OCTO•PLUS™

DOUBLE YOUR OCTO STYLE GEOMETRY FROM 8 TO 16 CUTTING EDGES!

Diameter Range:
1.50-12.00"
40.00-315.00mm

Depth of Cut:
Octo+05: .12", 3.00mm
Octo+09: .20", 5.00mm

Hand:
RH & LH

Cutter Series:
ON5H / ON6H / OP1N / OP5N / OP6N

Insert Series:
ONCU05, ONCQ09 & ONCU09

Materials:
Aluminum, Iron, Steel, Stainless Steel, Hi-Temps & Titanium

Features and Benefits

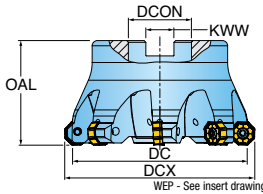
- 2-Side-Technology applied to octo shaped inserts for a cost-per-edge economy benefit
- Same insert fits RH & LH cutter bodies
- Same insert fits screw-held and wedge-held cutter bodies
- Carbide and SiN insert grade options for iron applications
- Faceted corner and anti-notch geometries to diffuse failure modes common to iron
- 32-63 Ra surface finishes when using integrated wiper of multi-purpose inserts
- 20-40 Ra surface finishes when using wiper insert in one or two pockets
- Cutter bodies ported with coolant

Member IMC Group
Ingersoll Cutting Tools

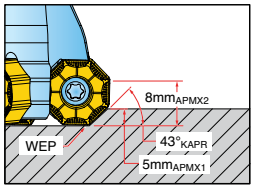
5MM SERIES ON5H, ON6H

43° FACE MILL

Facing | Lead Angle | Chamfering | Coolant



WEP - See insert drawing for wiper options.



INCH

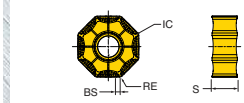
Part Number	DC Cutting Dia.	DCX Cutting Dia. Max.	OAL Overall Length	ZEFF Effective Teeth	DCON Bore Diameter	KWW Keyway	CSP Coolant
ON6H-15R01	1.500	1.83	1.570	4	0.500	0.250	Yes
ON5H-20R01	2.000	2.33	1.570	6	0.750	0.312	Yes
ON6H-20R01	2.000	2.33	1.570	4	0.750	0.312	Yes
ON6H-25R01	2.500	2.83	1.570	6	0.750	0.312	Yes
ON5H-30R01	3.000	3.33	1.750	10	1.000	0.375	Yes
ON6H-30R01	3.000	3.33	1.750	7	1.000	0.375	Yes
ON5H-40R01	4.000	4.33	2.375	12	1.500	0.625	Yes
ON6H-40R01	4.000	4.33	2.375	8	1.500	0.625	Yes
ON6H-50R01	5.000	5.33	2.375	10	1.500	0.625	Yes
ON5H-60R01	6.000	6.33	2.375	18	1.500	0.625	No
ON6H-60R01	6.000	6.33	2.375	12	1.500	0.625	No

METRIC

Part Number	DC Cutting Dia.	DCX Cutting Dia. Max.	OAL Overall Length	ZEFF Effective Teeth	DCON Bore Diameter	KWW Keyway	CSP Coolant
ON6H040R00	40.00 mm	48.3 mm	40.00 mm	4	16.000 mm	8.40 mm	Yes
ON5H050R00	50.00 mm	58.3 mm	40.00 mm	6	22.000 mm	10.40 mm	Yes
ON6H050R00	50.00 mm	58.3 mm	40.00 mm	4	22.000 mm	10.40 mm	Yes
ON5H063R00	63.00 mm	71.3 mm	40.00 mm	8	22.000 mm	10.40 mm	Yes
ON6H063R00	63.00 mm	71.3 mm	40.00 mm	6	22.000 mm	10.40 mm	Yes
ON5H080R00	80.00 mm	88.3 mm	50.00 mm	10	27.000 mm	12.40 mm	Yes
ON6H080R00	80.00 mm	88.3 mm	50.00 mm	7	27.000 mm	12.40 mm	Yes
ON5H100R00	100.00 mm	108.3 mm	55.00 mm	12	32.000 mm	14.40 mm	Yes
ON6H100R00	100.00 mm	108.3 mm	55.00 mm	8	32.000 mm	14.40 mm	Yes
ON5H125R00	125.00 mm	133.3 mm	63.00 mm	16	40.000 mm	16.40 mm	Yes
ON6H125R00	125.00 mm	133.3 mm	63.00 mm	10	40.000 mm	16.40 mm	Yes
ON5H160R00	160.00 mm	168.3 mm	63.00 mm	20	40.000 mm	16.00 mm	No
ON6H160R00	160.00 mm	168.3 mm	63.00 mm	12	40.000 mm	16.00 mm	No

