

DSAS

SOLID CARBIDE DRILLS FOR HRSA MATERIALS



DSAS

APPLICATION

For successful drilling of HRSA materials in aerospace applications, cutting tools need to follow these important criteria:

- **Reliability**
- **Stable processing**
- **Hole quality**
- **Dimensional accuracy**

DSAS carbide drills are able to meet these requirements, and therefore able to machine high quality holes in HRSA materials such as cobalt chrome, Inconel, nickel & titanium alloys.

DSAS drills can be used successfully for drilling jet engine, gas turbine, rocket, aircraft and furnace components.



FEATURES

DP9020 GRADE FOR MACHINING HEAT RESISTANT ALLOYS

Tough carbide grade provides high wear and fracture resistance, resulting in extended tool life.

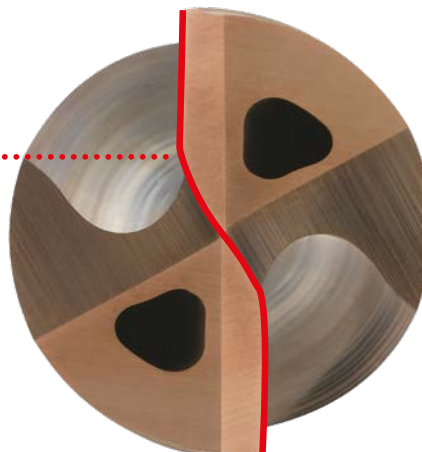


SPECIAL MARGIN

Thin margins reduce the contact area and avoids generation of work hardened layers when machining heat resistant alloys.

STRAIGHT CUTTING EDGE WITH DEDICATED HONING

The tough, straight cutting edge with a dedicated honing provides stable chip formation and prevents chipping at the cutting edge.



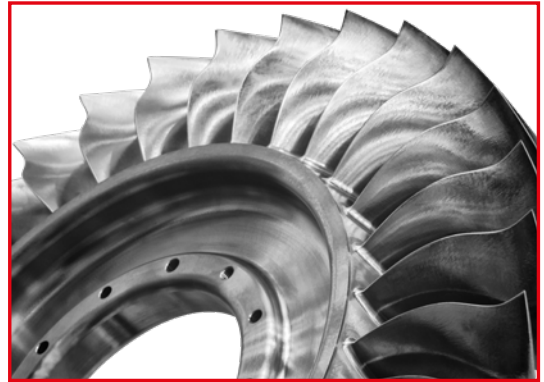
ADVANTAGES

CONSTANT HOLE QUALITY

HIGH REPEATABILITY

PROCESS SECURITY

DRILLING ACCURACY



PRODUCT RANGE

DRILL	DC	L / D	SHANK GEOMETRY	S	
DSAS	Ø 3 mm – 12 mm	3	DIN6535HA	©	✓

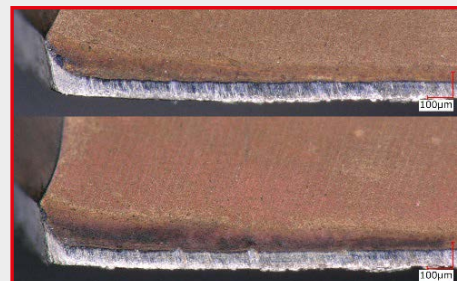
1. Inch diameters are also available.



DSAS

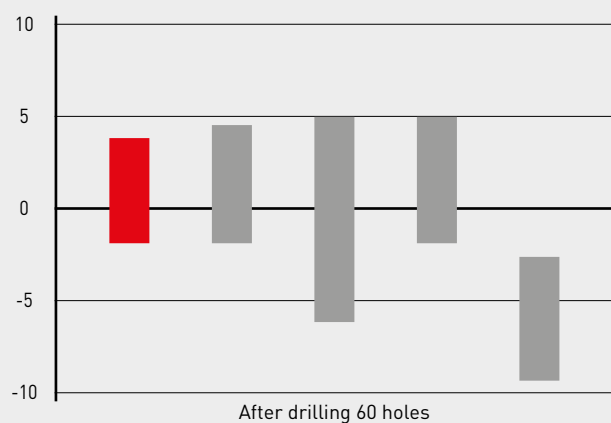
PERFORMANCE COMPARISON

Material	Inconel 718
Tool	DSAS0700X03S080
a_p (mm)	12
V_c (m/min)	15
f (mm/rev)	0.10
Coolant	Emulsion (10 %), Internal coolant
Machine	Vertical MC

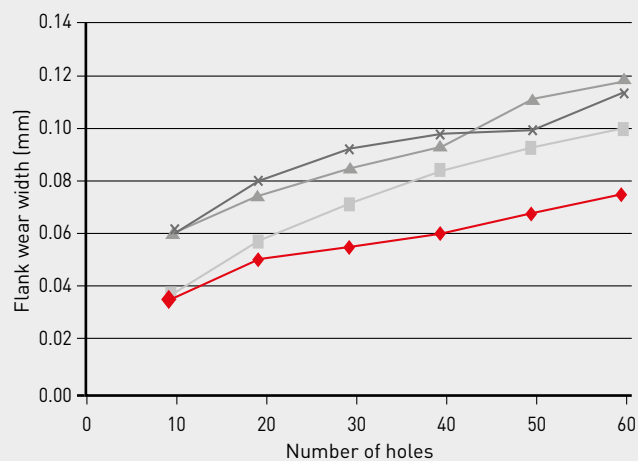


Flank wear width after drilling 60 holes

Ø HOLE OVERSIZE (µm)

