NPA

EXPANSION

Member IMC Group Ingersoll Cutting Tools

New Product Announcement

MILLING - INDEXABLE

Cutter Series

15G1B (.024")
15G1D, 5G1D (.040") NEW
15G1F, 5G5F, 5G6F (.060")
15M1P, 5M5P, 5M6P (.088")
5G5Q, 5G6Q (.107")
5G5M, 5G6M (.145")

Insert Series

SDXS04 (4 mm)
SDXS06 (6 mm) NEW
SDXS09 (9 mm)
SDES13, SDMS13 (13 mm)
SDXS16 (16 mm)
SDES19, SDMS19 (19 mm)

Geometries

MM: Pos. Geometry
MR: Heavy Duty
MR1: HD – Keen Edge

Diameter Range

All Series: 0.375–6.000"
(6 mm Series: 0.625–2.000")

Grades

IN2504, IN2505, IN2510, IN2530, IN2535, IN2537, IN4005, IN4030, IN4035, IN6537, IN7035

Lead Angle

12°

Adaptions

Cylindrical,
Weldon (9 and 13 mm only)
TopOn, ChipSurfer, Face Mill

Materials

- Steel
- Stainless Steel
- Cast Iron
- Non-Ferrous
- High-Temp Alloys
- Hardened Steel

See it in action! »

GOLDSFEED™

NEW **Ingersoll has Expanded the Proven GoldSFeed Line with a New SDXS06 Insert and Related Cutters**

- High-feed, high-positive designed 4-corner insert with wiping flats that can eliminate secondary passes.
- SDXS06 inserts feature a 12° lead-angle to produce 5x the feed rates in any material.
- Inserts include multiple types of edge reinforcement and corner configurations.

WINSFEED™ ADVANCED MACHINING

ingersoll-imc.com

6 mm Expansion

Overview

Our most popular hi-feed mill series, **GoldSFeed** (formerly GoldQuad), is now expanded to include a 6 mm cutter series.

FEATURES & BENEFITS:

- Six hi-feed families offering insert sizes of 4, 6, 9, 13, 16, and 19 mm, multiple cutter - adaptions, pilot sizes and densities.
- Inserts feature 12° lead-angles to produce 5x the feed rates in any material.
- Each cutter family includes light, medium, and heavy duty insert geometries, multiple edge configurations, and our most advanced grades.
- Inserts include multiple types of edge reinforcement and corner configurations.
- All cutter families offer inserts with radial wiping flats that can eliminate secondary passes.

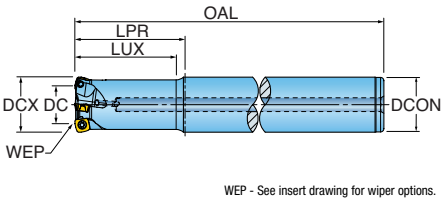
THIS DOCUMENT FEATURES THE 6 MM GOLDSFEED EXPANSION, ONLY.

SCAN/CLICK/TAP
to see additional 4, 9, 13, 16, and 19 mm cutter/insert offerings.

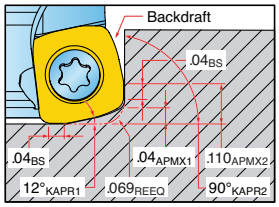
Face | Lead Angle | Shoulder | Ramp | Contour | Pocket | Corkscrew | Plunge | Coolant

6 mm • Series 15G1D

HI-FEED END MILL - CYLINDRICAL SHANK (6 MM INSERT)



WEP - See insert drawing for wiper options.

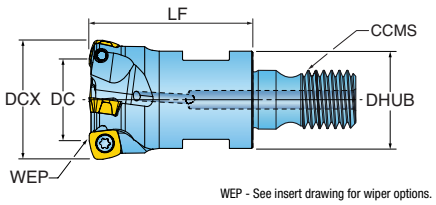


Part Number	DCX Cutting Dia. Max.	DC Cutting Dia.	LUX Usable Length Max.	LPR Protruding Length	OAL Overall Length	ZEFF Effective Teeth	REEQ Program Radius Equivalent	DCON Shank Dia.	RMPX Ramp Angle Max.
INCH									
15G1D-06015S6R01	0.625	0.314	1.500	1.500	4.000	2	0.069	0.625	2.50
15G1D-07020S7R01	0.750	0.438	2.000	2.000	5.000	3	0.069	0.750	3.50
15G1D-07030S7R01	0.750	0.438	3.000	3.000	6.000	3	0.069	0.750	3.50
15G1D-08020S8R01	0.875	0.562	2.000	2.000	7.000	4	0.069	0.875	3.00
15G1D-10020S1R01	1.000	0.686	2.000	2.000	10.000	4	0.069	1.000	2.50
15G1D-10030S1R01	1.000	0.686	3.000	3.000	7.000	4	0.069	1.000	2.50
15G1D-12030S9R01	1.250	0.936	3.000	3.000	5.500	5	0.069	1.250	2.00

