

Cutter Series:
1TJ1C, TJ1C

Insert Series:
ENHU05 (90°)
UNHU05 (Hi-Feed)

Diameters:
.500" - 2.00"
12.0 - 40.0 mm

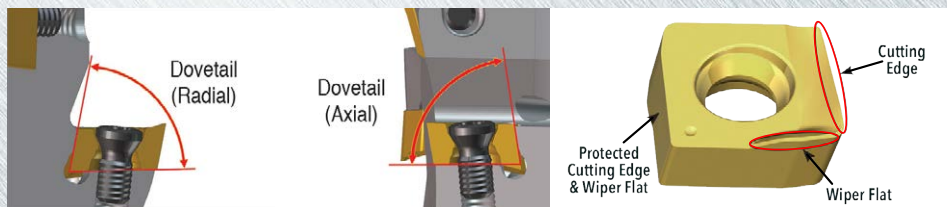
Materials:
Cast Iron, Steel, Stainless Steel,
Hardened Steel, High-Temp Alloys

Depth of Cut:
90°: .186"
Hi-Feed: .019"

Easy-Loading 5mm I.C. Micro Insert That Runs At Maximum Feed Rates

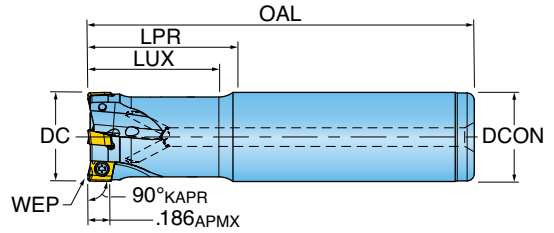
Features & Benefits:

- Double dovetail pockets allow for easy insert indexing - Insert clamps in pocket while affixing the screw.
- Double dovetail pocket along with strong M2.0 insert screw promotes ultra stable insert mounting - To be run at high feed rates!
- Double positive insert geometry offers .18" axial depth of cut capability with 2 indexes.
- Integrated wiper flats produce surface finishes as good as Ra 32
- Equipped with fine pitched densities for high productivity machining
- This multi-functional tool does everything - Ramps, Plunges, Interpolates - and does them aggressively!



SERIES 1TJ1C (CYLINDRICAL STYLE) (5MM)

90° END MILL WITH 2 INDEXES



WEP - See insert drawing for wiper options.

INCH

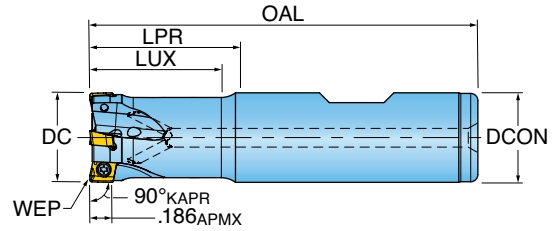
Part Number	DC Cutting Dia.	LUX Usable Length Max.	LPR Protruding Length	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Dia.
1TJ1C-05012S4R01	0.500	0.75	1.22	3.00	2	0.500
1TJ1C-06020S6R01	0.625	1.25	2.09	4.00	3	0.625
1TJ1C-07030S7R01	0.750	1.25	3.00	5.00	4	0.750
1TJ1C-10037S1R01	1.000	1.25	3.75	6.00	5	1.000

METRIC

Part Number	DC Cutting Dia.	LUX Usable Length Max.	LPR Protruding Length	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Dia.
1TJ1C012020T2R00	12.00 mm	17.0 mm	20.0 mm	80.0 mm	2	12.00 mm
1TJ1C013020T2R00	13.00 mm	17.0 mm	20.0 mm	80.0 mm	2	12.00 mm

SERIES 1TJ1C (WELDON STYLE) (5MM)

90° END MILL WITH 2 INDEXES



WEP - See insert drawing for wiper options.

