



# HIPOPOS<sup>u</sup>™

MILLING PRODUCTS

**Cutter series (Applications)**  
12J1D: 90° Mill (.22 DOC)  
22J3D: 90° Long Edge Mill  
12\_1D: Chamfer End Mill

**Diameter Range**  
.375" - 2.000"

**Corner Radii**  
Sharp, .008", .015", .031",  
.062" & Hi-Feed

**Chamfer Angles**  
30, 45, 60

**Materials**  
Iron, Steel, Stainless Steel,  
Aluminum, Hi-Temps  
Titanium & Hard Steel



## Our Highest Positive Mini-Size Mills with 90° and Hi-Feed Insert Options

### Features & Benefits:

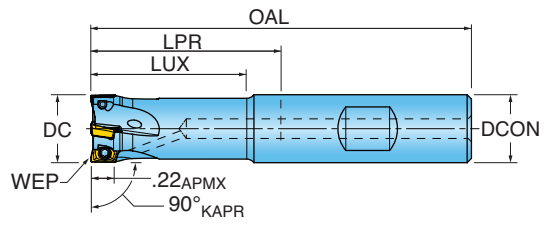
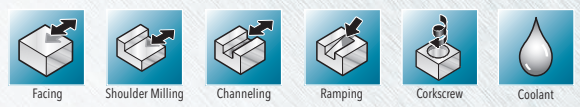
- Double-Positive geometry for efficient milling on small platform machines; Ideal for Live Spindles on Lathe and Swiss type machines
- 90° & Hi-Feed inserts fit the same pocket
- Diverse range of cutter adaptations and insert grades/geometries
- Large diameter modular cutter heads that fit solid ER shanks for utmost productivity and fast/accurate tool changes on the machine
- Inserts with integrated wipers produce 32-63 Ra surface finishes





**HI-POS™ SERIES 12J1D (WELDON SHANK)**

**90° & HI-FEED END MILL**



WEPP - See insert drawing for wiper options.

Part Number	DC Cutting Dia.	LUX Usable Length Max.	LPR Protruding Length	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Dia.
12J1D-0300587R01	0.375	0.52	0.72	2.50	2	0.500
12J1D-0500979R01	0.500	0.90	1.09	3.00	3	0.625
12J1D-0601479R01	0.620	1.52	1.72	3.50	4	0.625
12J1D-0701684R02	0.720	1.65	1.75	3.75	4	0.750
12J1D-0701684R01	0.750	1.65	1.75	3.75	5	0.750
12J1D-1001780R01	1.000	1.75	1.75	4.00	7	1.000
12J1D-1001780R02	1.000	1.75	1.75	4.00	5	1.000
12J1D-1001784R01	1.000	1.75	1.75	3.75	7	0.750
12J1D-1001784R02	1.000	1.75	1.75	3.75	5	0.750

Notes: Cutter body should be relieved to accept .062"R insert.  
.02" APMX for Hi-Feed insert UOMT0602TR.

**METRIC**

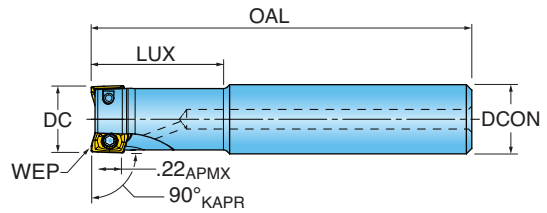
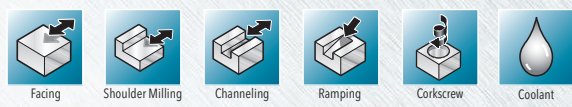
Part Number	DC Cutting Dia.	LUX Usable Length Max.	LPR Protruding Length	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Dia.
12J1D010018W3R01	9.50 mm	18.0 mm	32.0 mm	80.0 mm	2	16.00 mm
12J1D010018W3R00	10.00 mm	18.0 mm	32.0 mm	80.0 mm	2	16.00 mm
12J1D012020W3R01	11.50 mm	20.0 mm	32.0 mm	80.0 mm	3	16.00 mm
12J1D012020W3R00	12.00 mm	20.0 mm	32.0 mm	80.0 mm	3	16.00 mm
12J1D014022W3R00	14.00 mm	22.0 mm	32.0 mm	80.0 mm	3	16.00 mm
12J1D016026W3R00	16.00 mm	26.0 mm	37.0 mm	85.0 mm	4	16.00 mm
12J1D020030W4R00	20.00 mm	30.0 mm	40.0 mm	90.0 mm	5	20.00 mm
12J1D025040W5R00	25.00 mm	40.0 mm	44.0 mm	100.0 mm	7	25.00 mm

Notes: Cutter body should be relieved to accept 1.6mm R insert.  
0.5mm APMX for Hi-Feed insert (UOMT0602TR).



**HI-POS™ SERIES 12J1D (CYLINDRICAL SHANK)**

**90° & HI-FEED END MILL**



WEPP - See insert drawing for wiper options.

Part Number	DC Cutting Dia.	LUX Usable Length Max.	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Dia.
12J1D-03009R8R01	0.375	0.90	2.50	2	0.375
12J1D-04009S4R01	0.490	0.90	2.75	2	0.500
12J1D-05009S4R01	0.500	0.90	2.75	3	0.500
12J1D-05011S4R01	0.500	1.15	3.00	2	0.500
12J1D-06014S6R01	0.620	1.40	6.00	3	0.625

Notes: Cutter body should be relieved to accept .062" R insert.  
.02" APMX for Hi-Feed insert UOMT0602TR.