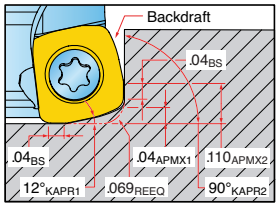
Face | Lead Angle | Shoulder | Ramp | Contour | Pocket | Corkscrew | Plunge | Coolant

6 mm • Series 15G1D

HI-FEED END MILL - TOPON (6 MM INSERT)



WEP - See insert drawing for wiper options.

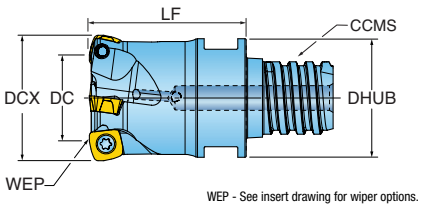


Part Number	DCX Cutting Dia. Max.	DC Cutting Dia.	LF Functional Length	ZEFF Effective Teeth	REEQ Program Radius Equivalent	DHUB Hub Dia.	CCMS Connection Code Machine Side	RMPX Ramp Angle Max.
INCH								
15G1D-06010X5R01	0.625	0.314	1.000	2	0.069	0.50	TopOn M08	2.50
15G1D-07010X6R01	0.750	0.438	1.000	3	0.069	0.70	TopOn M10	3.50
15G1D-08010X7R01	0.875	0.562	1.000	4	0.069	0.70	TopOn M12	3.00
15G1D-10013X7R01	1.000	0.686	1.380	4	0.069	0.82	TopOn M12	2.50
15G1D-12015X8R01	1.250	0.936	1.500	5	0.069	1.13	TopOn M16	2.00
15G1D-15015X8R01	1.500	1.186	1.500	6	0.069	1.13	TopOn M16	1.60
15G1D-15017X9R01	1.500	1.186	1.750	6	0.069	1.42	TopOn M20	1.60

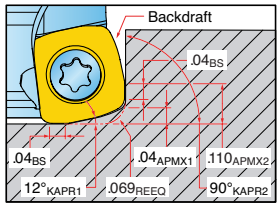
Face | Lead Angle | Shoulder | Ramp | Contour | Pocket | Corkscrew | Plunge | Coolant

6 mm • Series 15G1D

HI-FEED END MILL - CHIPSURFER (6 MM INSERT)



WEP - See insert drawing for wiper options.

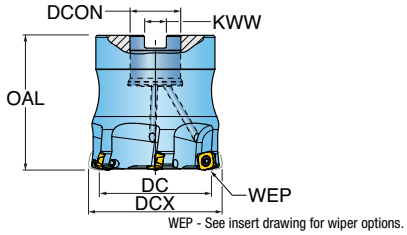


Part Number	DCX Cutting Dia. Max.	DC Cutting Dia.	LF Functional Length	ZEFF Effective Teeth	REEQ Program Radius Equivalent	DHUB Hub Dia.	CCMS Connection Code Machine Side	RMPX Ramp Angle Max.
INCH								
15G1D-06008TRR01	0.625	0.314	0.83	2	0.069	0.61	ChipSurfer T10	2.50
15G1D-07010TSR01	0.750	0.438	1.00	3	0.069	0.72	ChipSurfer T12	3.50
15G1D-10012TUR01	1.000	0.686	1.25	4	0.069	0.97	ChipSurfer T15	2.50

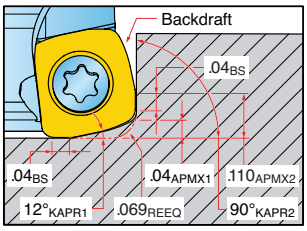
Face | Lead Angle | Shoulder | Ramp | Contour | Pocket | Corkscrew | Plunge | Coolant

6 mm • Series 15G1D

HI-FEED FACE MILL (6 MM INSERT)



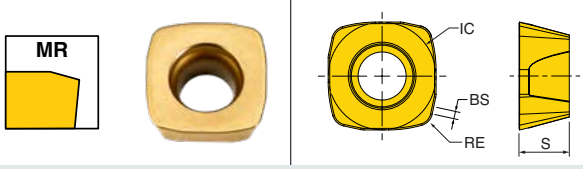
WEP - See insert drawing for wiper options.



