IASRF

MOLDINO
The Edge To Innovation

Radius Mill with Highly-Efficient Four-Corner Inserts

FACE MILL
STYLE

FEATURES

Economical four-corner inserts

Mill and inserts are designed for maximum cutting rigidity

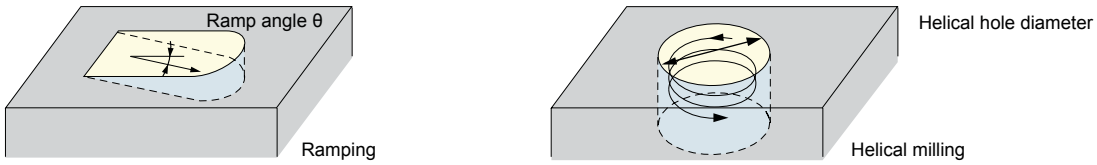
FEATURES

1. Four Corner Design Maximes Productivity and Cost Efficiency

The new four corner design has an insert shape that is almost identical to the conventional IASR two corner design. This new shape has the rigidity and productivity of the previous insert and the four usable corners creates greater cost-efficiency.

2. Direct Milling

Since the cutting flutes do not extend to the center, there are limitations on the ramp angle and hole diameter. As shown below, processing by direct milling without a pilot hole is possible for both ramping and helical milling.



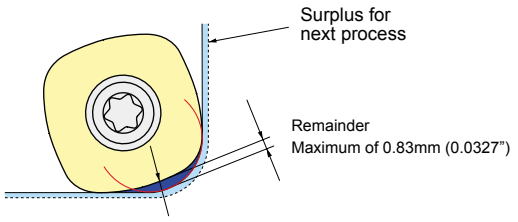
Tool Diameter	1.25”	1.5”	2”	3”	4”
Maximum ramp angle Θ	7°	4.5°	3°	1°	1°
Helical Hole Diameter	1.72” - 2.34”	2.22” - 2.84”	3.22” - 3.84”	5.59” - 6.14”	7” - 7.68”

【Note】 1. The ramp angle θ should be set within the ranges listed above. Use at ramp angles of 1° or less is recommended.
2. For hole diameters outside the ranges listed above, a pilot hole should be drilled before milling.

3. Programming Information

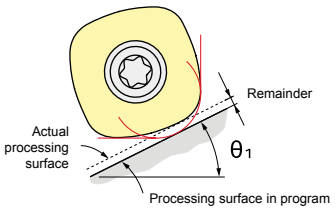
For rough milling, please create a program with corner radius values close to the reference values shown below.

When the corner radius is set to R4.5mm (R0.177”):



	R4.5mm (0.0177”)
Remainder	Less than 0.83mm (R0.0327”) [θ_1=22.1°]
Overcutting	None

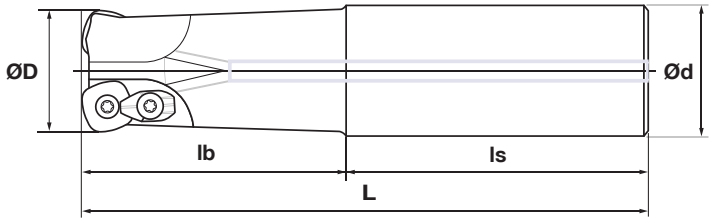
Normally, you should create a program with an input corner radius of approximately R4.5 (R0.177”). At an approximate corner radius of R4.5 (R0.177”), there is no overcutting.