5MM INSERTS

ONCU05



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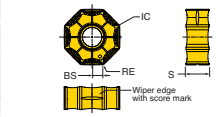
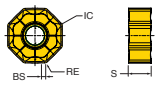


ONCU05_ANN



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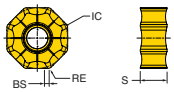

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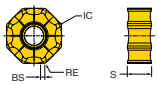
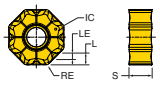


ONCU05_TN



Part Number	Application	RE Corner Radius	BS Wiper Length	IC Inscribed Circle Dia.	S Thickness (To Cutting Edge)	NOI Number of Indexes	IH Insert Hand	Grade	IN10K	IN2005	IN2010	IN2036	IN2504	IN2505	IN4010	IN4030	IN6515	IN6537	IN70N
ONCU0505ANEN	Keen Edge	0.031 R	0.028	0.521	0.230	16	Neutral				•	•	•	•	•	•			
ONCU0505ANFN-P	Grd/Pol for Al	0.031 R	0.028	0.521	0.230	16	Neutral		•										
ONCU0505ANN	SiN for Iron	0.031 R	0.028	0.521	0.230	16	Neutral												•
ONCU0505ANTN-HR	Multi-Purpose	0.031 R	0.028	0.521	0.216	16	Neutral			•		•	•	•		•		•	
ONCU0505ANTN-W	Wiper	0.031 R	0.095	0.521	0.217	4	Neutral							•					
ONCU050520TN	Anti-Notch	0.078 R	-	0.522	0.213	16	Neutral							•	•		•		