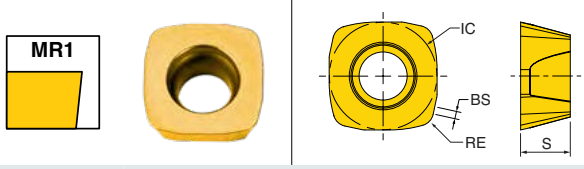
Part Number	DCX Cutting Dia. Max.	DC Cutting Dia.	OAL Overall Length	ZEFF Effective Teeth	REEQ Program Radius Equivalent	DCON Bore Dia.	KWW Keyway	RMPX Ramp Angle Max.
INCH								
5G1D-15R01	1.500	1.186	1.500	6	0.069	0.500	0.25	1.60
5G1D-20R01	2.000	1.686	2.000	6	0.069	0.750	0.31	1.00
5G1D-20R02	2.000	1.686	2.000	7	0.069	0.750	0.31	1.00

6 mm • Inserts

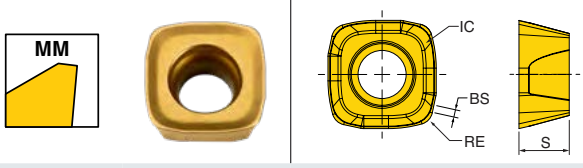
SDXS0603MPR-MR



SDXS0603MPR-MR1



SDXS0603MPR-MM



Part Number	Application	RE Corner Radius	BS Wiper Length	IC Inscribed Circle Dia.	S Thickness	NOI No. of Indexes	IH Insert Hand	Grades									
								IN2504	IN2510	IN4005	IN2505	IN4030	IN2530	IN4035	IN2535	IN7035	IN6537	IN2537
SDXS0603MPR-MR	Hi-Feed, Heavy Duty	0.034	0.041	6 mm	0.118	4	Right	•	•	•	•	•	•		•		•	•
SDXS0603MPR-MR1	Hi-Feed, Heavy Duty Keen Edge	0.034	0.041	6 mm	0.118	4	Right				•	•	•	•	•	•		
SDXS0603MPR-MM	Hi-Feed, Positive Geometry	0.034	0.041	6 mm	0.118	4	Right			•	•	•	•	•	•	•		

6 mm • Hardware

Part Number	Insert Screw	Driver	Retention Bolt	Optional: Coolant Bolt	Optional: Torque Driver Handle	Optional: Preset Torque Adapter	Optional: Torque Driver Bit
15G1D...	SM25-054-00	DS-0020	–	–	DS-A00-.25-S	DT-11-.25	DS-T08B
5G1D-15R01	SM25-054-00	DS-0020	SD-04-46	–	DS-A00-.25-S	DT-11-.25	DS-T08B
5G1D-20R01	SM25-054-00	DS-0020	SD-06-48	SD-06-A6	DS-A00-.25-S	DT-11-.25	DS-T08B
5G1D-20R02	SM25-054-00	DS-0020	SD-06-48	SD-06-A6	DS-A00-.25-S	DT-11-.25	DS-T08B