INCH

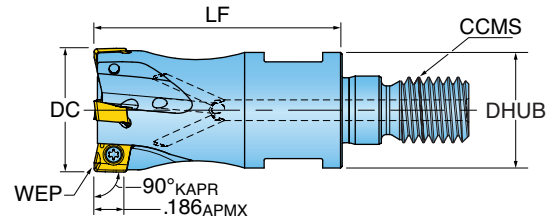
Part Number	DC Cutting Dia.	LUX Usable Length Max.	LPR Protruding Length	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Dia.
1TJ1C-0600779R01	0.625	0.72	0.75	2.66	3	0.625
1TJ1C-0701284R01	0.750	1.22	1.25	3.25	4	0.750
1TJ1C-1001780R01	1.000	1.72	1.75	4.00	6	1.000
1TJ1C-1001784R01	1.000	1.75	1.75	3.75	5	0.750

METRIC

Part Number	DC Cutting Dia.	LUX Usable Length Max.	LPR Protruding Length	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Dia.
1TJ1C016025W3R00	16.00 mm	22.0 mm	25.0 mm	90.0 mm	3.000	16.00 mm
1TJ1C020025W4R00	20.00 mm	22.0 mm	25.0 mm	105.0 mm	4.000	20.00 mm
1TJ1C025025W5R00	25.00 mm	22.0 mm	25.0 mm	115.0 mm	6.000	25.00 mm

SERIES 1TJ1C (TOP ON STYLE) (5MM)

90° MODULAR END MILL WITH 2 INDEXES



WEP - See insert drawing for wiper options.

INCH

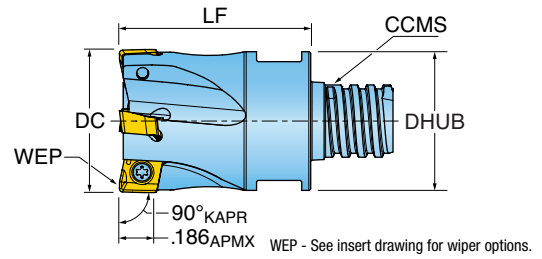
Part Number	DC Cutting Dia.	LF Functional Length	ZEFF Effective Teeth	CCMS Connection Code	DHUB Hub Dia.
1TJ1C-06010X5R01	0.625	1.00	3	TopOn M08	0.50
1TJ1C-07015X6R01	0.750	1.50	4	TopOn M10	0.69
1TJ1C-10015X7R01	1.000	1.50	5	TopOn M12	0.81

METRIC

Part Number	DC Cutting Dia.	LF Functional Length	ZEFF Effective Teeth	CCMS Connection Code	DHUB Hub Dia.
1TJ1C012023X4R00	12.00 mm	23.0 mm	2.000	TopOn M06	11.00 mm
1TJ1C016023X5R00	16.00 mm	23.0 mm	3.000	TopOn M08	13.00 mm
1TJ1C020035X6R00	20.00 mm	35.0 mm	4.000	TopOn M10	18.00 mm
1TJ1C025035X7R00	25.00 mm	35.0 mm	6.000	TopOn M12	21.00 mm

SERIES 1TJ1C (CHIP SURFER STYLE) (5MM)

90° MODULAR END MILL WITH 2 INDEXES

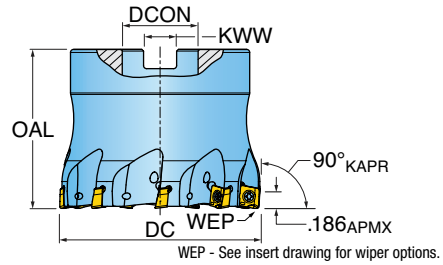


Part Number	DC Cutting Dia.	LF Functional Length	ZEFF Effective Teeth	CCMS Connection Code	DHUB Hub Dia.	CSP Coolant
1TJ1C-05006T8R01	0.500	0.65	2	Chip Surfer T08	.48	Yes
1TJ1C-06008TRR01	0.625	0.80	3	Chip Surfer T10	.60	Yes
1TJ1C-07007T8R01*	0.750	0.75	4	Chip Surfer T08	.48	No
1TJ1C-07010TSR01	0.750	1.00	4	Chip Surfer T12	.72	Yes
1TJ1C-10007T8R01*	1.000	0.75	5	Chip Surfer T08	.48	No
1TJ1C-10012TUR01	1.000	1.25	5	Chip Surfer T15	.94	Yes

* Ideal for Swiss Machines. Recommend with SERIES ER16T08SA shanks.

