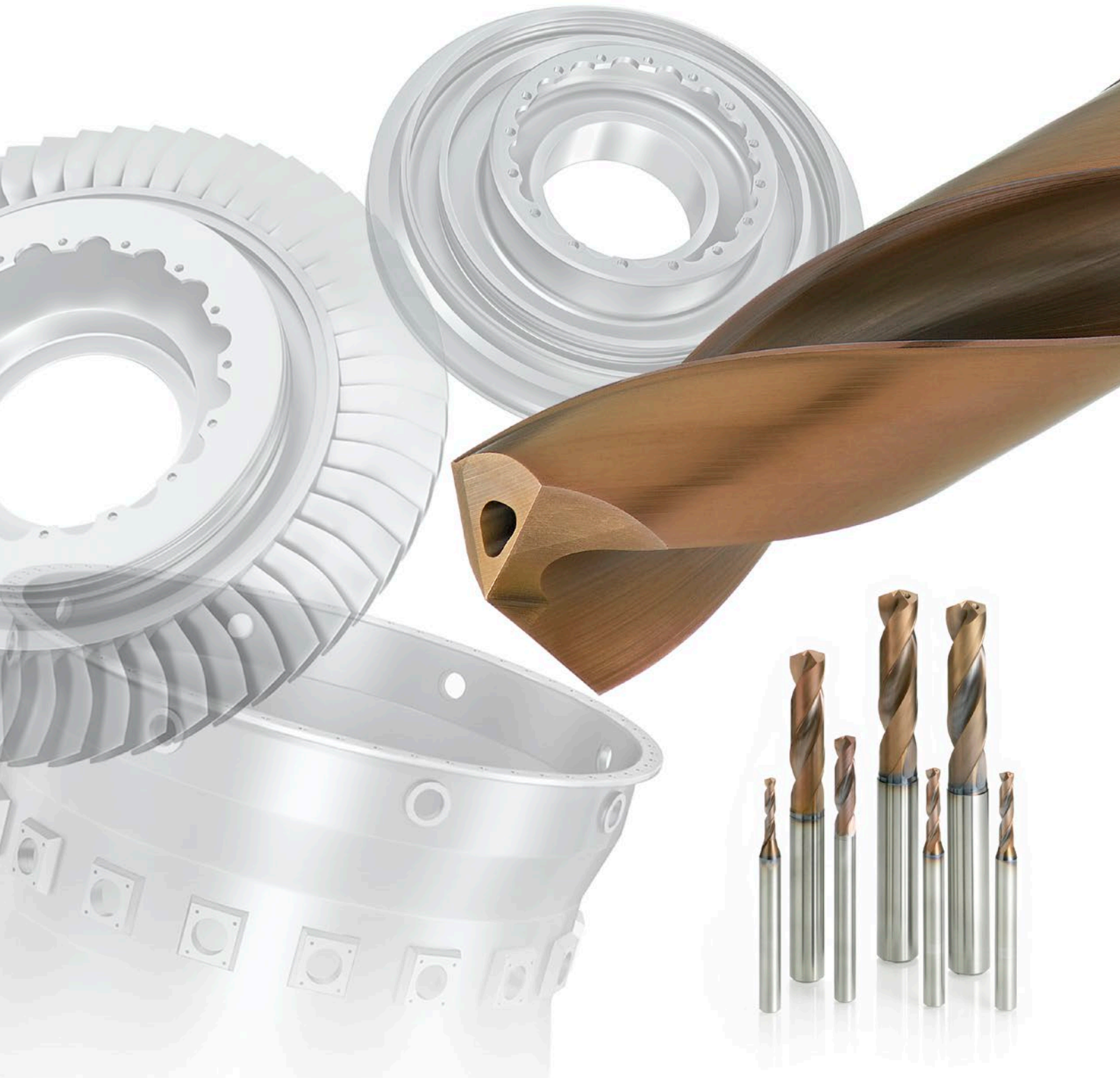


Solid Carbide Drill for Machining Heat Resistant Alloys

DSA Series

New
Products

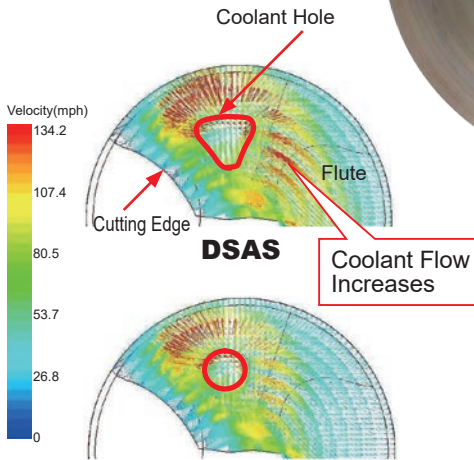


Solid Carbide Drill for Machining Heat Resistant Alloys

DSA Series

TRI-Cooling Technology

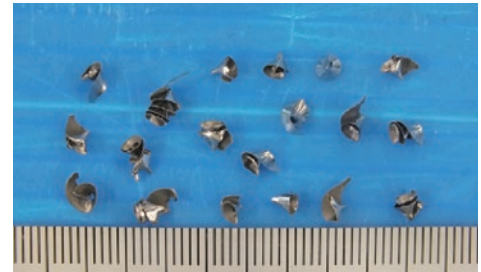
The unique hole geometry increases the coolant flow rate, resulting in high lubricity and cooling effect. (available in sizes over : \varnothing .1969 inch or \varnothing 5 mm)



Comparison of Coolant Flow Rate (Spindle Speed 4700 min⁻¹)

Straight Cutting Edge with Single-Pass Honing

The tough straight cutting edge with single-pass honing enables stable chip formation as well as preventing the cutting edge from chipping.