6 mm • Operating Guidelines

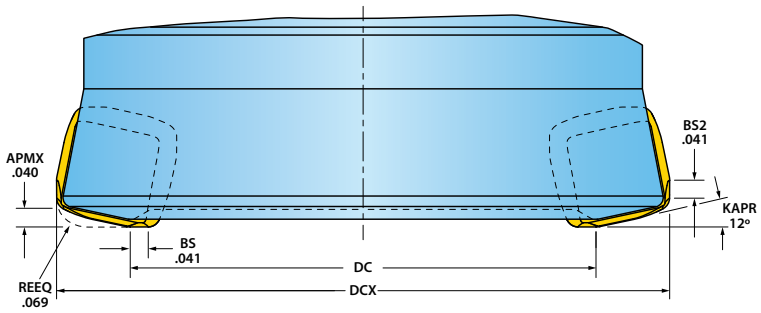
Materials				Vc Cutting Speed SFM	Hex Max. Chip Thickness (inch)	fz* Feed/ Tooth (inch)	Harder «---------» Tougher										Coolant	Geometry		
ISO	Mat'l Group #VDI 3323	Type	Examples				IN2504	IN2510	IN4005	IN2505	IN4030	IN2530	IN6537	IN7035	IN4035	IN2535		MR	MR1	MM
P	1–5	Non-alloy steel	1018, A36, 1045, A572, 1070	500–900	.004–.010	.020–.050	–	–	–	1	4	2	3	–	–	–	No	1	2	3
	6–9	Low-alloy steel	4140, 4340, P20, 8620, 300M	400–600	.003–.008	.015–.040	–	–	–	1	4	2	3	–	–	–	No	1	2	3
	10, 11	High-alloy steel	H13, A2, D2, M2, T1	300–500	.003–.008	.015–.040	–	–	–	1	4	2	3	–	–	–	No	1	2	3
M	12, 13	Stainless steel (ferritic & martensitic)	410, 416, 440	400–700	.003–.008	.015–.040	–	–	–	–	2	1	–	–	4	3	Yes	–	1	2
	14	Stainless steel (austenitic)	303, 304, 316, 15-5, 17-4	300–600	.003–.008	.015–.040	–	–	–	–	2	1	–	–	4	3	Yes	–	2	1
K	15, 16	Gray cast iron	CLS. 20, 30, 45	500–900	.004–.010	.020–.050	–	1	2	3	4	–	–	–	–	–	No	3	1	2
	17, 18	Ductile cast iron	60-40-18, 100-70-03	400–600	.003–.008	.015–.040	–	–	1	2	3	4	–	–	–	–	No	3	1	2
N	21–30	Aluminum	7075, 6061	1000+	.004–.010	.020–.050	–	–	1	2	3	4	–	–	–	–	Yes	–	2	1
S	31–35	High-temp alloys	Inconel, Hastelloy, Monel	80–140	.002–.004	.010–.020	–	–	–	–	–	–	–	2	3	1	Yes	–	1	2
	36, 37	Titanium alloys	6Al-4V, 5Al-5Mo-5V-3Cr	100–200	.004–.006	.020–.030	–	–	–	–	–	–	–	3	2	1	Yes	–	1	2
H	38, 39	Hardened steel >48	A2, O1, D2	100–200	.002–.004	.010–.020	1	–	3	2	–	–	–	–	–	–	No	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.

6 mm • Programming Data

DEFINITIONS

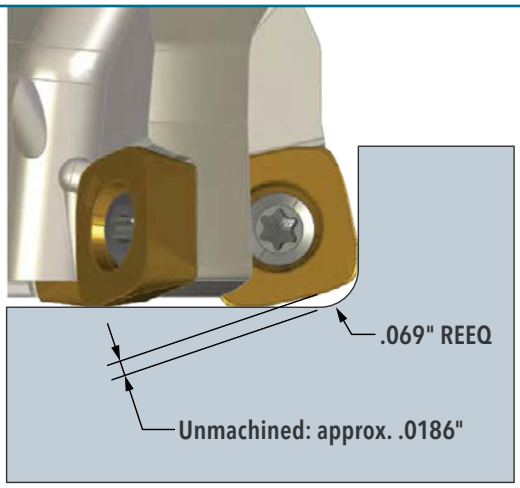
- » **DCX:** maximum cutting diameter
- » **DC:** effective cutter diameter
- » **KAPR:** cutting edge angle
- » **APMX:** maximum depth of cut
- » **REEQ:** program radius
- » **BS:** axial wiper length
- » **BS2:** radial wiper length