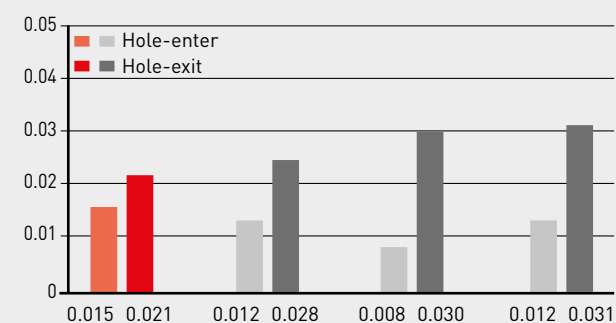


TOOL LIFE

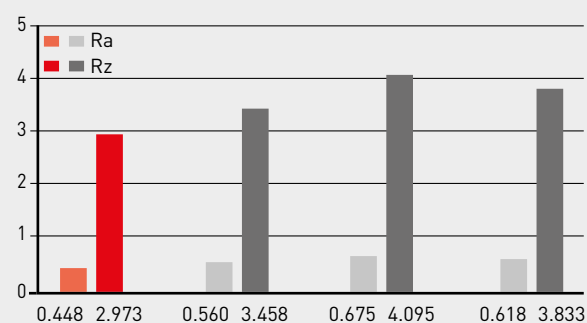


Material	Inconel 718
Tool	DSAS0700X03S080
a_p (mm)	10
V_c (m/min)	15
f (mm/rev)	0.10
Coolant	Emulsion (10 %), Internal coolant
Machine	Vertical MC

ROUNDNESS



WALL SURFACE ROUGHNESS (µm)



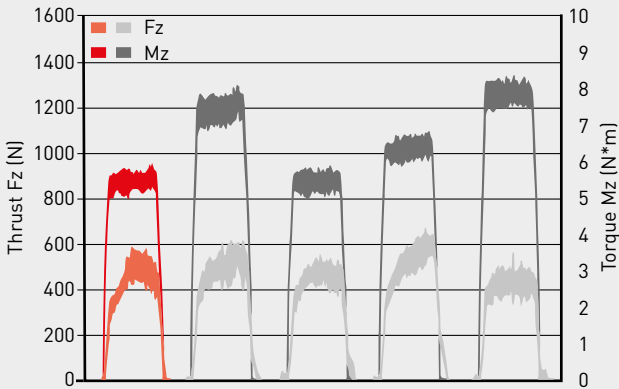
DSAS

CUTTING FORCE COMPARISON

SHARP CUTTING EDGES, LOW THRUST FORCE

Due to the sharper cutting edges, the DSAS drill gave a lower thrust force when drilling titanium compared to conventional products.

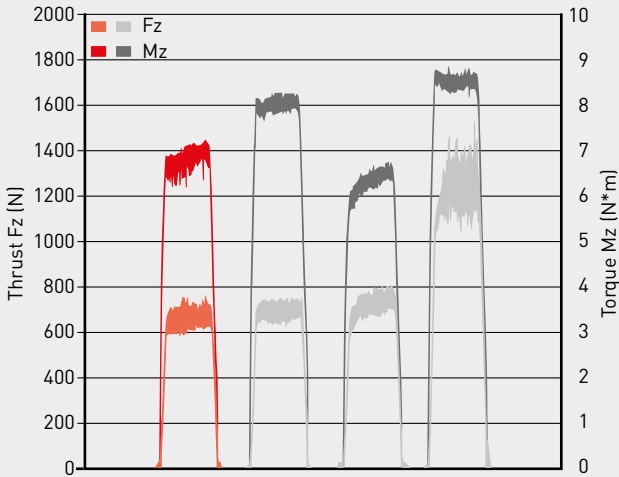
Material	Titanium alloy (Ti-6Al-4V)
Tool	DSAS0700X03S080
ap (mm)	10
Vc (m/min)	40
f (mm/rev)	0.15
Coolant	Emulsion (10 %), Internal coolant
Machine	Vertical MC



LOW CUTTING FORCE, HIGH QUALITY

The cutting resistance companion was carried out when machining RENE 41. Compared to conventional products, DSAS maintained the lowest cutting force.

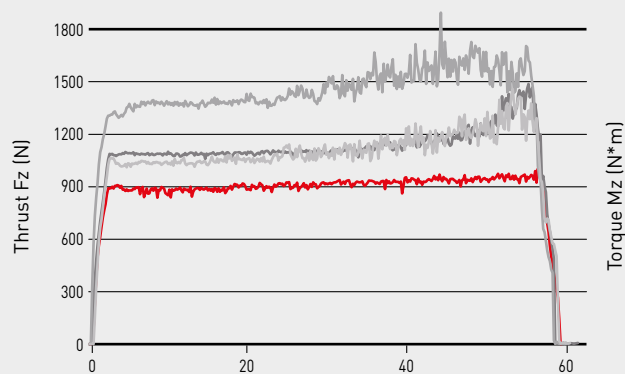
Material	RENE41
Tool	DSAS0700X03S080
ap (mm)	10
Vc (m/min)	15
f (mm/rev)	0.10
Coolant	Emulsion (10 %), Internal coolant
Machine	Vertical MC



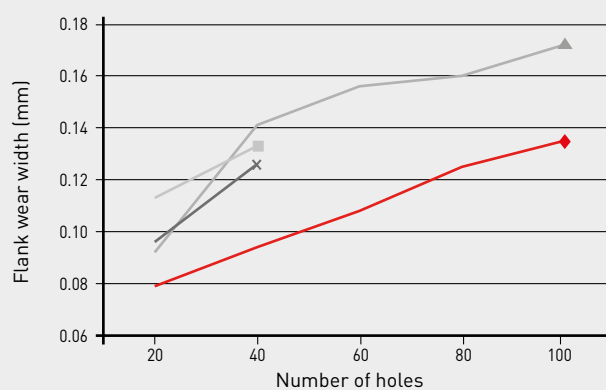
DSAS

CUTTING FORCE COMPARISON

Material	Inconel 718
Tool	DSAS0600X05S060
DC (mm)	6
ap (mm)	30
Vc (m/min)	20
f (mm/rev)	0.16
Coolant	Emulsion (10 %), Internal coolant
Machine	Vertical MC



