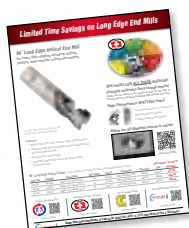


Table of Contents

Boring Tools/Boring Kits



Boring Tools	2
Boring Kits	3
Tooling Packages	4



Save on our high performance cutting tools and multi-material inserts with Techniks Tooling Packages. Visit www.techniksusa.com to find the package that's right for you!

Milling Tools - Face Mills



Standard Face Mills	
90° Face Mill	7
45° Face Mill	8
45° Heavy-Duty Face Mill	9
Positive High-Feed Face Mill	10
Negative High Feed Face Mills	11
Negative Cast Iron Cutter	12
Positive Button Cutter	13

ShrinkMILL Face Mills

90° ShrinkMILL	15
45° ShrinkMILL	16
Negative High Feed	17

Arbor Screws

Standard & CoolBLAST	18
----------------------------	----

Milling Tools - End Mills



Indexable End Mills

90° End Mills	20
Positive High-Feed End Mills	22
SDHF Indexable End Mills	23
Negative High-Feed End Mills	24
Long Edge Helical End Mills	25

PowerLOC End Mills

About PowerLOC	26
PowerLOC Indexable End Mills	27
PowerLOC Negative High Feed	28
PowerLOC Toolholders	29

Milling Inserts



About Multi-Material Inserts	30
FAQ's	31
Machining Guide	32
Insert Grade Info	33
Technical Formulas	36
Insert Cross-Reference	37
Milling Inserts	38-55



For full product specifications on our boring tools and deburring machines request our Toolholders and Accessories catalog or visit our website: www.techniksusa.com

Turning & Boring Tools



Negative Turning Toolholders

MCLNR/L 95°	57
MDJNR/L 93°	57
MVJNR/L 93°	58
MWLNLR/L 95°	58
MTJNR/L93°	59

Negative Boring Bars

PCLNR/L 95° Coolant Thru	60
PDUNR/L 93° Coolant Thru	60
PVUNR/L 93° Coolant Thru	61
PWLNLR/L 95° Coolant Thru	61

Positive Turning Toolholders

SCLCR/L 95°	62
STGCR/L 91°	62
SDJCR/L 93°	62

Positive Boring Bars

SCLCR/L 95° Coolant Thru	63
SDUCR/L 93° Coolant Thru	63
STFCR/L 91° Coolant Thru	64

Turning & Boring Inserts

Turning & Boring Inserts	67-93
--------------------------------	-------

Indexable Drills

Indexable Drills & Inserts	94
----------------------------------	----

Part Number Index

Part Number Index	95
-------------------------	----

See our full-line of High-Performance Boring Tools

We eliminate boring head repairs!



Key Points:

- lifetime guarantee
- performance & value
- easy to use & maintain



Our extremely strong boring heads provide outstanding performance compared to other brands. All Techniks boring heads feature insert pockets that are integral to the head, not extending out to the side like other, weaker designs. Because Techniks heads support the insert better, accuracy, rigidity and tool life are maximized.

No matter what your boring needs, we have a "right-size" solution that will grow with you in the future. Contact one of our sales specialists to discuss your needs and learn more about our Lifetime Guaranteed heads.

Ease-of-Use Features



AccuSET

Dial adjustable in increments of .0001". Quickly set the head to any diameter.

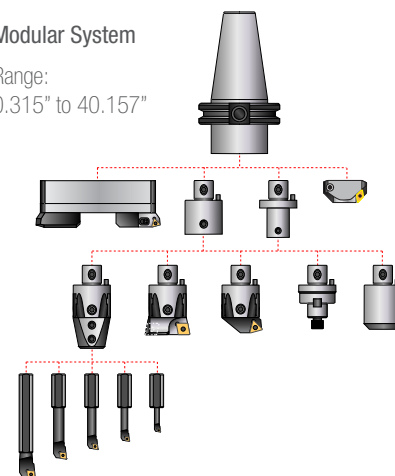


SpeedSET

Adjust both inserts on finish heads simultaneously. Cut setup time in half.

Modular System

Range:
0.315" to 40.157"



Boring Kits (8)



Modular System



MacroBOHR



Boring Bars



AccuSET Dial



Lifetime Guarantee

Boring Tool	Spindle Sizes	Range	Inserts	Boring Bars	AccuSET	Lifetime Guarantee
Boring Kits	BT40/50, CAT40/50, HSKA, Weldon, R8	.314" to 8.27"	rhombic or triangle	✓	✓	✓
Modular System	BT30/40/50, CAT40/50, HSKA, Weldon, R8	.315" to 19.685"	rhombic or triangle	✓	✓	✓
MacroBOHR	BT30/40/50, CAT40/50, HSKA	8.661" to 40.157"	rhombic or triangle	✓	✓	✓

For full details about our boring tools see our toolholders & accessories catalog or visit our website.

Serious Boring Tools at a Great Price

Techniks high-performance BohrSTAR kits

Features

- Lifetime Guarantee on boring heads
- Dial adjustable 0.0001" increments
- Rhombic or triangular inserts

Rhombic kits include:



- 1 Pc. EPMT 1.5_
- 3 Pcs. CCMT 21.5_
- 3 Pcs. CCMT 32.5_

Triangular kits include:



- 2 Pcs. TCMT 1.2_
- 3 Pcs. TCMT 1.8_
- 2 Pcs. TCMT 32.5_



Boring Heads

Get the kit that fits!

BohrSTAR43 Kit, Range: .314" to 1.69"

Order No.	Description	Price
6991210	BohrSTAR43 kit, rhombic inserts	\$1,576.00
6991215	BohrSTAR43 kit, triangular inserts	\$1,576.00

BohrSTAR100 Kit, Range: .314" to 3.94"

Order No.	Description	Price
6991220	BohrSTAR100 kit, rhombic inserts	\$1,983.00
6991235	BohrSTAR100 kit, triangular inserts	\$1,983.00

BohrSTAR170 Kit, Range: .314" to 6.69"

Order No.	Description	Price
6991230	BohrSTAR170 kit, rhombic inserts	\$2,745.00
6991250	BohrSTAR170 kit, triangular inserts	\$2,745.00

BohrSTAR210 Kit, Range: .314" to 8.27"

Order No.	Description	Price
6991245	BohrSTAR210 kit, rhombic inserts	\$2,900.00
6991240	BohrSTAR210 kit, triangular inserts	\$2,900.00



BohrSTAR43 Kit: .314" – 1.69"



BohrSTAR100 Kit: .314" – 3.94"



BohrSTAR170 Kit: .314" – 6.69"



BohrSTAR210 Kit: .314" – 8.27"



Face Mills and Inserts Tooling Packages

45° & 90° Face Mill Packages

For facing, plunging, ramping, and pocket milling



45° Face Mill packages includes SEKT inserts



90° Face Mill packages includes our new design high-helix APKT inserts for smoother cutting.



One insert cuts ALL THESE materials

Changing materials? Don't change inserts!

Simply run our inserts at the speeds & feeds on the back of the package for increased productivity AND reduced tool costs.

Watch our All-Material Inserts in action!



<http://ow.ly/FhPBk>

45° Face Mill Packages

Order No.	Face Mill	Description	Insert / Qty	Description	Reg. Price	Sale	You Save!
NP-001	2521234	FM45-2.00C-.750-4-13 (2"-CT)	2506169 / 40	SEKT12T3AGSN-LT30	\$644.00	\$384.00	\$260.00
NP-002	2531235	FM45-3.00C-1.25-6-13 (3"-CT)	2506169 / 60	SEKT12T3AGSN-LT30	\$960.00	\$576.00	\$684.00
NP-003	2541236	FM45-4.00C-1.25-7-13 (4"-CT)	2506169 / 70	SEKT12T3AGSN-LT30	\$1,120.00	\$672.00	\$448.00
NP-004	2551237	FM45-5.00C-1.50-8-13 (5"-CT)	2506169 / 80	SEKT12T3AGSN-LT30	\$1,344.00	\$768.00	\$576.00

90° Face Mill Packages

Order No.	Face Mill	Description	Insert / Qty	Description	Reg. Price	Sale	You Save!
NP-005	2621234	FM90-2.00C-.750-4-16 (2"-CT)	1506075 / 40	APKT1604PDTR-LT30	\$644.00	\$384.00	\$260.00
NP-006	2621244	FM90-2.00C-.750-5-16 (2"-CT)	1506075 / 50	APKT1604PDTR-LT30	\$805.00	\$480.00	\$325.00
NP-006.5	2621235	FM90-2.50C-1.00-5-16 (2.5"-CT)	1506075 / 50	APKT1604PDTR-LT30	\$816.00	\$430.00	\$386.00
NP-007	2631235	FM90-3.00C-1.25-6-16 (3"-CT)	1506075 / 60	APKT1604PDTR-LT30	\$960.00	\$576.00	\$384.00
NP-008	2641236	FM90-4.00C-1.25-7-16 (4"-CT)	1506075 / 70	APKT1604PDTR-LT30	\$1,120.00	\$672.00	\$448.00
NP-009	2651237	FM90-5.00C-1.50-8-16 (5"-CT)	1506075 / 80	APKT1604PDTR-LT30	\$1,344.00	\$768.00	\$576.00
NP-009.5	2621238	FM90-6.00-2.00-10-16 (6"-CT)	1506075 / 100	APKT1604PDTR-LT30	\$1,810.00	\$960.00	\$850.00

End Mills and Inserts Tooling Packages



Use with our new high-helix APKT inserts that provide smoother cutting than other designs



APKT1003 inserts



APKT1604 inserts

Non-Coolant/Coolant-Thru End Mills

For facing, plunging, ramping, and pocket milling

End Mill Packages: Non-Coolant

Order No.	End Mill	Description	Inserts / Qty	Description	Reg. Price	Sale	You Save!
NP-010	1631234	IEM90-.500-.500-4.00-1-10 (1/2")	3154411 / 20	APKT1003PDTR-LT30	\$323.00	\$157.00	\$166.00
NP-011	1641235	IEM90-.625-.625-5.00-2-10 (5/8")	3154411 / 20	APKT1003PDTR-LT30	\$343.00	\$157.00	\$186.00
NP-011.5	1641236	IEM90-.625-.625-7.00-2-10	3154411 / 20	APKT1003PDTR-LT30	\$356.00	\$165.00	\$191.00
NP-012	1651236	IEM90-.750-.750-5.00-2-10 (3/4")	3154411 / 20	APKT1003PDTR-LT30	\$363.00	\$157.00	\$206.00
NP-013	1652336	IEM90-.750-.750CW-3.50-3-10	3154411 / 30	APKT1003PDTR-LT30	\$497.00	\$236.00	\$261.00
NP-013.5	1651237	IEM90-.750-.750-8.00-2-10	3154411 / 20	APKT1003PDTR-LT30	\$360.00	\$157.00	\$203.00
NP-014	1661237	IEM90-1.00-1.00-6.00-3-10 (1")	3154411 / 30	APKT1003PDTR-LT30	\$462.00	\$236.00	\$226.00
NP-014.5	1661238	IEM90-1.00-1.00-7.87-3-10	3154411 / 30	APKT1003PDTR-LT30	\$462.00	\$236.00	\$226.00
NP-014.7	1671239	IEM90-1.00-1.00-7.87-2-16	1506075 / 20	APKT1604PDTR-LT30	\$417.00	\$225.00	\$192.00
NP-015	1676238	IEM90-1.25-1.25-6.00-3-16 (1-1/4")	1506075 / 30	APKT1604PDTR-LT30	\$533.00	\$288.00	\$245.00
NP-016	1686239	IEM90-1.50-1.25-6.00-4-16 (1-1/2")	1506075 / 40	APKT1604PDTR-LT30	\$649.00	\$384.00	\$265.00

End Mill Packages: Coolant-Thru

Order No.	End Mill	Description	Inserts / Qty	Description	Reg. Price	Sale	You Save!
NP-017	1632234	IEM90-.500-.500C-4.00-1-10 (1/2"-CT-H13)	3154411 / 20	APKT1003PDTR-LT30	\$333.00	\$157.00	\$176.00
NP-018	1642235	IEM90-.625-.625C-5.00-2-10 (5/8"-CT-H13)	3154411 / 20	APKT1003PDTR-LT30	\$353.00	\$157.00	\$196.00
NP-019	1652236	IEM90-.750-.750C-5.00-2-10 (3/4"-CT-H13)	3154411 / 20	APKT1003PDTR-LT30	\$373.00	\$157.00	\$216.00
NP-020	1662237	IEM90-1.00-1.00C-6.00-3-10 (1"-CT-H13)	3154411 / 30	APKT1003PDTR-LT30	\$472.00	\$236.00	\$236.00
NP-021	1662250	IEM90-1.00-1.00CW-3.50-2-16 (1"-CT-W-H13)	1506075 / 20	APKT1604PDTR-LT30	\$392.00	\$192.00	\$200.00
NP-022	1672238	IEM90-1.25-1.25C-6.00-3-16 (1-1/4"-CT-H13)	1506075 / 30	APKT1604PDTR-LT30	\$543.00	\$255.00	\$288.00
NP-023	1682239	IEM90-1.50-1.25C-6.00-4-16 (1-1/2"-CT-H13)	1506075 / 40	APKT1604PDTR-LT30	\$659.00	\$340.00	\$319.00

Indexable High-Performance Face Mills



Key Points:

- free cutter body program
- tooling package savings
- high-performance & value



One insert cuts ALL THESE materials

Techniks face mills are manufactured to the highest standards and provide outstanding performance and value. Each face mill features a bore I.D. tolerance of H6, which means less runout and longer cutter life than other brands. Our cutter bodies are made from H13 tool steel with an electroless nickel coating applied to provide corrosion resistance.