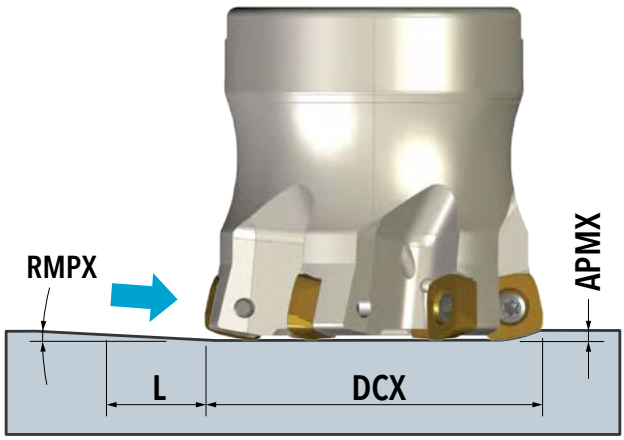
Part Number	DCX Cutting Dia. Max.	DC Cutting Dia.
15G1D-06015S6R01	0.625	0.314
15G1D-07020S7R01	0.750	0.438
15G1D-07030S7R01	0.750	0.438
15G1D-08020S8R01	0.875	0.562
15G1D-10020S1R01	1.000	0.686
15G1D-10030S1R01	1.000	0.686
15G1D-12030S9R01	1.250	0.936
15G1D-06010X5R01	0.625	0.314
15G1D-07010X6R01	0.750	0.438
15G1D-08010X7R01	0.875	0.562
15G1D-10013X7R01	1.000	0.686
15G1D-12015X8R01	1.250	0.936
15G1D-15015X8R01	1.500	1.186
15G1D-15017X9R01	1.500	1.186
15G1D-06008TRR01	0.625	0.314
15G1D-07010TSR01	0.750	0.438
15G1D-10012TUR01	1.000	0.686
5G1D-15R01	1.500	1.186
5G1D-20R01	2.000	1.686
5G1D-20R02	2.000	1.686

6 mm • Programming Tips

- » The shape of the insert nose can be approximated by programming as-if the insert had a .069" corner radius (REEQ). The difference will result in an unmachined area that's approximately .0186" deep.
- » The recommendations for cutting speed, chip-thickness grade, and insert geometry are starting recommendations and should be optimized based on the type and rate of edge failure.
- » The **Machining Calculator App**, on Ingersoll's website, is another resource for estimating and optimizing parameters. There are additional inputs like the radial width of cut and the effective rake angle can be included into the estimates.



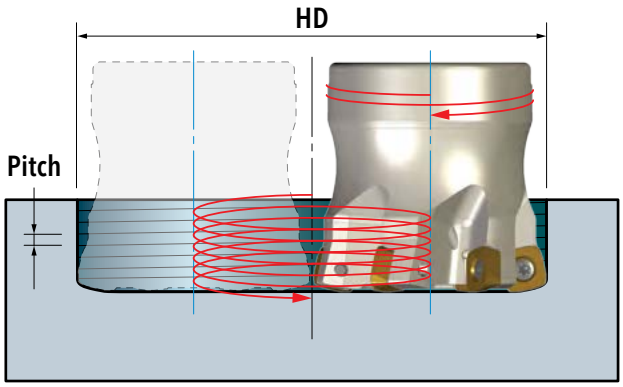
6 mm • Straight Ramping



DCX Cutting Dia. Max.	RMPX Ramp Angle Max.	L*	APMX Depth of Cut Max.
0.625	2.500	0.916	0.040
0.750	3.500	0.653	0.040
0.875	3.000	0.763	0.040
1.000	2.500	0.916	0.040
1.250	2.000	1.145	0.040
1.500	1.600	1.432	0.040
2.000	1.000	2.291	0.040

* L in this table is the length the cutter travels to reach the maximum depth of cut (.040") while traveling at the maximum ramp angle listed for the cutter.

6 mm • Helical Ramping



DCX Cutting Dia. Max.	HD Hole Dia. Min.	HD Hole Dia. Max.	HD Hole Dia. Max. w/o Cusp	Max. Pitch Per Revolution
0.625	0.812	1.250	0.939	0.040
0.750	1.044	1.500	1.188	0.040
0.875	1.288	1.750	1.437	0.040
1.000	1.538	2.000	1.686	0.040
1.250	2.032	1.500	2.186	0.040
1.500	2.534	3.000	2.686	0.040
2.000	3.534	4.000	3.686	0.040

PITCH

The maximum pitch is determined to not exceed the maximum depth of cut (APMX) and to not exceed the maximum ramp angle (RMPX).

EXAMPLE

» The minimum hole diameter that the .625" diameter cutter can interpolate from solid is .812" (leaving a raised cusp).

» The maximum hole diameter that the .625" diameter cutter can interpolate from solid is 1.250".

» The maximum hole diameter that the .625" diameter cutter can interpolate from solid while leaving a flat-bottom is .939" (leaving no raised cusp).

» The maximum pitch for this series matches the insert's radial wiper length of .040".