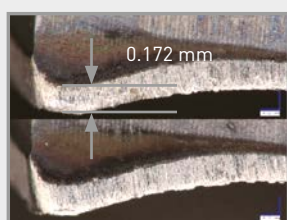
Material	Inconel 718
Tool	DSAS0600X05S060
DC (mm)	6
ap (mm)	30
Vc (m/min)	20
f (mm/rev)	0.10
Coolant	Emulsion (10 %), Internal coolant
Machine	Vertical MC



AFTER 100 HOLES



DSAS



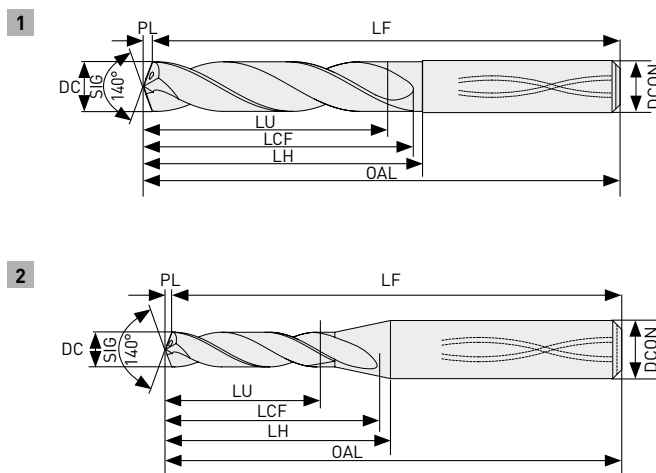
Conventional

DSAS



SOLID CARBIDE DRILL WITH INTERNAL COOLANT

S



DC=3	3<DC≤6	6<DC≤10	10<DC≤12
0	0	0	0
-0.018	-0.018	-0.022	-0.027



DC=3	3<DC≤6	6<DC≤10	10<DC≤12
0	0	0	0
-0.008	-0.008	-0.009	-0.011

Order number	DP9020	DC	DCN	L / D	OAL	LU	LCF	LH	LF	PL	Type
DSAS0300X03S060	●	3.00	6	3	70.5	9.5	21.5	23.5	70	0.5	1
DSAS0300X05S060	●	3.00	6	5	78.5	15.5	28.5	31.5	78	0.5	1
DSAS0310X03S060	●	3.10	6	3	70.6	9.9	21.6	23.6	70	0.6	1
DSAS0310X05S060	●	3.10	6	5	78.6	16.1	28.6	31.6	78	0.6	1
DSAS0318X03S060	●	3.18	6	3	70.6	10.1	21.6	23.6	70	0.6	1
DSAS0318X05S060	●	3.18	6	5	78.6	16.5	28.6	31.6	78	0.6	1
DSAS0320X03S060	●	3.20	6	3	70.6	10.2	21.6	23.6	70	0.6	1
DSAS0320X05S060	●	3.20	6	5	78.6	16.6	28.6	31.6	78	0.6	1
DSAS0326X03S060	●	3.26	6	3	70.6	10.4	21.6	23.6	70	0.6	1
DSAS0326X05S060	●	3.26	6	5	78.6	16.9	28.6	31.6	78	0.6	1
DSAS0330X03S060	●	3.30	6	3	70.6	10.5	21.6	23.6	70	0.6	1
DSAS0330X05S060	●	3.30	6	5	78.6	17.1	28.6	31.6	78	0.6	1
DSAS0340X03S060	●	3.40	6	3	70.6	10.8	21.6	23.6	70	0.6	1
DSAS0340X05S060	●	3.40	6	5	78.6	17.6	28.6	31.6	78	0.6	1
DSAS0350X03S060	●	3.50	6	3	70.6	11.1	21.6	23.6	70	0.6	1
DSAS0350X05S060	●	3.50	6	5	78.6	18.1	28.6	31.6	78	0.6	1
DSAS0357X03S060	●	3.57	6	3	70.7	11.4	22.7	23.7	70	0.7	1
DSAS0357X05S060	●	3.57	6	5	78.7	18.6	30.7	31.7	78	0.7	1
DSAS0360X03S060	●	3.60	6	3	70.7	11.5	22.7	23.7	70	0.7	1
DSAS0360X05S060	●	3.60	6	5	78.7	18.7	30.7	31.7	78	0.7	1