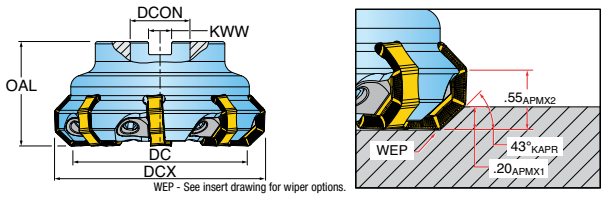
5MM HARDWARE

	Insert Screw	Driver Handle	Driver Blade (Metric)	Retention Bolt	Optional Coolant Bolt	Torque Driver Handle	Driver Blade (Imperial)	Torque Adapter Unit
ON6H-15R01	SM40-100-10	DS-A00T	DS-T156B	SD-04-86	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON5H-20R01	SM40-100-10	DS-A00T	DS-T156B	SD-06-46	SD-06-89	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON6H-20R01	SM40-100-10	DS-A00T	DS-T156B	SD-06-46	SD-06-89	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON6H-25R01	SM40-100-10	DS-A00T	DS-T156B	SD-06-46	SD-06-89	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON5H-30R01	SM40-100-10	DS-A00T	DS-T156B	SD-08-46	SD-08-92	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON6H-30R01	SM40-100-10	DS-A00T	DS-T156B	SD-08-46	SD-08-92	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON5H-40R01	SM40-100-10	DS-A00T	DS-T156B	SD-12-82	SD-12-99	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON6H-40R01	SM40-100-10	DS-A00T	DS-T156B	SD-12-82	SD-12-99	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON6H-50R01	SM40-100-10	DS-A00T	DS-T156B	SD-12-82	SD-12-99	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON5H-60R01	SM40-100-10	DS-A00T	DS-T156B	-	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON6H-60R01	SM40-100-10	DS-A00T	DS-T156B	-	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON6H040R00	SM40-100-10	DS-A00T	DS-A00T	ISO4762M8X25-12.9	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON5H050R00	SM40-100-10	DS-A00T	DS-A00T	ISO4762M10X25-12.9	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON6H050R00	SM40-100-10	DS-A00T	DS-A00T	ISO4762M10X25-12.9	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON5H063R00	SM40-100-10	DS-A00T	DS-A00T	ISO4762M10X25-12.9	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON6H063R00	SM40-100-10	DS-A00T	DS-A00T	ISO4762M10X25-12.9	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON5H080R00	SM40-100-10	DS-A00T	DS-A00T	ISO4762M12X35-12.9	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON6H080R00	SM40-100-10	DS-A00T	DS-A00T	ISO4762M12X35-12.9	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON5H100R00	SM40-100-10	DS-A00T	DS-A00T	ISO4762M16X30-12.9	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON6H100R00	SM40-100-10	DS-A00T	DS-A00T	ISO4762M16X30-12.9	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON5H125R00	SM40-100-10	DS-A00T	DS-A00T	ISO4762M20X40-12.9	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON6H125R00	SM40-100-10	DS-A00T	DS-A00T	ISO4762M20X40-12.9	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON5H160R00	SM40-100-10	DS-A00T	DS-A00T	ISO4762M20X40-12.9	-	DS-A00-.25-T	DS-T15B1	DT-35-.25
ON6H160R00	SM40-100-10	DS-A00T	DS-A00T	ISO4762M20X40-12.9	-	DS-A00-.25-T	DS-T15B1	DT-35-.25

9MM SERIES OP1N

43° FACE MILL WITH WEDGE-HELD INSERTS

Facing | Lead Angle | Chamfering



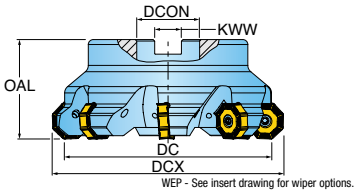
WEP - See insert drawing for wiper options.

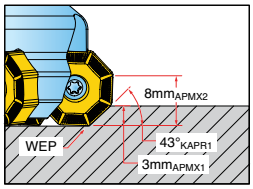
INCH

Part Number	DC Cutting Dia.	DCX Cutting Dia. Max.	OAL Overall Length	ZEFF Effective Teeth	DCON Bore Diameter	KWW Keyway	DBC Bolt Circle	HAND Hand
OP1N-30R01	3.000	3.53	1.750	8	1.000	0.375	NA	Right
OP1N-40R01	4.000	4.53	2.375	12	1.500	0.625	NA	Right
OP1N-50R01	5.000	5.53	2.375	15	1.500	0.625	NA	Right
OP1N-60R01	6.000	6.53	2.375	19	1.500	0.625	NA	Right
OP1N-80L01	8.000	8.53	2.375	24	2.500	1.000	4.00	Left
OP1N-80R01	8.000	8.53	2.375	24	2.500	1.000	4.00	Right
OP1N-10L01	10.000	10.53	2.375	30	2.500	1.000	4.00	Left
OP1N-10R01	10.000	10.53	2.375	30	2.500	1.000	4.00	Right
OP1N-12L01	12.000	12.53	2.375	38	2.500	1.000	4.00, 7.00	Left
OP1N-12R01	12.000	12.53	2.375	38	2.500	1.000	4.00, 7.00	Right

