 - 164	98 - 197	98 - 197	0.003 - 0.004	0.004 - 0.006	0.005 - 0.008

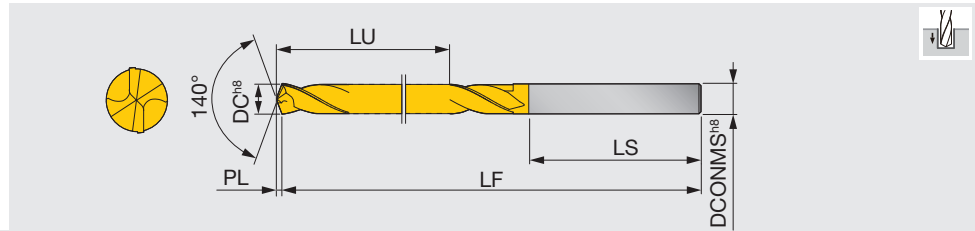
Cutting conditions in the above table show standard cutting conditions.

Cutting conditions may change due to the rigidity and power of the machine and the workpiece material.

Especially in deep hole drilling (L/D is over 5), the lower cutting speed is better for longer tool life.

The coolant pressure must be 0.5 MPa - 1MPa. Especially for small diameter drill, the higher pressure is recommended.

Oil holes that become blocked may cause drill breakages. A filter to prevent the circulation of chips must be used on the coolant supply system.



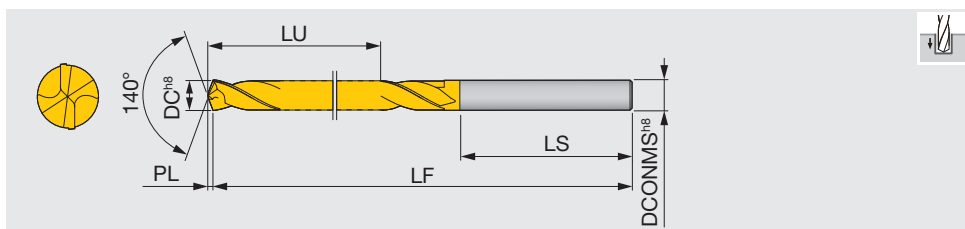
Metric	DC	AH180	DCONMS	LU	LS	LF	PL	Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0300F02	3	●	3	16.6	30	46	0.55	DSE0800F02	8	●	8	38.5	42	79	1.46
DSE0310F02	3.1		3.1	18.6	31	49	0.56	DSE0810F02	8.1		8.1	38.5	42	79	1.47
DSE0320F02	3.2	●	3.2	18.6	31	49	0.58	DSE0820F02	8.2		8.2	38.5	42	79	1.49
DSE0330F02	3.3		3.3	18.6	31	49	0.6	DSE0830F02	8.3		8.3	38.5	42	79	1.51
DSE0340F02	3.4	●	3.4	20.6	32	52	0.62	DSE0840F02	8.4		8.4	38.5	42	79	1.53
DSE0350F02	3.5	●	3.5	20.6	32	52	0.64	DSE0850F02	8.5	●	8.5	38.6	42	79	1.55
DSE0360F02	3.6		3.6	20.7	32	52	0.66	DSE0860F02	8.6		8.6	41.6	44	84	1.57
DSE0370F02	3.7		3.7	20.7	32	52	0.67	DSE0870F02	8.7		8.7	41.6	44	84	1.58
DSE0380F02	3.8		3.8	22.7	33	55	0.69	DSE0880F02	8.8		8.8	41.6	44	84	1.6
DSE0390F02	3.9		3.9	22.7	33	55	0.71	DSE0890F02	8.9		8.9	41.6	44	84	1.62
DSE0400F02	4	●	4	22.7	33	55	0.73	DSE0900F02	9	●	9	41.6	44	84	1.64
DSE0410F02	4.1		4.1	22.8	33	55	0.75	DSE0910F02	9.1		9.1	41.7	44	84	1.66
DSE0420F02	4.2		4.2	22.8	33	55	0.76	DSE0920F02	9.2		9.2	41.7	44	84	1.67
DSE0430F02	4.3	●	4.3	24.8	34	58	0.78	DSE0930F02	9.3		9.3	41.7	44	84	1.69
DSE0440F02	4.4		4.4	24.8	34	58	0.8	DSE0940F02	9.4		9.4	41.7	44	84	1.71
DSE0450F02	4.5	●	4.5	24.8	34	58	0.82	DSE0950F02	9.5	●	9.5	41.7	44	84	1.73
DSE0460F02	4.6		4.6	24.8	34	58	0.84	DSE0960F02	9.6		9.6	44.8	46	89	1.75
DSE0470F02	4.7		4.7	24.9	34	58	0.86	DSE0970F02	9.7		9.7	44.8	46	89	1.77
DSE0480F02	4.8		4.8	26.9	36	62	0.87	DSE0980F02	9.8		9.8	44.8	46	89	1.78
DSE0490F02	4.9		4.9	26.9	36	62	0.89	DSE0990F02	9.9		9.9	44.8	46	89	1.8
DSE0500F02	5	●	5	26.9	36	62	0.91	DSE1000F02	10	●	10	44.8	46	89	1.82
DSE0510F02	5.1	●	5.1	26.9	36	62	0.93								
DSE0520F02	5.2		5.2	27	36	62	0.95								
DSE0530F02	5.3		5.3	27	36	62	0.96								
DSE0540F02	5.4		5.4	29	38	66	0.98								
DSE0550F02	5.5	●	5.5	29	38	66	1								
DSE0560F02	5.6	●	5.6	29	38	66	1.02								
DSE0570F02	5.7		5.7	29	38	66	1.04								
DSE0580F02	5.8		5.8	29.1	38	66	1.06								
DSE0590F02	5.9		5.9	29.1	38	66	1.07								
DSE0600F02	6	●	6	29.1	38	66	1.09								
DSE0610F02	6.1		6.1	32.1	39	70	1.11								
DSE0620F02	6.2		6.2	32.1	39	70	1.13								
DSE0630F02	6.3		6.3	32.2	39	70	1.15								
DSE0640F02	6.4	●	6.4	32.2	39	70	1.16								
DSE0650F02	6.5	●	6.5	32.2	39	70	1.18								
DSE0660F02	6.6		6.6	32.2	39	70	1.2								
DSE0670F02	6.7		6.7	32.2	39	70	1.22								
DSE0680F02	6.8	●	6.8	35.2	40	74	1.24								
DSE0690F02	6.9		6.9	35.3	40	74	1.26								
DSE0700F02	7	●	7	35.3	40	74	1.27								
DSE0710F02	7.1		7.1	35.3	40	74	1.29								
DSE0720F02	7.2		7.2	35.3	40	74	1.31								
DSE0730F02	7.3		7.3	35.3	40	74	1.33								
DSE0740F02	7.4		7.4	35.4	40	74	1.35								
DSE0750F02	7.5	●	7.5	35.4	40	74	1.36								
DSE0760F02	7.6		7.6	38.4	42	79	1.38								
DSE0770F02	7.7		7.7	38.4	42	79	1.4								
DSE0780F02	7.8		7.8	38.4	42	79	1.42								
DSE0790F02	7.9		7.9	38.4	42	79	1.44								

● : Line up

Reference pages: Standard cutting conditions → J053

DSE-F03

Solid drill, 140° point angle, without coolant hole, shank diameter = tool diameter, L/D = 3, ø3 - ø10 mm



Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0300F03	3	●	3	21.6	39	60	0.55
DSE0310F03	3.1		3.1	24.6	36	60	0.56
DSE0320F03	3.2	●	3.2	24.6	36	60	0.58
DSE0330F03	3.3		3.3	24.6	36	60	0.6
DSE0340F03	3.4	●	3.4	24.6	36	60	0.62
DSE0350F03	3.5	●	3.5	24.6	36	60	0.64
DSE0360F03	3.6		3.6	27.7	33	60	0.66
DSE0370F03	3.7		3.7	27.7	33	60	0.67
DSE0380F03	3.8		3.8	27.7	33	60	0.69
DSE0390F03	3.9		3.9	27.7	33	60	0.71
DSE0400F03	4	●	4	27.7	33	60	0.73
DSE0410F03	4.1		4.1	29.8	34	63	0.75
DSE0420F03	4.2		4.2	29.8	34	63	0.76
DSE0430F03	4.3	●	4.3	29.8	34	63	0.78
DSE0440F03	4.4		4.4	29.8	34	63	0.8
DSE0450F03	4.5	●	4.5	29.8	34	63	0.82
DSE0460F03	4.6		4.6	32.8	36	68	0.84
DSE0470F03	4.7		4.7	32.9	36	68	0.86
DSE0480F03	4.8		4.8	32.9	36	68	0.87
DSE0490F03	4.9		4.9	32.9	36	68	0.89
DSE0500F03	5	●	5	32.9	36	68	0.91
DSE0510F03	5.1	●	5.1	34.9	38	72	0.93
DSE0520F03	5.2		5.2	35	38	72	0.95
DSE0530F03	5.3		5.3	35	38	72	0.96
DSE0540F03	5.4		5.4	35	38	72	0.98
DSE0550F03	5.5	●	5.5	35	38	72	1
DSE0560F03	5.6		5.6	37	38	74	1.02
DSE0570F03	5.7		5.7	37	38	74	1.04
DSE0580F03	5.8		5.8	37.1	38	74	1.06
DSE0590F03	5.9		5.9	37.1	38	74	1.07
DSE0600F03	6	●	6	42.1	40	81	1.09
DSE0610F03	6.1		6.1	42.1	40	81	1.11
DSE0620F03	6.2		6.2	42.1	40	81	1.13
DSE0630F03	6.3		6.3	42.2	40	81	1.15
DSE0640F03	6.4		6.4	42.2	40	81	1.16
DSE0650F03	6.5	●	6.5	42.2	40	81	1.18
DSE0660F03	6.6		6.6	44.2	40	83	1.2
DSE0670F03	6.7		6.7	44.2	40	83	1.22
DSE0680F03	6.8	●	6.8	44.2	40	83	1.24
DSE0690F03	6.9		6.9	44.3	40	83	1.26
DSE0700F03	7	●	7	44.3	40	83	1.27
DSE0710F03	7.1		7.1	46.3	42	87	1.29
DSE0720F03	7.2		7.2	46.3	42	87	1.31
DSE0730F03	7.3		7.3	46.3	42	87	1.33
DSE0740F03	7.4	●	7.4	46.4	42	87	1.35
DSE0750F03	7.5	●	7.5	46.4	42	87	1.36
DSE0760F03	7.6		7.6	49.4	42	90	1.38
DSE0770F03	7.7		7.7	49.4	42	90	1.4
DSE0780F03	7.8		7.8	49.4	42	90	1.42
DSE0790F03	7.9		7.9	49.4	42	90	1.44

Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0800F03	8	●	8	49.5	42	90	1.46
DSE0810F03	8.1		8.1	54.5	43	96	1.47
DSE0820F03	8.2		8.2	54.5	43	96	1.49
DSE0830F03	8.3		8.3	54.5	43	96	1.51
DSE0840F03	8.4		8.4	54.5	43	96	1.53
DSE0850F03	8.5	●	8.5	54.6	43	96	1.55
DSE0860F03	8.6	●	8.6	56.6	43	98	1.57
DSE0870F03	8.7		8.7	56.6	43	98	1.58
DSE0880F03	8.8		8.8	56.6	43	98	1.6
DSE0890F03	8.9		8.9	56.6	43	98	1.62
DSE0900F03	9	●	9	56.6	43	98	1.64
DSE0910F03	9.1		9.1	59.7	44	102	1.66
DSE0920F03	9.2		9.2	59.7	44	102	1.67
DSE0930F03	9.3		9.3	59.7	44	102	1.69
DSE0940F03	9.4		9.4	59.7	44	102	1.71
DSE0950F03	9.5	●	9.5	59.7	44	102	1.73
DSE0960F03	9.6		9.6	61.8	45	105	1.75
DSE0970F03	9.7		9.7	61.8	45	105	1.77
DSE0980F03	9.8		9.8	61.8	45	105	1.78
DSE0990F03	9.9		9.9	61.8	45	105	1.8
DSE1000F03	10	●	10	61.8	45	105	1.82

● : Line up

Reference pages: Standard cutting conditions → J053

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Cutting speed: Vc (sfm)			Feed: f (ipr)		
			ø0.118" ~ ø0.236"	ø0.236" ~ ø0.394"	ø0.394" ~ ø0.630"	ø0.118" ~ ø0.236"	ø0.236" ~ ø0.394"	ø0.394" ~ ø0.630"
P	Mild steels, Low carbon steels	< 180HB	131 - 328	197 - 394	197 - 427	0.006 - 0.012	0.006 - 0.014	0.008 - 0.020
	Carbon steels, Alloy steels	180 ~ 300HB	131 - 295	164 - 394	197 - 427	0.006 - 0.012	0.006 - 0.014	0.006 - 0.016
	High alloy steels, etc.	250 ~ 350HB	131 - 262	164 - 328	164 - 328	0.004 - 0.008	0.006 - 0.010	0.006 - 0.014
M	Stainless steels	< 200HB	33 - 66	33 - 66	33 - 66	0.002 - 0.006	0.002 - 0.006	0.002 - 0.006
K	Gray cast irons	< 200HB	131 - 295	164 - 312	164 - 328	0.006 - 0.012	0.008 - 0.016	0.008 - 0.016
	Ductile cast irons	< 300HB	115 - 262	131 - 279	148 - 295	0.006 - 0.012	0.008 - 0.016	0.008 - 0.016
S	Titanium alloys		66 - 131	66 - 131	66 - 131	0.004 - 0.008	0.006 - 0.010	0.006 - 0.016
	Heat-resistant alloys	250HB <	33 - 98	33 - 98	33 - 98	0.001 - 0.003	0.002 - 0.004	0.003 - 0.005
H	High hardened steels	< 40HRC	66 - 131	66 - 131	66 - 131	0.002 - 0.006	0.002 - 0.006	0.003 - 0.008

Because the cutting conditions may be changed depending on the material type, hardness, machinability, machine tool, and coolant, the most appropriate conditions must be decided based on the chip control condition and tool failure mode.
 When using the smaller diameter tools in each range, set the feed "f" to the lower recommended values.
 When drilling difficult-to-cut materials, coolant supplying conditions are critical for successful drilling. So, the use of constant and flood coolant is highly recommended.
 When work material is austenitic stainless steel and the hole depth is over L/D = 2, using a step drilling program or a DSX drill with an oil hole is recommended.

Grade
A
Insert
B
Ext. Toolholder
C
Int. Toolholder
D
Threading
E
Grooving
F
Miniature Tool
G
Milling Cutter
H
Endmill
I
Drilling Tool
J
Tooling System
K
User's Guide
L
Index
M

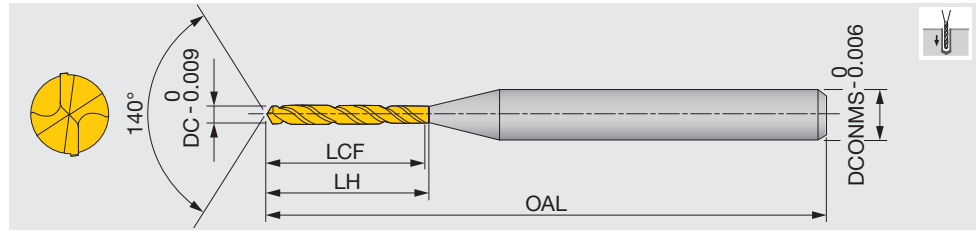


2-effective Drill
Indexable Drill
Deep Hole Drill

GIGAMINIDRILL

DSM

Micro solid drill, 140° point angle, without coolant hole, shank diameter ø3 mm, L/D = 5 - 15, tool diameter ø0.1 - ø3 mm



Metric	DC	Coated		DCONMS	LCF	LH	OAL	Metric	DC	Coated		DCONMS	LCF	LH	OAL
		YH170	YH180							YH170	YH180				
DSM0010G10	0.1	●		3	1.15	1.4	38	DSM0070G10	0.7	●		3	8.6	9.2	38
DSM0011G10	0.11	●		3	1.25	1.5	38	DSM0071G10	0.71			3	9.2	9.8	38
DSM0012G10	0.12	●		3	1.35	1.6	38	DSM0072G10	0.72			3	9.2	9.8	38
DSM0013G10	0.13	●		3	1.55	1.8	38	DSM0073G10	0.73			3	9.2	9.8	38
DSM0014G10	0.14	●		3	1.65	1.9	38	DSM0074G10	0.74			3	9.2	9.8	38
DSM0015G10	0.15	●		3	1.75	2	38	DSM0075G10	0.75	●		3	9.2	9.8	38
DSM0016G10	0.16	●		3	1.85	2.1	38	DSM0076G10	0.76			3	9.9	10.5	38
DSM0017G10	0.17	●		3	1.95	2.2	38	DSM0077G10	0.77			3	9.9	10.5	38
DSM0018G10	0.18	●		3	2.15	2.4	38	DSM0078G10	0.78			3	9.9	10.5	38
DSM0019G10	0.19	●		3	2.25	2.5	38	DSM0079G10	0.79			3	9.9	10.5	38
DSM0020G10	0.2	●		3	2.35	2.6	38	DSM0080G10	0.8	●		3	9.9	10.5	38
DSM0021G10	0.21	●		3	2.45	2.7	38	DSM0081G10	0.81			3	10.5	11.1	38
DSM0022G10	0.22	●		3	2.55	2.8	38	DSM0082G10	0.82			3	10.5	11.1	38
DSM0023G10	0.23	●		3	2.75	3	38	DSM0083G10	0.83			3	10.5	11.1	38
DSM0024G10	0.24	●		3	2.85	3.1	38	DSM0084G10	0.84			3	10.5	11.1	38
DSM0025G10	0.25	●		3	3	3.3	38	DSM0085G10	0.85			3	10.5	11.1	38
DSM0026G10	0.26	●		3	3.1	3.4	38	DSM0086G10	0.86			3	9.9	10.5	38
DSM0027G10	0.27	●		3	3.2	3.5	38	DSM0087G10	0.87			3	9.9	10.5	38
DSM0028G10	0.28	●		3	3.4	3.7	38	DSM0088G10	0.88	●		3	9.9	10.5	38
DSM0029G10	0.29	●		3	3.5	3.8	38	DSM0089G10	0.89			3	9.9	10.5	38
DSM0030G10	0.3	●		3	3.9	4.2	38	DSM0090G10	0.9	●		3	9.9	10.5	38
DSM0031G15	0.31	●		3	5.6	5.9	38	DSM0091G10	0.91			3	10.5	11.1	38
DSM0032G15	0.32	●		3	5.6	5.9	38	DSM0092G10	0.92			3	10.5	11.1	38
DSM0033G15	0.33	●		3	5.6	5.9	38	DSM0093G10	0.93			3	10.5	11.1	38
DSM0034G15	0.34	●		3	5.6	5.9	38	DSM0094G10	0.94			3	10.5	11.1	38
DSM0035G15	0.35	●		3	5.6	5.9	38	DSM0095G10	0.95			3	10.5	11.1	38
DSM0036G15	0.36	●		3	6.5	6.8	38	DSM0096G10	0.96			3	11	11.6	38
DSM0037G15	0.37	●		3	6.5	6.8	38	DSM0097G10	0.97	●		3	11	11.6	38
DSM0038G15	0.38	●		3	6.5	6.8	38	DSM0098G10	0.98			3	11	11.6	38
DSM0039G15	0.39	●		3	6.5	6.8	38	DSM0099G10	0.99			3	11	11.6	38
DSM0040G15	0.4	●		3	6.5	6.8	38	DSM0100G10	1	●		3	11.5	12.1	38
DSM0041G15	0.41	●		3	7.4	7.7	38	DSM0101G05	1.01			3	8	8.6	38
DSM0042G15	0.42	●		3	7.4	7.7	38	DSM0102G05	1.02			3	8	8.6	38
DSM0043G15	0.43	●		3	7.4	7.7	38	DSM0103G05	1.03			3	8	8.6	38
DSM0044G15	0.44	●		3	7.4	7.7	38	DSM0104G05	1.04			3	8	8.6	38
DSM0045G15	0.45	●		3	7.4	7.7	38	DSM0105G05	1.05			3	8	8.6	38
DSM0046G15	0.46	●		3	8.1	8.7	38	DSM0106G05	1.06			3	8	8.6	38
DSM0047G15	0.47	●		3	8.1	8.7	38	DSM0107G05	1.07			3	8	8.6	38
DSM0048G15	0.48	●		3	8.1	8.7	38	DSM0108G05	1.08	●		3	8	8.6	38
DSM0049G15	0.49	●		3	8.1	8.7	38	DSM0109G05	1.09			3	8	8.6	38
DSM0050G15	0.5	●		3	8.1	8.7	38	DSM0110G05	1.1	●		3	8	8.6	38
DSM0051G10	0.51			3	6.6	7.2	38	DSM0111G05	1.11			3	8.9	9.5	38
DSM0052G10	0.52			3	6.6	7.2	38	DSM0112G05	1.12			3	8.9	9.5	38
DSM0053G10	0.53			3	6.6	7.2	38	DSM0113G05	1.13			3	8.9	9.5	38
DSM0054G10	0.54			3	6.6	7.2	38	DSM0114G05	1.14			3	8.9	9.5	38
DSM0055G10	0.55	●		3	6.6	7.2	38	DSM0115G05	1.15			3	8.9	9.5	38
DSM0056G10	0.56			3	7.3	7.9	38	DSM0116G05	1.16			3	8.9	9.5	38
DSM0057G10	0.57			3	7.3	7.9	38	DSM0117G05	1.17			3	8.9	9.5	38
DSM0058G10	0.58			3	7.3	7.9	38	DSM0118G05	1.18			3	8.9	9.5	38
DSM0059G10	0.59			3	7.3	7.9	38	DSM0119G05	1.19			3	8.9	9.5	38
DSM0060G10	0.6	●		3	7.3	7.9	38	DSM0120G05	1.2	●		3	8.9	9.5	38
DSM0061G10	0.61			3	7.9	8.5	38	DSM0121G05	1.21			3	9.7	10.3	38
DSM0062G10	0.62			3	7.9	8.5	38	DSM0122G05	1.22			3	9.7	10.3	38
DSM0063G10	0.63			3	7.9	8.5	38	DSM0123G05	1.23			3	9.7	10.3	38
DSM0064G10	0.64			3	7.9	8.5	38	DSM0124G05	1.24			3	9.7	10.3	38
DSM0065G10	0.65	●		3	7.9	8.5	38	DSM0125G05	1.25			3	9.7	10.3	38
DSM0066G10	0.66			3	8.6	9.2	38	DSM0126G05	1.26			3	9.7	10.3	38
DSM0067G10	0.67			3	8.6	9.2	38	DSM0127G05	1.27			3	9.7	10.3	38
DSM0068G10	0.68			3	8.6	9.2	38								
DSM0069G10	0.69			3	8.6	9.2	38								

● : Line up

Reference pages: Standard cutting conditions → J056

Metric	DC	Coated		DCONMS	LCF	LH	OAL	Metric	DC	Coated		DCONMS	LCF	LH	OAL
		YH170	YH180							YH170	YH180				
DSM0128G05	1.28			3	9.7	10.3	38	DSM0204G05	2.04			3	16.1	16.7	45
DSM0129G05	1.29			3	9.7	10.3	38	DSM0205G05	2.05			3	16.1	16.7	45
DSM0130G05	1.3	●		3	9.7	10.3	38	DSM0206G05	2.06			3	16.1	16.7	45
DSM0131G05	1.31			3	10.5	11.1	38	DSM0207G05	2.07			3	16.1	16.7	45
DSM0132G05	1.32			3	10.5	11.1	38	DSM0208G05	2.08			3	16.1	16.7	45
DSM0133G05	1.33			3	10.5	11.1	38	DSM0209G05	2.09			3	16.1	16.7	45
DSM0134G05	1.34			3	10.5	11.1	38	DSM0210G05	2.1	●		3	16.1	16.7	45
DSM0135G05	1.35			3	10.5	11.1	38	DSM0211G05	2.11			3	16.9	17.5	45
DSM0136G05	1.36			3	10.5	11.1	38	DSM0212G05	2.12			3	16.9	17.5	45
DSM0137G05	1.37			3	10.5	11.1	38	DSM0213G05	2.13			3	16.9	17.5	45
DSM0138G05	1.38			3	10.5	11.1	38	DSM0214G05	2.14			3	16.9	17.5	45
DSM0139G05	1.39			3	10.5	11.1	38	DSM0215G05	2.15			3	16.9	17.5	45
DSM0140G05	1.4	●		3	10.5	11.1	38	DSM0216G05	2.16			3	16.9	17.5	45
DSM0141G05	1.41			3	11.3	11.9	38	DSM0217G05	2.17			3	16.9	17.5	45
DSM0142G05	1.42			3	11.3	11.9	38	DSM0218G05	2.18			3	16.9	17.5	45
DSM0143G05	1.43			3	11.3	11.9	38	DSM0219G05	2.19			3	16.9	17.5	45
DSM0144G05	1.44			3	11.3	11.9	38	DSM0220G05	2.2	●		3	16.9	17.5	45
DSM0145G05	1.45	●		3	11.3	11.9	38	DSM0221G05	2.21			3	17.7	18.3	45
DSM0146G05	1.46			3	11.3	11.9	38	DSM0222G05	2.22			3	17.7	18.3	45
DSM0147G05	1.47			3	11.3	11.9	38	DSM0223G05	2.23			3	17.7	18.3	45
DSM0148G05	1.48			3	11.3	11.9	38	DSM0224G05	2.24			3	17.7	18.3	45
DSM0149G05	1.49			3	11.3	11.9	38	DSM0225G05	2.25			3	17.7	18.3	45
DSM0150G05	1.5	●		3	11.3	11.9	38	DSM0226G05	2.26			3	17.7	18.3	45
DSM0151G05	1.51			3	12.1	12.7	45	DSM0227G05	2.27			3	17.7	18.3	45
DSM0152G05	1.52			3	12.1	12.7	45	DSM0228G05	2.28			3	17.7	18.3	45
DSM0153G05	1.53	●		3	12.1	12.7	45	DSM0229G05	2.29			3	17.7	18.3	45
DSM0154G05	1.54			3	12.1	12.7	45	DSM0230G05	2.3	●		3	17.7	18.3	45
DSM0155G05	1.55	●		3	12.1	12.7	45	DSM0231G05	2.31			3	18.5	19.1	55
DSM0156G05	1.56			3	12.1	12.7	45	DSM0232G05	2.32			3	18.5	19.1	55
DSM0157G05	1.57			3	12.1	12.7	45	DSM0233G05	2.33			3	18.5	19.1	55
DSM0158G05	1.58			3	12.1	12.7	45	DSM0234G05	2.34			3	18.5	19.1	55
DSM0159G05	1.59			3	12.1	12.7	45	DSM0235G05	2.35			3	18.5	19.1	55
DSM0160G05	1.6	●		3	12.1	12.7	45	DSM0236G05	2.36			3	18.5	19.1	55
DSM0161G05	1.61			3	12.9	13.6	45	DSM0237G05	2.37			3	18.5	19.1	55
DSM0162G05	1.62			3	12.9	13.6	45	DSM0238G05	2.38			3	18.5	19.1	55
DSM0163G05	1.63			3	12.9	13.6	45	DSM0239G05	2.39			3	18.5	19.1	55
DSM0164G05	1.64			3	12.9	13.6	45	DSM0240G05	2.4	●		3	18.5	19.1	55
DSM0165G05	1.65	●		3	12.9	13.6	45	DSM0241G05	2.41			3	19.3	19.9	55
DSM0166G05	1.66			3	12.9	13.6	45	DSM0242G05	2.42			3	19.3	19.9	55
DSM0167G05	1.67			3	12.9	13.6	45	DSM0243G05	2.43			3	19.3	19.9	55
DSM0168G05	1.68			3	12.9	13.6	45	DSM0244G05	2.44			3	19.3	19.9	55
DSM0169G05	1.69			3	12.9	13.6	45	DSM0245G05	2.45			3	19.3	19.9	55
DSM0170G05	1.7	●		3	12.9	13.6	45	DSM0246G05	2.46			3	19.3	19.9	55
DSM0171G05	1.71			3	13.7	14.3	45	DSM0247G05	2.47			3	19.3	19.9	55
DSM0172G05	1.72			3	13.7	14.3	45	DSM0248G05	2.48			3	19.3	19.9	55
DSM0173G05	1.73			3	13.7	14.3	45	DSM0249G05	2.49			3	19.3	19.9	55
DSM0174G05	1.74			3	13.7	14.3	45	DSM0250G05	2.5	●		3	19.3	19.9	55
DSM0175G05	1.75			3	13.7	14.3	45	DSM0251G05	2.51			3	20.1	20.7	55
DSM0176G05	1.76			3	13.7	14.3	45	DSM0252G05	2.52			3	20.1	20.7	55
DSM0177G05	1.77			3	13.7	14.3	45	DSM0253G05	2.53			3	20.1	20.7	55
DSM0178G05	1.78			3	13.7	14.3	45	DSM0254G05	2.54			3	20.1	20.7	55
DSM0179G05	1.79			3	13.7	14.3	45	DSM0255G05	2.55			3	20.1	20.7	55
DSM0180G05	1.8	●		3	13.7	14.3	45	DSM0256G05	2.56	●		3	20.1	20.7	55
DSM0181G05	1.81			3	14.5	15.1	45	DSM0257G05	2.57			3	20.1	20.7	55
DSM0182G05	1.82	●		3	14.5	15.1	45	DSM0258G05	2.58			3	20.1	20.7	55
DSM0183G05	1.83			3	14.5	15.1	45	DSM0259G05	2.59			3	20.1	20.7	55
DSM0184G05	1.84			3	14.5	15.1	45	DSM0260G05	2.6	●		3	20.1	20.7	55
DSM0185G05	1.85	●		3	14.5	15.1	45	DSM0261G05	2.61			3	20.9	21.5	55
DSM0186G05	1.86			3	14.5	15.1	45	DSM0262G05	2.62			3	20.9	21.5	55
DSM0187G05	1.87			3	14.5	15.1	45	DSM0263G05	2.63			3	20.9	21.5	55
DSM0188G05	1.88			3	14.5	15.1	45	DSM0264G05	2.64			3	20.9	21.5	55
DSM0189G05	1.89			3	14.5	15.1	45	DSM0265G05	2.65			3	20.9	21.5	55
DSM0190G05	1.9	●		3	14.5	15.1	45	DSM0266G05	2.66			3	20.9	21.5	55
DSM0191G05	1.91			3	15.3	15.9	45	DSM0267G05	2.67			3	20.9	21.5	55
DSM0192G05	1.92			3	15.3	15.9	45	DSM0268G05	2.68			3	20.9	21.5	55
DSM0193G05	1.93			3	15.3	15.9	45	DSM0269G05	2.69			3	20.9	21.5	55
DSM0194G05	1.94			3	15.3	15.9	45	DSM0270G05	2.7	●		3	20.9	21.5	55
DSM0195G05	1.95	●		3	15.3	15.9	45	DSM0271G05	2.71			3	21.7	22.3	55
DSM0196G05	1.96			3	15.3	15.9	45	DSM0272G05	2.72			3	21.7	22.3	55
DSM0197G05	1.97			3	15.3	15.9	45	DSM0273G05	2.73			3	21.7	22.3	55
DSM0198G05	1.98			3	15.3	15.9	45	DSM0274G05	2.74			3	21.7	22.3	55
DSM0199G05	1.99			3	15.3	15.9	45	DSM0275G05	2.75			3	21.7	22.3	55
DSM0200G05	2		●	3	15.3	15.9	45	DSM0276G05	2.76			3	21.7	22.3	55
DSM0201G05	2.01			3	16.1	16.7	45	DSM0277G05	2.77			3	21.7	22.3	55
DSM0202G05	2.02			3	16.1	16.7	45								
DSM0203G05	2.03		●	3	16.1	16.7	45								

● : Line up

Reference pages: Standard cutting conditions → J056

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index



Metric	DC	Coated					Metric	DC	Coated					
		YH170	YH180	DCONMS	LCF	LH			OAL	YH170	YH180	DCONMS	LCF	LH
DSM0278G05	2.78			3	21.7	22.3	55	DSM0290G05	2.9	●	3	22.5	23.1	55
DSM0279G05	2.79			3	21.7	22.3	55	DSM0291G05	2.91		3	23.3	23.9	55
DSM0280G05	2.8		●	3	21.7	22.3	55	DSM0292G05	2.92		3	23.3	23.9	55
DSM0281G05	2.81			3	22.5	23.1	55	DSM0293G05	2.93		3	23.3	23.9	55
DSM0282G05	2.82			3	22.5	23.1	55	DSM0294G05	2.94		3	23.3	23.9	55
DSM0283G05	2.83			3	22.5	23.1	55	DSM0295G05	2.95		3	23.3	23.9	55
DSM0284G05	2.84			3	22.5	23.1	55	DSM0296G05	2.96		3	23.3	23.9	55
DSM0285G05	2.85			3	22.5	23.1	55	DSM0297G05	2.97		3	23.3	23.9	55
DSM0286G05	2.86			3	22.5	23.1	55	DSM0298G05	2.98		3	23.3	23.9	55
DSM0287G05	2.87			3	22.5	23.1	55	DSM0299G05	2.99		3	23.3	23.9	55
DSM0288G05	2.88			3	22.5	23.1	55	DSM0300G05	3	●	3	23.3	23.9	55
DSM0289G05	2.89			3	22.5	23.1	55							

● : Line up

STANDARD CUTTING CONDITIONS

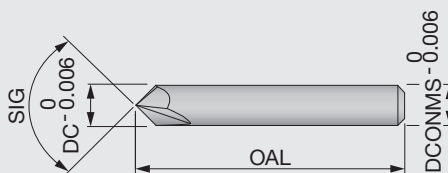
ISO	Workpiece material	Cutting speed: Vc (sfm)			Feed: f (ipr)				
		ø0.1 ~ ø0.3 (ø0.004" ~ ø0.012")	ø0.3 ~ ø0.5 (ø0.012" ~ ø0.020")	ø0.5 ~ ø3 (ø0.020" ~ ø0.118")	ø0.1 ~ ø0.3 (ø0.004" ~ ø0.012")	ø0.3 ~ ø0.5 (ø0.012" ~ ø0.020")	ø0.5 ~ ø1 (ø0.020" ~ ø0.039")	ø1 ~ ø2 (ø0.039" ~ ø0.079")	ø2 ~ ø3 (ø0.079" ~ ø0.118")
P	Carbon steels, Alloy steels	16 - 66	49 - 98	82 - 197	0.0004 - 0.00016	0.00008 - 0.0004	0.00020 - 0.0020	0.0012 - 0.0035	0.0020 - 0.004
M	Stainless steels	7 - 39	20 - 59	33 - 66	0.0002 - 0.00016	0.00008 - 0.00031	0.00020 - 0.0012	0.0004 - 0.0016	0.0008 - 0.0020
K	Gray cast irons	16 - 49	33 - 82	66 - 164	0.0002 - 0.00016	0.00008 - 0.0005	0.00020 - 0.0012	0.0004 - 0.0024	0.0012 - 0.005
	Ductile cast irons	16 - 49	33 - 82	66 - 164	0.0004 - 0.00012	0.00008 - 0.0004	0.00020 - 0.0008	0.0004 - 0.0020	0.0012 - 0.004
N	Aluminum alloys	33 - 66	33 - 98	66 - 164	0.0004 - 0.0004	0.00020 - 0.0012	0.0004 - 0.0020	0.0016 - 0.006	0.0024 - 0.008
	Copper / Brass	33 - 66	33 - 98	66 - 164	0.0004 - 0.0004	0.00020 - 0.0012	0.0004 - 0.0020	0.0016 - 0.006	0.0024 - 0.008
S	Heat-resistant alloys	7 - 20	16 - 33	26 - 66	0.0002 - 0.00012	0.00008 - 0.00016	0.00008 - 0.00016	0.00008 - 0.00016	Not recommended
H	High hardened steels	13 - 26	20 - 33	20 - 52	0.0002 - 0.00008	0.00004 - 0.00020	0.00020 - 0.0008	0.0004 - 0.0012	0.0008 - 0.0024

When the drilling depth is deeper than L/D = 5, use drill pecking every 10 to 50% of the drill diameter.
The above cutting conditions apply when a water soluble cutting fluid is used. For drilling a hole smaller than ø0.012", use of a starting drill is recommended.
When setting the drill, the drill run out should be within 0.00008" on the taper. (Especially for the drill diameter smaller than ø0.020")

GIGAMINIDRILL

DSM-CP

Centering drill for DSM drill



Metric	DC	YH170	DCONMS	OAL	SIG
DSM-CP90	3	●	3	38.1	90°
DSM-CP140	3	●	3	38.1	140°

● : Line up

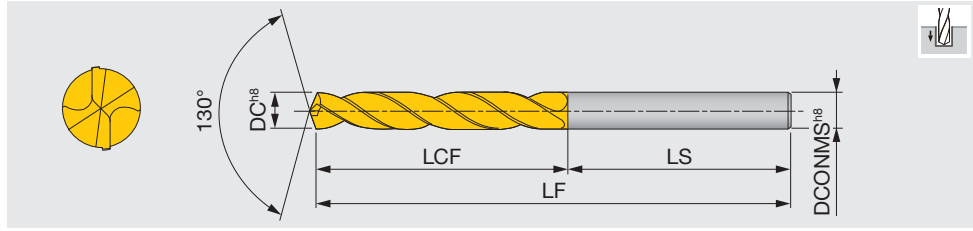
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed: Vc (sfm)	Feed: f (ipr)	
			DSM-CP90	DSM-CP140
P	Carbon, Mild and Alloy steels	98 - 262	0.00039 - 0.00236	0.00118 - 0.00314
K	Gray and ductile cast irons	98 - 262	0.00078 - 0.00236	0.00196 - 0.00393
N	Aluminum alloys	197 - 394	0.00078 - 0.0039	0.00196 - 0.0059
M	Stainless steels	49 - 131	0.00039 - 0.00118	0.00078 - 0.00236
H	High hardened steels (~45HRC)	33 - 131	Not recommended	0.00039 - 0.00196

For hard materials and stainless steels which have work-hardening nature, DSM-CP140 is recommended.
Above cutting conditions are when using a water-soluble cutting fluid. When using a water-insoluble type, set the cutting speed to lower side.

DMXU L/D=2 (VS type)

Soliddrill with 130° point angle without oil hole & shank size equal to drill dia., L/D = 2,
dia = $\varnothing 0.111''$ - $\varnothing 0.781''$



Inch	DC	AH170	DCONMS	LCF	LS	LF	Inch	DC	AH170	DCONMS	LCF	LS	LF
DMXU1110VS	#34	●	0.111	0.630	1.18	1.81	DMXU2969VS	19/64	●	0.297	1.46	1.65	3.11
DMXU1130VS	#33	●	0.113	0.630	1.18	1.81	DMXU3020VS	#N	●	0.302	1.46	1.65	3.11
DMXU1160VS	#32	●	0.116	0.630	1.18	1.81	DMXU3125VS	5/16	●	0.313	1.46	1.65	3.11
DMXU1200VS	#31	●	0.120	0.708	1.22	1.93	DMXU3160VS	#0	●	0.316	1.46	1.65	3.11
DMXU1250VS	1/8	●	0.125	0.708	1.22	1.93	DMXU3230VS	#P	●	0.323	1.46	1.65	3.11
DMXU1285VS	#30	●	0.129	0.708	1.22	1.93	DMXU3281VS	21/64	●	0.328	1.46	1.65	3.11
DMXU1360VS	#29	●	0.136	0.787	1.26	2.05	DMXU3320VS	#Q	●	0.332	1.46	1.65	3.11
DMXU1405VS	#28	●	0.141	0.787	1.26	2.05	DMXU3390VS	#R	●	0.339	1.57	1.73	3.31
DMXU1406VS	9/64	●	0.141	0.787	1.26	2.05	DMXU3438VS	11/32	●	0.344	1.57	1.73	3.31
DMXU1440VS	#27	●	0.144	0.787	1.26	2.05	DMXU3480VS	#S	●	0.348	1.57	1.73	3.31
DMXU1470VS	#26	●	0.147	0.886	1.30	2.17	DMXU3580VS	#T	●	0.358	1.57	1.73	3.31
DMXU1495VS	#25	●	0.150	0.886	1.30	2.17	DMXU3594VS	23/64	●	0.359	1.57	1.73	3.31
DMXU1520VS	#24	●	0.152	0.886	1.30	2.17	DMXU3680VS	#U	●	0.368	1.57	1.73	3.31
DMXU1540VS	#23	●	0.154	0.886	1.30	2.17	DMXU3750VS	3/8	●	0.375	1.69	1.81	3.50
DMXU1562VS	5/32	●	0.156	0.886	1.30	2.17	DMXU3770VS	#V	●	0.377	1.69	1.81	3.50
DMXU1570VS	#22	●	0.157	0.886	1.30	2.17	DMXU3860VS	#W	●	0.386	1.69	1.81	3.50
DMXU1590VS	#21	●	0.159	0.886	1.30	2.17	DMXU3906VS	25/64	●	0.391	1.69	1.81	3.50
DMXU1610VS	#20	●	0.161	0.886	1.30	2.17	DMXU3970VS	#X	●	0.397	1.69	1.81	3.50
DMXU1660VS	#19	●	0.166	0.945	1.34	2.28	DMXU4040VS	#Y	●	0.404	1.69	1.81	3.50
DMXU1695VS	#18	●	0.170	0.945	1.34	2.28	DMXU4062VS	13/32	●	0.406	1.69	1.81	3.50
DMXU1719VS	11/64	●	0.172	0.945	1.34	2.28	DMXU4130VS	#Z	●	0.413	1.69	1.81	3.50
DMXU1730VS	#17	●	0.173	0.945	1.34	2.28	DMXU4219VS	27/64	●	0.422	1.85	1.89	3.74
DMXU1770VS	#16	●	0.177	0.945	1.34	2.28	DMXU4375VS	7/16	●	0.438	1.85	1.89	3.74
DMXU1800VS	#15	●	0.180	0.945	1.34	2.28	DMXU4531VS	29/64	●	0.453	1.85	1.89	3.74
DMXU1820VS	#14	●	0.182	0.945	1.34	2.28	DMXU4688VS	15/32	●	0.469	2.01	2.01	4.02
DMXU1850VS	#13	●	0.185	0.945	1.34	2.28	DMXU4844VS	31/64	●	0.484	2.01	2.01	4.02
DMXU1875VS	3/16	●	0.188	1.02	1.42	2.44	DMXU5000VS	1/2	●	0.500	2.01	2.01	4.02
DMXU1890VS	#12	●	0.189	1.02	1.42	2.44	DMXU5050VS	TUBE	●	0.505	2.01	2.01	4.02
DMXU1910VS	#11	●	0.191	1.02	1.42	2.44	DMXU5156VS	33/64	●	0.516	2.01	2.01	4.02
DMXU1935VS	#10	●	0.194	1.02	1.42	2.44	DMXU5312VS	17/32	●	0.531	2.13	2.09	4.21
DMXU1960VS	#9	●	0.196	1.02	1.42	2.44	DMXU5469VS	35/64	●	0.547	2.13	2.09	4.21
DMXU1990VS	#8	●	0.199	1.02	1.42	2.44	DMXU5625VS	9/16	●	0.563	2.20	2.17	4.37
DMXU2010VS	#7	●	0.201	1.02	1.42	2.44	DMXU5781VS	37/64	●	0.578	2.20	2.17	4.37
DMXU2031VS	13/64	●	0.203	1.02	1.42	2.44	DMXU5937VS	19/32	●	0.594	2.28	2.24	4.53
DMXU2040VS	#6	●	0.204	1.02	1.42	2.44	DMXU6094VS	39/64	●	0.609	2.28	2.24	4.53
DMXU2055VS	#5	●	0.206	1.02	1.42	2.44	DMXU6250VS	5/8	●	0.625	2.28	2.24	4.53
DMXU2090VS	#4	●	0.209	1.10	1.50	2.60	DMXU6330VS	TUBE	●	0.633	2.36	2.32	4.69
DMXU2130VS	#3	●	0.213	1.10	1.50	2.60	DMXU6406VS	41/64	●	0.641	2.36	2.32	4.69
DMXU2188VS	7/32	●	0.219	1.10	1.50	2.60	DMXU6562VS	21/32	●	0.656	2.36	2.32	4.69
DMXU2210VS	#2	●	0.221	1.10	1.50	2.60	DMXU6875VS	11/16	●	0.688	2.44	2.40	4.85
DMXU2280VS	#1	●	0.228	1.10	1.50	2.60	DMXU7031VS	45/64	●	0.703	2.44	2.40	4.85
DMXU2344VS	15/64	●	0.234	1.10	1.50	2.60	DMXU7187VS	23/32	●	0.719	2.52	2.48	5.00
DMXU2380VS	#B	●	0.238	1.22	1.54	2.76	DMXU7344VS	47/64	●	0.734	2.52	2.48	5.00
DMXU2420VS	#C	●	0.242	1.22	1.54	2.76	DMXU7500VS	3/4	●	0.750	2.60	2.56	5.16
DMXU2460VS	#D	●	0.246	1.22	1.54	2.76	DMXU7590VS	TUBE	●	0.759	2.60	2.60	5.16
DMXU2500VS	1/4	●	0.250	1.22	1.54	2.76	DMXU7656VS	49/64	●	0.766	2.60	2.56	5.16
DMXU2570VS	#F	●	0.257	1.22	1.54	2.76	DMXU7812VS	25/32	●	0.781	2.60	2.56	5.16
DMXU2610VS	#G	●	0.261	1.22	1.54	2.76							
DMXU2656VS	17/64	●	0.266	1.34	1.57	2.91							
DMXU2660VS	#H	●	0.266	1.34	1.57	2.91							
DMXU2720VS	#I	●	0.272	1.34	1.57	2.91							
DMXU2770VS	#J	●	0.277	1.34	1.57	2.91							
DMXU2810VS	#K	●	0.281	1.34	1.57	2.91							
DMXU2812VS	9/32	●	0.281	1.34	1.57	2.91							
DMXU2900VS	#L	●	0.290	1.34	1.57	2.91							
DMXU2950VS	#M	●	0.295	1.34	1.57	2.91							

Cutting fluid should be sufficiently supplied to the drill point and the entrance of the hole.

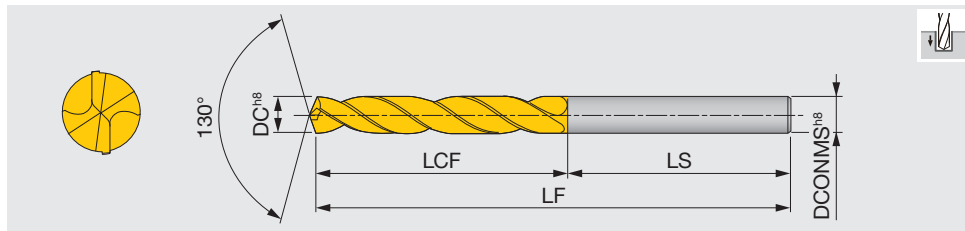
● : Line up

Use a water soluble cutting fluid containing relatively high content of extreme pressure additive for heavy duty cutting or use a water-insoluble cutting fluid.

Reference pages: Standard cutting conditions → J059

DMXU L/D=3 (VM type)

Solidrill with 130° point angle without oil hole & shank size equal to drill dia., L/D = 3, dia = ø0.199" - ø0.781"



Inch	DC	AH170	DCONMS	LCF	LS	LF	Inch	DC	AH170	DCONMS	LCF	LS	LF
DMXU1990VM	#8	●	0.199	1.34	1.50	2.83	DMXU5625VM	9/16	●	0.562	3.50	2.44	5.94
DMXU2010VM	#7	●	0.201	1.34	1.50	2.83	DMXU5781VM	37/64	●	0.578	3.58	2.44	6.03
DMXU2031VM	13/64	●	0.203	1.34	1.50	2.83	DMXU5937VM	19/32	●	0.594	3.70	2.48	6.18
DMXU2040VM	#6	●	0.204	1.34	1.50	2.83	DMXU6094VM	39/64	●	0.609	3.70	2.48	6.18
DMXU2055VM	#5	●	0.206	1.34	1.50	2.83	DMXU6250VM	5/8	●	0.625	3.78	2.52	6.30
DMXU2090VM	#4	●	0.209	1.34	1.50	2.83	DMXU6330VM	TUBE	●	0.633	4.02	2.40	6.57
DMXU2130VM	#3	●	0.213	1.34	1.50	2.83	DMXU6406VM	41/64	●	0.641	4.02	2.40	6.57
DMXU2188VM	7/32	●	0.219	1.42	1.50	2.91	DMXU6562VM	21/32	●	0.656	4.02	2.40	6.57
DMXU2210VM	#2	●	0.221	1.34	1.50	2.91	DMXU6875VM	11/16	●	0.688	4.02	2.40	6.57
DMXU2280VM	#1	●	0.228	1.34	1.50	2.91	DMXU7031VM	45/64	●	0.703	4.02	2.40	6.57
DMXU2344VM	15/64	●	0.234	1.61	1.56	3.19	DMXU7187VM	23/32	●	0.719	4.49	2.40	7.05
DMXU2380VM	#B	●	0.238	1.34	1.58	3.19	DMXU7344VM	47/64	●	0.734	4.49	2.40	7.05
DMXU2420VM	#C	●	0.242	1.34	1.58	3.19	DMXU7500VM	3/4	●	0.750	4.49	2.40	7.05
DMXU2460VM	#D	●	0.246	1.34	1.58	3.19	DMXU7590VM	TUBE	●	0.759	4.49	2.40	7.05
DMXU2500VM	1/4	●	0.250	1.34	1.58	3.19	DMXU7656VM	49/64	●	0.766	4.49	2.40	7.05
DMXU2570VM	#F	●	0.257	1.69	1.57	3.27	DMXU7812VM	25/32	●	0.781	4.49	2.40	7.05
DMXU2610VM	#G	●	0.261	1.69	1.57	3.27							
DMXU2656VM	17/64	●	0.266	1.69	1.57	3.27							
DMXU2660VM	#H	●	0.266	1.69	1.57	3.27							
DMXU2720VM	#I	●	0.272	1.69	1.57	3.27							
DMXU2770VM	#J	●	0.277	1.77	1.65	3.43							
DMXU2810VM	#K	●	0.281	1.77	1.65	3.43							
DMXU2812VM	9/32	●	0.281	1.77	1.65	3.43							
DMXU2900VM	#L	●	0.290	1.77	1.65	3.43							
DMXU2950VM	#M	●	0.295	1.77	1.65	3.43							
DMXU2969VM	19/64	●	0.297	1.89	1.65	3.54							
DMXU3020VM	#N	●	0.302	1.77	1.65	3.54							
DMXU3125VM	5/16	●	0.313	1.77	1.65	3.54							
DMXU3160VM	#O	●	0.316	2.09	1.69	3.78							
DMXU3230VM	#P	●	0.323	2.09	1.69	3.78							
DMXU3281VM	21/64	●	0.328	2.09	1.69	3.78							
DMXU3320VM	#Q	●	0.332	2.09	1.69	3.78							
DMXU3390VM	#R	●	0.339	2.17	1.69	3.86							
DMXU3438VM	11/32	●	0.344	2.17	1.69	3.86							
DMXU3480VM	#S	●	0.348	2.17	1.69	3.86							
DMXU3580VM	#T	●	0.358	2.28	1.73	4.02							
DMXU3594VM	23/64	●	0.359	2.28	1.73	4.02							
DMXU3680VM	#U	●	0.368	2.28	1.73	4.02							
DMXU3750VM	3/8	●	0.375	2.36	1.77	4.13							
DMXU3770VM	#V	●	0.377	2.36	1.77	4.13							
DMXU3860VM	#W	●	0.386	2.36	1.77	4.13							
DMXU3906VM	25/64	●	0.390	2.36	1.77	4.13							
DMXU3970VM	#X	●	0.397	2.60	1.81	4.41							
DMXU4040VM	#Y	●	0.404	2.60	1.81	4.41							
DMXU4062VM	13/32	●	0.406	2.60	1.81	4.41							
DMXU4130VM	#Z	●	0.413	2.60	1.81	4.41							
DMXU4219VM	27/64	●	0.422	2.67	1.81	4.49							
DMXU4375VM	7/16	●	0.438	2.80	1.85	4.65							
DMXU4531VM	29/64	●	0.453	2.87	1.89	4.76							
DMXU4688VM	15/32	●	0.469	2.87	1.89	4.76							
DMXU4844VM	31/64	●	0.484	2.99	2.32	5.32							
DMXU5000VM	1/2	●	0.500	3.07	2.32	5.39							
DMXU5050VM	TUBE	●	0.505	3.07	2.32	5.39							
DMXU5156VM	33/64	●	0.516	3.31	2.36	5.67							
DMXU5312VM	17/32	●	0.531	3.31	2.36	5.67							
DMXU5469VM	35/64	●	0.547	3.39	2.40	5.79							

Cutting fluid should be sufficiently supplied to the drill point and the entrance of the hole.

Use a water soluble cutting fluid containing relatively high content of extreme pressure additive for heavy duty cutting or use a water-insoluble cutting fluid.

● : Line up

Reference pages: Standard cutting conditions → J059

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Examples (JIS)	Hardness	Cutting speed Vc (sfm)	Feed: f (ipr)			
					ø0.118 ~ ø0.197	ø0.197 ~ ø0.394	ø0.394 ~ ø0.630	ø0.630 ~ ø0.787
P	Mild steels · Low Carbon steels	1018, etc.	< 180HB	131 - 262	0.006 - 0.010	0.006 - 0.012	0.008 - 0.016	0.010 - 0.020
	Carbon steels · Alloy steels	1045, etc.	180 ~ 300HB	131 - 262	0.006 - 0.010	0.006 - 0.012	0.008 - 0.016	0.010 - 0.020
	High alloy steels, etc.	4140, etc.	250 ~ 350HB	131 - 230	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012	0.008 - 0.016
M	Stainless steels	304SS, etc.	< 200HB	66 - 131	0.002 - 0.008	0.004 - 0.010	0.004 - 0.012	0.006 - 0.012
K	Gray cast irons	Class 25, etc.	< 300HB	131 - 262	0.006 - 0.014	0.010 - 0.018	0.012 - 0.024	0.014 - 0.026
	Ductile cast irons	60-40-18, etc.	< 300HB	131 - 262	0.006 - 0.012	0.008 - 0.016	0.010 - 0.020	0.012 - 0.024
S	Titanium alloys	Ti-6Al-4V, etc.		66 - 131	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012	0.008 - 0.016
	Heat-resistant alloys	Inconel 718, etc.	250HB <	33 - 98	0.001 - 0.003	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005
H	Hardened material		< 45HRC	33 - 98	0.001 - 0.003	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005

Because the cutting conditions may be changed depending on the material type, hardness, machinability, machine tool, and coolant, the most appropriate conditions must be decided whilst referring the chip control condition and tool failure mode.