DSAS

Order number	DP9020	DC	DCON	L / D	OAL	LU	LCF	LH	LF	PL	Type
DSAS0370X03S060	●	3.70	6	3	70.7	11.8	22.7	23.7	70	0.7	1
DSAS0370X05S060	●	3.70	6	5	78.7	19.2	30.7	31.7	78	0.7	1
DSAS0380X03S060	●	3.80	6	3	70.7	12.1	22.7	23.7	70	0.7	1
DSAS0380X05S060	●	3.80	6	5	78.7	19.7	30.7	31.7	78	0.7	1
DSAS0390X03S060	●	3.90	6	3	70.7	12.4	22.7	23.7	70	0.7	1
DSAS0390X05S060	●	3.90	6	5	78.7	20.2	30.7	31.7	78	0.7	1
DSAS0397X03S060	●	3.97	6	3	70.7	12.6	22.7	23.7	70	0.7	1
DSAS0397X05S060	●	3.97	6	5	78.7	20.5	30.7	31.7	78	0.7	1
DSAS0400X03S060	●	4.00	6	3	70.7	12.7	22.7	23.7	70	0.7	1
DSAS0400X05S060	●	4.00	6	5	78.7	20.7	30.7	31.7	78	0.7	1
DSAS0410X03S060	●	4.10	6	3	73.7	13.0	24.7	26.7	73	0.7	1
DSAS0410X05S060	●	4.10	6	5	82.7	21.2	33.7	35.7	82	0.7	1
DSAS0420X03S060	●	4.20	6	3	73.8	13.4	24.8	26.8	73	0.8	1
DSAS0420X05S060	●	4.20	6	5	82.8	21.8	33.8	35.8	82	0.8	1
DSAS0430X03S060	●	4.30	6	3	73.8	13.7	24.8	26.8	73	0.8	1
DSAS0430X05S060	●	4.30	6	5	82.8	22.3	33.8	35.8	82	0.8	1
DSAS0437X03S060	●	4.37	6	3	73.8	13.9	24.8	26.8	73	0.8	1
DSAS0437X05S060	●	4.37	6	5	82.8	22.6	33.8	35.8	82	0.8	1
DSAS0440X03S060	●	4.40	6	3	73.8	14.0	24.8	26.8	73	0.8	1
DSAS0440X05S060	●	4.40	6	5	82.8	22.8	33.8	35.8	82	0.8	1
DSAS0450X03S060	●	4.50	6	3	73.8	14.3	24.8	26.8	73	0.8	1
DSAS0450X05S060	●	4.50	6	5	82.8	23.3	33.8	35.8	82	0.8	1
DSAS0460X03S060	●	4.60	6	3	75.8	14.6	25.8	28.8	75	0.8	1
DSAS0460X05S060	●	4.60	6	5	85.8	23.8	35.8	38.8	85	0.8	1
DSAS0470X03S060	●	4.70	6	3	75.9	15.0	25.9	28.9	75	0.9	1
DSAS0470X05S060	●	4.70	6	5	85.9	24.4	35.9	38.9	85	0.9	1
DSAS0476X03S060	●	4.76	6	3	75.9	15.2	25.9	28.9	75	0.9	1
DSAS0476X05S060	●	4.76	6	5	85.9	24.7	35.9	38.9	85	0.9	1
DSAS0480X03S060	●	4.80	6	3	75.9	15.3	25.9	28.9	75	0.9	1
DSAS0480X05S060	●	4.80	6	5	85.9	24.9	35.9	38.9	85	0.9	1
DSAS0486X03S060	●	4.86	6	3	75.9	15.5	25.9	28.9	75	0.9	1
DSAS0486X05S060	●	4.86	6	5	85.9	25.2	35.9	38.9	85	0.9	1
DSAS0490X03S060	●	4.90	6	3	75.9	15.6	25.9	28.9	75	0.9	1
DSAS0490X05S060	●	4.90	6	5	85.9	25.4	35.9	38.9	85	0.9	1
DSAS0500X03S060	●	5.00	6	3	81.9	15.9	28.9	29.9	81	0.9	2
DSAS0500X05S060	●	5.00	6	5	89.9	25.9	39.9	42.9	89	0.9	2
DSAS0510X03S060	●	5.10	6	3	81.9	16.2	28.9	29.9	81	0.9	2
DSAS0510X05S060	●	5.10	6	5	89.9	26.4	39.9	42.9	89	0.9	2
DSAS0516X03S060	●	5.16	6	3	82.0	16.5	29.0	30.0	81	1.0	2
DSAS0516X05S060	●	5.16	6	5	90.0	26.8	40.0	43.0	89	1.0	2
DSAS0520X03S060	●	5.20	6	3	82.0	16.6	29.0	30.0	81	1.0	2
DSAS0520X05S060	●	5.20	6	5	90.0	27.0	40.0	43.0	89	1.0	2
DSAS0530X03S060	●	5.30	6	3	82.0	16.9	29.0	30.0	81	1.0	2
DSAS0530X05S060	●	5.30	6	5	90.0	27.5	40.0	43.0	89	1.0	2
DSAS0540X03S060	●	5.40	6	3	82.0	17.2	29.0	30.0	81	1.0	2
DSAS0540X05S060	●	5.40	6	5	90.0	28.0	40.0	43.0	89	1.0	2
DSAS0550X03S060	●	5.50	6	3	82.0	17.5	29.0	30.0	81	1.0	2
DSAS0550X05S060	●	5.50	6	5	90.0	28.5	40.0	43.0	89	1.0	2
DSAS0556X03S060	●	5.56	6	3	82.1	17.8	31.1	31.1	81	1.1	2
DSAS0556X05S060	●	5.56	6	5	90.1	28.9	43.1	43.1	89	1.1	2