DSAS



Conventional

New Grade for Machining of Heat Resistant Alloys DP9020

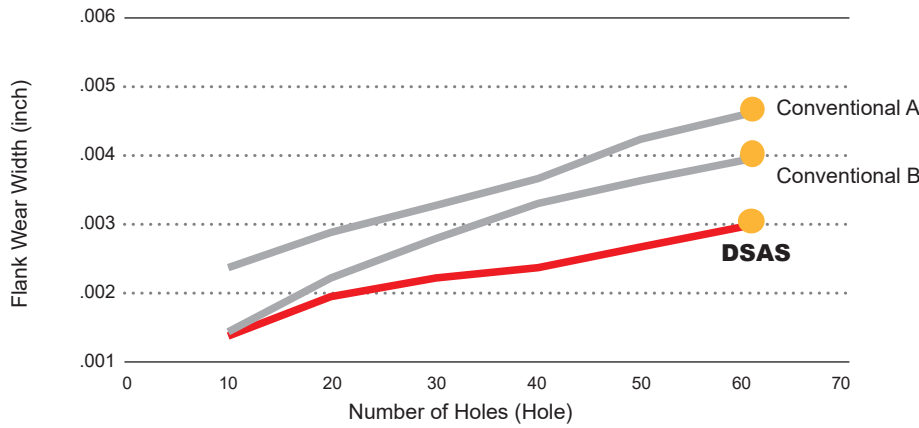
New hard grade provides both high wear and fracture resistance, leading to longer tool life.

Special Margin

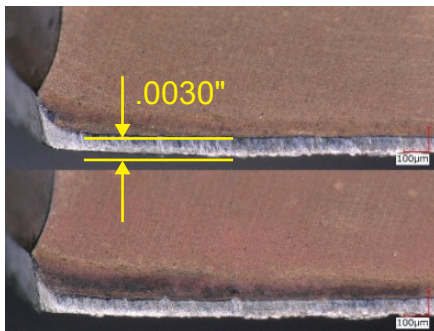
The specially designed thin margin minimizes contact area with hole surface and workpiece materials in combination with tri-cooling technology to reduce cutting heat and prevent the generation of work-hardening making it especially suited for the machining of heat resistant alloys.

Cutting Performance

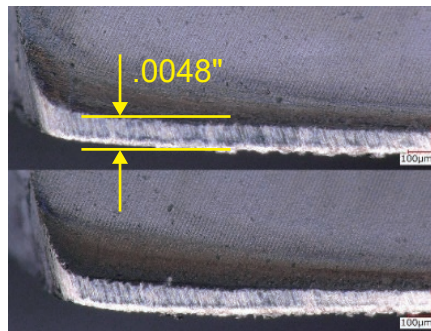
Comparison of Flank Wear Width by Inconel 718