9MM SERIES OP5N, OP6N

43° FACE MILL





INCH

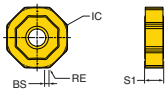
Part Number	DC Cutting Dia.	DCX Cutting Dia. Max.	OAL Overall Length	ZEFF Effective Teeth	DCON Bore Diameter	KWW Keyway	DBC Bolt Circle	CSP Coolant
OP6N-25R01	2.500	3.04	1.570	5	0.750	0.312	NA	Yes
OP6N-30R01	3.000	3.54	1.750	6	1.000	0.375	NA	Yes
OP6N-40R01	4.000	4.54	2.375	7	1.500	0.625	NA	Yes
OP6N-50R01	5.000	5.54	2.375	8	1.500	0.625	NA	Yes
OP6N-60R01	6.000	6.54	2.375	10	1.500	0.625	NA	No
OP6N-80R01	8.000	8.54	2.375	12	2.500	1.000	4.00	No
OP6N-10R01	10.000	10.54	2.375	14	2.500	1.000	4.00	No

METRIC

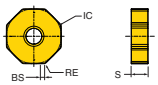
Part Number	DC Cutting Dia.	DCX Cutting Dia. Max.	OAL Overall Length	ZEFF Effective Teeth	BD Body Diameter	DCON Bore Diameter	KWW Keyway	DBC Bolt Circle	CSP Coolant
OP6N100R00	100.00 mm	113.6 mm	55.00 mm	7	85.0 mm	32.000 mm	14.40 mm	NA	Yes
OP5N125R00	125.00 mm	138.6 mm	63.00 mm	12	100.0 mm	40.000 mm	16.40 mm	NA	Yes
OP6N125R00	125.00 mm	138.6 mm	63.00 mm	8	100.0 mm	40.000 mm	16.40 mm	NA	Yes
OP6N160R00	160.00 mm	173.6 mm	63.00 mm	10	130.0 mm	40.000 mm	16.40 mm	66.7 mm	No
OP5N200R00	200.00 mm	213.6 mm	63.00 mm	18	160.0 mm	60.000 mm	25.70 mm	101.6 mm	No
OP5N250R00	250.00 mm	263.4 mm	63.00 mm	22	190.0 mm	60.000 mm	25.70 mm	101.6 mm	No
OP6N315R00	315.00 mm	328.6 mm	80.00 mm	16	255.0 mm	60.000 mm	25.70 mm	101.6, 177.8 mm	No

9MM INSERTS

ONCQ09_N



ONCQ09_ANN



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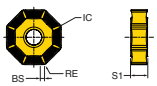

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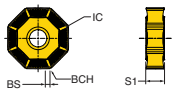

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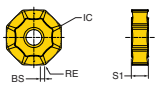

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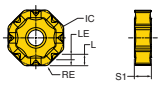

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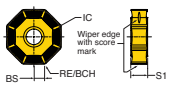

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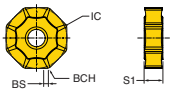


Part Number	Application	RE/BCH Corner Radius/ Chamfer	BS Wiper Length	IC Inscribed Circle Dia.	S Thickness (To Cutting Edge)	NOI Number of Indexes	IH Insert Hand
ONCU0906ANFN-WE	Positive Geometry	0.030 Chamfer	0.031	0.842	0.258	16	Neutral
ONCU0906ANTN-HR	Pos. w/Land	0.030 Chamfer	0.031	0.842	0.258	16	Neutral
ONCU0906ANTN-W	Wiper	0.030 Chamfer	0.157	0.842	0.258	4	Neutral
ONCQ090612TN	Flat Top	0.047 R	0.031	0.842	0.260	16	Neutral
ONCQ0906ANN	SiN for Iron	0.047 R	0.031	0.842	0.258	16	Neutral
ONCU090612FN-P	Grd/Pol for Al	0.047 R	0.031	0.842	0.258	16	Neutral
ONCU090612TN-HR	Multi-Purpose	0.047 R	0.031	0.842	0.258	16	Neutral
ONCU090612TN-W	Wiper	0.047 R	0.157	0.842	0.258	16	Neutral
ONCU090630TN	Anti-Notch	0.118 R	-	0.842	0.258	16	Neutral
ONCU090638TN-HR	Medium Roughing	0.150 R	-	0.842	0.258	16	Neutral