1. The coolant holes will be round in drills of Ø 5 mm or less.

DSAS

Order number	DP9020	DC	DCON	L / D	OAL	LU	LCF	LH	LF	PL	Type
DSAS0560X03S060	●	5.60	6	3	82.1	17.9	31.1	31.1	81	1.1	2
DSAS0560X05S060	●	5.60	6	5	90.1	29.1	43.1	43.1	89	1.1	2
DSAS0570X03S060	●	5.70	6	3	82.1	18.2	31.1	31.1	81	1.1	2
DSAS0570X05S060	●	5.70	6	5	90.1	29.6	43.1	43.1	89	1.1	2
DSAS0580X03S060	●	5.80	6	3	82.1	18.5	31.1	31.1	81	1.1	2
DSAS0580X05S060	●	5.80	6	5	90.1	30.1	43.1	43.1	89	1.1	2
DSAS0590X03S060	●	5.90	6	3	82.1	18.8	31.1	31.1	81	1.1	2
DSAS0590X05S060	●	5.90	6	5	90.1	30.6	43.1	43.1	89	1.1	2
DSAS0595X03S060	●	5.95	6	3	82.1	19.0	31.1	31.1	81	1.1	2
DSAS0595X05S060	●	5.95	6	5	90.1	30.9	43.1	43.1	89	1.1	2
DSAS0600X03S060	●	6.00	6	3	82.1	19.1	31.1	31.1	81	1.1	2
DSAS0600X05S060	●	6.00	6	5	90.1	31.1	43.1	43.1	89	1.1	2
DSAS0610X03S080	●	6.10	8	3	87.2	19.5	34.2	37.2	86	1.2	2
DSAS0610X05S080	●	6.10	8	5	96.2	31.7	47.2	49.2	95	1.2	2
DSAS0620X03S080	●	6.20	8	3	87.2	19.8	34.2	37.2	86	1.2	2
DSAS0620X05S080	●	6.20	8	5	96.2	32.2	47.2	49.2	95	1.2	2
DSAS0630X03S080	●	6.30	8	3	87.2	20.1	34.2	37.2	86	1.2	2
DSAS0630X05S080	●	6.30	8	5	96.2	32.7	47.2	49.2	95	1.2	2
DSAS0635X03S080	●	6.35	8	3	87.2	20.3	34.2	37.2	86	1.2	2
DSAS0635X05S080	●	6.35	8	5	96.2	33.0	47.2	49.2	95	1.2	2
DSAS0640X03S080	●	6.40	8	3	87.2	20.4	34.2	37.2	86	1.2	2
DSAS0640X05S080	●	6.40	8	5	96.2	33.2	47.2	49.2	95	1.2	2
DSAS0650X03S080	●	6.50	8	3	87.2	20.7	34.2	37.2	86	1.2	2
DSAS0650X05S080	●	6.50	8	5	96.2	33.7	47.2	49.2	95	1.2	2
DSAS0660X03S080	●	6.60	8	3	91.3	21.1	36.3	38.3	90	1.3	2
DSAS0660X05S080	●	6.60	8	5	99.3	34.3	50.3	52.3	98	1.3	2
DSAS0670X03S080	●	6.70	8	3	91.3	21.4	36.3	38.3	90	1.3	2
DSAS0670X05S080	●	6.70	8	5	99.3	34.8	50.3	52.3	98	1.3	2
DSAS0675X03S080	●	6.75	8	3	91.3	21.5	36.3	38.3	90	1.3	2
DSAS0675X05S080	●	6.75	8	5	99.3	35.0	50.3	52.3	98	1.3	2
DSAS0680X03S080	●	6.80	8	3	91.3	21.7	36.3	38.3	90	1.3	2
DSAS0680X05S080	●	6.80	8	5	99.3	35.3	50.3	52.3	98	1.3	2
DSAS0690X03S080	●	6.90	8	3	91.3	22.0	36.3	38.3	90	1.3	2
DSAS0690X05S080	●	6.90	8	5	99.3	35.8	50.3	52.3	98	1.3	2
DSAS0695X03S080	●	6.95	8	3	91.3	22.2	36.3	38.3	90	1.3	2
DSAS0695X05S080	●	6.95	8	5	99.3	36.1	50.3	52.3	98	1.3	2
DSAS0700X03S080	●	7.00	8	3	91.3	22.3	36.3	38.3	90	1.3	2
DSAS0700X05S080	●	7.00	8	5	99.3	36.3	50.3	52.3	98	1.3	2
DSAS0710X03S080	●	7.10	8	3	91.4	22.7	39.4	40.4	90	1.4	2
DSAS0710X05S080	●	7.10	8	5	104.4	36.9	54.4	57.4	103	1.4	2
DSAS0714X03S080	●	7.14	8	3	91.4	22.8	39.4	40.4	90	1.4	2
DSAS0714X05S080	●	7.14	8	5	104.4	37.1	54.4	57.4	103	1.4	2
DSAS0720X03S080	●	7.20	8	3	91.4	23.0	39.4	40.4	90	1.4	2
DSAS0720X05S080	●	7.20	8	5	104.4	37.4	54.4	57.4	103	1.4	2
DSAS0730X03S080	●	7.30	8	3	91.4	23.3	39.4	40.4	90	1.4	2
DSAS0730X05S080	●	7.30	8	5	104.4	37.9	54.4	57.4	103	1.4	2
DSAS0740X03S080	●	7.40	8	3	91.4	23.6	39.4	40.4	90	1.4	2
DSAS0740X05S080	●	7.40	8	5	104.4	38.4	54.4	57.4	103	1.4	2
DSAS0750X03S080	●	7.50	8	3	91.4	23.9	39.4	40.4	90	1.4	2