SERIES TJ1C (5MM)

90° FACE MILL WITH 2 INDEXES



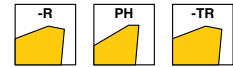
INCH

Part Number	DC Cutting Dia.	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Dia.	KWW Keyway
TJ1C-15R01	1.500	1.57	8	0.500	0.250
TJ1C-20R01	2.000	1.57	9	0.750	0.312

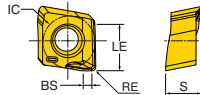
METRIC

Part Number	DC Cutting Dia.	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Dia.	KWW Keyway
TJ1C032R00	32.00 mm	32.00 mm	7.000	16.00 mm	8.40 mm
TJ1C040R00	40.00 mm	40.00 mm	8.000	16.00 mm	8.40 mm

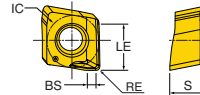
INSERTS (5MM)



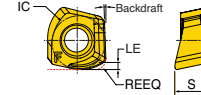
ENHU05_R



ENHU05_R-PH












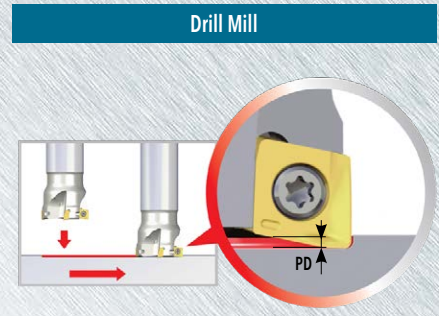
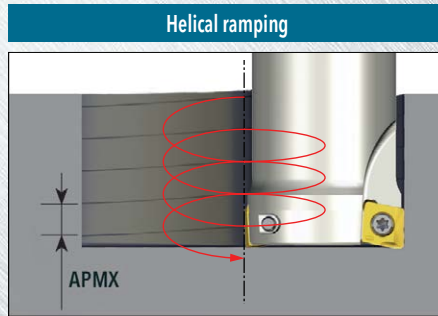
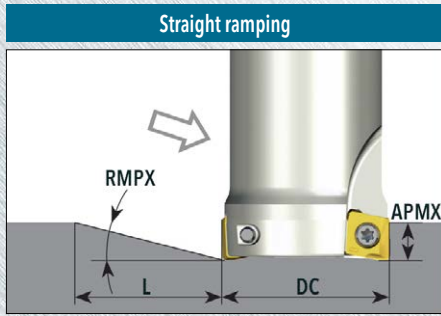
UNHU05



Part Number	Application	RE Corner Radius	BS Wiper Length	LE Cutting Edge Length	IC Inscribed Circle Dia.	S Thickness	NOI No. of Indexes	IH Insert Hand	Grade	IN2504	IN2505	IN2510	IN2530	IN6515	IN7036
ENHU050302R	Multi-Purpose	0.008	0.030	0.180	0.203	0.133	2	Right		•			•		
ENHU050304R	Multi-Purpose	0.015	0.030	0.180	0.203	0.133	2	Right	•	•			•	•	
ENHU050304R-PH	SS/Hi-Temp/Ti	0.015	0.030	0.180	0.203	0.133	2	Right		•			•		•
ENHU050308R	Multi-Purpose	0.031	0.015	0.180	0.203	0.133	2	Right		•	•		•	•	
ENHU050308R-PH	SS/Hi-Temp/Ti	0.031	0.015	0.180	0.203	0.133	2	Right		•			•		•
UNHU0503TR	Hi-Feed	0.035	-	0.019	0.203	0.126	2	Right					•		

HARDWARE (5MM)