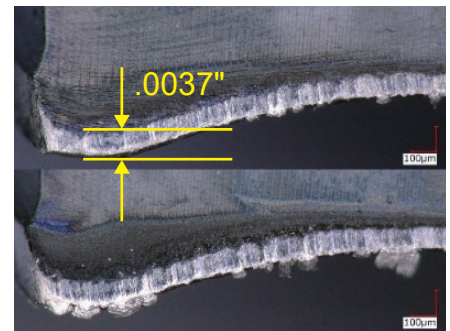
<Cutting Conditions>
 Workpiece Material : Inconel 718
 Tool : DSAS0700X03S080
 Drill Dia. : DC= .2756 inch
 Hole Depth : .470 inch (I= DCx 1.7)
 Cutting Speed : vc= 50 SFM
 Feed per Rev. : fr= .0039 IPR
 Cutting Mode : Internal Coolant
 (Water-soluble Coolants)
 Machine : Vertical MC



DSAS

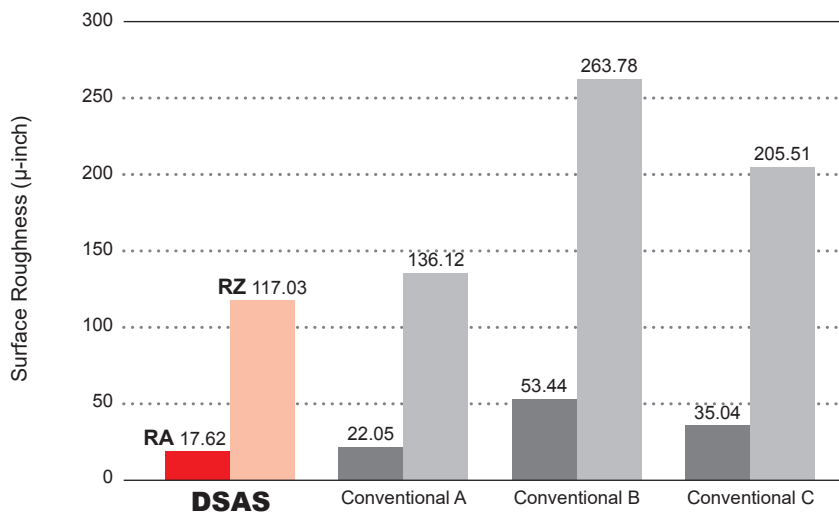


Conventional A



Conventional B

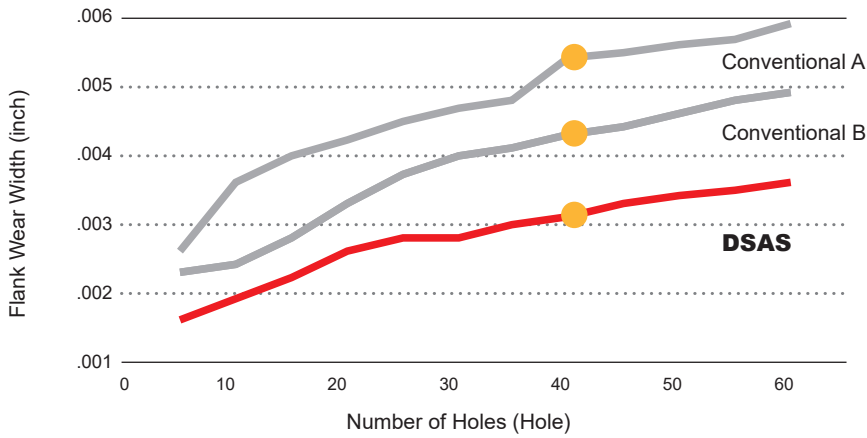
Comparison of Wall Surface Roughness by Inconel 718



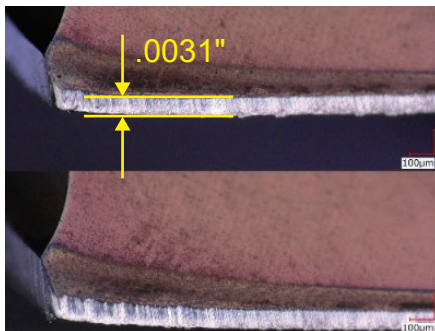
<Cutting Conditions>
 Workpiece Material : Inconel 718
 Tool : DSAS0700X03S080
 Drill Dia. : DC= .2756 inch
 Hole Depth : .390 inch (I= DCx 1.4)
 Cutting Speed : vc= 50 SFM
 Feed per Rev. : fr= .0039 IPR
 Cutting Mode : Internal Coolant
 (Water-soluble Coolants)
 Machine : Vertical MC