When using the smaller side of the diameter range, the feed rate should be set lower.

When drilling difficult-to-cut materials, coolant supplying conditions are critical for successful drilling. So, the use of constant and flood coolant is highly recommended.

For the standard DMX-type drills, somewhat large honing width intended for drilling of general steels is applied. But, when drilling difficult-to-cut materials having high hardness, requiring lowering the feed rate, the honing width should be modified.

The drills with special honing specification are made to order on request.

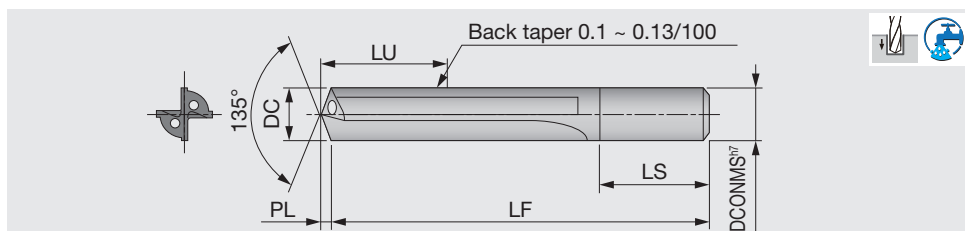
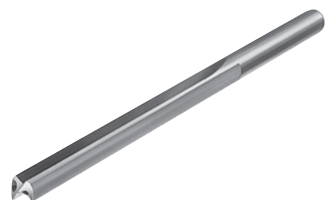
Inconel is trademark of Huntington Alloys, Inc.

Grade
Insert
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index



FDCU

Straight flute solid drill for high feed drilling of aluminum and cast iron, with oil hole



L/D = 5 (S type)

Inch	DC	G1F	DCONMS	LU	LS	LF
FDCU203S	0.2031	●	0.2362	1.73	1.57	3.35
FDCU218S	0.2188	●	0.2362	1.89	1.57	3.54
FDCU234S	0.2344	●	0.2362	1.89	1.57	3.54
FDCU265S	0.2656	●	0.2756	2.20	1.57	3.94
FDCU296S	0.2969	●	0.3150	2.52	1.65	4.33
FDCU312S	0.3125	●	0.3150	2.52	1.65	4.33
FDCU328S	0.3281	●	0.3543	2.68	1.73	4.53

L/D = 8 (L type)

Inch	DC	G1F	DCONMS	LU	LS	LF
FDCU218L	0.2188	●	0.2362	2.60	1.57	4.33
FDCU250L	0.2500	●	0.2756	2.83	1.57	4.53
FDCU265L	0.2656	●	0.2756	3.03	1.57	4.72
FDCU281L	0.2813	●	0.3150	3.27	1.65	4.92
FDCU328L	0.3281	●	0.3543	3.70	1.73	5.51
FDCU343L	0.3438	●	0.3543	3.90	1.73	5.71

DC	Tool diameter tolerance
0.2031 ≤ DC ≤ 0.2344	+0.0008 ~ +0.0004
0.2344 < DC ≤ 0.3281	+0.0010 ~ +0.0006

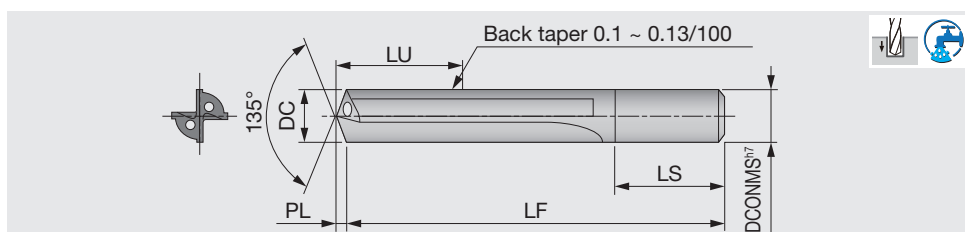
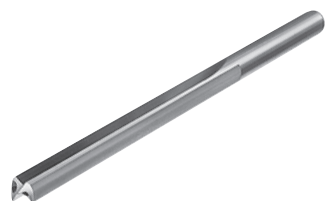
● : Line up

DC	Tool diameter tolerance
0.2188 ≤ DC	+0.0008 ~ +0.0004
0.2500 < DC ≤ 0.3438	+0.0010 ~ +0.0006

● : Line up

FDC-S L/D=5

Solid drill for cast iron and aluminum alloy, with straight flute, 135° point angle, with coolant hole, L/D = 5, ø5.1 - ø16 mm



Metric	DC	G1F	DCONMS	LU	LS	LF	PL
FDC0510S	5.1	●	6	45.1	40	85	1.06
FDC0600S	6	●	6	49.2	40	90	1.24
FDC0840S	8.4	●	9	69.7	44	115	1.74
FDC0860S	8.6	●	9	73.8	44	120	1.78
FDC1050S	10.5	●	11	86.2	46	140	2.17
FDC1100S	11	●	11	90.3	46	140	2.28
FDC1150S	11.5	●	12	94.4	48	150	2.38
FDC1200S	12	●	12	98.5	48	150	2.49

Metric	DC	G1F	DCONMS	LU	LS	LF	PL
FDC1250S	12.5	●	13	102.6	50	160	2.59
FDC1300S	13	●	13	106.7	50	160	2.69
FDC1350S	13.5	●	14	110.8	52	170	2.8
FDC1400S	14	●	14	114.9	52	170	2.9
FDC1450S	14.5	●	15	119	54	180	3
FDC1500S	15	●	15	123.1	54	180	3.11
FDC1550S	15.5	●	16	127.2	56	190	3.21
FDC1600S	16	●	16	131.3	56	190	3.31

DC	Tolerance (mm)
5 ≤ DC ≤ 6	+0.02 ~ +0.01
6 < DC ≤ 16	+0.025 ~ +0.015

● : Line up

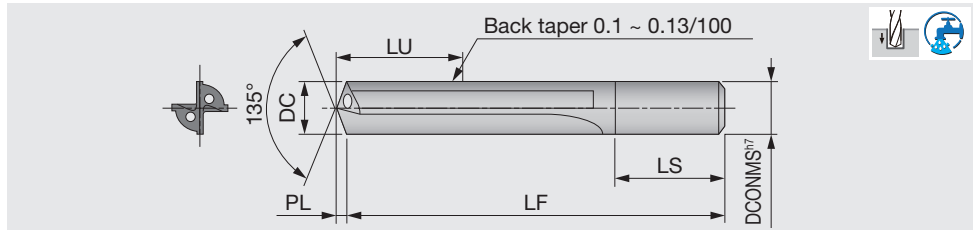
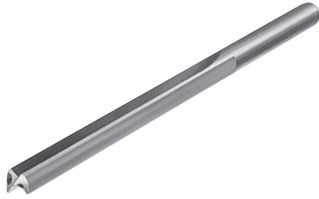
Coolant

- Supply coolant through the inside of a drill.
- The coolant pressure should be 0.5 to 1 MPa.
- Use water-soluble coolant containing a large amount of extreme pressure additive.

Reference pages: Standard cutting conditions → J061

FDC-L L/D=8

Solid drill for cast iron and aluminum alloy, with straight flute, 135° point angle, with coolant hole, L/D = 8, $\phi 5 - \phi 10$ mm



Metric	DC	G1F	DCONMS	LU	LS	LF	PL
FDC0500L	5	●	5	56	38	95	1.04
FDC0550L	5.5	●	6	62.1	40	105	1.14
FDC0600L	6	●	6	67.2	40	110	1.24
FDC0620L	6.2	●	7	73.3	40	115	1.28
FDC0650L	6.5	●	7	73.4	40	115	1.35
FDC0680L	6.8	●	7	78.4	40	120	1.41
FDC0700L	7	●	7	78.5	40	120	1.45
FDC0750L	7.5	●	8	84.6	42	125	1.55

Metric	DC	G1F	DCONMS	LU	LS	LF	PL
FDC0780L	7.8	●	8	89.6	42	130	1.62
FDC0800L	8	●	8	89.7	42	130	1.66
FDC0850L	8.5	●	9	95.8	44	140	1.76
FDC0860L	8.6	●	9	100.8	44	145	1.78
FDC0900L	9	●	9	100.9	44	145	1.86
FDC0950L	9.5	●	10	107	44	150	1.97
FDC1000L	10	●	10	112.1	46	160	2.07

● : Line up

DC	Tolerance (mm)
5 ≤ DC ≤ 6	+0.02 ~ +0.01
6 < DC < 10	+0.025 ~ +0.015

Coolant

- Supply coolant through the inside of a drill.
- The coolant pressure should be 0.5 to 1 MPa.
- Use water-soluble coolant containing a large amount of extreme pressure additive.

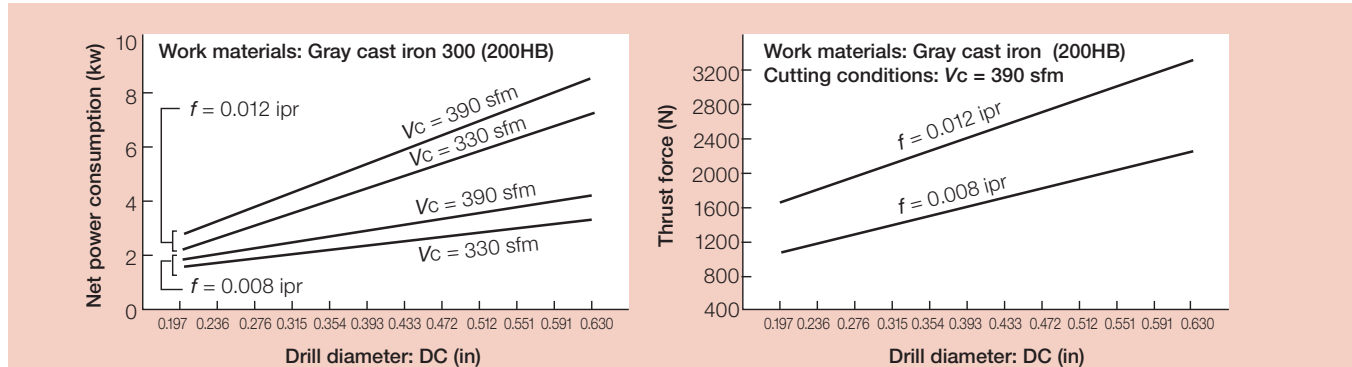
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed: Vc (sfm)			Feed: f (ipr)		
		$\phi 5 \sim \phi 8$	$\phi 8 \sim \phi 12$	$\phi 12 \sim \phi 16$	$\phi 5 \sim \phi 8$	$\phi 8 \sim \phi 12$	$\phi 12 \sim \phi 16$
		$\phi 0.1969 - \phi 0.3150$	$\phi 0.3150 - \phi 0.4724$	$\phi 0.4724 - \phi 0.6300$	$\phi 0.1969 - \phi 0.3150$	$\phi 0.3150 - \phi 0.4724$	$\phi 0.4724 - \phi 0.6300$
N	Aluminum alloys	330 - 460	390 - 520	460 - 590	0.004 - 0.010	0.006 - 0.012	0.006 - 0.012
K	Gray cast irons	300 - 390	360 - 460	430 - 520	0.004 - 0.010	0.006 - 0.012	0.008 - 0.012
	Ductile cast irons	200 - 260	230 - 300	230 - 330	0.004 - 0.010	0.006 - 0.012	0.006 - 0.012

Caution: When changing a tool, completely clean the chips which may be clogged in the collet or adapter.

Note: The cutting conditions shown above may vary depending on the work material, coolant dilution ratio and coolant supply pressure used.

CUTTING PERFORMANCE

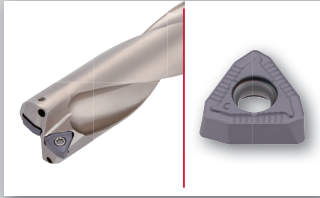




TungSix-Drill

Indexable drill

Inch Metric



TUNGSIX-DRILL

Indexable drill with 6-corner inserts for high productivity



ø0.750" - ø2.000" / L/D = 2, 3, 4

J006,
J064 - J073



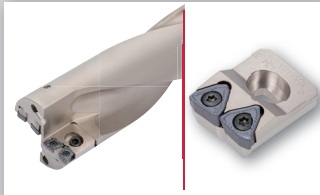
TUNGDRILLTWISTED

Indexable drill with 4-corner inserts for various drilling applications



ø0.500" - ø2.125" / L/D = 2, 3, 4, 5

J006,
J074 - J084



TUNGDRILLBIG

Large diameter drill with cartridges for TungSix-Drill and TungDrillTwisted inserts



ø2.250" - ø3.150" / L/D = 2.5

J006,
J085 - J091





Indexable drill

6 cornered insert with high performance and high economical solution

Double-sided insert with 6-cutting edges

TungSixDrill is the first indexable drill in the world to adapt double-sided inserts with 6-cutting edges, reducing the insert consumption for the customers.

One insert type for both the central and peripheral pockets

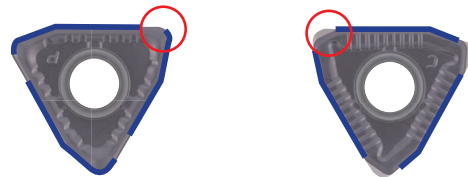
One side has the central edge and other side has the peripheral edge.

Low cutting force even with double sided insert

The cutting forces are almost equal to competitors positive single sided inserts, especially at higher feed rates, thus complementing higher productivity.

Peripheral side

Central side



Optimal distance between each cutting edge

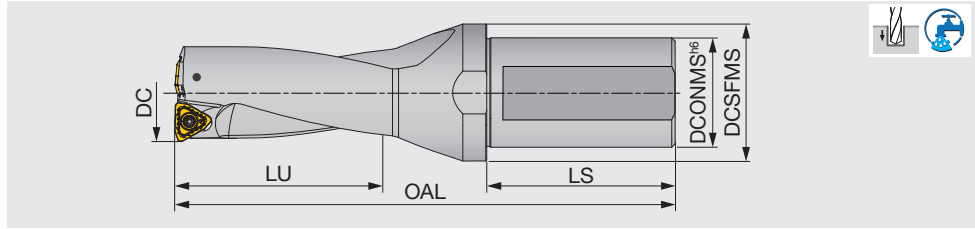
Prevents the overlapping of damaged edges



TUNGSIX-DRILL

TDSU-F L/D=2

L/D = 2, flat, tool diameter $\phi 0.812'' - \phi 1.062''$



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset** (radial)	WT(lb)	Insert
TDSU-0750FS-02***	0.750	1.000	1.457	1.531	2.280	4.897	0.004	0.80	WWMU05X205R-D*
TDSU0812F-2	0.812	1.000	1.457	1.657	2.205	4.697	0.031	0.77	WWMU05X205R-D*
TDSU0875F-2	0.875	1.000	1.457	1.782	2.205	4.862	0.020	0.82	WWMU05X205R-D*
TDSU0937F-2	0.937	1.000	1.457	1.911	2.205	5.028	0.047	0.86	WWMU060306R-D*
TDSU1000F-2	1.000	1.000	1.457	2.035	2.205	5.197	0.026	0.92	WWMU060306R-D*
TDSU1062F-2	1.062	1.250	1.575	2.161	2.342	5.500	0.012	1.32	WWMU060306R-D*

** For offsetting on lathe *** Drill with side port

SPARE PARTS

Designation	Clamping screw	Wrench
TDSU-0750FS-02	CSPB-2.2	IP-7D
TDSU0812... - TDSU0875...	CSPB-2.2	IP-7D
TDSU0937... - TDSU1062...	CSPB-2.5	IP-8D

Tool diameter	Tool diameter tolerance	Hole diameter tolerance*
$\phi 0.750 - \phi 1.062$	+ 0.008 / 0	+ 0.014 / 0

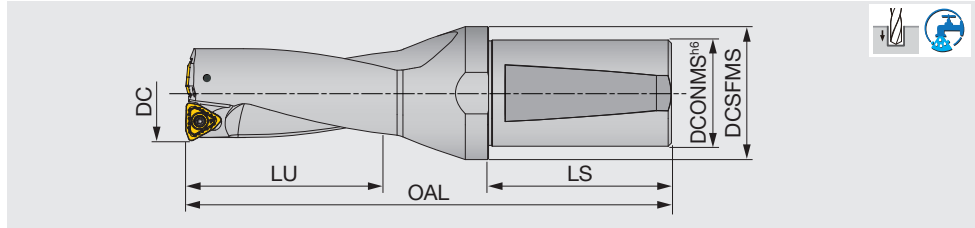
*Just for reference

Recommended clamping torque:
CSPB-2.2 = 0.74 lb-ft, CSPB-2.5 = 0.96 lb-ft

TUNGSIX-DRILL

TDSU L/D=2

L/D = 2, Whistle notch, tool diameter $\phi 1.125'' - \phi 2.000''$



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset** (radial)	WT(lb)	Insert
TDSU1125-02	1.125	1.250	1.575	2.250	2.280	5.892	0.043	1.5	WWMU08X408R-D*
TDSU1187-02	1.187	1.250	1.575	2.374	2.280	6.079	0.019	1.6	WWMU08X408R-D*
TDSU1250-02	1.250	1.250	1.575	2.500	2.280	6.267	0.008	1.7	WWMU08X408R-D*
TDSU1312-02	1.312	1.500	1.969	2.624	2.688	6.862	0.055	2.5	WWMU09X510R-D*
TDSU1375-02	1.375	1.500	1.969	2.750	2.688	7.049	0.047	2.6	WWMU09X510R-D*
TDSU1437-02	1.437	1.500	1.969	2.874	2.688	7.237	0.027	2.8	WWMU09X510R-D*
TDSU1500-02	1.500	1.500	1.969	3.000	2.688	7.424	0.015	2.9	WWMU09X510R-D*
TDSU1562-02	1.562	1.500	1.969	3.124	2.688	7.612	0.074	3.0	WWMU11X512R-D*
TDSU1625-02	1.625	1.500	2.165	3.250	2.688	7.799	0.059	3.3	WWMU11X512R-D*
TDSU1687-02	1.687	1.500	2.165	3.374	2.688	7.987	0.051	3.5	WWMU11X512R-D*
TDSU1750-02	1.750	1.500	2.165	3.500	2.688	8.174	0.027	3.7	WWMU11X512R-D*
TDSU1812-02	1.812	1.500	2.165	3.624	2.688	8.362	0.015	3.9	WWMU11X512R-D*
TDSU1875-02	1.875	1.500	2.165	3.750	2.688	8.549	0.094	4.2	WWMU13X512R-D*
TDSU1937-02	1.937	1.500	2.165	3.874	2.688	8.737	0.078	4.3	WWMU13X512R-D*
TDSU2000-02	2.000	1.500	2.165	4.000	2.688	8.924	0.067	4.6	WWMU13X512R-D*

** For offsetting on lathe

SPARE PARTS

Designation	Clamping screw	Wrench
TDSU1125... - TDSU1250...	CSTB-3	T-9D
TDSU1312... - TDSU1500...	CSTB-4	T-15D
TDSU1562... - TDSU2000...	CSTB-5	T-20D

Tool diameter	Tool diameter tolerance	Hole diameter tolerance*
$\phi 1.125 - \phi 2.000$	+ 0.004	+ 0.008 / -0.004

*Just for reference

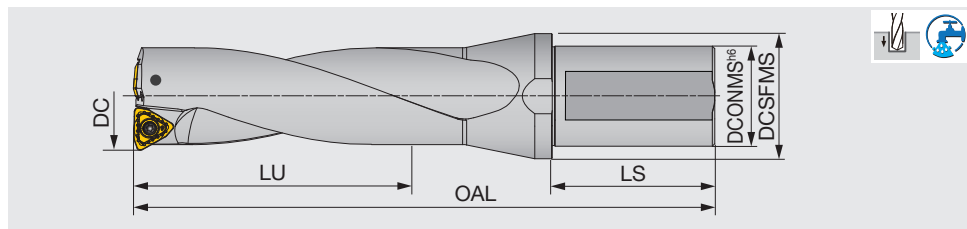
Recommended clamping torque:
CSTB-3 = 1.70 lb-ft, CSTB-4 = 2.58 lb-ft, CSTB-5 = 3.69 lb-ft

Reference pages: Inserts → **J068**, Standard cutting conditions → **J070 - J071**

TUNGSIX-DRILL

TDSU-F L/D=3

L/D = 3, flat, tool diameter $\varnothing 0.812'' - \varnothing 1.062''$



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset** (radial)	WT(lb)	Insert
TDSU-0750FS-03***	0.750	1.000	1.457	2.281	2.280	5.653	0.004	0.84	WWMU05X205R-D*
TDSU0812F-3	0.812	1.000	1.457	2.470	2.205	5.547	0.031	0.84	WWMU05X205R-D*
TDSU0875F-3	0.875	1.000	1.457	2.657	2.205	5.697	0.020	0.87	WWMU05X205R-D*
TDSU0937F-3	0.937	1.000	1.457	2.848	2.205	5.929	0.047	0.93	WWMU060306R-D*
TDSU1000F-3	1.000	1.000	1.457	3.035	2.205	6.157	0.026	1.01	WWMU060306R-D*
TDSU1062F-3	1.062	1.250	1.575	3.221	2.342	6.524	0.012	1.43	WWMU060306R-D*

** For offsetting on lathe *** Drill with side port

SPARE PARTS

Designation	Clamping screw	Wrench
TDSU-0750FS-03	CSPB-2.2	IP-7D
TDSU0812... - TDSU0875...	CSPB-2.2	IP-7D
TDSU0937... - TDSU1062...	CSPB-2.5	IP-8D

Tool diameter	Tool diameter tolerance	Hole diameter tolerance*
$\varnothing 0.750 - \varnothing 1.062$	+ 0.008 / 0	+ 0.014 / 0

*Just for reference

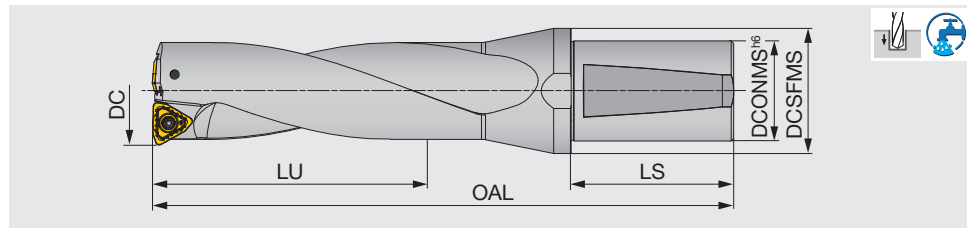
Recommended clamping torque:

CSPB-2.2 = 0.74 lb-ft, CSPB-2.5 = 2.87 lb-ft

TUNGSIX-DRILL

TDSU L/D=3

L/D = 3, Whistle notch, tool diameter $\varnothing 1.125'' - \varnothing 2.000''$



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset** (radial)	WT(lb)	Insert
TDSU1125-03	1.125	1.250	1.575	3.375	2.280	7.017	0.043	1.7	WWMU08X408R-D*
TDSU1187-03	1.187	1.250	1.575	3.561	2.280	7.267	0.019	1.8	WWMU08X408R-D*
TDSU1250-03	1.250	1.250	1.575	3.750	2.280	7.517	0.008	1.9	WWMU08X408R-D*
TDSU1312-03	1.312	1.500	1.969	3.936	2.688	8.174	0.055	2.8	WWMU09X510R-D*
TDSU1375-03	1.375	1.500	1.969	4.125	2.688	8.424	0.047	2.9	WWMU09X510R-D*
TDSU1437-03	1.437	1.500	1.969	4.311	2.688	8.674	0.027	3.1	WWMU09X510R-D*
TDSU1500-03	1.500	1.500	1.969	4.500	2.688	8.924	0.015	3.3	WWMU09X510R-D*
TDSU1562-03	1.562	1.500	1.969	4.686	2.688	9.174	0.074	3.4	WWMU11X512R-D*
TDSU1625-03	1.625	1.500	2.165	4.875	2.688	9.424	0.059	3.8	WWMU11X512R-D*
TDSU1687-03	1.687	1.500	2.165	5.061	2.688	9.674	0.051	4.1	WWMU11X512R-D*
TDSU1750-03	1.750	1.500	2.165	5.250	2.688	9.924	0.027	4.3	WWMU11X512R-D*
TDSU1812-03	1.812	1.500	2.165	5.436	2.688	10.174	0.015	4.6	WWMU11X512R-D*
TDSU1875-03	1.875	1.500	2.165	5.625	2.688	10.424	0.094	4.9	WWMU13X512R-D*
TDSU1937-03	1.937	1.500	2.165	5.811	2.688	10.674	0.078	5.1	WWMU13X512R-D*
TDSU2000-03	2.000	1.500	2.165	6.000	2.688	10.924	0.067	5.5	WWMU13X512R-D*

** For offsetting on lathe

SPARE PARTS

Designation	Clamping screw	Wrench
TDSU1125... - TDSU1250...	CSTB-3	T-9D
TDSU1312... - TDSU1500...	CSTB-4	T-15D
TDSU1562... - TDSU2000...	CSTB-5	T-20D

Tool diameter	Tool diameter tolerance	Hole diameter tolerance*
$\varnothing 1.125 - \varnothing 2.000$	+ 0.004	+ 0.008 / -0.004

*Just for reference

Recommended clamping torque:

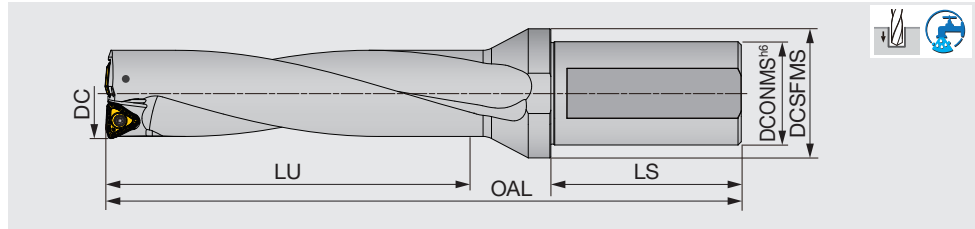
CSTB-3 = 1.70 lb-ft, CSTB-4 = 2.58 lb-ft, CSTB-5 = 3.69 lb-ft

Reference pages: Inserts → **J068**, Standard cutting conditions → **J070 - J071**

TUNGSIK-DRILL

TDSU-F L/D=4

L/D = 4, flat, tool diameter $\varnothing 0.812''$ - $\varnothing 2.000''$



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset** (radial)	WT(lb)	Insert
TDSU-0750FS-04***	0.750	1.000	1.457	3.031	2.280	6.401	0.004	0.88	WWMU05X205R-D*
TDSU0812F-4	0.812	1.000	1.457	3.283	2.343	6.457	0.031	0.95	WWMU05X205R-D*
TDSU0875F-4	0.875	1.000	1.457	3.531	2.343	6.708	0.016	1.01	WWMU05X205R-D*
TDSU0937F-4	0.938	1.000	1.457	3.787	2.343	7.003	0.047	1.10	WWMU060306R-D*
TDSU1000F-4	1.000	1.000	1.457	4.035	2.343	7.294	0.024	1.22	WWMU060306R-D*
TDSU1062F-4	1.063	1.250	1.575	4.287	2.343	7.585	0.012	1.64	WWMU060306R-D*
TDSU1125F-4	1.125	1.250	1.575	4.543	2.343	7.894	0.043	1.70	WWMU08X408R-D*
TDSU1187F-4	1.187	1.250	1.575	4.791	2.343	8.174	0.019	1.82	WWMU08X408R-D*
TDSU1250F-4	1.250	1.250	1.575	5.043	2.343	8.469	0.008	1.97	WWMU08X408R-D*
TDSU1312F-4	1.312	1.500	1.969	5.299	2.736	9.161	0.055	2.85	WWMU09X510R-D*
TDSU1375F-4	1.375	1.500	1.969	5.551	2.736	9.450	0.047	2.95	WWMU09X510R-D*
TDSU1437F-4	1.437	1.500	1.969	5.799	2.736	9.742	0.027	3.19	WWMU09X510R-D*
TDSU1500F-4	1.500	1.500	1.969	6.051	2.736	10.033	0.015	3.37	WWMU09X510R-D*
TDSU1562F-4	1.562	1.500	1.969	6.307	2.736	10.352	0.074	3.57	WWMU11X512R-D*
TDSU1625F-4	1.625	1.500	2.165	6.559	2.736	10.641	0.059	3.86	WWMU11X512R-D*
TDSU1687F-4	1.687	1.500	2.165	6.807	2.736	10.932	0.051	4.16	WWMU11X512R-D*
TDSU1750F-4	1.750	1.500	2.165	7.059	2.736	11.223	0.027	4.42	WWMU11X512R-D*
TDSU1812F-4	1.812	1.500	2.165	7.307	2.736	11.517	0.015	4.70	WWMU11X512R-D*
TDSU1875F-4	1.875	1.500	2.165	7.571	2.736	11.813	0.094	5.08	WWMU13X512R-D*
TDSU1937F-4	1.937	1.500	2.165	7.819	2.736	12.105	0.078	5.30	WWMU13X512R-D*
TDSU2000F-4	2.000	1.500	2.165	8.071	2.736	12.396	0.067	5.75	WWMU13X512R-D*

** For offsetting on lathe *** Drill with side port

SPARE PARTS

Designation	Clamping screw	Wrench
TDSU-0750FS-04	CSPB-2.2	IP-7D
TDSU0812... - TDSU0875...	CSPB-2.2	IP-7D
TDSU0937... - TDSU1062...	CSPB-2.5	IP-8D
TDSU1125... - TDSU1250...	CSTB-3	T-9D
TDSU1312... - TDSU1500...	CSTB-4	T-15D
TDSU1562... - TDSU2000...	CSTB-5	T-20D

Recommended clamping torque: CSPB-2.2 = 0.74 lb-ft, CSPB-2.5 = 0.96 lb-ft, CSTB-3 = 1.70 lb-ft, CSTB-4 = 2.58 lb-ft, CSTB-5 = 3.69 lb-ft

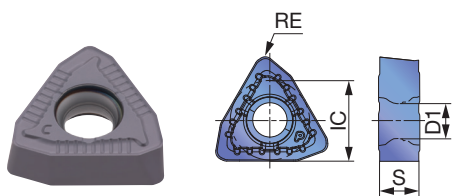
Tool diameter	Tool diameter tolerance	Hole diameter tolerance*
$\varnothing 0.750 - \varnothing 2.000$	+ 0.008 / 0	+ 0.014 / 0

*Just for reference

Reference pages: Inserts → **J068**, Standard cutting conditions → **J070 - J071**

INSERT

DJ



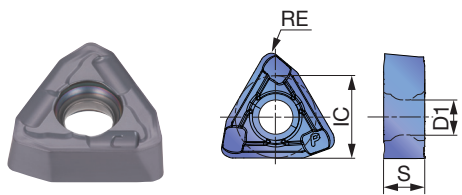
P	Steel	☆	★						
M	Stainless	★	☆						
K	Cast iron	☆	★						
N	Non-ferrous	☆	☆						
S	Superalloys	★	☆						
H	Hard materials	★	☆						

★ : First choice
 ☆ : Second choice

Designation	IC (in)	S (in)	Coated		D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH3135	AH9030				
WWMU05X205R-DJ	0.228	0.094	●	●	0.098	0.020	0.812	0.875
WWMU060306R-DJ	0.264	0.114	●	●	0.118	0.024	0.937	1.062
WWMU08X408R-DJ	0.315	0.154	●	●	0.134	0.031	1.125	1.250
WWMU09X510R-DJ	0.382	0.193	●	●	0.173	0.039	1.312	1.500
WWMU11X512R-DJ	0.445	0.224	●	●	0.217	0.047	1.562	1.812
WWMU13X512R-DJ	0.512	0.224	●	●	0.217	0.047	1.875	2.000

● : Line up

DS



P	Steel	★						
M	Stainless	★						
K	Cast iron							
N	Non-ferrous	★						
S	Superalloys	★						
H	Hard materials							

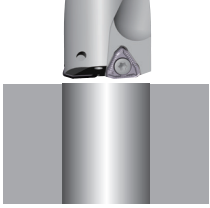
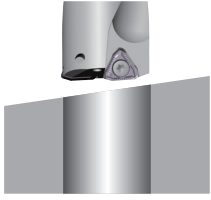
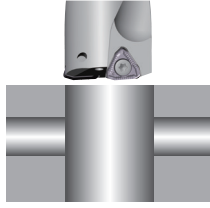

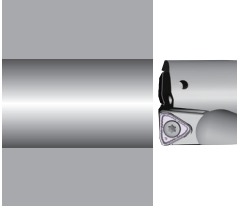
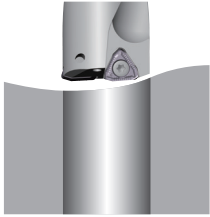
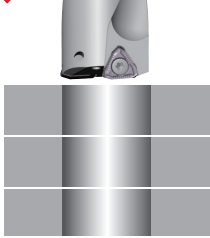

★ : First choice
 ☆ : Second choice

Designation	IC (in)	S (in)	Coated		D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH6030					
WWMU05X205R-DS	0.228	0.094	●		0.098	0.020	0.812	0.925
WWMU060306R-DS	0.264	0.114	●		0.118	0.024	0.941	1.063
WWMU08X408R-DS	0.315	0.154	●		0.134	0.031	1.125	1.250
WWMU09X510R-DS	0.382	0.193	●		0.173	0.039	1.312	1.500
WWMU11X512R-DS	0.445	0.224	●		0.217	0.047	1.562	1.812
WWMU13X512R-DS	0.512	0.224	●		0.217	0.047	1.875	2.000

● : Line up

APPLICATION RANGE

*In case of Interrupted cutting, feed should be decreased.

Feed f (ipr)	Refer to J060 - J061 page	0.002	0.002	0.002
Application range	OK Plane surface 	OK Slant surface 	OK Cross hole 	OK Plunging 
Feed f (ipr)	0.004	0.002	Disapprove	Disapprove
Application range	OK Boring 	OK Round surface 	X Stacked plates 	X Back boring 

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Endmill
Drilling Tool
Tooling System
User's Guide
Index



STANDARD CUTTING CONDITIONS



ISO	Workpiece materials	Priority	Chip breakers	Grade	Cutting speed Vc (sfm)
P	Low carbon steels (C < 0.3) 1018, 1020, 1026, etc.	First choice	DS	AH6030	525 - 820
		Wear resistance	DJ	AH9030	525 - 1050
	Carbon steels (C > 0.3) 1045, 1055, etc.	First choice	DJ	AH9030	262 - 820
		Fracture resistance	DJ	AH3135	262 - 820
	Low alloy steels 5120, etc.	First choice	DS	AH6030	525 - 820
		Wear resistance	DJ	AH9030	525 - 820
Alloy steels 4140, 8620, etc.	First choice	DJ	AH9030	262 - 656	
	Fracture resistance	DJ	AH3135	262 - 656	
M	Stainless steels (Austenitic) 304SS, 316SS, etc.	First choice	DS	AH6030	328 - 656
		Fracture resistance	DJ	AH3135	328 - 656
	Stainless steels (Martensitic and ferritic) 430SS, 416SS, etc.	First choice	DS	AH6030	328 - 656
		Fracture resistance	DJ	AH3135	328 - 656
	Stainless steels (Precipitation hardening) 17-4 PH, etc.	First choice	DS	AH6030	262 - 394
		Fracture resistance	DJ	AH3135	262 - 394
K	Gray cast irons Class 25, Class 30, etc.	First choice	DJ	AH9030	262 - 820
		Fracture resistance	DJ	AH3135	262 - 656
	Ductile cast irons 60-40-18, 60-55-06, etc.	First choice	DJ	AH9030	262 - 656
		Fracture resistance	DJ	AH3135	262 - 492
N	Aluminum alloy	First choice	DS	AH6030	656 - 1312
S	Heat resistant alloy Inconel718, etc.	First choice	DS	AH6030	66 - 197
		Fracture resistance	DJ	AH3135	66 - 197
	Titanium alloys Ti-6Al-4V, etc.	First choice	DS	AH6030	131 - 394
		Fracture resistance	DJ	AH3135	131 - 394
H	Hardened steel Over 40HRC	First choice	DJ	AH9030	164 - 328
		Fracture resistance	DJ	AH3135	131 - 262

Feed: *f* (ipr)

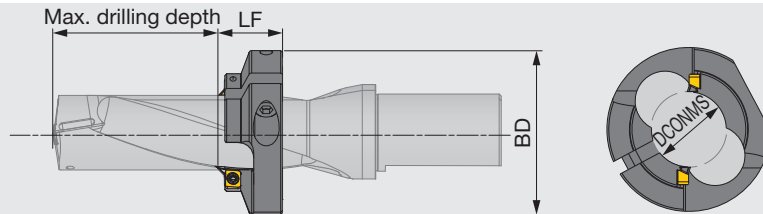
L/D = 2, 3		L/D = 4			
DC (in)		DC (in)			
ø0.787 - ø1.083	ø1.102 - ø1.496	ø1.535 - ø2.126	ø0.787 - ø1.063	ø1.102 - ø1.496	ø1.353 - ø2.126
0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0024 - 0.0059	0.0024 - 0.0063	0.0031 - 0.0071	0.0024 - 0.0059	0.0024 - 0.0059	0.0031 - 0.0067
0.0016 - 0.0047	0.0016 - 0.0051	0.0016 - 0.0059	0.0016 - 0.0047	0.0016 - 0.0051	0.0016 - 0.0059
0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055
0.0024 - 0.0059	0.0024 - 0.0063	0.0031 - 0.0071	0.0024 - 0.0059	0.0024 - 0.0059	0.0031 - 0.0067
0.0016 - 0.0047	0.0016 - 0.0051	0.0016 - 0.0059	0.0016 - 0.0047	0.0016 - 0.0051	0.0016 - 0.0059
0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0024 - 0.0059	0.0024 - 0.0071	0.0031 - 0.0079	0.0024 - 0.0059	0.0024 - 0.0063	0.0031 - 0.0071
0.0024 - 0.0051	0.0024 - 0.0063	0.0031 - 0.0071	0.0024 - 0.0051	0.0024 - 0.0063	0.0031 - 0.0071
0.0024 - 0.0059	0.0024 - 0.0071	0.0031 - 0.0079	0.0024 - 0.0059	0.0024 - 0.0063	0.0031 - 0.0071
0.0024 - 0.0051	0.0024 - 0.0063	0.0031 - 0.0071	0.0024 - 0.0051	0.0024 - 0.0063	0.0031 - 0.0071
0.0039 - 0.0071	0.0039 - 0.0079	0.0039 - 0.0098	0.0039 - 0.0071	0.0039 - 0.0079	0.0039 - 0.0079
0.0039 - 0.0071	0.0039 - 0.0079	0.0039 - 0.0098	0.0039 - 0.0071	0.0039 - 0.0079	0.0039 - 0.0079
0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0024 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055
0.0024 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055
0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031
0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index







TDXCF chamfering tool

Chamfering tool for TungDrillTwisted and TungSix-Drill



Inch	DCONMS	BD	LF	Application drill	Max. drilling depth		
					L/D = 2	L/D = 3	L/D = 4
TDXCF210L25	0.791	1.929	0.984	TDSU0812...	0.700	1.512	-
TDXCF230L25	0.870	1.929	0.984	TDSU0875...	0.825	1.700	-
TDXCF240L25	0.909	1.929	0.984	TDSU0937...	0.950	1.887	-
TDXCF260L30	0.982	2.520	1.181	TDSU1000...	0.878	1.878	-
TDXCF270L30	1.020	2.520	1.181	TDSU1062...	1.003	2.065	-
TDXCF290L30	1.098	2.520	1.181	TDSU1125...	-	-	3.486
TDXCF300L30	1.138	2.520	1.181	TDSU1187...	-	-	3.726
TDXCF320L30	1.217	2.520	1.181	TDSU1250...	-	-	3.976
TDXCF340L30	1.291	2.520	1.181	TDSU1312...	-	-	4.226
TDXCF350L30	1.331	2.520	1.181	TDSU1375...	-	-	4.476
TDXCF370L30	1.409	3.346	1.181	TDSU1437...	-	-	4.726
TDXCF380L30	1.449	3.346	1.181	TDSU1500...	-	-	4.977
TDXCF400L30	1.528	3.346	1.181	TDSU1562...	-	-	5.245
TDXCF410L30	1.567	3.346	1.181	TDSU1625...	-	-	5.496
TDXCF430L30	1.638	3.346	1.181	TDSU1687...	-	-	5.746
TDXCF450L30	1.717	3.346	1.181	TDSU1750...	-	-	5.998
TDXCF460L30	1.756	3.346	1.181	TDSU1812...	-	-	6.248
TDXCF480L30	1.835	3.346	1.181	TDSU1875...	-	-	6.496
TDXCF500L30	1.913	3.346	1.181	TDSU1937...	-	-	6.746
TDXCF510L30	1.953	3.346	1.181	TDSU2000...	-	-	6.996

SPARE PARTS

Designation	 Screw for insert	 Screw for ring	 Wrench for insert	 Wrench for ring
TDXCF210 - 250	CSPB-4S	CM6X16	IP-15D	P-5
TDXCF260 - 540	CSPB-4S	CM8X1.25X20-A	IP-15D	P-6

Recommended clamping torque: CSPB-4S = 2.58 lb-ft

INSERT

XHGX-45A



P	Steel	★								
M	Stainless	★								
K	Cast iron	★								
N	Non-ferrous	☆								
S	Superalloys	★								
H	Hard materials	★								

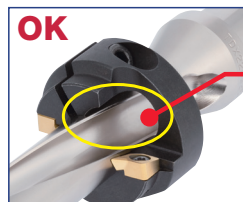
Designation	PNA	C (in)	Coated										
			GHT 30										
XHGX090700R-45A	45°	0.100	●										

★ : First choice
☆ : Second choice

● : Line up

Caution in mounting the chamfering tool on the drill body

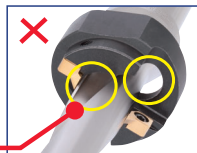
- ① Place the ring on the drill body and match the positions of flutes on drill and ring. Temporarily clamp the ring with the ring screw tightened lightly.
- ② Place the inserts, and tighten the insert screw lightly.
- ③ Adjust the ring position with a presetter, height gauge, or Vernier caliper, and securely tighten the ring screw, then the insert screw.



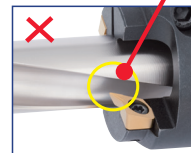
Match the positions of flutes on drill and ring.

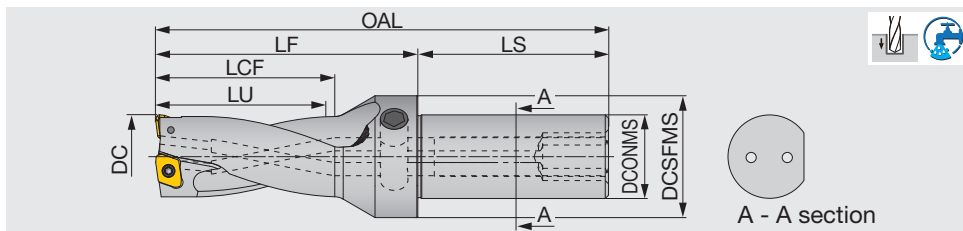
(Inserts will be automatically set to the right positions.)

The cutting edge of the insert is in the ring flute.



The flutes on drill and ring do not match.



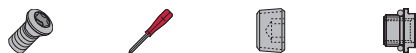


Inch	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset** (radial)	WT(lb)	Insert
TDXU-0500FS-02	0.500	0.750	1.250	1.015	1.015	1.130	2.019	4.034	0.030	0.44	XPMT040104R-D*
TDXU-0531FS-02	0.531	0.750	1.250	1.077	1.077	1.200	2.089	4.104	0.024	0.45	XPMT040104R-D*
TDXU-0562FS-02	0.562	0.750	1.250	1.139	1.139	1.260	2.152	4.167	0.018	0.45	XPMT040104R-D*
TDXU-0625FS-02	0.625	0.750	1.250	1.271	1.271	1.390	2.283	4.304	0.026	0.46	XPMT050204R-D*
TDXU-0687FS-02	0.687	1.000	1.457	1.393	1.393	1.510	2.471	4.770	0.048	0.79	XPMT06X308R-D*
TDXU-0750FS-02	0.75	1.000	1.457	1.519	1.519	1.640	2.591	4.890	0.027	0.82	XPMT06X308R-D*
TDXU-0812FS-02	0.812	1.000	1.457	1.643	1.643	1.760	2.729	5.028	0.015	0.85	XPMT06X308R-D*
TDXU-0875FS-02	0.875	1.000	1.457	1.773	1.773	1.890	2.849	5.152	0.045	0.88	XPMT07H308R-D*
TDXU-0937FS-02	0.937	1.000	1.457	1.897	1.897	2.020	2.991	5.294	0.029	0.93	XPMT07H308R-D*
TDXU-1000FS-02	1.000	1.000	1.457	2.023	2.023	2.140	3.111	5.414	0.013	0.96	XPMT07H308R-D*
TDXU-1062FS-02	1.062	1.250	1.575	2.153	2.153	2.270	3.401	5.710	0.059	1.3	XPMT08T308R-D*
TDXU-1125FS-02	1.125	1.250	1.575	2.279	2.279	2.400	3.541	5.850	0.043	1.38	XPMT08T308R-D*
TDXU-1187FS-02	1.187	1.250	1.575	2.403	2.403	2.520	3.658	5.967	0.026	1.45	XPMT08T308R-D*
TDXU-1250FS-02	1.250	1.250	1.575	2.529	2.529	2.650	3.783	6.092	0.010	1.52	XPMT08T308R-D*
TDXU-1312FS-02	1.312	1.500	1.969	2.667	2.667	2.790	4.013	6.744	0.088	2.25	XPMT110412R-D*
TDXU-1375FS-02	1.375	1.500	1.969	2.793	2.793	2.910	4.155	6.886	0.072	2.32	XPMT110412R-D*
TDXU-1437FS-02	1.437	1.500	1.969	2.917	2.917	3.040	4.272	7.003	0.055	2.34	XPMT110412R-D*
TDXU-1500FS-02	1.500	1.500	1.969	3.043	3.043	3.160	4.413	7.144	0.038	2.53	XPMT110412R-D*
TDXU-1562FS-02	1.562	1.500	1.969	3.167	3.167	3.290	4.553	7.284	0.022	2.54	XPMT110412R-D*
TDXU-1625FS-02	1.625	1.500	2.165	3.311	3.311	3.430	4.728	7.477	0.128	2.85	XPMT150512R-D*
TDXU-1687FS-02	1.687	1.500	2.165	3.435	3.435	3.550	4.868	7.617	0.115	3.02	XPMT150512R-D*
TDXU-1750FS-02	1.750	1.500	2.165	3.561	3.561	3.680	4.986	7.735	0.097	3.14	XPMT150512R-D*
TDXU-1812FS-02	1.812	1.500	2.165	3.685	3.685	3.810	5.128	7.877	0.082	3.3	XPMT150512R-D*
TDXU-1875FS-02	1.875	1.500	2.165	3.811	3.811	3.930	5.251	8.000	0.063	3.49	XPMT150512R-D*
TDXU-1937FS-02	1.937	1.500	2.165	3.935	3.935	4.050	5.385	8.134	0.049	3.61	XPMT150512R-D*
TDXU-2000FS-02	2.000	1.500	2.165	4.061	4.061	4.180	5.510	8.259	0.030	3.82	XPMT150512R-D*
TDXU-2125FS-02	2.125	1.500	2.165	4.311	4.311	4.430	5.790	8.548	-	4.24	XPMT150512R-D*

** For offsetting on lathe

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
$\varnothing 0.500 - \varnothing 0.625$	+ 0.004 / 0	+ 0.010 / 0
$\varnothing 0.687 - \varnothing 2.125$	+ 0.008 / 0	+ 0.012 / 0

SPARE PARTS

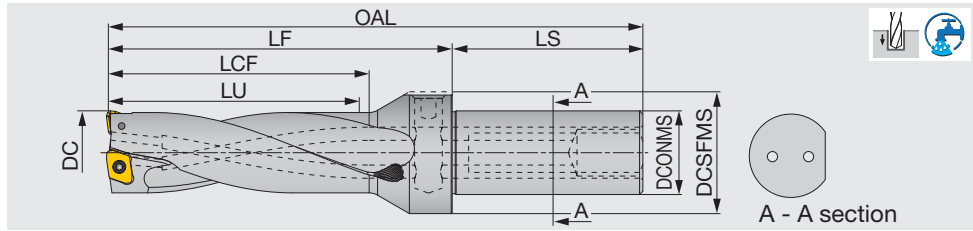


Designation	Clamping screw	Torx driver	Plug *	
			Side port	Rear port (Optional parts)
TDXU500 - TDXU0562	CSPB-2H	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU-0625FS-02	CSPB-2L043	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU0687 - TDXU0812	CSPB-2.2	IP-7D	NPTF1/8	(SL25IN)
TDXU0875 - TDXU1000	CSPB-2.5	IP-8D	NPTF1/8	(SL25IN)
TDXU1062 - TDXU1250	CSTB-3	T-9D	NPTF1/4	(SL32IN)
TDXU1312 - TDXU1562	CSTB-4	T-15D	NPTF1/4	(SL38IN)
TDXU1625 - TDXU2125	CSTB-5	T-20D	NPTF1/4	(SL38IN)

Recommended clamping torque: CSPB-2H/CSPB-2L043= 0.52 lb-ft, CSPB-2.2= 0.74 lb-ft, CSPB-2.5= 0.96 lb-ft, CSTB-3= 1.70 lb-ft, CSTB-4= 2.58 lb-ft, CSTB-5= 3.69 lb-ft

* Please see the dimensions on page **J078**.

Reference pages: Inserts → **J079 - J080**, Standard cutting conditions → **J081**



Inch	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset** (radial)	WT(lb)	Insert
TDXU-0500FS-03	0.500	0.750	1.250	1.515	2.000	1.630	2.519	4.534	0.030	0.45	XPMT040104R-D*
TDXU-0531FS-03	0.531	0.750	1.250	1.608	2.000	1.730	2.620	4.635	0.024	0.46	XPMT040104R-D*
TDXU-0562FS-03	0.562	0.750	1.250	1.701	2.000	1.820	2.715	4.730	0.018	0.47	XPMT040104R-D*
TDXU-0625FS-03	0.625	0.750	1.250	1.896	2.000	2.020	2.909	4.930	0.026	0.49	XPMT050204R-D*
TDXU-0687FS-03	0.687	1.000	1.457	2.080	2.280	2.200	3.159	5.458	0.048	0.83	XPMT06X308R-D*
TDXU-0750FS-03	0.750	1.000	1.457	2.269	2.280	2.390	3.341	5.640	0.027	0.87	XPMT06X308R-D*
TDXU-0812FS-03	0.812	1.000	1.457	2.455	2.280	2.580	3.542	5.841	0.015	0.91	XPMT06X308R-D*
TDXU-0875FS-03	0.875	1.000	1.457	2.648	2.280	2.770	3.724	6.027	0.045	0.95	XPMT07H308R-D*
TDXU-0937FS-03	0.937	1.000	1.457	2.834	2.280	2.960	3.929	6.232	0.029	1.03	XPMT07H308R-D*
TDXU-1000FS-03	1.000	1.000	1.457	3.023	2.280	3.210	4.111	6.314	0.013	1.05	XPMT07H308R-D*
TDXU-1062FS-03	1.062	1.250	1.575	3.215	2.280	3.340	4.464	6.773	0.059	1.43	XPMT08T308R-D*
TDXU-1125FS-03	1.125	1.250	1.575	3.404	2.280	3.520	4.666	6.975	0.043	1.52	XPMT08T308R-D*
TDXU-1187FS-03	1.187	1.250	1.575	3.590	2.280	3.710	4.845	7.154	0.026	1.62	XPMT08T308R-D*
TDXU-1250FS-03	1.250	1.250	1.575	3.779	2.280	3.900	5.033	7.342	0.010	1.74	XPMT08T308R-D*
TDXU-1312FS-03	1.312	1.500	1.969	3.979	2.688	4.100	5.325	8.056	0.088	2.51	XPMT110412R-D*
TDXU-1375FS-03	1.375	1.500	1.969	4.168	2.688	4.290	5.530	8.261	0.072	2.61	XPMT110412R-D*
TDXU-1437FS-03	1.437	1.500	1.969	4.354	2.688	4.470	5.709	8.440	0.055	2.63	XPMT110412R-D*
TDXU-1500FS-03	1.500	1.500	1.969	4.543	2.688	4.660	5.913	8.644	0.038	2.86	XPMT110412R-D*
TDXU-1562FS-03	1.562	1.500	1.969	4.729	2.688	4.850	6.115	8.846	0.022	2.92	XPMT110412R-D*
TDXU-1625FS-03	1.625	1.500	2.165	4.936	2.688	5.050	6.353	9.102	0.128	3.33	XPMT150512R-D*
TDXU-1687FS-03	1.687	1.500	2.165	5.122	2.688	5.240	6.555	9.304	0.115	3.57	XPMT150512R-D*
TDXU-1750FS-03	1.750	1.500	2.165	5.311	2.688	5.430	6.736	9.485	0.097	3.74	XPMT150512R-D*
TDXU-1812FS-03	1.812	1.500	2.165	5.497	2.688	5.620	6.941	9.690	0.082	3.95	XPMT150512R-D*
TDXU-1875FS-03	1.875	1.500	2.165	5.686	2.688	5.800	7.126	9.875	0.063	4.22	XPMT150512R-D*
TDXU-1937FS-03	1.937	1.500	2.165	5.872	2.688	5.990	7.322	10.071	0.049	4.41	XPMT150512R-D*
TDXU-2000FS-03	2.000	1.500	2.165	6.061	2.688	6.180	7.510	10.259	0.030	4.6	XPMT150512R-D*
TDXU-2125FS-03	2.125	1.500	2.165	6.436	2.688	6.550	7.915	10.664	-	5.31	XPMT150512R-D*

** For offsetting on lathe

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
$\phi 0.500 - \phi 0.625$	+ 0.004 / 0	+ 0.010 / 0
$\phi 0.687 - \phi 2.125$	+ 0.008 / 0	+ 0.012 / 0

SPARE PARTS



Designation	Clamping screw	Torx driver	Plug *	
			Side port	Rear port (Optional parts)
TDXU500 - TDXU0562	CSPB-2H	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU-0625FS-03	CSPB-2L043	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU0687-TDXU0812	CSPB-2.2	IP-7D	NPTF1/8	(SL25IN)
TDXU0875 - TDXU1000	CSPB-2.5	IP-8D	NPTF1/8	(SL25IN)
TDXU1062 - TDXU1250	CSTB-3	T-9D	NPTF1/4	(SL32IN)
TDXU1312 - TDXU1562	CSTB-4	T-15D	NPTF1/4	(SL38IN)
TDXU1625 - TDXU2125	CSTB-5	T-20D	NPTF1/4	(SL38IN)

Recommended clamping torque: CSPB-2H/CSPB-2L043= 0.52 lb-ft, CSPB-2.2= 0.74 lb-ft, CSPB-2.5= 0.96 lb-ft, CSTB-3= 1.70 lb-ft, CSTB-4= 2.58 lb-ft, CSTB-5= 3.69 lb-ft

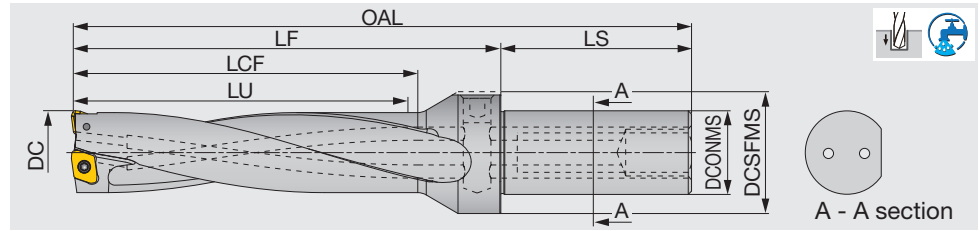
* Please see the dimensions on page **J078**.

