QUADTWIST™

Insert Sizes:
SOMT 05...PS
SOMT 06...PS
SOMT 07...PS
SOMT 08...PS
SOMT 09...PS
SOMT 11...PS
SOMT 13...PS
SOMT 15...PS

Drill Diameters:
0.5630" - 2.000"
(14.3mm - 50.8mm)

Drill Lengths:
2xD
3xD
4xD
5xD

Grades:
IN2505

NEW PRODUCT ANNOUNCEMENT 2019

NEW PS Chip Breaker Added to QuadTwist Insert Offering

Ingersoll Cutting Tools is proud to announce the release of the PS chip breaker for the QuadTwist product line for drilling of mild steel.

PS Chip Breaker Features and Benefits:

- Suitable for mild steel & low carbon steel machining due to its improved chip breaking capability
- Mild steel application range now expanded

QuadTwist current 'SK' chip breaker is a multi-purpose insert that works very well in a wide variety of materials. Ingersoll has expanded QuadTwist's capabilities by now introducing the new PS chip breaker that is specifically designed for the machining of mild steel applications.

QuadTwist currently utilizes several type of chip breakers for material specific applications:

SK-	General Purpose
NG-	Cast Iron
HP-	Aluminum


SK


NG


HP

Member IMC Group Ingersoll Cutting Tools

CASE STUDY 1

Machine		Vertical machining center (Spindle-CAT50)		
Coolant		Internal (145 psi)		
Workpiece Material		Low carbon steel (1020)		
Drill Body		QR0191076N5R02		
Inserts		**SOMT 060204 PS IN2505** **SOMT 060204 SK IN2505**		
Depth of Cut	ap (inch)	2.00"		
Cutting Speed	V (sfm)	590	656	721
Feed Rate	f (ipr)	.004"		

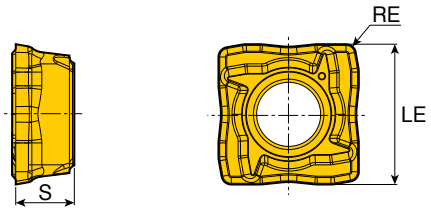
PS			
SK			

CASE STUDY 2

Machine		Vertical machining center (Spindle-CAT50)		
Coolant		Internal (145 psi)		
Workpiece Material		Low carbon steel (1115)		
Drill Body		QR0222089N5R02		
Inserts		**SOMT 070306 PS IN2505** **SOMT 070306 SK IN2505**		
Depth of Cut	ap (inch)	2.00"		
Cutting Speed	V (sfm)	590	656	721
Feed Rate	f (ipr)	.004"		

PS			
SK			

SOMT...PS Inserts



Part Number	LE Cutting Edge Effective Length	S Insert Thickness	RE Corner Radius	PVD coated
				IN2505
SOMT 050204 PS	0.193	0.094	0.016	●
SOMT 060204 PS	0.224	0.094	0.016	●
SOMT 070306 PS	0.268	0.110	0.024	●
SOMT 08T306 PS	0.311	0.156	0.024	●
SOMT 09T308 PS	0.362	0.156	0.031	●
SOMT 11T308 PS	0.433	0.156	0.031	●
SOMT 130408 PS	0.504	0.173	0.031	●
SOMT 150510 PS	0.590	0.189	0.039	●

Note: See E-Cat for inch and metric drill bodies.

●: Standard items

2xD, 3xD, 4xD, 5XD RECOMMENDED CUTTING CONDITIONS

ISO	Material	Condition	Tensile Strength Rm (N/mm²)	Hardness (HB)	Matl No.	Cutting Speed Vc (SFM)	Feed vs. Drill Diameter In/Rev Drill Length 2, 3, 4, 5xD			
							SOMT 05 Ø.551-.645 (inch)	SOMT 06 Ø.649-.763 (inch)	SOMT 07 Ø.767-.882 (inch)	SOMT 08 Ø.886-1.039 (inch)
P	Non-alloy steel <0.25% C & cast steel, > = 0.25% C free cutting <0.55% C steel > = 0.55% C	Annealed	420	125	1	700 -1200	.0015-.003	.0015-.003	.0025-.004	.0025-.004
		Annealed	650	190	2	600 - 950	.0025-.004	.0025-.004	.0025-.005	.0025-.005
		Quenched & Tempered	850	250	3	450 - 800	.0025-.005	.0025-.005	.0025-.006	.0025-.006
		Annealed	750	220	4	450 - 800	.0025-.005	.0025-.005	.0025-.006	.0025-.006
		Quenched & Tempered	1000	300	5	450 - 800	.0025-.005	.0025-.005	.0025-.006	.0025-.006
	Low alloy steel & cast steek (less than 5% alloying elements)	Annealed	600	200	6	450 - 800	.0025-.005	.0025-.005	.0025-.006	.0025-.006
		Quenched & Tempered	930	275	7	325 - 600	.0025-.005	.0025-.005	.0025-.005	.0025-.005
			1000	300	8	325 - 600	.0025-.005	.0025-.005	.0025-.005	.0025-.005
			1200	350	9	325 - 600	.0025-.005	.0025-.005	.0025-.005	.0025-.005
	High alloy steel, cast steel, & tool steel	Annealed	680	200	10	450 - 675	.0025-.004	.0025-.005	.0025-.005	.0025-.005
		Quenched & Tempered	1100	325	11	325 - 525	.0025-.004	.0025-.005	.0025-.005	.0025-.005

ISO	Material	Condition	Tensile Strength Rm (N/mm²)	Hardness (HB)	Matl No.	Cutting Speed Vc (SFM)	Feed vs. Drill Diameter In/Rev Drill Length 2, 3, 4, 5xD			
							SOMT 09 Ø 1.063-1.220 (inch)	SOMT 11 Ø 1.250-1.460 (inch)	SOMT 13 Ø 1.437-1.687 (inch)	SOMT 15 Ø 1.719-2.000 (inch)
P	Non-alloy steel <0.25% C & cast steel, > = 0.25% C free cutting <0.55% C steel > = 0.55% C	Annealed	420	125	1	700 -1200	.0025-.005	.0025-.005	.0025-.005	.0025-.005
		Annealed	650	190	2	600 - 950	.0025-.005	.0025-.005	.0025-.005	.0025-.005
		Quenched & Tempered	850	250	3	450 - 800	.0025-.006	.0025-.006	.0025-.006	.0025-.006
		Annealed	750	220	4	450 - 800	.0025-.006	.0025-.006	.0025-.006	.0025-.006
		Quenched & Tempered	1000	300	5	450 - 800	.0025-.006	.0025-.006	.0025-.006	.0025-.006
	Low alloy steel & cast steek (less than 5% alloying elements)	Annealed	600	200	6	450 - 800	.0025-.006	.0025-.006	.0025-.006	.0025-.006
		Quenched & Tempered	930	275	7	325 - 600	.0025-.005	.0025-.005	.0025-.005	.0025-.005
			1000	300	8	325 - 600	.0025-.005	.0025-.005	.0025-.005	.0025-.005
			1200	350	9	325 - 600	.0025-.005	.0025-.005	.0025-.005	.0025-.005
	High alloy steel, cast steel, & tool steel	Annealed	680	200	10	450 - 675	.0025-.005	.0025-.005	.0025-.005	.0025-.005
		Quenched & Tempered	1100	325	11	325 - 525	.0025-.005	.0025-.005	.0025-.005	.0025-.005