**METRIC**

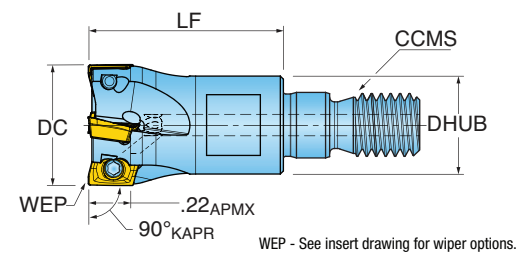
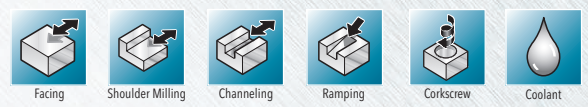
Part Number	DC Cutting Dia.	LUX Usable Length Max.	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Dia.
12J1D010016T1R00	10.00 mm	16.0 mm	55.0 mm	2	10.00 mm
12J1D012017T2R00	12.00 mm	17.0 mm	60.0 mm	3	12.00 mm
12J1D016019T3R00	16.00 mm	19.0 mm	90.0 mm	4	16.00 mm
12J1D020017T4R00	20.00 mm	19.0 mm	105.0 mm	5	20.00 mm
12J1D025065T4R00	25.00 mm	65.0 mm	115.0 mm	7	20.00 mm

Notes: Cutter body should be relieved to accept 1.6mm R insert.  
0.5mm APMX for Hi-Feed insert (UOMT0602TR).



**HI-POS™ SERIES 12J1D (TOP-ON STYLE)**

**90° & HI-FEED END MILL**



Part Number	DC Cutting Dia.	LF Functional Length	ZEFF Effective Teeth	CCMS Connection Code Machine Side	DHUB Hub Dia.
12J1D-05010X4R01	0.500	1.00	3	TopOn M06	0.47
12J1D-06010X5R01	0.620	1.00	4	TopOn M08	0.51
12J1D-07015X6R01	0.750	1.50	5	TopOn M10	0.70
12J1D-10015X7R01	1.000	1.50	7	TopOn M12	0.82
12J1D-12017X8R01	1.250	1.75	8	TopOn M16	1.14
12J1D-15017X8R01	1.500	1.75	9	TopOn M16	1.14

Notes: Cutter body should be relieved to accept .062"R insert.  
.02" APMX for Hi-Feed insert UOMT0602TR.

**METRIC**

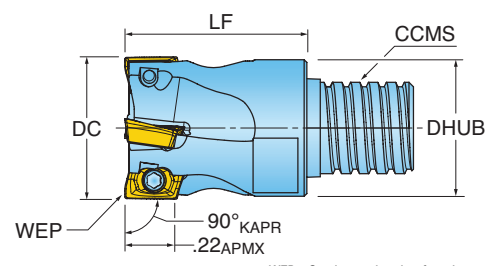
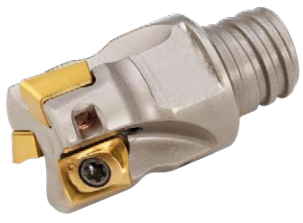
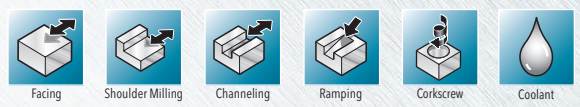
Part Number	DC Cutting Dia.	LF Functional Length	ZEFF Effective Teeth	CCMS Connection Code Machine Side	DHUB Hub Dia.
12J1D010017X4R00	10.00 mm	17.0 mm	2	TopOn M06	9.8 mm
12J1D012023X4R00	12.00 mm	23.0 mm	3	TopOn M06	11.8 mm
12J1D015023X5R00	15.00 mm	23.0 mm	4	TopOn M08	13.0 mm
12J1D016023X5R00	16.00 mm	23.0 mm	4	TopOn M08	13.0 mm
12J1D020030X6R00	20.00 mm	30.0 mm	5	TopOn M10	18.0 mm
12J1D025035X7R00	25.00 mm	35.0 mm	7	TopOn M12	21.0 mm
12J1D030043X8R00	30.00 mm	43.0 mm	8	TopOn M16	29.0 mm
12J1D032043X8R00	32.00 mm	43.0 mm	8	TopOn M16	29.0 mm
12J1D035043X8R00	35.00 mm	43.0 mm	9	TopOn M16	29.0 mm

Notes: Cutter body should be relieved to accept 1.6mm R insert.  
0.5mm APMX for Hi-Feed insert (UOMT0602TR).



**HI-POS™ SERIES 12J1D (CHIPSURFER STYLE)**

**90° & HI-FEED END MILL**



WEPP - See insert drawing for wiper options.