Reference pages: Inserts → **J079 - J080**, Standard cutting conditions → **J081**



TDXU-FS L/D=4

L/D = 4, flat, tool diameter $\varnothing 0.500'' - \varnothing 2.125''$



Inch	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset** (radial)	WT(lb)	Insert
TDXU-0500FS-04	0.500	0.750	1.250	2.015	2.000	2.130	3.019	5.034	0.030	0.460	XPMT040104R-D*
TDXU-0531FS-04	0.531	0.750	1.250	2.139	2.000	2.260	3.151	5.166	0.024	0.480	XPMT040104R-D*
TDXU-0562FS-04	0.562	0.750	1.250	2.263	2.000	2.390	3.278	5.293	0.018	0.490	XPMT040104R-D*
TDXU-0625FS-04	0.625	0.750	1.250	2.521	2.000	2.640	3.535	5.556	0.026	0.520	XPMT050204R-D*
TDXU-0687FS-04	0.687	1.000	1.457	2.767	2.280	2.890	3.847	6.146	0.048	0.860	XPMT06X308R-D*
TDXU-0750FS-04	0.750	1.000	1.457	3.019	2.280	3.140	4.091	6.390	0.027	0.920	XPMT06X308R-D*
TDXU-0812FS-04	0.812	1.000	1.457	3.267	2.280	3.390	4.355	6.654	0.015	0.960	XPMT06X308R-D*
TDXU-0875FS-04	0.875	1.000	1.457	3.523	2.280	3.640	4.599	6.902	0.045	1.030	XPMT07H308R-D*
TDXU-0937FS-04	0.937	1.000	1.457	3.771	2.280	3.890	4.867	7.170	0.029	1.130	XPMT07H308R-D*
TDXU-1000FS-04	1.000	1.000	1.457	4.023	2.280	4.140	5.111	7.414	0.013	1.140	XPMT07H308R-D*
TDXU-1062FS-04	1.062	1.250	1.575	4.277	2.280	4.400	5.527	7.836	0.059	1.560	XPMT08T308R-D*
TDXU-1125FS-04	1.125	1.250	1.575	4.529	2.280	4.650	5.791	8.100	0.043	1.660	XPMT08T308R-D*
TDXU-1187FS-04	1.187	1.250	1.575	4.777	2.280	4.900	6.032	8.341	0.026	1.800	XPMT08T308R-D*
TDXU-1250FS-04	1.250	1.250	1.575	5.029	2.280	5.150	6.283	8.592	0.010	1.950	XPMT08T308R-D*
TDXU-1312FS-04	1.312	1.500	1.969	5.291	2.688	5.410	6.637	9.368	0.088	2.770	XPMT110412R-D*
TDXU-1375FS-04	1.375	1.500	1.969	5.543	2.688	5.660	6.905	9.636	0.072	2.900	XPMT110412R-D*
TDXU-1437FS-04	1.437	1.500	1.969	5.791	2.688	5.910	7.146	9.877	0.055	2.930	XPMT110412R-D*
TDXU-1500FS-04	1.500	1.500	1.969	6.043	2.688	6.160	7.413	10.144	0.038	3.180	XPMT110412R-D*
TDXU-1562FS-04	1.562	1.500	1.969	6.291	2.688	6.410	7.677	10.408	0.022	3.310	XPMT110412R-D*
TDXU-1625FS-04	1.625	1.500	2.165	6.561	2.688	6.680	7.978	10.727	0.128	3.820	XPMT150512R-D*
TDXU-1687FS-04	1.687	1.500	2.165	6.809	2.688	6.930	8.242	10.991	0.115	4.120	XPMT150512R-D*
TDXU-1750FS-04	1.750	1.500	2.165	7.061	2.688	7.180	8.486	11.235	0.097	4.340	XPMT150512R-D*
TDXU-1812FS-04	1.812	1.500	2.165	7.309	2.688	7.430	8.754	11.503	0.082	4.600	XPMT150512R-D*
TDXU-1875FS-04	1.875	1.500	2.165	7.561	2.688	7.680	9.001	11.750	0.063	4.950	XPMT150512R-D*
TDXU-1937FS-04	1.937	1.500	2.165	7.809	2.688	7.930	9.259	12.008	0.049	5.210	XPMT150512R-D*
TDXU-2000FS-04	2.000	1.500	2.165	8.061	2.688	8.180	9.510	12.259	0.030	5.370	XPMT150512R-D*
TDXU-2125FS-04	2.125	1.500	2.165	8.561	2.688	8.680	10.040	12.789	-	6.390	XPMT150512R-D*

** For offsetting on lathe

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
$\varnothing 0.500 - \varnothing 0.625$	+ 0.004 / 0	+ 0.016 / 0
$\varnothing 0.687 - \varnothing 2.125$	+ 0.008 / 0	+ 0.018 / 0

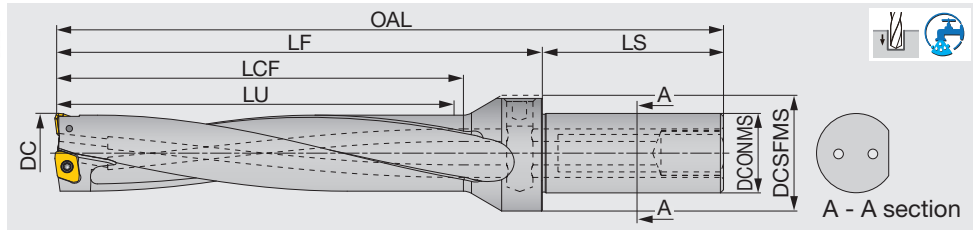
SPARE PARTS

Designation	Clamping screw	Torx driver	Plug *	
			Side port	Rear port (Optional parts)
TDXU500 - TDXU0562	CSPB-2H	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU-0625FS-04	CSPB-2L043	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU0687 - TDXU0812	CSPB-2.2	IP-7D	NPTF1/8	(SL25IN)
TDXU0875 - TDXU1000	CSPB-2.5	IP-8D	NPTF1/8	(SL25IN)
TDXU1062 - TDXU1250	CSTB-3	T-9D	NPTF1/4	(SL32IN)
TDXU1312 - TDXU1562	CSTB-4	T-15D	NPTF1/4	(SL38IN)
TDXU1625 - TDXU2000	CSTB-5	T-20D	NPTF1/4	(SL38IN)

Recommended clamping torque: CSPB-2H/CSPB-2L043= 0.52 lb-ft, CSPB-2.2= 0.74 lb-ft, CSPB-2.5= 0.96 lb-ft, CSTB-3= 1.70 lb-ft, CSTB-4= 2.58 lb-ft, CSTB-5= 3.69 lb-ft

* Please see the dimensions on page **J078**.

Reference pages: Inserts → **J079 - J080**, Standard cutting conditions → **J081**



Inch	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset** (radial)	WT(lb)	Insert
TDXU-0500FS-05	0.500	0.750	1.250	2.515	2.000	2.630	3.519	5.534	0.030	0.47	XPMT040104R-D*
TDXU-0531FS-05	0.531	0.750	1.250	2.670	2.000	2.790	3.682	5.697	0.024	0.5	XPMT040104R-D*
TDXU-0562FS-05	0.562	0.750	1.250	2.825	2.000	2.950	3.841	5.856	0.018	0.51	XPMT040104R-D*
TDXU-0625FS-05	0.625	0.750	1.250	3.146	2.000	3.270	4.161	6.182	0.026	0.55	XPMT050204R-D*
TDXU-0687FS-05	0.687	1.000	1.457	3.454	2.280	3.580	4.535	6.834	0.048	0.9	XPMT06X308R-D*
TDXU-0750FS-05	0.750	1.000	1.457	3.769	2.280	3.890	4.841	7.140	0.027	0.96	XPMT06X308R-D*
TDXU-0812FS-05	0.812	1.000	1.457	4.079	2.280	4.200	5.168	7.467	0.015	1.02	XPMT06X308R-D*
TDXU-0875FS-05	0.875	1.000	1.457	4.398	2.280	4.520	5.474	7.777	0.045	1.1	XPMT07H308R-D*
TDXU-0937FS-05	0.937	1.000	1.457	4.708	2.280	4.830	5.805	8.108	0.029	1.22	XPMT07H308R-D*
TDXU-1000FS-05	1.000	1.000	1.457	5.023	2.280	5.140	6.111	8.414	0.013	1.23	XPMT07H308R-D*
TDXU-1062FS-05	1.062	1.250	1.575	5.339	2.280	5.460	6.590	8.899	0.059	1.69	XPMT08T308R-D*
TDXU-1125FS-05	1.125	1.250	1.575	5.654	2.280	5.770	6.916	9.225	0.043	1.81	XPMT08T308R-D*
TDXU-1187FS-05	1.187	1.250	1.575	5.964	2.280	6.080	7.219	9.528	0.026	1.97	XPMT08T308R-D*
TDXU-1250FS-05	1.250	1.250	1.575	6.279	2.280	6.400	7.533	9.842	0.010	2.16	XPMT08T308R-D*
TDXU-1312FS-05	1.312	1.500	1.969	6.603	2.688	6.720	7.949	10.680	0.088	3.03	XPMT110412R-D*
TDXU-1375FS-05	1.375	1.500	1.969	6.918	2.688	7.040	8.280	11.011	0.072	3.19	XPMT110412R-D*
TDXU-1437FS-05	1.437	1.500	1.969	7.228	2.688	7.350	8.583	11.314	0.055	3.22	XPMT110412R-D*
TDXU-1500FS-05	1.500	1.500	1.969	7.543	2.688	7.660	8.913	11.644	0.038	3.51	XPMT110412R-D*
TDXU-1562FS-05	1.562	1.500	1.969	7.853	2.688	7.970	9.239	11.970	0.022	3.7	XPMT110412R-D*
TDXU-1625FS-05	1.625	1.500	2.165	8.186	2.688	8.300	9.603	12.352	0.128	4.3	XPMT150512R-D*
TDXU-1687FS-05	1.687	1.500	2.165	8.496	2.688	8.610	9.929	12.678	0.115	4.67	XPMT150512R-D*
TDXU-1750FS-05	1.750	1.500	2.165	8.811	2.688	8.930	10.236	12.985	0.097	4.94	XPMT150512R-D*
TDXU-1812FS-05	1.812	1.500	2.165	9.121	2.688	9.240	10.567	13.316	0.082	5.25	XPMT150512R-D*
TDXU-1875FS-05	1.875	1.500	2.165	9.436	2.688	9.550	10.876	13.625	0.063	5.68	XPMT150512R-D*
TDXU-1937FS-05	1.937	1.500	2.165	9.746	2.688	9.860	11.196	13.945	0.049	6.01	XPMT150512R-D*
TDXU-2000FS-05	2.000	1.500	2.165	10.061	2.688	10.180	11.510	14.259	0.030	6.14	XPMT150512R-D*
TDXU-2125FS-05	2.125	1.500	2.165	10.686	2.688	10.800	12.165	14.914	-	7.46	XPMT150512R-D*

** For offsetting on lathe

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
$\varnothing 0.500 - \varnothing 0.625$	+ 0.004 / 0	+ 0.016 / 0
$\varnothing 0.687 - \varnothing 2.125$	+ 0.008 / 0	+ 0.018 / 0

SPARE PARTS



Designation	Clamping screw	Torx driver	Plug *	
			Side port	Rear port (Optional parts)
TDXU500 - TDXU0562	CSPB-2H	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU-0625FS-05	CSPB-2L043	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU0687 - TDXU0812	CSPB-2.2	IP-7D	NPTF1/8	(SL25IN)
TDXU0875 - TDXU1000	CSPB-2.5	IP-8D	NPTF1/8	(SL25IN)
TDXU1062 - TDXU1250	CSTB-3	T-9D	NPTF1/4	(SL32IN)
TDXU1312 - TDXU1562	CSTB-4	T-15D	NPTF1/4	(SL38IN)
TDXU1625 - TDXU2000	CSTB-5	T-20D	NPTF1/4	(SL38IN)

Recommended clamping torque: CSPB-2H/CSPB-2L043= 0.52 lb-ft, CSPB-2.2= 0.74 lb-ft, CSPB-2.5= 0.96 lb-ft, CSTB-3= 1.70 lb-ft, CSTB-4= 2.58 lb-ft, CSTB-5=3.69 lb-ft

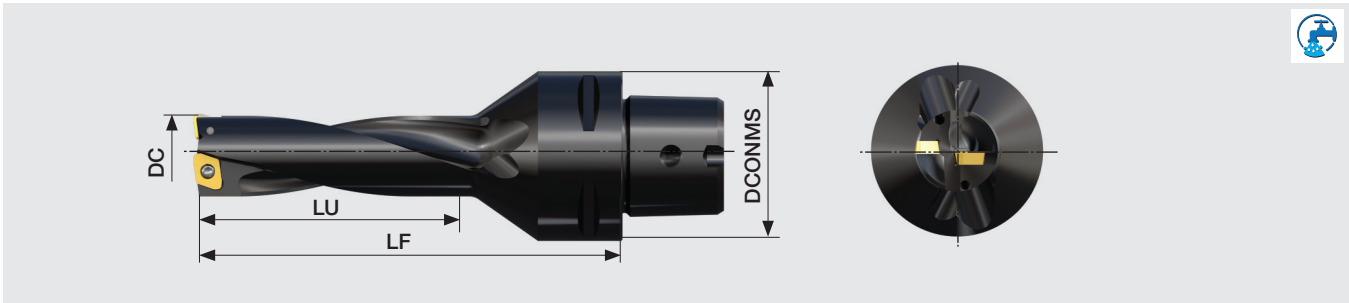
* Please see the dimensions on page **J078**.

Reference pages: Inserts → **J079 - J080**, Standard cutting conditions → **J081**

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Milling Cutter
Miniature Tool
Endmill
Drilling Tool
User's Guide Tooling System
Index



TungCap C-TDX



Metric	DCONMS	DC	LF	L	Max. offset** (radial)	Insert
C4TDX150L082-3	40	15	82	45	0.9	XPMT050204R-D*
C4TDX200L101-3	40	20	101	60	0.5	XPMT06X308R-D*
C4TDX250L125-3	40	25	125	75	0.4	XPMT07H308R-D*
C4TDX300L139-3	40	30	139	90	0.7	XPMT08T308R-D*
C6TDX200L101-3	63	20	101	60	0.5	XPMT06X308R-D*
C6TDX250L121-3	63	25	121	75	0.4	XPMT07H308R-D*
C6TDX300L139-3	63	30	139	90	0.7	XPMT08T308R-D*
C6TDX350L159-3	63	35	159	105	1.8	XPMT110412R-D*
C6TDX400L177-3	63	40	177	120	0.5	XPMT110412R-D*

Applicable for 14 MPa pressure coolant
 ** For offsetting on lathe

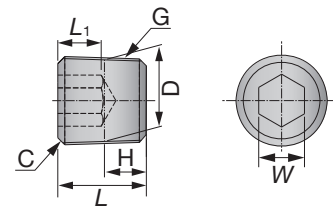
SPARE PARTS



Designation	Clamping screw	Screw
C4TDX150L082-3	CSTB-2L040	T-6D
C4TDX200L101-3	CSTB-2.2R	T-7D
C4TDX250L125-3	CSTB-2.5	T-8D
C4TDX300L139-3	CSTB-3	T-9D
C6TDX200L101-3	CSTB-2.2R	T-7D
C6TDX250L121-3	CSTB-2.5	T-8D
C6TDX300L139-3	CSTB-3	T-9D
C6TDX350L159-3	CSTB-4	T-15D
C6TDX400L177-3	CSTB-4	T-15D

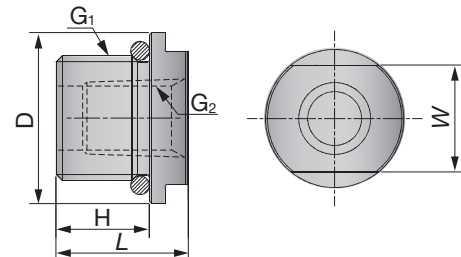
Side port

Inch	D	H	L	W	G	L1	C
NPTF1/8	0.374	0.161	0.312	0.187	NPTF1/8	0.156	0.028
NPTF1/4	0.492	0.228	0.437	0.250	NPTF1/4	0.239	0.039



Rear port

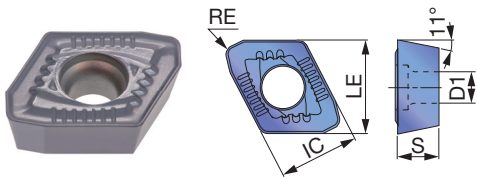
Inch	D	H	L	W	G1	G2
SL25IN	0.866	0.472	0.669	0.669	M16X1.5	NPTF1/8
SL32IN	1.142	0.591	0.827	0.866	M22X2.0	NPTF1/4
SL38IN	1.496	0.591	0.827	0.866	M30X2.0	NPTF1/4



Reference pages: Inserts → **J079 - J080**, Standard cutting conditions → **J081**

INSERT

DJ



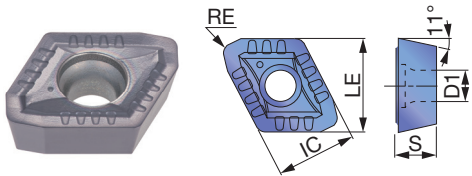
P	Steel			★	☆								
M	Stainless	☆		★									
K	Cast iron		☆	☆	★								
N	Non-ferrous	★		☆									
S	Superalloys	☆		★	☆								
H	Hard materials	☆		★	☆								

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated				S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725	T1115	AH6030	AH9030					
XPMT040104R-DJ	0.169	0.177	●	●	●	●	0.063	0.090	0.016	0.492	0.571
XPMT050204R-DJ	0.205	0.213	●	●	●	●	0.094	0.090	0.016	0.591	0.669
XPMT06X308R-DJ	0.236	0.276	●	●	●	●	0.118	0.100	0.032	0.689	0.847
XPMT07H308R-DJ	0.276	0.323	●	●	●	●	0.142	0.110	0.032	0.866	1.024
XPMT08T308R-DJ	0.335	0.390	●	●	●	●	0.156	0.130	0.032	1.063	1.260
XPMT110412R-DJ	0.441	0.492	●	●	●	●	0.187	0.170	0.047	1.299	1.614
XPMT150512R-DJ	0.591	0.634	●	●	●	●	0.219	0.220	0.047	1.654	2.126

● : Line up

DS



P	Steel	☆	★										
M	Stainless	☆	★										
K	Cast iron												
N	Non-ferrous	☆											
S	Superalloys	☆	★										
H	Hard materials												

★ : First choice
☆ : Second choice

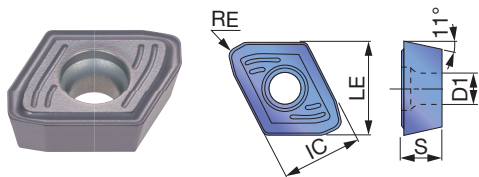
Designation	IC (in)	LE (in)	Coated		S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725	AH6030					
XPMT040104R-DS	0.169	0.177	●	●	0.063	0.090	0.016	0.492	0.571
XPMT050204R-DS	0.205	0.213	●	●	0.094	0.090	0.016	0.591	0.669
XPMT06X308R-DS	0.236	0.276	●	●	0.118	0.100	0.032	0.689	0.847
XPMT07H308R-DS	0.276	0.323	●	●	0.142	0.110	0.032	0.866	1.024
XPMT08T308R-DS	0.335	0.390	●	●	0.156	0.130	0.032	1.063	1.260
XPMT110412R-DS	0.441	0.492	●	●	0.187	0.170	0.047	1.299	1.614
XPMT150512R-DS	0.591	0.634	●	●	0.219	0.220	0.047	1.654	2.126

● : Line up

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Endmill
Drilling Tool
Tooling System
User's Guide
Index



DW



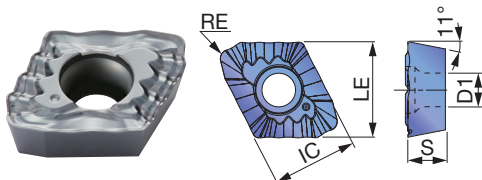
P	Steel	☆	★	☆																
M	Stainless	☆	★	☆																
K	Cast iron		☆	★																
N	Non-ferrous	☆	★																	
S	Superalloys	☆	★	☆																
H	Hard materials	☆	★	☆																

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated										S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)				
			AH725	AH6030	AH9030																
XPMT040104R-DW	0.169	0.177	●	●	●																
XPMT050204R-DW	0.205	0.213	●	●	●																
XPMT06X308R-DW	0.236	0.276	●	●	●																
XPMT07H308R-DW	0.276	0.323	●	●	●																
XPMT08T308R-DW	0.335	0.390	●	●	●																
XPMT110412R-DW	0.441	0.492	●	●	●																
XPMT150512R-DW	0.591	0.634	●	●	●																

● : Line up

DG



P	Steel	★																		
M	Stainless	☆																		
K	Cast iron																			
N	Non-ferrous	★																		
S	Superalloys	☆																		
H	Hard materials																			

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated										S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)				
			AH725																		
XPMT08T308R-DG	0.335	0.390	●																		
XPMT110412R-DG	0.441	0.492	●																		
XPMT150512R-DG	0.591	0.634	●																		

● : Line up

RECOMMENDED INSERT

ISO	Workpiece material	First choice	High feed	High speed	Troubleshooting			
					Chipping resistance	Wear resistance	Surface finish	Chip control
P	Low carbon steels (C ≤ 0.3%)	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
	Carbon steels (C > 0.3%) Alloy steels	DJ, AH6030	DW, AH6030	DJ, AH9030	DW, AH725	DJ, AH9030	DW, AH6030	-
	Low alloy steels	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	-
M	Stainless steel	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
K	Gray cast irons	DJ, AH9030	DW, AH9030	DJ, T1115	DW, AH725	-	DW, AH9030	-
	Ductile cast irons	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-
N	Aluminum alloy	DJ, AH725	DW, AH725	DS, AH6030	-	-	DW, AH725	DG, AH725
S	Titanium alloys Heat-resistant alloys	DS, AH6030	-	-	DW, AH725	-	DW, AH725	DG, AH725
H	Hardened steel	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed Vc (sfm)	Series L/D	Feed: f (ipr)				
				ø0.500" - ø0.562"	ø0.625"	ø0.687" - ø1.000"	ø1.062" - ø1.25"	ø1.312" - ø2.000"
P	Low carbon steels (C < 0.3) 1018, 1026, etc.	525 - 1050	2D, 3D	0.0008 - 0.0024	0.0008 - 0.0024	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
			4D, 5D	0.0008 - 0.0024	0.0008 - 0.0024	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
	Carbon steels (C > 0.3) 1045, 1055, etc.	262 - 820	2D, 3D	0.0016 - 0.0039	0.0016 - 0.0047	0.0024 - 0.0051	0.0024 - 0.0059	0.0031 - 0.0071
			4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0024 - 0.0039	0.0024 - 0.0047	0.0031 - 0.0055
M	Low alloy steels 4130, etc.	525 - 820	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0055
			4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0055
	Alloy steels 4140, 5120, etc.	262 - 656	2D, 3D	0.0016 - 0.0039	0.0016 - 0.0047	0.0024 - 0.0051	0.0024 - 0.0059	0.0031 - 0.0071
			4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0024 - 0.0039	0.0024 - 0.0047	0.0031 - 0.0055
K	Stainless steels (Austenitic) 304, 316, etc.	328 - 656	2D, 3D	0.0008 - 0.0031	0.0008 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047
			4D, 5D	0.0008 - 0.0031	0.0008 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047
	Stainless steels (Martensitic and ferritic) 430, 416, etc.	328 - 722	2D, 3D	0.0008 - 0.0031	0.0008 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047
4D, 5D			0.0008 - 0.0031	0.0008 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047	
S	Stainless steels (Precipitation hardening) 630, etc.	262 - 394	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0024 - 0.0039
			4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0024 - 0.0039
N	Gray cast irons Class 25, Class 30, etc.	262 - 820	2D, 3D	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0059	0.0024 - 0.0071	0.0031 - 0.0079
			4D, 5D	0.0024 - 0.0039	0.0024 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0055	0.0031 - 0.0063
K	Ductile cast irons 60-40-18, etc.	262 - 656	2D, 3D	0.0016 - 0.0047	0.0016 - 0.0047	0.0024 - 0.0059	0.0024 - 0.0071	0.0031 - 0.0079
			4D, 5D	0.0016 - 0.0039	0.0016 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0055	0.0031 - 0.0063
N	Aluminum alloy 333.0, 383.0, etc.	656 - 1312	2D, 3D	0.0039 - 0.0047	0.0039 - 0.0059	0.0059 - 0.0079	0.0059 - 0.0079	0.0059 - 0.0098
			4D, 5D	0.0031 - 0.0047	0.0031 - 0.0047	0.0047 - 0.0063	0.0047 - 0.0063	0.0047 - 0.0079
S	Heat-resistant alloys Inconel 718, etc.	66 - 197	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
			4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
S	Titanium alloys Ti-6Al-4V, etc.	131 - 394	2D, 3D	0.0024 - 0.0039	0.0024 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0047
			4D, 5D	0.0024 - 0.0031	0.0024 - 0.0031	0.0024 - 0.0039	0.0024 - 0.0039	0.0024 - 0.0039
H	Hardened steel ≥ 40HRC	131 - 328	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
			4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031

STANDARD CUTTING CONDITIONS FOR DG TYPE CHIPBREAKER

ISO	Workpiece material	Cutting speed Vc (sfm)	Series L/D	Feed: f (ipr)	
				ø1.062" - ø1.250"	ø1.312" - ø2.000"
P	Low carbon steels (C < 0.3) 1018, 1026, etc.	260 - 590	2D, 3D 4D, 5D	0.0016 - 0.0039	

When using the smaller side of the diameter range, the feed rate should be set lower.

When using DW insert for work materials of 40 HRC, the feed rate should be set below 50%.

For difficult-to-cut materials (heat-resistant alloys, etc.), the cutting speed should be set 25% below that of carbon steels.

High speed machining means cutting speeds over 150 m/min (429 sfm).

For high-feed machining, apply a feed rate that is approximately 1.5 times the standard feed conditions.

When using DW insert for troubleshooting, use it within the range of standard cutting conditions.

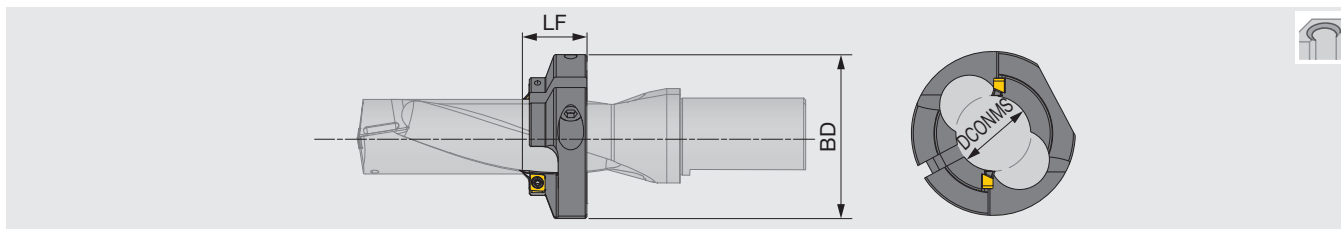
DG type chipbreaker is suitable for heavy machines that have low-rpm spindles. If chatter occurs, a lower feed rate is recommended.

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index



TDXCF chamfering tool

Chamfering tool for TungDrillTwisted and TungSix-Drill



Inch	DCONMS	BD	LF	Application drill	L/D = 2		L/D = 3		L/D = 4		L/D = 5	
					TDX***F	TDX***W	TDX***F	TDX***W	TDX***F	TDX***W	TDX***F	TDX***W
TDXCF150L25	0.681	1.929	0.984	TDX175*25-*	0.512	0.740	1.201	1.429	1.890	2.118	2.579	2.807
TDXCF160L25	0.681	1.929	0.984	TDX180*25-*	0.551	0.783	1.260	1.492	1.969	2.201	2.677	2.909
TDXCF180L25	0.713	1.929	0.984	TDX185*25-*	0.591	0.831	1.319	1.559	2.047	2.287	2.776	3.016
TDXCF190L25	0.713	1.929	0.984	TDX190*25-*	0.630	0.874	1.378	1.622	2.126	2.370	2.874	3.118
TDXCF210L25	0.752	1.929	0.984	TDX195*25-*	0.669	0.921	1.437	1.689	2.205	2.457	2.972	3.224
TDXCF230L25	0.752	1.929	0.984	TDX200*25-*	0.787	0.965	1.575	1.752	2.323	2.539	3.110	3.327
TDXCF240L25	0.791	1.929	0.984	TDX205*25-*	0.827	1.012	1.634	1.819	2.402	2.626	3.209	3.433
TDXCF260L30	0.791	1.929	0.984	TDX210*25-*	0.866	1.055	1.693	1.882	2.480	2.709	3.307	3.535
TDXCF270L30	0.831	1.929	0.984	TDX215*25-*	0.906	1.102	1.752	1.949	2.559	2.795	3.406	3.642
TDXCF290L30	0.831	1.929	0.984	TDX220*25-*	0.945	1.146	1.811	2.012	2.638	2.878	3.504	3.744
TDXCF300L30	0.870	1.929	0.984	TDX225*25-*	0.984	1.193	1.870	2.079	2.717	2.965	3.602	3.850
TDXCF320L30	0.870	1.929	0.984	TDX230*25-*	1.024	1.236	1.929	2.142	2.795	3.047	3.701	3.953
TDXCF340L30	0.909	1.929	0.984	TDX235*25-*	1.063	1.283	1.988	2.209	2.874	3.134	3.799	4.059
TDXCF350L30	0.909	1.929	0.984	TDX240*25-*	1.102	1.327	2.047	2.272	2.953	3.217	3.898	4.161
TDXCF370L30	0.943	1.929	0.984	TDX245*25-*	1.142	1.374	2.106	2.339	3.031	3.303	3.996	4.268
TDXCF380L30	0.943	1.929	0.984	TDX250*25-*	1.181	1.417	2.165	2.402	3.110	3.386	4.094	4.370
TDXCF400L30	0.982	2.520	1.181	TDX255*25-*	1.024	1.268	2.028	2.272	2.992	3.276	3.996	4.280
TDXCF410L30	0.982	2.520	1.181	TDX260*25-*	1.063	1.311	2.087	2.335	3.071	3.358	4.094	4.382
TDXCF430L30	1.020	2.520	1.181	TDX270*32-*	1.142	1.402	2.205	2.465	3.228	3.528	4.291	4.591
TDXCF450L30	1.059	2.520	1.181	TDX280*32-*	1.193	1.492	2.295	2.594	3.386	3.697	4.488	4.799
TDXCF460L30	1.098	2.520	1.181	TDX290*32-*	1.272	1.583	2.413	2.724	3.543	3.866	4.685	5.008
TDXCF480L30	1.138	2.520	1.181	TDX300*32-*	1.350	1.673	2.531	2.854	3.701	4.035	4.882	5.217
TDXCF500L30	1.177	2.520	1.181	TDX310*32-*	1.429	1.764	2.650	2.984	3.858	4.205	5.079	5.425
TDXCF510L30	1.217	2.520	1.181	TDX320*32-*	1.508	1.854	2.768	3.114	4.016	4.374	5.276	5.634

SPARE PARTS

Designation	Screw for insert	Screw for ring	Wrench for insert	Wrench for ring
TDXCF130 - 250	CSPB-4S	CM6X16	IP-15D	P-5
TDXCF260 - 540	CSPB-4S	CM8X1.25X20-A	IP-15D	P-6

Recommended clamping torque: CSPB-4S = 2.58 lb-ft

INSERT

XHGX-45A



P	Steel	★							
M	Stainless	★							
K	Cast iron	★							
N	Non-ferrous	☆							
S	Superalloys	★							
H	Hard materials	★							

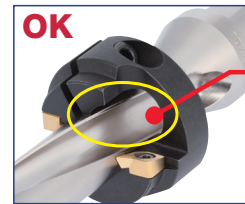
★ : First choice
☆ : Second choice

Designation	PNA	C (in)	Coated										
			GHT 30										
XHGX090700R-45A	45°	0.100	●										

● : Line up

Caution in mounting the chamfering tool on the drill body

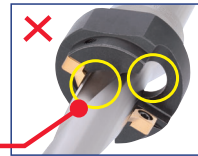
- ① Place the ring on the drill body and match the positions of flutes on drill and ring. Temporarily clamp the ring with the ring screw tightened lightly.
- ② Place the inserts, and tighten the insert screw lightly.
- ③ Adjust the ring position with a presetter, height gauge, or Vernier caliper, and securely tighten the ring screw, then the insert screw.



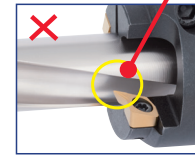
Match the positions of flutes on drill and ring.

(Inserts will be automatically set to the right positions.)

The cutting edge of the insert is in the ring flute.

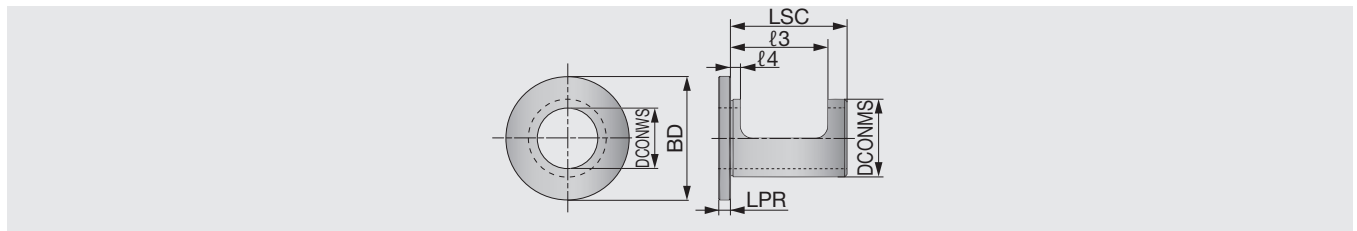


The flutes on drill and ring do not match.



EZ sleeve

Eccentric sleeve for TungDrillTwisted and TungSix-Drill



Inch	DCONWS	DCONMS	BD	LSC	LPR	l3	l4	Hole diameter adjustment	Cutting edge height adjustment
EZ0.75-1.25	0.750	1.250	1.750	2.000	0.200	1.575	0.375	+0.016 ~ - 0.008	+0.008 ~ - 0.006
EZ1.00-1.50	1.000	1.500	2.000	2.500	0.200	1.965	0.375	+0.016 ~ - 0.008	+0.008 ~ - 0.006
EZ1.25-2.00	1.250	2.000	2.500	2.700	0.200	1.965	0.375	+0.016 ~ - 0.008	+0.008 ~ - 0.006
EZ1.50-2.00	1.500	2.000	2.750	2.900	0.200	1.965	0.375	+0.024 ~ - 0.008	+0.012 ~ - 0.008

SPARE PARTS

Designation	Wrench
EZ...	P-2.5

Use EZ sleeves for the following purposes

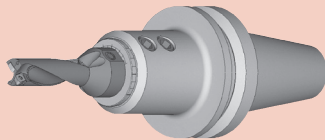
Hole diameter adjustment on the milling machine

Adjusting the finishing diameter when milling

Adjusting the finishing diameter in tool-rotating applications such as on machining centers and milling machines:



By using **EZ sleeve**, the finishing diameter can be adjusted in the range from **+0.024"** to **-0.008"**.



Scale for adjusting finishing diameter in milling (Periphery of sleeve)

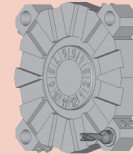
Adjusting cutting edge height on lathe

Lathe

Adjusting of the cutting edge height in work rotating applications such as on lathes:



By using **EZ sleeve**, the cutting edge height can be adjusted in the range from **+0.012"** to **-0.008"**. It results in eliminating troubles caused by improper cutting-edge height.

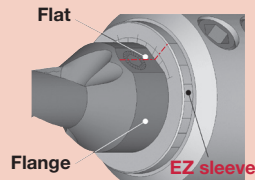


Scale for adjusting cutting edge height in turning (Front face of sleeve)

Setting of EZ sleeve

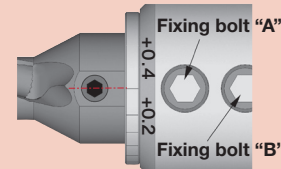
Hole diameter adjustment on the milling machine

As shown in the Figure on the right, set the EZ sleeve between the drill shank and the toolholder.



Align the graduated scale on the periphery of the EZ sleeve with the center of the flat of the drill flange.

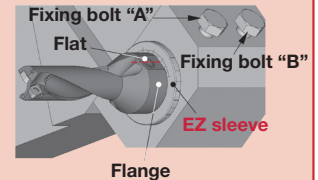
In the Figure shown on the right, the sleeve is set so that the finishing diameter will be increased by 0.4 mm.



When rotating the EZ sleeve, insert the wrench into the hole at the flange periphery and rotate the EZ sleeve.
Screws A + B have to be loosened.
Secure the drill by screw A.
Secure the EZ sleeve by lightly tightening screw B.
Tighten screw B only lightly otherwise EZ sleeve can be damaged!

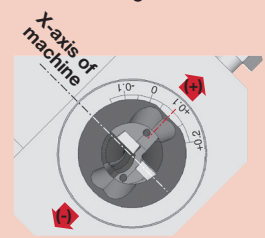
Adjusting cutting edge height on lathe

As shown in the Figure on the right, set the EZ sleeve between the drill shank and the toolblock.



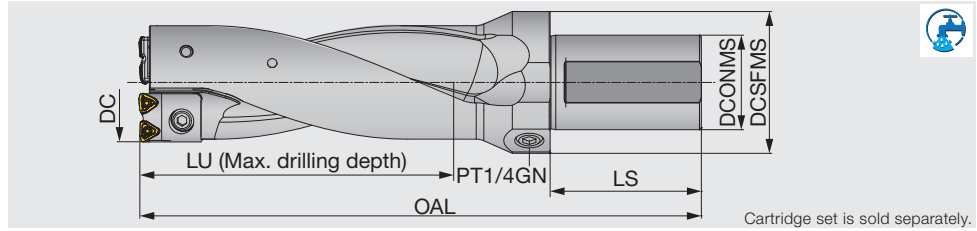
Align the graduated scale on the front face of the EZ sleeve with the center of the flat of the drill flange.

In the Figure shown on the right, the sleeve is set so that the center of the drill will shift by 0.1 mm to the plus (+) direction.



Cautious points

- The scale is only a rough guide, so be sure to measure the actual drilling diameter to confirm the result. Especially in turning, test machining is recommended as the drilling diameter will vary according to the adjustment.
- Can not be used for collet chuck holders.
- Over L/D 4 or bigger adjustment, please reduce feed.
- For smaller adjustment, the drill itself will interfere with the hole diameter. It is recommended that hole diameter should be adjusted to a larger diameter than the drill diameter.



Body Inch	Cartridge set Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	WT(lb)	Setting plate		Insert
									Designation	Thickness	
TDBU2250-2447-2.5	TDSCA57-62	2.250	2.000	2.953	6.117	4.000	11.957	8.8	-	-	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.289	2.000	2.953	6.117	4.000	11.957	8.8	AP0801	0.020	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.329	2.000	2.953	6.117	4.000	11.957	8.8	AP0802	0.039	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.368	2.000	2.953	6.117	4.000	11.957	8.8	AP0803	0.059	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.407	2.000	2.953	6.117	4.000	11.957	8.8	AP0804	0.079	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.447	2.000	2.953	6.117	4.000	11.957	8.8	AP0805	0.098	WWMU08X408R-D*
TDBU2461-2579-2.5	TDSCA63-66	2.461	2.000	2.953	6.447	4.000	12.567	10.1	-	-	WWMU08X408R-D*
TDBU2461-2579-2.5	TDSCA63-66	2.500	2.000	2.953	6.447	4.000	12.567	10.1	AP0801	0.020	WWMU08X408R-D*
TDBU2461-2579-2.5	TDSCA63-66	2.539	2.000	2.953	6.447	4.000	12.567	10.1	AP0802	0.039	WWMU08X408R-D*
TDBU2461-2579-2.5	TDSCA63-66	2.579	2.000	2.953	6.447	4.000	12.567	10.1	AP0803	0.059	WWMU08X408R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.632	2.000	2.953	7.170	4.000	13.544	11.9	-	-	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.671	2.000	2.953	7.170	4.000	13.544	11.9	AP1101	0.020	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.711	2.000	2.953	7.170	4.000	13.544	11.9	AP1102	0.039	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.750	2.000	2.953	7.170	4.000	13.544	11.9	AP1103	0.059	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.789	2.000	2.953	7.170	4.000	13.544	11.9	AP1104	0.079	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.829	2.000	2.953	7.170	4.000	13.544	11.9	AP1105	0.098	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.868	2.000	2.953	7.170	4.000	13.544	11.9	AP1106	0.118	WWMU09X510R-D*
TDBU2921-3157-2.5	TDSCA74-80	2.921	2.000	2.953	7.894	4.000	13.973	13.7	-	-	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	2.961	2.000	2.953	7.894	4.000	13.973	13.7	AP1101	0.020	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.000	2.000	2.953	7.894	4.000	13.973	13.7	AP1102	0.039	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.039	2.000	2.953	7.894	4.000	13.973	13.7	AP1103	0.059	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.079	2.000	2.953	7.894	4.000	13.973	13.7	AP1104	0.079	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.118	2.000	2.953	7.894	4.000	13.973	13.7	AP1105	0.098	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.157	2.000	2.953	7.894	4.000	13.973	13.7	AP1106	0.118	WWMU11X512R-D*

Body SPARE PARTS

Designation	① Setting plate screw	Plug Screw	② Cartridge screw	③ Setting plate 1	③ Setting plate 2	③ Setting plate 3	③ Setting plate 4	③ Setting plate 5	③ Setting plate 6	Wrench for setting plate	Wrench for cartridge	Wrench for plug	④ Washer
TDBU2250-2447-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	AP0802	AP0803	AP0804	AP0805	-	T-9D	P-4	P-6	5.3X10X1
TDBU2461-2579-2.5	CSTB-3	PT1/4GN	CHHM6-15	AP0801	AP0802	AP0803	-	-	-	T-9D	P-5	P-6	6.4X12.5X1.6
TDBU2632-2868-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6
TDBU2921-3157-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6

Cartridge set SPARE PARTS

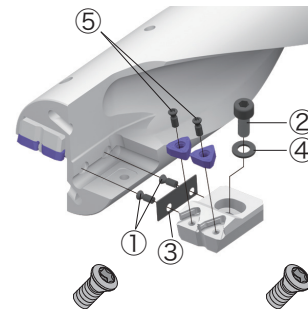
Designation	⑤ Insert screw	Wrench
TDSCA57-62	CSTB-3	T-9F
TDSCA63-66	CSTB-3	T-9F
TDSCA67-73	CSTB-4	T-15F
TDSCA74-80	CSTB-5	T-20F

Cartridge SPARE PARTS

Designation	Insert screw (x2)	Setting plate screw
TDS08CA-C-57-62	CSTB-3	-
TDS08CA-C-63-66	CSTB-3	-
TDS09CA-C-67-73	CSTB-4	-
TDS11CA-C-74-80	CSTB-5	-

SPARE PARTS

Designation	Insert screw (x2)	Setting plate screw (x2)
TDS08CA-P-57-62	CSTB-3	CSTB-3
TDS08CA-P-63-66	CSTB-3	CSTB-3
TDS09CA-P-67-73	CSTB-4	CSTB-3
TDS11CA-P-74-80	CSTB-5	CSTB-3

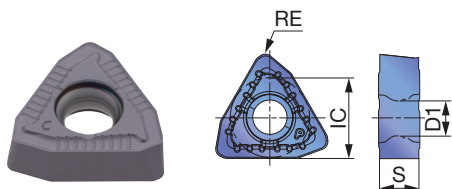


Recommended clamping torque: CSTB-3 = 1.70 lb-ft, CSTB-4 = 2.58 lb-ft, CSTB-5 = 3.69 lb-ft

Reference pages: Inserts → **J086**, Standard cutting conditions → **J087**

INSERT

DJ



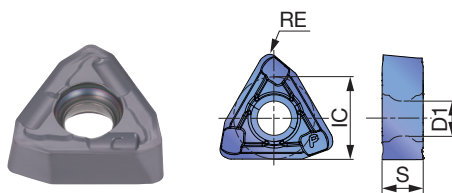
P	Steel	☆	★						
M	Stainless	★	☆						
K	Cast iron	☆	★						
N	Non-ferrous	★	☆						
S	Superalloys	★	☆						
H	Hard materials	★	☆						

★ : First choice
 ☆ : Second choice

Designation	IC (in)	S (in)	Coated						D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH3135	AH9030								
WWMU05X205R-DJ	0.228	0.094	●	●					0.098	0.020	0.787	0.925
WWMU060306R-DJ	0.264	0.114	●	●					0.118	0.024	0.941	1.063
WWMU08X408R-DJ	0.315	0.154	●	●					0.134	0.031	1.083	1.260
WWMU09X510R-DJ	0.382	0.193	●	●					0.173	0.039	1.299	1.331
WWMU11X512R-DJ	0.445	0.224	●	●					0.217	0.047	1.535	1.811
WWMU13X512R-DJ	0.512	0.224	●	●					0.217	0.047	1.850	2.126

● : Line up

DS



P	Steel	★							
M	Stainless	★							
K	Cast iron								
N	Non-ferrous								
S	Superalloys	★							
H	Hard materials								

★ : First choice
 ☆ : Second choice

Designation	IC (in)	S (in)	Coated						D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH6030									
WWMU05X205R-DS	0.228	0.094	●						0.098	0.020	0.787	0.925
WWMU060306R-DS	0.264	0.114	●						0.118	0.024	0.941	1.063
WWMU08X408R-DS	0.315	0.154	●						0.134	0.031	1.083	1.260
WWMU09X510R-DS	0.382	0.193	●						0.173	0.039	1.299	1.331
WWMU11X512R-DS	0.445	0.224	●						0.217	0.047	1.535	1.811
WWMU13X512R-DS	0.512	0.224	●						0.217	0.047	1.850	2.126

● : Line up

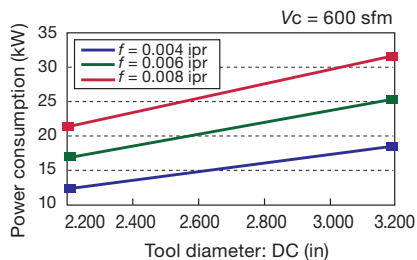
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Priority	Chip breakers	Grade	Cutting speed Vc (sfm)	Feed: f (ipr)		
						DC (in)		
						ø2.165 - ø2.205	ø2.244 - ø2.874	ø2.913 - ø3.150
P	Low carbon steels (C<0.3) 1018, 1020, 1026, etc.	First choice	DS	AH6030	525 - 820	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
		Wear resistance	DJ	AH9030	525 - 1050	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
	Carbon steels (C>0.3) 1045, 1055, etc.	First choice	DJ	AH9030	262 - 820	0.0024 - 0.0063	0.0024 - 0.0071	0.0031 - 0.0079
		Fracture resistance	DJ	AH3135	262 - 820	0.0016 - 0.0051	0.0016 - 0.0059	0.0016 - 0.0063
	Low alloy steels 5120, etc.	First choice	DS	AH6030	525 - 820	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
		Wear resistance	DJ	AH9030	525 - 820	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055
	Alloy steels 4140, 8620, etc.	First choice	DJ	AH9030	262 - 656	0.0024 - 0.0063	0.0024 - 0.0071	0.0031 - 0.0079
		Fracture resistance	DJ	AH3135	262 - 656	0.0016 - 0.0051	0.0016 - 0.0055	0.0016 - 0.0059
M	Stainless steels (Austenitic) 304SS, 316SS, etc.	First choice	DS	AH6030	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
		—	DJ	AH3135	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
	Stainless steels (Martensitic and ferritic) 430SS, 416SS, etc.	First choice	DS	AH6030	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
		—	DJ	AH3135	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
	Stainless steels (Precipitation hardening) 17-4 PH, etc.	First choice	DS	AH6030	262 - 394	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
		—	DJ	AH3135	262 - 394	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
K	Gray cast irons Class 25, Class 30, etc.	First choice	DJ	AH9030	262 - 820	0.0024 - 0.0071	0.0031 - 0.0079	0.0031 - 0.0087
		Fracture resistance	DJ	AH3135	262 - 656	0.0024 - 0.0059	0.0031 - 0.0063	0.0031 - 0.0071
	Ductile cast irons 60-40-18, 60-55-06, etc.	First choice	DJ	AH9030	262 - 656	0.0024 - 0.0063	0.0024 - 0.0071	0.0031 - 0.0079
		Fracture resistance	DJ	AH3135	262 - 492	0.0024 - 0.0059	0.0031 - 0.0063	0.0031 - 0.0071
N	Aluminum alloy	First choice	DS	AH6030	656 - 1312	0.0039 - 0.0079	0.0039 - 0.0091	0.0039 - 0.0098
		—	DJ	AH9030	656 - 1312	0.0039 - 0.0079	0.0039 - 0.0091	0.0039 - 0.0098
S	Heat-resistant alloys Inconel718, etc.	First choice	DS	AH6030	66 - 197	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039
		—	DJ	AH3135	66 - 197	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039
	Titanium alloys Ti-6Al-4V, etc.	First choice	DS	AH6030	131 - 394	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055
		—	DJ	AH3135	131 - 394	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055
H	Hardened steel < 40HRC	First choice	DJ	AH9030	164 - 328	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039
		Fracture resistance	DJ	AH3135	131 - 262	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039

Caution

Machine

- Use drills on a fully covered machine to maintain safety.
- Use drills on a high powered machine such as a BT50.
- Figure on right shows reference of required machine power.



Cutting coolant

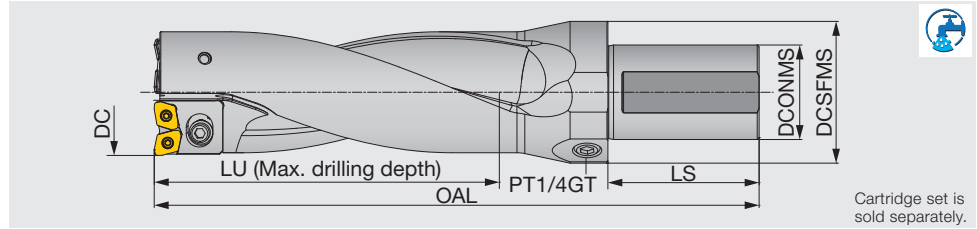
- Internal coolant supply is recommended.
- Coolant pressure higher than 1MPa is essential.
- Use water soluble type coolant.

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
Index



TDB, TDX cartridge set

Adjustable tool diameter, L/D = 2.5, tool diameter $\varnothing 2.250'' - \varnothing 3.157''$



Cartridge set is sold separately.