Cutting Performance

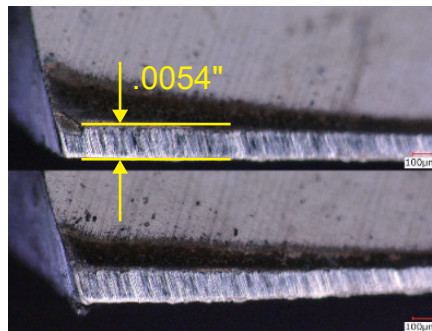
Comparison of Flank Wear Width by RENE 41



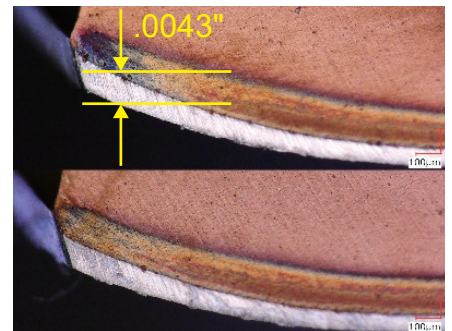
<Cutting Conditions>
 Workpiece Material : RENE 41
 Tool : DSAS0690X03S080
 Drill Dia. : DC= .2717 inch
 Hole Depth : .390 inch (l= DCx 1.4)
 Cutting Speed : vc= 50 SFM
 Feed per Rev. : fr= .0039 IPR
 Cutting Mode : Internal Coolant
 (Water-soluble Coolants)
 Machine : Vertical MC



DSAS

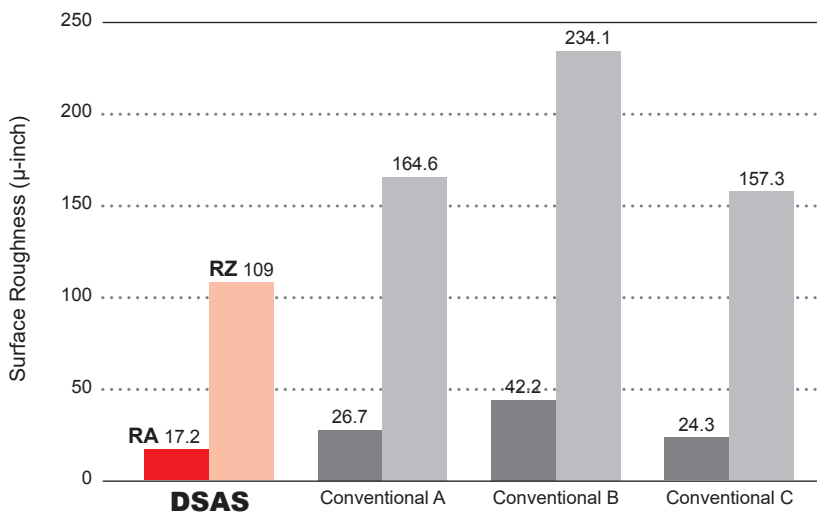


Conventional A



Conventional B

Comparison of Wall Surface Roughness by RENE 41



<Cutting Conditions>
 Workpiece Material : RENE 41
 Tool : DSAS0690X03S080
 Drill Dia. : DC= .2717"
 Hole Depth : .390 inch (l= DCx 1.4)
 Cutting Speed : vc= 50 SFM
 Feed per Rev. : fr= .0039 IPR
 Cutting Mode : Internal Coolant
 (Water-soluble Coolants)
 Machine : Vertical MC

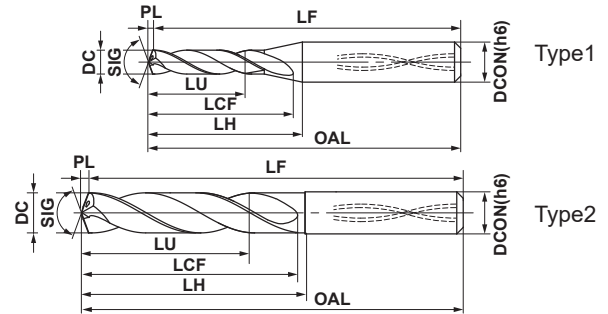
Solid Carbide Drill for Machining Heat Resistant Alloys

DSA

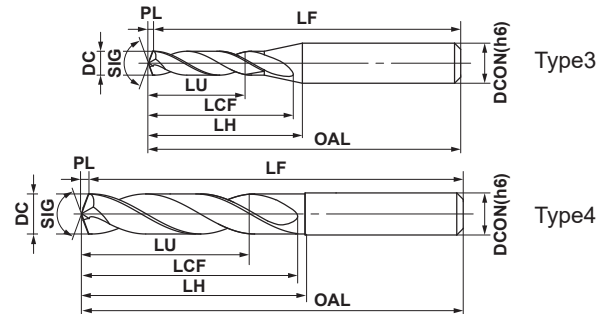


P M K N **S** H

DSAS



DSAE



* When looking at coating the color can vary depending on the direction of viewing. This does not have any effect on the performance of the drill.