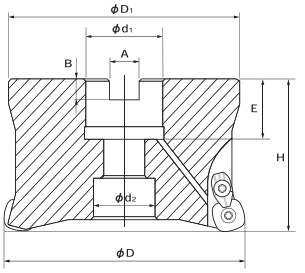


IASRF

Shank + Bore Type
Inch

MOLDINO
The Edge To Innovation





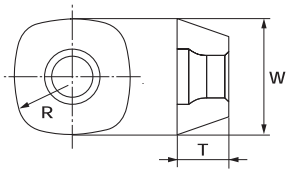
D	0/-0.2

Shank Style Inch

Part No.	Flutes	ØD	L	Ød	lb	ls	Insert
IASRFS4020R	2	**1.25**	6	1.25	2.75	3.25	SDNW12/SDMT12
IASRFS4024R	3	**1.50**	6	1.50	1.75	4.25	SDNW12/SDMT12

Face Mill Style Inch

Part No.	Flutes	ØD	$ØD_1$	H	E	A	B	$Ød_1$	$Ød_2$	Insert
IASRF4032-4	4	**2.00**	1.85	1.969	0.748	0.315	0.197	0.75	0.630	SDNW12/SDMT12
IASRF4048-5	5	**3.00**	2.99	2.480	1.378	0.374	0.236	1.00	0.827	SDNW12/SDMT12
IASRF4064-6	6	**4.00**	3.78	2.756	1.378	0.626	0.394	1.50	1.236	SDNW12/SDMT12



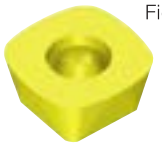


Fig-1
Standard Insert

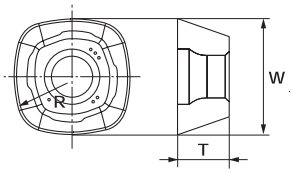


Fig-2
Insert with Chip Breaker

Part No.	JP4020	JS4045	CY250	JS4060	JM4060	R (mm)	T (mm)	W (mm)	Shape
SDNW1205ZDTN-R15	•	•		•	•	15	5.56	12.7	Fig-1
SDMT1205ZDTN-R15	•	•	•	•	•	15	5.56	12.7	Fig-2

All Inserts have four effective cutting edges

	Clamp Screw	Clamp Piece Set	Wrench
			
ALL SIZES	262-142	CM4-141	105-T15

IASRF

Cutting Conditions
Inch + Metric

MOLDINO
The Edge To Innovation

INCH	Ø	1.25	1.5	2	3	4
Material	Number of flute	2	3	4	5	6
Mild Steel Carbon Steel <200HB	N(rpm)	1800	1500	1120	750	560
	Vc(sfm)	591	591	591	591	591
	Vf(in/min)	213	266	265	221	198
JS4060	fz(in/t)	0.059	0.059	0.059	0.059	0.059
JS4045	ap(in)	0.039	0.039	0.059	0.059	0.059
CY250	ae(in)	0.866	1.024	1.378	2.087	2.756
Carbon Steel Alloy Steel <30HRC	N(rpm)	1500	1250	940	620	470
	Vc(sfm)	492	492	492	492	492
	Vf(in/min)	177	221	222	183	167
JS4060	fz(in/t)	0.059	0.059	0.059	0.059	0.059
JS4045	ap(in)	0.039	0.039	0.059	0.059	0.059
CY250	ae(in)	0.866	1.024	1.378	2.087	2.756
Tool Steel Alloy Steel 30-45HRC	N(rpm)	1200	1000	750	500	370
	Vc(sfm)	394	394	394	394	394
	Vf(in/min)	76	94	94	79	70
JP4020	fz(in/t)	0.031	0.031	0.031	0.031	0.031
JS4045	ap(in)	0.039	0.039	0.059	0.059	0.059
JS4060	ae(in)	0.866	1.024	1.378	2.087	2.756
CY250						
Tool Steel Alloy Steel 45-50HRC	N(rpm)	800	660	500	330	250
	Vc(sfm)	262	262	262	262	262
	Vf(in/min)	25	31	31	26	24
	fz(in/t)	0.016	0.016	0.016	0.016	0.016
	ap(in)	0.039	0.039	0.039	0.039	0.039
JP4020	ae(in)	0.866	1.024	1.378	2.087	2.756
Stainless Steel	N(rpm)	1200	1000	750	500	370
	Vc(sfm)	394	394	394	394	394
	Vf(in/min)	76	94	94	79	70
	fz(in/t)	0.031	0.031	0.031	0.031	0.031
	ap(in)	0.039	0.039	0.059	0.059	0.059
JM4060	ae(in)	0.866	1.024	1.378	2.087	2.756
Cast Iron	N(rpm)	1800	1500	1120	750	560
	Vc(sfm)	591	591	591	591	591
	Vf(in/min)	283	354	353	295	265
	fz(in/t)	0.079	0.079	0.079	0.079	0.079
JS4045	ap(in)	0.079	0.079	0.079	0.079	0.079
JP4020	ae(in)	0.866	1.024	1.378	2.087	2.756