									
	Screw	Driver	Retention Bolt	Coolant Retention Bolt	Wrench	Torque Wrench	Torque Driver Handle	Preset Torque Bit	Torque Driver Bit
1TJ1C-05012S4R01	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-06020S6R01	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-07030S7R01	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-10037S1R01	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-0600779R01	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-0701284R01	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-1001780R01	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-1001784R01	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-06010X5R01	SM20-043-00	DS-TP06S			610MM		DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-07015X6R01	SM20-043-00	DS-TP06S			615MM		DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-10015X7R01	SM20-043-00	DS-TP06S			617MM		DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-05006T8R01	SM20-043-00	DS-TP06S			WS-0030	DT-130-10	DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-06008TRR01	SM20-043-00	DS-TP06S			WS-0044	DT-250-13	DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-07010TSR01	SM20-043-00	DS-TP06S			WS-0059	DT-250-16	DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C-10012TUR01	SM20-043-00	DS-TP06S			WS-0061	DT-350-20	DS-A00-.25-S	DT-05-.25	DS-TP06B
TJ1C-15R01	SM20-043-00	DS-TP06S	SD04-46	SD04-85			DS-A00-.25-S	DT-05-.25	DS-TP06B
TJ1C-20R01	SM20-043-00	DS-TP06S	SD-06-46	SD-06-89			DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C016025W3R00	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C020025W4R00	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C025025W5R00	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C012020T2R00	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C013020T2R00	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C012023X4R00	SM20-043-00	DS-TP06S					DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C016023X5R00	SM20-043-00	DS-TP06S			610MM		DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C020035X6R00	SM20-043-00	DS-TP06S			615MM		DS-A00-.25-S	DT-05-.25	DS-TP06B
1TJ1C025035X7R00	SM20-043-00	DS-TP06S			617MM		DS-A00-.25-S	DT-05-.25	DS-TP06B
TJ1C032R00	SM20-043-00	DS-TP06S		ISO4762M8X25-12.9			DS-A00-.25-S	DT-05-.25	DS-TP06B
TJ1C040R00	SM20-043-00	DS-TP06S		ISO4762M8X25-12.9			DS-A00-.25-S	DT-05-.25	DS-TP06B



RAMP DATA USING SERIES ENHU (90°)

DC Cutting Dia.	Straight Ramp			Helical Ramp			PD Plunge Depth
	RMPX Ramp Angle	L	APMX	Min. Dia. Milled Hole	Max. Dia. Milled Hole	APMX / Rev	
0.50	6.9	1.5	0.18	0.61	-	0.041	0.027
				-	1.00	0.180	
0.62	4.4	2.3	0.18	0.86	-	0.057	0.027
				-	1.25	0.150	
0.75	3.3	3.1	0.18	1.11	-	0.065	0.027
				-	1.50	0.135	
1.00	2.2	4.7	0.18	1.60	-	0.072	0.027
				-	2.00	0.120	
1.50	1.3	7.9	0.18	2.60	-	0.078	0.027
				-	3.00	0.180	
2.00	0.9	11.5	0.18	3.60	-	0.078	0.027
				-	4.00	0.098	

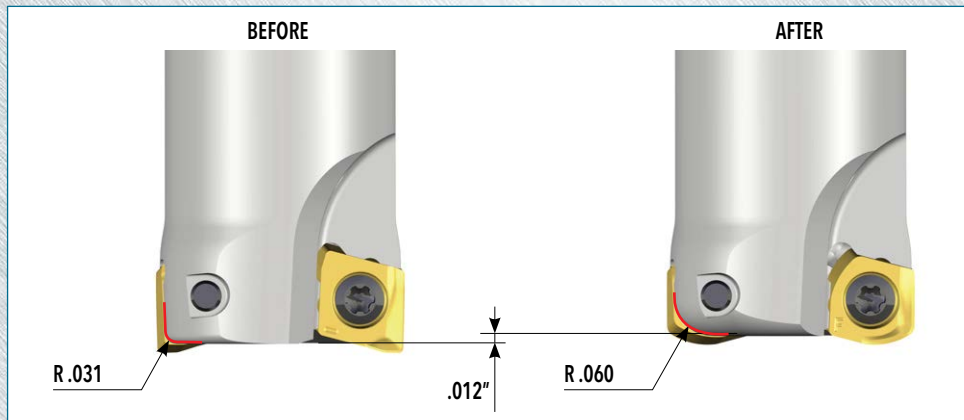
RAMP DATA USING SERIES UNHU (HI-FEED)