1. The coolant holes will be round in drills of $\varnothing 5$ mm or less.



DSAS

Order number	DP9020	DC	DCON	L / D	OAL	LU	LCF	LH	LF	PL	Type
DSAS0750X05S080	●	7.50	8	5	104.4	38.9	54.4	57.4	103	1.4	2
DSAS0754X03S080	●	7.54	8	3	91.5	24.1	41.5	41.5	90	1.5	2
DSAS0754X05S080	●	7.54	8	5	104.5	39.2	57.5	57.5	103	1.5	2
DSAS0760X03S080	●	7.60	8	3	91.5	24.3	41.5	41.5	90	1.5	2
DSAS0760X05S080	●	7.60	8	5	104.5	39.5	57.5	57.5	103	1.5	2
DSAS0770X03S080	●	7.70	8	3	91.5	24.6	41.5	41.5	90	1.5	2
DSAS0770X05S080	●	7.70	8	5	104.5	40.0	57.5	57.5	103	1.5	2
DSAS0780X03S080	●	7.80	8	3	91.5	24.9	41.5	41.5	90	1.5	2
DSAS0780X05S080	●	7.80	8	5	104.5	40.5	57.5	57.5	103	1.5	2
DSAS0790X03S080	●	7.90	8	3	91.5	25.2	41.5	41.5	90	1.5	2
DSAS0790X05S080	●	7.90	8	5	104.5	41.0	57.5	57.5	103	1.5	2
DSAS0794X03S080	●	7.94	8	3	91.5	25.3	41.5	41.5	90	1.5	2
DSAS0794X05S080	●	7.94	8	5	104.5	41.2	57.5	57.5	103	1.5	2
DSAS0800X03S080	●	8.00	8	3	91.5	25.5	41.5	41.5	90	1.5	2
DSAS0800X05S080	●	8.00	8	5	104.5	41.5	57.5	57.5	103	1.5	2
DSAS0810X03S100	●	8.10	10	3	97.5	25.8	44.5	47.5	96	1.5	2
DSAS0810X05S100	●	8.10	10	5	114.5	42.0	61.5	63.5	113	1.5	2
DSAS0820X03S100	●	8.20	10	3	97.5	26.1	44.5	47.5	96	1.5	2
DSAS0820X05S100	●	8.20	10	5	114.5	42.5	61.5	63.5	113	1.5	2
DSAS0830X03S100	●	8.30	10	3	97.5	26.4	44.5	47.5	96	1.5	2
DSAS0830X05S100	●	8.30	10	5	114.5	43.0	61.5	63.5	113	1.5	2
DSAS0833X03S100	●	8.33	10	3	97.5	26.5	44.5	47.5	96	1.5	2
DSAS0833X05S100	●	8.33	10	5	114.5	43.2	61.5	63.5	113	1.5	2
DSAS0840X03S100	●	8.40	10	3	97.5	26.7	44.5	47.5	96	1.5	2
DSAS0840X05S100	●	8.40	10	5	114.5	43.5	61.5	63.5	113	1.5	2
DSAS0850X03S100	●	8.50	10	3	97.5	27.0	44.5	47.5	96	1.5	2
DSAS0850X05S100	●	8.50	10	5	114.5	44.0	61.5	63.5	113	1.5	2
DSAS0860X03S100	●	8.60	10	3	102.6	27.4	46.6	48.6	101	1.6	2
DSAS0860X05S100	●	8.60	10	5	117.6	44.6	64.6	66.6	116	1.6	2
DSAS0870X03S100	●	8.70	10	3	102.6	27.7	46.6	48.6	101	1.6	2
DSAS0870X05S100	●	8.70	10	5	117.6	45.1	64.6	66.6	116	1.6	2
DSAS0873X03S100	●	8.73	10	3	102.6	27.8	46.6	48.6	101	1.6	2
DSAS0873X05S100	●	8.73	10	5	117.6	45.3	64.6	66.6	116	1.6	2
DSAS0880X03S100	●	8.80	10	3	102.6	28.0	46.6	48.6	101	1.6	2
DSAS0880X05S100	●	8.80	10	5	117.6	45.6	64.6	66.6	116	1.6	2
DSAS0890X03S100	●	8.90	10	3	102.6	28.3	46.6	48.6	101	1.6	2
DSAS0890X05S100	●	8.90	10	5	117.6	46.1	64.6	66.6	116	1.6	2
DSAS0900X03S100	●	9.00	10	3	102.6	28.6	46.6	48.6	101	1.6	2
DSAS0900X05S100	●	9.00	10	5	117.6	46.6	64.6	66.6	116	1.6	2
DSAS0910X03S100	●	9.10	10	3	102.8	29.1	49.8	50.8	101	1.8	2
DSAS0910X05S100	●	9.10	10	5	122.8	47.3	68.8	71.8	121	1.8	2
DSAS0920X03S100	●	9.20	10	3	102.8	29.4	49.8	50.8	101	1.8	2
DSAS0920X05S100	●	9.20	10	5	122.8	47.8	68.8	71.8	121	1.8	2
DSAS0930X03S100	●	9.30	10	3	102.8	29.7	49.8	50.8	101	1.8	2
DSAS0930X05S100	●	9.30	10	5	122.8	48.3	68.8	71.8	121	1.8	2
DSAS0940X03S100	●	9.40	10	3	102.8	30.0	49.8	50.8	101	1.8	2
DSAS0940X05S100	●	9.40	10	5	122.8	48.8	68.8	71.8	121	1.8	2
DSAS0950X03S100	●	9.50	10	3	102.8	30.3	49.8	50.8	101	1.8	2
DSAS0950X05S100	●	9.50	10	5	122.8	49.3	68.8	71.8	121	1.8	2
DSAS0953X03S100	●	9.53	10	3	102.8	30.4	49.8	50.8	101	1.8	2