Use our CoolBLAST coolant arbor screws to provide coolant thru capability without the cost of expensive coolant tools.

For best results use our LT30 grade inserts (or LT-05 grade for aluminum) that provide great results in all materials. Instead of throwing half-used inserts away, you can keep cutting the next job with the same insert. Simply change the feeds and speeds as required.



CoolBLAST arbor screw provides coolant path even with non-coolant thru face mills.

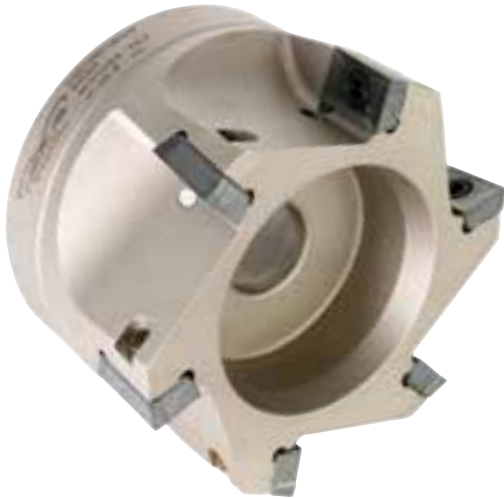


Face Mills	Diameters	Inserts	Insert Pockets	H6 Bore I.D.	ShrinkMILL	CoolBLAST
90° Facemills	2" 2.5" 3" 4" 5" 6"	APKT, APGT, APEX	4, 5, 6, 7, 8, 10	✓	✓	✓
45° Facemills	2" 3" 4" 5"	SEKT, SEET	4, 6, 7, 8	✓	✓	✓
45° Heavy-Duty	3" 4" 5" 6"	SNKX (8 edges)	5, 7, 8, 10	✓		✓
Positive High-Feed	2" 2.5" 3" 4"	SDKX	4, 5, 6, 7	✓		✓
Negative Cast Iron	3" 4" 5" 6"	PNEG (10 edges)	8, 10, 12, 14	✓		
Round Button	2" 3"	RDMT, RDMW, RDMX	4, 5	✓	✓	✓
Negative High-Feed	2" 2.5" 3" 4"	SNKX	4, 6, 7	✓	✓	✓

Applications Include



90° Face Mills and Inserts



Features

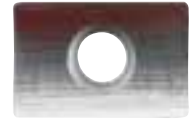
- H6 bore tolerance is 38% more accurate than standard face mills
- Coolant thru ready with coolant arbor screw
- Made from H13 tool steel and electroless nickel coated for long life



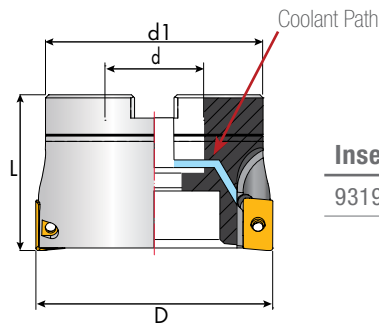
APKT



APGT



APEX



Available in 2", 3", 4", 5", 6.6" diameters.
Use with insert APKT 1604 for most materials.
For aluminum, use with APTG 1604 or
APEX 1604 PDFRFO1-5005-HP (2 cutting edges)

Insert Screw	Wrench
9319345	9355555

90° Face Mills, Coolant Thru & Non-Coolant

Part No.	Description	Insert	D	d	Pockets	d1	L
2621234	FM90-2.00C-.750-4-16	AP_ _1604	2.00	0.75	4	1.69	1.57
2621244	FM90-2.00C-.750-5-16	AP_ _1604	2.00	0.75	5	1.69	1.57
2621246	FM90-2.5C-1.00-5-16	AP_ _1604	2.5	1.0	5	2.36	1.75
2631235	FM90-3.00C-1.25-6-16	AP_ _1604	3.00	1.25	6	2.76	1.97
2641236	FM90-4.00C-1.25-7-16	AP_ _1604	4.00	1.25	7	2.76	1.97
2651237	FM90-5.00C-1.50-8-16	AP_ _1604	5.00	1.50	8	3.82	2.48
2661239	FM90-6.00-2.00-10-16	AP_ _1604	6	2.0	10	4.72	2.38

Blue indicates coolant thru capable. To run coolant thru order Coolant Arbor Screws on page 18.

APKT, APTG, APEX Milling Inserts

Multi purpose 90° milling insert suitable for roughing to finishing-slotting, shoulder and face milling.



Part No.	Description	Grade	l	s	r	Direction
1506075	APKT 1604 PDTR-NEW	L 30	0.606	0.187	0.031	Right
1506073	APKT 1604-PDTR	LT 30	0.060	0.187	0.031	Right
1506078	APKT 160416 PDTR	LT 30	0.606	0.187	0.062	Right
1500300	APKT 160424 ER	LT 30	0.060	0.187	0.094	Right
1506079	APKT 160432 PDTR	LT 30	0.606	0.187	0.125	Right
1506506	APGT 160408 PDER ALU	LT 05	0.606	0.187	0.031	Right
3151239	APEX 1604 PDFR F01 HP	GH05	0.704	0.227	Sharp	Right

Green indicates aluminum insert.

45° Face Mills and Inserts



Features

- H6 bore tolerance is 38% more accurate than standard face mills
- Coolant thru ready with coolant arbor screw
- Made from H13 tool steel and electroless nickel coated for long life

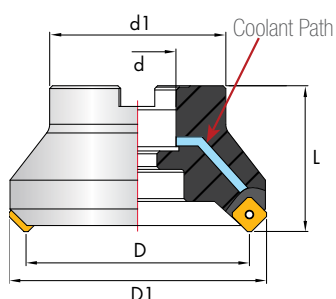


SEKT



SEET

Available in 2", 3", 4", 5" diameters.
Use with SEKT 12 inserts for most materials.
For aluminum, use with SEET 13T3 (4 cutting edges)



Insert Screw	Wrench
9318345	9355555

45° Face Mills, Coolant Thru

Part No.	Description	Inserts	D	d	D1	Z	d1	L
2521234	FM45-2.00C-.750-4-13	SE_ _12T3/13T3	2.00	0.75	2.48	4	1.69	1.57
2531235	FM45-3.00C-1.25-6-13	SE_ _12T3/13T3	3.00	1.25	3.66	6	2.75	1.97
2541236	FM45-4.00C-1.25-7-13	SE_ _12T3/13T3	4.00	1.25	4.49	7	2.75	1.97
2551237	FM45-5.00C-1.50-8-13	SE_ _12T3/13T3	5.00	1.50	5.43	8	3.82	2.48

Blue indicates coolant thru capable. To run coolant thru order Coolant Arbor Screws on page 18.

SEKT Milling Inserts

Multi purpose 45° milling insert, designed for high depths of cut. Suitable for roughing to finishing face milling operations.



Part No.	Description	Grade	l	s	r	Direction
2506169	SEKT 12T3 AGSN	LT 30	0.528	0.156	Chamfer	Neutral
3251239	SEET 13T3 HP	WSK10	0.528	0.158	Chamfer	Neutral

Green indicates aluminum insert.

Heavy-Duty 45° Face Mills & Inserts

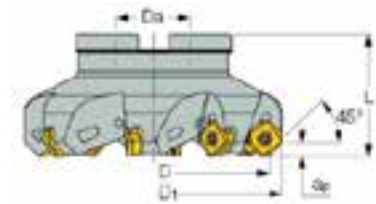


Features

- H6 bore tolerance is 38% more accurate than standard face mills
- Internal coolant directed at each cutting edge
- Made from H13 tool steel and electroless nickel coated for long life



SNKX



For easier cutting at higher feed rates and greater depth-of-cut. An excellent choice for heavy milling of steel and cast iron.

Available in 3", 4", 5", 6" diameters.

Use with SNKX inserts (8 cutting edges)

Insert Screw	Wrench
9318345	9355555

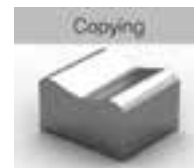
Heavy Duty 45° Face Mill (FM) Coolant Thru

Part No.	Description	Inserts	D	D1	Da	Z	L
2531237	FM45-D3.00-1.25-5-16	SNKX 1607	3.00	3.71	1.25	5	2.00
2541238	FM45-D4.00-1.50-7-16	SNKX 1607	4.00	4.58	1.50	7	2.00
2551239	FM45-D5.00-1.50-8-16	SNKX 1607	5.00	5.62	1.50	8	2.50
2561240	FM45-D6.00-2.00-10-16	SNKX 1607	6.00	6.63	2.00	10	2.50

Blue indicates coolant thru capable. To run coolant thru order Coolant Arbor Screws on page 18.

SNKX Heavy Duty 45° Milling Inserts

Exclusive and unique design insert with 8 cutting edges for high feed. Suitable for roughing to semi-finishing face milling operations.



Part No.	Description	Grade	Direction
2502205	SNKX 1607-45°	LT 30	Right

Pr. R. = Programming Radius.

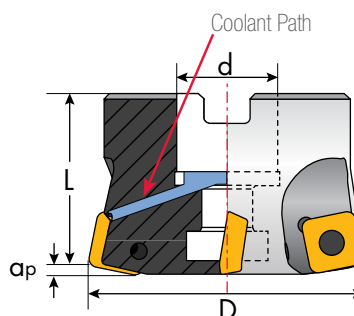
Positive High Feed Face Mills



Features

- H6 bore tolerance is 38% more accurate than standard face mills
- Internal coolant directed at each cutting edge
- Made from H13 tool steel and electroless nickel coated for long life

Achieve higher feed rates in steel, stainless steel, cast iron, hard steel, high-temp alloys and even aluminum. Perfect for facing, plunging, ramping, and pocket milling, Positive insert clearance provides excellent helical ramping capabilities.



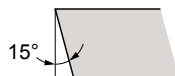
SDHF High Feed Face Mill Coolant Thru

Part No.	Description	Insert	D	d	L	Pockets	Ap max	α°	Screw	Wrench
2928820	SDHF 2.00-.750C-4-12	SDKX 1205	2.00	.750	1.574	4	.098	1.574	9319347	9355555
2828825	SDHF 2.50-.750C-5-12	SDKX 1205	2.50	.750	1.574	5	.098	1.574	9319347	9355555
2938830	SDHF 3.00-1.000C-6-12	SDKX 1205	3.00	1.000	1.97	6	.098	1.97	9319347	9355555
2948840	SDHF 4.00-1.250C-7-12	SDKX 1205	4.00	1.250	1.97	7	.098	1.97	9319347	9355555

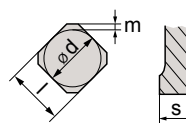
Blue indicates coolant thru capable. To run coolant thru order Coolant Arbor Screws on page 18. α° = Ramp Angle.



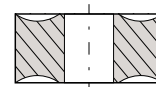
Shape



Clearance Angle



Tolerance
 $d \pm 0.08$
 $m \pm 0.013$
 $s \pm 0.025$



Fixing
Chip breaker

SDKX Milling Inserts

Part No.	Description	Grade	l	s	Pr. R.	Direction
2503095	SDKX 0904 HF	LT 30	0.375	0.187	0.078	Right
2503096	SDKX 1205 HF	LT 30	0.500	0.219	0.098	Right

Pr. R = Programming Radius

Application Guide



Negative High Feed Face Mills

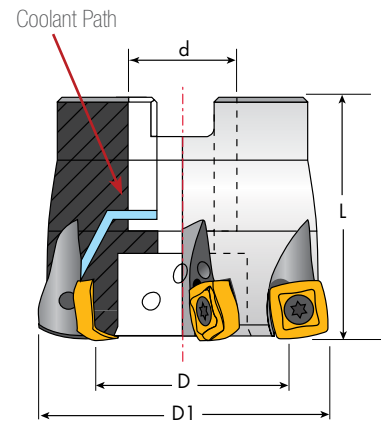


Features

- H6 bore tolerance is 38% more accurate than standard face mills
- Internal coolant directed at each cutting edge
- Made from H13 tool steel and electroless nickel coated for long life



SNKX



For roughing operations in steel, cast iron, and hardened materials milling pockets and 3D surfaces
An excellent choice for plunge milling, and also work great for profile and copy milling.
Use with SNKX inserts (8 cutting edges)
Available in 2", 2.5", 3", 4" diameters.

High Feed Face Mills Coolant Thru

Part No.	Description	D	d	L	Z	Insert	Ap	α°	Screw	Wrench
9202123	HF-2.00-.750C-4SN9	2.00	0.75	1.57	4	SNKX09T3	0.040	1°	6811264	9355444
9212124	HF-2.50-.750C-5SN9	2.50	0.75	1.57	4	SNKX09T3	0.040	.75°	6811264	9355444
9353123	HF-3.00-1.00C-6SN9	3.00	1.00	1.57	6	SNKX09T3	0.040	.5°	6811264	9355444
9474123	HF-4.00-1.25C-7SN9	4.00	1.25	2.00	7	SNKX09T3	0.040	.25°	6811264	9355444

Blue indicates coolant. α° = Ramp Angle.