DC Cutting Dia.	Straight Ramp			Helical Ramp			PD Plunge Depth
	RMPX Ramp Angle	L	APMX	Min. Dia. Milled Hole	Max. Dia. Milled Hole	APMX / Rev	
0.50	5.0	0.2	0.019	0.77	-	0.019	0.015
				-	1.00	0.019	
0.62	2.7	0.4	0.019	1.02	-	0.019	0.015
				-	1.25	0.019	
0.75	1.7	0.6	0.019	1.27	-	0.019	0.015
				-	1.50	0.019	
1.00	1.2	0.9	0.019	1.77	-	0.019	0.015
				-	2.00	0.019	
1.50	0.6	1.8	0.019	2.77	-	0.019	0.015
				-	3.00	0.019	
2.00	0.2	5.4	0.019	3.77	-	0.019	0.015
				-	4.00	0.019	

HI-FEED INSERT TECHNICAL DATA

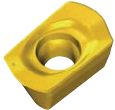
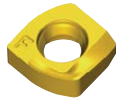
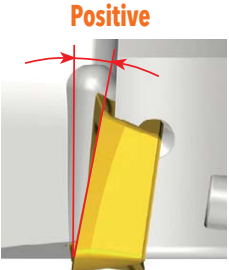

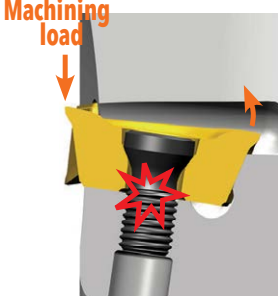
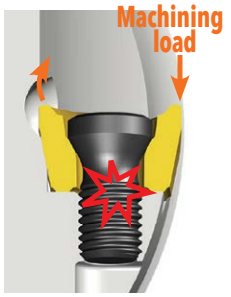
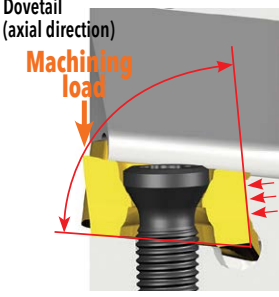
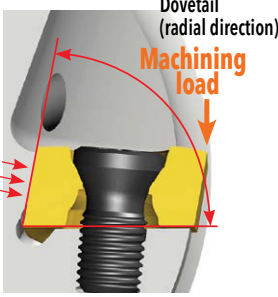
Housing Modification for Hi-Feed Insert

When using the new UNHU0503TR Hi-Feed insert, check to ensure the cutter body does not protrude beyond the trailing edge of the Hi-Feed Insert. If it does, the housing corner can be modified on a lathe or grinder by removing .012" off the face and enlarging the corner radius to R.060 (illustrated below).

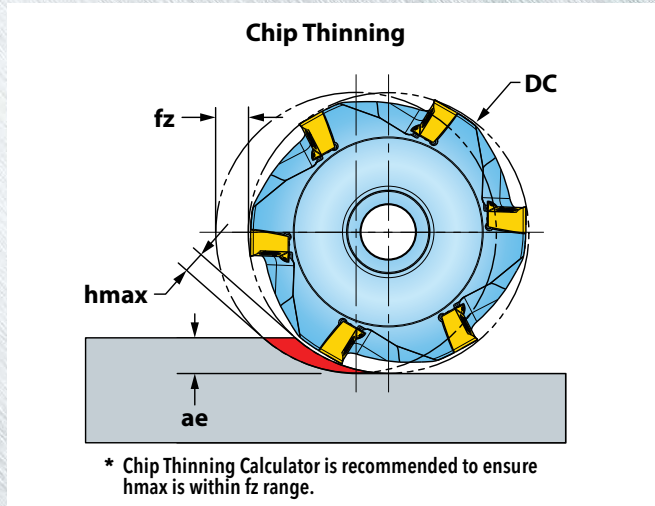


Double Dovetail Pocket Advantage

With single-side inserts, the insert screw bears most of the machining load, which frequently causes breakage. The UNHU05 insert's double dovetail structure supports the machining load for more stable machining.