Type		Tolerance	(inch)			
Type		Tolerance	DC=.1181	.1181<DC≤.2362	.2362<DC≤.3937	.3937<DC≤.4724
Type 1,2,3,4	DC	0	0	0	0	0
	DCON	0	0	0	0	0

Type		Tolerance	(mm)			
Type		Tolerance	DC=3	3<DC≤6	6<DC≤10	10<DC≤12
Type 1,2,3,4	DC	0	0	0	0	0
	DCON	0	0	0	0	0

DC					L/D	Coolant (Int./Ext.)	Order Number	Stock DP9020	LU		LCF		LH		OAL		LF		PL		DCON		Type		
Metric (mm)	Decimal	Fraction	Wire / Letter	Thread Size					mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch		mm	inch
	(inch)																								
3.000	.1181				3	Ext.	DSAE0300X03S060	★	9.5	.374	21.5	.846	23.5	.925	70.5	2.776	70	2.756	0.5	.020	6	.236	3		
					3	Int.	DSAS0300X03S060	●	9.5	.374	21.5	.846	23.5	.925	70.5	2.776	70	2.756	0.5	.020	6	.236	1		
3.175	.1250	1/8			3	Int.	DSAS0318X03S060	●	10.1	.398	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	1		
3.300	.1299			M4x.7	3	Int.	DSAS0330X03S060	●	10.5	.413	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	1		
3.400	.1339				3	Ext.	DSAE0340X03S060	★	10.8	.425	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	3		
					3	Int.	DSAS0340X03S060	●	10.8	.425	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	1		
3.500	.1378				3	Int.	DSAS0350X03S060	●	11.1	.437	21.6	.850	23.6	.929	70.6	2.780	70	2.756	0.6	.024	6	.236	1		
3.572	.1407	9/64			3	Int.	DSAS0357X03S060	●	11.4	.449	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	1		
3.969	.1563	5/32			3	Int.	DSAS0397X03S060	●	12.6	.496	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	1		
4.000	.1575				3	Ext.	DSAE0400X03S060	★	12.7	.500	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	3		
					3	Int.	DSAS0400X03S060	●	12.7	.500	22.7	.894	23.7	.933	70.7	2.783	70	2.756	0.7	.028	6	.236	1		
4.100	.1614				3	Int.	DSAS0410X03S060	●	13.0	.512	24.7	.972	26.7	1.051	73.7	2.902	73	2.874	0.7	.028	6	.236	1		
4.200	.1654			M5x.8	3	Int.	DSAS0420X03S060	●	13.4	.528	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	1		
4.300	.1693				3	Ext.	DSAE0430X03S060	★	13.7	.539	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	3		
					3	Int.	DSAS0430X03S060	●	13.7	.539	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	1		
4.366	.1719	11/64			3	Int.	DSAS0437X03S060	●	13.9	.547	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	1		
4.500	.1772		16	#12-24	3	Ext.	DSAE0450X03S060	★	14.3	.563	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	3		
					3	Int.	DSAS0450X03S060	●	14.3	.563	24.8	.976	26.8	1.055	73.8	2.906	73	2.874	0.8	.031	6	.236	1		
4.700	.1850			13	3	Int.	DSAS0470X03S060	●	15.0	.591	25.9	1.020	28.9	1.138	75.9	2.988	75	2.953	0.9	.035	6	.236	1		

Note 1) The coolant hole of ϕ .1875" (ϕ 4.763mm) or less will be round shape.

● : Inventory maintained. ★ : Inventory maintained in Japan.