SNKX Milling Inserts

Part No.	Description	Grade	Direction
SNKX09T3	SNKX 09T3-HF	LT30	Right



Negative Cast Iron Milling Cutter



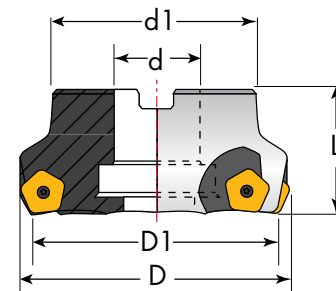
Features

- H6 bore tolerance is 38% more accurate than standard face mills
- Internal coolant directed at each cutting edge
- Made from H13 tool steel and electroless nickel coated for long life



PNEG

Negative pentagon insert primarily used in cast iron, but can be used in other materials. 10 cutting edges produce lower cost per corner. Available in 3", 4", 5", 6" diameters.



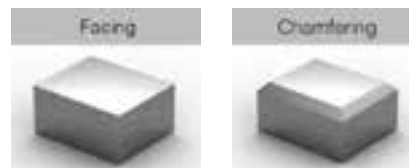
Decagon Cutter

Part No.	Description	Insert	D	d	D1	Z	d1	L	Screw	Wrench
2139910	PN11-3.00-1.00-08	PNEG1105	3.00	1.00	2.87	8	2.36	2.00	9319345	9355555
2149920	PN11-4.00-1.25-10	PNEG1105	4.00	1.25	3.93	10	3.16	2.00	9319345	9355555
2159930	PN11-5.00-1.50-12	PNEG1105	5.00	1.50	4.90	12	3.94	2.50	9319345	9355555
2169940	PN11-6.00-1.50-14	PNEG1105	6.00	1.50	5.80	14	4.53	2.50	9319345	9355555

PNEG Milling Inserts

Part No.	Description	Grade	Direction
3959999	PNEG 110512 R CM	152	Right

See back of box for speeds & feed information.



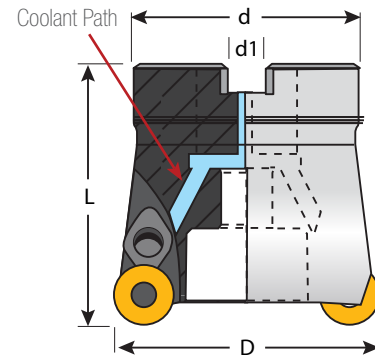
Positive Round Button Cutter Face Mill



Features

- H6 bore tolerance is 38% more accurate than standard face mills
- Internal coolant directed at each cutting edge
- Made from H13 tool steel and electroless nickel coated for long life

For roughing operations including milling pockets and 3D surfaces. Works great for profile and copy milling.
Number of indexes depends on D.O.C.
Available in 2", 3" diameters.



Round Button Cutter Coolant Thru

Part No.	Description	Insert	D	d	d1	ap	Z	α°	L
2825635	RD12-2.00-.750C-4	RD__1204	2.00	0.75	1.69	0.250	4	5°	1.97
2835640	RD12-3.00-1.00C-5	RD__1204	2.50	0.75	2.19	0.250	5	3°	1.97

Blue indicates coolant. α° = Ramp Angle.

RDM_1204 Inserts

Button inserts provide the maximum number of cutting edges depending upon depth-of-cut.



RDMT
general purpose



RDMW
hard steels &
cast iron



RDMX
aluminum &
soft material



Part No.	Description	Grade	Radius	Operation	Screw	Clamp	Wrench	Clamp Screw	Clamp Screw Wrench	Material
3355541	RDMT 1204	LT30	-	*	9311311	9344999	9355555	6811299	9355666	P-M-K-S-H
3355548	RDMW 1204	LT30	-	*	9311311	9344999	9355555	6811299	9355666	P-M-K-S-H
3355549	RDMX 1204	LT30	-	*	9311311	9344999	9355555	6811299	9355666	P-M-K-S-H

* Pocket Milling, Copying, Facing

P = steel, M = stainless, K = cast iron, S = high temp alloys, H = hardened material, N = aluminum & alloys

ShrinkMILL Super-Rigid Milling Tools



ShrinkMILLS provide ShrinkFIT advantages to milling tools.
No ShrinkFIT machine? No problem. We will do it for you.

Key Points:

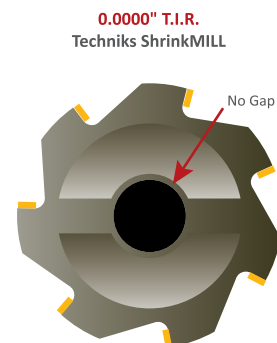
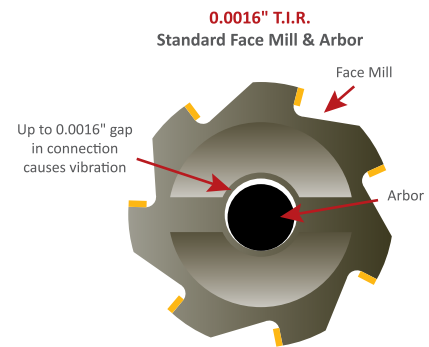
- T.I.R. of 0.0" extends insert life 30%–50%
- improved surface finish
- Best tool for high metal removal rates

NOTE: You lose 10% of tool life for every .0001" of T.I.R. Insert life varies with cutting conditions.

Compared to other tools in your shop, face mills actually have a very poor T.I.R. (runout) specification. This is because the I.D./O.D. tolerance between the face mill and the arbor is 0.0016" (see diagram). Poor T.I.R. causes runout and vibration while cutting, reducing cutter life.

Our patented ShrinkMILLS create a near-perfect connection between the face mill and arbor, and are the most rigid, and accurate milling tools in the industry. ShrinkMILLS are your best choice for high metal removal rates, improved surface finish and extended cutter life.

Let us show you the cost savings using ShrinkMILLS. Contact us to schedule a demonstration or to request test tools. With ShrinkMILLS you will hear the difference when they runs, and see it in the surface finish.



90° ShrinkMILLS

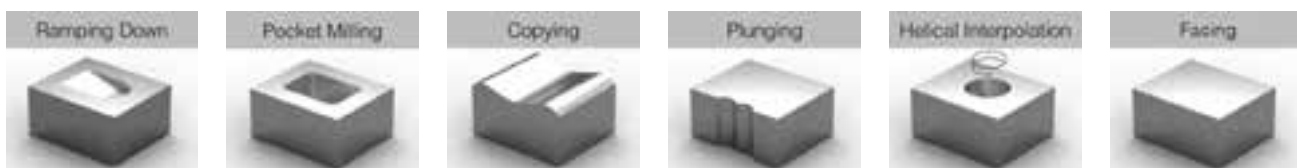
45° ShrinkMILLS

Negative High Feed

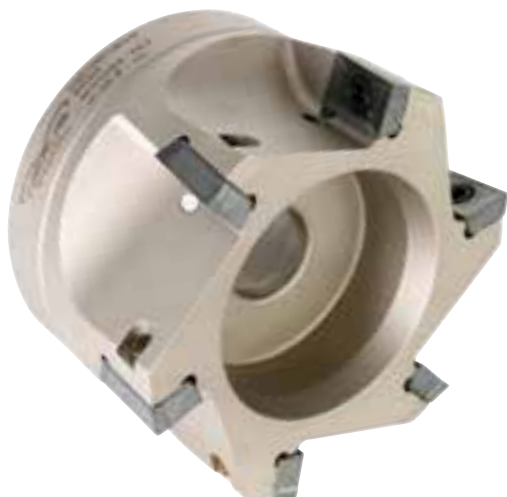
Button Cutter

ShrinkMILLS	Diameters	Inserts	Insert Pockets	H6 Bore I.D.	ShrinkMILL	CoolBLAST
90° ShrinkMILLS	2" 2.5" 3" 4" 5" 6"	APKT, APGT, APEX	4, 5, 6, 7, 8, 10	✓	✓	✓
45° ShrinkMILLS	2" 3" 4" 5"	SEKT, SEET	4, 6, 7, 8	✓	✓	✓
Round Button	2" 3"	RDMT, RDMW, RDMX	4, 5	✓	✓	✓
Negative High-Feed	2" 2.5" 3" 4"	SNKX	4, 6, 7	✓	✓	✓

ShrinkMILLS are your best choice for:



90° ShrinkMILL Facemill



Features

- ShrinkMILL bore tolerance creates a nearly perfect connection between arbor and face mill
- Coolant thru ready with coolant arbor screw
- Made from H13 tool steel and electroless nickle coated for long life



APKT



APGT



APEX

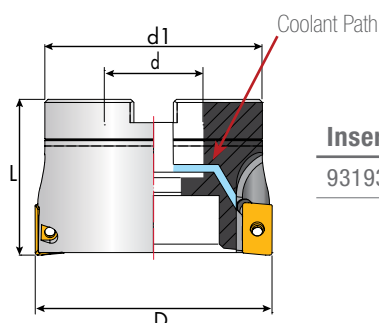
Use ShrinkMILL face mills when better metal removal rates and longer cutter life is desired.

Use with insert APKT 1604 for most materials.

For aluminum, use with APGT 1604 or

APEX 1604 PDFRFO1-5005-HP (2 cutting edges)

Available in 2", 3", 4", 5" diameters.



Insert Screw	Wrench
9319345	9355555

90° ShrinkMILL (SFM) Coolant Thru

Part No.	Description	Insert	D	d	Z	d1	L
2321234	SFM90-2.00C-.750-4-16	AP__1604	2.00	0.75	4	1.69	1.57
2331235	SFM90-3.00C-1.25-6-16	AP__1604	3.00	1.25	6	2.76	1.97
2341236	SFM90-4.00C-1.25-7-16	AP__1604	4.00	1.25	7	2.76	1.97
2351237	SFM90-5.00C-1.50-8-16	AP__1604	5.00	1.50	8	3.82	2.48

Blue indicates coolant thru capable. To run coolant thru order Coolant Arbor Screws on page 18.

APKT, APGT, APEX Milling Inserts

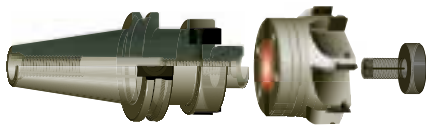
Multi purpose 90° milling insert suitable for roughing to finishing-slotting, shoulder and face milling.



Part No.	Description	Grade	l	s	r	Direction
1506075	APKT 1604 PDTR-NEW	L 30	0.606	0.187	0.031	Right
1506073	APKT 1604-PDTR	LT 30	0.060	0.187	0.031	Right
1506078	APKT 160416 PDTR	LT 30	0.606	0.187	0.062	Right
1500300	APKT 160424 ER	LT 30	0.060	0.187	0.094	Right
1506079	APKT 160432 PDTR	LT 30	0.606	0.187	0.125	Right
1506506	APGT 160408 PDER ALU	LT 05	0.606	0.187	0.031	Right
3151239	APEX 1604 PDFR F01 HP	GH05	0.704	0.227	Sharp	Right

Green indicates aluminum insert.

45° ShrinkMILL Face Mills



Features

- ShrinkMILL bore tolerance creates a nearly perfect connection between arbor and face mill
- Coolant thru ready with coolant arbor screw
- Made from H13 tool steel and electroless nickle coated for long life

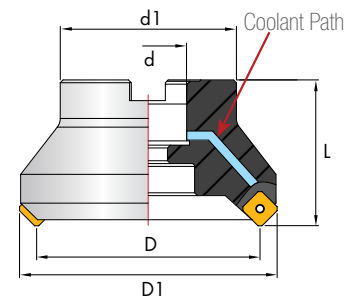


SEKT



SEET

Insert Screw	Wrench
9318345	9355555



Use ShrinkMILL face mills when better metal removal rates and longer cutter life is desired.

Use with SEKT 12 inserts for most materials.

For aluminum, use with SEET 13T3 (4 cutting edges)

Available in 2", 3", 4", 5" diameters.

45° ShrinkMILL (SFM) Coolant Thru

Part No.	Description	Inserts	D	d	D1	Z	d1	L
2421234	SFM45-2.00C-.750-4-13	SE_ _12T3/13T3	2.00	0.75	2.48	4	1.69	1.57
2431235	SFM45-3.00C-1.25-6-13	SE_ _12T3/13T3	3.00	1.25	3.66	6	2.76	1.97
2441236	SFM45-4.00C-1.25-7-13	SE_ _12T3/13T3	4.00	1.25	4.49	7	2.76	1.97
2451237	SFM45-5.00C-1.50-8-13	SE_ _12T3/13T3	5.00	1.50	5.43	8	3.82	2.48

Blue indicates coolant thru capable. To run coolant thru order Coolant Arbor Screws on page 18.

SEKT Milling Inserts

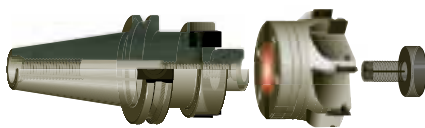
Multi purpose 45° milling insert, designed for high depths of cut. Suitable for roughing to finishing-face, plunging and ramping down milling operations.



Part No.	Description	Grade	l	s	r	Direction
2506169	SEKT 12T3 AGSN	LT 30	0.528	0.156	Chamfer	Neutral
3251239	SEET 13T3 HP	WSK10	0.528	0.158	Chamfer	Neutral

Green indicates aluminum insert.