Body	Cartridge set	DC	DCONMS	DCSFMS	LU	LS	OAL	WT(lb)	Setting plate	Insert
Inch	Inch								Designation Thickness	
TDBU2250-2447-2.5	TDXCA57-62	2.250	2.000	2.953	6.117	4.000	11.874	8.8	-	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.289	2.000	2.953	6.117	4.000	11.874	8.8	AP0801 0.020	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.329	2.000	2.953	6.117	4.000	11.874	8.8	AP0802 0.039	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.368	2.000	2.953	6.117	4.000	11.874	8.8	AP0803 0.059	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.407	2.000	2.953	6.117	4.000	11.874	8.8	AP0804 0.079	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.447	2.000	2.953	6.117	4.000	11.874	8.8	AP0805 0.098	XPMT08T308R-D*
TDBU2461-2579-2.5	TDXCA63-66	2.461	2.000	2.953	6.447	4.000	12.465	10.1	-	XPMT08T308R-D*
TDBU2461-2579-2.5	TDXCA63-66	2.500	2.000	2.953	6.447	4.000	12.465	10.1	AP0801 0.020	XPMT08T308R-D*
TDBU2461-2579-2.5	TDXCA63-66	2.539	2.000	2.953	6.447	4.000	12.465	10.1	AP0802 0.039	XPMT08T308R-D*
TDBU2461-2579-2.5	TDXCA63-66	2.579	2.000	2.953	6.447	4.000	12.465	10.1	AP0803 0.059	XPMT08T308R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.632	2.000	2.953	7.170	4.000	13.449	11.9	-	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.671	2.000	2.953	7.170	4.000	13.449	11.9	AP1101 0.020	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.711	2.000	2.953	7.170	4.000	13.449	11.9	AP1102 0.039	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.750	2.000	2.953	7.170	4.000	13.449	11.9	AP1103 0.059	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.789	2.000	2.953	7.170	4.000	13.449	11.9	AP1104 0.079	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.829	2.000	2.953	7.170	4.000	13.449	11.9	AP1105 0.098	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.868	2.000	2.953	7.170	4.000	13.449	11.9	AP1106 0.118	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	2.921	2.000	2.953	7.894	4.000	13.843	13.7	-	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	2.961	2.000	2.953	7.894	4.000	13.843	13.7	AP1101 0.020	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.000	2.000	2.953	7.894	4.000	13.843	13.7	AP1102 0.039	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.039	2.000	2.953	7.894	4.000	13.843	13.7	AP1103 0.059	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.079	2.000	2.953	7.894	4.000	13.843	13.7	AP1104 0.079	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.118	2.000	2.953	7.894	4.000	13.843	13.7	AP1105 0.098	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.157	2.000	2.953	7.894	4.000	13.843	13.7	AP1106 0.118	XPMT110412R-D*

Body

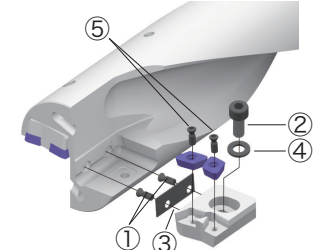
SPARE PARTS

Designation	① Setting plate screw	Plug Screw	② Cartridge screw	③ Setting plate 1	③ Setting plate 2	③ Setting plate 3	③ Setting plate 4	③ Setting plate 5	③ Setting plate 6	Wrench for setting plate	Wrench for cartridge	Wrench for plug	④ Washer
TDBU2250-2447-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	AP0802	AP0803	AP0804	AP0805	-	T-9D	P-4	P-6	5.3X10X1
TDBU2461-2579-2.5	CSTB-3	PT1/4GN	CHHM6-15	AP0801	AP0802	AP0803	-	-	-	T-9D	P-5	P-6	6.4X12.5X1.6
TDBU2632-2868-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6
TDBU2921-3157-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6

Cartridge set

SPARE PARTS

Designation	⑤ Insert screw	Wrench
TDXCA57-62	CSTB-3	T-9F
TDXCA63-66	CSTB-3	T-9F
TDXCA67-73	CSTB-4	T-15F
TDXCA74-80	CSTB-4	T-15F



Cartridge

SPARE PARTS

Designation	Insert screw (x2)	Setting plate screw
TDX08CA-C1	CSTB-3	-
TDX08CA-C2	CSTB-3	-
TDX11CA-C1	CSTB-4	-
TDX11CA-C2	CSTB-4	-

SPARE PARTS

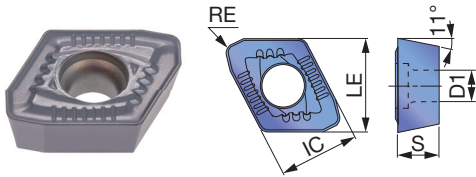
Designation	Insert screw (x2)	Setting plate screw (x2)
TDX08CA-P1	CSTB-3	CSTB-3
TDX08CA-P2	CSTB-3	CSTB-3
TDX11CA-P1	CSTB-4	CSTB-3
TDX11CA-P2	CSTB-4	CSTB-3

Recommended clamping torque: CSTB-3= 1.70 lb-ft, CSTB-4= 2.58 lb-ft

Reference pages: Inserts → **J089 - J090**, Standard cutting conditions → **J090 - J091**

INSERT

DJ



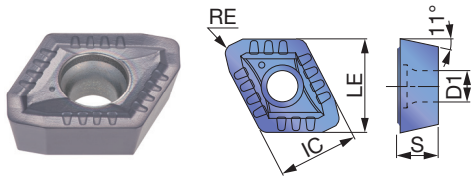
P	Steel			★	☆				
M	Stainless	☆		★					
K	Cast iron		☆	☆	★				
N	Non-ferrous	☆		★					
S	Superalloys	☆		★	☆				
H	Hard materials	☆		★	☆				

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated				S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725	T1115	AH6030	AH9030					
XPMT08T308R-DJ	0.335	0.390	●	●	●	●	0.156	0.134	0.031	2.250	2.579
XPMT110412R-DJ	0.441	0.492	●	●	●	●	0.187	0.173	0.047	2.632	3.157

● : Line up

DS



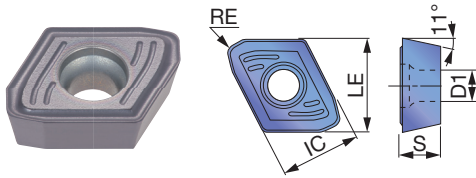
P	Steel	☆	★						
M	Stainless	☆	★						
K	Cast iron								
N	Non-ferrous	☆							
S	Superalloys	☆	★						
H	Hard materials								

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated				S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725	AH6030							
XPMT08T308R-DS	0.335	0.390	●	●			0.156	0.134	0.031	2.250	2.579
XPMT110412R-DS	0.441	0.492	●	●			0.187	0.173	0.047	2.632	3.157

● : Line up

DW



P	Steel	☆	★	☆					
M	Stainless	☆	★	☆					
K	Cast iron		☆	★					
N	Non-ferrous	☆	★						
S	Superalloys	☆	★	☆					
H	Hard materials	☆	★	☆					

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated				S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725	AH6030	AH9030						
XPMT08T308R-DW	0.335	0.390	●	●	●		0.156	0.134	0.031	2.250	2.579
XPMT110412R-DW	0.441	0.492	●	●	●		0.187	0.173	0.047	2.632	3.157

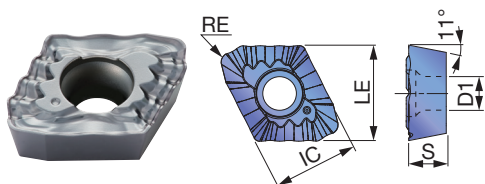
● : Line up

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Milling Cutter
Miniature Tool
Endmill
Drilling Tool
User's Guide
Tooling System
Index

A
B
C
D
E
F
G
H
I
J
K
L
M

INSERT

DG



P	Steel	★							
M	Stainless	☆							
K	Cast iron								
N	Non-ferrous	★							
S	Superalloys	☆							
H	Hard materials								

★ : First choice
 ☆ : Second choice

Designation	IC (in)	LE (in)	Coated							S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725											
XPMT08T308R-DG	0.335	0.390	●							0.156	0.134	0.031	2.250	2.579
XPMT110412R-DG	0.441	0.492	●							0.187	0.173	0.047	2.632	3.157

● : Line up

RECOMMENDED INSERT

ISO	Workpiece material	First choice	High feed	High speed	Chipping resistance	Troubleshooting		
						Wear resistance	Surface finish	Chip control
P	Low carbon steels (C ≤ 0.3%)	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
	Carbon steels (C > 0.3%) Alloy steels	DJ, AH6030	DW, AH6030	DJ, AH9030	DW, AH725	DJ, AH9030	DW, AH6030	-
	Low alloy steels	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	-
M	Stainless steel	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
K	Gray cast irons	DJ, AH9030	DW, AH9030	DJ, T1115	DW, AH725	-	DW, AH9030	-
	Ductile cast irons	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-
N	Aluminum alloy	DJ, AH725	DW, AH725	DS, AH6030		-	DW, AH725	DG, AH725
S	Titanium alloys Heat-resistant alloys	DS, AH6030	-	-	DW, AH725	-	DW, AH725	DG, AH725
H	Hardened steel	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed Vc (sfm)	Feed: f (ipr)		
			ø2.165 ~ ø2.441	ø2.480 ~ ø2.874	ø2.913 ~ ø3.150
P	Low carbon steels (C < 0.3) 1018, 1026, etc.	525 - 1050	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
	Carbon steels (C > 0.3) 1045, 1055, etc.	262 - 820	0.0031 - 0.0071	0.0031 - 0.0071	0.0039 - 0.0079
	Low alloy steels 4130, etc.	525 - 820	0.0016 - 0.0063	0.0016 - 0.0063	0.0016 - 0.0063
	Alloy steels 4140, 5120, etc.	262 - 656	0.0031 - 0.0071	0.0031 - 0.0071	0.0031 - 0.0079
M	Stainless steels (Austenitic) 304, 316, etc.	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0024 - 0.0055
	Stainless steels (Martensitic and ferritic) 430, 416, etc.	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0024 - 0.0055
	Stainless steels (Precipitation hardening) 630, etc.	262 - 394	0.0016 - 0.0039	0.0016 - 0.0039	0.0024 - 0.0047
K	Gray cast irons Class 25, Class 30, etc.	262 - 820	0.0031 - 0.0079	0.0031 - 0.0079	0.0039 - 0.0087
	Ductile cast irons 60-40-18, etc.	262 - 656	0.0031 - 0.0079	0.0031 - 0.0079	0.0039 - 0.0087
N	Aluminum alloy 333.0, 383.0, etc.	656 - 1312	0.0059 - 0.0098	0.0059 - 0.0098	0.0071 - 0.011
S	Heat-resistant alloys Inconel 718, etc.	66 - 197	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
	Titanium alloys Ti-6Al-4V, etc.	131 - 394	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0047
H	Hardened steel ≥ 40HRC	131 - 328	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039

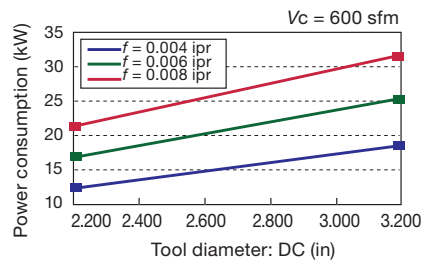
Standard cutting conditions for DG type chipbreaker

ISO	Workpiece material	Cutting speed Vc (sfm)	Series L/D	Feed: f (ipr)	
				ø1.062" - ø1.250"	ø1.312" - ø2.000"
P	Low carbon steels (C < 0.3) 1018, 1026, etc.	260 - 590	2D, 3D 4D, 5D	0.0016 - 0.0039	

Caution

Machine

- Use drills on a fully covered machine to maintain safety.
- Use drills on a high powered machine such as a BT50.
- Figure on right shows reference of required machine power.



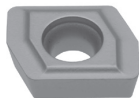
Cutting coolant

- Use water soluble type coolant with internal supply.
- Coolant pressure higher than 1MPa is essential.


Grade
Insert
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Endmill
Drilling Tool
Tooling System
Index

Drilling Insert

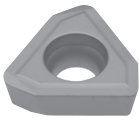
● LPMT03X206R-D4, LPMT05X204-D4

Shape	Designation	Coated			Applicable drill diameter	Applicable drill
		T313W				
	LPMT03X206R-D4	●			φ14 ~ φ17.5 (φ0.551" - φ0.689")	TDJ (Former products)
	LPMT05X204-D4	●			φ14 ~ φ17.5 (φ0.551" - φ0.689")	

● SPMP831DS, SPMP/M**2ERD

Shape	Designation	ISO Metric Designation	Coated			Applicable drill diameter	Applicable drill
			T313W				
	SPMP831DS	SPMT060204-DS	●			φ18 ~ φ19.5 (φ0.709" - φ0.768")	TDR, for Peripheral side (Former products)
	SPMP042ERD	SPMP080308ER-D	●			φ20 ~ φ28.5 (φ0.787" - φ1.122")	
	SPMM322ERD	SPMT090308ER-D	●			φ29 ~ φ34.5 (φ1.142" - φ1.358")	
	SPMM432ERD	SPMT120408ER-D	●			φ35 ~ φ49 (φ1.378" - φ1.929")	

● TPMP**ZDS, TPMP**ZERD, TPMM**ZERD

Shape	Designation	Coated			Applicable drill diameter	Applicable drill
		T313W				
	TPMP83ZDS	●			φ18 ~ φ19.5 (φ0.709" - φ0.768")	TDR, for Central side (Former products)
	TPMP04ZERD	●			φ20 ~ φ28.5 (φ0.787" - φ1.122")	
	TPMM32ZERD	●			φ29 ~ φ34.5 (φ1.142" - φ1.358")	
	TPMM43ZERD	●			φ35 ~ φ54 (φ1.378" - φ2.126")	

TPMM43ZERD can be used on the peripheral side.

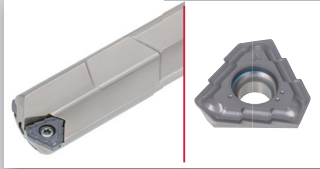
● WCMT**-D...

Shape	Designation	Coated			Applicable drill
		AH120	AH140	T313W	
	WCMT050308-DC			●	for counter boring, and drilling.
	WCMT050308-D4	●	●	●	
	WCMT06T308-DC			●	
	WCMT06T308-D4	●	●	●	
	WCMT080412-DC			●	
	WCMT080412-D4			●	

● : Line up



Deep Hole Drill

Inch Metric



DEEPTRI

Excellent productivity and stability in deep hole drilling



 $\phi 0.472'' - \phi 1.575''$ ($\phi 12 \text{ mm} - \phi 40 \text{ mm}$) / L/D = 8, 10, 15, 20, 25, for machining centers
 OAL < 64.961" (1650 mm) for gundrill machines (standard line-ups)

J007, J095
J096 - J121



GUNDRILL

Brazed gundrills suitable for small diameter deep hole drilling

 $\phi 3 \text{ mm} - \phi 12.2 \text{ mm}$ ($\phi 0.118'' - \phi 0.480''$)
 OAL $\leq 1650 \text{ mm}$ ($\phi 64.00''$) (standard line-ups)

J007, J095
J122



TRI-FINE

Direct mount drill head with 3-cornered inserts

 $\phi 16 \text{ mm} - \phi 28 \text{ mm}$ ($\phi 0.630'' - \phi 1.102''$)

J007, J124
J128 - J131



FINE-BEAM

Direct mount deep hole drilling heads

 $\phi 25 \text{ mm} - \phi 65 \text{ mm}$ ($\phi 0.984'' - \phi 2.559''$)

J007, J124
J132 - J137



UNIDEX

Indexable deep hole drilling heads with adjustable diameters

 $\phi 38 \text{ mm} - \phi 106.99 \text{ mm}$ ($\phi 1.496'' - \phi 4.212''$)

J007, J124
J138 - J143

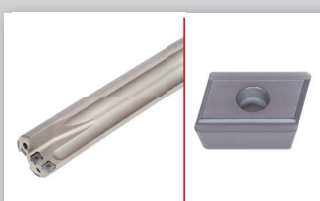


Brazed BTA tool

New solution for BTA drilling with two types of tools: single tube and double tube


 $\phi 8 - \phi 65$ ($\phi 0.315'' - \phi 0.614''$)

J007, J125 - 127
J144 - J156



HF drills for deep hole drilling






Indexable deep hole drills for large diameter with high productivity

 $\phi 30 \text{ mm} - \phi 63 \text{ mm}$ ($\phi 1.181'' - \phi 2.480''$),
hole depth: L/D=14

J007, J157 - J158

Indexable Gundrill guide

Indexable Gundrills & Brazed Gundrills

Drill type	Lathes & machining centers			Gundrill machines			Brazed tool
	MCTR	MCTRCH	MCTR	TRLG	TRLGCH	TRLG	SLJ
Indexable Gundrills Brazed Gundrill							
	<input checked="" type="checkbox"/> Inch <input checked="" type="checkbox"/> Metric	<input checked="" type="checkbox"/> Inch <input checked="" type="checkbox"/> Metric	<input checked="" type="checkbox"/> Inch <input checked="" type="checkbox"/> Metric	<input checked="" type="checkbox"/> Inch <input checked="" type="checkbox"/> Metric	<input checked="" type="checkbox"/> Inch <input checked="" type="checkbox"/> Metric	<input checked="" type="checkbox"/> Inch <input checked="" type="checkbox"/> Metric	<input type="checkbox"/> Inch <input checked="" type="checkbox"/> Metric
Drill diameter	ø0.500" - ø1.062" (ø12 mm - ø28mm)	ø0.578" - ø0.937" (ø14 mm - ø28 mm)	ø1.125" - ø1.500" (ø28.01 mm - ø40 mm)	ø0.472" - ø1.102" (ø12 mm - ø28 mm)	ø0.591" - ø0.937" (ø14 mm - ø28 mm)	ø1.181" (ø28.01 mm - ø40 mm)	ø3 - ø12.2
MCTR: Drilling depth TRLG, SLJ: Tool over all length	Max L/D = 25	Max L/D = 25	Max L/D = 25	31.567" - 39.516" (801.8 mm - 1003.7 mm)	65.039" - 72.181" (1652 mm - 1653.4 mm)	65.075" (1002.9 mm - 1652.9 mm)	ø3 - ø4.1 : Max = 800 mm ø4.1 - ø4.9 : Max = 1250 mm ø4.9 - ø12.2 : Max = 2000 mm
Hole tolerance (in) ^{*1}	+ 0.002 / - 0.004	+ 0.002 / - 0.005	+ 0.002 / - 0.004	+ 0.002 / - 0.004	+ 0.002 / - 0.005	+ 0.002 / - 0.004	+0.03 / -0.01
Surface finish Ra (µm)	1	1	1	1	1	1	3 - 25
Machine	Deep hole drilling machines	-	-	-	-	-	-
	NC machines	○	○	○	-	-	-
	Lathes	○	○	○	△	△	△
	Machining centers M/C	○	○	○	△	△	△
	Gundrill machines	-	-	-	○	○	○
Workpiece material	P Steel	★★★	★★★	★★★	★★★	★★★	★★
	M Stainless	★★	★★	★★	★★	★★	★
	K Cast iron	★★★	★★★	★★★	★★★	★★★	★★★
	N Non-ferrous	★★	★★	★★	★★	★★	★★★
	S Superalloys	★★	★★	★★	★★	★★	★
H Hard materials (≥40HRC)	★★★	★★★	★★★	★★★	★★★	★★★	★
Insert type	LOGT / TOHT	TOHT	FBH / FBM	LOGT / TOHT	TOHT	FBH / FBM	-
Page	J097 - J100	J101	J1012 - J107	J108 - J109	J110	J111 - J121	J122 - J123

*1: Just for reference

★★★(Excellent) ←→ ★(Standard)

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Endmill
Drilling Tool
Tooling System
Index



DEEPT^{RI}DRILL



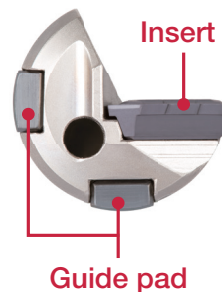
Indexable gundrill
 for extreme productivity
 and stability

Ultimate efficiency

Unique chipbreakers on the cutting edge enable impressive chip control and high feed rates.

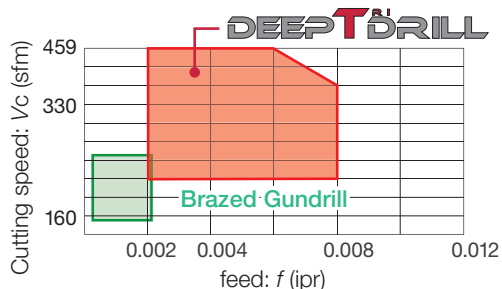
Excellent chip control

- Chip splitters breaks chips into smaller segments to facilitate smooth Chip evacuation process
- Its smooth chip evacuation ability allows the use in standard lathes and machining centers



Performance comparison with other types of drills

P 1055



Chip control

P 1055 Drill diameter : DC = 0.827"



Cutting speed : Vc = 328 sfm
 feed : f = 0.006 ipr



Vc = 197 sfm
 f = 0.002 ipr

Two bodies available for machining centers, lathes, and gundrill machines

MCTR : for machining centers and lathes



Tool dia.: DC = 0.500" - 1.575" (12 mm - 40 mm)
 *Max. DC = 40 : Available tailor-made tools
 L/D : 8, 10, 15, 20, 25

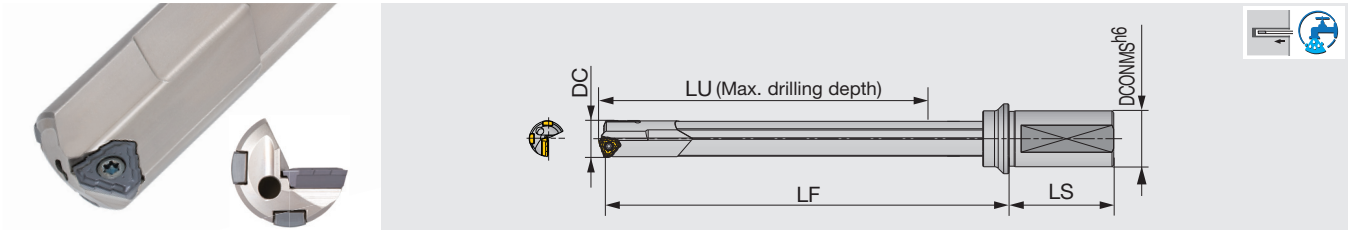
TRLG : for gundrill machines



Tool dia. : DC = 0.472" - 1.181" (12 mm - 30 mm)
 *Max. DC = 40 : Available tailor-made tools
 Overall length: 31.496", 39.370", 59.055", 64.961"
 (800 mm, 1000 mm, 1500 mm, 1650 mm)

* Can be tailored up to 94.488" (2400 mm) overall length

Reference pages: **J097 - J121**, Technical references → **L084**



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR15.88XU25.4-10	0.625	1.000	6.378	2.205	7.756	TOHT07...	GP05-060, GP05-18-060-DC
MCTR17.45XU25.4A-10	0.687	1.000	7.173	2.205	8.661	TOHT08..	GP05-075, GP05-18-075-DC
MCTR18.24XU25.4-10	0.718	1.000	7.598	2.205	9.134	TOHT09..	GP06-085, GP06-20-085-DC
MCTR18.64XU25.4-10	0.734	1.000	7.598	2.205	9.134	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.05XU25.4-10	0.750	1.000	7.992	2.205	9.567	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.94XU31.75-10	0.785	1.250	7.992	2.362	10.039	TOHT09..	GP06-085, GP06-20-085-DC
MCTR20.62XU31.75-10	0.812	1.250	8.394	2.362	10.039	TOHT10..	GP06-085, GP06-20-085-DC
MCTR22.23XU31.75-10	0.875	1.250	9.189	2.362	10.945	TOHT11..	GP06-100, GP06-20-100-DC
MCTR23.80XU31.75-10	0.937	1.250	9.976	2.362	11.850	TOHT11..	GP06-100, GP06-20-100-DC
MCTR25.40XU31.75-10	1.000	1.250	10.378	2.362	12.283	TOHT12..	GP06, GP06-20-120-DC
MCTR26.97XU31.75X-10	1.062	1.250	11.165	2.362	13.189	TOHT12..	GP06, GP06-20-120-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR16.00XM25A-10	16	25	172.2	56	209	TOHT08...	GP05-075, GP05-18-075-DC
MCTR16.50XM25A-10	16.5	25	172.2	56	209	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.00XM25A-10	17	25	182.2	56	220	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.00XM25A-10	18	25	192.2	56	232	TOHT08...	GP05-075, GP05-18-075-DC
MCTR19.00XM25-10	19	25	203	56	243	TOHT09...	GP06-085, GP06-20-085-DC
MCTR20.00XM32-10	20	32	213	60	255	TOHT09...	GP06-085, GP06-20-085-DC
MCTR21.00XM32-10	21	32	223.2	60	266	TOHT10...	GP06-085, GP06-20-085-DC
MCTR22.00XM32-10	22	32	233.4	60	278	TOHT11...	GP06-100, GP06-20-100-DC
MCTR23.00XM32-10	23	32	243.4	60	289	TOHT11...	GP06-100, GP06-20-100-DC
MCTR24.00XM32-10	24	32	253.4	60	301	TOHT11...	GP06-100, GP06-20-100-DC
MCTR25.00XM32-10	25	32	263.4	60	312	TOHT11...	GP06-100, GP06-20-100-DC
MCTR26.00XM40-10	26	40	273.6	70	324	TOHT12...	GP06, GP06-20-120-DC
MCTR27.00XM40-10	27	40	283.6	70	335	TOHT12...	GP06, GP06-20-120-DC
MCTR28.00XM40-10	28	40	283.6	70	337	TOHT12...	GP06, GP06-20-120-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
0.625 - 1.102	0 / - 0.003	+ 0.002 / - 0.004

(Unit: Inch)

SPARE PARTS

Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR16... - MCTR20.00...	SR14-560/S	T-8F	SR34-508	T-7F
MCTR20.62... - MCTR21...	SR34-506	T-9F	SR34-508	T-7F
MCTR22... - MCTR25.00...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTR25.4... - MCTR28...	SR14-506	T-15F	SR34-508	T-7F

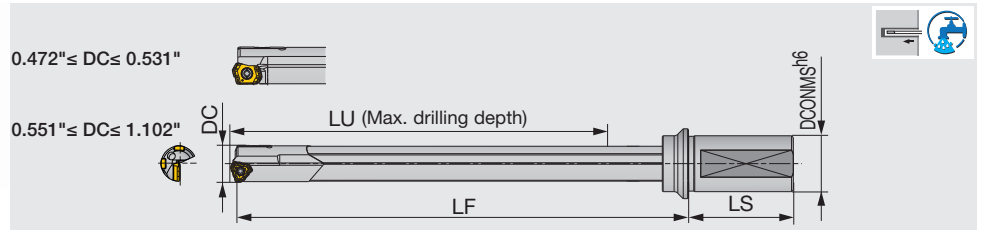
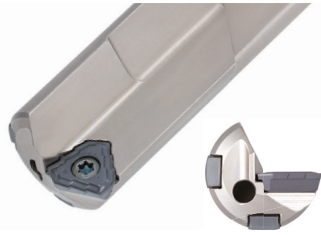
Recommended clamping torque (lb-ft): SR34-506=0.66, SR34-508=0.9, SR14-560/S=0.89, SR14-571/S=3.2, SR14-506=3.54



DEEPT^{AI} DRILL

MCTR L/D=15

Drill body for lathes and machining centers, L/D = 15, Tool diameter $\varnothing 0.5"$ - $\varnothing 1.062"$ and $\varnothing 12\text{mm}$ - $\varnothing 28\text{mm}$



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR12.70XU25.4-15	0.500	1.000	7.748	2.205	9.016	LOGT06..	GP04-055, GP04-16-055-DC
MCTR13.49XU25.4-15	0.531	1.000	8.339	2.205	9.646	LOGT06..	GP04-055, GP04-16-055-DC
MCTR14.27XU25.4-15	0.562	1.000	8.937	2.205	10.276	TOHT07..	GP05-060, GP05-18-060-DC
MCTR15.88XU25.4-15	0.625	1.000	9.528	2.205	10.984	TOHT07..	GP05-060, GP05-18-060-DC
MCTR17.45XU25.4A-15	0.687	1.000	10.717	2.205	12.205	TOHT08..	GP05-075, GP05-18-075-DC
MCTR18.24XU25.4-15	0.718	1.000	11.339	2.205	12.874	TOHT09..	GP06-085, GP06-20-085-DC
MCTR18.64XU25.4-15	0.734	1.000	11.339	2.205	12.874	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.05XU25.4-15	0.750	1.000	11.929	2.205	13.504	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.94XU31.75-15	0.785	1.250	12.520	2.362	14.173	TOHT09..	GP06-085, GP06-20-085-DC
MCTR20.62XU31.75-15	0.812	1.250	12.528	2.362	14.173	TOHT10..	GP06-085, GP06-20-085-DC
MCTR22.23XU31.75-15	0.875	1.250	13.717	2.362	15.472	TOHT11..	GP06-100, GP06-20-100-DC
MCTR23.80XU31.75-15	0.937	1.250	14.898	2.362	16.772	TOHT11..	GP06-100, GP06-20-100-DC
MCTR25.40XU31.75-15	1.000	1.250	15.500	2.362	17.402	TOHT12..	GP06, GP06-20-120-DC
MCTR26.97XU31.75X-15	1.062	1.250	16.681	2.362	18.701	TOHT12..	GP06, GP06-20-120-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR12.00XM20-15	12	20	196.8	50	225	LOGT06...	GP04-055, GP04-16-055-DC
MCTR12.50XM20-15	12.5	20	196.8	50	226	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.00XM25-15	13	25	211.8	56	245	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.50XM25-15	13.5	25	211.8	56	245	LOGT06...	GP04-055, GP04-16-055-DC
MCTR14.00XM25-15	14	25	227	56	245	TOHT07...	GP05-060, GP05-18-060-DC
MCTR14.50XM25-15	14.5	25	227	56	262	TOHT07...	GP05-060, GP05-18-060-DC
MCTR15.00XM25-15	15	25	242	56	278	TOHT07...	GP05-060, GP05-18-060-DC
MCTR16.00XM25A-15	16	25	257.2	56	294	TOHT08...	GP05-075, GP05-18-075-DC
MCTR16.50XM25A-15	16.5	25	257.2	56	294	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.00XM25A-15	17	25	272.2	56	310	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.50XM25A-15	17.5	25	272.2	56	310	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.00XM25A-15	18	25	287.2	56	327	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.50XM25-15	18.5	25	288	56	327	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.00XM25-15	19	25	303	56	343	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.50XM25-15	19.5	25	303	56	343	TOHT09...	GP06-085, GP06-20-085-DC
MCTR20.00XM32-15	20	32	318	60	360	TOHT09...	GP06-085, GP06-20-085-DC
MCTR21.00XM32-15	21	32	333.2	60	376	TOHT10...	GP06-085, GP06-20-085-DC
MCTR22.00XM32-15	22	32	348.4	60	393	TOHT11...	GP06-100, GP06-20-100-DC
MCTR23.00XM32-15	23	32	363.4	60	409	TOHT11...	GP06-100, GP06-20-100-DC
MCTR24.00XM32-15	24	32	378.4	60	426	TOHT11...	GP06-100, GP06-20-100-DC
MCTR25.00XM32-15	25	32	393.4	60	442	TOHT11...	GP06-100, GP06-20-100-DC
MCTR26.00XM40-15	26	40	408.6	70	459	TOHT12...	GP06, GP06-20-120-DC
MCTR27.00XM40-15	27	40	423.6	70	475	TOHT12...	GP06, GP06-20-120-DC
MCTR28.00XM40-15	28	40	423.6	70	477	TOHT12...	GP06, GP06-20-120-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
0.472 - 1.102	0 / - 0.003	+ 0.002 / - 0.004

(Unit: Inch)

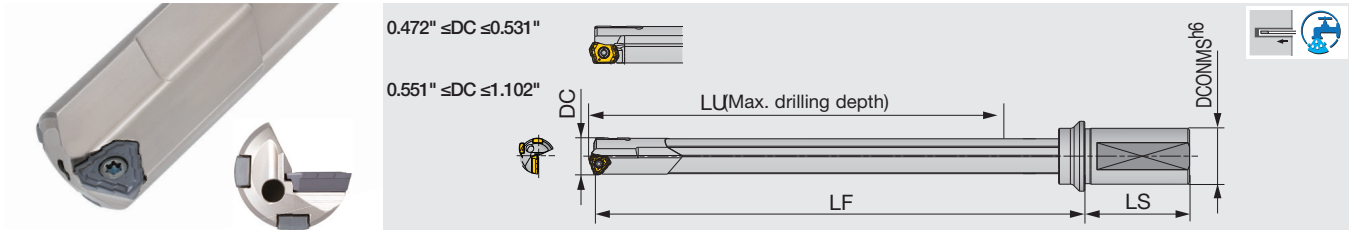
SPARE PARTS

Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR12... - MCTR13.5...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
MCTR14... - MCTR20.00...	SR14-560/S	T-8F	SR34-508	T-7F
MCTR20.62... - MCTR21...	SR34-506	T-9F	SR34-508	T-7F
MCTR22... - MCTR25.00...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTR25.4... - MCTR28...	SR14-506	T-15F	SR34-508	T-7F

Recommended clamping torque (lb-ft): CSPB-2L043=0.52, SR34-506=0.66, SR34-508=0.66, SR14-560/S=0.89, SR10503833L040=0.96, SR14-571/S=3.2, SR14-506=3.54

Reference pages: Inserts, Guide pads → **J114 - J117**, Standard cutting conditions → **J118**

Drill body for lathes and machining centers, L/D = 20, Tool diameter $\phi 12 - \phi 15$ mm



Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR12.00XM20-20	12	20	261.8	50	290	LOGT06...	GP04-055, GP04-16-055-DC
MCTR12.50XM20-20	12.5	20	261.8	50	291	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.00XM25-20	13	25	281.8	56	315	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.50XM25-20	13.5	25	281.8	56	315	LOGT06...	GP04-055, GP04-16-055-DC
MCTR14.00XM25-20	14	25	302	56	336	TOHT07...	GP05-060, GP05-18-060-DC
MCTR14.50XM25-20	14.5	25	302	56	337	TOHT07...	GP05-060, GP05-18-060-DC
MCTR15.00XM25-20	15	25	322	56	358	TOHT07...	GP05-060, GP05-18-060-DC

ϕD_c	Tool diameter tolerance	Applicable tolerance range of hole diameter
12 - 15	0 / - 0.07	+ 0.05 / - 0.1

SPARE PARTS

Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR12...-MCTR13.5...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
MCTR14...-MCTR15...	SR14-560/S	T-8F	SR34-508	T-7F

Recommended clamping torque (N·m): CSPB-2L043=0.7, SR34-508=0.9, SR14-560/S=1.2, SR10503833L040=1.3

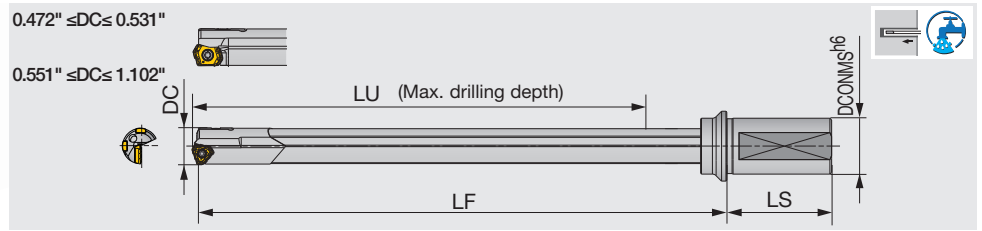
Reference pages: Inserts, Guide pads → **J114 - J117**, Standard cutting conditions → **J118**



DEEPT^{AI} DRILL

MCTR L/D=25

Drill body for lathes and machining centers, L/D = 25, Tool diameter $\varnothing 0.5'' - \varnothing 1.062''$ and $\varnothing 12\text{mm} - \varnothing 28\text{mm}$



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR12.70XU25.4-25	0.500	1.000	12.866	2.205	14.134	LOGT06..	GP04-055, GP04-16-055-DC
MCTR13.49XU25.4-25	0.531	1.000	13.850	2.205	15.157	LOGT06..	GP04-055, GP04-16-055-DC
MCTR14.27XU25.4-25	0.562	1.000	14.843	2.205	16.181	TOHT07..	GP05-060, GP05-18-060-DC
MCTR15.88XU25.4-25	0.625	1.000	15.827	2.205	17.283	TOHT07..	GP05-060, GP05-18-060-DC
MCTR17.45XU25.4A-25	0.687	1.000	17.803	2.205	19.291	TOHT08..	GP05-075, GP05-18-075-DC
MCTR18.24XU25.4-25	0.718	1.000	18.819	2.205	20.354	TOHT09..	GP06-085, GP06-20-085-DC
MCTR18.64XU25.4-25	0.734	1.000	18.819	2.205	20.354	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.05XU25.4-25	0.750	1.000	19.803	2.205	21.378	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.94XU31.75-25	0.785	1.250	20.787	2.362	22.441	TOHT09..	GP06-085, GP06-20-085-DC
MCTR20.62XU31.75-25	0.812	1.250	20.795	2.362	22.441	TOHT10..	GP06-085, GP06-20-085-DC
MCTR21.46XU31.75-25	0.845	1.250	21.78	2.362	23.465	TOHT10...	GP06-100, GP06-20-100-DC
MCTR22.23XU31.75-25	0.875	1.250	22.772	2.362	24.528	TOHT11..	GP06-100, GP06-20-100-DC
MCTR23.80XU31.75-25	0.937	1.250	24.740	2.362	26.614	TOHT11..	GP06-100, GP06-20-100-DC
MCTR25.40XU31.75-25	1.000	1.250	25.732	2.362	27.638	TOHT12..	GP06, GP06-20-120-DC
MCTR26.97XU31.75X-25	1.062	1.250	27.701	2.362	29.724	TOHT12..	GP06, GP06-20-120-DC
MCTR26.97XU38.1-25	1.062	1.500	27.701	2.756	29.724	TOHT12...	GP06, GP06-20-120-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR12.00XM20-25	12	20	326.8	50	355	LOGT06...	GP04-055, GP04-16-055-DC
MCTR12.50XM20-25	12.5	20	326.8	50	356	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.00XM25-25	13	25	351.8	56	385	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.50XM25-25	13.5	25	351.8	56	385	LOGT06...	GP04-055, GP04-16-055-DC
MCTR14.00XM25-25	14	25	377	56	411	TOHT07...	GP05-060, GP05-18-060-DC
MCTR14.50XM25-25	14.5	25	377	56	412	TOHT07...	GP05-060, GP05-18-060-DC
MCTR15.00XM25-25	15	25	402	56	438	TOHT07...	GP05-060, GP05-18-060-DC
MCTR16.00XM25A-25	16	25	427.2	56	464	TOHT08...	GP05-075, GP05-18-075-DC
MCTR16.50XM25A-25	16.5	25	427.2	56	464	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.00XM25A-25	17	25	452.2	56	490	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.50XM25A-25	17.5	25	452.2	56	490	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.00XM25A-25	18	25	477.2	56	517	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.50XM25-25	18.5	25	478	56	517	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.00XM25-25	19	25	503	56	543	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.50XM25-25	19.5	25	503	56	543	TOHT09...	GP06-085, GP06-20-085-DC
MCTR20.00XM32-25	20	32	528	60	570	TOHT09...	GP06-085, GP06-20-085-DC
MCTR21.00XM32-25	21	32	553.2	60	596	TOHT10...	GP06-085, GP06-20-085-DC
MCTR22.00XM32-25	22	32	578.4	60	623	TOHT11...	GP06-100, GP06-20-100-DC
MCTR23.00XM32-25	23	32	603.4	60	649	TOHT11...	GP06-100, GP06-20-100-DC
MCTR24.00XM32-25	24	32	628.4	60	676	TOHT11...	GP06-100, GP06-20-100-DC
MCTR25.00XM32-25	25	32	653.4	60	702	TOHT11...	GP06-100, GP06-20-100-DC
MCTR26.00XM40-25	26	40	678.6	70	729	TOHT12...	GP06, GP06-20-120-DC
MCTR27.00XM40-25	27	40	703.6	70	755	TOHT12...	GP06, GP06-20-120-DC
MCTR28.00XM40-25	28	40	703.6	70	757	TOHT12...	GP06, GP06-20-120-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
0.500 - 1.102	0 / - 0.003	+ 0.002 / - 0.004

(Unit: Inch)

SPARE PARTS

Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR12... - MCTR13.5...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
MCTR14... - MCTR20.00...	SR14-560/S	T-8F	SR34-508	T-7F
MCTR20.62... - ...MCTR21...	SR34-506	T-9F	SR34-508	T-7F
MCTR22... - MCTR25.00...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTR25.4... - MCTR28...	SR14-506	T-15F	SR34-508	T-7F

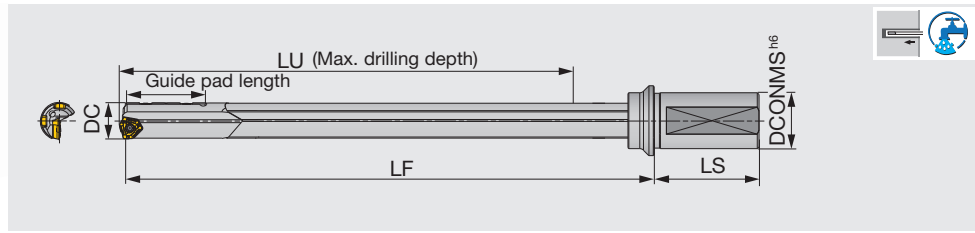
Recommended clamping torque (lb-ft):
 CSPB-2L043=0.52, SR34-506=0.66,
 SR34-508=0.66, SR14-560/S=0.89,
 SR10503833L040=0.96, SR14-571/
 S=2.36, SR14-506=3.54

Reference pages: Inserts, Guide pads → **J114 - J117**, Standard cutting conditions → **J118**

DEEPT^{AI} DRILL

MCTRCH L/D=25

Drill body for drilling cross hole applications on CNC lathes and machining centers, L/D = 25, Tool diameters $\phi 0.578'' - \phi 0.937''$ and $\phi 14\text{mm} - \phi 28\text{mm}$



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad	Guide pad length
MCTRCH14.68XU25.4-25	0.578	1.000	14.843	2.205	16.220	TOHT07...	GP05-060, GP05-18-060-DC	1.417
MCTRCH15.06XU25.4-25	0.593	1.000	15.827	2.205	17.244	TOHT07...	GP05-060, GP05-18-060-DC	1.417
MCTRCH18.24XU25.4-25	0.718	1.000	18.819	2.205	20.354	TOHT09...	GP06-085, GP06-20-085-DC	1.575
MCTRCH18.64XU25.4-25	0.734	1.000	18.819	2.205	20.354	TOHT09...	GP06-085, GP06-20-085-DC	1.575
MCTRCH23.80XU31.75-25	0.937	1.250	24.740	2.362	26.614	TOHT11...	GP06-100, GP06-20-100-DC	1.575

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad	Guide pad length
MCTRCH14.00XM25-25	14	25	377	56	411	TOHT07...	GP05-060, GP05-18-060-DC	36
MCTRCH15.00XM25-25	15	25	402	56	438	TOHT07...	GP05-060, GP05-18-060-DC	36
MCTRCH16.00XM25A-25	16	25	427.2	56	464	TOHT08...	GP05-075, GP05-18-075-DC	36
MCTRCH18.00XM25A-25	18	25	477.2	56	517	TOHT08...	GP05-075, GP05-18-075-DC	36
MCTRCH19.00XM25-25	19	25	503	56	543	TOHT09...	GP06-085, GP06-20-085-DC	40
MCTRCH20.00XM32-25	20	32	528	60	570	TOHT09...	GP06-085, GP06-20-085-DC	40
MCTRCH23.00XM32-25	23	32	603.4	60	649	TOHT11...	GP06-100, GP06-20-100-DC	40
MCTRCH24.00XM32-25	24	32	628.4	60	676	TOHT11...	GP06-100, GP06-20-100-DC	40
MCTRCH28.00XM40-25	28	40	703.6	70	757	TOHT12...	GP06, GP06-20-120-DC	40

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
$\phi 0.551 - \phi 1.102$	0 / - 0.004	+ 0.002 / - 0.005

(Unit: Inch)

SPARE PARTS



Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTRCH14... - MCTRCH20...	SR14-560/S	T-8F	SR34-508	T-7F
MCTRCH23... - MCTRCH24...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTRCH28...	SR14-506	T-15F	SR34-508	T-7F

Recommended clamping torque (lb-ft): SR34-508=0.66, SR14-560/S=0.89, SR14-571/S=2.36, SR14-506=3.54

Reference pages: Inserts, Guide pads → **J114 - J117**, Standard cutting conditions → **J118**

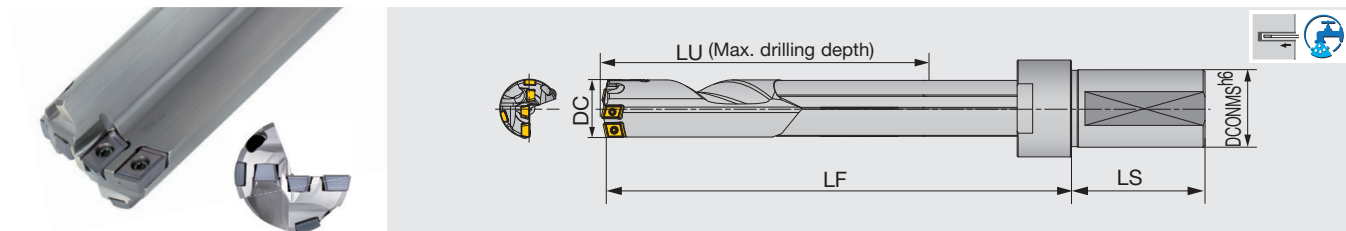
Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index



DEEPT^{RI} DRILL

MCTR-F L/D=8

Drill body for lathes and machining centers, L/D = 8, Tool diameter $\varnothing 33.1$, $\varnothing 39.1$ mm



Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR33.10XFM40-8	33.1	40	275	69	350	FBM07**-C, FBM06**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR39.10XFM40-8	39.1	40	323	69	407	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
33.1, 39.1	0 / - 0.07	+ 0.05 / - 0.1

Max. DC = 40: Available tailor-made tools (Unit: mm)

SPARE PARTS



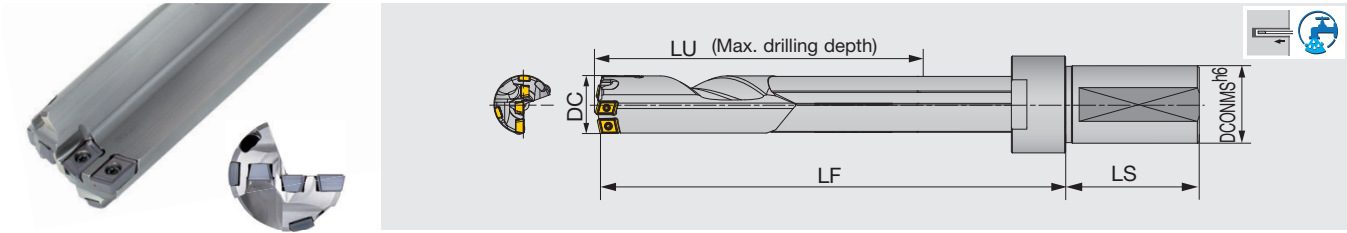
Designation	Insert								Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench		
	Screw	Wrench	Screw	Wrench	Screw	Wrench				
MCTR33.1..., MCTR39.1...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F		

Recommended clamping torque (N·m): CSTB2.5=1.3, CSTB-3S=2.3

Note: The drill body surface is blackened for corrosion resistance and may appear uneven.

This, however, will not affect the performance of the drill.

Drill body for lathes and machining centers, L/D = 10, Tool diameter $\phi 1.125'' - \phi 1.500''$ and $\phi 29\text{mm} - \phi 40\text{mm}$



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR28.58XFU31.75-10	1.125	1.250	11.520	2.717	14.173	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR31.75XFU31.75-10	1.250	1.250	12.717	2.717	15.551	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.93XFU31.75-10	1.375	1.250	13.902	2.717	16.850	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.10XFU31.75-10	1.500	1.250	15.488	2.717	18.661	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR29.00XFM40-10	29	40	292.6	69	360	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR30.00XFM40-10	30	40	312.9	69	383	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR31.00XFM40-10	31	40	312.9	69	383	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR32.00XFM40-10	32	40	323	69	395	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR33.00XFM40-10	33	40	333.1	69	406	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.00XFM40-10	34	40	343	69	418	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR35.00XFM40-10	35	40	353.1	69	428	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR36.00XFM40-10	36	40	363.1	69	441	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR37.00XFM40-10	37	40	373	69	451	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.00XFM40-10	38	40	383.1	69	464	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR39.00XFM40-10	39	40	393.4	69	474	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC
MCTR40.00XFM40-10	40	40	403.3	69	487	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
1.125 - 1.500	0 / - 0.003	+ 0.002 / - 0.004

Max. DC = 40: Available tailor-made tools

(Unit: Inch)

SPARE PARTS



Designation	Insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR28.58... - MCTR29...	CSTB-2.5	T-8F	CSTB-2.2	T-7F	CSTB-2.2	T-7F	SR34-508	T-7F
MCTR30... - MCTR33...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F
MCTR34... - MCTR40...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

Recommended clamping torque (lb-ft): SR34-508=0.66, CSTB-2.2=0.74, CSTB-2.5=0.96, CSTB-3S=1.70,

Note: The drill body surface is blackened for corrosion resistance and may appear uneven.

This will not affect the performance of the drill.

Reference pages: Inserts, Guide pads → **J114 - J117**, Standard cutting conditions → **J118**

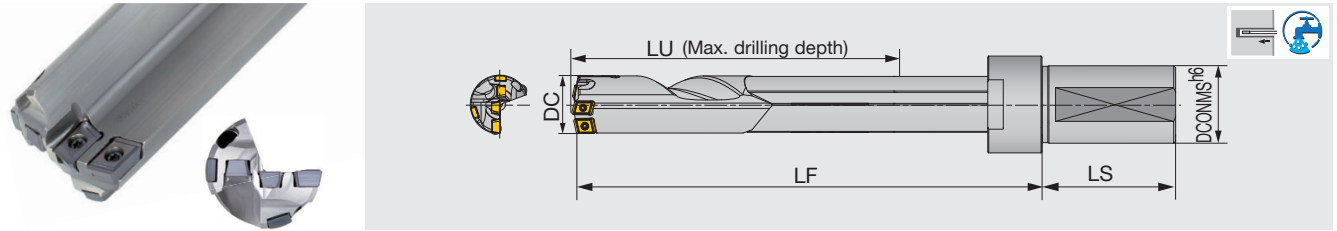


DEEPT^{AI} DRILL

MCTR-F L/D=15

Drill body for lathes and machining centers, L/D = 15, Tool diameter $\phi 1.125'' - \phi 1.500''$ and $\phi 29\text{mm} - \phi 40\text{mm}$

Deep Hole Drill
Indexable Drill
2-effective Drill



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR28.58XFU31.75-15	1.125	1.250	17.228	2.717	19.882	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR31.75XFU31.75-15	1.250	1.250	19.016	2.717	21.850	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.93XFU31.75-15	1.375	1.250	20.791	2.717	23.740	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.10XFU31.75-15	1.500	1.250	23.165	2.717	26.339	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR29.00XFM40-15	29	40	437.6	69	505	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR30.00XFM40-15	30	40	467.9	69	538	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR31.00XFM40-15	31	40	467.9	69	538	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR32.00XFM40-15	32	40	483	69	555	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR33.00XFM40-15	33	40	498.1	69	571	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.00XFM40-15	34	40	513	69	588	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR35.00XFM40-15	35	40	528.1	69	603	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR36.00XFM40-15	36	40	543.1	69	621	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR37.00XFM40-15	37	40	558	69	636	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.00XFM40-15	38	40	573.1	69	654	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR39.00XFM40-15	39	40	588.4	69	669	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC
MCTR40.00XFM40-15	40	40	603.3	69	687	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
1.125 - 1.500	0 / - 0.003	+ 0.002 / - 0.004

Max. DC = 40: Available tailor-made tools

(Unit: Inch)

SPARE PARTS



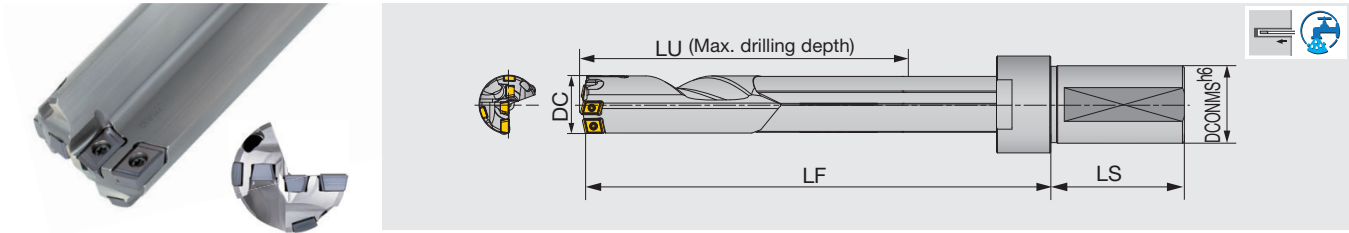
Designation	Insert								Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench	Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench				
MCTR28.58... - MCTR29...	CSTB-2.5	T-8F	CSTB-2.2	T-7F	CSTB-2.2	T-7F	SR34-508	T-7F		
MCTR30... - MCTR33...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F		
MCTR34... - MCTR40...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F		

Recommended clamping torque (lb-ft): SR34-508=0.66, CSTB-2.2=0.74, CSTB-2.5=0.96, CSTB-3S=1.7

Note: The drill body surface is blackened for corrosion resistance and may appear uneven. This will not affect the performance of the drill.

Reference pages: Inserts, Guide pads → **J114 - J117**, Standard cutting conditions → **J118**

Drill body for lathes and machining centers, L/D = 25, Tool diameter $\phi 1.125'' - \phi 1.500''$ and $\phi 30\text{mm}$



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR28.58XFU31.75-25	1.125	1.250	28.646	2.717	31.299	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR31.75XFU31.75-25	1.250	1.250	31.614	2.717	34.449	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.93XFU31.75-25	1.375	1.250	34.571	2.717	37.520	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.10XFU31.75-25	1.500	1.250	38.520	2.717	41.693	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR30.00XFM40-25	30	40	777.9	69	848	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
1.125 - 1.500	0 / - 0.003	+ 0.002 / - 0.004

Max. DC = 40: Specials available upon request (Unit: Inch)

SPARE PARTS

Designation	Insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR28...	CSTB-2.5	T-8F	CSTB-2.2	T-7F	CSTB-2.2	T-7F	SR34-508	T-7F
MCTR30... - MCTR31...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F
MCTR34... - MCTR38...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

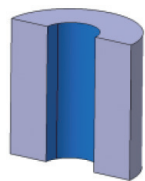
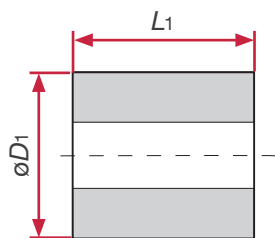
Recommended clamping torque (lb-ft): SR34-508=0.66, CSTB-2.2=0.74, CSTB-2.5=0.96, CSTB-3S=1.7

Note: The drill body surface is blackened for corrosion resistance and may appear uneven. This will not affect the performance of the drill.