Part Number	Grade	IN10K	IN2004	IN2005	IN2010	IN2015	IN2030	IN2036	IN2040	IN2505	IN2510	IN4005	IN4010	IN4030	IN6510	IN6515	IN70N
ONCU0906ANFN-WE			•		•	•					•			•	•		
ONCU0906ANTN-HR					•					•			•	•			
ONCU0906ANTN-W											•						
ONCQ0906ANN				•								•			•		
ONCQ090612TN																	•
ONCU090612FN-P		•															
ONCU090612TN-HR				•			•	•	•			•		•			
ONCU090612TN-W										•							
ONCU090630TN					•								•	•	•	•	
ONCU090638TN-HR					•		•										

9MM HARDWARE

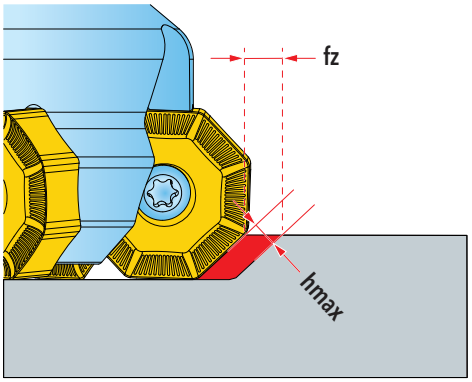
OP1N					
	Driver	Wedge	Adjusting Screw *	Retention Bolt	
OP1N-30R01	DS-H04T	2M0813-01	SB080-03	SD-08-46	
OP1N-40R01	DS-H04T	2M0813-01	SB080-03	SD-12-82	
OP1N-50R01	DS-H04T	2M0813-01	SB080-03	SD-12-82	
OP1N-60R01	DS-H04T	2M0813-01	SB080-03	SD-12-82	
OP1N-80L01	DS-H04T	2M0813-01	SB080-03	-	
OP1N-80R01	DS-H04T	2M0813-01	SB080-03	-	
OP1N-10L01	DS-H04T	2M0813-01	SB080-03	-	
OP1N-10R01	DS-H04T	2M0813-01	SB080-03	-	
OP1N-12L01	DS-H04T	2M0813-01	SB080-03	-	
OP1N-12R01	DS-H04T	2M0813-01	SB080-03	-	

*Adjusting Screw Torque: 4.4 ft-lb / 6 Nm

OP5N/OP6N									
	Insert Screw	Driver Handle	Driver Blade	Retention Bolt	Optional Coolant Bolt	Torque Driver Handle	Driver Blade (Imperial)	Torque Adapter Unit	
OP6N-25R01	SM50-130-R0	DS-A00T	DS-T206B	SD-06-46	SD-06-89	DS-A00-.25-T	DS-T20B1	DT-44-.25	
OP6N-30R01	SM50-130-R0	DS-A00T	DS-T206B	SD-08-46	SD-08-92	DS-A00-.25-T	DS-T20B1	DT-44-.25	
OP6N-40R01	SM50-130-R0	DS-A00T	DS-T206B	SD-12-82	SD-12-99	DS-A00-.25-T	DS-T20B1	DT-44-.25	
OP6N-50R01	SM50-130-R0	DS-A00T	DS-T206B	SD-12-82	SD-12-99	DS-A00-.25-T	DS-T20B1	DT-44-.25	
OP6N-60R01	SM50-130-R0	DS-A00T	DS-T206B	-	-	DS-A00-.25-T	DS-T20B1	DT-44-.25	
OP6N-80R01	SM50-130-R0	DS-A00T	DS-T206B	-	-	DS-A00-.25-T	DS-T20B1	DT-44-.25	
OP6N-10R01	SM50-130-R0	DS-A00T	DS-T206B	-	-	DS-A00-.25-T	DS-T20B1	DT-44-.25	
OP6N100R00	SM50-130-R0	DS-A00T	DS-T206B	ISO4762M16X30-12.9	-	DS-A00-.25-T	DS-T20B1	DT-44-.25	
OP5N125R00	SM50-130-R0	DS-A00T	DS-T206B	ISO4762M20X40-12.9	-	DS-A00-.25-T	DS-T20B1	DT-44-.25	
OP6N125R00	SM50-130-R0	DS-A00T	DS-T206B	ISO4762M20X40-12.9	-	DS-A00-.25-T	DS-T20B1	DT-44-.25	
OP6N160R00	SM50-130-R0	DS-A00T	DS-T206B	-	-	DS-A00-.25-T	DS-T20B1	DT-44-.25	
OP5N200R00	SM50-130-R0	DS-A00T	DS-T206B	-	-	DS-A00-.25-T	DS-T20B1	DT-44-.25	
OP5N250R00	SM50-130-R0	DS-A00T	DS-T206B	-	-	DS-A00-.25-T	DS-T20B1	DT-44-.25	
OP6N315R00	SM50-130-R0	DS-A00T	DS-T206B	-	-	DS-A00-.25-T	DS-T20B1	DT-44-.25	