Part Number	DC Cutting Dia.	LF Functional Length	ZEFF Effective Teeth	CCMS Connection Code Machine Side	DHUB Hub Dia.
12J1D-03006T6R01	0.375	0.630	2	Chip Surfer T06	0.36
12J1D-05006T8R01	0.500	0.650	2	Chip Surfer T08	0.48
12J1D-05006T8R02	0.500	0.650	3	Chip Surfer T08	0.48
12J1D-06008TRR01	0.625	0.800	4	Chip Surfer T10	0.60
12J1D-07010TSR01	0.750	1.000	5	Chip Surfer T12	0.72
12J1D-07010TSR02	0.750	1.000	3	Chip Surfer T12	0.72
<b>NEW</b> 12J1D-10012TUR01	1.000	1.250	7	Chip Surfer T15	0.94

Notes: Cutter body should be relieved to accept .062"R insert.  
 .02" APMX for Hi-Feed insert UOMT0602TR. No lubricant on adaption. Wrenches sold seperately.

**METRIC**

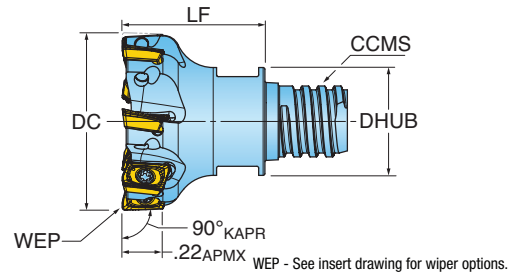
Part Number	DC Cutting Dia.	LF Functional Length	ZEFF Effective Teeth	CCMS Connection Code Machine Side	DHUB Hub Dia.
12J1D010016T6R00	10.00 mm	16.0 mm	2	Chip Surfer T06	9.7 mm
12J1D012017T8R00	12.00 mm	17.0 mm	3	Chip Surfer T08	11.7 mm
12J1D016019TRR00	16.00 mm	19.0 mm	4	Chip Surfer T10	15.5 mm
12J1D020022TSR00	20.00 mm	22.0 mm	5	Chip Surfer T12	18.2 mm

Notes: Cutter body should be relieved to accept 1.6mm R insert.  
 0.5mm APMX for Hi-Feed insert (UOMT0602TR). No lubricant on adaption. Wrenches sold seperately.



**HI-POS™ SERIES 12J1D (CHIPSURFER STYLE)**

90° END MILL FOR SWISS & LIVE TOOLING



Part Number	DC Cutting Dia.	LF Functional Length	ZEFF Effective Teeth	CCMS Connection Code Machine Side	DHUB Hub Dia.
<b>NEW</b> 12J1D-07008T8R01	0.750	0.800	5	Chip Surfer T08	0.48
<b>NEW</b> 12J1D-07008TRR01	0.750	0.800	5	Chip Surfer T10	0.60
<b>NEW</b> 12J1D-10008TRR01	1.000	0.800	7	Chip Surfer T10	0.72

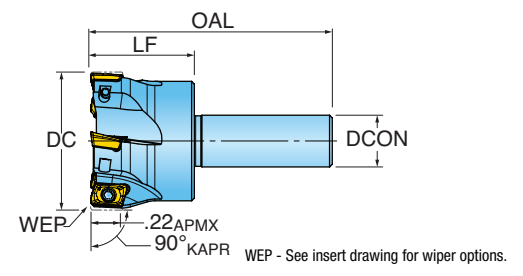
Notes: Cutter body should be relieved to accept .062"R insert. .02" APMX for Hi-Feed insert UOMT0602TR. No lubricant on adaption. Wrenches sold separately. Ideal when coupled with solid ER shanks for live spindles on swiss and lathe machines.





**HI-POS™ SERIES 12J1D (CYLINDRICAL SHANK)**

90° END MILL FOR SWISS & LIVE TOOLING

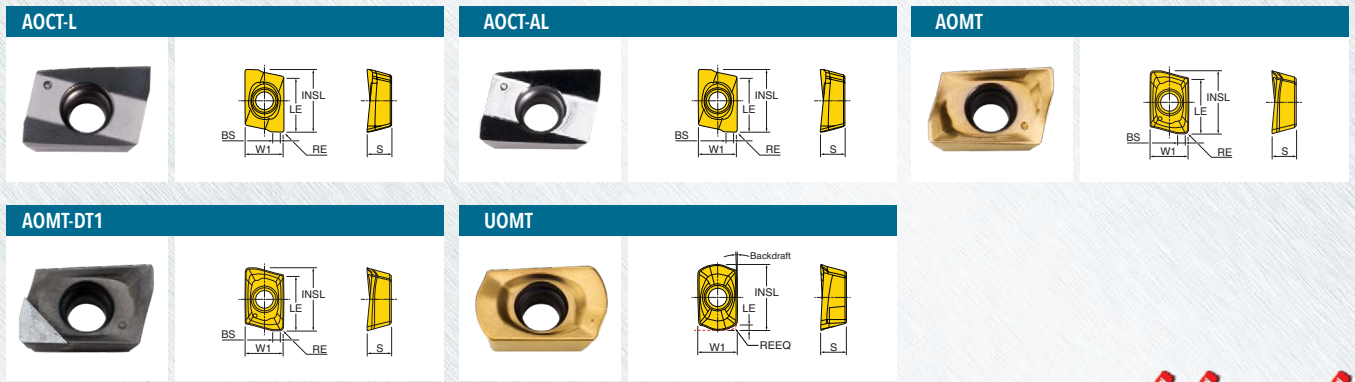


Part Number	DC Cutting Dia.	LF Functional Length	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Dia.
12J1D-07007R8R01	0.750	0.75	1.75	5	0.375
12J1D-10007R8R01	1.000	0.75	1.75	5	0.375
12J1D-15007S4R01	1.500	0.75	1.75	7	0.500
12J1D-20007S6R01	2.000	0.75	1.75	7	0.625

Notes: Cutter body should be relieved to accept .062"R insert.