Negative High Feed ShrinkMILL Face Mills



Features

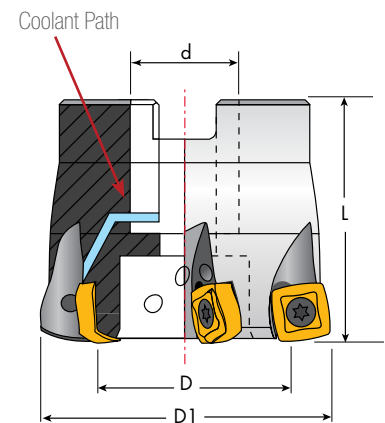
- H6 bore tolerance is 38% more accurate than standard face mills
- Internal coolant directed at each cutting edge
- Made from H13 tool steel and electroless nickel coated for long life



SNKX

For roughing operations in steel, cast iron, and hardened materials milling pockets and 3D surfaces
An excellent choice for plunge milling, and also work great for profile and copy milling.

Use with SNKX inserts (8 cutting edges)
Available in 2", 2.5", 3", 4" diameters.



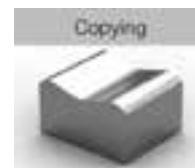
ShrinkMILL High Feed Face Mills Coolant Thru

Part No.	Description	D	d	H	Z	Insert	Ap	α°	Screw	Wrench
9223123	SHF-2.00-.750C-4SN9	2.00	0.75	1.570	4	SNKX09T3	0.040	1°	6811264	9355444
9233124	SHF-2.50-.750C-5SN9	2.50	0.75	1.570	4	SNKX09T3	0.040	.75°	6811264	9355444
9363123	SHF-3.00-1.00C-6SN9	3.00	1.00	1.57	6	SNKX09T3	0.040	.5°	6811264	9355444
9484123	SHF-4.00-1.25C-7SN9	4.00	1.25	2.00	7	SNKX09T3	0.040	.25°	6811264	9355444

Blue indicates coolant. α° = Ramp Angle.

SNKX Milling Inserts

Part No.	Description	Grade	Direction
SNKX09T3	SNKX 09T3-HF	LT30	Right



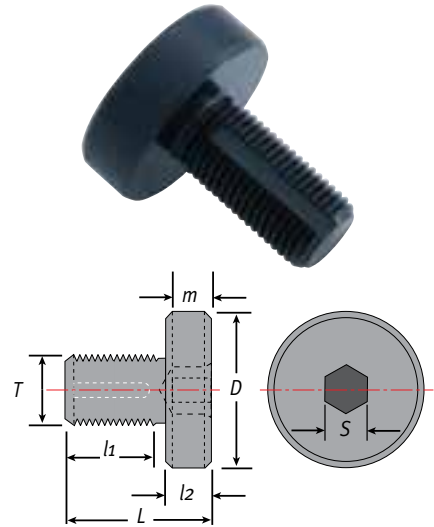
CoolBLAST & Standard Face Mill Arbor Screws



CoolBLAST arbor screw provides coolant path even with non-coolant thru face mills.

Features

- Compatible with all coolant thru face mills and ShrinkMILLS
- Works with all Techniks face mill arbors
- For coolant up to 1,500 PSI



CAT, BT, and HSK CoolBLAST Coolant Arbor Screws

Part No.	Description	Style	Size	D	L	l1	l2	T	S	m
WF.C1-0.5	CoolBLAST arbor screw 1/2"	B	1/2"	5/8"	.84"	.5"	.34"	1/4"-28UNF	3/16"	.157"
WF.C1-0.75	CoolBLAST arbor screw 3/4"	B	3/4"	7/8"	1.8"	1.4"	.37"	3/8"-24UNF	1/4"	.197"
9851125	CAS-A-0.75 smaller "D"	A	3/4"	5/8"	1.375"	1.0"	.36"	3/8-24 UNF	1/4"	.37"
WF.C1-1	CoolBLAST arbor screw 1.0"	B	1.0"	1-3/16"	1.4"	0.81"	.37"	1/2"-20UNF	5/16"	.197"
9851135	CAS-A-1.00 smaller "D"	A	1.0"	1.180"	1.375"	1.0"	.38"	1/2-20UNF	5/16"	.37"
WF.C1-1.25	CoolBLAST arbor screw 1-1/4"	B	1-1/4"	1-1/2"	1.44"	0.94"	.5"	5/8"-18UNF	5/16"	.236"
WF.C1-1.5	CoolBLAST arbor screw 1-1/2"	B	1-1/2"	1-7/8"	1.63"	1.13"	.5"	3/4"-16UNF	3/8"	.276"
WF.C1-2	CoolBLAST arbor screw 2.0"	B	2"	2-1/2"	1.81"	1.31"	.5"	1.0"-14UNF	1/2"	.354"

Blue indicates coolant.

CAT, BT, and HSK Standard Arbor Screws

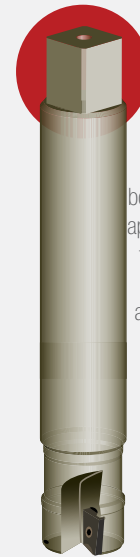
Part No.	Description	Arbor Size	D	L	l1	l2	T	S	m
WF0.5	FMA screw 1/2"	1/2"	5/8"	.84"	.5"	.34"	1/4"-28UNF	3/16"	.157"
WF0.75	FMA screw 3/4"	3/4"	7/8"	1.8"	1.4"	.37"	3/8"-24UNF	1/4"	.197"
WF1	FMA screw 1.0"	1.0"	1-3/16"	1.4"	0.81"	.37"	1/2"-20UNF	5/16"	.197"
WF1.25	FMA screw 1-1/4"	1-1/4"	1-1/2"	1.44"	0.94"	.5"	5/8"-18UNF	5/16"	.236"
WF1.5	FMA screw 1-1/2"	1-1/2"	1-7/8"	1.63"	1.13"	.5"	3/4"-16UNF	3/8"	.276"
WF2	FMA screw 2.0"	2"	2-1/2"	1.81"	1.31"	.5"	1.0"-14UNF	1/2"	.354"

High-Performance End Mills and Inserts



Key Points:

- free cutter body program
- tooling package specials
- high-performance & value



PowerLOC end mills borrow a time-honored approach to eliminating tool slippage in taps, (square drive) and applies it to end mills.

Techniks end mills are manufactured to the highest standards and provide outstanding performance and value. Each end mill meets a shank tolerance of H6, which means less runout and longer cutter life than other brands. Our cutter bodies are made from H13 tool steel with an electroless nickel coating applied to provide corrosion resistance.

Choose from coolant-thru or non-coolant styles as required.

For best results use our LT30 grade inserts (or LT-05 grade for aluminum) that provide great results in all materials. Instead of throwing half-used inserts away, you can keep cutting the next job with the same insert. Simply change the feeds and speeds as required.



Indexable End Mill



Positive High-Feed



Negative High-Feed



90° Helical Cutter



Indexable Drills



Inserts

End Mills	Diameters	Inserts	Insert Pockets	PowerLOC	ShrinkLOC	CoolBLAST
Indexable End Mill	.5" up to 1.5"	APKT, APGT	1, 2, 3	✓	✓	✓
Positive High-Feed	.75" up to 1.25"	WPGT, SDMT, SDKX	2, 3			✓
Negative High-Feed	1" up to 1.25"	SNKX (8 edges)	3, 4	✓	✓	✓
90° Helical Cutter	.75" up to 1.25"	APKT	4, 8, 12			✓
Indexable Drill	2.5" up to 9"	WCMX	3, 4, 6, 8			✓

Applications Include



Satisfaction guaranteed on all our CNC tooling solutions from spindle to workpiece.

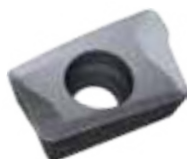
www.techniksusa.com

90° Indexable End Mills



Features

- H6 shank tolerance provides 38% less runout than standard end mills
- Coolant thru end mills from .5" up to 1.5"
- Made from H13 tool steel and electroless nickel coated for long life



APKT

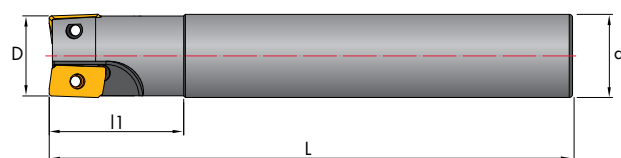


APGT

Applications



Use with APKT inserts for most materials. Use APGT for aluminum (2 cutting edges). Available in sizes from .5" up to 1.5". 1" size includes a Weldon shank.



Indexable End Mills - Coolant Thru

Part No.	Description	Insert*	D	d	L	Z	I1	α°	Screw	Wrench
1632234	IEM90-.500-.500C-4.00-1-10	AP__1003	.500	.500	4.00	1	0.787	32°	9316446	9355333
1642235	IEM90-.625-.625C-5.00-2-1	AP__1003	.625	.625	5.00	2	0.984	5°	9316446	9355333
1652236	IEM90-.750-.750C-5.00-2-10	AP__1003	.750	.750	5.00	2	0.984	7.5°	9316446	9355333
1652336	IEM90-.750-.750CW-3.50-3-10	AP__1003	.750	.750	3.50	3	1.00	5°	9316446	9355333
1662237	IEM90-1.00-1.00C-6.00-3-10	AP__1003	1.00	1.00	6.00	3	0.984	5°	9316446	9355333
1662250	IEM90-1.00-1.00CW-3.50-2-16	AP__1604	1.00	1.00	3.50	2	1.250	90°	9319345	9355555
1672238	IEM90-1.25-1.25C-6.00-3-16	AP__1604	1.25	1.25	6.00	3	1.772	3°	9319345	9355555
1682239	IEM90-1.50-1.25C-6.00-4-16	AP__1604	1.50	1.25	6.00	4	1.772	2.7°	9319345	9355555

Indexable End Mills - Non-Coolant

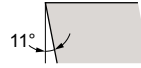
Part No.	Description	Insert	D	d	L	Z	I1	α°	Screw	Wrench
1631234	IEM90-.500-.500-4.00-1-10	AP__1003	.500	.500	4.00	1	0.787	32°	9316446	9355333
1641235	IEM90-.625-.625-5.00-2-10	AP__1003	.625	.625	5.00	2	0.984	5°	9316446	9355333
1641236	IEM90-.625-.625-7.00-2-10	AP__1003	.625	.625	7	2	1.44	5	9316446	9355333
1651236	IEM90-.750-.750-5.00-2-10	AP__1003	.750	.750	5.00	2	0.984	7.5°	9316446	9355333
1651237	IEM90-.750-.750-8.00-2-10	AP__1003	.750	.750	8	2	0.82	7.5	9316446	9355333
1661237	IEM90-1.00-1.00-6.00-3-10	AP__1003	1.00	1.00	6.00	3	0.984	5°	9316446	9355333
1671239	IEM90-1.00-1.00-7.87-2-16	AP__1604	1	1	7.87	2	1.91	5	9319345	9355555
1661238	IEM90-1.00-1.00-7.87-3-10	AP__1003	1	1	7.87	3	1.91	5	9316446	9355333
1676238	IEM90-1.25-1.25-6.00-3-16	AP__1604	1.25	1.25	6.00	3	1.772	3°	9319345	9355555
1686239	IEM90-1.50-1.25-6.00-4-16	AP__1604	1.50	1.25	6.00	4	1.772	2.7°	9319345	9355555

Z = insert pockets. α° = Ramp Angle

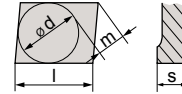
APKT and APGT Milling Inserts



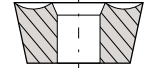
Shape



Clearance Angle



Tolerance
d ± 0.002
m ± 0.005
s ± 0.001



**Fixing
Chip breaker**

APKT Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
3154422	APKT 100304 PDTR	LT 30	0.409	0.138	0.016	Right
3154411	APKT 1003 PDTR	LT 30	0.409	0.138	0.031	Right
3154433	APKT 100312 PDTR	LT 30	0.409	0.138	0.047	Right
3154435	APKT 100316 PDTR	LT 30	0.409	0.138	0.062	Right
3154444	APKT 100332 PDTR	LT 30	0.409	0.138	0.126	Right
3154455	APKT 100340 PDTR	LT 30	0.409	0.138	0.157	Right
1506075	APKT 1604 PDTR-NEW	L 30	0.606	0.187	0.031	Right
1506073	APKT1604-PDTR	LT 30	0.060	0.187	0.031	Right
1506078	APKT 160416 PDTR	LT 30	0.606	0.187	0.062	Right
1500300	APKT 160424 ER	LT 30	0.060	0.187	0.094	Right
1506079	APKT 160432 PDTR	LT 30	0.606	0.187	0.125	Right

Face milling insert with 90° lead angle.

Multi purpose 90° milling insert suitable for roughing to finishing-slotting, shoulder and face milling operations.

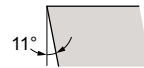


APGT Aluminum Milling Inserts

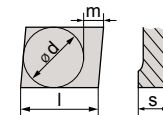
Multi purpose 90° milling insert suitable for roughing to finishing-slotting, shoulder and face milling.



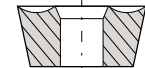
Shape



Clearance Angle



Tolerance
d ± 0.001
m ± 0.001
s ± 0.005



**Fixing
Chip breaker**

APGT Aluminum Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
1506502	APGT 100304 PDER ALU	LT 05	0.409	0.136	0.016	Right
1506506	APGT 160408 PDER ALU	LT 05	0.606	0.187	0.031	Right

Green indicates aluminum. Face milling Insert with 90° lead angle.

Highly positive inserts with a unique coating and 90° lead angle for aluminum.