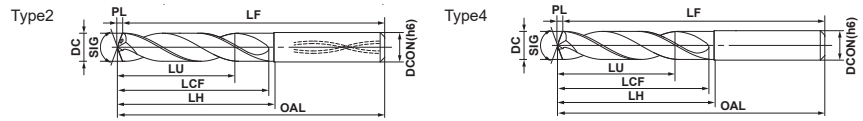
Solid Carbide Drill for Machining Heat Resistant Alloys

DSA

DC					L/D	Coolant (Int./Ext.)	Order Number	Stock DP9020	LU		LCF		LH		OAL		LF		PL		DCON		Type		
Metric (mm)	Decimal	Fraction	Wire / Letter	Thread Size					mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch		mm	inch
	(inch)																								
4.763	.1875	3/16			3	Int.	DSAS0476X03S060	●	15.2	.598	25.9	1.020	28.9	1.138	75.9	2.988	75	2.953	0.9	.035	6	.236	1		
5.000	.1969			M6x1.0	3	Ext.	DSAE0500X03S060	★	15.9	.626	28.9	1.138	29.9	1.177	81.9	3.224	81	3.189	0.9	.035	6	.236	4		
					3	Int.	DSAS0500X03S060	●	15.9	.626	28.9	1.138	29.9	1.177	81.9	3.224	81	3.189	0.9	.035	6	.236	2		
5.100	.2008		7	1/4-20	3	Ext.	DSAE0510X03S060	★	16.2	.638	28.9	1.138	29.9	1.177	81.9	3.224	81	3.189	0.9	.035	6	.236	4		
					3	Int.	DSAS0510X03S060	●	16.2	.638	28.9	1.138	29.9	1.177	81.9	3.224	81	3.189	0.9	.035	6	.236	2		
5.160	.2032	13/64			3	Int.	DSAS0516X03S060	●	16.5	.650	29.0	1.142	30.0	1.181	82.0	3.228	81	3.189	1.0	.039	6	.236	2		
5.400	.2126		3	1/4-28	3	Ext.	DSAE0540X03S060	★	17.2	.677	29.0	1.142	30.0	1.181	82.0	3.228	81	3.189	1.0	.039	6	.236	4		
					3	Int.	DSAS0540X03S060	●	17.2	.677	29.0	1.142	30.0	1.181	82.0	3.228	81	3.189	1.0	.039	6	.236	2		
5.500	.2165				3	Ext.	DSAE0550X03S060	★	17.5	.689	29.0	1.142	30.0	1.181	82.0	3.228	81	3.189	1.0	.039	6	.236	4		
					3	Int.	DSAS0550X03S060	●	17.5	.689	29.0	1.142	30.0	1.181	82.0	3.228	81	3.189	1.0	.039	6	.236	2		
5.557	.2188	7/32			3	Int.	DSAS0556X03S060	●	17.8	.701	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	2		
5.600	.2205		2		3	Ext.	DSAE0560X03S060	★	17.9	.705	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	4		
					3	Int.	DSAS0560X03S060	●	17.9	.705	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	2		
5.800	.2283		1		3	Int.	DSAS0580X03S060	●	18.5	.728	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	2		
5.900	.2323				3	Ext.	DSAE0590X03S060	★	18.8	.740	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	4		
					3	Int.	DSAS0590X03S060	●	18.8	.740	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	2		
5.954	.2344	15/64	A		3	Int.	DSAS0595X03S060	●	19.0	.748	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	2		
6.000	.2362			M7x1.0	3	Ext.	DSAE0600X03S060	★	19.1	.752	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	4		
					3	Int.	DSAS0600X03S060	●	19.1	.752	31.1	1.224	31.1	1.224	82.1	3.232	81	3.189	1.1	.043	6	.236	2		
6.100	.2402				3	Ext.	DSAE0610X03S080	★	19.5	.768	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	4		
					3	Int.	DSAS0610X03S080	●	19.5	.768	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	2		
6.200	.2441				3	Ext.	DSAE0620X03S080	★	19.8	.780	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	4		
					3	Int.	DSAS0620X03S080	●	19.8	.780	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	2		
6.350	.2500	1/4	E		3	Int.	DSAS0635X03S080	●	20.3	.799	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	2		