**HI-POS™ SERIES 12J1D INSERTS**



Part Number	Application	RE Corner Radius	BS Wiper Length	LE Cutting Edge Length	INSL Insert Length	W1 Insert Width	S Thickness	NOI Number of Indexes	IH Insert Hand	Grade	IN1030	IN10K	IN2005	IN2035 <small>NEW</small>	IN2504 <small>NEW</small>	IN2505	IN2530	IN90D <small>NEW</small>
AOCT060202R-AL	Grd/Pol for Al	0.008	0.031	0.216	0.256	0.165	0.102	2	Right			•						
<small>NEW</small> AOCT060202R-L*	Light; Keen & Coated	0.008	0.031	0.216	0.256	0.165	0.102	2	Right				•					
AOCT060204R-AL	Grd/Pol for Al	0.015	0.023	0.216	0.256	0.165	0.102	2	Right			•						
<small>NEW</small> AOCT060204R-L*	Light; Keen & Coated	0.015	0.023	0.216	0.256	0.165	0.102	2	Right				•					
AOCT060208R-AL	Grd/Pol for Al	0.031	0.018	0.216	0.256	0.165	0.102	2	Right			•						
AOMT060202R	Multi-Purpose	0.008	0.030	0.220	0.228	0.166	0.103	2	Right		•		•	•	•		•	
<small>NEW</small> AOMT060202R-DT1	PCD Tipped	0.008	0.040	0.090	0.265	0.163	0.100	1	Right									•
AOMT060204R	Multi-Purpose	0.015	0.020	0.220	0.228	0.166	0.103	2	Right				•	•	•	•	•	
AOMT060208R	Multi-Purpose	0.031	0.010	0.220	0.228	0.166	0.103	2	Right				•	•	•	•	•	
AOMT060216R	Multi-Purpose	0.062	-	0.220	0.228	0.166	0.103	2	Right				•	•	•	•	•	









\* Ideal for light chip loads on Swiss and Live Tooling.

Part Number	Application	REEQ Program Radius Equivalent	LE Cutting Edge Length	INSL Insert Length	W1 Insert Width	S Thickness	NOI Number of Indexes	IH Insert Hand	Grade	IN2035 <small>NEW</small>	IN2504 <small>NEW</small>	IN2505	IN2530





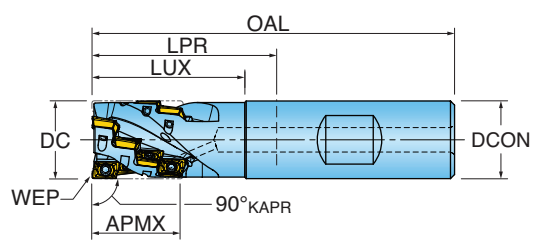
**HI-POS™ SERIES 12J1D HARDWARE**

									
	Insert Screw	Driver	**OPTIONAL** Torque Driver Handle	**OPTIONAL** Preset Torque Bit	**OPTIONAL** Torque Driver Bit	**OPTIONAL** TopOn Wrench	**OPTIONAL** ChipSurfer Wrench	**OPTIONAL** ChipSurfer Torque Driver	
Straight	12J1D Weldon	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	-	-
	12J1D Cylindrical	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	-	-
	12J1D Cyl. Swiss	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	-	-
Top-On	12J1D-05010X4R01	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	-	-
	12J1D-06010X5R01	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	610MM	-	-
	12J1D-07015X6R01	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	615MM	-	-
	12J1D-10015X7R01	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	617MM	-	-
	12J1D-12017X8R01	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	622MM	-	-
	12J1D-15017X8R01	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	622MM	-	-
	12J1D010017X4R00	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	-	-
	12J1D012023X4R00	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	-	-
	12J1D015023X5R00	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	610MM	-	-
	12J1D016023X5R00	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	610MM	-	-
	12J1D020030X6R00	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	615MM	-	-
	12J1D025035X7R00	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	617MM	-	-
	12J1D030043X8R00	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	622MM	-	-
	12J1D032043X8R00	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	622MM	-	-
	12J1D035043X8R00	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	622MM	-	-
	Chip-Surfer	12J1D-03006T6R01	SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0029
12J1D-05006T8R01		SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0030	DT-130-10
12J1D-05006T8R02		SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0030	DT-130-10
12J1D-06008TRR01		SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0044	DT-250-13
12J1D-07008TRR01		SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0030	DT-130-10
12J1D-07008TRR01		SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0044	DT-250-13
12J1D-07010TSR01		SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0059	DT-250-16
12J1D-07010TSR02		SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0059	DT-250-16
12J1D-10008TRR01		SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0044	DT-250-13
12J1D-10012TUR01		SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0061	DT-350-20
12J1D010016T6R00		SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0029	DT-90-08
12J1D012017T8R00		SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0030	DT-130-10
12J1D016019TRR00		SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0044	DT-250-13
12J1D020022TSR00		SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B	-	WS-0059	DT-250-16



**HI-POS™ SERIES 22J3D (WELDON SHANK)**

90° END MILL; ALL-EFFECTIVE RH HELIX



WEP - See insert drawing for wiper options.