1. The coolant holes will be round in drills of Ø 5 mm or less.

DSAS

Order number	DP9020	DC	DCON	L / D	OAL	LU	LCF	LH	LF	PL	Type
DSAS0953X05S100	●	9.53	10	5	122.8	49.4	68.8	71.8	121	1.8	2
DSAS0960X03S100	●	9.60	10	3	102.8	30.6	49.8	50.8	101	1.8	2
DSAS0960X05S100	●	9.60	10	5	122.8	49.8	68.8	71.8	121	1.8	2
DSAS0970X03S100	●	9.70	10	3	102.8	30.9	49.8	50.8	101	1.8	2
DSAS0970X05S100	●	9.70	10	5	122.8	50.3	68.8	71.8	121	1.8	2
DSAS0980X03S100	●	9.80	10	3	102.8	31.2	51.8	51.8	101	1.8	2
DSAS0980X05S100	●	9.80	10	5	122.8	50.8	71.8	71.8	121	1.8	2
DSAS0990X03S100	●	9.90	10	3	102.8	31.5	51.9	51.8	101	1.8	2
DSAS0990X05S100	●	9.90	10	5	122.8	51.3	71.8	71.8	121	1.8	2
DSAS0992X03S100	●	9.92	10	3	102.8	31.6	51.8	51.8	101	1.8	2
DSAS0992X05S100	●	9.92	10	5	122.8	51.4	71.8	71.8	121	1.8	2
DSAS1000X03S100	●	10.00	10	3	102.8	31.8	51.8	51.8	101	1.8	2
DSAS1000X05S100	●	10.00	10	5	122.8	51.8	71.8	71.8	121	1.8	2
DSAS1010X03S120	●	10.10	12	3	112.9	32.2	54.9	57.9	111	1.9	2
DSAS1010X05S120	●	10.10	12	5	135.9	52.4	75.9	79.9	134	1.9	2
DSAS1020X03S120	●	10.20	12	3	112.9	32.5	54.9	57.9	111	1.9	2
DSAS1020X05S120	●	10.20	12	5	135.9	52.9	75.9	79.9	134	1.9	2
DSAS1030X03S120	●	10.30	12	3	112.9	32.8	54.9	57.9	111	1.9	2
DSAS1030X05S120	●	10.30	12	5	135.9	53.4	75.9	79.9	134	1.9	2
DSAS1032X03S120	●	10.32	12	3	112.9	32.9	54.9	57.9	111	1.9	2
DSAS1032X05S120	●	10.32	12	5	135.9	53.5	75.9	79.9	134	1.9	2
DSAS1040X03S120	●	10.40	12	3	112.9	33.1	54.9	57.9	111	1.9	2
DSAS1040X05S120	●	10.40	12	5	135.9	53.9	75.9	79.9	134	1.9	2
DSAS1050X03S120	●	10.50	12	3	112.9	33.4	54.9	57.9	111	1.9	2
DSAS1050X05S120	●	10.50	12	5	135.9	54.4	75.9	79.9	134	1.9	2
DSAS1060X03S120	●	10.60	12	3	112.9	33.7	54.9	57.9	111	1.9	2
DSAS1060X05S120	●	10.60	12	5	135.9	54.9	75.9	79.9	134	1.9	2
DSAS1070X03S120	●	10.70	12	3	112.9	34.0	54.9	57.9	111	1.9	2
DSAS1070X05S120	●	10.70	12	5	135.9	55.4	75.9	79.9	134	1.9	2
DSAS1072X03S120	●	10.72	12	3	118.0	34.1	57.0	59.0	116	2.0	2
DSAS1072X05S120	●	10.72	12	5	142.0	55.6	79.0	80.0	140	2.0	2
DSAS1080X03S120	●	10.80	12	3	118.0	34.4	57.0	59.0	116	2.0	2
DSAS1080X05S120	●	10.80	12	5	142.0	56.0	79.0	80.0	140	2.0	2
DSAS1090X03S120	●	10.90	12	3	118.0	34.7	57.0	59.0	116	2.0	2
DSAS1090X05S120	●	10.90	12	5	142.0	56.5	79.0	80.0	140	2.0	2
DSAS1100X03S120	●	11.00	12	3	118.0	35.0	57.0	59.0	116	2.0	2
DSAS1100X05S120	●	11.00	12	5	142.0	57.0	79.0	80.0	140	2.0	2
DSAS1110X03S120	●	11.10	12	3	118.1	35.4	60.1	61.1	116	2.1	2
DSAS1110X05S120	●	11.10	12	5	142.1	57.6	83.1	86.1	140	2.1	2
DSAS1111X03S120	●	11.11	12	3	118.1	35.4	60.1	61.1	116	2.1	2
DSAS1111X05S120	●	11.11	12	5	142.1	57.7	83.1	86.1	140	2.1	2
DSAS1120X03S120	●	11.20	12	3	118.1	35.7	60.1	61.1	116	2.1	2
DSAS1120X05S120	●	11.20	12	5	142.1	58.1	83.1	86.1	140	2.1	2
DSAS1130X03S120	●	11.30	12	3	118.1	36.0	60.1	61.1	116	2.1	2
DSAS1130X05S120	●	11.30	12	5	142.1	58.6	83.1	86.1	140	2.1	2
DSAS1140X03S120	●	11.40	12	3	118.1	36.3	60.1	61.1	116	2.1	2
DSAS1140X05S120	●	11.40	12	5	142.1	59.1	83.1	86.1	140	2.1	2
DSAS1150X03S120	●	11.50	12	3	118.1	36.6	60.1	61.1	116	2.1	2
DSAS1150X05S120	●	11.50	12	5	142.1	59.6	83.1	86.1	140	2.1	2
DSAS1151X03S120	●	11.51	12	3	118.2	36.7	62.2	62.2	116	2.2	2

1. The coolant holes will be round in drills of Ø 5 mm or less.



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

DSAS

Order number	DP9020	DC	DCON	L / D	OAL	LU	LCF	LH	LF	PL	Type
DSAS1151X05S120	●	11.51	12	5	142.2	59.7	86.2	86.2	140	2.2	2
DSAS1160X03S120	●	11.60	12	3	118.2	37.0	62.2	62.2	116	2.2	2
DSAS1160X05S120	●	11.60	12	5	142.2	60.2	86.2	86.2	140	2.2	2
DSAS1170X03S120	●	11.70	12	3	118.2	37.3	62.2	62.2	116	2.2	2
DSAS1170X05S120	●	11.70	12	5	142.2	60.7	86.2	86.2	140	2.2	2
DSAS1180X03S120	●	11.80	12	3	118.2	37.6	62.2	62.2	116	2.2	2
DSAS1180X05S120	●	11.80	12	5	142.2	61.2	86.2	86.2	140	2.2	2
DSAS1190X03S120	●	11.90	12	3	118.2	37.9	62.2	62.2	116	2.2	2
DSAS1190X05S120	●	11.90	12	5	142.2	61.7	86.2	86.2	140	2.2	2
DSAS1200X03S120	●	12.00	12	3	118.2	38.2	62.2	62.2	116	2.2	2
DSAS1200X05S120	●	12.00	12	5	142.2	62.2	86.2	86.2	140	2.2	2

1. The coolant holes will be round in drills of Ø 5 mm or less.

DSAS

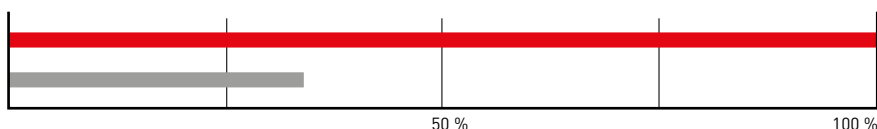
RECOMMENDED CUTTING CONDITIONS

Material	DC	L / D	Vc	n	f
S	3	≤5	10	1000	0.06 [0.04–0.1]
	4		10	790	0.06 [0.04–0.1]
	5		12	760	0.08 [0.06–0.12]
	6		15	790	0.1 [0.08–0.15]
	8		15	590	0.1 [0.08–0.15]
	10		18	570	0.1 [0.08–0.15]
	12		20	530	0.12 [0.08–0.15]
	3	≤5	40	4200	0.08 [0.06–0.12]
	4		40	3100	0.1 [0.08–0.16]
	5		40	2500	0.12 [0.08–0.2]
	6		40	2100	0.14 [0.1 –0.2]
	8		42	1600	0.18 [0.15–0.25]
	10		42	1300	0.22 [0.18–0.28]
	12		45	1100	0.24 [0.2 –0.3]