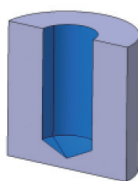


DEEPT^{ri}DRILL

MCTR Quotation sheet



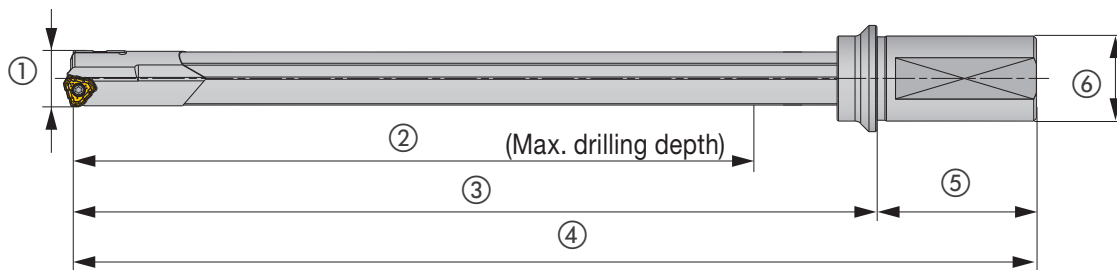
Through



Blind

øD1	
L1	
Hole tolerance	

Request



①	
②	
③	

④	
⑤	
⑥	

Description	
Quote QTY	pcs

*MOQ: 1pc

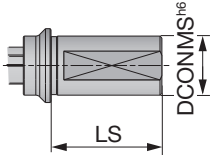
Technical data

Machine type	<input type="checkbox"/> MCT	<input type="checkbox"/> Lathe
	<input type="checkbox"/> Vertical	<input type="checkbox"/> Horizontal
Machine name		
Power	Kw	
Coolant type	<input type="checkbox"/> Oil	<input type="checkbox"/> Water-soluble

Workpiece

Part	
Material	
Hardness	

Driver

Driver	DCONMS		LS		Driver code	Coverage	
	Inch	Metric	Inch	Metric		Inch	Metric
		0.984	25	2.205		56	M25
	1.260	32	2.362	60	M32	ø0.775 - ø1.011	ø19.7 - ø25.69
	1.575	40	2.756	70	M40	ø1.011 - ø1.102	ø25.7 - ø28
	1.000	25.4	2.205	56	U25.4	ø0.551 - ø0.775	ø14 - ø19.69
	1.250	31.75	2.362	60	U31.75	ø0.775 - ø1.011	ø19.7 - ø25.69
	1.500	38.1	2.756	70	U38.1	ø1.011 - ø1.102	ø25.7 - ø28

- Please check "●" in the list of driver.
- If you need special design, please send us detail information.
- If the drill depth is more than "øD1 x 30", you should use 2 types of DeepTriDrill, a short and a long one, because of tool fracture caused by chattering.

DESIGNATION FOR TAILOR MADE TOOLS

For tailor-made drills, use the below guide line to make the designation (Cat. No).

MCTR

18.50

XM

25

-

22

1 Series

MCTR	DeepTri-Drill (For machining centers and lathes)
MCTRCH	DeepTri-Drill (For gundrill machines, cross hole specification)

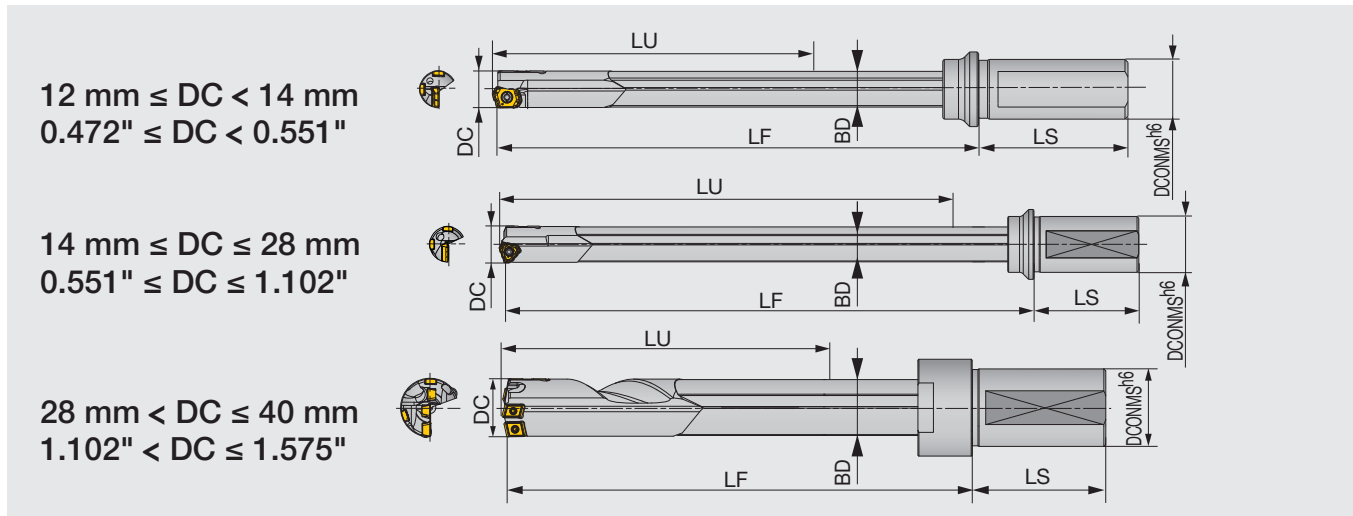
2 Drill diameter DC (mm)

18.50	18.50
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3 Driver diameter DCONMS (mm)

25	25
----	----

4 L/D ratio



AVAILABLE RANGE OF TAILOR MADE DRILL BODIES

DC	DCONMS	LU	LS	LF	BD	DC	DCONMS	LU	LS	LF	BD
12 - 12.49	20	124.8 - 326.8	50	153 - 225	11.5	24.7 - 25.69	32	211.4 - 653.6	60	260 - 702	24
12.5 - 12.99	20	123.8 - 326.8	50	153 - 226	12	25.7 - 26.69	40	219.6 - 678.6	70	270 - 719	25
13 - 13.49	25	122.8 - 351.8	56	156 - 245	12.5	26.7 - 27.69	40	227.6 - 703.6	70	279 - 745	26
13.5 - 13.99	25	122.8 - 351.8	56	156 - 245	13	27.7 - 28	40	227.6 - 703.6	70	281 - 747	27
14 - 14.49	25	122 - 377	56	156 - 411	13.5	28.01 - 29	40	148.7 - 728.7	69	215 - 795	27
14.5 - 14.99	25	122 - 377	56	157 - 412	14	29.01 - 29.99	40	153.7 - 753.7	69	222 - 822	28
15 - 15.99	25	130 - 402	56	166 - 438	14.5	30 - 31	40	158.7 - 778.7	69	228 - 848	29
16 - 16.79	25	138.2 - 427.2	56	175 - 464	15.5	31.01 - 32	40	163.7 - 803.7	69	235 - 875	30
16.8 - 17.69	25	146.2 - 452.2	56	184 - 490	16.2	32.01 - 33	40	168.7 - 828.7	69	241 - 901	31
17.7 - 18.69	25	154.2 - 478	56	194 - 517	17.2	33.01 - 34	40	173.7 - 853.7	69	248 - 928	32
18.7 - 19.69	25	163 - 503	56	203 - 543	18.2	34.01 - 35	40	178.7 - 878.7	69	253 - 953	32
19.7 - 20.69	32	171 - 528.2	60	213 - 570	19	35.01 - 36	40	183.7 - 903.7	69	261 - 981	34
20.7 - 21.69	32	179.2 - 553.2	60	222 - 596	20	36.01 - 37	40	188.7 - 928.7	69	266 - 1006	34
21.7 - 22.69	32	187.2 - 578.4	60	232 - 623	21	37.01 - 38	40	193.7 - 953.7	69	274 - 1034	36
22.7 - 23.69	32	195.4 - 603.4	60	241 - 649	22	38.01 - 39	40	198.7 - 978.7	69	279 - 1059	36
23.7 - 24.69	32	203.4 - 628.4	60	251 - 676	23	39.01 - 40	40	203.7 - 1003.7	69	287 - 1087	38

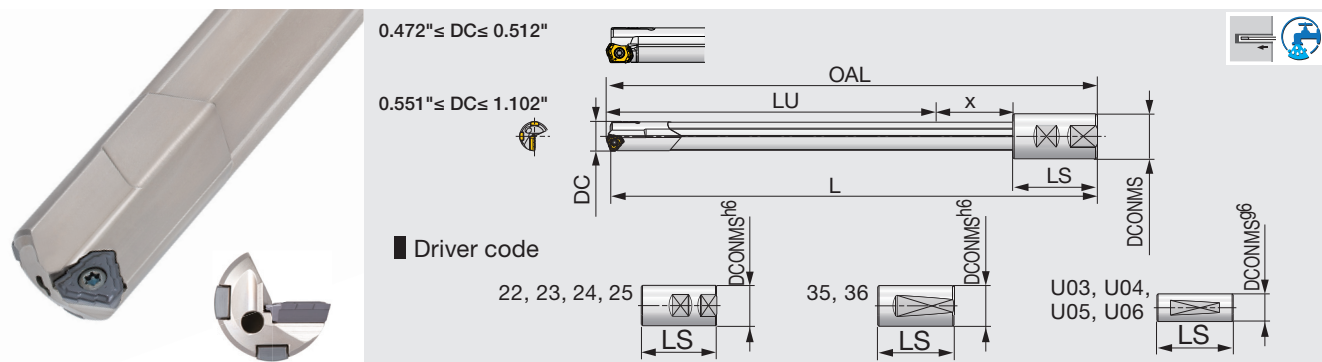
(unit: mm)

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index



DEEPT^{RI} DRILL TRLG

Drill body for gundrill machines, Tool diameters $\varnothing 0.5''$ - $\varnothing 0.531''$ and $\varnothing 12\text{mm}$ - $\varnothing 28\text{mm}$



Inch	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG12.70X1219-U04	0.500	47	1.000	44.559	48.063	2.756	0.748	U04	LOGT06..	GP04-055, GP04-16-055-DC
TRLG12.70X1524-U04	0.500	60	1.000	56.567	60.071	2.756	0.748	U04	LOGT06..	GP04-055, GP04-16-055-DC
TRLG13.49X1219-U04	0.531	47	1.000	44.520	48.063	2.756	0.787	U04	LOGT06..	GP04-055, GP04-16-055-DC
TRLG13.49X1527-U04	0.531	60	1.000	56.646	60.189	2.756	0.787	U04	LOGT06..	GP04-055, GP04-16-055-DC

Metric	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG12.00X800-U03	12	800	19.05	713.8	801.8	70	18	U03	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X800-22	12	800	20	733.8	801.8	50	18	22	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X1000-U03	12	1000	19.05	913.8	1001.8	70	18	U03	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X1000-22	12	1000	20	933.8	1001.8	50	18	22	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X1650-U03	12	1650	19.05	1563.8	1651.8	70	18	U03	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X1650-22	12	1650	20	1583.8	1651.8	50	18	22	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X800-U04	13	800	25.4	711.8	801.8	70	20	U04	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X800-23	13	800	25	725.8	801.8	56	20	23	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X1000-U04	13	1000	25.4	911.8	1001.8	70	20	U04	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X1000-23	13	1000	25	925.8	1001.8	56	20	23	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X1650-U04	13	1650	25.4	1561.8	1651.8	70	20	U04	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X1650-23	13	1650	25	1575.8	1651.8	56	20	23	LOGT06...	GP04-055, GP04-16-055-DC
TRLG14.00X800-23	14	800	25	725	802	56	21	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X800-U04	14	800	25.4	711	802	70	21	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X1000-23	14	1000	25	925	1002	56	21	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X1000-U04	14	1000	25.4	911	1002	70	21	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X1650-23	14	1650	25	1575	1652	56	21	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X1650-U04	14	1650	25.4	1561	1652	70	21	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X800-23	14.5	800	25	724	802	56	22	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X800-U04	14.5	800	25.4	710	802	70	22	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X1000-23A	14.5	1000	25	924	1002	56	22	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X1000-U04	14.5	1000	25.4	910	1002	70	22	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X1650-23	14.5	1650	25	1574	1652	56	22	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X1650-U04	14.5	1650	25.4	1560	1652	70	22	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X800-23	15	800	25	723	802	56	23	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X800-U04	15	800	25.4	709	802	70	23	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X1000-23	15	1000	25	923	1002	56	23	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X1000-U04	15	1000	25.4	909	1002	70	23	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X1650-23	15	1650	25	1573	1652	56	23	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X1650-U04	15	1650	25.4	1559	1652	70	23	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG16.00X800-23A	16	800	25	722.2	802.2	56	24	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X800-U04A	16	800	25.4	708.2	802.2	70	24	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X1000-23A	16	1000	25	922.2	1002.2	56	24	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X1000-U04A	16	1000	25.4	908.2	1002.2	70	24	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X1500-23A	16	1500	25	1422.2	1502.2	56	24	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X1500-U04A	16	1500	25.4	1408.2	1502.2	70	24	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG17.00X800-23A	17	800	25	721.2	802.2	56	25	23	TOHT08...	GP05-075, GP05-18-075-DC

Metric	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG17.00X800-U04A	17	800	25.4	707.2	802.2	70	25	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG17.00X1000-23A	17	1000	25	921.2	1002.2	56	25	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG17.00X1000-U04A	17	1000	25.4	907.2	1002.2	70	25	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X800-23A	18	800	25	719.2	802.2	56	27	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X800-U04A	18	800	25.4	705.2	802.2	70	27	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X1000-23A	18	1000	25	919.2	1002.2	56	27	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X1000-U04A	18	1000	25.4	905.2	1002.2	70	27	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X1500-23A	18	1500	25	1419.2	1502.2	56	27	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X1500-U04A	18	1500	25.4	1405.2	1502.2	70	27	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.50X1500-23	18.5	1500	25	1420	1503	56	27	23	TOHT09...	GP06-085, GP06-20-085-DC
TRLG18.50X1500-U04	18.5	1500	25.4	1406	1503	70	27	U04	TOHT09...	GP06-085, GP06-20-085-DC
TRLG19.00X800-23	19	800	25	719	803	56	28	23	TOHT09...	GP06-085, GP06-20-085-DC
TRLG19.00X800-U04	19	800	25.4	705	803	70	28	U04	TOHT09...	GP06-085, GP06-20-085-DC
TRLG19.00X1000-23	19	1000	25	919	1003	56	28	23	TOHT09...	GP06-085, GP06-20-085-DC
TRLG19.00X1000-U04	19	1000	25.4	905	1003	70	28	U04	TOHT09...	GP06-085, GP06-20-085-DC
TRLG20.00X800-24	20	800	32	713	803	60	30	24	TOHT09...	GP06-085, GP06-20-085-DC
TRLG20.00X800-U05	20	800	31.75	703	803	70	30	U05	TOHT09...	GP06-085, GP06-20-085-DC
TRLG20.00X1000-24	20	1000	32	913	1003	60	30	24	TOHT09...	GP06-085, GP06-20-085-DC
TRLG20.00X1000-U05	20	1000	31.75	903	1003	70	30	U05	TOHT09...	GP06-085, GP06-20-085-DC
TRLG21.00X1000-24	21	1000	32	912.2	1003.2	60	31	24	TOHT10...	GP06-085, GP06-20-085-DC
TRLG21.00X1000-U05	21	1000	31.75	902.2	1003.2	70	31	U05	TOHT10...	GP06-085, GP06-20-085-DC
TRLG22.00X1000-24	22	1000	32	910.4	1003.4	60	33	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG22.00X1000-U05	22	1000	31.75	900.4	1003.4	70	33	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG22.00X1500-24	22	1500	32	1410.4	1503.4	60	33	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG22.00X1500-U05	22	1500	31.75	1400.4	1503.4	70	33	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG23.00X1000-24	23	1000	32	909.4	1003.4	60	34	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG23.00X1000-U05	23	1000	31.75	899.4	1003.4	70	34	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG23.00X1500-24	23	1500	32	1409.4	1503.4	60	34	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG23.00X1500-U05	23	1500	31.75	1399.4	1503.4	70	34	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG24.00X1000-24	24	1000	32	907.4	1003.4	60	36	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG24.00X1000-U05	24	1000	31.75	897.4	1003.4	70	36	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG24.00X1500-24	24	1500	32	1407.4	1503.4	60	36	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG24.00X1500-U05	24	1500	31.75	1397.4	1503.4	70	36	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG25.00X1000-24	25	1000	32	906.4	1003.4	60	37	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG25.00X1000-U05	25	1000	31.75	896.4	1003.4	70	37	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG26.00X1000-25	26	1000	40	894.7	1003.6	70	39	25	TOHT12...	GP06, GP06-20-120-DC
TRLG26.00X1000-U06	26	1000	38.1	894.7	1003.6	70	39	U06	TOHT12...	GP06, GP06-20-120-DC
TRLG27.00X1000-25	27	1000	40	893.7	1003.6	70	40	25	TOHT12...	GP06, GP06-20-120-DC
TRLG27.00X1000-U06	27	1000	38.1	893.7	1003.6	70	40	U06	TOHT12...	GP06, GP06-20-120-DC
TRLG28.00X1000-25	28	1000	40	891.7	1003.6	70	42	25	TOHT12...	GP06, GP06-20-120-DC
TRLG28.00X1000-U06	28	1000	38.1	891.7	1003.6	70	42	U06	TOHT12...	GP06, GP06-20-120-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
0.472 - 1.102	0 / - 0.003	+ 0.002 / - 0.004

(Unit: Inch)

SPARE PARTS

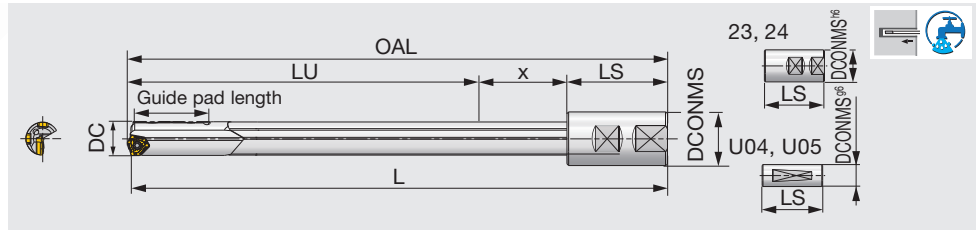
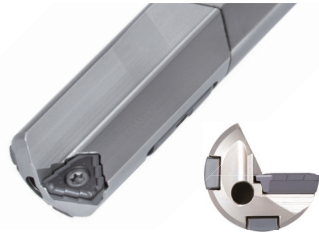
Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
TRLG12... - TRLG13...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
TRLG14... - TRLG20...	SR14-560/S	T-8F	SR34-508	T-7F
TRLG21...	SR34-506	T-9F	SR34-508	T-7F
TRLG22... - TRLG25...	SR14-571/S	T-10/5	SR34-508	T-7F
TRLG26... - TRLG28...	SR14-506	T-15F	SR34-508	T-7F

Recommended clamping torque (lb-ft): CSPB-2L043=0.52, SR34-508=0.66, SR34-506=0.66, SR14-560/S=0.89, SR10503833L040=0.96, SR14-571/S=2.36, SR14-506=3.54

Reference pages: Inserts, Guide pads → **J114 - J117**, Standard cutting conditions → **J118**

DEEPT^{RI} DRILL TRLGCH

Drill body for drilling cross hole applications on gun drilling machines, Tool diameters $\varnothing 0.578''$ - $\varnothing 0.937''$ and $\varnothing 15\text{mm}$ - $\varnothing 24\text{mm}$



Inch	DC	L	DCONMS	LU	OAL	LS	X	Driver code	Insert	Guide pad	Guide pad length
TRLGCH14.68X1830-U05	0.578	72.047	1.250	68.504	72.126	2.756	0.866	U05	TOHT07...	GP05-060, GP05-18-060-DC	1.417
TRLGCH15.06X1830-U05	0.593	72.047	1.250	68.465	72.126	2.756	0.906	U05	TOHT07...	GP05-060, GP05-18-060-DC	1.417
TRLGCH18.24X1830-U05	0.718	72.047	1.250	68.346	72.165	2.756	1.063	U05	TOHT09...	GP06-085, GP06-20-085-DC	1.575
TRLGCH18.64X1830-U05	0.734	72.047	1.250	68.346	72.165	2.756	1.063	U05	TOHT09...	GP06-085, GP06-20-085-DC	1.575
TRLGCH23.42X1830-U05	0.922	72.047	1.250	68.087	72.181	2.756	1.339	U05	TOHT11...	GP06-100, GP06-20-100-DC	1.575
TRLGCH23.80X1830-U05	0.937	72.047	1.250	68.008	72.181	2.756	1.417	U05	TOHT11...	GP06-100, GP06-20-100-DC	1.575

Metric	DC	L	DCONMS	LU	OAL	LS	X	Driver code	Insert	Guide pad	Guide pad length
TRLGCH15.00X1650-U04	15	1650	25.4	1559	1652	70	23	U04	TOHT07...	GP05-060, GP05-18-060-DC	36
TRLGCH15.00X1650-23	15	1650	25	1573	1652	56	23	23	TOHT07...	GP05-060, GP05-18-060-DC	36
TRLGCH18.00X1650-U04A	18	1650	25.4	1555.2	1652.2	70	27	U04	TOHT08...	GP05-075, GP05-18-075-DC	36
TRLGCH18.00X1650-23A	18	1650	25	1569.2	1652.2	56	27	23	TOHT08...	GP05-075, GP05-18-075-DC	36
TRLGCH23.00X1650-U05	23	1650	31.75	1549.4	1653.4	70	34	U05	TOHT11...	GP06-100, GP06-20-100-DC	40
TRLGCH23.00X1650-24	23	1650	32	1559.4	1653.4	60	34	24	TOHT11...	GP06-100, GP06-20-100-DC	40
TRLGCH24.00X1650-U05	24	1650	31.75	1547.4	1653.4	70	36	U05	TOHT11...	GP06-100, GP06-20-100-DC	40
TRLGCH24.00X1650-24	24	1650	32	1557.4	1653.4	60	36	24	TOHT11...	GP06-100, GP06-20-100-DC	40

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
$\varnothing 0.578 - \varnothing 0.945$	0 / - 0.004	+ 0.002 / - 0.005

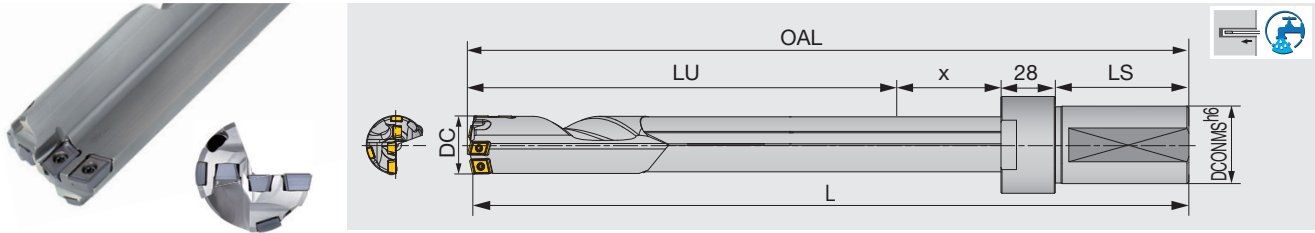
(Unit: Inch)

SPARE PARTS

Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
TRLGCH14... - TRLGCH18...	SR14-560/S	T-8F	SR34-508	T-7F
TRLGCH23... - TRLGCH24...	SR14-571/S	T-10/5	SR34-508	T-7F

Recommended clamping torque (lb-ft): SR34-508=0.66, R14-560/S=0.89, SR14-571/S=2.36

Reference pages: Inserts, Guide pads → **J114 - J117**, Standard cutting conditions → **J118**



Inch	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG29.36X1828-FU31.75	1.156	71.969	1.250	66.520	72.071	27.165	1.732	FU31.75	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC

Metric	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG30.00X1000-FM40	30	1000	40	860.9	1002.9	69	45	FM40	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
TRLG30.00X1650-FM40	30	1650	40	1510.9	1652.9	69	45	FM40	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
TRLG30.00X1650-FU38.1	30	1650	38.1	1510.9	1652.9	69	45	FU38.1	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
1.181	0 / - 0.003	+ 0.002 / - 0.004

Max. DC = 40: Available tailor-made tools

(Unit: Inch)

SPARE PARTS



Designation	Insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
TRLG30...	Screw	Wrench	Screw	Wrench	Screw	Wrench	SR34-508	T-7F

Recommended clamping torque (lb-ft): SR34-508=0.66, CSTB-2.5=0.96

Note: The drill body surface is blackened for corrosion resistance and may appear uneven. This will not affect the performance of the drill.

DESIGNATION FOR TAILOR MADE TOOLS

For tailor-made drills, use the below guide line to make the designation (Cat. No).

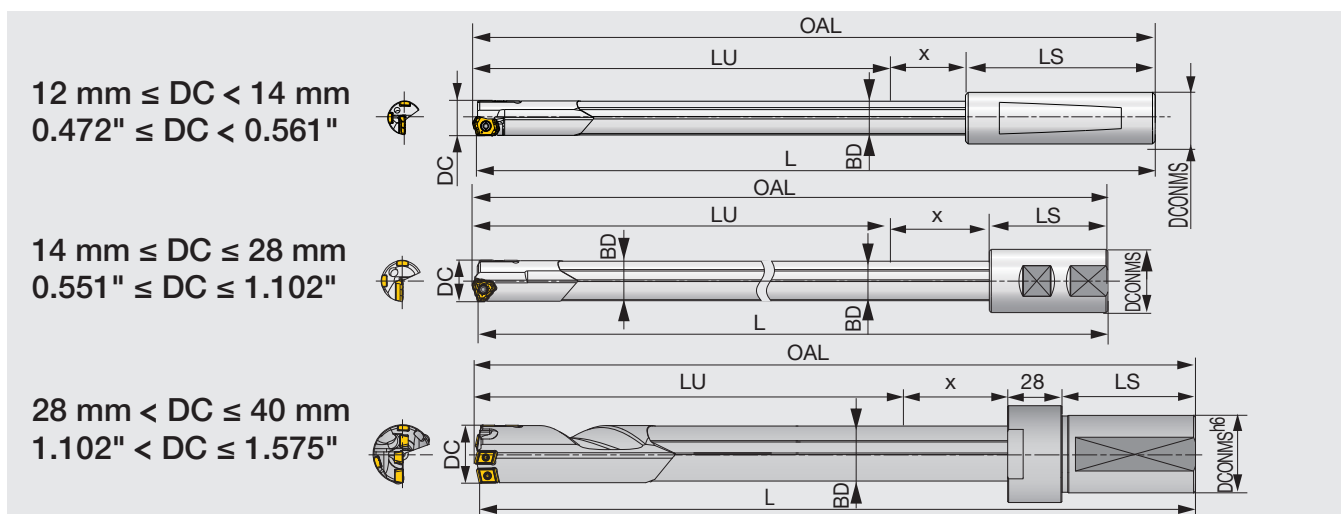
1 **TRLG** **2** **18.50** **X** **3** **900** - **4** **23**

1 Series	
TRLG	DeepTri-Drill (for gundrill machines)
TRLGCH	DeepTri-Drill (For gundrill machines, cross hole specification)

2 Drill diameter DC (mm)	
18.50	18.50

3 Overall length: L (mm)	
900	900

4 Driver code	
23	23

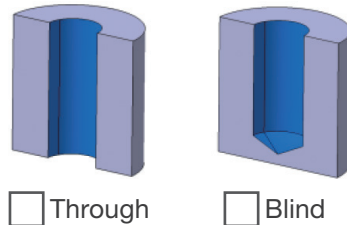
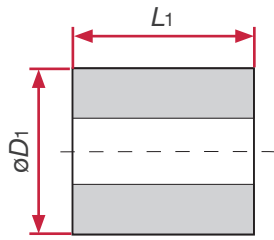


AVAILABLE RANGE OF TAILOR MADE DRILL BODIES

DC	L	x	BD	DC	L	x	BD
12 - 12.49	400 - 2400	18	11.5	24.7 - 25.69	400 - 2400	37	24
12.5 - 12.99	400 - 2400	19	12	25.7 - 26.69	400 - 2400	39	25
13 - 13.49	400 - 2400	20	12.5	26.7 - 27.69	400 - 2400	40	26
13.5 - 13.99	400 - 2400	20	13	27.7 - 28	400 - 2400	42	27
14 - 14.49	400 - 2400	21	13.5	28.01 - 29	400 - 2400	42	27
14.5 - 14.99	400 - 2400	22	14	29.01 - 29.99	400 - 2400	44	28
15 - 15.99	400 - 2400	23	14.5	30 - 31	400 - 2400	45	29
16 - 16.79	400 - 2400	24	15.5	31.01 - 32	400 - 2400	47	30
16.8 - 17.69	400 - 2400	25	16.2	32.01 - 33	400 - 2400	48	31
17.7 - 18.69	400 - 2400	27	17.2	33.01 - 34	400 - 2400	50	32
18.7 - 19.69	400 - 2400	28	18.2	34.01 - 35	400 - 2400	50	32
19.7 - 20.69	400 - 2400	30	19	35.01 - 36	400 - 2400	53	34
20.7 - 21.69	400 - 2400	31	20	36.01 - 37	400 - 2400	53	34
21.7 - 22.69	400 - 2400	33	21	37.01 - 38	400 - 2400	56	36
22.7 - 23.69	400 - 2400	34	22	38.01 - 39	400 - 2400	56	36
23.7 - 24.69	400 - 2400	36	23	39.01 - 40	400 - 2400	59	38

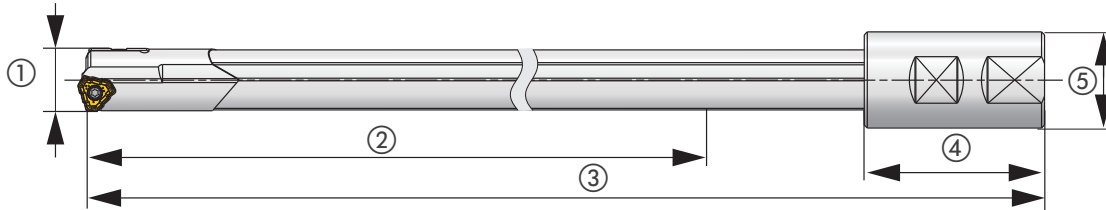
Please provide the driver shape necessary for your request

(Unit: mm)



ϕD_1	
L_1	
Hole tolerance	

Request



①	
②	
③	

④	
⑤	
⑥	

Description	
Quote QTY	pcs
*MOQ: 1pc	

Technical data

Machine type	<input type="checkbox"/> GM* <input type="checkbox"/> Lathe
	<input type="checkbox"/> Vertical <input type="checkbox"/> Horizontal
Machine name	
Power	Kw
Coolant type	<input type="checkbox"/> Oil <input type="checkbox"/> Water-soluble

*Gundrill machine

Workpiece

Part	
Material	
Hardness	

Driver

Driver	●	DCONMS		LS		Driver code	Coverage	
		Inch	Metric	Inch	Metric		Inch	Metric
		0.984	25	2.205	56	23	$\phi 0.551 - \phi 0.775$	$\phi 14 - \phi 19.69$
		1.260	32	2.362	60	24	$\phi 0.551 - \phi 1.011$	$\phi 14 - \phi 25.69$
		1.260	32	2.756	70	25	$\phi 0.551 - \phi 1.130$	$\phi 14 - \phi 28.69$
		1.969	50	2.756	80	26	$\phi 0.551 - \phi 1.130$	$\phi 14 - \phi 28.69$
		0.984	25	2.205	56	35	$\phi 0.551 - \phi 0.775$	$\phi 14 - \phi 19.69$
		1.260	32	2.362	60	36	$\phi 0.551 - \phi 1.011$	$\phi 14 - \phi 25.69$
		1.000	25.4	2.756	70	U04	$\phi 0.551 - \phi 0.775$	$\phi 14 - \phi 19.69$
		1.250	31.75	2.756	70	U05	$\phi 0.551 - \phi 1.011$	$\phi 14 - \phi 25.69$
		1.500	38.1	2.756	70	U06	$\phi 0.551 - \phi 1.102$	$\phi 14 - \phi 28$

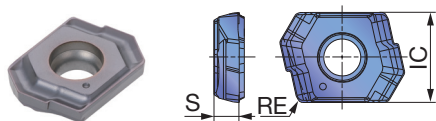
- Please check "●" in the list of driver.
- If you need special design, please send us detail information.
- In case of using machines other than a Gundrill machine, if the drill depth is more than " $\phi D_1 \times 30$ ", you should use 2 types of DeepTriDrill, a short and a long one, because of tool fracture caused by chattering.

Grade
Insert
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Milling Cutter
Miniature Tool
Endmill
Drilling Tool
Tooling System
User's Guide
Index



INSERT

LOGT-NDJ



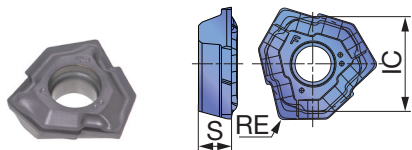
P	Steel	★								
M	Stainless	★								
K	Cast iron	★								
N	Non-ferrous	★								
S	Superalloys	★								
H	Hard materials	★								

★ : First choice
☆ : Second choice

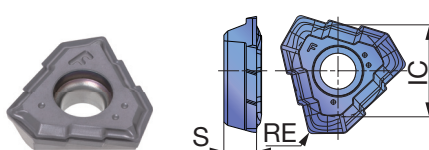
Designation	DCN (in)	DCX (in)	Coated								S (in)	RE (in)
			AH725									
LOGT060204R-NDJ	0.472	0.551	●								0.079	0.016

● : Line up
Package quantity = 10 pcs.

TOHT-NDL (07..., 08...)



TOHT-NDL (09... - 12...)



P	Steel	★								
M	Stainless	★								
K	Cast iron	★								
N	Non-ferrous	★								
S	Superalloys	★								
H	Hard materials	★								

★ : First choice
☆ : Second choice

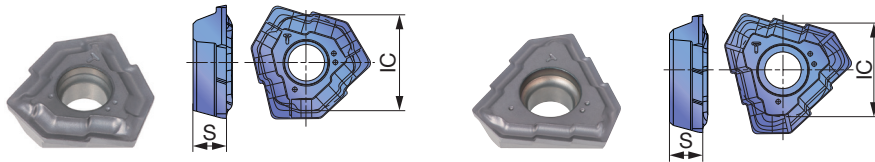
Designation	DCN (in)	DCX (in)	Coated								IC (in)	S (in)	RE (in)
			AH725										
TOHT070304R-NDL	0.551	0.630	●								0.303	0.091	0.016
TOHT080305R-NDL	0.630	0.709	●								0.337	0.110	0.020
TOHT090305R-NDL	0.709	0.787	●								0.328	0.118	0.020
TOHT100305R-NDL	0.788	0.866	●								0.363	0.130	0.020
TOHT110405R-NDL	0.866	0.984	●								0.409	0.150	0.020
TOHT120405R-NDL	0.985	1.102	●								0.456	0.169	0.020

● : Line up
Package quantity = 10 pcs.

INSERT

TOHT-NDJ (070..., 080...)

TOHT-NDJ (090... - 120...)



P Steel	★									
M Stainless	★									
K Cast iron	★									
N Non-ferrous	★									
S Superalloys	★									
H Hard materials	★									

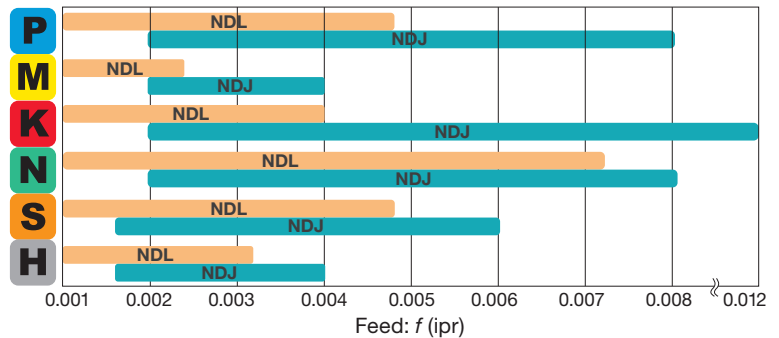
★ : First choice
☆ : Second choice

Designation	DCN (in)	DCX (in)	Coated								IC (in)	S (in)	
			AH725										
TOHT070304R-NDJ	0.551	0.630	●									0.303	0.091
TOHT080305R-NDJ	0.630	0.709	●									0.337	0.110
TOHT090305R-NDJ	0.709	0.787	●									0.328	0.118
TOHT100305R-NDJ	0.788	0.866	●									0.363	0.130
TOHT110405R-NDJ	0.866	0.984	●									0.409	0.150
TOHT120405R-NDJ	0.985	1.102	●									0.456	0.169

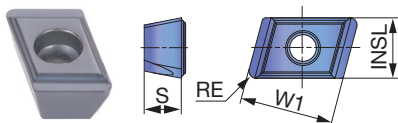
● : Line up
Package quantity = 10 pcs.

■ Identifications for NDJ and NDJ geometries ■ Recommended feed rates

Chipbreaker	NDL	NDJ
Cutting edge strength	Strong	Very strong
ID on insert		



FBM-C (For central)



P Steel	★	☆								
M Stainless	★	☆								
K Cast iron	★	☆								
N Non-ferrous	★	☆								
S Superalloys	★	☆								
H Hard materials	★	☆								

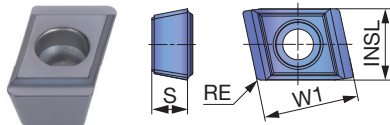
★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated								S (in)	DCN (in)	DCX (in)	RE (in)		
			AH725	AH8015												
FBM070408L-G-C	0.256	0.394	●	●									0.157	1.103	1.378	0.031
FBM080408L-G-C	0.315	0.394	●	●									0.157	1.378	1.575	0.031

● : Line up
Package quantity = 10 pcs.



FBM-I (For intermediate)



G type chipbreaker	DL type chipbreaker
FBM060304R-G-I	FBM060304R-DL-I
FBM070404R-G-I	FBM070404R-DL-I

The designation of insert with G type and DL type is different, even in the same shape.

Please refer to the table above to check the insert designation. Both inserts can be mounted on the drill body.

	P Steel	M Stainless	K Cast iron	N Non-ferrous	S Superalloys	H Hard materials
★	★	★	★	★	★	★
☆	☆	☆	☆	☆	☆	☆

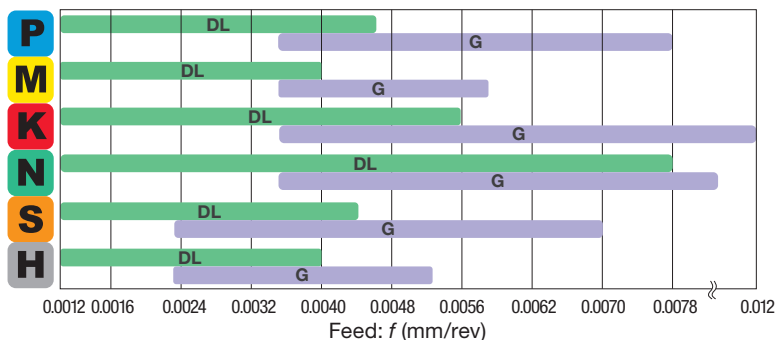
★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated								S (in)	DCN (in)	DCX (in)	RE (in)		
			AH725	AH8015												
FBM060304R-G-I	0.217	0.315	●	●									0.118	1.103	1.181	0.016
FBM060304R-DL-I	0.217	0.315	●										0.118	1.103	1.181	0.016
FBM070404R-G-I	0.256	0.394	●	●									0.157	1.181	1.575	0.016
FBM070404R-DL-I	0.256	0.394	●										0.157	1.181	1.575	0.016

● : Line up

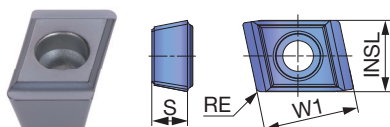
Package quantity = 10 pcs.

Recommended feed rates



For cross hole drilling, please use the new DL type chipbreaker because the feed needs to be reduced.

FBH-P (For peripheral)



	P Steel	M Stainless	K Cast iron	N Non-ferrous	S Superalloys	H Hard materials
★	★	★	★	★	★	★
☆	☆	☆	☆	☆	☆	☆

★ : First choice
☆ : Second choice

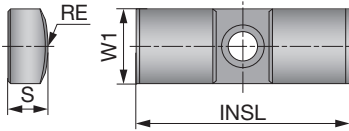
Designation	INSL (in)	W1 (in)	Coated				S (in)	DCN (in)	DCX (in)	RE (in)
			AH725	UC3120	AH8015	AH3135				
FBH060304R-G-P	0.236	0.315	●	●			0.118	1.103	1.181	0.016
FBH060308R-G-P	0.236	0.315	●		●	●	0.118	1.103	1.181	0.031
FBH080404R-G-P	0.295	0.394	●	●			0.157	1.181	1.496	0.016
FBH080408R-G-P	0.295	0.394	●		●	●	0.157	1.181	1.496	0.031
FBH090404R-G-P	0.354	0.394	●	●			0.157	1.496	1.575	0.016
FBH090408R-G-P	0.354	0.394	●		●	●	0.157	1.496	1.575	0.031

● : Line up

Package quantity = 10 pcs.

GUIDE PAD

GP04, 05, 06, 07, 08



	P	M	K	N	S	H
Steel	☆	☆	★	☆		
Stainless	☆	☆	★	☆		
Cast iron	☆	☆	★	☆		
Non-ferrous	☆	☆	★	☆		
Superalloys	☆	☆	★	☆		
Hard materials	☆	☆	★	☆		

★ : First choice
☆ : Second choice

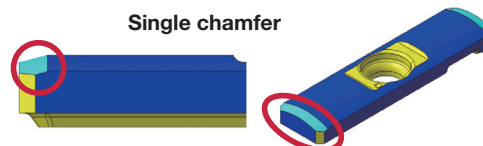
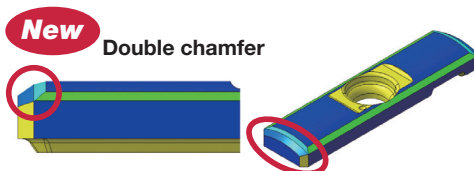
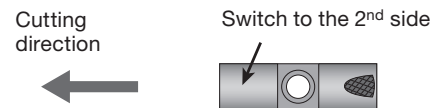
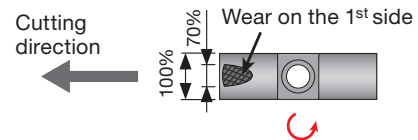
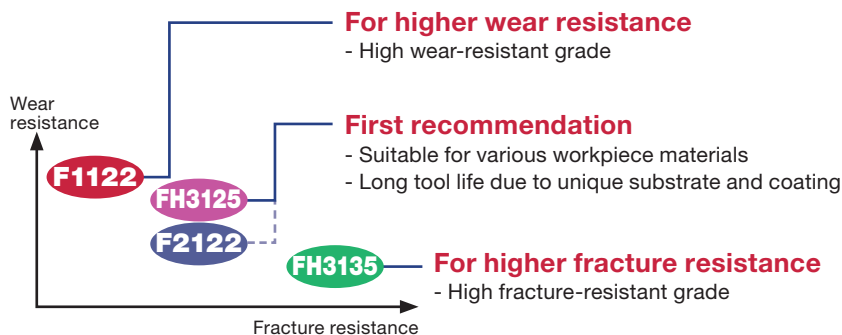
Designation	DCN (in)	DCX (in)	Coated				W1 (in)	INSL (in)	S (in)	RE (in)	Chamfer
			F1122	F2122	FH3125	FH3135					
GP04-055	0.472	0.5508	● ▲				0.157	0.63	0.079	0.217	Single
GP04-16-055-DC	0.472	0.5508			● ●		0.157	0.63	0.079	0.217	Double
GP05-060	0.5512	0.6295	● ▲				0.197	0.709	0.098	0.236	Single
GP05-18-060-DC	0.5512	0.6295			● ●		0.197	0.709	0.098	0.236	Double
GP05-075	0.6299	0.7087	● ▲				0.197	0.709	0.098	0.295	Single
GP05-18-075-DC	0.6299	0.7087			● ●		0.197	0.709	0.098	0.295	Double
GP06-085	0.7091	0.8268	● ▲				0.236	0.787	0.118	0.335	Single
GP06-20-085-DC	0.7091	0.8268			● ●		0.236	0.787	0.118	0.335	Double
GP06-100	0.8271	0.9843	● ▲				0.236	0.787	0.118	0.394	Single
GP06-20-100-DC	0.8271	0.9843			● ●		0.236	0.787	0.118	0.394	Double
GP06	0.9846	1.2992	● ▲				0.236	0.787	0.118	0.472	Single
GP06-20-120-DC	0.9846	1.2992			● ●		0.236	0.787	0.118	0.472	Double
GP07	1.2996	1.496	● ▲				0.276	0.787	0.138	0.472	Single
GP07-20-120-DC	1.2996	1.496			● ●		0.276	0.787	0.138	0.472	Double
GP08	1.4965	1.575	● ▲				0.315	0.984	0.177	0.610	Single
GP08-25-155-DC	1.4965	1.575			● ●		0.315	0.984	0.177	0.610	Double

● : Line up
▲ : To be discontinued
Package quantity = 5 pcs.

REPLACING GUIDE PADS

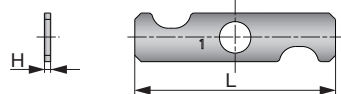
Guide pads are subject to wear, like inserts

- The guide pad has two sides.
- Each guide pad can be used on two sides. When the first corner wears out to 70% of the width, reverse the guide pad to use the second side.
- Replace with a new guide pad when the second side wears out.

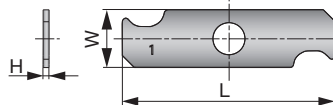


SHIM

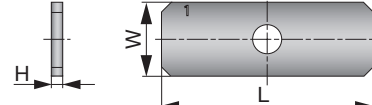
SHIMSET-GP04



SHIMSET-GP05



SHIMSET-GP06



Designation	DC	W	L	H
SHIMSET-GP04	12 - 13.99	4	16	2
SHIMSET-GP05	14 - 15.99	5	18	2.5
SHIMSET-GP06	16 - 18	5	18	2.5

(Unit: mm)

Shim thickness: 0.01 / 0.02 / 0.03 / 0.04 / 0.05 mm
 Shim sheets are sold as set.
 Package quantity = 5 pcs. (1pc per each thickness)

Shim sheet combinations by adjusting diameter

Adjustment diameter	Shim thickness in guide pad of diameter side.	Shim thickness in guide pad of bearing side.	Required number of shim set
+0.0004	0.0004	-	1
+0.0008	0.0008	0.0004	1
+0.0012	0.0012	0.0004 + 0.0008	1
+0.0016	0.0016	0.0004 + 0.0012	1
+0.0020	0.0020	0.0008 + 0.0012	1
+0.0024	0.0004 + 0.0020	0.0008 + 0.0016	1
+0.0028	0.0008 + 0.0020	0.0012 + 0.0016	1
+0.0031	0.0012 + 0.0020	0.0016 + 0.0016	2
+0.0035	0.0016 + 0.0020	0.0016 + 0.0020	2
+0.0039	0.0020 + 0.0020	0.0016 + 0.0016 + 0.0008	2

(Unit: in)

Guide pad of diameter side



Guide pad of bearing side

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Priority	Chip-breaker	Cutting speed Vc (sfm)	f (ipr)			
					ø0.472 - ø0.551	ø0.551 - ø0.709	ø0.709 - ø1.102	ø1.103 - ø1.575
P	Low carbon steel (C < 0.3) 70,1025, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.004	0.0012 - 0.004	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0039	0.0020 - 0.004	0.0020 - 0.004	0.004 - 0.008
	Carbon steel (C > 0.3) 1045c,1055, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.004	0.0012 - 0.005	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0063	0.0020 - 0.006	0.0020 - 0.008	0.004 - 0.008
M	Low alloy steel (C < 0.3) 5120, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.004	0.0012 - 0.004	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0039	0.0020 - 0.004	0.0020 - 0.004	0.004 - 0.008
	Alloy steel (C > 0.3) 4140, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.004	0.0012 - 0.005	-
		First choice	NDJ/G	262 - 394	0.0020 - 0.0063	0.0020 - 0.006	0.0020 - 0.008	0.004 - 0.008
K	Stainless steel (Austenitic) 304,316, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.002	0.0012 - 0.002	-
		First choice	NDJ/G	197 - 328	0.0020 - 0.0039	0.0020 - 0.004	0.0020 - 0.004	0.004 - 0.006
	Stainless steel (Martensitic, Ferritic) 430,416, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.002	0.0012 - 0.002	-
		First choice	NDJ/G	197 - 328	0.0020 - 0.0039	0.0020 - 0.004	0.0020 - 0.004	0.004 - 0.006
N	Stainless steel (Precipitation hardening) S17400, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.002	0.0012 - 0.002	-
		First choice	NDJ/G	197 - 328	0.0020 - 0.0039	0.0020 - 0.004	0.0020 - 0.004	0.004 - 0.006
	Gray cast iron No.250B, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.006	0.0020 - 0.007	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0098	0.0020 - 0.010	0.0020 - 0.012	0.004 - 0.012
S	Ductile cast iron 700, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.006	0.0020 - 0.007	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0098	0.0020 - 0.010	0.0020 - 0.012	0.004 - 0.012
	Aluminum alloys	For low feed machines	NDL	262 - 525	-	0.0012 - 0.006	0.0012 - 0.006	-
		First choice	NDJ/G	328 - 656	0.0020 - 0.0079	0.0020 - 0.008	0.0020 - 0.008	0.004 - 0.010
H	Heat-resistant alloys Inconel 718, etc.	For low feed machines	NDL	65.6 - 164	-	0.0012 - 0.002	0.0012 - 0.003	-
		First choice	NDJ/G	65.6 - 164	0.0016 - 0.0031	0.0016 - 0.003	0.0016 - 0.004	0.002 - 0.005
	Titanium alloys Ti-6Al-4V, etc.	For low feed machines	NDL	98.4 - 197	-	0.0012 - 0.004	0.0012 - 0.005	-
		First choice	NDJ/G	98.4 - 197	0.0020 - 0.0051	0.0020 - 0.005	0.0020 - 0.006	0.004 - 0.007
Hardened steel ≥ 40HRC	For low feed machines	NDL	131 - 328	-	0.0012 - 0.003	0.0012 - 0.003	-	
	First choice	NDJ/G	164 - 328	0.0016 - 0.0031	0.0016 - 0.003	0.0016 - 0.004	0.002 - 0.005	

APPLICATION RANGE

Feed f (ipr)	0.001 - 0.002	0.001 - 0.05	0.004 - 0.012
Application	<p>OK Cross hole drilling</p>	<p>OK Inclined exit</p> <p>0.630" or less (for standard drill)</p>	<p>OK Boring</p>

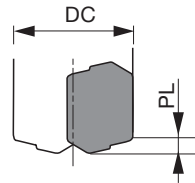
Note 1) When drilling cross holes or exiting the inclined surface, make sure the guide-pads are suitable.
 Note 2) A pilot hole is needed prior to a boring operation. $ap \geq 0.040"$ is recommended for boring operations.

SHAPES OF THE HOLE BOTTOM

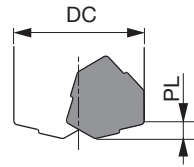
DC	Insert	Maximum difference PL
0.472 - 0.551	LOGT06	0.071
0.551 - 0.630	TOHT07	0.079
0.630 - 0.709	TOHT08	0.087
0.709 - 0.787	TOHT09	0.118
0.788 - 0.866	TOHT10	0.126
0.866 - 0.984	TOHT11	0.134
0.985 - 1.102	TOHT12	0.146

(Unit: Inch)

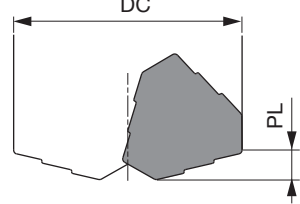
LOGT06...



TOHT07..., 08...



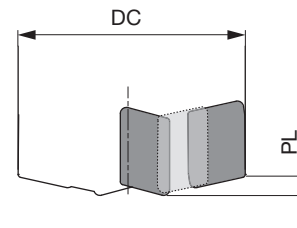
TOHT09... - TOHT12...



DC	Central	Insert Intermediate	Peripheral	Maximum difference PL
1.103 - 1.142	FBM070408L-G-C	FBM060304R-G-I	FBH060304R-G-P	0.102
1.142 - 1.181	FBM070408L-G-C	FBM060304R-G-I	FBH060304R-G-P	0.102
1.181 - 1.220	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.114
1.221 - 1.260	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.118
1.260 - 1.299	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.122
1.300 - 1.339	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.118
1.339 - 1.378	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.122
1.378 - 1.417	FBM080408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.122
1.418 - 1.457	FBM080408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.118
1.457 - 1.496	FBM080408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.122
1.496 - 1.535	FBM080408L-G-C	FBM070404R-G-I	FBH090404R-G-P	0.134
1.536 - 1.575	FBM080408L-G-C	FBM070404R-G-I	FBH090404R-G-P	0.13

(Unit: Inch)

FBM...