Part Number	DC Cutting Dia.	APMX Depth of Cut Max.	LUX Usable Length Max.	LPR Protruding Length	OAL Overall Length	ZNF Face Insert Count	ZNP Peripheral Insert Count	NOF Flute Count	DCON Shank Dia.
22J3D-0601179R01	0.625	0.650	1.25	1.59	3.50	2	4	2	0.625
22J3D-0701484R01	0.750	0.860	1.45	1.50	3.50	3	9	3	0.750

Notes: Total Number of Inserts = ZNF + ZNP.  
Cutter body must be relieved to accept .062R insert.

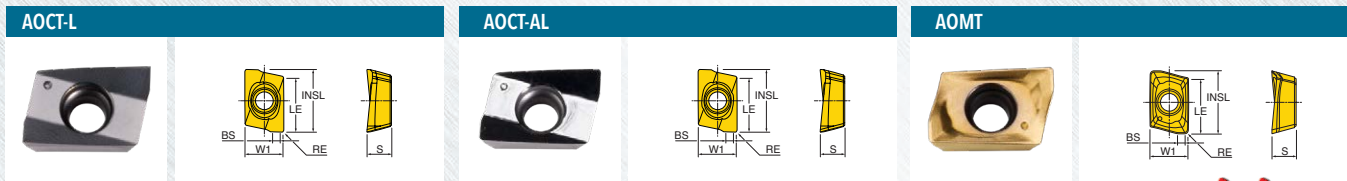
**METRIC**

Part Number	DC Cutting Dia.	APMX Depth of Cut Max.	LUX Usable Length Max.	LPR Protruding Length	OAL Overall Length	ZNF Face Insert Count	ZNP Peripheral Insert Count	NOF Flute Count	DCON Shank Dia.
22J1D016017W3R00	16.00 mm	16.50 mm	30.0 mm	32.0 mm	80.0 mm	2	4	2	16.00 mm
22J1D019022W4R00	19.00 mm	22.00 mm	32.0 mm	35.0 mm	85.0 mm	3	9	3	20.00 mm
22J1D020022W4R00	20.00 mm	22.00 mm	32.0 mm	35.0 mm	85.0 mm	3	9	3	20.00 mm
22J1D022022W4R00	22.00 mm	22.00 mm	32.0 mm	35.0 mm	85.0 mm	4	12	4	20.00 mm
22J1D025027W5R00	25.00 mm	27.00 mm	36.0 mm	39.0 mm	95.0 mm	4	16	4	25.00 mm

Notes: Total Number of Inserts = ZNF + ZNP.  
Cutter body must be relieved to accept .062R insert.



**HI-POS™ SERIES 22J3D INSERTS**



Part Number	Application	Station	RE Corner Radius	BS Wiper Length	LE Cutting Edge Length	INSL Insert Length	W1 Insert Width	S Thickness	NOI Number of Indexes	IH Insert Hand	Grade	IN1030	IN10K	IN2005	IN2035 <small>NEW</small>	IN2504 <small>NEW</small>	IN2505	IN2530	
																			•
<small>NEW</small> AOCT060200R-L	Light; Keen & Coated	Face & Periphery	Sharp	0.039	0.216	0.256	0.165	0.102	2	Right				•					
AOCT060202R-AL	Grd/Pol for Al	Face & Periphery	0.008	0.031	0.216	0.256	0.165	0.102	2	Right			•						
<small>NEW</small> AOCT060202R-L	Light; Keen & Coated	Face & Periphery	0.008	0.031	0.216	0.256	0.165	0.102	2	Right			•						
AOCT060204R-AL	Grd/Pol for Al	Face & Periphery	0.015	0.023	0.216	0.256	0.165	0.102	2	Right			•						
<small>NEW</small> AOCT060204R-L	Light; Keen & Coated	Face & Periphery	0.015	0.023	0.216	0.256	0.165	0.102	2	Right			•						
AOCT060208R-AL	Grd/Pol for Al	Face	0.031	0.018	0.216	0.256	0.165	0.102	2	Right			•						
AOMT060202R	Multi-Purpose	Face & Periphery	0.008	0.030	0.220	0.228	0.166	0.103	2	Right		•		•	•	•		•	
AOMT060204R	Multi-Purpose	Face & Periphery	0.015	0.020	0.220	0.228	0.166	0.103	2	Right				•		•	•	•	
AOMT060208R	Multi-Purpose	Face	0.031	0.010	0.220	0.228	0.166	0.103	2	Right				•	•	•	•	•	
AOMT060216R	Multi-Purpose	Face	0.062	-	0.220	0.228	0.166	0.103	2	Right				•		•		•	

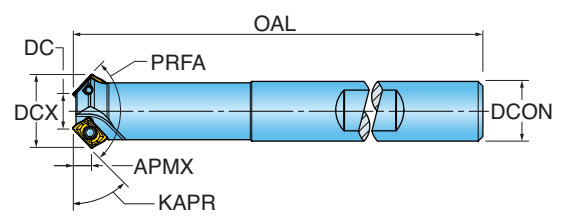
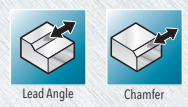
**HI-POS™ SERIES 22J3D HARDWARE**

SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B



**HI-POS™ SERIES 12\_1D (WELDON SHANK)**

**CHAMFER MILL**



Part Number	DC Cutting Dia.	DCX Cutting Dia. Max.	KAPR Cutting Edge Angle	PRFA Profile Angle	APMX Depth of Cut Max.	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Dia.
12M1D-0303287R01	0.312	0.520	60	60	0.180	5.00	2	0.500
12N1D-0303287R01	0.312	0.618	45	90	0.150	5.00	2	0.500
12P1D-0303287R01	0.312	0.690	30	120	0.100	5.00	2	0.500

Notes: Shank modifications can be made by cutting off the back to desired length.