1. Through spindle high pressure coolant is recommended.
2. Emulsion coolant is recommended.
3. When using non water-soluble coolant reduce the cutting speed by 10-20 %.
4. When drilling using an external coolant system, peck / step feed drilling is recommended at every DC x 0.5 depth to promote the breaking of chips.

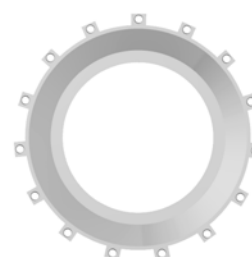
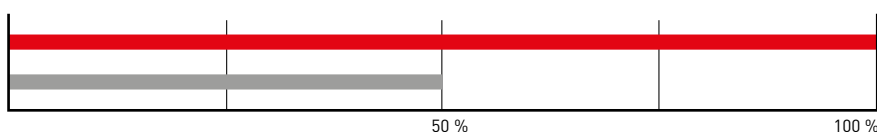
APPLICATION EXAMPLES

Tool	DSAS0800X03S080
Workpiece material	Jet engine casing – Inconel 718
Vc (m/min)	15
f (mm/rev)	0.10
ap (mm)	5
Coolant	Emulsion internal
Result	12 holes (continued drilling still possible)

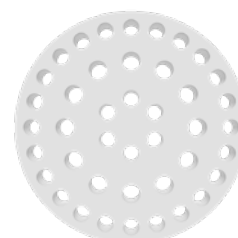
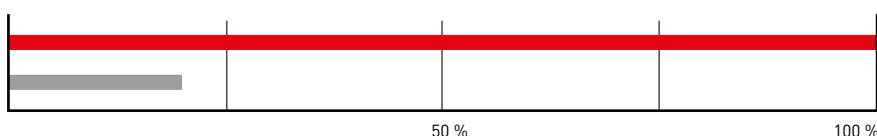


DSAS drill achieved more than 3 times longer tool life and displayed stable drilling with good hole accuracy.

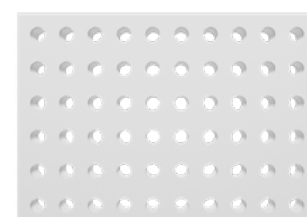
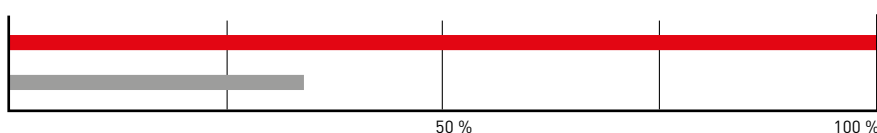
Tool	DSAS0560X03S060
Workpiece material	Inner Seal – HS188
Vc (m/min)	15
f (mm/rev)	0.035
ap (mm)	5
Coolant	Emulsion internal
Result	64 holes (further drilling still possible)



Tool	DSAS0800X03S080
Workpiece material	K-Monel
Vc (m/min)	26
f (mm/rev)	0.1
ap (mm)	32
Coolant	Emulsion internal
Result	50 holes



Tool	DSAS0580X03S060
Workpiece material	Rene41
Vc (m/min)	23.6
f (mm/rev)	0.05
ap (mm)	12
Coolant	Emulsion internal
Result	60 holes



Hole tolerance was maintained.

MEMO

EUROPEAN SALES COMPANIES

GERMANY

MITSUBISHI MATERIALS TOOLS EUROPE GMBH
Comeniusstr. 2 . 40670 Meerbusch
Phone +49 2159 91890 . Fax +49 2159 918966
Email admin@mmchg.de

UK Office

MMC HARDMETAL UK LTD
1 Centurion Court, Centurion Way
Tamworth, B77 5PN
Phone +44 1827 312312
Email sales@mitsubishicarbide.co.uk

UK Deliveries / Returns

Unit 4 B5K Business Park, Quartz Close
Tamworth, B77 4GR

SPAIN

MITSUBISHI MATERIALS ESPAÑA, S.A.
Calle Emperador 2 . 46136 Museros / Valencia
Phone +34 96 1441711
Email comercial@mmevalencia.es

FRANCE

MMC METAL FRANCE S.A.R.L.
6, Rue Jacques Monod . 91400 Orsay
Phone +33 1 69 35 53 53 . Fax +33 1 69 35 53 50
Email mmfsales@mmc-metal-france.fr

POLAND

MMC HARDMETAL POLAND SP. Z O.O
Al. Armii Krajowej 61 . 50-541 Wrocław
Phone +48 71335 1620 . Fax +48 71335 1621
Email sales@mitsubishicarbide.com.pl

ITALY

MMC ITALIA S.R.L.
Viale Certosa 144 . 20156 Milano
Phone +39 0293 77031 . Fax +39 0293 589093
Email info@mmc-italia.it

TURKEY

MITSUBISHI MATERIALS TOOLS EUROPE GMBH ALMANYA İZMİR MERKEZ ŞUBESİ
Adalet Mahallesi Anadolu Caddesi No: 41-1 . 15001 35530 Bayraklı / İzmir
Phone +90 232 5015000 . Fax +90 232 5015007
Email info@mmchg.com.tr

www.mmc-carbide.com

DISTRIBUTED BY:



B256E 

Published by:  MITSUBISHI MATERIALS TOOLS EUROPE | 2021.10