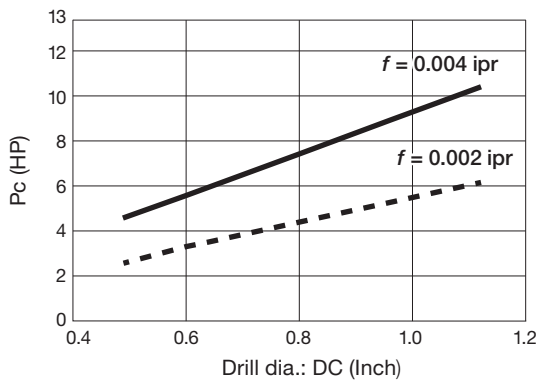
Grade
Insert
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index



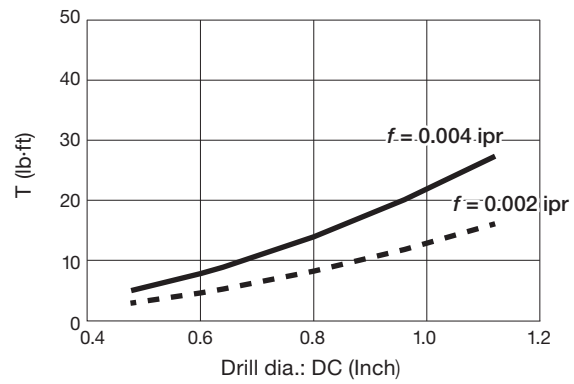


REQUIRED SPINDLE POWER AND COOLANT PRESSURE

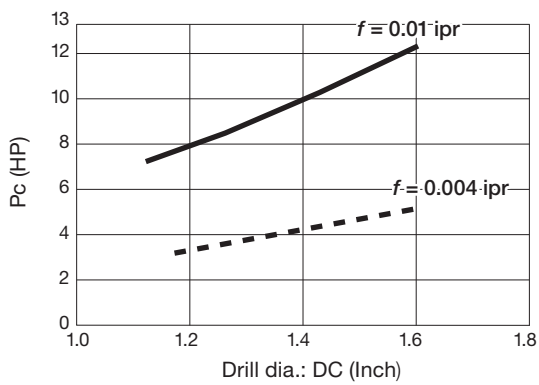
Net power



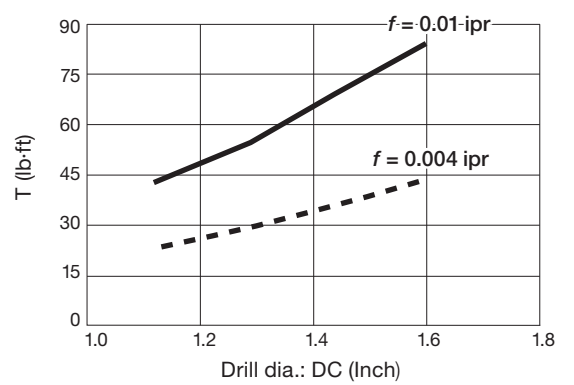
Torque



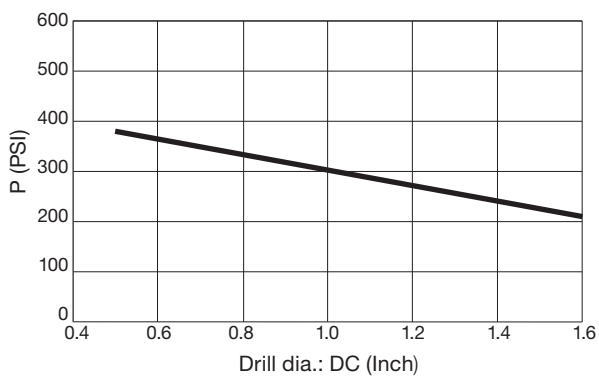
Net power



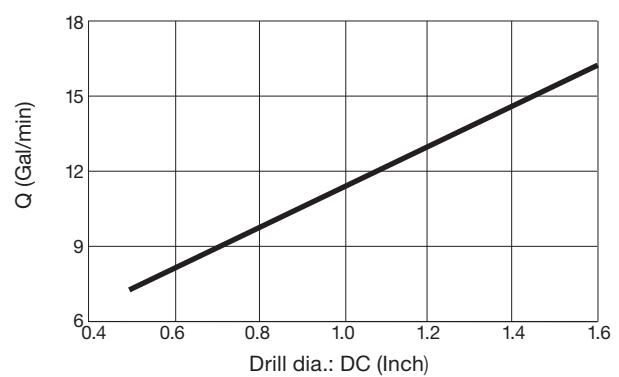
Torque



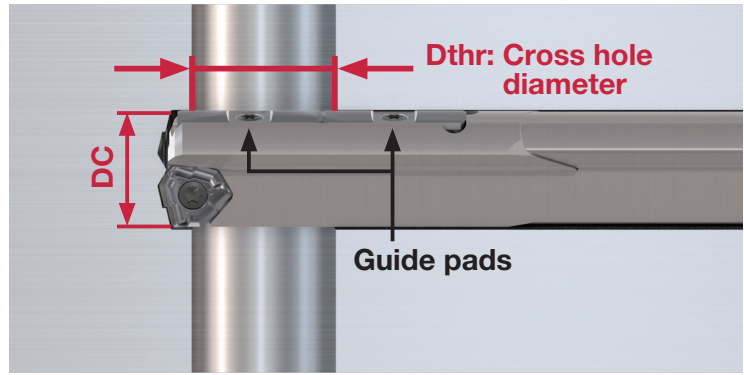
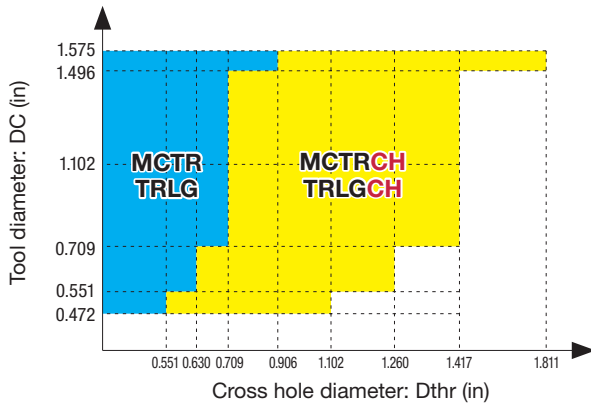
Coolant pressure



Coolant flow rate

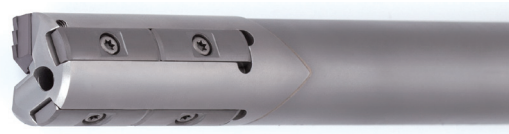


PROPER DEEPTRI-DRILL MODEL FOR SUITABLE CROSS HOLE DISTANCE.



CAUTIONS FOR CROSS HOLE DRILLING

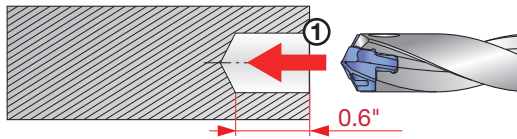
- Decrease the feed rate when the drill head comes in contact with a cross hole. ($f = 0.001 - 0.002$ ipr)
- **Retract the gundrill with a slow rotation. ($n = 4$ rpm, $V_f = 12$ ipm)**
- **When the gundrill is rapidly pulled out without rotating, the insert and/or guide pads may come in contact with burrs on the cross holes on the way back, resulting in damages**



A tailor-made tool for a cross hole distance over 0.630"

DRILLING PROCEDURE ON MACHINING CENTERS AND LATHES

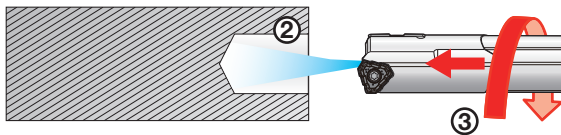
Proceed as instructed below in order to maximize the tool performance safely.



① Drill the guide hole

Hole diameter tolerance: $+0.0004'' - +0.004''$
Hole depth: $H = 0.6''$

Please use DrillMeister or TDX + EZ sleeve to make a guide hole

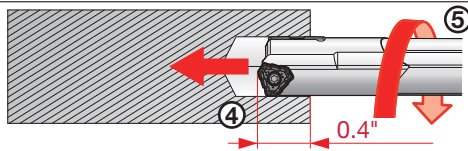


② Start coolant

③ Slowly insert DeepTriDrill into the guide hole

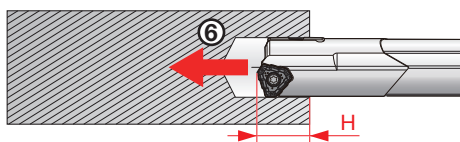
No. of revolution: $n = 50 - 100$ rpm
Feed speed: $V_f = 4 - 12$ ipm

Caution: Do not rotate the drill at machining speed outside the hole



④ Stop the drill at 0.4" depth

⑤ Start rotating at machining speed

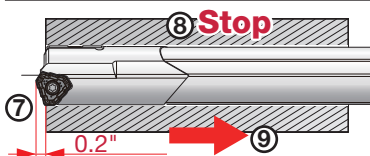


⑥ Start feed

At the entrance ($H = 0.4'' - 0.6''$)

→ Feed: $f = 80\%$ of programmed feed

Hole depth: $H \geq 0.6''$ → Feed: $f = 100\%$

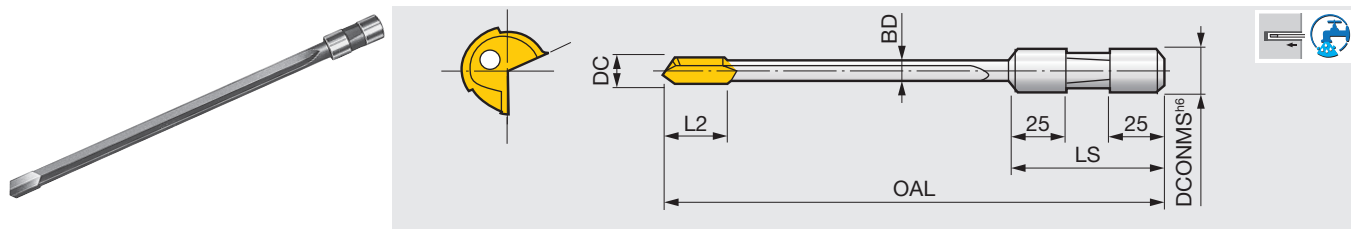


⑦ For through hole

Continue drilling until the drill head passes through the workpiece by 0.2"

⑧ Stop the rotation and coolant

⑨ Return the drill (Head back to the starting position)



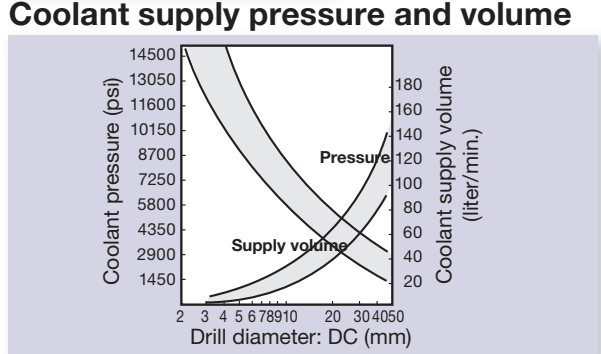
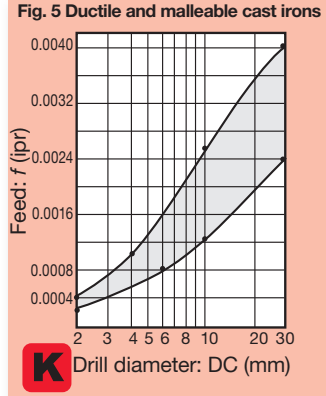
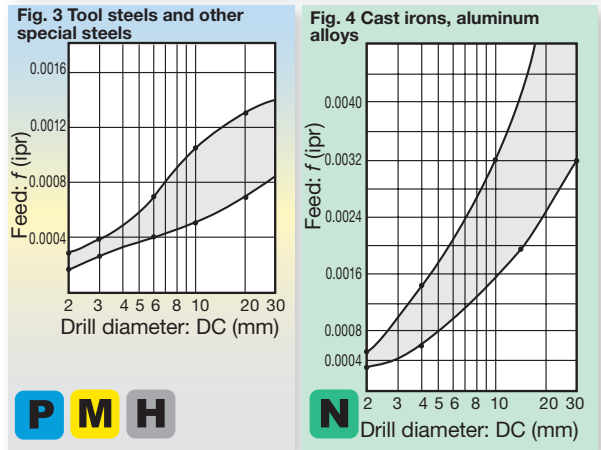
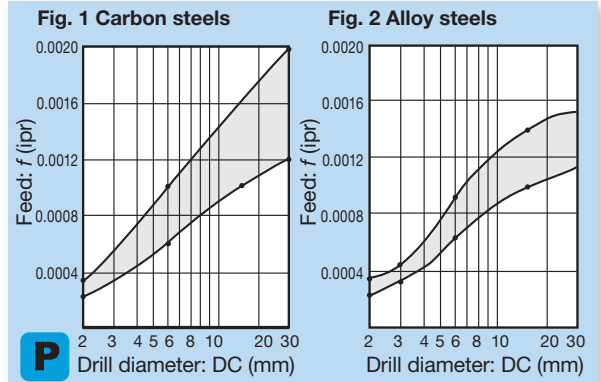
Metric	DC	DCONMS	L2	OAL
SLJ0300L0400NA	3	12.7	15	400
SLJ0300L0600NA	3	12.7	15	600
SLJ0500L0600NA	5	12.7	25	600
SLJ0550L0600NA	5.5	19.05	25	600
SLJ0600L0600NA	6	19.05	25	600
SLJ0700L0600NA	7	19.05	25	600
SLJ0800L0600NA	8	19.05	25	600
SLJ1000L0600NA	10	19.05	30	600
SLJ0500L1000NA	5	12.7	25	1000
SLJ0600L1000NA	6	19.05	25	1000
SLJ0700L1000NA	7	19.05	25	1000
SLJ0800L1000NA	8	19.05	25	1000
SLJ1000L1000NA	10	19.05	30	1000
SLJ0600L1250NA	6	19.05	25	1250
SLJ0610L1250NA	6.1	19.05	25	1250
SLJ0620L1250NA	6.2	19.05	25	1250
SLJ0700L1250NA	7	19.05	25	1250
SLJ0800L1250NA	8	19.05	25	1250
SLJ0810L1250NA	8.1	19.05	25	1250
SLJ0820L1250NA	8.2	19.05	25	1250
SLJ1000L1250NA	10	19.05	30	1250
SLJ1010L1250NA	10.1	19.05	30	1250
SLJ1020L1250NA	10.2	19.05	30	1250
SLJ1200L1250NA	12	19.05	30	1250
SLJ1210L1250NA	12.1	19.05	30	1250
SLJ1220L1250NA	12.2	19.05	30	1250
SLJ0600L1650NA	6	19.05	25	1650
SLJ0610L1650NA	6.1	19.05	25	1650
SLJ0620L1650NA	6.2	19.05	25	1650
SLJ0700L1650NA	7	19.05	25	1650
SLJ0800L1650NA	8	19.05	25	1650
SLJ0810L1650NA	8.1	19.05	25	1650
SLJ0820L1650NA	8.2	19.05	25	1650
SLJ1000L1650NA	10	19.05	30	1650
SLJ1010L1650NA	10.1	19.05	30	1650
SLJ1020L1650NA	10.2	19.05	30	1650
SLJ1200L1650NA	12	19.05	30	1650
SLJ1210L1650NA	12.1	19.05	30	1650
SLJ1220L1650NA	12.2	19.05	30	1650

TUBE DIAMETER

DC	BD	DC	BD	DC	BD
3 - 3.19	2.9	5.2 - 5.49	5	8.7 - 9.19	8.5
3.2 - 3.39	3.1	5.5 - 5.79	5.3	9.2 - 9.69	9
3.4 - 3.59	3.3	5.8 - 5.99	5.6	9.7 - 10.39	9.5
3.6 - 3.89	3.5	6 - 6.19	5.8	10.4 - 10.89	10
3.9 - 4.09	3.7	6.2 - 6.59	5.9	10.9 - 11.39	10.6
4.1 - 4.29	3.9	6.6 - 7.09	6.4	11.4 - 11.99	11.1
4.3 - 4.49	4.1	7.1 - 7.59	6.9	12 - 12.2	11.7
4.5 - 4.89	4.3	7.6 - 8.09	7.4		
4.9 - 5.19	4.7	8.1 - 8.69	7.9		

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Heat treatment	Hardness		Cutting speed Vc (sfm)	feed f (ipr)	
			HB	HRC			
P	Free-cutting carbon steel		160 - 190	(5) - (11)	427	Refer to Fig. 1	
	C10C ~ C15 S10C ~ S15C	Cold drawn					
	S30C ~ S50C C30 ~ C50	Cold drawn	200 - 230	(12) - 20	328		
	S35C ~ S50C C30 ~ C50	Hardened and tempered	250 - 300	25 - 32	262		
	Carbon steels		110 ~ 120		427		
	S10C ~ S35C C10 ~ C30	Annealed	120 ~ 185	~ (9)	394		
	S10C ~ S50C C10 ~ C50	Annealed	170 ~ 200	(5) ~ (13)	328		
	S20C ~ S30C C20 ~ C30	Hardened and tempered	210 ~ 250	(16) ~ 24	295		
	S30C ~ S55C C30 ~ C55	Hardened and tempered	260 ~ 310	26 ~ 33	230		
	S50C ~ C50 ~	Hardened and tempered	320 ~ 375	34 ~ 40	164		
	S50C ~ C55 ~	Hardened and tempered	380 ~ 440	41 ~ 47	131		
	Alloy steels	Annealed or Hardened and tempered	150 ~ 230	~ (20)	295		Refer to Fig. 2
			240 ~ 310	23 ~ 33	230		Refer to Fig. 2
			315 ~ 370	34 ~ 40	164		Refer to Fig. 3
380 ~ 440			40 ~ 47	131			
Cast steels	Hardened and tempered	140 ~ 180	~ (8)	328	Refer to Fig. 2		
		190 ~ 240	(11) ~ 22	295			
Tool steels	Annealed	150 ~ 200	~ (13)	230	Refer to Fig. 3		
		210 ~ 300	(16) ~ 32	164			
M	Stainless steels Ferritic SUS405, 430 X6Cr17	Annealed	150 ~ 200	~ (13)	230	Refer to Fig. 3	
	Austenitic SUS304, 305 X5CrNi18-9	Annealed	160 ~ 220	~ (18)	164		
	Martensitic SUS403, 410 X12Cr13	Annealed Hardened and tempered	160 ~ 220 300 ~ 350	~ (18) 32 ~ 38	230 164		
K	Gray cast iron		110 ~ 180		295	Refer to Fig. 4	
			190 ~ 220		262		
			220 ~ 260		230		
	Ductile cast iron		120 ~ 170		262	Refer to Fig. 5	
			180 ~ 240		213		
			240 ~ 280		180		
			260 ~ 320		131		
	Malleable cast irons		110 ~ 180		295		
		190 ~ 220		262			
N	Cast aluminum alloys Aluminum die cast alloys	Annealed	5000load 40 ~ 100		591	Refer to Fig. 4	
	Copper alloys	Annealed	120 ~ 160 160 ~ 205		< 492	Refer to Fig. 4 Refer to Fig. 5	
H	Bearing steels		150 ~ 210		230	Refer to Fig. 3	
	Heat-resistant alloys				66		
	High speed steels		210 ~ 285	(16) ~ 30	164		



Guidelines for attainable accuracies

Workpiece material	Surface roughness (µm)	Roundness (µm)	Cylindricity (µm)	Oversizing (µm)
Carbon and alloy steels	6 ~ 25	5 ~ 10	10 ~ 15	- 5 ~ 30
Cast irons	3 ~ 15	3 ~ 5	5 ~ 10	- 5 ~ 15
Aluminum alloys, Copper alloys	0.3 ~ 6	3 ~ 5	5 ~ 10	- 10 ~ 5

Note: Over size values given in the table are based on the drill diameter.

Cutting fluid









A water-insoluble fluid is recommended when machining with gun drills. When using water soluble fluid, use the fluid for heavy duty cutting in higher concentration. A water-insoluble fluid must be taken care for Fire prevention

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Milling Cutter
Miniature Tool
Endmill
Drilling Tool
Tooling System
User's Guide
Index









Drill Head Category

Solid drilling - Indexable drill heads -

Applications		STS (Single Tube System) 			DTS (Double Tube System) 		
		TRI-FINE	FINE-BEAM	UNIDEX	TRI-FINE	FINE-BEAM	UNIDEX
Solid drill head		FNTR	FNBM	KUSTS	FNTR-D	FNBM-D	KUDTS
							
Drill diameter		ø16 mm - ø28 mm (ø0.630" - ø1.102")	ø25 mm - ø65 mm (ø0.984" - ø2.559")	ø38 mm - ø293.99 mm (ø1.496" - ø4.212")	ø18.4 mm - ø28 mm (ø0.724" - ø1.102")	ø25 mm - ø65 mm (ø0.984" - ø2.559")	ø38 mm - ø106.99 mm (ø1.496" - ø4.212")
Thread type	External 4-start thread	○	○	○	○	○	○
	Internal single-start thread	○	○	○	-	-	-
Hole tolerance		IT10	IT10	IT10	IT10	IT10	IT10
Surface finish Ra (µm)		2	2	3	2	2	3
Machine	Deep hole drilling machines	○	○	○	○	○	○
	NC machines	-	-	-	○	○	○
	Lathes	-	-	-	○	○	○
	Machining centers M/C	-	-	-	○	○	○
	Gundrill machines	-	-	-	-	-	-
Workpiece material	P Steel	★★★	★★★	★★★	★★★	★★★	★★★
	M Stainless	★★★	★★★	★★★	★★★	★★★	★★★
	K Cast iron	★★★	★★★	★★★	★★★	★★★	★★★
	N Non-ferrous	★★★	★★★	★★★	★★★	★★★	★★★
	S Superalloys	★★	★★	★★	★★	★★	★★
	H Hard materials (≥40HRC)	★★	★★	★★	★★	★★	★★
Insert type		TOHT	FBH / FBM	NPMX / TPMX (508 / 1123)	TOHT	FBH / FBM	NPMX / TPMX (508 / 1123)
Plus Cartridge and Guide pad +1 mm - +5 mm		-	-	○	-	-	○
Page		J128 - J131	J132 - J133 J135 - J137	J138 - J139 J142 - J143	J129 - J131	J134 - J137	J140 - J143

★★★(Excellent) ←→ ★(Standard)

Solid drilling - Brazed drill heads -

Applications		STS (Single Tube System) 			DTS (Double Tube System) 
		MBU	UTE	BTU	ETU
Brazed drilling heads					
Drill diameter		ø8 mm - ø14.79 mm (ø0.315" - ø0.582")	ø12.6 mm - ø20 mm (ø0.496" - ø0.787")	ø12.6 mm - ø65 mm (ø0.496" - ø0.614")	ø18.4 mm - ø65 mm (ø0.724" - ø2.559")
Thread type	External single-start thread	○	-	-	-
	External 2-start thread	-	○*1	○*1	-
	External 4-start thread	-	○*2	○*2	○
	Internal single-start thread	-	-	-	-
Hole tolerance		IT9	IT9	IT9	IT9
Surface finish Ra (µm)		2	2	2	2
Machine	Deep hole drilling machines	○	○	○	○
	NC machines	-	-	-	○
	Lathes	-	-	-	○
	Machining centers M/C	-	-	-	○
	Gundrill machines	-	-	-	-
Workpiece material	P Steel	★★★	★★★	★★★	★★★
	M Stainless	★★★	★★★	★★★	★★★
	K Cast iron	★★★	★★★	★★★	★★★
	N Non-ferrous	★★★	★★★	★★★	★★★
	S Superalloys	★★	★★	★★	★★
	H Hard materials (≥40HRC)	★★	★★	★★	★★
Page		J144, J149	J145, J149	J146 - J147, J149	J148 - J149

*1: UTE & BTU Drill head : ø12.6 mm - ø15.59 mm, External 2-start thread






*2: UTE & BTU Drill head : ø15.6 mm -, External 4-start thread

★★★ (Excellent) ← → ★ (Standard)



Drill Tube Category

Drill Tubes

Applications			STS (Single Tube System)				DTS (Double Tube System)		
			UMBB	ST	ST	UB	OT	IT	
Drill tubes									
Tube diameter			ø7.1 mm - ø12 mm (ø0.280" - ø0.472")	ø11 mm - ø13 mm (ø0.433" - ø0.512")	ø14 mm - ø274 mm (ø0.551" - ø10.787")	ø12 mm - ø274 mm (ø0.472" - ø10.787")	ø18 mm - ø166 mm (ø0.709" - ø6.535")	ø10 mm - ø130 mm (ø0.394" - ø5.118")	
Thread type			Internal single-start thread	Internal 2-start thread	Internal 4-start thread	External single-start thread	Internal 4-start thread	-	
Drill Head	Indexable	Solid	FNTR	-	-	○	○	○	○
			FNBM	-	-	○	○	○	○
			KUSTS	-	-	○	○	-	-
			KUDTS	-	-	-	-	○	○
	Brazed	Solid	MBU	○	-	-	-	-	-
			UTE	-	○	○	-	-	-
			BTU	-	○	○	-	-	-
			ETU	-	-	-	-	○	○
Drill diameter			ø8 mm - ø14.79 mm (ø0.315" - ø0.582")	ø12.6 mm - ø15.59 mm (ø0.496" - ø0.614")	ø15.6 mm - ø291.99 mm (ø0.614" - ø11.496")	ø14.5 mm - ø293.99 mm (ø0.571" - ø11.574")	ø18.4 mm - ø183.99 mm (ø0.724" - ø7.244")	ø18.4 mm - ø183.99 mm (ø0.724" - ø7.244")	
Solid			○	○	○	○	○	○	
Counter			-	-	○ ^{*1}	○ ^{*1}	○ ^{*1}	○	
Trepanning			-	-	○ ^{*2}	○ ^{*2}	-	-	
Page			J150	J150	J150	J152	J154	J154	

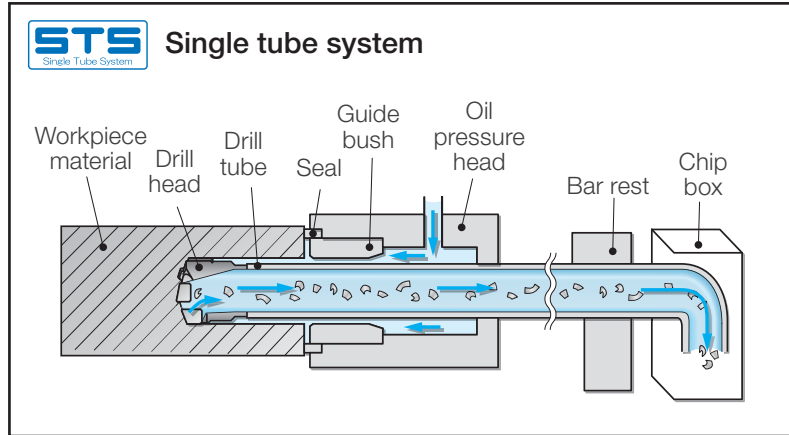
*1. Counter : ST / UB / OT Tube - Drill diameter ø25 mm or more

*2. Trepanning : ST / UB Tube - Drill diameter ø100 mm or more

Single Tube System (STS) and Double Tube System (DTS)

Single Tube System (STS)

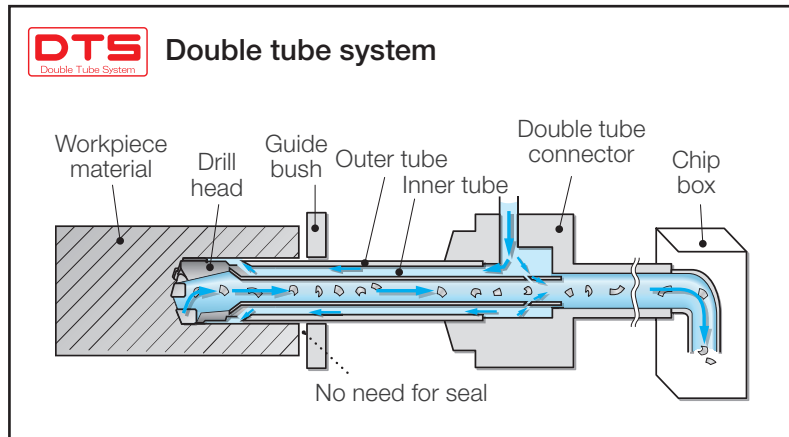
The STS may also be referred to as the BTA system in the deep hole drilling process. A large volume of coolant is pumped under high pressure to the cutting area in the workpiece. Chips are then forced out through the drill tube at the back and they do not touch workpiece allowing super surface finish. STS is a very good method to obtain holes of high productivity and high accuracy by using a dedicated drilling machine and a sealing with the workpiece.



Double Tube System (DTS)

The DTS is characterized by its two tube construction and is therefore known as the double tube system. A sealing system and pressure head, which is required in the Single Tube System (STS) is not necessary for the DTS and it is therefore suitable for conventional general purpose machines such as lathes or machining centers.

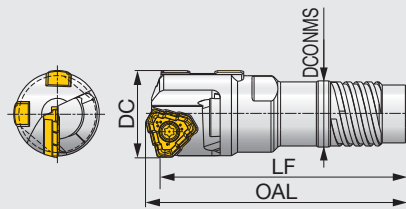
In general, because of less efficient chip evacuation than the STS the recommended max drilling depth is 1000mm. However, the unique DTC-R tube connector that is capable of supplying high pressure coolant can successfully achieve drilling depths of up to 2000 mm.



TRI-FINE

TRI-FINE STS-EX

Indexable head with external 4-start thread for single tube system



Metric	DC		Drill tube		OAL	LF	DCONMS	Insert	Guide pad
	(in)	(mm)	Designation	Dia. (mm)					
FNTR-0097S-16.00	0.630	16	ST0097	14	57	55	12.6	TOHT080305R	GP06-075
FNTR-0098S-17.00	0.669	17	ST0098	15	57	55	13.6	TOHT080305R	GP06-075
FNTR-0000S-20.00	0.787	20	ST0000	17	59	56	15.5	TOHT090305R	GP06-085
FNTR-00S-21.00	0.827	21	ST00	18	63	60	16	TOHT100305R	GP06-085
FNTR-01S-22.00	0.866	22	ST01	20	69	65.5	18	TOHT110405R	GP06-100
FNTR-01S-24.00	0.945	24	ST01	20	69	65.5	18	TOHT110405R	GP06-100
FNTR-02S-25.00	0.984	25	ST02	22	69	65.5	19.5	TOHT110405R	GP06-100
FNTR-02S-25.40	1.000	25.4	ST02	22	69	65.5	19.5	TOHT120405R	GP06
FNTR-02S-26.00	1.024	26	ST02	22	69	65.5	19.5	TOHT120405R	GP06
FNTR-03S-28.00	1.102	28	ST03	24	69	65.5	21	TOHT120405R	GP06

INSERT SPARE PARTS



Designation	Screw	Wrench
TOHT080305R	CSTB-2.5S	T-8F
TOHT080305R	CSTB-2.5S	T-8F
TOHT090305R	CSTB-2.5S	T-8F
TOHT100305R	CSTB-3S	T-9F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT120405R	CSTB-4S	T-15F
TOHT120405R	CSTB-4S	T-15F
TOHT120405R	CSTB-4S	T-15F

GUIDE PAD SPARE PARTS



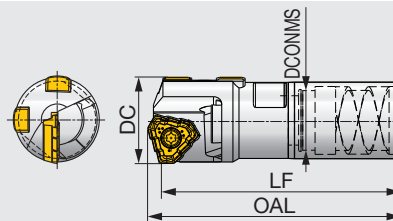
Designation	Screw	Wrench
GP06-075	CSTB-2.2S	T-7F
GP06-075	CSTB-2.2S	T-7F
GP06-085	CSTB-2.2S	T-7F
GP06-085	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F

Recommended clamping torque (N·m): CSTB-2.2S=1, CSTB-2.5S=1.3, CSTB-3S=2.3, CSTB-3.5H=3, CSTB-4S=3

TRI-FINE

TRI-FINE STS-IN

Indexable head with internal single-start thread for single tube system



Metric	DC		Drill tube		OAL	LF	DCONMS	Insert	Guide pad
	(in)	(mm)	Designation	Dia. (mm)					
FNTR-13N-1-16.00	0.630	16	UB13-1	13	55.5	53.5	10.8	TOHT080305R	GP06-075
FNTR-14N-2-18.00	0.709	18	UB14-2	14	55.5	53.5	12.1	TOHT080305R	GP06-075
FNTR-18N-20.00	0.787	20	UB18	18	61	58	14.5	TOHT090305R	GP06-085
FNTR-20N-22.00	0.866	22	UB20	20	63.5	60	16	TOHT110405R	GP06-100
FNTR-20N-24.00	0.945	24	UB20	20	63.5	60	16	TOHT110405R	GP06-100
FNTR-22N-25.00	0.984	25	UB22	22	63.5	60	17	TOHT110405R	GP06-100
FNTR-22N-26.00	1.024	26	UB22	22	68.5	65	17	TOHT120405R	GP06
FNTR-24N-28.00	1.102	28	UB24	24	68.5	65	19	TOHT120405R	GP06

INSERT SPARE PARTS



Designation	Screw	Wrench
TOHT080305R	CSTB-2.5S	T-8F
TOHT080305R	CSTB-2.5S	T-8F
TOHT090305R	CSTB-2.5S	T-8F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT120405R	CSTB-4S	T-15F
TOHT120405R	CSTB-4S	T-15F

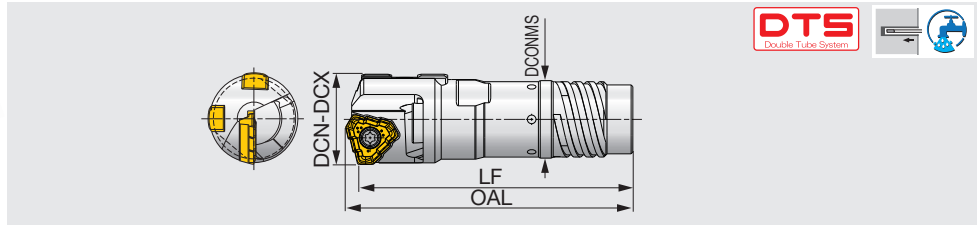
GUIDE PAD SPARE PARTS



Designation	Screw	Wrench
GP06-075	CSTB-2.2S	T-7F
GP06-075	CSTB-2.2S	T-7F
GP06-085	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F

Recommended clamping torque (N·m): CSTB-2.2S=1, CSTB-2.5S, CSTB-3S=2.3, CSTB-3.5H=3, CSTB-4S=3

Indexable head with external 4-start thread for double tube system



Metric	DCN		DCX		Outer tube			Insert	Guide pad		
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)	OAL				
FNTR-00D-xx.xx	0.725	18.41	0.787	20	OT00	18	62	59	16	TOHT090305R	GP06-085
FNTR-01D-xx.xx	0.788	20.01	0.827	21	OT01	19.5	66.5	63.5	18	TOHT100305R	GP06-085
FNTR-01D-xx.xx	0.827	21.01	0.858	21.8	OT01	19.5	66.5	63.5	18	TOHT100305R	GP06-100
FNTR-02D-xx.xx	0.859	21.81	0.866	21.99	OT02	21.5	66.5	63.5	19.5	TOHT100305R	GP06-100
FNTR-02D-xx.xx	0.866	22	0.949	24.1	OT02	21.5	69	65.5	19.5	TOHT110405R	GP06-100
FNTR-03D-xx.xx	0.949	24.11	0.984	25	OT03	23.5	69	65.5	21	TOHT110405R	GP06-100
FNTR-03D-xx.xx	0.985	25.01	1.039	26.4	OT03	23.5	71	67.5	21	TOHT120405R	GP06
FNTR-04D-xx.xx	1.040	26.41	1.102	28	OT04	26	74	70.5	23.5	TOHT120405R	GP06

e.g. Designation for tool diameter ø20 mm : FNTR-00D-20.00

INSERT SPARE PARTS

Designation	Screw	Wrench
TOHT090305R	CSTB-2.5S	T-8F
TOHT100305R	CSTB-3S	T-9F
TOHT100305R	CSTB-3S	T-9F
TOHT100305R	CSTB-3S	T-9F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT120405R	CSTB-4S	T-15F
TOHT120405R	CSTB-4S	T-15F

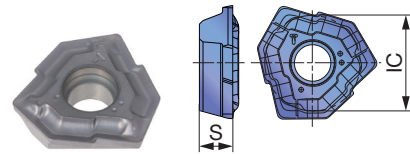
GUIDE PAD SPARE PARTS

Designation	Screw	Wrench
GP06-085	CSTB-2.2S	T-7F
GP06-085	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F

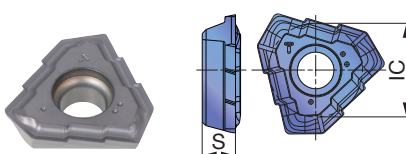
Recommended clamping torque (N·m): CSTB-2.2S=1, CSTB-2.5S, CSTB-3S=2.3, CSTB-3.5H=3, CSTB-4S=3

INSERT

TOHT-NDJ (070..., 080...)



TOHT-NDJ (090... - 120...)



P Steel	★								
M Stainless	★								
K Cast iron	★								
N Non-ferrous	★								
S Superalloys	★								
H Hard materials	★								

★ : First choice
☆ : Second choice

Designation	DCN (in)	DCX (in)	Coated							IC (in)	S (in)
			AH725								
TOHT080305R-NDJ	0.630	0.709	●							0.337	0.110
TOHT090305R-NDJ	0.709	0.787	●							0.328	0.118
TOHT100305R-NDJ	0.788	0.866	●							0.363	0.130
TOHT110405R-NDJ	0.866	0.984	●							0.409	0.150
TOHT120405R-NDJ	0.985	1.102	●							0.456	0.169

● : Line up
Package quantity = 10 pcs.

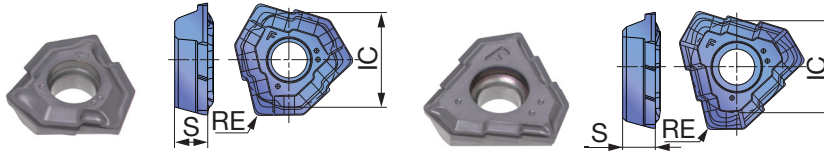
Reference pages: Inserts → **J130 - J131**, Guide pads → **J131**,
Drill tube (STS) → **J150**, Drill tube (DTS) → **J154**



INSERT

TOHT-NDL (07..., 08...)

TOHT-NDL (09... - 12...)



P	Steel	★								
M	Stainless	★								
K	Cast iron	★								
N	Non-ferrous	★								
S	Superalloys	★								
H	Hard materials	★								

★ : First choice
☆ : Second choice

Designation	DCN (in)	DCX (in)	Coated								IC (in)	S (in)	RE (in)
			AH725										
TOHT070304R-NDL	0.551	0.630	●								0.303	0.091	0.016
TOHT080305R-NDL	0.630	0.709	●								0.337	0.110	0.020
TOHT090305R-NDL	0.709	0.787	●								0.328	0.118	0.020
TOHT100305R-NDL	0.788	0.866	●								0.363	0.130	0.020
TOHT110405R-NDL	0.866	0.984	●								0.409	0.150	0.020
TOHT120405R-NDL	0.985	1.102	●								0.456	0.169	0.020

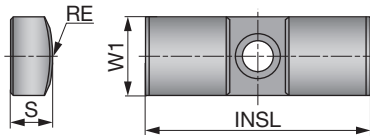
● : Line up
Package quantity = 10 pcs.

ISO classifications for Insert grades

Grade	ISO area						
	10	15	20	25	30	35	40
P AH725		■	■	■	■		
M AH725			■	■	■		
K AH725			■	■			
N AH725			■	■			
S AH725			■	■			
H AH725				■	■		

GUIDE PAD

GP06



P	Steel	☆	☆	★	☆
M	Stainless	☆	☆	★	☆
K	Cast iron	☆	☆	★	☆
N	Non-ferrous	☆	☆	★	☆
S	Superalloys	☆	☆	★	☆
H	Hard materials	☆	☆	★	☆

★ : First choice
☆ : Second choice

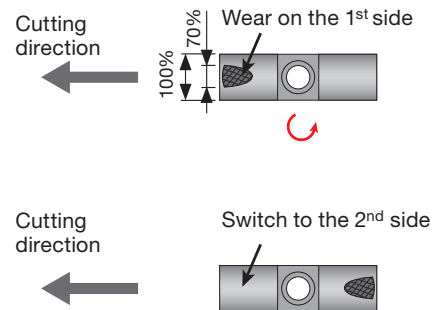
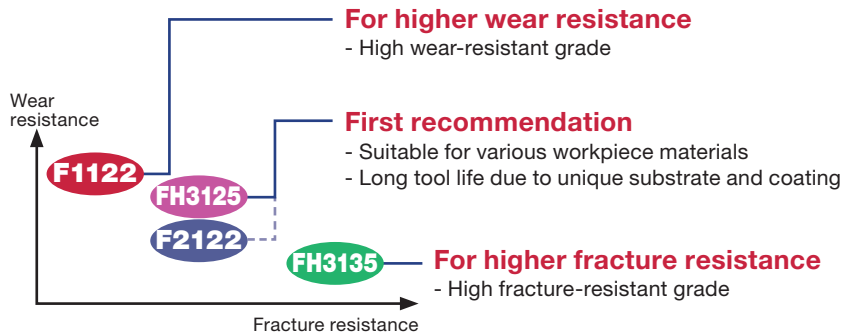
Designation	DCN (in)	DCX (in)	Coated				W1 (in)	INSL (in)	S (in)	RE (in)
			F1122	F2122	FH3125	FH3135				
GP06-075	0.630	0.709	●	▲			0.236	0.787	0.118	0.295
GP06-20-075-DC	0.630	0.709			●	●	0.236	0.787	0.118	0.295
GP06-085	0.709	0.827	●	▲			0.236	0.787	0.118	0.335
GP06-20-085-DC	0.709	0.827			●	●	0.236	0.787	0.118	0.335
GP06-100	0.827	0.984	●	▲			0.236	0.787	0.118	0.394
GP06-20-100-DC	0.827	0.984			●	●	0.236	0.787	0.118	0.394
GP06	0.985	1.299	●	▲			0.236	0.787	0.118	0.472
GP06-20-120-DC	0.985	1.299			●	●	0.236	0.787	0.118	0.472

● : Line up
▲ : To be discontinued
Package quantity = 5 pcs.

REPLACING GUIDE PADS

Guide pads are subject to wear, like inserts

- The guide pad has two sides.
- Each guide pad can be used on two sides. When the first corner wears out to 70% of the width, reverse the guide pad to use the second side.
- Replace with a new guide pad when the second side wears out.

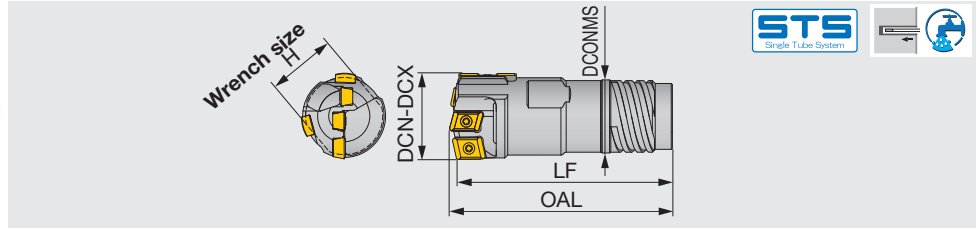


GP	06-075	F2122
Series	Size	Grade

Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Milling Cutter
Miniature Tool
Endmill
Drilling Tool
Tooling System
User's Guide
Index



Direct mount indexable head with external 4-start thread for single tube system (STS), tool diameter: $\varnothing 25 - \varnothing 65$ mm (0.984" - 2.559")



Metric	DCN		DCX		Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-02S-xx.xx	0.984	25	1.039	26.4	ST02	22	73	70	19.5	19
FNBM-03S-xx.xx	1.040	26.41	1.130	28.7	ST03	24	73	70	21	21
FNBM-04S-xx.xx	1.130	28.71	1.220	31	ST04	26	78	75	23.5	24
FNBM-05S-xx.xx	1.221	31.01	1.311	33.3	ST05	28	78	75	25.5	26
FNBM-06S-xx.xx	1.311	33.31	1.425	36.2	ST06	30	83	80	28	28
FNBM-07S-xx.xx	1.426	36.21	1.559	39.6	ST07	33	93	90	30	30
FNBM-08S-xx.xx	1.559	39.61	1.693	43	ST08	36	99	95	33	32
FNBM-09S-xx.xx	1.693	43.01	1.850	47	ST09	39	104	100	36	36
FNBM-10S-xx.xx	1.851	47.01	2.035	51.7	ST10	43	104	100	39	38
FNBM-11S-xx.xx	2.036	51.71	2.213	56.2	ST11	47	114	110	43	46
FNBM-12S-xx.xx	2.213	56.21	2.559	65	ST12	51	120	115	47.5	50
FNBM-13S-xx.xx	2.386	60.61	2.559	65	ST13	56	120	115	51	54

e.g. Designation for tool diameter $\varnothing 30$ mm : FNBM-04S-30.00

SPARE PARTS



Tool diameter DCN - DCX (mm)	Insert									Guide pad		
	① Peripheral			② Intermediate			③ Central			④		
	Insert	Screw	Wrench	Insert	Screw	Wrench	Insert	Screw	Wrench	Guide pad	Screw	Wrench
25.00 - 28.00	FBH060304R-G-P	CSTB-2.2	T-7F	FBM060304R-G-I	CSTB-2.2	T-7F	FBM060308L-G-C	CSTB-2.2	T-7F	GP06	CSTB-2.2S	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM060308L-HF-C	CSTB-2.2	T-7F	GP06	CSTB-2.2S	T-7F
28.01 - 29.99	FBH060304R-G-P	CSTB-2.2	T-7F	FBM060304R-G-I	CSTB-2.2	T-7F	FBM070408L-G-C	SR14-560-HG	T-8F	GP06	CSTB-2.2S	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP06	CSTB-2.2S	T-7F
30.00 - 35.00	FBH080404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM070408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
35.01 - 38.00	FBH080404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
38.01 - 39.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
39.01 - 41.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
41.01 - 44.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
44.01 - 45.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
45.01 - 47.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
47.01 - 51.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
51.01 - 54.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
54.01 - 57.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
57.01 - 60.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
60.01 - 64.00	FBH130404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
64.01 - 65.00	FBH130404R-G-P	SR14-560-HG	T-8F	FBM130404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM130404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F

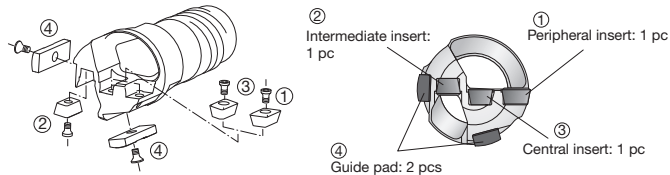
Please see the page **J135 - J137** for the grades of inserts and guide pads.

Drill heads come with clamping screws and wrenches but do not include inserts and guide pads.

Please purchase inserts and guide pads separately.

Recommended clamping torque (N·m): CSTB-2.2/CSTB-2.2S = 1, SR14-560-HG = 1.2, CSTB-3S = 2.3, CSTB-3.5 = 3.5

G type chipbreaker	HF type chipbreaker
FBH060304R-G-P	FBH060308R-HF-P
FBH080404R-G-P	FBH080408R-HF-P
FBH090404R-G-P	FBH090408R-HF-P
FBH110404R-G-P	FBH110408R-HF-P
FBH130404R-G-P	FBH130408R-HF-P
FBM060304R-G-I	FBM060304R-HF-I
FBM070404R-G-I	FBM070404R-HF-I
FBM080404R-G-I	FBM080404R-HF-I
FBM100404R-G-I	FBM100404R-HF-I
FBM130404R-G-I	FBM130404R-HF-I
FBM060308L-G-C	FBM060308L-HF-C
FBM070408L-G-C	FBM070408L-HF-C
FBM080408L-G-C	FBM080408L-HF-C
FBM100408L-G-C	FBM100408L-HF-C
FBM130408L-G-C	FBM130408L-HF-C

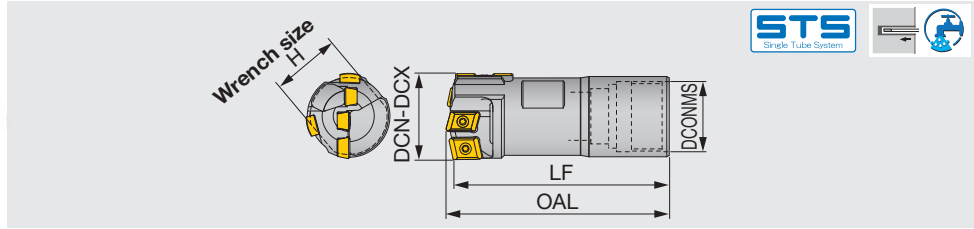


The designation of insert with G type and HF type is different, even in the same shape.

Please refer to the table on the left to check the insert designation. Both inserts can be mounted on the drill head.

Reference pages: Inserts → **J135 - J136**, Guide pads → **J137**,
Drill tube (STS) → **J150**

Direct mount indexable head with internal single-start thread for single tube system (STS), tool diameter: $\varnothing 25 - \varnothing 65$ mm (0.984" - 2.559")



Metric	DCN		DCX		Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-22N-xx.xx	0.984	25	1.063	26.99	UB22	22	73	70	20	19
FNBM-24N-xx.xx	1.063	27	1.142	29	UB24	24	73	70	22	21
FNBM-24N-xx.xx	1.142	29.01	1.181	29.99	UB24	24	73	70	22	24
FNBM-26N-xx.xx	1.181	30	1.259	31.99	UB26	26	78	75	24	24
FNBM-28N-xx.xx	1.260	32	1.338	33.99	UB28	28	78	75	26	26
FNBM-30N-xx.xx	1.339	34	1.456	36.99	UB30	30	93	90	27	28
FNBM-33N-xx.xx	1.457	37	1.574	39.99	UB33	33	98	95	30	30
FNBM-36N-xx.xx	1.575	40	1.732	43.99	UB36	36	104	100	33	32
FNBM-39N-xx.xx	1.732	44	1.850	46.99	UB39	39	109	105	37	36
FNBM-43N-xx.xx	1.850	47	2.047	51.99	UB43	43	109	105	41	38
FNBM-47N-xx.xx	2.047	52	2.244	56.99	UB47	47	114	110	44	46
FNBM-51N-xx.xx	2.244	57	2.401	60.99	UB51	51	120	115	49	46
FNBM-56N-xx.xx	2.402	61	2.559	65	UB56	56	120	115	53	54

e.g. Designation for tool diameter $\varnothing 30$ mm : FNBM-26N-30.00

SPARE PARTS



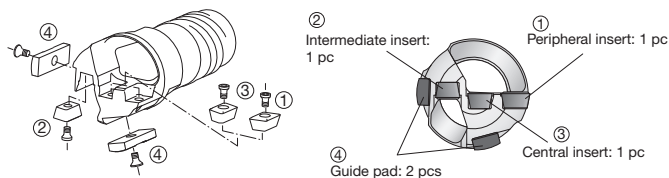
Tool diameter DCN - DCX (mm)	Insert									Guide pad		
	①Peripheral			②Intermediate			③Central			④		
	Insert	Screw	Wrench	Insert	Screw	Wrench	Insert	Screw	Wrench	Guide pad	Screw	Wrench
25.00 - 28.00	FBH060304R-G-P	CSTB-2.2	T-7F	FBM060304R-G-I	CSTB-2.2	T-7F	FBM060308L-G-C	CSTB-2.2	T-7F	GP06	CSTB-2.2S	T-7F
25.00 - 28.00	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM060308L-HF-C	CSTB-2.2	T-7F	GP06	CSTB-2.2S	T-7F
28.01 - 29.99	FBH060304R-G-P	CSTB-2.2	T-7F	FBM060304R-G-I	CSTB-2.2	T-7F	FBM070408L-G-C	SR14-560-HG	T-8F	GP06	CSTB-2.2S	T-7F
28.01 - 29.99	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP06	CSTB-2.2S	T-7F
30.00 - 35.00	FBH080404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM070408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
30.00 - 35.00	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
35.01 - 38.00	FBH080404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
35.01 - 38.00	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
38.01 - 39.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
38.01 - 39.00	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
39.01 - 41.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
39.01 - 41.00	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
41.01 - 44.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
41.01 - 44.00	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
44.01 - 45.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
44.01 - 45.00	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
45.01 - 47.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
45.01 - 47.00	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
47.01 - 51.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
47.01 - 51.00	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
51.01 - 54.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
51.01 - 54.00	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
54.01 - 57.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
54.01 - 57.00	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
57.01 - 60.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
57.01 - 60.00	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
60.01 - 64.00	FBH130404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
60.01 - 64.00	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
64.01 - 65.00	FBH130404R-G-P	SR14-560-HG	T-8F	FBM130404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
64.01 - 65.00	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM130404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F

Please see the page **J135 - J137** for the grades of inserts and guide pads.

Drill heads come with clamping screws and wrenches but do not include inserts and guide pads.

Please purchase inserts and guide pads separately.

Recommended clamping torque (N·m): CSTB-2.2/CSTB-2.2S = 1, SR14-560-HG = 1.2, CSTB-3S = 2.3, CSTB-3.5 = 3.5

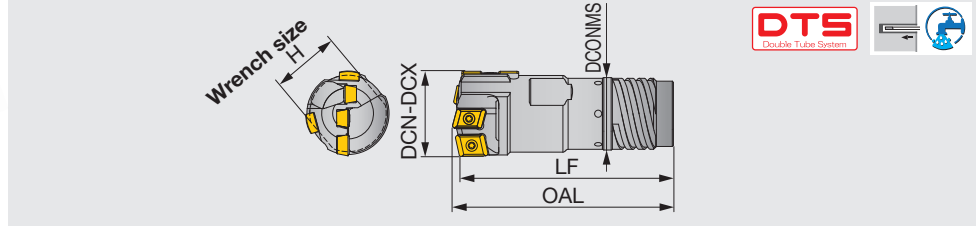


The designation of insert with G type and HF type is different, even in the same shape.

Please refer to the table on the left to check the insert designation. Both inserts can be mounted on the drill head.