Suitable for roughing to finishing-slotting, shoulder and face milling operations.

.75" Positive High-Feed Indexable End Mills



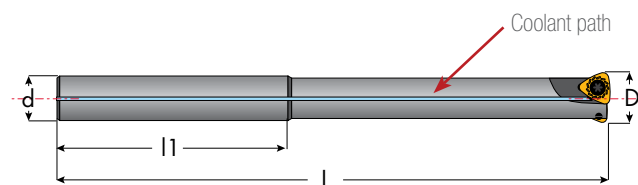
Features

- H6 shank tolerance provides 38% less runout than standard end mills
- Coolant thru ready
- Made from H13 tool steel and electroless nickel coated for long life

This positive high-feed end mill is a great choice for all high-feed applications. The positive insert clearance reduces radial cutting forces, minimizing spindle wear and provides excellent helical ramping. Available in .75" size. Use with WPGT inserts



WPGT



Positive High Feed Indexable End Mills Coolant Thru

Insert	Insert Screw	Wrench
WPGT0503	9317446	9355444

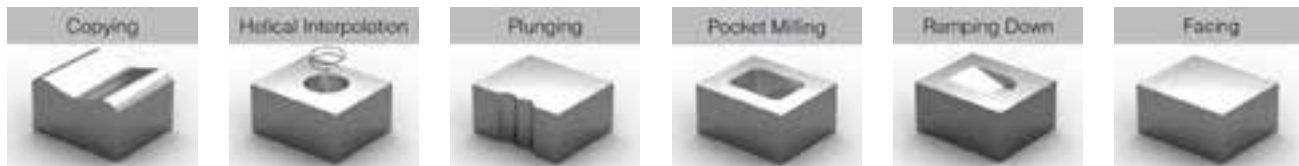
Part No.	Description	D	d	L	Z	l1	Ap	α°
1658810	HFEM-0.75-0.75-7.00-WP05-02	0.75	0.75	5.00	2	3.25	0.06	6.5°

Blue indicates coolant. Z = number of inserts. α° = Ramp Angle

WPGT Milling Inserts

See back of insert box for speeds and feeds data.

Applications



Part No.	Description	Grade	Direction
3451112	WPGT 050315 ZSR HF	351	Neutral

HF = High Feed

1.0" - 1.25" Positive High Feed Indexable End Mills



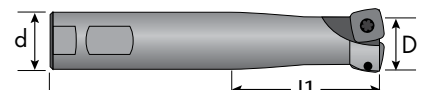
Features

- H6 shank tolerance provides 38% less runout than standard end mills
- Coolant thru ready
- Made from H13 tool steel and electroless nickel coated for long life



SDHX

Achieve higher feed rates in steel, stainless steel, cast iron, hard steel, high-temp alloys and even aluminum. Perfect for facing, plunging, ramping, and pocket milling, these cutters are also used for extended-reach applications or when cutting conditions are unstable. The positive insert clearance reduces radial cutting forces, minimizing spindle wear and provides excellent helical ramping.



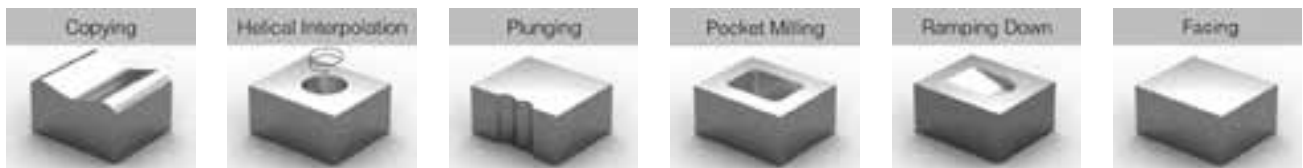
SDHF Positive High Feed Indexable End Mills Coolant Thru

Part No.	Description	D	d	L	Z	L1	Ap Max	Screw	Wrench
6602119	SDHF 1.00-1.00CW-5.00-2-09	1	1	5	2	2.36	.059	9317549	9355555
6602120	SDHF 1.00-1.00CW-8.00-2-09	1	1	8	3	2.53	.059	9317549	9355555
6602121	SDHF 1.25-1.25CW-5.00-3-09	1.25	1.25	5	2	2.36	.059	9317549	9355555
6602122	SDHF 1.25-1.25CW-8.00-3-09	1.25	1.25	8	3	2.53	.059	9317549	9355555

Blue indicates coolant.

SDHX Milling Inserts

Applications



Part No.	Description	Grade	Direction
2503095	SDHX 0904-HF LT 3000	LT 3000	right

HF = High Feed

Negative High Feed Indexable End Mills



Features

- H6 shank tolerance provides 38% less runout than standard end mills
- Coolant thru ready
- Made from H13 tool steel and electroless nickel coated for long life

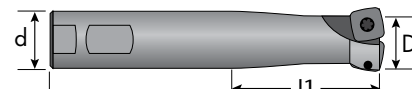
For high-feed roughing and semi-finishing in steel, cast iron, and hardened materials. 8 cutting edges for maximum productivity and reduced costs.

Available in 1" and 1.25" sizes.

Use with SNKX 09T3 inserts.



SNKX 09T3



Negative High-Feed End Mills - Coolant Thru

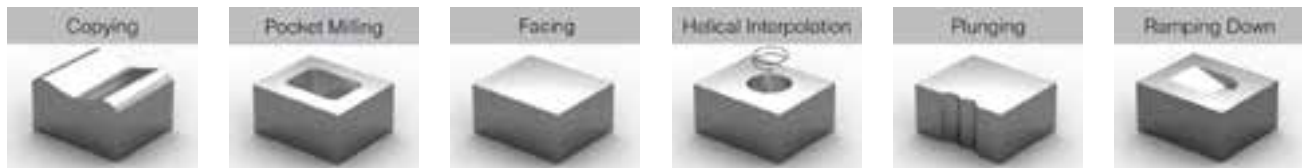
Part No.	Description	D	d	L	Z	l1	Ap	α°	Screw	Wrench
6602118	HFEM-1.00-1.00CW-5.00-3SN9	1.00	1.00	5.00	3	2.36	.039	3.5°	6811264	9355444
6602117	HFEM-1.00-1.00CW-8.00-3SN9	1.00	1.00	8.00	3	3.94	.039	3.5°	6811264	9355444
6702119	HFEM-1.25-1.25CW-5.00-4SN9	1.25	1.25	5.00	4	2.36	.039	2°	6811264	9355444
6702120	HFEM-1.25-1.25CW-8.00-3SN9	1.25	1.25	8.00	3	3.94	.039	2°	6811264	9355444

Blue indicates coolant. W=Weldon. Z = number of inserts. α° = Ramp Angle

SNKX High Feed Milling Inserts

Suitable for roughing to semi-finishing copying of 3D surfaces and face milling operations.

Applications



Part No.	Description	Grade	Pr. R.	Direction
2502115	SNKX 09T3-HF	LT 30	0.165	Right

Pr. R. = Programming Radius. Exclusive and unique design insert with 8 cutting edges for high feed.

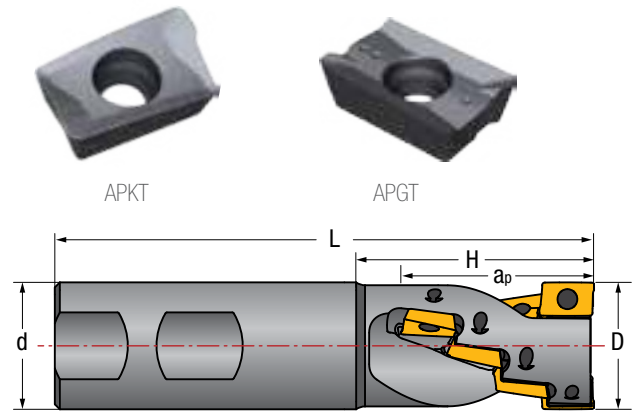
High Performance Long Edge Helical Cutter



Features

- H6 shank tolerance provides 38% less runout than standard end mills
- Coolant thru ready
- Made from H13 tool steel and electroless nickel coated for long life

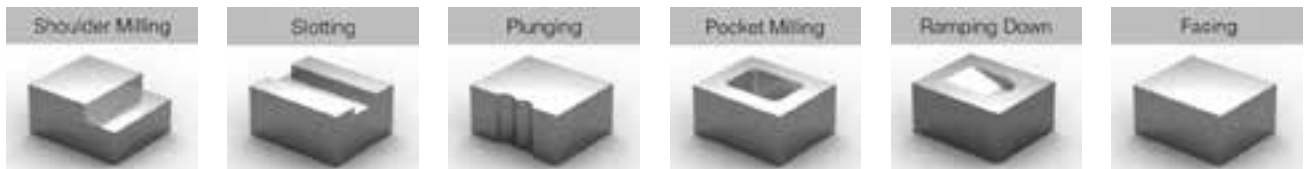
For heavy-duty roughing including: slotting, profiling, deep shoulder cutting and ramping. A great choice for steels, stainless, cast iron, hardened steels, high-temp alloys and aluminum. High-helix design allows high feed rates and reduced cutting forces. Very stable in the cut thanks to positive rake angles



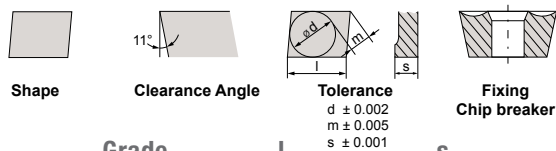
90° Long Edge Helical Cutter

Part No.	Description	D	a _p	Flutes	Inserts	H	L	d	Shank
1651238	IEM90-.75-1.15-CW.75-10	.75	1.15	1	4	1.43	3.50	.75	Weldon
1662251	IEM90-1.00-1.50-CW1.00-10	1.00	1.47	2	8	1.87	4.25	1.00	Weldon
1672237	IEM90-1.25-1.86-CW1.25-10	1.25	1.86	2	12	2.12	4.50	1.25	Weldon

Applications



APKT Milling Inserts



Part No.	Description	Grade	l	s	r	Direction
3154411	APKT 1003 PDTR	LT 30	0.409	0.138	0.031	Right
3154422	APKT 100304 PDTR	LT 30	0.409	0.138	0.016	Right
3154433	APKT 100312 PDTR	LT 30	0.409	0.138	0.047	Right
3154435	APKT 100316 PDTR	LT 30	0.409	0.138	0.062	Right
3154444	APKT 100332 PDTR	LT 30	0.409	0.138	0.126	Right
3154455	APKT 100340 PDTR	LT 30	0.409	0.138	0.157	Right
1506502	APGT 100304 PDER ALU	LT 05	0.409	0.136	0.016	Right

Green indicates highly positive inserts with a unique coating and 90° lead angle for aluminum

PowerLOC Square Drive Eliminates Tool Slippage



PowerLOC end mills borrow a time-honored approach to eliminating tool slippage in taps, (square drive) and applies it to end mills.

PowerLOC Square Drive Solves These Problems

1. Tool slippage (axial movement)
2. Early cutter failure and poor finish due to .0018" runout of end mill holders
3. Poor performance at extended lengths and when cutting heavy loads

PowerLOC Solutions

- Square Drive eliminates tool slippage
- Use PowerLOC end mills with ER collet chucks for significantly better runout and cutter life performing general milling. (see below)
- For heavy milling and extended lengths use PowerLOC endmills with ShrinkLOC holders for maximum rigidity and accuracy



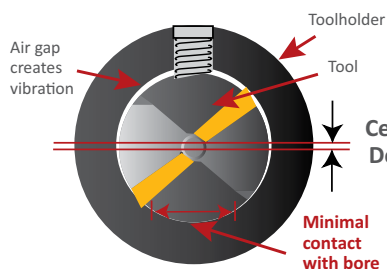
.0018" T.I.R.
Typical Use
End Mill Holder



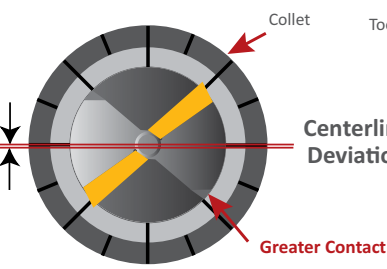
.0004" T.I.R.
Better Option
PowerLOC Collet Chuck



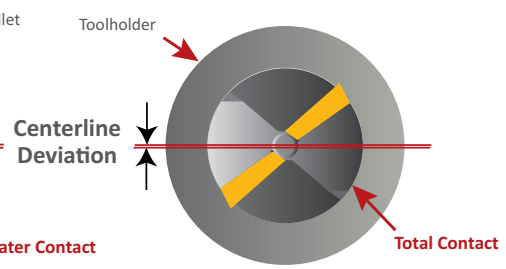
.0002" T.I.R.
Best Option
ShrinkLOC Holder



Average Tool Life

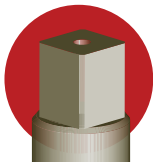


Up to 25% More Tool Life



Up to 50% Additional Tool Life

PowerLOC 90° Square Drive Indexable End Mills



PowerLOC square shank end mills feature an H6 shank tolerance that provides 38% less runout, so tools cut smoother and last longer. They are constructed of H13 tool steel for improved rigidity in the cut, and are electroless nickel plated for long life.

Available in .5", .75", and 1" sizes. Use with APKT inserts for most materials. For aluminum use APGT.