OPERATING GUIDELINES 5MM

Chip Thinning



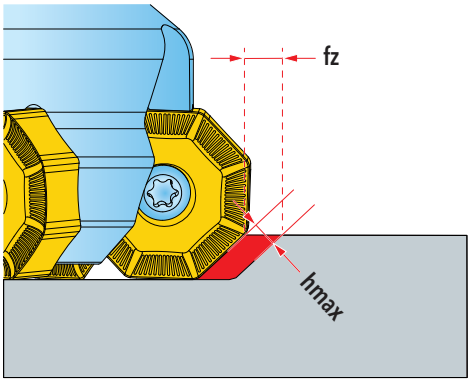
* Chip Thinning Calculator is recommended to ensure hmax is greater than .003"

Materials				Vc Cutting Speed SFM	fz* Feed/Tooth (inch)	Harder <----------> Tougher									Coolant
						Ceramic	Carbide								
ISO	Mat'l Group #VDI 3323	Type	Examples			IN70N	IN2504	IN6515	IN10K	IN2010 IN4010	IN2005 IN2505	IN4030	IN6537	IN2036	
P	1-5	Non-alloy Steel	1018, A36, 1045, A572, 1070	400-1000	.006 - .012						2	1	3		No
	6-9	Low-alloy Steel	4140, 4340, P20, 8620, 300M	300-700											
	10, 11	High-alloy Steel	H13, A2, D2, M2, T1	300-500											
M	12-13	Stainless Steel (Ferritic & Martensitic)	400, 416, 440	300-700	.005-.009						3	2		1	May not be required at high speeds
	14	Stainless Steel (Martensitic)	303, 304, 316, 15-5, 17-4	400-700											
			13-8 PH	200-400											Yes
K	15-16	Gray Cast Iron	CLS. 20, 30, 45	500-1000	.008-.016		3	2		1			4		No
				1800+	.005-.008	1									
	17-18	Nodular Cast Iron	60-40-18, 100-70-03	400-800	.007-.014		3	1		2			4		
				1500+	.004-.007	1									
N	21-30	Aluminum	7075, 6061	1500-10000	.006-.012				1						Yes
S	31-35	High-Temp Alloys	Inconel, Hastelloy, Nimonic, Monel	75-120	.003-.006						2	3		1	Yes
	36-37	Titanium Alloys	6Al-4V, 5Al-5Mo-5V-3Cr	100-150	.004-.007						3	2		1	

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may cause for reductions in feeds and speed or dramatic increases. Additionally, DOC and WOC may need to be revised to optimize the tools performance.