Reference pages: Inserts → **J135 - J136**, Guide pads → **J137**,
Drill tube (STS) → **J150**

Direct mount indexable head with external 4-start thread for double tube system (DTS), tool diameter: $\varnothing 25 - \varnothing 65$ mm (0.984" - 2.559")



Metric	DCN		DCX		Outer tube		Drill head			
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-03D-xx.xx	0.984	25	1.039	26.4	OT03	23.5	73	70	21	19
FNBM-04D-xx.xx	1.040	26.41	1.130	28.7	OT04	26	78	75	23.5	21
FNBM-05D-xx.xx	1.130	28.71	1.220	31	OT05	28	78	75	25.5	24
FNBM-06D-xx.xx	1.221	31.01	1.311	33.3	OT06	30.5	83	80	28	26
FNBM-07D-xx.xx	1.311	33.31	1.425	36.2	OT07	33	93	90	30	28
FNBM-08D-xx.xx	1.426	36.21	1.559	39.6	OT08	35.5	99	95	33	30
FNBM-09D-xx.xx	1.559	39.61	1.693	43	OT09	39	104	100	36	32
FNBM-10D-xx.xx	1.693	43.01	1.850	47	OT10	42.5	104	100	39	36
FNBM-11D-xx.xx	1.851	47.01	2.035	51.7	OT11	46.5	114	110	43	38
FNBM-12D-xx.xx	2.036	51.71	2.213	56.2	OT12	51	120	115	47.5	46
FNBM-13D-xx.xx	2.213	56.21	2.386	60.6	OT13	55.5	120	115	51	50
FNBM-13D-xx.xx	2.386	60.61	2.559	65	OT13	55.5	120	115	51	54

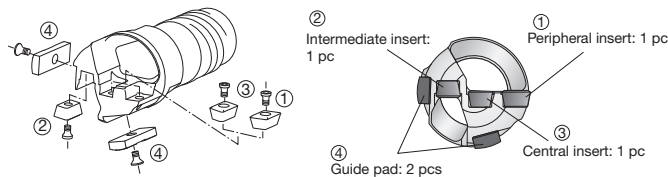
e.g. Designation for tool diameter $\varnothing 30$ mm : FNBM-05D-30.00

SPARE PARTS

Tool diameter DCN - DCX (mm)	Insert									Guide pad		
	① Peripheral			② Intermediate			③ Central			④		
	Insert	Screw	Wrench	Insert	Screw	Wrench	Insert	Screw	Wrench	Guide pad	Screw	Wrench
25.00 - 28.00	FBH060304R-G-P	CSTB-2.2	T-7F	FBM060304R-G-I	CSTB-2.2	T-7F	FBM060308L-G-C	CSTB-2.2	T-7F	GP06	CSTB-2.2S	T-7F
28.01 - 29.99	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM060308L-HF-C	CSTB-2.2	T-7F	GP06	CSTB-2.2S	T-7F
30.00 - 35.00	FBH060304R-G-P	CSTB-2.2	T-7F	FBM060304R-G-I	CSTB-2.2	T-7F	FBM070408L-G-C	SR14-560-HG	T-8F	GP06	CSTB-2.2S	T-7F
35.01 - 38.00	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
38.01 - 39.00	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
39.01 - 41.00	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
41.01 - 44.00	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
44.01 - 45.00	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
45.01 - 47.00	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
47.01 - 51.00	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
51.01 - 54.00	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
54.01 - 57.00	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
57.01 - 60.00	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
60.01 - 64.00	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
64.01 - 65.00	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM130404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F

G type chipbreaker	HF type chipbreaker
FBH060304R-G-P	FBH060308R-HF-P
FBH080404R-G-P	FBH080408R-HF-P
FBH090404R-G-P	FBH090408R-HF-P
FBH110404R-G-P	FBH110408R-HF-P
FBH130404R-G-P	FBH130408R-HF-P
FBM060304R-G-I	FBM060304R-HF-I
FBM070404R-G-I	FBM070404R-HF-I
FBM080404R-G-I	FBM080404R-HF-I
FBM100404R-G-I	FBM100404R-HF-I
FBM130404R-G-I	FBM130404R-HF-I
FBM060308L-G-C	FBM060308L-HF-C
FBM070408L-G-C	FBM070408L-HF-C
FBM080408L-G-C	FBM080408L-HF-C
FBM100408L-G-C	FBM100408L-HF-C
FBM130408L-G-C	FBM130408L-HF-C

Please see the page **J135 - J137** for the grades of inserts and guide pads.
 Drill heads come with clamping screws and wrenches but do not include inserts and guide pads.
 Please purchase inserts and guide pads separately.
 Recommended clamping torque (N·m): CSTB-2.2/CSTB-2.2S = 1, SR14-560-HG = 1.2, CSTB-3S = 2.3, CSTB-3.5 = 3.5

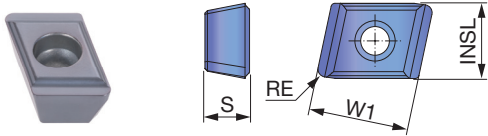


The designation of insert with G type and HF type is different, even in the same shape.
 Please refer to the table on the left to check the insert designation. Both inserts can be mounted on the drill head.

Reference pages: Inserts → **J135 - J136**, Guide pads → **J137**,
 Drill tube (DTS) → **J154**

INSERT

FBM-C (Central insert)



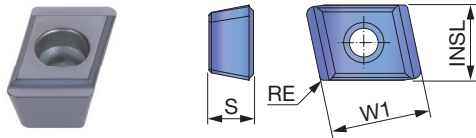
P	Steel	★	☆																	
M	Stainless	★	☆																	
K	Cast iron	★	☆																	
N	Non-ferrous	★	☆																	
S	Superalloys	★	☆																	
H	Hard materials	★	☆																	

★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated																		S (in)	DCN (in)	DCX (in)	RE (in)
			AH725	AH8015																				
FBM060308L-G-C	0.217	0.315	●																		0.118	0.984	1.102	0.031
FBM060308L-HF-C	0.217	0.315	●	●																	0.118	0.984	1.102	0.031
FBM070408L-G-C	0.256	0.394	●																		0.157	1.106	1.378	0.031
FBM070408L-HF-C	0.256	0.394	●	●																	0.157	1.106	1.378	0.031
FBM080408L-G-C	0.315	0.394	●																		0.157	1.378	1.732	0.031
FBM080408L-HF-C	0.315	0.394	●	●																	0.157	1.378	1.732	0.031
FBM100408L-G-C	0.374	0.394	●																		0.157	1.733	2.126	0.031
FBM100408L-HF-C	0.374	0.394	●	●																	0.157	1.733	2.126	0.031
FBM130408L-G-C	0.492	0.394	●																		0.157	2.126	2.559	0.031
FBM130408L-HF-C	0.492	0.394	●	●																	0.157	2.126	2.559	0.031

● : Line-up

FBM-I (Intermediate insert)



P	Steel	★	☆																						
M	Stainless	★	☆																						
K	Cast iron	★	☆																						
N	Non-ferrous	★	☆																						
S	Superalloys	★	☆																						
H	Hard materials	★	☆																						

★ : First choice
☆ : Second choice

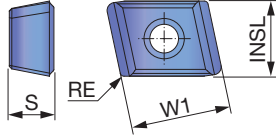
Designation	INSL (in)	W1 (in)	Coated																					
			AH725	AH8015																				
FBM060304R-G-I	0.217	0.315	●	●																	0.118	0.984	1.181	0.016
FBM060304R-HF-I	0.217	0.315	●	●																	0.118	0.984	1.181	0.016
FBM070404R-G-I	0.256	0.394	●																		0.157	1.181	1.614	0.016
FBM070404R-HF-I	0.256	0.394	●	●																	0.157	1.181	1.614	0.016
FBM080404R-G-I	0.315	0.394	●																		0.157	1.615	2.008	0.016
FBM080404R-HF-I	0.315	0.394	●	●																	0.157	1.615	2.008	0.016
FBM100404R-G-I	0.374	0.394	●																		0.157	2.008	2.520	0.016
FBM100404R-HF-I	0.374	0.394	●	●																	0.157	2.008	2.520	0.016
FBM130404R-G-I	0.492	0.394	●																		0.157	2.520	2.559	0.016
FBM130404R-HF-I	0.492	0.394	●	●																	0.157	2.520	2.559	0.016

● : Line-up

Grade
Insert
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Endmill
Drilling Tool
Tooling System
User's Guide
Index



FBH-P (Peripheral insert)



P	Steel	★	☆	☆	☆
M	Stainless	★	☆	☆	☆
K	Cast iron	★	☆	☆	☆
N	Non-ferrous	★	☆	☆	☆
S	Superalloys	★	☆	☆	☆
H	Hard materials	★	☆	☆	☆

★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated				S (in)	DCN (in)	DCX (in)	RE (in)
			AH725	UC3120	AH8015	AH3135				
FBH060304R-G-P	0.236	0.315	●	●			0.118	0.984	1.181	0.016
FBH060308R-G-P	0.236	0.315	●		●	●	0.118	1.103	1.181	0.031
FBH060308R-HF-P	0.236	0.315	●		●		0.118	0.984	1.181	0.031
FBH080404R-G-P	0.295	0.394	●	●			0.157	1.181	1.496	0.016
FBH080408R-G-P	0.295	0.394	●		●	●	0.157	1.181	1.496	0.031
FBH080408R-HF-P	0.295	0.394	●		●		0.157	1.181	1.496	0.031
FBH090404R-G-P	0.354	0.394	●	●			0.157	1.496	1.850	0.016
FBH090408R-G-P	0.354	0.394	●		●	●	0.157	1.496	1.575	0.031
FBH090408R-HF-P	0.354	0.394	●		●		0.157	1.496	1.850	0.031
FBH110404R-G-P	0.433	0.394	●				0.157	1.851	2.362	0.016
FBH110408R-HF-P	0.433	0.394	●		●		0.157	1.851	2.362	0.031
FBH130404R-G-P	0.512	0.394	●				0.157	2.363	2.559	0.016
FBH130408R-HF-P	0.512	0.394	●		●		0.157	2.363	2.559	0.031

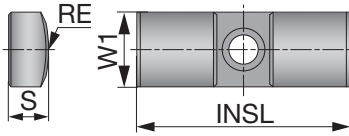
● : Line-up

ISO classifications for Insert grades

	Grade	(Former name)	ISO area								
			5	10	15	20	25	30	35	40	
P	AH8015	-			■	■	■	■	■		
	AH725	(UC2220)			■	■	■	■	■		
M	AH8015	-		■	■	■	■	■			
	AH725	(UC2220)			■	■	■	■	■		
K	AH8015	-			■	■	■				
	AH725	(UC2220)			■	■	■				
N	AH8015	-			■	■	■				
	AH725	(UC2220)			■	■	■				
S	AH8015	-			■	■	■				
	AH725	(UC2220)			■	■	■				

GUIDE PAD

GP06, 07, 08, 10S, 12



	P	M	K	N	S	H
Steel	☆	☆	★	☆		
Stainless	☆	☆	★	☆		
Cast iron	☆	☆	★	☆		
Non-ferrous	☆	☆	★	☆		
Superalloys	☆	☆	★	☆		
Hard materials	☆	☆	★	☆		

★ : First choice
☆ : Second choice

Designation	DCN (in)	DCX (in)	Coated				W1 (in)	INSL (in)	S (in)	RE (in)
			F1122	F2122	FH3125	FH3135				
GP06	0.984	1.181	●	▲			0.236	0.787	0.118	0.472
GP06-20-120-DC	0.984	1.181			●	●	0.236	0.787	0.118	0.472
GP07	1.181	1.535	●	▲			0.276	0.787	0.138	0.472
GP07-20-120-DC	1.181	1.535			●	●	0.276	0.787	0.138	0.472
GP08	1.536	1.772	●	▲			0.315	0.984	0.177	0.610
GP08-25-155-DC	1.536	1.772			●	●	0.315	0.984	0.177	0.610
GP10S	1.772	2.244	●	▲			0.394	1.181	0.177	0.787
GP10-30-200-DC	1.772	2.244			●	●	0.394	1.181	0.177	0.787
GP12	2.244	2.559	●	▲			0.472	1.378	0.217	0.984
GP12-35-250-DC	2.244	2.559			●	●	0.472	1.378	0.217	0.984

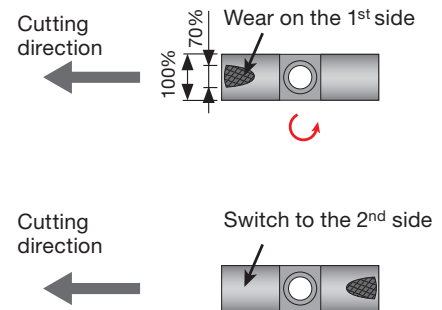
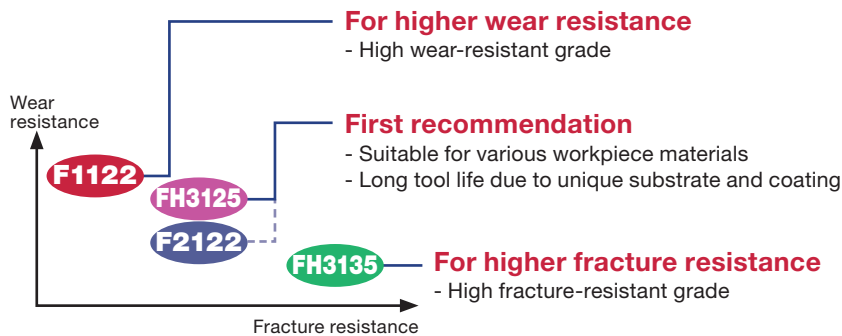
All of the above guide pads are finished with coating.

● : Line up
▲ : To be discontinued
Package quantity = 5 pcs.

REPLACING GUIDE PADS

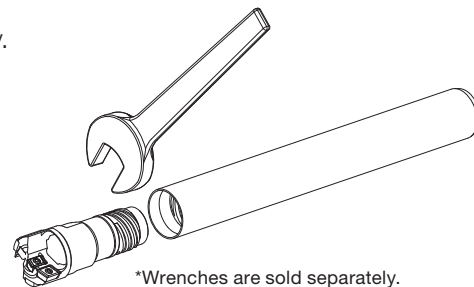
Guide pads are subject to wear, like inserts

- The guide pad has two sides.
- Each guide pad can be used on two sides. When the first corner wears out to 70% of the width, reverse the guide pad to use the second side.
- Replace with a new guide pad when the second side wears out.



NOTE FOR MOUNTING A DRILL HEAD

Please be sure to use a wrench for a drill head to be clamped firmly.

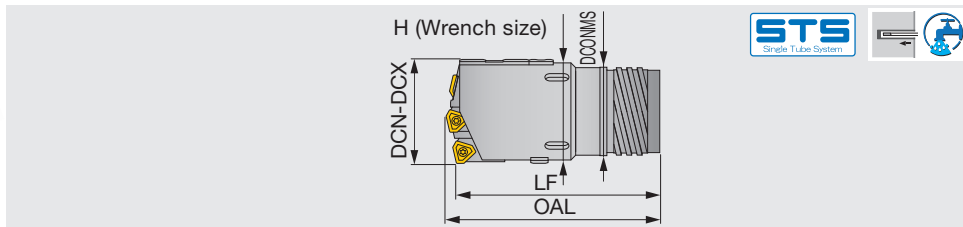


*Wrenches are sold separately.

UNIDEX

UNIDEX STS-EX

Indexable drill head with external 4-start thread for single tube system (STS), diameters adjustable, tool diameter $\varnothing 38.00 - \varnothing 106.99$ mm (1.496" - 4.212")



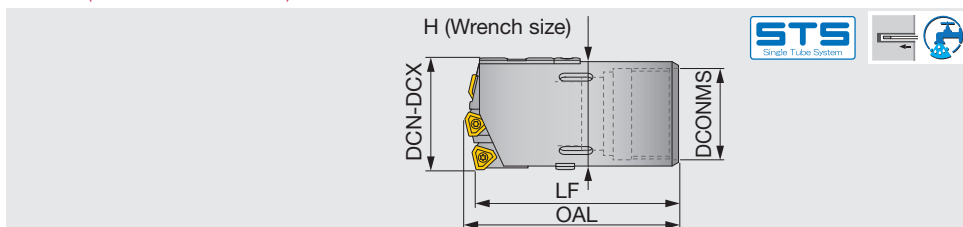
Metric	DCN		DCX		CICT	Drill tube			Drill head		
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS07E-xx.xx	1.496	38	1.559	39.6	3	ST07	33	90	85	30	37
KUSTS08E-xx.xx	1.559	39.61	1.693	43	3	ST08	36	91	85	33	40
KUSTS09E-xx.xx	1.693	43.01	1.850	47	3	ST09	39	101	95	36	43
KUSTS10E-xx.xx	1.851	47.01	2.035	51.7	3	ST10	43	102	95	39	48
KUSTS11E-xx.xx	2.036	51.71	2.213	56.2	3	ST11	47	107	100	43	52
KUSTS12E-xx.xx	2.213	56.21	2.386	60.6	3	ST12	51	118	110	47	57
KUSTS13E-xx.xx	2.386	60.61	2.559	65	3	ST13	56	119	110	51	61
KUSTS14E-xx.xx	2.559	65	2.637	66.99	3	ST14	56	159	150	52	63
KUSTS15E-xx.xx	2.638	67	2.874	72.99	3	ST15	62	159	150	58	69
KUSTS16E-xx.xx	2.874	73	3.149	79.99	3	ST16	68	160	150	63	76
KUSTS17E-xx.xx	3.150	80	3.425	86.99	3	ST17	75	191	180	70	83
KUSTS18E-xx.xx	3.425	87	3.937	99.99	3	ST18	82	193	180	77	96
KUSTS19E-xx.xx	3.937	100	4.212	106.99	3	ST19	94	193	180	89	102

e.g. Designation for tool diameter $\varnothing 60$ mm: KUSTS12E-60.00
Drill heads with the diameter $\varnothing 92$ mm or over have a top guide pocket.
Adjusting diameters has to be required before using.

UNIDEX

UNIDEX STS-IN

Indexable drill head with internal single-start thread for single tube system (STS), diameters adjustable, tool diameter $\varnothing 38.00 - \varnothing 106.99$ mm (1.496" - 4.212")



Metric	DCN		DCX		CICT	Drill tube			Drill head		
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS33-xx.xx	1.496	38	1.574	39.99	3	UB33	33	85	80	30	37
KUSTS36-xx.xx	1.575	40	1.732	43.99	3	UB36	36	86	80	33	41
KUSTS39-xx.xx	1.732	44	1.850	46.99	3	UB39	39	96	90	37	43
KUSTS43-xx.xx	1.850	47	2.047	51.99	3	UB43	43	97	90	41	48
KUSTS47-xx.xx	2.047	52	2.244	56.99	3	UB47	47	107	100	44	53
KUSTS51-xx.xx	2.244	57	2.401	60.99	3	UB51	51	118	110	49	57
KUSTS56-xx.xx	2.402	61	2.677	67.99	3	UB56	56	119	110	53	64
KUSTS62-xx.xx	2.677	68	2.952	74.99	3	UB62	62	129	120	59	71
KUSTS68-xx.xx	2.953	75	3.189	80.99	3	UB68	68	161	150	65	77
KUSTS75-xx.xx	3.189	81	3.582	90.99	3	UB75	75	162	150	71	87
KUSTS82-xx.xx	3.583	91	3.897	98.99	3	UB82	82	162	150	79	95
KUSTS94-xx.xx	3.898	99	4.212	106.99	3	UB94	94	163	150	90	102

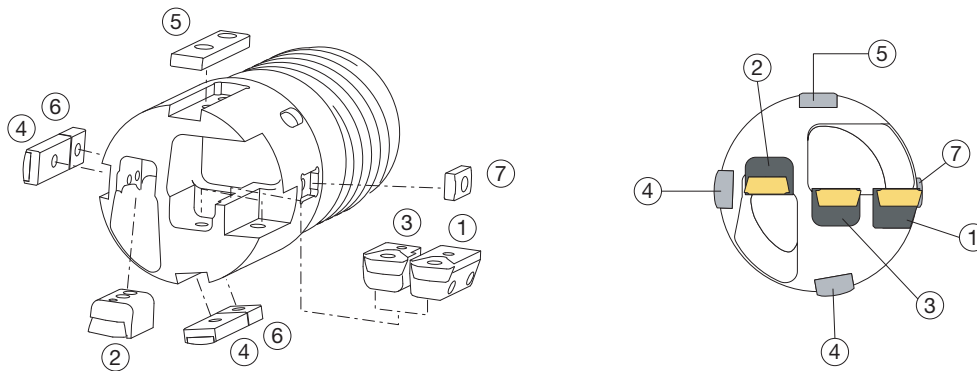
e.g. Designation for tool diameter $\varnothing 60$ mm: KUSTS51-60.00
Drill heads with the diameter $\varnothing 92$ mm or over have a top guide pocket.
Adjusting diameters has to be required before using.

Reference pages: UNIDEX STS-EX: Inserts → **J142**, Standard cutting conditions → **J143**, Drill tube (STS) → **J150**
UNIDEX STS-IN: Inserts → **J142**, Standard cutting conditions → **J143**, Drill tube (STS) → **J152**
Screw, Guide pad → **J141**

SPARE PARTS



Tool diameter DCN-DCX (mm)	Cartridge			Guide pad							
	Peripheral	Intermediate	Central	Guide pad		Filler	Protector		Sub guide pad		
	Cartridge①	Cartridge②	Cartridge③	④	Qty.	⑤	Qty.	⑥	Qty.	⑦	Qty.
38 - 39.99	OZ05R	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
40 - 44.99	OZ402 - 04	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
45 - 47.99	OZ402 - 04	IOZ05R	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
48 - 51.99	OZ402 - 04	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
52 - 54.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
55 - 57.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
58 - 59.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
60 - 63.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG08	1
64 - 67.99	OZ402 - 43	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG10	1
68 - 77.99	OZ402 - 32	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
78 - 84.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
85 - 91.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
92 - 98.99	OZ402 - 43	IOZ402 - 63	IOZ402 - 63	GP14	2	FILLER14	1	GPT14	2	CUG10	1
99 - 106.99	OZ402 - 63	IOZ402 - 63	IOZ402 - 63	GP18	2	FL18 - M	1	GPT18 - M	2	CUG14 - M	1



* Depending on tool diameters, parts may not be positioned as shown in the above.

INSERT

Tool diameter DCN-DCX (mm)	Peripheral insert			Intermediate insert			Central insert		
	New	Conventional	Qty.	New	Conventional	Qty.	New	Conventional	Qty.
	38 - 39.99	NPMX08**R...	508 - 05R	1	NPMX08**R...	508 - 05R	1	NPMX08**R...	508 - 05R
40 - 44.99	TPMX14**R...	1123 - 04R	1	NPMX08**R...	508 - 05R	1	NPMX08**R...	508 - 05R	1
45 - 47.99	TPMX14**R...	1123 - 04R	1	NPMX08**R...	508 - 05R	1	TPMX14**R...	1123 - 04R	1
48 - 51.99	TPMX14**R...	1123 - 04R	1	TPMX14**R...	1123 - 04R	1	TPMX14**R...	1123 - 04R	1
52 - 54.99	TPMX17**R...	1123 - 32R	1	TPMX14**R...	1123 - 04R	1	TPMX14**R...	1123 - 04R	1
55 - 57.99	TPMX17**R...	1123 - 32R	1	TPMX14**R...	1123 - 04R	1	TPMX17**R...	1123 - 32R	1
58 - 59.99	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1
60 - 63.99	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1
64 - 67.99	TPMX24**R...	1123 - 43R	1	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1
68 - 77.99	TPMX17**R...	1123 - 32R	1	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1
78 - 84.99	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1
85 - 91.99	TPMX28**R...	1123 - 63R	1	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1
92 - 98.99	TPMX24**R...	1123 - 43R	1	TPMX28**R...	1123 - 63R	1	TPMX28**R...	1123 - 63R	1
99 - 106.99	TPMX28**R...	1123 - 63R	1	TPMX28**R...	1123 - 63R	1	TPMX28**R...	1123 - 63R	1

The tool diameter can be increased up to 5 mm using the plus (+) spare parts. (The expansion allowance depends on tool diameters.)
Drill heads come with cartridge, guide pad, filler, protector, sub guide pad, and wrench, but do not include inserts.

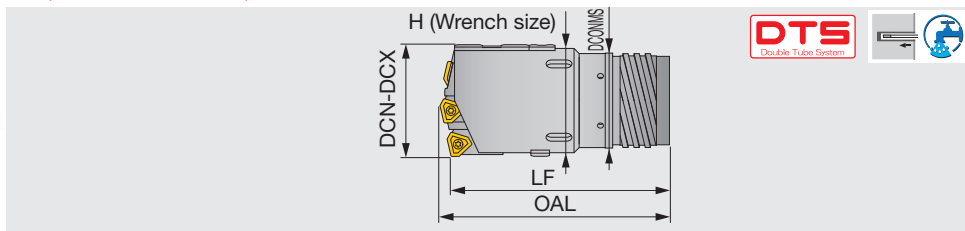
Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index



UNIDEX

UNIDEX DTS

Indexable drill head with external 4-start thread for double tube system (DTS), diameters adjustable, tool diameter $\varnothing 38 - \varnothing 106.99$ mm (1.496" - 4.212")



Metric	DCN		DCX		CICT	Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUDTS08E-xx.xx	1.496	38	1.559	39.6	3	OT08	35.5	90	85	33	37
KUDTS09E-xx.xx	1.559	39.61	1.693	43	3	OT09	39	91	85	36	40
KUDTS10E-xx.xx	1.693	43.01	1.850	47	3	OT10	42.5	101	95	39	43
KUDTS11E-xx.xx	1.851	47.01	2.035	51.7	3	OT11	46.5	102	100	43	48
KUDTS12E-xx.xx	2.036	51.71	2.213	56.2	3	OT12	51	107	100	47	52
KUDTS13E-xx.xx	2.213	56.21	2.559	65	3	OT13	55.5	119	110	51	61
KUDTS14E-xx.xx	2.559	65	2.637	66.99	3	OT14	56	159	150	52	63
KUDTS15E-xx.xx	2.638	67	2.874	72.99	3	OT15	62	159	150	58	69
KUDTS16E-xx.xx	2.874	73	3.149	79.99	3	OT16	68	160	150	63	76
KUDTS17E-xx.xx	3.150	80	3.425	86.99	3	OT17	75	191	180	70	83
KUDTS18E-xx.xx	3.425	87	3.937	99.99	3	OT18	82	193	180	77	96
KUDTS19E-xx.xx	3.937	100	4.212	106.99	3	OT19	94	193	180	89	102

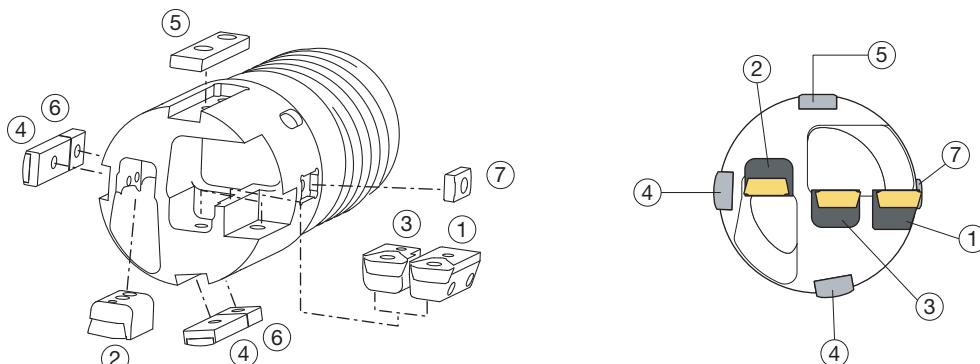
e.g. Designation for tool diameter $\varnothing 60$ mm: KUDTS13E-60.00
 Drill heads with the diameter $\varnothing 92$ mm or over have a top guide pocket.
 Adjusting diameters has to be required before using.

SPARE PARTS



Tool diameter DCN-DCX (mm)	Cartridge			Guide pad							
	Peripheral	Intermediate	Central	Guide pad		Filler		Protector		Sub guide pad	
	Cartridge ①	Cartridge ②	Cartridge ③	④	Qty.	⑤	Qty.	⑥	Qty.	⑦	Qty.
38 - 39.99	OZ05R	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
40 - 44.99	OZ402 - 04	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
45 - 47.99	OZ402 - 04	IOZ05R	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
48 - 51.99	OZ402 - 04	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
52 - 54.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
55 - 57.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
58 - 59.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
60 - 63.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG08	1
64 - 67.99	OZ402 - 43	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG10	1
68 - 77.99	OZ402 - 32	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
78 - 84.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
85 - 91.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
92 - 98.99	OZ402 - 43	IOZ402 - 63	IOZ402 - 63	GP14	2	FILLER14	1	GPT14	2	CUG10	1
99 - 106.99	OZ402 - 63	IOZ402 - 63	IOZ402 - 63	GP18	2	FL18 - M	1	GPT18 - M	2	CUG14 - M	1

Filler is to protect a top guide pocket and included in the drill heads with $\varnothing 92$ mm or over.



* Depending on tool diameters, parts may not be positioned as shown in the above.

Reference pages: Inserts → **J142**, Standard cutting conditions → **J143**, Drill tube (DTS) → **J154**
 Screw, Guide pad → **J141**

INSERT

Tool diameter DCN-DCX (mm)	Peripheral insert		Qty.	Intermediate insert		Qty.	Central insert		Qty.
	New	Conventional		New	Conventional		New	Conventional	
38 - 39.99	NPMX08**R...	508 - 05R	1	NPMX08**R...	508 - 05R	1	NPMX08**R...	508 - 05R	1
40 - 44.99	TPMX14**R...	1123 - 04R	1	NPMX08**R...	508 - 05R	1	NPMX08**R...	508 - 05R	1
45 - 47.99	TPMX14**R...	1123 - 04R	1	NPMX08**R...	508 - 05R	1	TPMX14**R...	1123 - 04R	1
48 - 51.99	TPMX14**R...	1123 - 04R	1	TPMX14**R...	1123 - 04R	1	TPMX14**R...	1123 - 04R	1
52 - 54.99	TPMX17**R...	1123 - 32R	1	TPMX14**R...	1123 - 04R	1	TPMX14**R...	1123 - 04R	1
55 - 57.99	TPMX17**R...	1123 - 32R	1	TPMX14**R...	1123 - 04R	1	TPMX17**R...	1123 - 32R	1
58 - 59.99	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1
60 - 63.99	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1
64 - 67.99	TPMX24**R...	1123 - 43R	1	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1
68 - 77.99	TPMX17**R...	1123 - 32R	1	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1
78 - 84.99	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1
85 - 91.99	TPMX28**R...	1123 - 63R	1	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1
92 - 98.99	TPMX24**R...	1123 - 43R	1	TPMX28**R...	1123 - 63R	1	TPMX28**R...	1123 - 63R	1
99 - 106.99	TPMX28**R...	1123 - 63R	1	TPMX28**R...	1123 - 63R	1	TPMX28**R...	1123 - 63R	1

The tool diameter can be increased up to 5 mm using the plus (+) spare parts. (The expansion allowance depends on tool diameters.)
Drill heads come with cartridge, guide pad, filler, protector, sub guide pad, and wrench, but do not include inserts.

SCREW

Tool diameter DCN - DCX (mm)	Insert						Guide pad					
	Peripheral		Intermediate		Central		Guide pad/Filler		Protector		Sub guide pad	
	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
38 - 39.99	CSTB-2.2	T-7D	CSTB-2.2	T-7D	CSTB-2.2	T-7D	CSTB-3S	T-9D	CSTB-3S	T-9D	CSTB-3S	T-9D
40 - 44.99	CSTB-2.5	T-8D	CSTB-2.2	T-7D	CSTB-2.2	T-7D	CSTB-3S	T-9D	CSTB-3S	T-9D	CSTB-3S	T-9D
45 - 47.99	CSTB-2.5	T-8D	CSTB-2.2	T-7D	CSTB-2.5	T-8D	CSTB-4S	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
48 - 51.99	CSTB-2.5	T-8D	CSTB-2.5	T-8D	CSTB-2.5	T-8D	CSTB-4S	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
52 - 54.99	CSTB-3.5D	T-9D	CSTB-2.5	T-8D	CSTB-2.5	T-8D	CSTB-4S	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
55 - 57.99	CSTB-3.5D	T-9D	CSTB-2.5	T-8D	CSTB-3.5D	T-9D	CSTB-4S	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
58 - 59.99	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-4S	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
60 - 63.99	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-4S	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
64 - 67.99	CSTB-4M	T-15D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTA-5S	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
68 - 77.99	CSTB-3.5D	T-9D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTA-5S	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
78 - 84.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTA-5S	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
85 - 91.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTA-5S	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
92 - 98.99	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-5	T-20D	CSTA-5S	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
99 - 106.99	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	LS1206S	H3	LS1206S	H3	CSTA-5S	T-15D

SCREW

Tool diameter DCN - DCX (mm)	Cartridge screws							
	Peripheral				Intermediate		Central	
	Screw	Wrench	Adjustable screw	Wrench	Screw	Wrench	Screw	Wrench
38 - 39.99	LS1803RH	H2	AS0003-5	H1.5	CSTB-3	T-9D	CSTB-3	T-9D
40 - 44.99	LS1803.5RH	H2.5	AS0004-8	H2	CSTB-3	T-9D	CSTB-3	T-9D
45 - 47.99	LS1803.5RH	H2.5	AS0004-8	H2	CSTB-3	T-9D	CSTB-3.5	T-9D
48 - 51.99	LS1803.5RH	H2.5	AS0004-8	H2	CSTB-3.5	T-15D	CSTB-3.5	T-15D
52 - 54.99	LS1805RH	H3	AS0005-10	H2.5	CSTB-3.5	T-15D	CSTB-3.5	T-15D
55 - 57.99	LS1805RH	H3	AS0005-10	H2.5	CSTB-3.5	T-15D	CSTA-5	T-15D
58 - 59.99	LS1805RH	H3	AS0005-10	H2.5	CSTA-5	T-15D	CSTA-5	T-15D
60 - 63.99	LS1805RH	H3	AS0005-10	H2.5	CSTA-5	T-15D	CSTA-5	T-15D
64 - 67.99	LS1806RH	H4	AS0005-15	H2.5	CSTA-5	T-15D	CSTA-5	T-15D
68 - 77.99	LS1805RH	H3	AS0005-10	H2.5	LS1206	H3	LS1206	H3
78 - 84.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206	H3
85 - 91.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3	LS1206	H3
92 - 98.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206S	H3
99 - 106.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3	LS1206S	H3

Guide pads and protectors



Guide pad	Dimensions (in)	Lock screw	Wrench	Protector	Dimensions (in)	Lock screw	Wrench
	W H L				W H		
GP08	0.315 0.177 0.984	CSTB-3S	T-9D	GPT08	0.315 0.177	CSTB-3S	T-9D
GP08-25-155-DC	0.315 0.177 0.984	CSTB-3S	T-9D	GPT08	0.315 0.177	CSTB-3S	T-9D
GP10	0.394 0.236 1.378	CSTB-4S	T-15D	GPT10	0.394 0.236	CSTB-4S	T-15D
GP10-35-200-DC	0.394 0.236 1.378	CSTB-4S	T-15D	GPT10	0.394 0.236	CSTB-4S	T-15D
GP14	0.551 0.295 1.575	CSTA-5S	T-15D	GPT14	0.551 0.295	CSTA-5S	T-15D
GP14-40-250-DC	0.551 0.295 1.575	CSTA-5S	T-15D	GPT14	0.551 0.295	CSTA-5S	T-15D
GP18	0.709 0.354 1.575	LS1206S / LS1206SSS ***	H3	GPT18-M	0.709 0.354	LS1206S	H3
GP18-40-300-DC	0.709 0.354 1.575	LS1206S / LS1206SSS ***	H3	GPT18-M	0.709 0.354	LS1206S	H3

***LS1206SSS for dimensional guide pad
(for diameter ϕ 118.00 - ϕ 150.99, ϕ 169.00 - ϕ 208.99 and ϕ 233.00 - ϕ 247.99 mm)

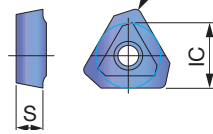
● : Line up, ▲ : To be discontinued
Package quantity = 5 pcs.

Grade
Insert
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Endmill
Drilling Tool
User's Guide Tooling System
Index

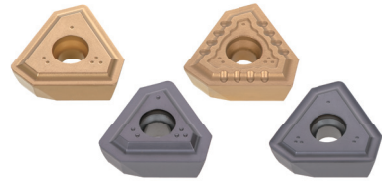
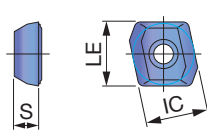
INSERT

NPMX..., TPMX.../508-05R..., 1123_**R...

TPMX type (New)
1123 type (Conventional)



NPMX type (New)
508 type (Conventional)



Right-hand type

Metric		Chipbreaker		AH8015	UC1220 (DLX2)	UC1125 (DLXT)	UC1230 (DLX3)	UC3215 (KLX2)	UC3210 (KLXT3)	UC2220 (NLX)	UC3120 (KLXT)	IC (in)	S (in)	R (in)	LE (in)
New	Conventional	New	Conventional												
NPMX080308R-G	508-05R	G	-									0.315	0.125	-	0.329
NPMX080304R-B	508-05RBR1	B	BR1									0.315	0.125	-	0.329
TPMX140308R-G	-	G	-									0.333	0.138	0.031	-
TPMX140304R-B	-	B	-									0.333	0.138	0.031	-
TPMX140304R-B	1123-04R	G	-									0.333	0.138	0.031	-
TPMX140304R-B	-	B	-									0.333	0.138	0.031	-
TPMX140304R-B	1123-04RBR1	B	BR1									0.333	0.138	0.016	-
TPMX140308R-DT	1123-04RS	DT	S									0.333	0.138	0.031	-
TPMX170408R-G	-	G	-									0.406	0.157	0.031	-
TPMX170408R-G	1123-32R	G	-									0.406	0.157	0.031	-
TPMX170404R-B	-	B	-									0.406	0.157	0.031	-
TPMX170404R-B	1123-32RBR1	B	BR1									0.406	0.157	0.016	-
TPMX170408R-BG	-	BG	-									0.406	0.157	0.031	-
TPMX170408R-BG	1123-32RB	BG	B									0.406	0.157	0.031	-
TPMX170408R-DT	1123-32RS	DT	S									0.406	0.157	0.031	-
TPMX240512R-G	-	G	-									0.559	0.217	0.047	-
TPMX240512R-G	1123-43R	G	-									0.559	0.217	0.047	-
TPMX240504R-B	-	B	-									0.559	0.217	0.047	-
TPMX240504R-B	1123-43RBR1	B	BR1									0.559	0.217	0.016	-
TPMX240512R-BG	-	BG	-									0.559	0.217	0.047	-
TPMX240512R-BG	1123-43RB	BG	B									0.559	0.217	0.047	-
TPMX240512R-DT	1123-43RS	DT	S									0.559	0.217	0.047	-
TPMX280716R-G	-	G	-									0.669	0.295	0.063	-
TPMX280716R-G	1123-63R	G	-									0.669	0.295	0.063	-
TPMX280708R-B	-	B	-									0.669	0.295	0.063	-
TPMX280708R-B	1123-63RBR1	B	BR1									0.669	0.295	0.031	-
TPMX280716R-BG	-	BG	-									0.669	0.295	0.063	-
TPMX280716R-BG	1123-63RB	BG	B									0.669	0.295	0.063	-
TPMX280716R-DT	1123-63RS	DT	S									0.669	0.295	0.063	-

● : Line up

Left-hand type

Metric		Chipbreaker		AH8015	UC1220 (DLX2)	UC1125 (DLXT)	UC1230 (DLX3)	UC3215 (KLX2)	UC3210 (KLXT3)	UC2220 (NLX)	UC3120 (KLXT)	IC (in)	S (in)	R (in)	LE (in)
New	Conventional	New	Conventional												
TPMX140308L-G	1123-04L	G	-									0.333	0.138	0.031	-
TPMX170408L-G	1123-32L	G	-									0.406	0.157	0.031	-
TPMX170408L-BG	1123-32LB	BG	B									0.406	0.157	0.031	-
TPMX170408L-DT	1123-32LS	DT	S									0.406	0.157	0.031	-
TPMX240512L-G	1123-43L	G	-									0.559	0.217	0.047	-
TPMX240512L-BG	1123-43LB	BG	B									0.559	0.217	0.047	-
TPMX240512L-DT	1123-43LS	DT	S									0.559	0.217	0.047	-
TPMX280716L-G	1123-63L	G	-									0.669	0.295	0.063	-
TPMX280716L-BG	1123-63LB	BG	B									0.669	0.295	0.063	-

● : Line up

Chipbreaker

<p>G (New)</p> <p>Versatile</p>	<p>B (New) BR1 (Conventional)</p> <p>Good chip control for heat-resistant alloy</p>
<p>BG (New) B (Conventional)</p> <p>Good chip control for difficult-to-cut steel</p>	<p>DT (New) S (Conventional)</p> <p>Reduced cutting force</p>

*Difficult-to-cut steel: Material that tends to produce long chips

ISO classifications for Insert grades

● : Line up

	Grade	(Former name)	ISO area												
			5	10	15	20	25	30	35	40					
P	AH8015	-													
	UC1220	(DLX2)													
	UC2220	(NLX)													
	UC1125	(DLXT)													
	UC1230	(DLX3)													
M	UC3120	(KLXT)													
	AH8015	-													
	UC2220	(NLX)													
K	UC1230	(DLX3)													
	UC3120	(KLXT)													
	AH8015	-													
N	UC3215	(KLX2)													
	UC3120	(KLXT)													
	AH8015	-													
S	UC3210	(KLXT3)													
	UC2220	(NLX)													
	UC3120	(KLXT)													
	UC1230	(DLX3)													

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness (HB)	Cutting speed Vc (sfm)	Feed: fn (in/rev)						
					Drill dia. (in)						
P	Carbon steels Casting steels High carbon steels Carbon tool steels	1010 - 1025	0.10 - 0.25%C Non-hardened	125	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012	
		1025 - 1055	0.25 - 0.25%C Non-hardened	190	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012	
			0.25 - 0.25%C Hardened and tempered	250	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012	
		SK	0.55 - 0.80%C Non-hardened	220	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012	
	0.55 - 0.80%C Hardened and tempered		300	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012		
	Low alloy steels Casting steels (alloying element < 5%)	SNC, DCr, SNCN SCM, SMn		Non-hardened	200	197 - 328	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
				Hardened and tempered	275	197 - 328	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
					300	164 - 328	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
	High alloy steels Casting steel Tool steels	SNS, SKD, SKT SKH, SK		Non-hardened	200	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
				Hardened and tempered	325	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
M	Stainless steels	430SS	Ferritic	200	197 - 361	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012	
		410SS	Martensite	240	197 - 361	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012	
		304SS,316SS	Austenite	180	197 - 361	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012	
K	Ductile cast irons	60-40-18 - 65-45-120	Ferritic / Pearlitic	180	197 - 328	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.007 - 0.009	
		80-55-06 - 100-70-03	Pearlitic	260	197 - 328	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.007 - 0.009	
	Gray cast irons	Class 10 - Class 20	Low tensile strength	160	197 - 328	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.007 - 0.009	
		Class 25 - Class 35	High tensile strength	250	197 - 328	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.007 - 0.009	
	Malleable cast irons	FCMB, FCMW	Ferritic	130	197 - 328	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.007 - 0.009	
FCMWP, FCMP		Pearlitic	230	197 - 328	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.007 - 0.009		
N	Aluminum alloys Forging		Non-aged	60	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013	
			Soluted, Aged	100	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013	
	Aluminum alloys Casting		≤12% Si	Non-aged	75	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013
			Soluted, Aged	90	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013	
			>12% Si	High silicon	130	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013
	Copper alloys		>1% Pb	Free cutting copper	110	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013
			Brass, Red brass	90	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013	
S	Nickel-based alloys		Fe base	Non-aged	200	66 - 213	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
				Soluted, Aged	280	66 - 213	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
			Ni / Co base	Non-aged	250	66 - 213	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
				Soluted, Aged	350	66 - 213	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
				Casted	320	66 - 213	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
	Titanium alloys		α		Rm400	98 - 328	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
			α - β		Rm1050	98 - 328	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012

The above values should not be used as the exact recommendations. They may need modification depending on the machining conditions, materials, etc.

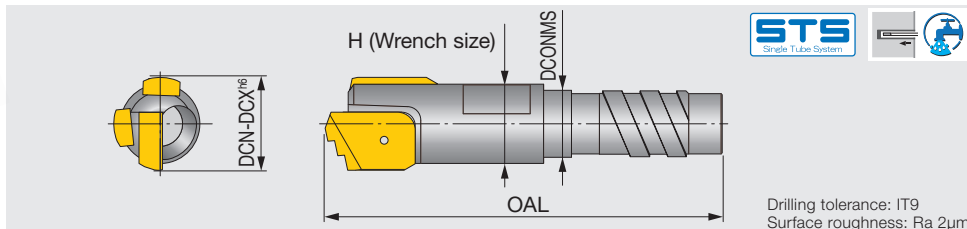
Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index



MBU

MBU type drill head

Brazed drill head with external single-start thread for single tube system (STS),
tool diameter $\varnothing 8 - \varnothing 14.79 \text{ mm}$ (0.315" - 0.582")



Metric	DCN		DCX		Drill tube		OAL	DCONMS	H
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)			
MBU-0899-1 xx.xx	0.315	8	0.328	8.32	UMBB071	7.1	34	6	6
MBU-0899-2 xx.xx	0.328	8.33	0.341	8.65	UMBB071	7.1	34	6	6
MBU-0899-3 xx.xx	0.341	8.66	0.354	8.99	UMBB071	7.1	34	6	6
MBU-0999-1 xx.xx	0.354	9	0.367	9.32	UMBB083	8.3	34	7.2	7
MBU-0999-2 xx.xx	0.367	9.33	0.380	9.65	UMBB083	8.3	34	7.2	7
MBU-0999-3 xx.xx	0.380	9.66	0.393	9.99	UMBB083	8.3	34	7.2	7
MBU-1099-1 xx.xx	0.394	10	0.406	10.32	UMBB090	9	34	7.6	8
MBU-1099-2 xx.xx	0.407	10.33	0.419	10.65	UMBB090	9	34	7.6	8
MBU-1099-3 xx.xx	0.420	10.66	0.433	10.99	UMBB090	9	34	7.6	8
MBU-1199-1 xx.xx	0.433	11	0.446	11.32	UMBB100	10	34	8.6	9
MBU-1199-2 xx.xx	0.446	11.33	0.459	11.65	UMBB100	10	34	8.6	9
MBU-1199-3 xx.xx	0.459	11.66	0.472	11.99	UMBB100	10	34	8.6	9
MBU-1349-1 xx.xx	0.472	12	0.487	12.36	UMBB110	11	34	9.1	10
MBU-1349-2 xx.xx	0.487	12.37	0.501	12.73	UMBB110	11	34	9.1	10
MBU-1349-3 xx.xx	0.502	12.74	0.516	13.1	UMBB110	11	34	9.1	10
MBU-1349-4 xx.xx	0.516	13.11	0.531	13.49	UMBB110	11	34	9.1	10
MBU-1449-1 xx.xx	0.531	13.5	0.544	13.82	UMBB120	12	34	10.8	11
MBU-1449-2 xx.xx	0.544	13.83	0.557	14.15	UMBB120	12	34	10.8	11
MBU-1449-3 xx.xx	0.557	14.16	0.570	14.48	UMBB120	12	34	10.8	11
MBU-1449-4 xx.xx	0.570	14.49	0.582	14.79	UMBB120	12	34	10.8	11

e.g. Designation for tool diameter $\varnothing 9 \text{ mm}$: MBU-0899-1 9.00
The interface of the drill tube has a unique shape. Please be sure to use UMBB drill tube.