METRIC	Ø	31.75	38.1	50.8	76.2	101.6
Material	Number of flute	2	3	4	5	6
Mild Steel Carbon Steel <200HB	N(rpm)	1800	1500	1120	750	560
	Vc(m/min)	180	180	180	180	180
	Vf(mm/min)	5400	6750	6720	5625	5040
JS4060	fz(mm/t)	1.50	1.50	1.50	1.50	1.50
JS4045	ap(mm)	1	1	1.5	1.5	1.5
CY250	ae(mm)	22	26	35	53	70
Carbon Steel Alloy Steel <30HRC	N(rpm)	1500	1250	940	620	470
	Vc(m/min)	150	150	150	150	150
	Vf(mm/min)	4500	5625	5640	4650	4230
JS4060	fz(mm/t)	1.50	1.50	1.50	1.50	1.50
JS4045	ap(mm)	1	1	1.5	1.5	1.5
CY250	ae(mm)	22	26	35	53	70
Tool Steel Alloy Steel 30-45HRC	N(rpm)	1200	1000	750	500	370
	Vc(m/min)	120	120	120	120	120
	Vf(mm/min)	1920	2400	2400	2000	1776
JP4020	fz(mm/t)	0.80	0.80	0.80	0.80	0.80
JS4045	ap(mm)	1	1	1.5	1.5	1.5
JS4060	ae(mm)	22	26	35	53	70
CY250						
Tool Steel Alloy Steel 45-50HRC	N(rpm)	800	660	500	330	250
	Vc(m/min)	80	80	80	80	80
	Vf(mm/min)	640	792	800	660	600
	fz(mm/t)	0.40	0.40	0.40	0.40	0.40
	ap(mm)	1	1	1	1	1
JP4020	ae(mm)	22	26	35	53	70
Stainless Steel	N(rpm)	1200	1000	750	500	370
	Vc(m/min)	120	120	120	120	120
	Vf(mm/min)	1920	2400	2400	2000	1776
	fz(mm/t)	1	1.0	1.0	1.0	1.0
	ap(mm)	1	1.0	1.5	1.5	1.5
JM4060	ae(mm)	22	26	35	53	70
Cast Iron	N(rpm)	1800	1500	1120	750	560
	Vc(m/min)	180	180	180	180	180
	Vf(mm/min)	7200	9000	8960	7500	6720
	fz(mm/t)	2.00	2.00	2.00	2.00	2.00
JS4045	ap(mm)	2	2	2	2	2
JP4020	ae(mm)	22	26	35	53	70

COATING MATERIALS FOR INSERTS

Material name ISO Classification	Coating Name Coating Type	Application	Features
JP4020 P10-M10-K10	**JP Coating** PVD	For pre-hardened steel (40-50HRC)	Uses coating with excellent shock resistance, making it superior for cutting prehardened steel.
JS4045 P30-K30	**JS Coating** PVD	General purpose for steel	Uses rough grain substrate and JS coating. Suitble for general steel cutting
CY250 P30-M30-K30	**PCA Coating** PVD	General purpose for steel	Uses TiAlN Coating; has wide cutting region range
JS4060 P40	**JS Coating** PVD	For wet general purpose cutting of steel	Uses coating with excellent heat resistance and lubrication characteristics; has a wide range cutting
JM4060 P40-M40	**JM Coating** PVD	For wet general cutting of steel, stainless steel	Newly developed PVD technology improves adhesion of membranes to reduce peeling of membranes due to welding