APKT



APGT

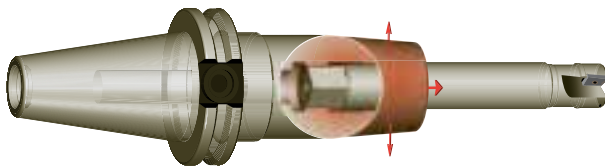
Applications



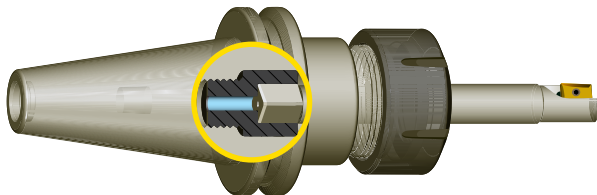
Features

- Square drive eliminates tool slippage
- Flexible! Use with ER chuck or ShrinkLOC holders
- Extends cutter life and reduces scrap

PowerLOC end mills borrow a time-honored approach to eliminating tool slippage in taps, (square drive) and applies it to end mills. Use PowerLOC end mills with either ShrinkLOC holders or ER Collet Chucks (see below)

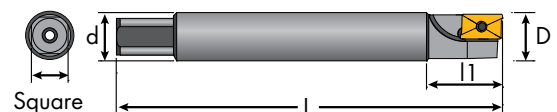


Use PowerLOC end mills with ShrinkLOC holders for heavy milling or when extended cutter life and improved surface finish is desired. ShrinkLOC holders provide maximum rigidity and accuracy in the cut and are a great choice for machining at extended lengths.



Use PowerLOC end mills with ER Chucks and a PLSS adapter to perform light milling without investing in end mill holders or milling chucks.

PowerLOC End Mills Coolant Thru and Non-Coolant



Part No.	Description	No. of Inserts	Collet Size	D	d	L	l1	Square	α°
1633345	PLIM.500-.500C-4.00-1-10	1	ER32 or ER40	.500	.500	4.00	0.79	0.380	32°
1655345	PLIM.750-.750C-5.00-2-10	2	ER32 or ER40	.750	.750	5.00	0.98	0.563	7.5°
1666350	PLIM1.00-1.00C-3.50-2-16	2	ER40	1.00	1.00	3.50	1.25	.750	5°
1666345	PLIM1.00-1.00C-6.00-3-10	3	ER40	1.00	1.00	6.00	0.98	0.750	5°
1632345	PLIM.500-.500-4.00-1-10	1	ER32 or ER40	.500	.500	4.00	0.79	0.380	32°
1654345	PLIM.750-.750-5.00-2-10	2	ER32 or ER40	.750	.750	5.00	0.98	0.563	7.5°
1665345	PLIM1.00-1.00-6.00-3-10	3	ER40	1.00	1.00	6.00	0.98	0.750	5°

Blue indicates coolant thru. α° = Ramp Angle

Satisfaction guaranteed on all our CNC tooling solutions from spindle to workpiece.

www.techniksusa.com

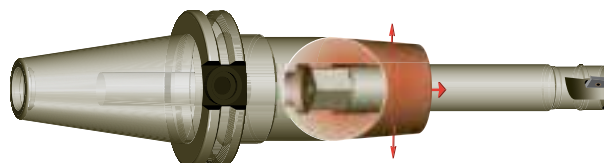
Negative High Feed Square Drive End Mills



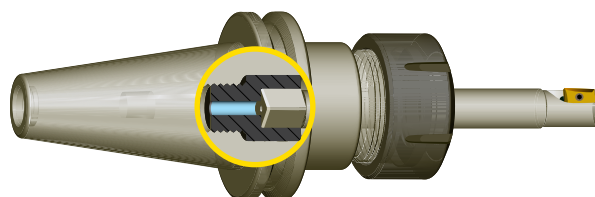
Features

- Square drive eliminates tool slippage
- Flexible! Use with ER chuck or ShrinkLOC holders
- Extends cutter life and reduces scrap

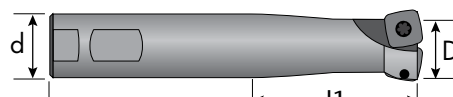
PowerLOC end mills borrow a time-honored approach to eliminating tool slippage in taps, (square drive) and applies it to end mills. Use PowerLOC end mills with either ShrinkLOC holders or ER Collet Chucks (see below)



Use PowerLOC end mills with ShrinkLOC holders for heavy milling or when extended cutter life and improved surface finish is desired. ShrinkLOC holders provide maximum rigidity and accuracy in the cut and are a great choice for machining at extended lengths.



Use PowerLOC end mills with ER Chucks and a PLSS adapter to perform light milling without investing in end mill holders or milling chucks.



PowerLOC square shank end mills feature an H6 shank tolerance that provides 38% less runout, so tools cut smoother and last longer. They are constructed of H13 tool steel for improved rigidity in the cut, and are electroless nickel plated for long life.

Available in .5", .75", and 1" sizes. Use with APKT inserts for steel, cast iron, and hardened materials. For aluminum use APGT.



- SNKX inserts 8 cutting edges
- Low axial cutting forces reduce spindle wear
- Excellent for dry machining of moulds and dies

PowerLOC Coolant Thru High-Feed End Mills

Part No.	Description	D	d	L	Z	Insert	I1	Ap	α°	Screw	Wrench
6612118	PLHF-1.00-1.00C-5.00-3SN9	1.00	1.00	5.00	3	SNKX09T3	2.36	.039	3.5°	6811264	9355444
6612117	PLHF-1.00-1.00C-8.00-3SN9	1.00	1.00	8.00	3	SNKX09T3	3.94	.039	3.5°	6811264	9355444
6712119	PLHF-1.25-1.25C-5.00-4SN9	1.25	1.25	5.00	4	SNKX09T3	1.20	.039	2°	6811264	9355444
6712120	PLHF-1.25-1.25C-8.00-3SN9	1.25	1.25	8.00	3	SNKX09T3	1.20	.039	2°	6811264	9355444

Blue indicates coolant. Z = number of inserts. α° = Ramp Angle

SNKX High Feed Milling Inserts

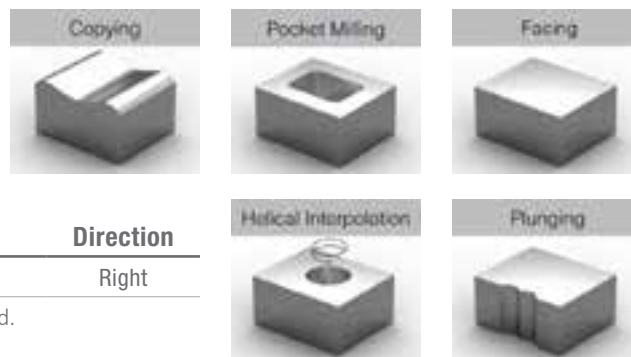
(See back of insert box for speeds and feeds data.)

Suitable for roughing to semi-finishing copying of 3D surfaces and face milling operations.

Part No.	Description	Grade	Pr. R.	Direction
2502115	SNKX 09T3-HF	LT 30	0.165	Right

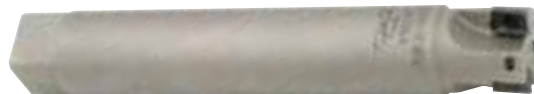
Pr. R. = Programming Radius. Insert with 8 cutting edges for high feed.

Application Guide

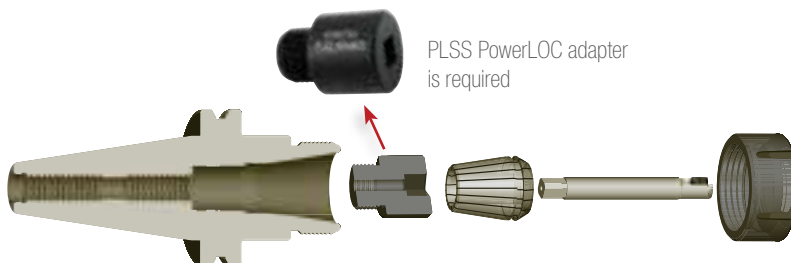


Toolholders for PowerLOC End Mills

CAT40, CAT50 ER PowerLOC End Mill Toolholders



For general milling applications use Techniks collet chucks with PowerLOC end mills and (PLSS) adapters.



Part No.	Descriptions	Collet	Length	PLSS .5" End Mill	PLSS .75" End Mill	PLSS 1.0" End Mill	PLSS 1.25" End Mill
22253	CAT40-ER-32-2.76	ER32	2.76	9398765	9397764	-	-
22255	CAT40-ER-32-4	ER32	4	9397764	9397764	-	-
22261	CAT40-ER-40-3.15	ER40	3.15	9396764	9396763	9396762	-
22311	CAT50-ER-32-4	ER32	4	9398765	9397764	-	-
22313	CAT50-ER-32-6	ER32	6	9397764	9397764	-	-
22321	CAT50-ER-40-4	ER40	4	9396764	9396763	9396762	-
22331	CAT50-ER-50-4	ER50	4	-	-	-	9396766

Additional toolholder lengths available. Collets sold separately.

High Performance Milling Inserts

Milling Inserts



Key Points:

- free test inserts
- cost-effective solutions
- fits other cutter bodies



You only need to stock a few types of inserts...

For over 35 years insert companies have profited by convincing customers that they need special inserts for each material. Then they saturated the market with dozens of "specialized" insert choices, that the customer is stuck with even though they only use them for one material or application.

Recent advances in insert technology have changed all this. Because Techniks inserts are both HARDER and TOUGHER (see chart) they work in all materials up to 55 HRC. Now you can get great performance cutting brass, aluminum, cast iron, steels, hard steels and exotics – **all with the same insert**. Our inserts are very resistant to plastic deformation and provide excellent performance in uninterrupted cuts.

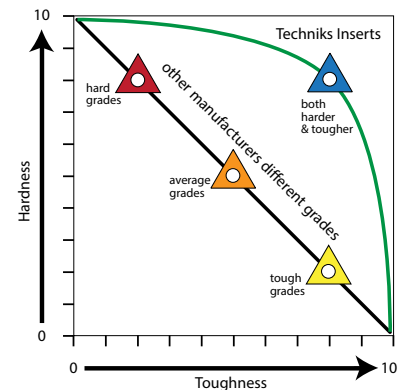
Changing jobs? Don't change inserts!



Simply run our inserts at the recommended speeds and feeds on the back of the package for great results in all materials. Stop throwing away half used inserts and start saving money! Call us to match up with your cutter bodies. Complimentary test inserts available upon request.



... instead of stocking all kinds of inserts...



Techniks inserts are both HARDER & TOUGHER



APKT



SEKT



SNKX



SDKX



RDMT



PNEG

Insert Type

Test Inserts

Package Deals

All-Material

ISO Compatible

PVD 3.5X

Milling Inserts



Frequently Asked Questions

In machine shops that run Techniks inserts, what do they find as the biggest benefits?

- *Cost saving- 80% reduction in insert inventory, ordering and stocking cost.*
- *Time saving- always have the right insert on hand reduces the number of setups and down time.*

Can I really run Techniks inserts in any material?

Techniks inserts have been tested in countless application around the world, and perform well in practically any material.

Note that Techniks inserts will work well in aluminum, production jobs in aluminum frequently require chip-control optimization. Use Techniks LT-05 Grade optimized for aluminum.

How does the LT-05 Grade perform in low silicon Aluminum?

Our inserts' geometry is specially designed for aluminum with low silicon content, creating chips that break instead of curl. The inserts are also coated and treated to reduce friction achieving unbeatable performance and tool life.

What speeds and feeds should I use?

Starting recommendations are provided for each individual insert, indicating the speeds and feeds that are required for most materials. In order to achieve the maximum advantage from Techniks' grade technology it is important to always run the inserts according to the recommended conditions. In general, the best results are normally achieved at the high range of the recommended cutting speeds.

What can we expect regarding the quality and consistency of Techniks inserts?

You can expect inserts with much higher accuracy and consistency than you have been accustomed up to now: insert-to-insert, box-to-box and batch-to-batch. This advantage improves the unattended operation of your machines.

What percentage of my tooling requirements can Techniks supply?

In most regular shops Techniks' insert program will add about 80% of all inserts needed for CNC machines up to 20 Hp. The insert program covers a full range of standard turning and milling operations from Semi-Roughing to Super-Finishing.

Will Techniks inserts run better than the inserts I currently use?

Our multi-material inserts evolved from our extensive know-how in sub-micron powder technology, our advanced PVD coating, and unique chip breaker geometry. With Techniks, the same insert can be used job after job, replacing the dozens of confusing insert choices that are common in our industry.

Is Techniks PVD coating the same as other inserts?

Techniks' state of the art PVD coating has significant differences compared to other suppliers. Our coating is thicker and stronger, – with better adhesion, higher performance and longer tool life.

What about turning tool holders & boring bars?

Techniks' ANSI / ISO standard turning inserts are designed to fit all industrial standard turning tools and boring bars, using the tool holders you already have in your shop.

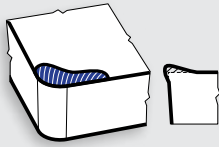
In turning, when should I use the _NMP style inserts rather than the _NMG style inserts?

Most customers find that High-Positive _NMP style inserts (CNMP, TNMP and WNMP) deliver the best results in sticky materials, such as 316 stainless steel, Inconel, and titanium (high heat and corrosion resistant properties). This is achieved by our unique combination of our grades and geometry.