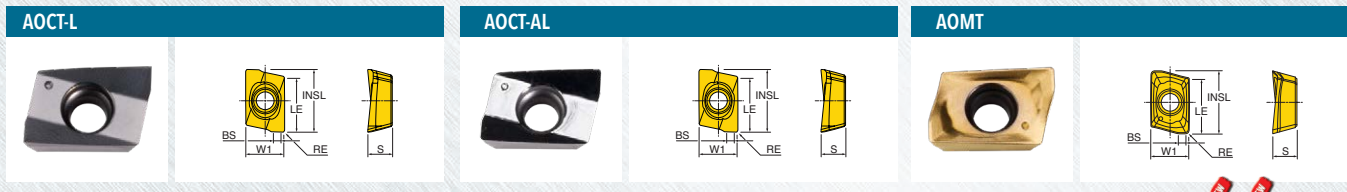
**METRIC**

Part Number	DC Cutting Dia.	DCX Cutting Dia. Max.	KAPR Cutting Edge Angle	PRFA Profile Angle	APMX Depth of Cut Max.	OAL Overall Length	ZEFF Effective Teeth	DCON Shank Dia.
12M1D008025T1R00	8.00 mm	13.70 mm	60	60	4.80 mm	65.0 mm	2	10.00 mm
12N1D008025T1R00	8.00 mm	16.00 mm	45	90	3.90 mm	65.0 mm	2	10.00 mm
12P1D008025T1R00	8.00 mm	17.70 mm	30	120	2.70 mm	65.0 mm	2	10.00 mm

Notes: Shank modifications can be made by cutting off the back to desired length.



# HI-POS™ SERIES 12\_1D INSERTS



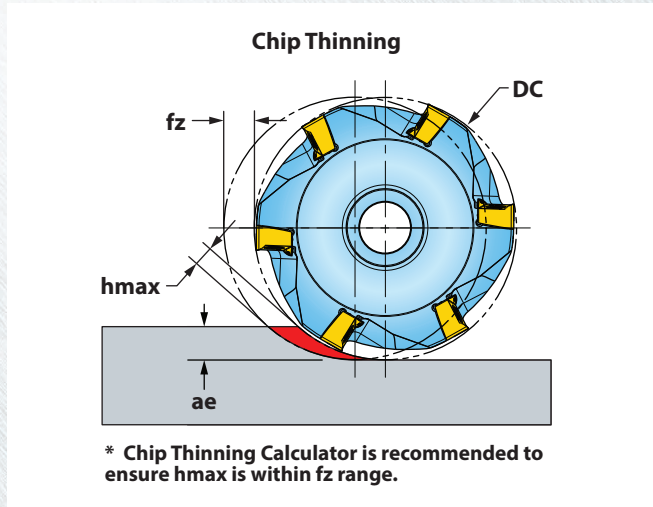
Part Number	Application	RE Corner Radius	BS Wiper Length	LE Cutting Edge Length	INSL Insert Length	W1 Insert Width	S Thickness	NOI Number of Indexes	IH Insert Hand	Grade	IN1030	IN10K	IN2005	IN2035	IN2504	IN2505	IN2530
<b>NEW</b> AOCT060200R-L	Light; Keen & Coated	Sharp	0.039	0.216	0.256	0.165	0.102	2	Right				•				
AOCT060202R-AL	Grd/Pol for Al	0.008	0.031	0.216	0.256	0.165	0.102	2	Right			•					
<b>NEW</b> AOCT060202R-L	Light; Keen & Coated	0.008	0.031	0.216	0.256	0.165	0.102	2	Right				•				
AOCT060204R-AL	Grd/Pol for Al	0.015	0.023	0.216	0.256	0.165	0.102	2	Right			•					
<b>NEW</b> AOCT060204R-L	Light; Keen & Coated	0.015	0.023	0.216	0.256	0.165	0.102	2	Right				•				
AOCT060208R-AL	Grd/Pol for Al	0.031	0.018	0.216	0.256	0.165	0.102	2	Right				•				
AOMT060202R	Multi-Purpose	0.008	0.030	0.220	0.228	0.166	0.103	2	Right		•		•	•	•		•
AOMT060204R	Multi-Purpose	0.015	0.020	0.220	0.228	0.166	0.103	2	Right				•		•	•	•
AOMT060208R	Multi-Purpose	0.031	0.010	0.220	0.228	0.166	0.103	2	Right				•	•	•	•	•
AOMT060216R	Multi-Purpose	0.062	-	0.220	0.228	0.166	0.103	2	Right				•		•		•