ISO classifications for Insert grades

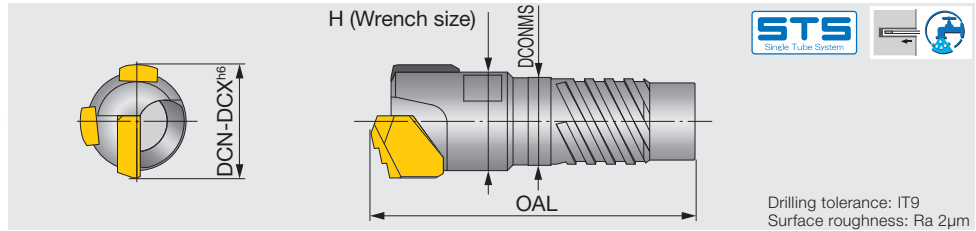
	Grade	(Former name)	ISO area								
			5	10	15	20	25	30	35	40	
P	1122	(PC ZAP)		■	■	■					
M	3112	(TF ZAP)			■	■	■				
K	3112	(TF ZAP)		■	■	■					
N	3112	(TF ZAP)			■	■	■				
S	3112	(TF ZAP)			■	■	■				

Reference pages: Standard cutting conditions → **J149**, Drill tube (STS) → **J150**

UTE

UTE type drill head

Brazed drill head with external 2-start or 4-start thread for single tube system (STS), tool diameter $\phi 12.6 - \phi 20$ mm (0.496" - 0.787")



Metric	DCN		DCX		Drill tube		OAL	DCNMS	H
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)			
UTE-0094-1 xx.xx	0.496	12.6	0.509	12.92	ST0094	11	40	9.6	10
UTE-0094-2 xx.xx	0.509	12.93	0.511	12.99	ST0094	11	40	9.6	10
UTE-0094-3 xx.xx	0.512	13	0.522	13.25	ST0094	11	40	9.6	10
UTE-0094-4 xx.xx	0.522	13.26	0.535	13.6	ST0094	11	40	9.6	10
UTE-0095-1 xx.xx	0.536	13.61	0.548	13.93	ST0095	12	40	10.6	11
UTE-0095-2 xx.xx	0.549	13.94	0.551	13.99	ST0095	12	40	10.6	11
UTE-0095-3 xx.xx	0.551	14	0.561	14.26	ST0095	12	40	10.6	11
UTE-0095-4 xx.xx	0.562	14.27	0.575	14.6	ST0095	12	40	10.6	11
UTE-0096-1 xx.xx	0.575	14.61	0.588	14.93	ST0096	13	40	11.6	12
UTE-0096-2 xx.xx	0.588	14.94	0.601	15.26	ST0096	13	40	11.6	12
UTE-0096-3 xx.xx	0.601	15.27	0.614	15.59	ST0096	13	40	11.6	12
UTE-0097-1 xx.xx	0.614	15.6	0.628	15.96	ST0097	14	40	12.6	13
UTE-0097-2 xx.xx	0.629	15.97	0.643	16.32	ST0097	14	40	12.6	13
UTE-0097-3 xx.xx	0.643	16.33	0.657	16.7	ST0097	14	40	12.6	13
UTE-0098-1 xx.xx	0.658	16.71	0.670	17.03	ST0098	15	40	13.6	14
UTE-0098-2 xx.xx	0.671	17.04	0.683	17.36	ST0098	15	40	13.6	14
UTE-0098-3 xx.xx	0.684	17.37	0.697	17.7	ST0098	15	40	13.6	14
UTE-0099-1 xx.xx	0.697	17.71	0.712	18.09	ST0099	16	40	14.5	15
UTE-0099-2 xx.xx	0.713	18.1	0.728	18.48	ST0099	16	40	14.5	15
UTE-0099-3 xx.xx	0.728	18.49	0.744	18.9	ST0099	16	40	14.5	15
UTE-0000-1 xx.xx	0.744	18.91	0.758	19.26	ST0000	17	40	15.5	16
UTE-0000-2 xx.xx	0.759	19.27	0.772	19.62	ST0099	17	40	15.5	16
UTE-0000-3 xx.xx	0.773	19.63	0.787	20	ST0099	17	40	15.5	16

e.g. Designation for tool diameter $\phi 12.92$ mm: UTE-0094-1 12.92

UTE Drill head : $\phi 12.6$ mm - $\phi 15.59$ mm, External 2-start thread

UTE Drill head : $\phi 15.6$ mm - $\phi 20$ mm, External 4-start thread

ISO classifications for Insert grades

	Grade	(Former name)	ISO area								
			5	10	15	20	25	30	35	40	
P	1122	(UP ZAP)									
M	3112	(TF ZAP)									
K	3112	(TF ZAP)									
N	3112	(TF ZAP)									
S	3132	(TFKS ZAP)									

Reference pages: Standard cutting conditions → **J149**, Drill tube (STS) → **J150**

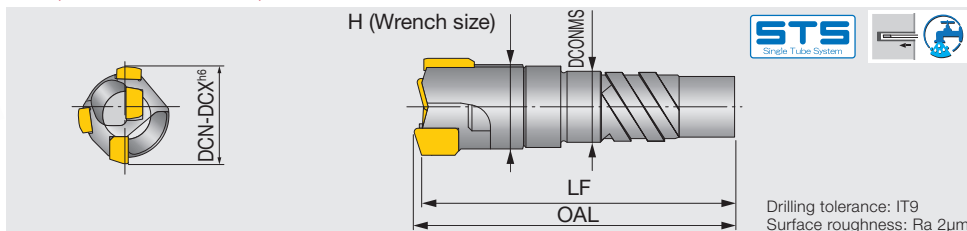
Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Milling Cutter
Miniature Tool
Endmill
Drilling Tool
Tooling System
User's Guide
Index



BTU

BTU type drill head (Small diameter, 2 edges)

Brazed drill head with external 2-start thread for single tube system (STS), tool diameter $\phi 12.6 - \phi 15.59$ mm (0.496" - 0.614")



Metric	DCN		DCX		Drill tube		OAL	LF	DCONMS	H
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)				
BTU-00941 xx.xx	0.496	12.6	0.516	13.1	ST0094	11	43	41.9	9.6	10
BTU-00942 xx.xx	0.516	13.11	0.535	13.6	ST0094	11	43	41.9	9.6	10
BTU-00951 xx.xx	0.536	13.61	0.555	14.1	ST0095	12	43	41.8	10.6	11
BTU-00952 xx.xx	0.556	14.11	0.575	14.6	ST0095	12	43	41.8	10.6	11
BTU-00961 xx.xx	0.575	14.61	0.594	15.1	ST0096	13	43	41.7	11.6	12
BTU-00962 xx.xx	0.595	15.11	0.614	15.59	ST0096	13	43	41.7	11.6	12

e.g. Designation for tool diameter $\phi 13.1$ mm: BTU-00941 13.10

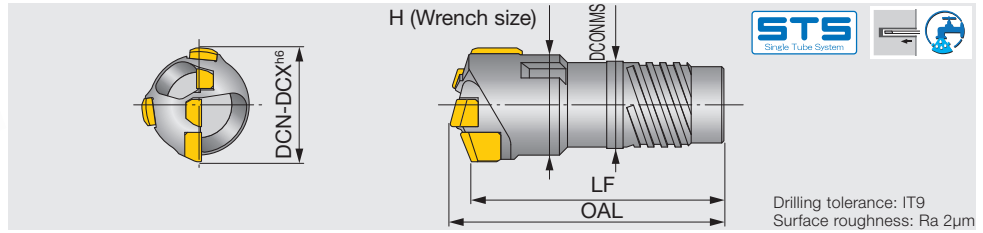
ISO classifications for Insert grades

	Grade	(Former name)	ISO area								
			5	10	15	20	25	30	35	40	
P	1122	(UP ZAP)				20	25	30			
M	2122	(N3 ZAP)						30	35	40	
K	1122	(UP ZAP)			15	20	25				
N	1122	(UP ZAP)			15	20	25				
S	1122	(UP ZAP)			15	20	25				

BTU

BTU type drill head (3 edges)

Brazed drill head with external 4-start thread for single tube system (STS),
tool diameter $\phi 15.6 - \phi 65$ mm (0.614" - 0.559")



Metric	DCN		DCX		Drill tube		OAL	LF	DCONMS	H
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)				
BTU-00971 xx.xx	0.614	15.6	0.638	16.2	ST0097	14	43	40.3	12.6	-
BTU-00972 xx.xx	0.638	16.21	0.657	16.7	ST0097	14	43	40.3	12.6	14
BTU-00981 xx.xx	0.658	16.71	0.677	17.2	ST0098	15	43	40.3	13.6	15
BTU-00982 xx.xx	0.678	17.21	0.697	17.7	ST0098	15	43	40.3	13.6	15
BTU-00991 xx.xx	0.697	17.71	0.724	18.4	ST0099	16	47	44.2	14.5	15
BTU-00992 xx.xx	0.725	18.41	0.744	18.9	ST0099	16	47	44.1	14.5	-
BTU-001 xx.xx	0.744	18.91	0.756	19.2	ST0000	17	47	44.1	15.5	17
BTU-002 xx.xx	0.756	19.21	0.787	20	ST0000	17	47	44	15.5	18
BTU-011 xx.xx	0.788	20.01	0.823	20.9	ST00	18	52.5	49.4	16	18
BTU-012 xx.xx	0.823	20.91	0.858	21.8	ST00	18	52.5	49.4	16	19
BTU-021 xx.xx	0.859	21.81	0.902	22.9	ST01	20	56	52.8	18	20
BTU-022 xx.xx	0.902	22.91	0.949	24.1	ST01	20	56	52.6	18	21
BTU-031 xx.xx	0.949	24.11	0.992	25.2	ST02	22	57.5	54	19.5	23
BTU-032 xx.xx	0.993	25.21	1.039	26.4	ST02	22	57.5	54	19.5	24
BTU-041 xx.xx	1.040	26.41	1.083	27.5	ST03	24	57.5	53.8	21	25
BTU-042 xx.xx	1.083	27.51	1.130	28.7	ST03	24	57.5	53.8	21	26
BTU-051 xx.xx	1.130	28.71	1.173	29.8	ST04	26	63.5	59.5	23.5	27
BTU-052 xx.xx	1.174	29.81	1.220	31	ST04	26	63.5	59.3	23.5	28
BTU-061 xx.xx	1.221	31.01	1.264	32.1	ST05	28	63.5	59.4	25.5	29
BTU-062 xx.xx	1.264	32.11	1.311	33.3	ST05	28	63.5	59.1	25.5	30
BTU-071 xx.xx	1.311	33.31	1.370	34.8	ST06	30	63.5	59	28	32
BTU-072 xx.xx	1.370	34.81	1.425	36.2	ST06	30	63.5	58.9	28	33
BTU-081 xx.xx	1.426	36.21	1.469	37.3	ST07	33	73.5	68.7	30	34
BTU-082 xx.xx	1.469	37.31	1.512	38.4	ST07	33	73.5	68.5	30	35
BTU-083 xx.xx	1.512	38.41	1.559	39.6	ST07	33	73.5	68.3	30	36
BTU-091 xx.xx	1.559	39.61	1.598	40.6	ST08	36	73.5	68.2	33	37
BTU-092 xx.xx	1.599	40.61	1.646	41.8	ST08	36	73.5	68	33	38
BTU-093 xx.xx	1.646	41.81	1.693	43	ST08	36	73.5	67.8	33	39
BTU-101 xx.xx	1.693	43.01	1.744	44.3	ST09	39	75	69.5	36	41
BTU-102 xx.xx	1.744	44.31	1.795	45.6	ST09	39	75	69.3	36	42
BTU-103 xx.xx	1.796	45.61	1.850	47	ST09	39	75	69.1	36	43
BTU-111 xx.xx	1.851	47.01	1.909	48.5	ST10	43	75	68.8	39	44
BTU-112 xx.xx	1.910	48.51	1.972	50.1	ST10	43	75	68.7	39	46
BTU-113 xx.xx	1.973	50.11	2.035	51.7	ST10	43	75	68.5	39	47
BTU-121 xx.xx	2.036	51.71	2.094	53.2	ST11	47	82	75.2	43	49
BTU-122 xx.xx	2.095	53.21	2.154	54.7	ST11	47	82	75.2	43	50
BTU-123 xx.xx	2.154	54.71	2.213	56.2	ST11	47	82	75.2	43	51
BTU-131 xx.xx	2.213	56.21	2.299	58.4	ST12	51	84	77.4	47	54
BTU-132 xx.xx	2.300	58.41	2.386	60.6	ST12	51	84	76.9	47	55
BTU-133 xx.xx	2.386	60.61	2.472	62.8	ST12	51	84	76.8	47	57
BTU-134 xx.xx	2.473	62.81	2.559	65	ST12	51	84	76.5	47	59
BTU-133L xx.xx	2.386	60.61	2.472	62.8	ST13	56	84	76.8	51	57
BTU-134L xx.xx	2.473	62.81	2.559	65	ST13	56	84	76.5	51	59

e.g. Designation for tool diameter $\phi 16.2$ mm: BTU-00971 16.20

ISO classifications for Insert grades

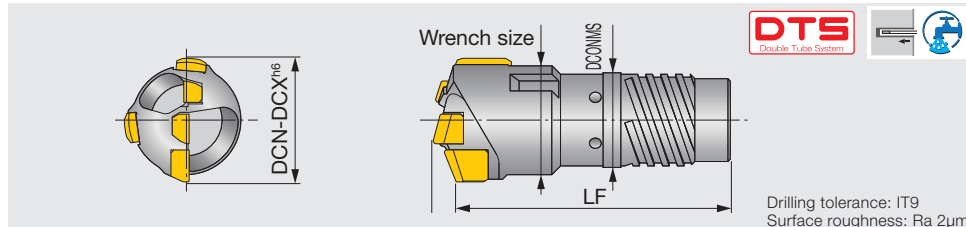
	Grade	(Former name)	ISO area							
			5	10	15	20	25	30	35	40
P	1122	(UP ZAP)								
	1132	(UX-2 ZAP)								
M	1132	(UX-2 ZAP)								
	2122	(N3 ZAP)								
K	3132	(TFKS ZAP)								
N	3132	(TFKS ZAP)								
S	3132	(TFKS ZAP)								

Reference pages: Standard cutting conditions → J149, Drill tube (STS) → J150

ETU

ETU type drill head

Brazed drill head with external 4-start thread for double tube system (DTS), tool diameter $\varnothing 18.4 - \varnothing 65$ mm (0.724" - 2.559")



Drilling tolerance: IT9
Surface roughness: Ra 2 μ m

Metric	DCN		DCX		Drill tube		OAL	LF	DCONMS	H
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)				
ETU-001 xx.xx	0.724	18.4	0.756	19.2	OT00	18	50	47.1	16	17
ETU-002 xx.xx	0.756	19.21	0.787	20	OT00	18	50	47	16	18
ETU-011 xx.xx	0.788	20.01	0.823	20.9	OT01	20	56	52.8	18	18
ETU-012 xx.xx	0.823	20.91	0.858	21.8	OT01	20	56	52.7	18	19
ETU-021 xx.xx	0.859	21.81	0.902	22.9	OT02	22	56	52.8	19.5	20
ETU-022 xx.xx	0.902	22.91	0.949	24.1	OT02	22	56	52.6	19.5	21
ETU-031 xx.xx	0.949	24.11	0.992	25.2	OT03	24	57.5	54	21	23
ETU-032 xx.xx	0.993	25.21	1.039	26.4	OT03	24	57.5	54	21	24
ETU-041 xx.xx	1.040	26.41	1.083	27.5	OT04	26	60.5	56.8	23.5	25
ETU-042 xx.xx	1.083	27.51	1.130	28.7	OT04	26	60.5	56.8	23.5	26
ETU-051 xx.xx	1.130	28.71	1.173	29.8	OT05	28	63.5	59.5	25.5	27
ETU-052 xx.xx	1.174	29.81	1.220	31	OT05	28	63.5	59.3	25.5	28
ETU-061 xx.xx	1.221	31.01	1.264	32.1	OT06	31	63.5	59.4	28	29
ETU-062 xx.xx	1.264	32.11	1.311	33.3	OT06	31	63.5	59.2	28	30
ETU-071 xx.xx	1.311	33.31	1.370	34.8	OT07	33	70.5	66	30	32
ETU-072 xx.xx	1.370	34.81	1.425	36.2	OT07	33	70.5	65.8	30	33
ETU-081 xx.xx	1.426	36.21	1.469	37.3	OT08	36	73.5	68.7	33	34
ETU-082 xx.xx	1.469	37.31	1.512	38.4	OT08	36	73.5	68.5	33	35
ETU-083 xx.xx	1.512	38.41	1.559	39.6	OT08	36	73.5	68.3	33	36
ETU-091 xx.xx	1.559	39.61	1.598	40.6	OT09	39	73.5	68.2	36	37
ETU-092 xx.xx	1.599	40.61	1.646	41.8	OT09	39	73.5	68	36	38
ETU-093 xx.xx	1.646	41.81	1.693	43	OT09	39	73.5	67.9	36	39
ETU-101 xx.xx	1.693	43.01	1.744	44.3	OT10	43	75	69.5	39	41
ETU-102 xx.xx	1.744	44.31	1.795	45.6	OT10	43	75	69.3	39	42
ETU-103 xx.xx	1.796	45.61	1.850	47	OT10	43	75	69.1	39	43
ETU-111 xx.xx	1.851	47.01	1.909	48.5	OT11	47	79	72.9	43	44
ETU-112 xx.xx	1.910	48.51	1.972	50.1	OT11	47	79	72.8	43	46
ETU-113 xx.xx	1.973	50.11	2.035	51.7	OT11	47	79	72.5	43	47
ETU-121 xx.xx	2.036	51.71	2.094	53.2	OT12	51	82	75.3	47	49
ETU-122 xx.xx	2.095	53.21	2.154	54.7	OT12	51	82	75.5	47	50
ETU-123 xx.xx	2.154	54.71	2.213	56.2	OT12	51	82	75.3	47	51
ETU-131 xx.xx	2.213	56.21	2.299	58.4	OT13	56	84	77.4	51	54
ETU-132 xx.xx	2.300	58.41	2.386	60.6	OT13	56	84	76.9	51	55
ETU-133 xx.xx	2.386	60.61	2.472	62.8	OT13	56	84	77	51	57
ETU-134 xx.xx	2.473	62.81	2.559	65	OT13	56	84	76.6	51	59

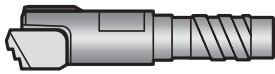
e.g. Designation for tool diameter $\varnothing 19.2$ mm: ETU-001 19.20

ISO classifications for Insert grades

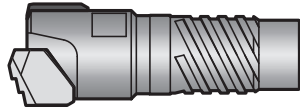
	Grade	(Former name)	ISO area								
			5	10	15	20	25	30	35	40	
P	1122	(UP ZAP)		■	■	■					
	1132	(UX-2 ZAP)				■	■	■			
M	1132	(UX-2 ZAP)					■	■	■		
	2122	(N3 ZAP)						■	■	■	
K	3132	(TFKS ZAP)			■	■	■				
N	3132	(TFKS ZAP)		■	■	■					
S	3132	(TFKS ZAP)			■	■	■				

Reference pages: Standard cutting conditions → **J149**, Drill tube (DTS) → **J154**

STANDARD CUTTING CONDITIONS



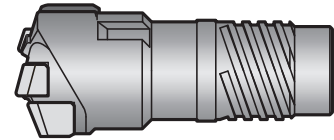
MBU



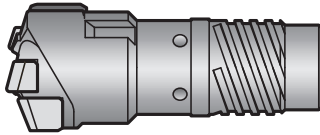
UTE



**BTU
(2 edges)**



**BTU
(3 edges)**



**ETU
(3 edges)**

ISO	Workpiece material	JIS	Condition	Hardness (HB)	Cutting speed Vc (sfm)	Feed per revolution: fn (in/rev)					
						Drill dia. (in)					
						0.315" - 0.787"		0.496" - 0.787"			0.788" - 1.220"
MBU, UTE		BTU, ETU									
P	Carbon steels Cast steels High carbon steels Carbon tool steels	1010 - 1025	0.1 - 0.25 %C Non-hardened	125	230 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012	
		1025 - 1055	0.25 - 0.25 %C Non-hardened	190	230 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012	
		SK	0.25 - 0.25 %C Hardened	250	230 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012	
			0.55 - 0.80 %C Non-hardened	220	230 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012	
	Low alloy steels Cast steels (alloying element < 5%)	SNC, DCr, SNCN SCM, SMn	Non-hardened	200	230 - 361	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012	
			Hardened	275	197 - 361	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.011	
	High alloy steels, Cast steels Tool steels	SNS, SKD, SKT SKH, SK	Non-hardened	200	230 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012	
			Hardened	325	230 - 427	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.011	
	M	Stainless steels	430SS	Ferritic	200	131 - 361	0.002 - 0.005	0.003 - 0.006	0.004 - 0.011	0.005 - 0.012	0.006 - 0.014
			410SS	Martensitic	240	131 - 361	0.002 - 0.005	0.003 - 0.006	0.004 - 0.011	0.005 - 0.012	0.006 - 0.014
304SS,316SS			Austenitic	180	131 - 361	0.002 - 0.005	0.002 - 0.005	0.003 - 0.010	0.004 - 0.011	0.006 - 0.013	
K	Ductile cast iron	60-40-18 - 65-45-120	Ferritic / Pearlitic	180	164 - 361	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012	
		80-55-06 - 100-70-03	Pearlitic	260	164 - 361	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012	
	Gray cast iron	Class 10 - Class 20	Low tensile strength	160	197 - 361	0.002 - 0.005	0.002 - 0.005	0.003 - 0.007	0.004 - 0.008	0.006 - 0.010	
		Class 25 - Class 35	High tensile strength	250	197 - 361	0.002 - 0.005	0.002 - 0.005	0.003 - 0.007	0.004 - 0.008	0.006 - 0.010	
	Malleable cast irons	FCMB,FCMW	Ferritic	130	230 - 361	0.002 - 0.005	0.002 - 0.005	0.003 - 0.007	0.004 - 0.008	0.006 - 0.010	
		FCMWP,FCMP	Pearlitic	230	230 - 361	0.002 - 0.005	0.002 - 0.005	0.003 - 0.007	0.004 - 0.008	0.006 - 0.010	
N	Aluminum alloy Wrought		Non-aged	60	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012	
			Soluted, Aged	100	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012	
	Aluminum alloy Cast	<=12% Si	Non-aged	75	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012	
			Soluted, Aged	90	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012	
			>12% Si	High silicon content	130	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012
	Copper alloys	>1% Pb	Free-cutting copper	110	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012	
Brass, Red brass			90	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012		
		Electrolytic copper	100	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012		
S	Heat-resistant alloy	Fe based alloys	Non-aged	200	66 - 164	0.002 - 0.005	0.002 - 0.005	0.003 - 0.006	0.005 - 0.007	0.006 - 0.010	
			Soluted, Aged	280	66 - 164	0.002 - 0.005	0.002 - 0.005	0.003 - 0.006	0.005 - 0.007	0.006 - 0.010	
		Ni / Co based alloys	Non-aged	250	66 - 164	0.002 - 0.005	0.002 - 0.005	0.003 - 0.006	0.005 - 0.007	0.006 - 0.010	
			Soluted, Aged	350	66 - 164	0.002 - 0.005	0.002 - 0.005	0.003 - 0.006	0.005 - 0.007	0.006 - 0.010	
	Titanium alloys	α	Cast	320	66 - 164	0.002 - 0.005	0.002 - 0.005	0.003 - 0.006	0.005 - 0.007	0.006 - 0.010	
			α-β	Rm1050	98 - 197	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.008	
		α-β	Rm1050	98 - 197	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.008		

The above values may need modification depending on the machining conditions, materials, etc.

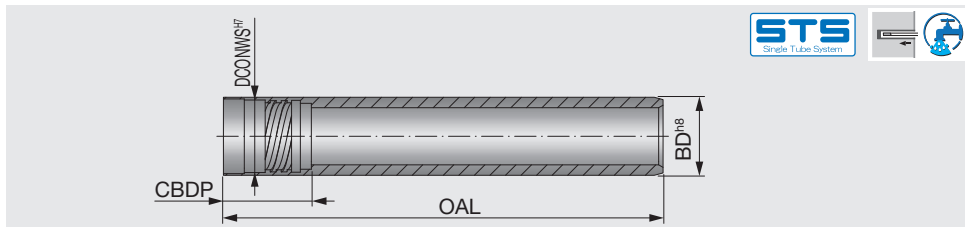
Grade
Insert
Toolholder
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
User's Guide Tooling System
Index



ST

ST - for single tube system

Drill tube for single tube system (STS), internal thread type, 2-start thread (tool dia. ≤ ø15.59 mm, 0.614") or 4-start thread (tool dia. ≥ ø15.6 mm, 0.614")



Metric	DCN - DCX		OAL		BD	DCONWS	CBDP	Metric	DCN - DCX		OAL	BD	DCONWS	CBDP
	(in)	(mm)	1600	2600					(in)	(mm)				
ST0094	0.496 - 0.535	12.6 - 13.6	●	○	11	9.6	22	ST14	2.559 - 2.637	65 - 66.99	○	56	52	75
ST0095	0.536 - 0.575	13.61 - 14.6	●	○	12	10.6	22	ST15	2.638 - 2.874	67 - 72.99	○	62	58	75
ST0096	0.575 - 0.614	14.61 - 15.59	●	○	13	11.6	22	ST16	2.874 - 3.149	73 - 79.99	○	68	63	75
ST0097	0.614 - 0.657	15.6 - 16.7	●	○	14	12.6	21	ST17	3.15 - 3.425	80 - 86.99	○	75	70	97
ST0098	0.658 - 0.697	16.71 - 17.7	●	●	15	13.6	21	ST18	3.425 - 3.937	87 - 99.99	○	82	77	97
ST0099	0.697 - 0.744	17.71 - 18.9	●	●	16	14.5	22	ST19	3.937 - 4.409	100 - 111.99	○	94	89	97
ST0000	0.744 - 0.787	18.91 - 20	●	●	17	15.5	22	ST20	4.409 - 4.881	112 - 123.99	○	106	101	118
ST00	0.788 - 0.858	20.01 - 21.8	●	●	18	16	27.5	ST21	4.882 - 5.354	124 - 135.99	○	118	113	118
ST01	0.859 - 0.949	21.81 - 24.1	●	○	20	18	30	ST22	5.354 - 5.826	136 - 147.99	○	130	125	118
ST02	0.949 - 1.039	24.11 - 26.4	●	○	22	19.5	30	ST23	5.827 - 6.299	148 - 159.99	○	142	137	139
ST03	1.040 - 1.130	26.41 - 28.7	●	○	24	21	30	ST24	6.299 - 6.771	160 - 171.99	○	154	149	139
ST04	1.130 - 1.220	28.71 - 31	●	○	26	23.5	33	ST25	6.772 - 7.244	172 - 183.99	○	166	161	139
ST05	1.221 - 1.311	31.01 - 33.3	●	○	28	25.5	33	ST26	7.244 - 7.716	184 - 195.99	○	178	173	144
ST06	1.311 - 1.425	33.31 - 36.2	●	○	30	28	33	ST27	7.717 - 8.189	196 - 207.99	○	190	185	144
ST07	1.426 - 1.559	36.21 - 39.6	●	○	33	30	40	ST28	8.189 - 8.661	208 - 219.99	○	202	197	144
ST08	1.559 - 1.693	39.61 - 43	●	○	36	33	40	ST29	8.661 - 9.133	220 - 231.99	○	214	208	164
ST09	1.693 - 1.850	43.01 - 47	●	○	39	36	40	ST30	9.134 - 9.606	232 - 243.99	○	226	220	164
ST10	1.851 - 2.035	47.01 - 51.7	●	○	43	39	40	ST31	9.606 - 10.078	244 - 255.99	○	238	232	164
ST11	2.036 - 2.213	51.71 - 56.2	●	○	47	43	44	ST32	10.079 - 10.551	256 - 267.99	○	250	244	184
ST12	2.213 - 2.386	56.21 - 60.6	●	○	51	47	44	ST33	10.551 - 11.023	268 - 279.99	○	262	256	184
ST13	2.386 - 2.559	60.61 - 65	○	○	56	51	44	ST34	11.024 - 11.496	280 - 291.99	○	274	268	184

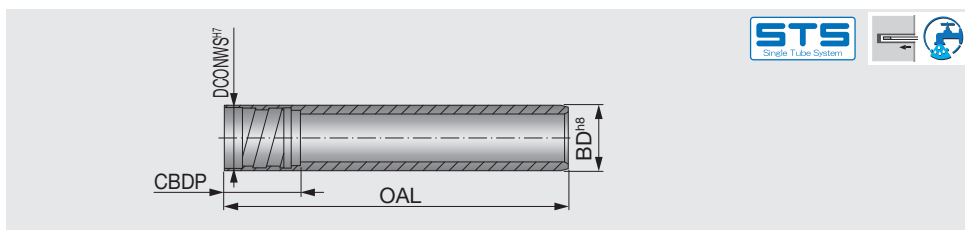
Please specify the length (L) when ordering.
e.g. For ø60 mm drill diameter / 2600 mm drill tube length: ST12X2600
The lengths that are not in the above will be available upon request.

● : Line up
○ : Item to be customized

UMBB

UMBB - for single tube system with MBU

Drill tube with internal single-start thread for MBU drill head



Metric	DCN - DCX		OAL	BD	DCONWS	CBDP
	(in)	(mm)				
UMBB071	0.315 - 0.354	8 - 8.99	○	7.1	6	13.5
UMBB083	0.354 - 0.393	9 - 9.99	○	8.3	7.2	13.5
UMBB090	0.394 - 0.433	10 - 10.99	○	9	7.6	13.5
UMBB100	0.433 - 0.472	11 - 11.99	○	10	8.6	13.5
UMBB110	0.472 - 0.531	12 - 13.49	○	11	9.1	13.5
UMBB120	0.531 - 0.582	13.5 - 14.79	○	12	10.8	13.5

Please specify the length (L) when ordering.
e.g. For ø11 mm drill diameter / 1000 mm drill tube length: UMBB100X1000

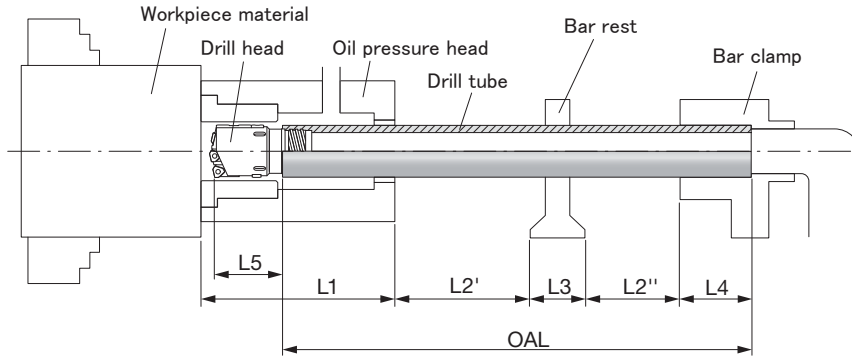
○ : Item to be customized

Reference pages: ST: Drill head → **J128** (TRI-FINE STS-EX), **J132** (FINE BEAM STS-EX), **J138** (UNIDEX STS-EX), **J145** (UTE), **J146 - J147** (BTU)

UMBB: Drill head → **J144** (MBU)

TUBE LENGTH FOR SPECIAL DRILLS

Drill tubes with the lengths that are not for standard items will be available upon request. Please use the below guide to calculate the drill tube length.



- L = Drill tube whole length
- L1 = Oil pressure head length
- L2 = Drilling depth (L2' + L2'')
- L3 = Bar rest length
- L4 = Drill tube clamp length
- L5 = Length from drill tube tip and peripheral edge tip

$$\text{Drill tube length OAL} = L1 + L2 + L3 + L4 - L5$$

BTU



DCN - DCX		L5
(in)	(mm)	
0.496 - 0.697	12.6 - 17.7	20
0.697 - 0.756	17.71 - 19.2	23
0.756 - 0.858	19.21 - 21.8	22
0.859 - 0.949	21.81 - 24.1	23
0.949 - 1.130	24.11 - 28.7	24
1.130 - 1.311	28.71 - 33.3	27
1.311 - 1.425	33.31 - 36.2	26
1.426 - 1.598	36.21 - 40.6	29
1.599 - 1.693	40.61 - 43	28
1.693 - 1.850	43.01 - 47	30
1.851 - 2.035	47.01 - 51.7	29
2.036 - 2.213	51.71 - 56.2	32
2.213 - 2.299	56.21 - 58.4	34
2.300 - 2.559	58.41 - 65	33

FINE-BEAM



DCN - DCX		L5
(in)	(mm)	
0.984 - 1.130	25 - 28.7	40
1.130 - 1.311	28.71 - 33.3	42
1.311 - 1.425	33.31 - 36.2	47
1.426 - 1.559	36.21 - 39.6	50
1.559 - 1.693	39.61 - 43	55
1.693 - 2.035	43.01 - 51.7	60
2.036 - 2.213	51.71 - 56.2	66
2.213 - 2.559	56.21 - 65	71

UNIDEX



DCN - DCX		L5
(in)	(mm)	
1.496 - 1.693	38 - 43	45
1.693 - 2.035	43.01 - 51.7	55
2.036 - 2.213	51.71 - 56.2	56
2.213 - 2.559	56.21 - 65	66
2.559 - 3.149	65 - 79.99	75
3.150 - 4.409	80 - 111.99	83
4.409 - 5.826	112 - 147.99	87
5.827 - 7.244	148 - 183.99	86
7.244 - 10.078	184 - 255.99	101
10.079 - 11.496	256 - 291.99	106

TRI-FINE



DCN - DCX		L5
(in)	(mm)	
0.630 - 0.657	16 - 16.7	34
0.658 - 0.697	16.71 - 17.7	34
0.697 - 0.744	17.71 - 18.9	34
0.744 - 0.787	18.91 - 20	34
0.788 - 0.858	20.01 - 21.8	32.5
0.859 - 0.866	21.81 - 21.99	33.5
0.866 - 0.949	22 - 24.1	35.5
0.949 - 1.039	24.11 - 26.4	35.5
1.040 - 1.102	26.41 - 28	35.5

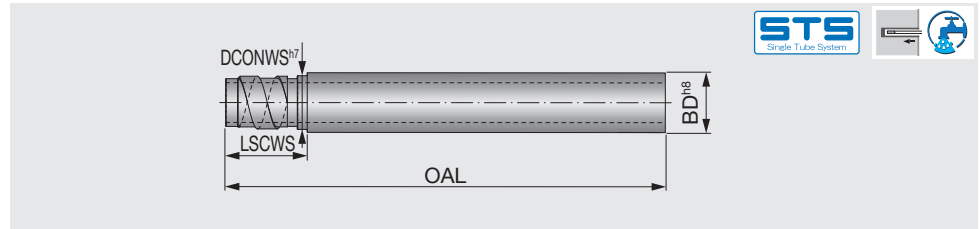
Grade
Insert
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index



UB

UB - for single tube system

Drill tube for single tube system (STS), external thread type, single-start thread



Deep Hole Drill
 Indexable Drill
 2-effective Drill

Metric	DCN - DCX		OAL Special length	BD	DCONWS	LSCWS	Metric	DCN - DCX		OAL Special length	BD	DCONWS	LSCWS
	(in)	(mm)						(in)	(mm)				
UB12-1	0.571 - 0.591	14.5 - 15	○	12	11.5	23	UB56	2.402 - 2.677	61 - 67.99	○	56	53	41
UB12-2	0.591 - 0.61	15.01 - 15.5	○	12	11.8	23	UB62	2.677 - 2.952	68 - 74.99	○	62	59	41
UB13-1	0.611 - 0.63	15.51 - 16	○	13	12.4	23	UB68	2.953 - 3.189	75 - 80.99	○	68	65	71
UB13-2	0.630 - 0.650	16.01 - 16.5	○	13	12.7	23	UB75	3.189 - 3.582	81 - 90.99	○	75	71	71
UB14-1	0.650 - 0.679	16.51 - 17.25	○	14	13.4	23	UB82	3.583 - 3.897	91 - 98.99	○	82	79	71
UB14-2	0.680 - 0.709	17.26 - 18	○	14	13.7	23	UB94	3.898 - 4.370	99 - 110.99	○	94	90	71
UB15	0.709 - 0.748	18.01 - 19	○	15	14.4	23	UB106	4.370 - 4.842	111 - 122.99	○	106	102	71
UB16.5	0.748 - 0.787	19.01 - 19.99	○	16.5	15.4	23	UB118	4.843 - 5.315	123 - 134.99	○	118	114	71
UB18	0.787 - 0.866	20 - 21.99	○	18	16.5	26	UB130	5.315 - 5.866	135 - 148.99	○	130	126	71
UB20	0.866 - 0.984	22 - 24.99	○	20	19	26	UB142	5.866 - 6.378	149 - 161.99	○	142	139	71
UB22	0.984 - 1.063	25 - 26.99	○	22	20	26	UB154	6.378 - 6.850	162 - 173.99	○	154	151	86
UB24	1.063 - 1.181	27 - 29.99	○	24	22	26	UB166	6.850 - 7.322	174 - 185.99	○	166	163	86
UB26	1.181 - 1.259	30 - 31.99	○	26	24	26	UB178	7.323 - 7.795	186 - 197.99	○	178	175	86
UB28	1.260 - 1.338	32 - 33.99	○	28	26	26	UB190	7.795 - 8.267	198 - 209.99	○	190	187	86
UB30	1.339 - 1.456	34 - 36.99	○	30	27	41	UB202	8.268 - 8.740	210 - 221.99	○	202	199	86
UB33	1.457 - 1.574	37 - 39.99	○	33	30	41	UB214	8.740 - 9.212	222 - 233.99	○	214	211	86
UB36	1.575 - 1.732	40 - 43.99	○	36	33	41	UB226	9.213 - 9.685	234 - 245.99	○	226	223	86
UB39	1.732 - 1.850	44 - 46.99	○	39	37	41	UB238	9.685 - 10.157	246 - 257.99	○	238	235	86
UB43	1.850 - 2.047	47 - 51.99	○	43	41	41	UB250	10.157 - 10.63	258 - 269.99	○	250	247	121
UB47	2.047 - 2.244	52 - 56.99	○	47	44	41	UB262	10.63 - 11.102	270 - 281.99	○	262	259	121
UB51	2.244 - 2.401	57 - 60.99	○	51	49	41	UB274	11.102 - 11.574	282 - 293.99	○	274	271	121

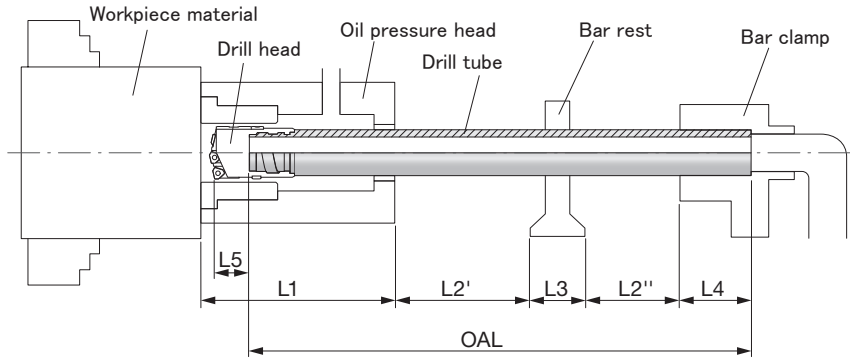
Please specify the length (L) when ordering.
 e.g. For ø60 mm drill diameter / 2600 mm drill tube length: UB51X2600

○ : Item to be customized

Reference pages: Drill head → **J128** (TRI-FINE STS-IN), **J133** (FINE BEAM STS-IN), **J138** (UNIDEX STS-IN)

TUBE LENGTH FOR SPECIAL DRILLS

Please use the below guide to calculate the drill tube length.



OAL = Drill tube whole length
 L1 = Oil pressure head length
 L2 = Drilling depth (L2' + L2'')
 L3 = Bar rest length
 L4 = Drill tube clamp length
 L5 = Length from drill tube tip and peripheral edge tip

$$\text{Drill tube length OAL} = L1 + L2 + L3 + L4 - L5$$

FINE-BEAM



DCN - DCX		L5
(in)	(mm)	
0.984 - 1.181	25 - 29.99	45
1.181 - 1.338	30 - 33.99	50
1.339 - 1.456	34 - 36.99	50
1.457 - 1.574	37 - 39.99	55
1.575 - 1.732	40 - 43.99	60
1.732 - 2.047	44 - 51.99	65
2.047 - 2.244	52 - 56.99	70
2.244 - 2.559	57 - 65	75

UNIDEX



DCN - DCX		L5
(in)	(mm)	
1.496 - 1.732	38 - 43.99	40
1.732 - 2.047	44 - 51.99	50
2.047 - 2.244	52 - 56.99	60
2.244 - 2.677	57 - 67.99	70
2.677 - 6.378	68 - 161.99	80
6.378 - 10.157	162 - 257.99	105
10.157 - 11.574	258 - 293.99	90

TRI-FINE



DCN - DCX		L5
(in)	(mm)	
0.63 - 0.65	16 - 16.5	31.5
0.65 - 0.679	16.51 - 17.25	31.5
0.68 - 0.709	17.26 - 18	31.5
0.709 - 0.748	18.01 - 19	31.5
0.748 - 0.787	19.01 - 19.99	31.5
0.787 - 0.866	20 - 21.99	33
0.866 - 0.984	22 - 24.99	35
0.984	25	35
0.985 - 1.063	25.01 - 26.99	40
1.063 - 1.102	27 - 28	40

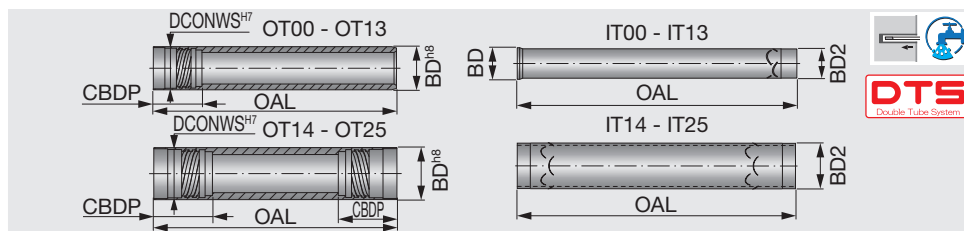
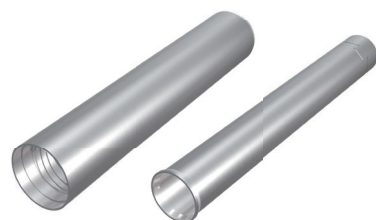
Grade
Insert
Ext. Toolholder
Int. Toolholder
Threading
Grooving
Miniature Tool
Milling Cutter
Endmill
Drilling Tool
Tooling System
User's Guide
Index



OT & IT

OT & IT - for double tube system

Outer tube and inner tube for double tube system



Outer tube (OT)

Inner tube (IT)

Metric	DCN - DCX		OAL Special length	BD	DCONWS	CBDP	Metric	DCN - DCX		OAL Special length	BD	BD2
	(in)	(mm)						(in)	(mm)			
OT00	0.724 - 0.787	18.4 - 20	○	18	16	27.5	IT00	0.724 - 0.787	18.4 - 20	○	12	10
OT01	0.788 - 0.858	20.01 - 21.8	○	19.5	18	30	IT01	0.788 - 0.858	20.01 - 21.8	○	14	12
OT02	0.859 - 0.949	21.81 - 24.1	○	21.5	19.5	30	IT02	0.859 - 0.949	21.81 - 24.1	○	15	13
OT03	0.949 - 1.039	24.11 - 26.4	○	23.5	21	30	IT03	0.949 - 1.039	24.11 - 26.4	○	16	14
OT04	1.040 - 1.130	26.41 - 28.7	○	26	23.5	33	IT04	1.040 - 1.130	26.41 - 28.7	○	18	16
OT05	1.130 - 1.220	28.71 - 31	○	28	25.5	33	IT05	1.130 - 1.220	28.71 - 31	○	20	18
OT06	1.221 - 1.311	31.01 - 33.3	○	30.5	28	33	IT06	1.221 - 1.311	31.01 - 33.3	○	22	20
OT07	1.311 - 1.425	33.31 - 36.2	○	33	30	40	IT07	1.311 - 1.425	33.31 - 36.2	○	24	22
OT08	1.426 - 1.559	36.21 - 39.6	○	35.5	33	40	IT08	1.426 - 1.559	36.21 - 39.6	○	26	24
OT09	1.559 - 1.693	39.61 - 43	○	39	36	40	IT09	1.559 - 1.693	39.61 - 43	○	29	27
OT10	1.693 - 1.850	43.01 - 47	○	42.5	39	40	IT10	1.693 - 1.850	43.01 - 47	○	32	30
OT11	1.851 - 2.035	47.01 - 51.7	○	46.5	43	44	IT11	1.851 - 2.035	47.01 - 51.7	○	35	32
OT12	2.036 - 2.213	51.71 - 56.2	○	51	47	44	IT12	2.036 - 2.213	51.71 - 56.2	○	39	36
OT13	2.213 - 2.559	56.21 - 65	○	55.5	51	44	IT13	2.213 - 2.559	56.21 - 65	○	43	40
OT14	2.559 - 2.637	65 - 66.99	○	56	52	75	IT14	2.559 - 2.637	65 - 66.99	○	-	40
OT15	2.756 - 2.874	70 - 72.99	○	62	58	75	IT15	2.756 - 2.874	70 - 72.99	○	-	44
OT16	2.874 - 3.149	73 - 79.99	○	68	63	75	IT16	2.874 - 3.149	73 - 79.99	○	-	48
OT17	3.150 - 3.425	80 - 86.99	○	75	70	97	IT17	3.15 - 3.425	80 - 86.99	○	-	54
OT18	3.425 - 3.937	87 - 99.99	○	82	77	97	IT18	3.425 - 3.937	87 - 99.99	○	-	60
OT19	3.937 - 4.409	100 - 111.99	○	94	89	97	IT19	3.937 - 4.409	100 - 111.99	○	-	70
OT20	4.409 - 4.881	112 - 123.99	○	106	101	118	IT20	4.409 - 4.881	112 - 123.99	○	-	80
OT21	4.882 - 5.354	124 - 135.99	○	118	113	118	IT21	4.882 - 5.354	124 - 135.99	○	-	80
OT22	5.354 - 5.826	136 - 147.99	○	130	125	118	IT22	5.354 - 5.826	136 - 147.99	○	-	95
OT23	5.827 - 6.299	148 - 159.99	○	142	137	139	IT23	5.827 - 6.299	148 - 159.99	○	-	100
OT24	6.299 - 6.771	160 - 171.99	○	154	149	139	IT24	6.299 - 6.771	160 - 171.99	○	-	120
OT25	6.772 - 7.244	172 - 183.99	○	166	161	139	IT25	6.772 - 7.244	172 - 183.99	○	-	130

○ : Item to be customized

Please specify the length when ordering.

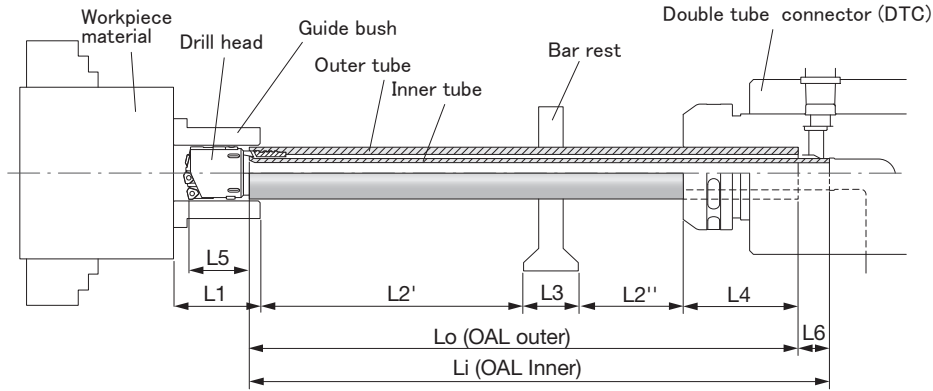
e.g. For ø60 mm drill diameter / 1070 mm drill outer tube length: OT13X1070

Please choose the inner tube length according to the below.

- ▶ tool diameter: ø18.40 - 65.00 mm (OT00 - OT13) Inner tube length = Outer tube length + 30 mm
- ▶ tool diameter: ø65.00 - 123.99 mm (OT14 - OT20) Inner tube length = Outer tube length + 190 mm
- ▶ tool diameter: ø124.00 - 183.99 mm (OT21 - OT25) Inner tube length = Outer tube length + 220 mm

TUBE LENGTH FOR SPECIAL DRILLS

Please use the below guide to calculate the drill tube length.



Lo = Outer tube whole length
 Li = Inner tube whole length
 L1 = Guide bush length (or Pilot hole depth)
 L2 = Drilling depth (L2' + L2'')
 L3 = Bar rest length
 L4 = Length of outer tube in connector *
 L5 = Length from drill tube tip and peripheral edge tip
 L6 = Difference between outer tube length and inner tube length

Outer tube length $Lo = L1 + L2 + L3 + L4 - L5$

Inner tube length $Li = Lo + L6$

DTC type	L4 *	L6 **
DTC 4R type (OT00 - OT13)	120	30
DTC 5R type (OT14 - OT20)	0	190
DTC 6R type (OT21 - OT25)	0	220

(mm)

The outer tube should enter in the guide bush or the pilot hole with at least 5 mm.

ETU



DCN - DCX		L5
(in)	(mm)	
0.724 - 0.787	18.4 - 20	20
0.788 - 0.949	20.01 - 24.1	23
0.949 - 1.130	24.11 - 28.7	24
1.130 - 1.311	28.71 - 33.3	27
1.311 - 1.425	33.31 - 36.2	26
1.426 - 1.598	36.21 - 40.6	29
1.599 - 1.693	40.61 - 43	28
1.693 - 1.850	43.01 - 47	30
1.851 - 2.035	47.01 - 51.7	29
2.036 - 2.213	51.71 - 56.2	32
2.213 - 2.299	56.21 - 58.4	34
2.300 - 2.559	58.41 - 65	33

FINE-BEAM



DCN - DCX		L5
(in)	(mm)	
0.984 - 1.039	25 - 26.4	40
1.040 - 1.220	26.41 - 31	42
1.221 - 1.311	31.01 - 33.3	47
1.311 - 1.425	33.31 - 36.2	50
1.426 - 1.559	36.21 - 39.6	55
1.559 - 1.850	39.61 - 47	60
1.851 - 2.035	47.01 - 51.7	66
2.036 - 2.559	51.71 - 65	71

UNIDEX



DCN - DCX		L5
(in)	(mm)	
1.496 - 1.693	38 - 43	45
1.693 - 1.850	43.01 - 47	55
1.851 - 2.035	47.01 - 51.7	51
2.036 - 2.213	51.71 - 56.2	56
2.213 - 2.559	56.21 - 65	66
2.559 - 3.149	65 - 79.99	75
3.150 - 4.409	80 - 111.99	83
4.409 - 5.826	112 - 147.99	87
5.827 - 7.244	148 - 183.99	86

TRI-FINE



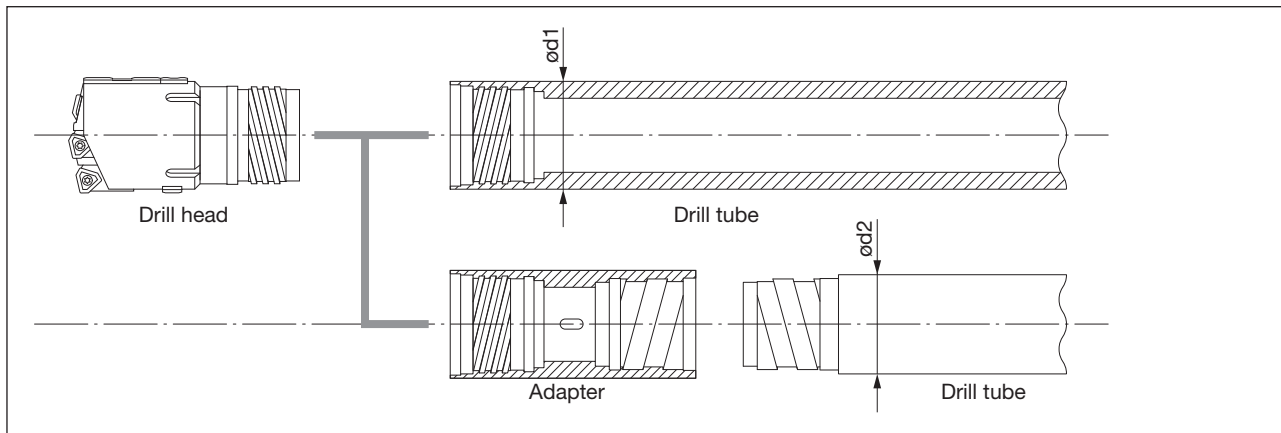
DCN - DCX		L5
(in)	(mm)	
0.724 - 0.787	18.4 - 20	31.5
0.788 - 0.858	20.01 - 21.8	33.5
0.859 - 0.866	21.81 - 21.99	33.5
0.866 - 0.949	22 - 24.1	35.5
0.949 - 0.984	24.11 - 25	35.5
0.985 - 1.039	25.01 - 26.4	37.5
1.040 - 1.102	26.41 - 28	37.5

Grade
 Insert
 Ext. Toolholder
 Int. Toolholder
 Threading
 Grooving
 Miniature Tool
 Milling Cutter
 Endmill
 Drilling Tool
 User's Guide Tooling System
 Index

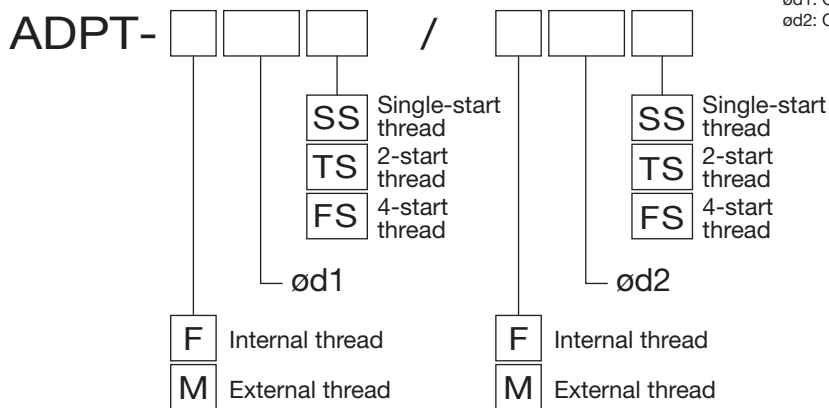
A
 B
 C
 D
 E
 F
 G
 H
 I
 J
 K
 L
 M

CONVERSION ADAPTER

Adapter for external thread - internal thread conversion



$\phi d1$: Outer diameter of the tube that is applicable for the drill head
 $\phi d2$: Outer diameter of the tube that is connected with the adapter



Designation example

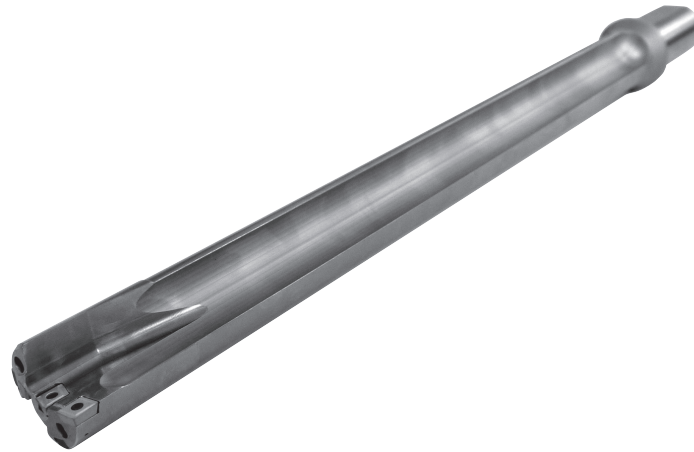
For the conversion from ST11 to UB47

ADPT-F47FS / F47SS

↑ ↑
 ST11 UB47

* The adapters to change sizes will be available upon request.

HF Drill : Indexable drill for deep hole



■ Economical for middle range deep hole drilling

- Tool diameter range: $\varnothing 30$ - $\varnothing 63$ mm (*)
- Drilling depth: 6xD - 14xD
- Shortened drilling time when using conventional machine
- * Other diameters are available upon request.

■ Effective machining on conventional machines

- Recommended for use on Horizontal M/C
- Can also be used on turning machine

■ Good chip evacuation

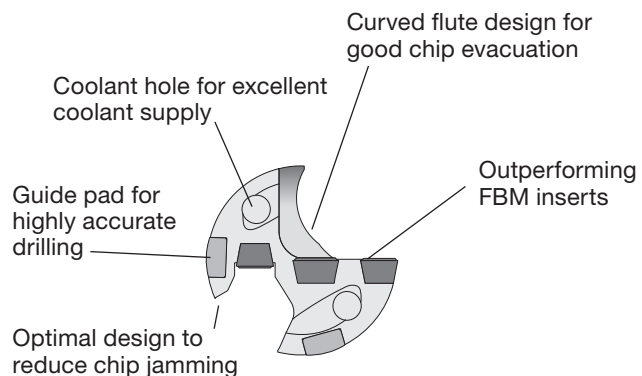
- FBM inserts enable best chip control
- Unique head design eliminates chip jamming
- Curved flute design ensures good chip evacuation

■ Easy to use, rigid drill body

- Direct mount inserts, no diameter adjustment necessary
- Body is made from heat treated tool steel

■ High quality surface finish

- Burnishing effect improves surface finish
- Possible to eliminate finish process



Grade

Insert

Ext. Toolholder

Int. Toolholder

Threading

Grooving

Miniature Tool

Milling Cutter

Endmill

Drilling Tool

Tooling System

User's Guide

Index

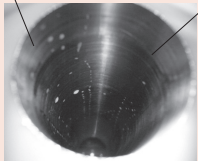
● PRACTICAL EXAMPLE

Cutting conditions

Tool diameter DC: $\varnothing 30$ mm
 Drilling depth: 200 mm
 Workpiece material: S45C
 Cutting speed V_c : 100 m/min
 Feed f : 0.1 mm/rev
 Machine: BT50 M/C

No spiral marks caused by chips

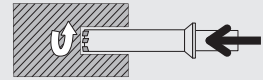
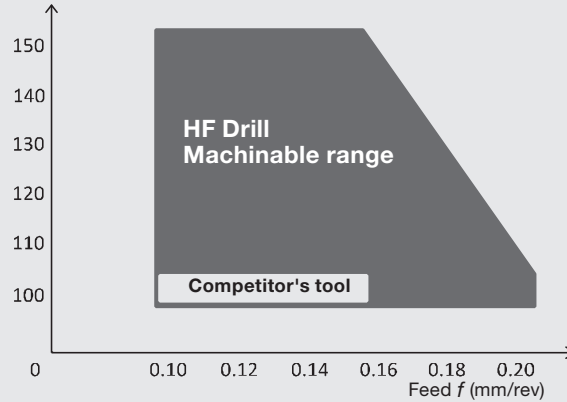
Burnishing effect by guide pads improves surface finish



BT50 M/C Machining data

Excellent chip evacuation ensures the stable drilling on M/C.

Cutting speed V_c (m/min)



- Water-soluble coolant
- Pressure: 1.5 MPa
- Through spindle

Tool diameter DC: $\varnothing 30$ mm
 Drilling depth: 200 mm
 Workpiece material: S45C
 Cutting speed V_c : 100 - 150 m/min
 Feed f : 0.1 - 0.2 mm/rev
 Machine: BT50 Horizontal M/C (Max 11 kW)

Cautionary points in use

To start the tool, a pilot hole is required. (tolerance: + 0.1 to 0.15 mm)

Tool diameter DC (mm)	Pilot hole length H (mm)
$\varnothing 30 \sim \varnothing 39$	over 10
$\varnothing 39.01 \sim \varnothing 45$	over 12.5
$\varnothing 45.01 \sim \varnothing 57$	over 15
$\varnothing 57.01 \sim \varnothing 63$	over 17.5

- The pilot hole should ideally have a flat bottom, but generally a indexable drill is acceptable to create a pilot hole if the inner insert touches the bottom last.
- DrillForce-Meister series or TDX drills are recommended for a pilot hole drilling.