OPERATING GUIDELINES 9MM

Chip Thinning



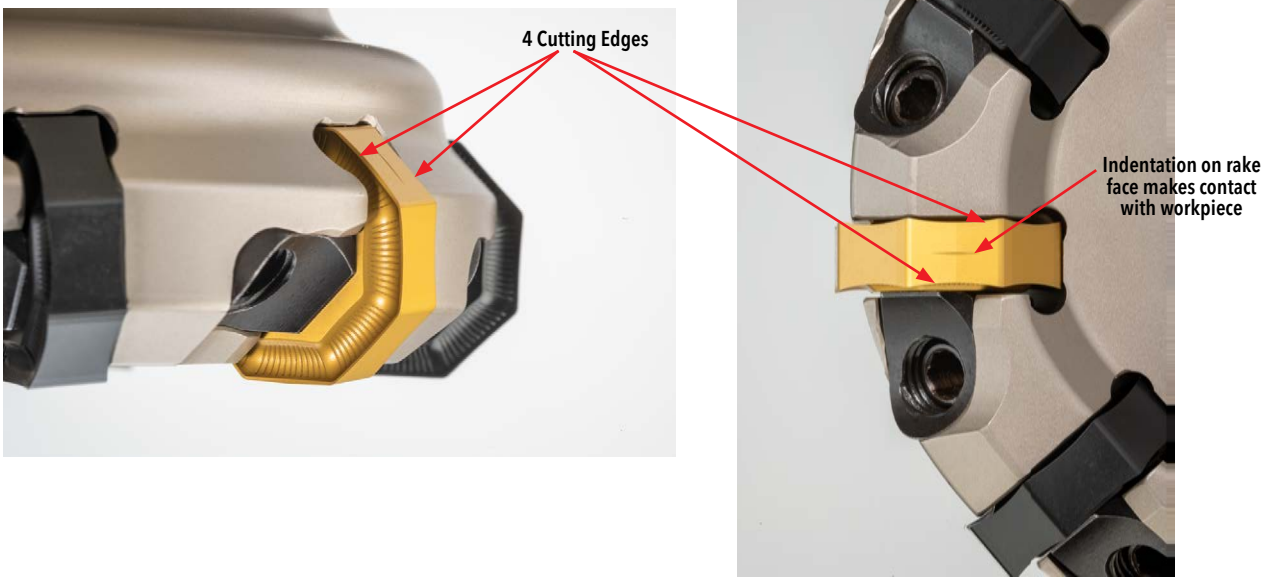
* Chip Thinning Calculator is recommended to ensure hmax is greater than .003"

Materials				Vc Cutting Speed SFM	fz* Feed/ Tooth (inch)	Harder <----------> Tougher											Coolant
						Ceramic	Carbide										
ISO	Mat'l Group #VDI 3323	Type	Examples			IN70N	IN2004	IN2015 IN6515	IN10K	IN2010 IN2510 IN4010 IN6510	IN2040	IN2005 IN2505 IN4005	IN2030 IN4030	IN6537	IN2036		
P	1-5	Non-alloy Steel	1018, A36, 1045, A572, 1070	400-1000	.006 - .012						3	2	1	4			No
	6-9	Low-alloy Steel	4140, 4340, P20, 8620, 300M	300-700													
	10, 11	High-alloy Steel	H13, A2, D2, M2, T1	300-500													
M	12-13	Stainless Steel (Ferritic & Martensitic)	400, 416, 440	300-700	.005-.009										1		May not be required at high speeds
	14	Stainless Steel (Martensitic)	303, 304, 316, 15-5, 17-4	400-700								3	2				
			13-8 PH	200-400													Yes
K	15-16	Gray Cast Iron	CLS. 20, 30, 45	500-1000	.008-.016		3	2		1				4			No
				1800+	.005-.008	1											
	17-18	Nodular Cast Iron	60-40-18, 100-70-03	400-800	.007-.014		3	1		2				4			
				1500+	.004-.007	1											
N	21-30	Aluminum	7075, 6061	1500-10000	.006-.012				1								Yes
S	31-35	High-Temp Alloys	Inconel, Hastelloy, Nimonic, Monel	75-120	.003-.006							2	3		1		Yes
	36-37	Titanium Alloys	6Al-4V, 5Al-5Mo-5V-3Cr	100-150	.004-.007							3	2		1		

Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may cause for reductions in feeds and speed or dramatic increases. Additionally, DOC and WOC may need to be revised to optimize the tools performance.

TECHNICAL INFORMATION

ONCU-W Wiper Orientation



Wiper Orientation