6.400	.2520				3	Ext.	DSAE0640X03S080	★	20.4	.803	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	4		
					3	Int.	DSAS0640X03S080	●	20.4	.803	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	2		
6.500	.2559				3	Int.	DSAS0650X03S080	●	20.7	.815	34.2	1.346	37.2	1.465	87.2	3.433	86	3.386	1.2	.047	8	.315	2		
6.600	.2598				3	Int.	DSAS0660X03S080	●	21.1	.831	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	2		
6.747	.2657	17/64			3	Int.	DSAS0675X03S080	●	21.5	.846	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	2		
6.800	.2677				3	Ext.	DSAE0680X03S080	★	21.7	.854	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	4		
					3	Int.	DSAS0680X03S080	●	21.7	.854	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	2		
6.900	.2717		I	5/16-24	3	Ext.	DSAE0690X03S080	★	22.0	.866	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	4		
					3	Int.	DSAS0690X03S080	●	22.0	.866	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	2		
7.000	.2756			M8x1.0	3	Ext.	DSAE0700X03S080	★	22.3	.878	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	4		
					3	Int.	DSAS0700X03S080	●	22.3	.878	36.3	1.429	38.3	1.508	91.3	3.594	90	3.543	1.3	.051	8	.315	2		
7.100	.2795				3	Ext.	DSAE0710X03S080	★	22.7	.894	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	4		
					3	Int.	DSAS0710X03S080	●	22.7	.894	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	2		
7.144	.2813	9/32	K		3	Int.	DSAS0714X03S080	●	22.8	.898	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	2		
7.200	.2835				3	Int.	DSAS0720X03S080	●	23.0	.906	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	2		
7.400	.2913				3	Int.	DSAS0740X03S080	●	23.6	.929	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	2		
7.500	.2953		M		3	Int.	DSAS0750X03S080	●	23.9	.941	39.4	1.551	40.4	1.591	91.4	3.598	90	3.543	1.4	.055	8	.315	2		
7.541	.2969	19/64			3	Int.	DSAS0754X03S080	●	24.1	.949	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	2		
7.800	.3071				3	Ext.	DSAE0780X03S080	★	24.9	.980	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	4		
					3	Int.	DSAS0780X03S080	●	24.9	.980	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	2		
7.900	.3110				3	Int.	DSAS0790X03S080	●	25.2	.992	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	2		
7.938	.3125	5/16		3/8-16	3	Int.	DSAS0794X03S080	●	25.3	.996	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	2		
8.000	.3150				3	Ext.	DSAE0800X03S080	★	25.5	1.004	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	4		
					3	Int.	DSAS0800X03S080	●	25.5	1.004	41.5	1.634	41.5	1.634	91.5	3.602	90	3.543	1.5	.059	8	.315	2		
8.100	.3189				3	Ext.	DSAE0810X03S100	★	25.8	1.016	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	4		
					3	Int.	DSAS0810X03S100	●	25.8	1.016	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	2		
8.200	.3228		P		3	Ext.	DSAE0820X03S100	★	26.1	1.028	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	4		
					3	Int.	DSAS0820X03S100	●	26.1	1.028	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	2		