Competitor's mini 90 degree high feed insert		UNHN0503TR	
			
Single sided, 2 corners		Double-sided, 2 corners (Double-dovetail)	
M1.8 screw		M2.0 screw	
			
			

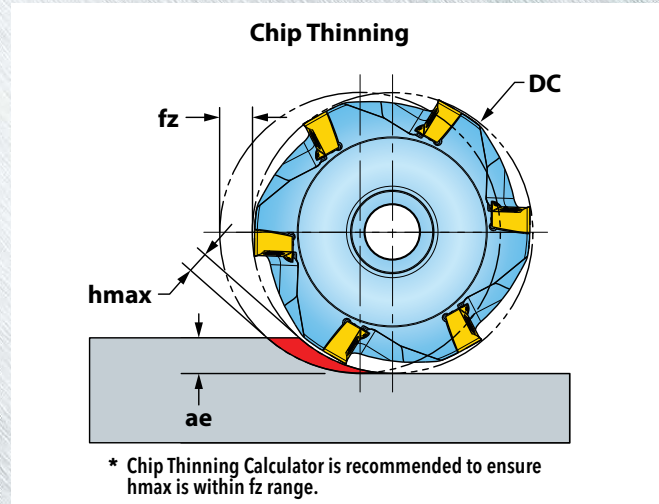
OPERATING GUIDELINES - 90°



ISO	Materials			Vc Cutting Speed SFM	fz* Feed/Tooth (inch)	Harder <-----> Tougher						Coolant
	Mat'l Group #VDI 3323	Type	Examples			Carbide						
						IN2504	IN6515	IN2510	IN2505	IN2530	IN7036	
P	1 thru 5	Non-alloy Steel	1018, A36, 1045, A572, 1070	400-1000	.003-.007							No
	6 thru 9	Low-alloy Steel	4140, 4340, P20, 8620, 300M	350-500					2	1		
	10, 11	High-alloy Steel	H13, A2, D2, M2, T1	300-700								
M	12 thru 13	Stainless Steel (Ferritic & Martensitic)	300 Series, 304, 316	350-600	.002-.005				3	2	1	Yes May not be required at high speeds
	14	Stainless Steel (Martensitic)	400 Series, 15-5 PH	300-550								
K	15 thru 16	Gray Cast Iron	CLS. 20, 30, 45	300-1000	.003-.007	3	2	1				No
	17 thru 20	Nodular Cast Iron	60-40-18, 100-70-03	300-600								
S	31 thru 35	High-Temp Alloys	Inconel, Hastelloy, Nimonic, Monel	75-120	.002-.005				3	2	1	Yes
	36 thru 37	Titanium Alloys	6Al-4V, 5Al-5Mo-5V-3Cr	100-150					2	3	1	
H	38 thru 39	Hardened Steel >48	A2, O1, D2	165-360	.002-.005	1			2			Yes

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 - HIGH FEED



ISO	Materials			Vc Cutting Speed SFM	fz* Feed/Tooth (inch)	Grade	Coolant
	Mat'l Group #VDI 3323	Type	Examples			Carbide	
						IN2530	
P	1 thru 5	Non-alloy Steel	1018, A36, 1045, A572, 1070	400-1000	.020-.040	1	No
	6 thru 9	Low-alloy Steel	4140, 4340, P20, 8620, 300M	350-500			
	10, 11	High-alloy Steel	H13, A2, D2, M2, T1	300-700			
M	12 thru 13	Stainless Steel (Ferritic & Martensitic)	410, 416, 440	350-600	.020-.030	1	Yes
	14	Stainless Steel (Austenitic)	303, 304, 316, 15-5, 17-4	300-550			May not be required at high speeds
K	15 thru 16	Gray Cast Iron	CLS. 20, 30, 45	300-1000	.020-.040	1	No
	17 thru 20	Nodular Cast Iron	60-40-18, 100-70-03	300-600			
S	31 thru 35	High-Temp Alloys	Inconel, Hastelloy, Nimonic, Monel	75-120	.020-.030	1	Yes
	36 thru 37	Titanium Alloys	6Al-4V, 5Al-5Mo-5V-3Cr	100-150			
H	38 thru 39	Hardened Steel >48	A2, O1, D2	165-360	.020-.030	1	Yes

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.