APKT
ADKT
AOMT
APMT
LDMT
ODMT
ODMW
OFER
OFMT
ONKX
PNEG
RDMT
RDMW
RDMX
SDKT
SDKX
SEKN
SEKR
SEKT
SNKX
SPUN
SPKN
SPKR
SPMT
TPKN
TPKR
TPUN
WPGT
APET
APEX
APGT
SEET
SEGT

Machining Optimization

Machining Troubleshooting for Milling & Turning



Built-up Edge
(Adhesive Wear)

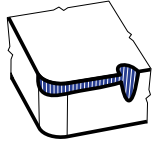


Problem

The workpiece material is welded to the cutting edge, usually due to temperatures that are too low.

Solution

- Increase cutting speed
- Increase feed
- Use more positive geometry



Notch Wear
(Adhesive/Mechanical wear)

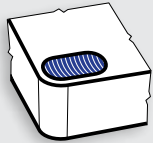


Problem

The result of adhesive or mechanical action: chipping or localized wear at the depth-of-cut line.

Solution

- Use more positive geometry
- Reduce feed
- Vary depth-of-cut



Crater
(Chemical Wear)

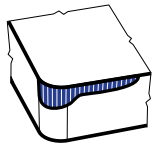


Problem

Occurs on the rake surface, normally the result of the combination of a diffusion and abrasion wear mechanism.

Solution

- Decrease cutting speed
- Check coolant direction
- Use more positive geometry



Flank Wear
(Abrasive Wear)

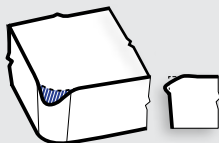


Problem

Abrasive wear mechanism occurs on the cutting edge's flank. Not common in Techniks inserts.

Solution

- Decrease cutting speed
- Check coolant direction



Plastic Deformation
(Thermal Wear)

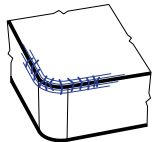


Problem

Caused by cutting forces and temperatures that are too high. Not common in Techniks inserts.

Solution

- Decrease cutting speed
- Decrease feed rate



Thermal Cracks
(Thermal Wear)

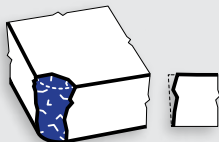


Problem

Small cracks — normally at 90° to the cutting edge — caused by temperature variations

Solution

- Stabilize the temperature
- Shut off coolant



Breakage
(Mechanical Wear)



Problem

Most of the breakages happen because the wear development is not seen in time.

Solution

- Check the toolholder
- Check the tool overhang
- Check the Amax
- Decrease feed and Vc
- Use a more robust insert
- Check the run out

Inserts Designation Based on ANSI and ISO Norms

1. Insert shape

 A	 B	 C	 D
 G	 H	 K	 L
 M	 O	 P	 R
 S	 T	 V	 W

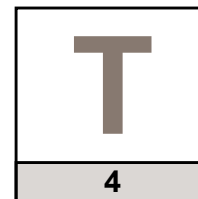
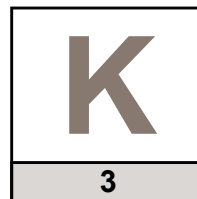
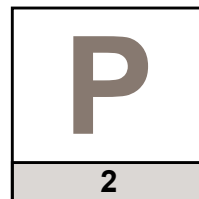
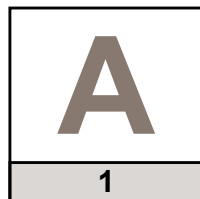
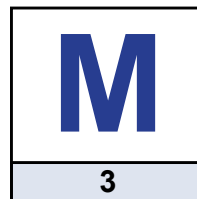
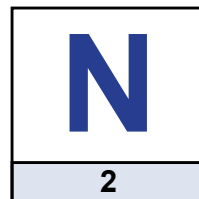
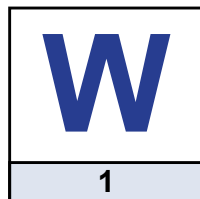
2. Clearance angle

Letter Symbol	α
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Special

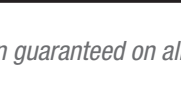
3. Tolerance Class

Symbol	D	M	S
A	± 0.0010	± 0.0002	± 0.001
C	± 0.0010	± 0.0005	± 0.001
E	± 0.0010	± 0.0010	± 0.001
F	± 0.0005	± 0.0002	± 0.001
G	± 0.0010	± 0.0010	± 0.005
H	± 0.0005	± 0.0005	± 0.001
J*	± 0.002-0.006	± 0.0002	± 0.001
K*	± 0.002-0.006	± 0.0005	± 0.001
L*	± 0.002-0.006	± 0.0010	± 0.001
M*	± 0.002-0.006	± 0.003-0.008	± 0.005
N*	± 0.002-0.006	± 0.003-0.008	± 0.001
U*	± 0.003-0.010	± 0.005-0.015	± 0.005

*Depending on the insert size (For exact tolerance see insert pag



6. Insert thickness

	Symbol		Inch
	ISO	ANSI	
	01	1	1/16
	T1	1.2	5/64
	02	1.5	3/32
	03	2	1/8
	T3	2.5	5/32
	04	3	3/16
	05	3.5	7/32
	06	4	1/4
	07	5	5/16
	09	6	3/8

7. Insert corner radius

Symbol		Corner radius (in)	1 st letter (Milling)
ISO	ANSI		
01	0	0.004	A = 45°
02	0.5	0.008	D = 60°
04	1	0.016	E = 75°
08	2	0.032	F = 85°
12	3	0.047	P = 90°
16	4	0.063	Z = other
20	5	0.079	
24	6	0.095	
28	7	0.109	
32	8	0.125	
00	-	Round insert (in)	
M0	-	Round insert (mm)	



Inserts Designation Based on ANSI and ISO Norms

4. Fixing and chip breaker types

Type	Symbol	Type	Symbol
A		N	
B		P	
F		R	
G		T	
H		W	
M		X	Special design

5. Cutting Edge Length

I.C.			C	D	R	S	T	V	W
Symbol	Inch	mm							
1.2	.156	1.2	S4	04	03	03	06		
1.5	.187	1.5	04	05	04	04	08	08	S3
1.8	.219	1.8	05	06	05	05	09	09	03
2	.250	2	06	07	06	06	11	11	04
2.5	.313	2.5	08	09	07	07	13	13	05
3	.375	3	09	11	09	09	16	16	06
4	.500	4	12	15	12	12	22	22	08
5	.625	5	16	19	15	15	27	27	10
6	.750	6	19	23	19	19	33	33	13
8	1.000	8	25	31	25	25	44	44	17
08	.315	08			08				
10	.394	10			10				
12	.472	12			12				
16	.630	16			16				

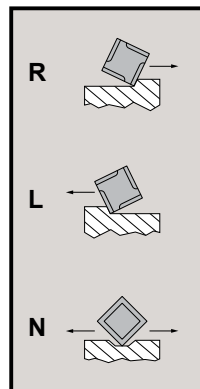
4	3	2			NN
5	6	7	8	9	10
16	04	PD	T	R	
5	6	7	8	9	10

8. Edge preparation

	F
	E
	T
	S

Optional information

9. Cutting direction



Optional information

10. Internal Designation

e.g. Application (Milling)

45 = 45° Approach angle
90 = 90° Approach angle
HF = High Feed

Optional information

e.g. Chip breaker (Turning)

NN = General purposes
NM = Roughing operations
NX = General purposes Magia
PP = All purposes grooving
ALU = Non Ferrous Materious

Optional information

Composition & Characteristics of Metals

Material Group	Gr. N°	VDI Group	Material Examples*	Description	Be careful with
Steel	Non-alloyed	1	1	Non-alloyed Steel • Composition > Fe-C alloy (usually 0.1 to 0.6% of carbon). • Characteristics > Good machinability and high cutting speeds can be applied. When it has less than 0.25% of carbon can be very sticky, requiring positive rake and small land inserts. Alloyed Steel • Composition > Fe-C alloy (maximum 2.1% of carbon) with additives like Cr, Mo, V, Ni, Mn, Co, W, etc. • Characteristics > The variation of the amount of alloying elements and different heat treatments control features such as mechanical resistance and machinability. It's important to follow the cutting speeds recommended according to the hardness of the steel, since it influences a lot the temperature of the cut, chemical and adhesive wears. High alloyed Steel have more than 5% of alloying elements.	Built-up edge Crater
		2	2		Built-up edge Crater
		3	3		
	Low alloyed	2	6		Built-up edge Crater
		2	4,6		
		2	5,7		
		2	8		
	High alloyed	3	10		Crater
		3	10		
		3	11		
		3	11		
Stainless Steel	Austenitic	4	14	• Composition > Alloyed Steel with more than 11% of Chrom(Cr). • Characteristics > Stainless steel does not stain, corrode, or rust as easily as ordinary steel. Usually they are difficult to machine, because of it's narrow range of cutting speeds. If the cutting speed is too low, the material sticks in the cutting edge, if it's too high, the high quantity of additives produces abrasive wears in the cutting edge.	Built-up edge Notch wear
		4	14		Notch wear Crater
	Duplex	5	14		
		5	14		Crater
	Ferritic & Martensitic	6	12		
		6	13		
Cast Iron	Grey	7	15	• Composition > Fe-C alloy with 2.1 to 5% of carbon. It can be alloyed with Si, P, Mn and Ni. • Characteristics > Grey cast iron tends to be brittle, and malleable cast irons usually have a more ductile but less homogeneous microstructure. Reinforced cutting edges will perform the best, and high productivity can be achieved by using high feeds.	Flank wear Crater Mechanical cracks
		7	15		
		7	16		
	Malleable & Nodular	8	17,19		
		8	17,19		
		8	18,20		
High Temp Alloys	Fe, Ni & Co based	9	31,32	Composition > Iron (Fe) based, Nickel (Ni) based or Cobalt (Co) based alloys and Titanium alloys. Characteristics > High Temperature alloys and Titanium provide excellent mechanical strength resistance, as well as corrosion and oxidation resistance. Relatively low cutting speed is recommended due to their poor thermal conductivity.	Notch wear Crater
		9	33		
		9	34		
	Ti based	10	36		
		10	37		
		10	37		
Hardened Mat.	Steel	11	38	This group includes hardened and tempered steel up to 55 HRC, chilled and white cast iron up to 55 HRC. Machining success depends largely on clamping system rigidity, as cutting forces and power consumption are high. Finishing represents the majority of the operations for this materials group.	Crater
		11	38		
		11	38		
	Chilled Cast Iron	11	40		
	White Cast Iron	11	41		
Non-Ferrous	Al (>8%Si)	12	25	Non-ferrous and soft materials (less than 130HB of hardness). Most common: Aluminum Composition > Al alloys. It can be alloyed with Cu, Zn, Mg, Mn and Si. Characteristics > Aluminium is widely used due to its low density and relatively good strength/weight ratio. When machining it tends to have long chips and built up edge. A highly positive cutting edge together with low friction coating are supposed to control the chips and reduce built up edge.	Built-up edge
	Al (<8%Si)	13	21, 22		
	Al (<8%Si)	13	23, 24		
	Copper Alloys	14	26,27,28		
	Non-Metallic	15	29		
		15	30		
			-	Graphite	

Technical Formulas

Definition	Formula
Inches Per Tooth (IPT or Chip Load) The thickness of material that is removed by one tooth in one complete revolution.	
Inches Per Revolution (IPR) The linear distance that a tool advances in one complete revolution.	$IPR = IPT \times \text{NUMBER OF TEETH}$
Inches Per Minute (IPM) The linear distance, in inches, that the tool advances in one minute.	$IPM = IPR \times RPM$
Surface Feet Per Minute (SFPM) The linear distance, in feet, that the cutting edge of the tool travels in one minute.	$SFPM = \frac{RPM \times DIA}{3.82}$
Revolutions Per Minute (RPM) The number of times a tool rotates 360° in one minute.	$RPM = \frac{SFPM \times 3.82}{DIA}$
Meters Per Minute (M/MIN) The linear distance, in meters, that the cutting edge of the tool travels in one minute.	$M/M = RPM \times .003 \times DIA$
Convert Millimeters to Inches	$INCHES = \frac{MM}{25.4}$
Convert Inches to Millimeters	$MM = INCHES \times 25.4$
Convert Meters Per Minute to Surface Feet Per Minute	$SFPM = M/M \times 3.3$
Convert Surface Feet Per Minute to Meters Per Minute	$MM = \frac{SFPM}{3.3}$
Depth Of Cut (DOC) The amount of material removed, in thickness, by one pass of the cutting tool.	
Metal Removal Rate ("Q" or IN³/MIN). The amount of cubic inches of material removed in one minute.	$Q = DOC \times WOC \times IPM$
Balancing Feed and DOC A given value that allows an end user to balance feed rate and depth of cut.	$AMAX = DOC \times IPR$