Note 1) The coolant hole of ϕ .1875" (ϕ 4.763mm) or less will be round shape.

● : Inventory maintained. ★ : Inventory maintained in Japan.



DC					L/D	Coolant (Int./Ext.)	Order Number	Stock DP9020	LU		LCF		LH		OAL		LF		PL		DCON		Type		
Metric (mm)	Decimal	Fraction	Wire / Letter	Thread Size					mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch		mm	inch
	(inch)																								
8.335	.3282	21/64			3	Int.	DSAS0833X03S100	●	26.5	1.043	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	2		
8.400	.3307				3	Ext.	DSAE0840X03S100	★	26.7	1.051	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	4		
					3	Int.	DSAS0840X03S100	●	26.7	1.051	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	2		
8.500	.3346			M10x1.5	3	Ext.	DSAE0850X03S100	★	27.0	1.063	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	4		
					3	Int.	DSAS0850X03S100	●	27.0	1.063	44.5	1.752	47.5	1.870	97.5	3.839	96	3.780	1.5	.059	10	.394	2		
8.600	.3386		R		3	Int.	DSAS0860X03S100	●	27.4	1.079	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	2		
8.700	.3425			M10x1.25	3	Int.	DSAS0870X03S100	●	27.7	1.091	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	2		
8.732	.3438	11/32			3	Int.	DSAS0873X03S100	●	27.8	1.094	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	2		
8.800	.3465				3	Int.	DSAS0880X03S100	●	28.0	1.102	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	2		
8.900	.3504				3	Int.	DSAS0890X03S100	●	28.3	1.114	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	2		
9.000	.3543				3	Ext.	DSAE0900X03S100	★	28.6	1.126	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	4		
					3	Int.	DSAS0900X03S100	●	28.6	1.126	46.6	1.835	48.6	1.913	102.6	4.039	101	3.976	1.6	.063	10	.394	2		
9.500	.3740				3	Int.	DSAS0950X03S100	●	30.3	1.193	49.8	1.961	50.8	2.000	102.8	4.047	101	3.976	1.8	.071	10	.394	2		
9.525	.3750	3/8			3	Int.	DSAS0953X03S100	●	30.4	1.197	49.8	1.961	50.8	2.000	102.8	4.047	101	3.976	1.8	.071	10	.394	2		
9.922	.3907	25/64		7/16-20	3	Int.	DSAS0992X03S100	●	31.6	1.244	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	2		
10.000	.3937				3	Ext.	DSAE1000X03S100	★	31.8	1.252	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	4		
					3	Int.	DSAS1000X03S100	●	31.8	1.252	51.8	2.039	51.8	2.039	102.8	4.047	101	3.976	1.8	.071	10	.394	2		
10.319	.4063	13/32			3	Int.	DSAS1032X03S120	●	32.9	1.295	54.9	2.161	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	2		
10.500	.4134		Z		3	Ext.	DSAE1050X03S120	★	33.4	1.315	54.9	2.161	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	4		
					3	Int.	DSAS1050X03S120	●	33.4	1.315	54.9	2.161	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	2		
10.700	.4213				3	Ext.	DSAE1070X03S120	★	34.0	1.339	56.9	2.240	57.9	2.280	112.9	4.445	111	4.370	1.9	.075	12	.472	4		
10.716	.4219	27/64		1/2-13	3	Int.	DSAS1072X03S120	●	34.1	1.343	57.0	2.244	59.0	2.323	118.0	4.646	116	4.567	2.0	.079	12	.472	2		
11.000	.4331				3	Ext.	DSAE1100X03S120	★	35.0	1.378	57.0	2.244	59.0	2.323	118.0	4.646	116	4.567	2.0	.079	12	.472	4		
					3	Int.	DSAS1100X03S120	●	35.0	1.378	57.0	2.244	59.0	2.323	118.0	4.646	116	4.567	2.0	.079	12	.472	2		
11.500	.4528				3	Ext.	DSAE1150X03S120	★	36.6	1.441	60.1	2.366	61.1	2.406	118.1	4.650	116	4.567	2.1	.083	12	.472	4		
					3	Int.	DSAS1150X03S120	●	36.6	1.441	60.1	2.366	61.1	2.406	118.1	4.650	116	4.567	2.1	.083	12	.472	2		
12.000	.4724			M14x2.0	3	Ext.	DSAE1200X03S120	★	38.2	1.504	62.2	2.449	62.2	2.449	118.2	4.654	116	4.567	2.2	.087	12	.472	4		
					3	Int.	DSAS1200X03S120	●	38.2	1.504	62.2	2.449	62.2	2.449	118.2	4.654	116	4.567	2.2	.087	12	.472	2		

Recommended Cutting Conditions

(inch)

Workpiece Material			Heat Resistant Alloys	Titanium Alloys		
			Inconel718 etc.	Ti-6Al-4V etc.		
DC		L/D	Cutting Speed vc (SFM)	Feed fr (Min.—Max.) (IPR)	Cutting Speed vc (SFM)	Feed fr (Min.—Max.) (IPR)
inch	mm					
.1181	3.000	≤ 3	30	.002 (.002— .004)	130	.003 (.002— .005)
.1575	4.000	≤ 3	30	.002 (.002— .004)	130	.004 (.003— .006)
.1969	5.000	≤ 3	40	.003 (.002— .005)	130	.005 (.003— .008)
.2362	6.000	≤ 3	50	.004 (.003— .006)	130	.006 (.004— .008)
.3150	8.000	≤ 3	50	.004 (.003— .006)	140	.007 (.006— .010)
.3937	10.000	≤ 3	60	.004 (.003— .006)	140	.009 (.007— .011)
.4724	12.000	≤ 3	65	.005 (.003— .006)	150	.009 (.008— .012)

Note 1) Spindle through & high pressure coolant system is recommended to make stable holes.

Note 2) Emulsion type of water-soluble coolant is recommended.

Note 3) In non water-insoluble coolant, reduce the cutting speed by 10%-20%.

Note 4) When drilling length of DCx1 or more with the use of external coolant system, step drilling is recommended in every DCx0.5 to encourage chips to break.

For your safety

●Don't touch breakers and chips without gloves. ●Please machine within recommended application range, and exchange expired tools with new parts in advance. ●Please use safety cover and wear safety glasses. ●When using compounded cutting oils, please take fire prevention. ●When attaching inserts or spare parts, please use the attached wrench or driver. ●When using tools in revolution machining, please make a trial run to check run-out, vibration, abnormal sounds etc.

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