# HI-POS™ SERIES 12\_1D HARDWARE

SM18-041-00	DS-TP06S	DS-A00-.25-S	DT-05-.25	DS-TP06B



**HI-POS™ 90° OPERATING GUIDELINES**



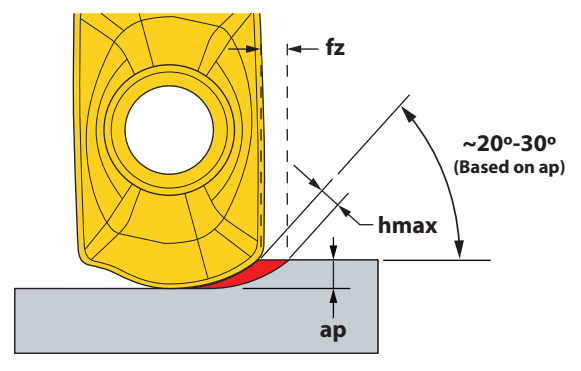
ISO	Materials			Vc Cutting Speed SFM	fz* Feed/Tooth (inch)	Harder <-----> Tougher						Coolant
	Mat'l Group #VDI 3323	Type	Examples			IN90D	IN2504	IN10K	IN2505 IN2005	IN2530 IN1030	IN2035	
<b>P</b>	1 - 5	Non-alloy Steel	1018, A36, 1045, A572, 1070	400-1000	.002-.006							No
	6 - 9	Low-alloy Steel	4140, 4340, P20, 8620, 300M	350-700		3		1	2			
	10 - 11	High-alloy Steel	H13, A2, D2, M2, T1	300-600								
<b>M</b>	12 - 13	Stainless Steel (Ferritic & Martensitic)	410, 416, 440	350-600	.002-.005				2	3	1	Yes
	14	Stainless Steel (Austenitic)	303, 304, 316, 15-5, 17-4	300-550								May not be required at high speeds
<b>K</b>	15 - 16	Gray Cast Iron	CLS. 20, 30, 45	500-1000	.002-.006							No
	17 - 20	Nodular Cast Iron	60-40-18, 100-70-03	400-800		1		2				
<b>N</b>	21 - 30	Aluminum	7075, 6061	1000-3000	.002-.007	1		1				Yes
<b>S</b>	31 - 35	High-Temp Alloys	Inconel, Hastelloy, Nimonic, Monel	65-150	.002-.005				2	3	1	Yes
	36 - 37	Titanium Alloys	6Al-4V, 5Al-5Mo-5V-3Cr	85-200					3	2	1	
<b>H</b>	38 - 39	Hardened Steel >48	A2, O1, D2	130-250	.002-.004		1		2			No

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.



**HI-POS™ HI-FEED OPERATING GUIDELINES**

Radius (Lead Angle) Chip Thinning

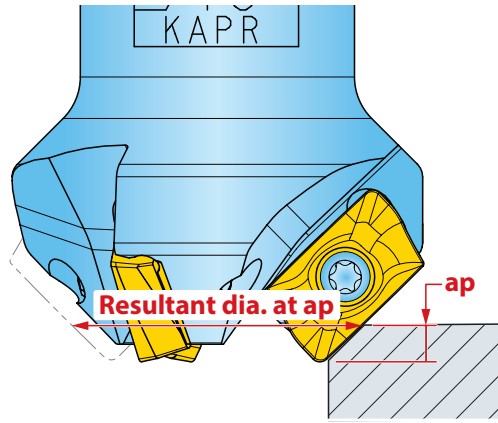


ISO	Materials			Vc Cutting Speed SFM	fz Feed/Tooth (inch)	ap Recom- mended (inch)	hmax* Max. Chip Thickness (inch)	Harder <--> Tougher				Coolant
	Mat'l Group #VDI 3323	Type	Examples					IN2504	IN2505	IN2530	IN2035	
P	1 - 5	Non-alloy Steel	1018, A36, 1045, A572, 1070	400-1000	.012-.030	.008-.019	.003-.010	3	2	1		No
	6 - 9	Low-alloy Steel	4140, 4340, P20, 8620, 300M	350-700								
	10 - 11	High-alloy Steel	H13, A2, D2, M2, T1	300-600								
M	12 - 13	Stainless Steel (Fer- ritic & Martensitic)	410, 416, 440	350-600	.012-.030	.008-.019	.003-.010		3	2	1	Yes
	14	Stainless Steel (Austenitic)	303, 304, 316, 15-5, 17-4	300-550								
K	15 - 16	Gray Cast Iron	CLS. 20, 30, 45	500-1000	.015-.030	.008-.019	.003-.012	1	2			No
	17 - 20	Nodular Cast Iron	60-40-18, 100-70-03	400-800								
S	31 - 35	High-Temp Alloys	Inconel, Hastelloy, Nimonic, Monel	65-150	.012-.025	.008-.019	.003-.009		2	3	1	Yes
	36 - 37	Titanium Alloys	6Al-4V, 5Al-5Mo-5V-3Cr	85-200								
H	38 - 39	Hardened Steel >48	A2, O1, D2	130-250	.012-.025	.008-.015	.003-.009	1	2			No

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.

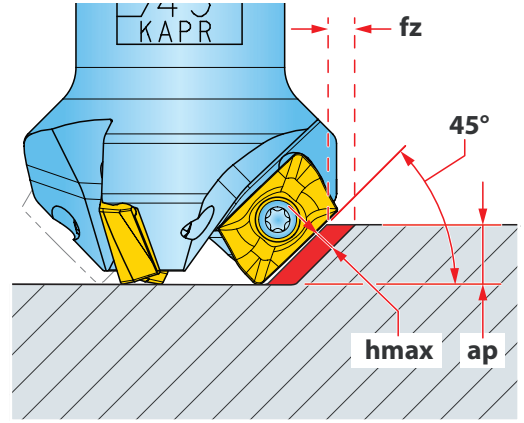
# HI-POS<sup>®</sup> CHAMFER OPERATING GUIDELINES

## RPM Calculation



RPM calculation is to be made using the resultant diameter at ap.

## Chip Thinning



Chip Thinning calculator is recommended to ensure hmax falls within fz range.

ISO	Materials			Vc Cutting Speed SFM	fz* Feed/Tooth (inch)	Harder <-----> Tougher						Coolant
	Mat'l Group #VDI 3323	Type	Examples			IN90D	IN2504	IN10K	IN2505 IN2005	IN2530 IN1030	IN2035	
P	1 - 5	Non-alloy Steel	1018, A36, 1045, A572, 1070	400-1000	.002-.006							No
	6 - 9	Low-alloy Steel	4140, 4340, P20, 8620, 300M	350-700		3		1	2			
	10 - 11	High-alloy Steel	H13, A2, D2, M2, T1	300-600								
M	12 - 13	Stainless Steel (Ferritic & Martensitic)	410, 416, 440	350-600	.002-.005				2	3	1	Yes
	14	Stainless Steel (Austenitic)	303, 304, 316, 15-5, 17-4	300-550								May not be required at high speeds
K	15 - 16	Gray Cast Iron	CLS. 20, 30, 45	500-1000	.002-.006							No
	17 - 20	Nodular Cast Iron	60-40-18, 100-70-03	400-800		1		2				
N	21 - 30	Aluminum	7075, 6061	1000-3000	.002-.007	1		1				Yes
S	31 - 35	High-Temp Alloys	Inconel, Hastelloy, Nimonic, Monel	65-150	.002-.005				2	3	1	Yes
	36 - 37	Titanium Alloys	6Al-4V, 5Al-5Mo-5V-3Cr	85-200					3	2	1	
H	38 - 39	Hardened Steel >48	A2, O1, D2	130-250	.002-.004		1		2			No

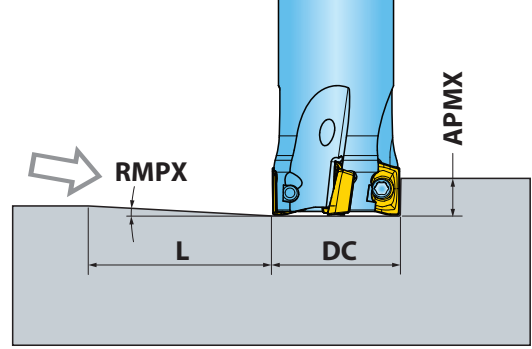
Note: Feed and speed recommendations are starting operating parameters. They are only guidelines from which further optimization should take place. Operating parameters are influenced by many machining variables. These variables may cause for reductions in feeds and speed or dramatic increases. Additionally,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



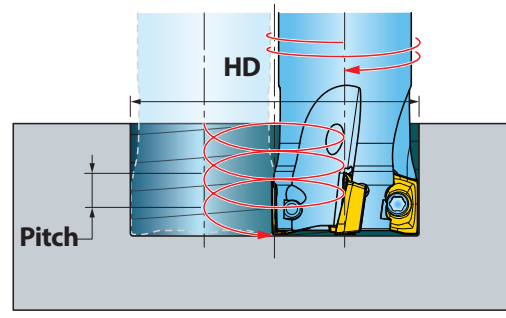


**HI-POS™ RAMPING DATA**

**Straight Ramping**



**Helical Ramping**



Ramp Data - 90° Inserts (AOMT06)						
DC Cutter Diameter	Straight Ramp			Helical Ramp		
	RMPX Ramp Angle Max.	APMX Depth of Cut Max.	L Ramp Length Min.	HD Hole Dia. Min.	HD Hole Dia. Max.	Pitch Max.
0.375	10.5	0.22	1.2	0.43		0.035
					0.75	0.135
0.500	5.5	0.22	2.3	0.75		0.059
					1.00	0.125
0.625	4.0	0.22	3.1	0.95		0.062
					1.25	0.118
0.750	2.6	0.22	4.8	1.18		0.062
					1.50	0.168
1.000	2.0	0.22	6.3	1.65		0.067
					2.00	0.137

Ramp Data - Hi-Feed Insert (UOMT06)						
DC Cutter Diameter	Straight Ramp			Helical Ramp		
	RMPX Ramp Angle Max.	APMX Depth of Cut Max.	L Ramp Length Min.	HD Hole Dia. Min.	HD Hole Dia. Max.	Pitch Max.
0.375	0.5	0.019	2.2	0.55		0.004
					0.75	0.008
0.500	4.5	0.019	0.3	0.70		0.019
					1.00	0.019
0.625	2.8	0.019	0.4	1.02		0.019
					1.25	0.019
0.750	2.2	0.019	0.5	1.02		0.019
					1.50	0.019
1.000	1.4	0.019	0.8	1.73		0.019
					2.00	0.019

**HI-POS<sup>®</sup> HOUSING MODIFICATION**

**Housing Modification for R.062 Insert**

When using AOMT06020216R, check to ensure the cutter body does not protrude beyond the trailing edge of the insert. If it does, the housing corner can be modified on a lathe or grinder by removing material as illustrated below.