Techniks Inserts Cross-Reference Guide

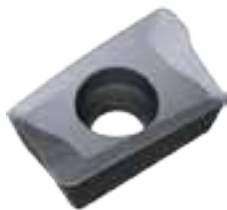
Insert Description	Part No.	Cutter Bodies
ADKT1505PDTR-LT30	1506065	Iscar
AOMT123608PETR-LT30	3153311	Mitsubishi
APGT1003PDER-ALU-LT05	1506501	Iscar
APGT1604PDER-ALU-LT05	1506505	Kennametal, Korloy, Ingersoll, Seco, Stellram
APKT 100304 PDTR LT30	3154422	Iscar
APKT 100312 PDTR LT30	3154433	Iscar
APKT 100332 PDTR LT30	3154444	Iscar
APKT 100340 PDTR LT30	3154455	Iscar
APKT1003PDTR-LT30	3154411	Iscar
APKT160424ER-LT30	1500300	Kennametal, Korloy, Ingersoll, Seco, Stellram
APKT1604PDTR-LT30	1506073	Kennametal, Korloy, Ingersoll, Seco, Stellram
APKT1604PDTR-LT30-NEW	1506075	Kennametal, Korloy, Ingersoll, Seco, Stellram
APKT1705PETR-LT30	1506077	Ingersoll, Taegutec
APMT0903PDTR-LT30	3153317	Walter
APMT1135PDTR-LT30	3153321	Mitsubishi
APMT1604PDTR-LT30	3151134	Kennametal, Korloy, Ingersoll, Seco, Stellram
APMT160408PDTR-LT30	3153325	Kennametal, Korloy, Ingersoll, Seco, Stellram
KNUX160405R11-LT10	3164420	Kennametal
LDMT1504PDTR-LT30	3161989	Ceratizit
ODMT0504ZZTR-LT30	3954406	Seco
ODMT060508TN-LT30	3954411	Seco, Walter
ODMW060508TN-LT30	3954415	Seco, Walter
OFER070405TN-LT30	3954421	Iscar, Seco
OFMT050405TR-LT30	3954441	Seco, Iscar
OFMT05T305TN-LT30	3954431	Seco, Iscar
OFMT070405TN-LT30	3954435	Iscar, Seco
RCMT0602MO-LT10	3355511	Kennametal
RCMT0602MO-LT1000	3351914	Kennametal
RCMT0803MO-LT10	3355516	Seco, Walter
RCMT0803MO-LT1000	3351915	ISO Turning
RCMT10T3MO-LT10	3355521	ISO Turning
RCMT10T3MO-LT1000	3351916	ISO Turning
RCMT1204MO-LT10	3355525	ISO Turning
RCMT1204MO-LT1000	3351917	ISO Turning

Insert Description	Part No.	Cutter Bodies
RDMT0602MO-LT30	3355528	Kennametal
RDMT0803MO-LT30	3355531	Seco, Walter
RDMT1003MO-LT30	3355533	Kennametal
RDMT10T3MO-LT30	3355536	Kennametal, Seco, Walter
RDMT1204MO-LT30	3355541	Walter
RDMT12T3MO-LT30	3355543	Kennametal
RDMW10T3MO-LT30	3355546	Walter
RDMW1204MO-LT30	3355548	Walter
RDMX10T3MO-LT30	3351552	Walter
RDMX1204MO-LT30	3355549	Walter
SDKT1204AETN-LT30	3254411	Walter
SDKX0904HF-LT30	2503095	Stellram High Feed
SDKX1205HF-LT30	2503096	Stellram High Feed
SEGT1204AFEN-ALU-LT05	2506509	Sandvik, Kennametal
SEKN42AFTN-LT30	3254415	Iscar, Seco, Sandvick, Walter, Kennametal
SEKN43AFTN-LT30	3254417	Iscar, Seco, Sandvick, Walter, Kennametal
SEKN53AFTN-LT30	3254421	Iscar, Seco, Sandvick, Walter, Kennametal
SEKR1203AFTN-LT30	3254431	Iscar, Seco, Sandvick, Walter, Kennametal
SEKR43AFTN-LT30	3254433	Sandvik
SEKT1204AFTN-LT30	3254435	Iscar, Sandvik, Walter
SEKT12T3AGSN-LT30	2506169	Sandvik
SNKX1205-45-LT30	2502203	Walter
SNKX1607-45-LT30	2502205	Ingersoll, Iscar
SPKN42EDTR-LT30	3263336	ISO Milling
SPKN43EDTR-LT30	3263341	ISO Milling
SPKN53EDTR-LT30	3266029	ISO Milling
SPKR42EDTR-LT30	3253346	ISO Milling
SPKR43EDTR-LT30	3263351	ISO Milling
SPMT12T308-LT30	3263347	Sandvik
WCMX030208R53	3441111	Sandvik
WCMX040208NN	3441121	Sandvik
WCMX050308NN	3441125	Sandvik
WCMX06T308NN	3441131	Sandvik
WCMX080412NN	3441135	Sandvik

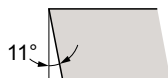
The tradenames Ceratizit, Iscar, Ingersoll, Kennametal, Korloy, Mitsubishi, Seco, Sandvick, Stellram, Taegutec and Walter, are properties of their respective companies and are used here only for identification purposes.

APKT
ADKT
AOMT
APMT
LDMT
ODMT
ODMW
OFER
OFMT
ONKX
PNEG
RDMT
RDMW
RDMX
SDKT
SDKX
SEKN
SEKR
SEKT
SNKX
SPUN
SPKN
SPKR
SPMT
TPKN
TPKR
TPUN
WPGT
APET
APEX
APGT
SEET
SEGT

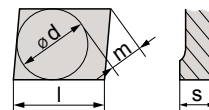
APKT Milling Inserts



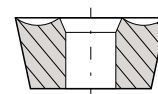
Shape



Clearance Angle



Tolerance
 $d \pm 0.002$
 $m \pm 0.005$
 $s \pm 0.001$



**Fixing
Chip breaker**

APKT Milling Inserts

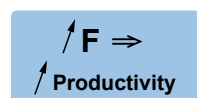
Part No.	Description	Grade	l	s	r	Direction
3154422	APKT 100304 PDTR	LT 30	0.409	0.138	0.016	Right
3154411	APKT 1003 PDTR	LT 30	0.409	0.138	0.031	Right
3154433	APKT 100312 PDTR	LT 30	0.409	0.138	0.047	Right
3154435	APKT 100316 PDTR	LT 30	0.409	0.138	0.062	Right
3154444	APKT 100332 PDTR	LT 30	0.409	0.138	0.126	Right
3154455	APKT 100340 PDTR	LT 30	0.409	0.138	0.157	Right
1506075	APKT 1604 PDTR-NEW	L 30	0.606	0.187	0.031	Right
1506073	APKT1604-PDTR	LT 30	0.060	0.187	0.031	Right
1506078	APKT 160416 PDTR	LT 30	0.606	0.187	0.062	Right
1500300	APKT 160424 ER	LT 30	0.060	0.187	0.094	Right
1506079	APKT 160432 PDTR	LT 30	0.606	0.187	0.125	Right
1506077	APKT 1705 PETR	LT 30	0.646	0.187	0.031	Right

Multi purpose 90° milling insert suitable for roughing to finishing-slotting, shoulder and face milling operations.
 Face Mill for APKT. See page 10. End Mill for APKT. See page 23. PowerLOC End Mill for AP__1003 see page 27.

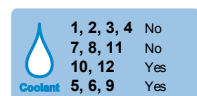
Application Guide



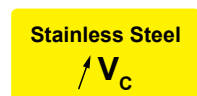
Use these tips to help get the best productivity using Techniks' inserts.



To increase productivity, it is recommended to increase feed (f) and respect cutting speed.



When milling materials from groups 1, 2, 3, 4, 7, 8 and 11, coolant is not recommended. When machining materials from groups 5, 6, 9, 10 and 12, it is recommended to use coolant.



In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

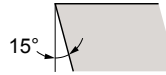


Go to <http://bit.ly/2c5a8U1>
 or scan the QR code to find the
 speeds & feeds for your inserts.

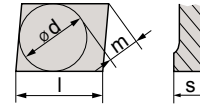
ADKT & AOMT Milling Inserts



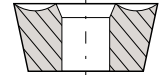
Shape



Clearance Angle



Tolerance
d ± 0.002
m ± 0.005
s ± 0.001



Fixing
Chip breaker

ADKT Milling Inserts

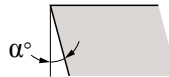
Part No.	Description	Grade	l	s	r	Direction
1506065	ADKT 1505 PDTR	LT 30	0.512	0.222	0.038	Right

Face milling insert with 90° lead angle.

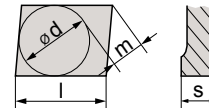
Multi purpose 90° milling insert suitable for roughing to finishing-slotting, shoulder and face milling operations.



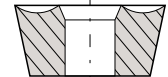
Shape



Clearance Angle
 α = Special



Tolerance
d ± 0.002
m ± 0.003
s ± 0.005



Fixing
Chip breaker

AOMT Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
3153311	AOMT 123608 PETR	LT 30	0.409	0.143	0.031	Right

Face milling insert with 90° lead angle.

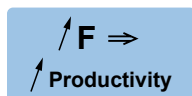
Multi purpose 90° milling insert suitable for roughing to finishing-slotting, shoulder and face ramping down milling operations.

Application Guide

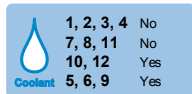


Go to <http://bit.ly/2c5a8U1>
or scan the QR code to find the
speeds & feeds for your inserts.

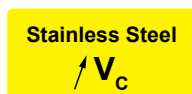
Use these tips to help get the best productivity using Techniks' inserts.



To increase productivity, it is recommended to increase feed (f) and respect cutting speed.



When milling materials from groups 1, 2, 3, 4, 7, 8 and 11, coolant is not recommended. When machining materials from groups 5, 6, 9, 10 and 12, it is recommended to use coolant.

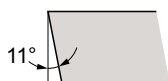


In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

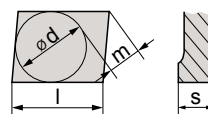
APMT & LDMT Milling Inserts



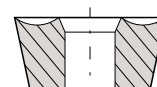
Shape



Clearance Angle



Tolerance
 $d \pm 0.002$
 $m \pm 0.003$
 $s \pm 0.005$



**Fixing
Chip breaker**

APMT Milling Inserts

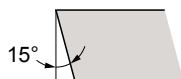
Part No.	Description	Grade	l	s	r	Direction
3153317	APMT 0903 PDTR	LT 30	0.375	0.125	0.016	Right
3153321	APMT 1135 PDTR	LT 30	0.374	0.139	0.028	Right
3151134	APMT 1604 PDTR	LT 30	0.625	0.187	0.026	Right
3153325	APMT 160408 PDTR	LT 30	0.625	0.187	0.031	Right

Face milling insert with 90° lead angle.

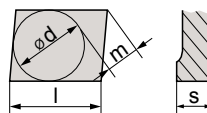
Multi purpose 90° milling insert suitable for roughing to finishing-slotting, shoulder and face milling operations.



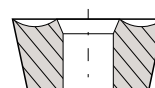
Shape



Clearance Angle



Tolerance
 $d \pm 0.002$
 $m \pm 0.003$
 $s \pm 0.005$



**Fixing
Chip breaker**

LDMT Milling Inserts

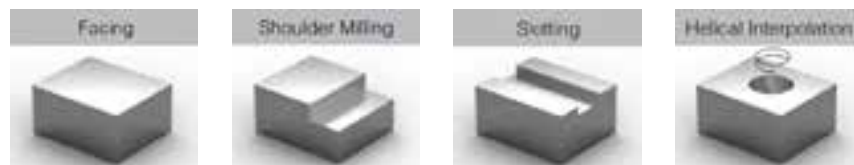
Part No.	Description	Grade	l	s	r	Direction
3161989	LDMT 1504 PDTR	LT 30	0.575	0.187	0.029	Right

Availability is subject to special agreement.

Face milling insert with 90° lead angle.

Multi purpose 90° milling insert suitable for roughing to finishing-slotting, shoulder and face milling operations.

Application Guide

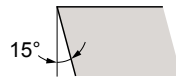


Go to <http://bit.ly/2c5a8U1>
 or scan the QR code to find the
 speeds & feeds for your inserts.

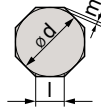
ODMT & ODMW Milling Inserts



Shape

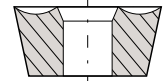


Clearance Angle



Tolerance

$s \pm 0.005$
For $l = 05$, $d \pm 0.003$ $m \pm 0.005$
For $l = 06$, $d \pm 0.004$ $m \pm 0.006$



**Fixing
Chip breaker**

ODMT Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
3954406	ODMT 0504 ZZTR	LT 30	0.207	0.187	0.031	Right
3954411	ODMT 060508 TN	LT 30	0.259	0.219	0.031	Right

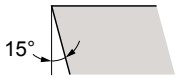
Face Milling Insert with 45° Lead Angle.

Multi purpose 45° milling insert with 8 cutting edges.

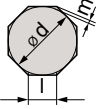
Suitable for roughing to finishing-face milling, plunging and ramping down operations.



Shape

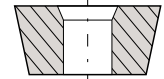


Clearance Angle



Tolerance

$d \pm 0.004$
 $m \pm 0.006$
 $s \pm 0.005$



**Fixing
Chip breaker**

ODMW Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
3954415	ODMW 060508 TN	LT 30	0.259	0.219	0.031	Right

Face milling insert with 45° lead angle.

Multi purpose 45° milling insert with 8 cutting edges and flat rake surface. Designed for materials that generate short chips.

Suitable for roughing to finishing-face milling, plunging and ramping down operations.

Application Guide

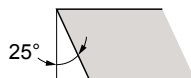


Go to <http://bit.ly/2c5a8U1>
or scan the QR code to find the
speeds & feeds for your inserts.

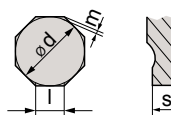
OFER & OFMT Milling Inserts



Shape

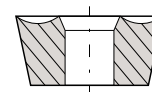


Clearance Angle



Tolerance

$d \pm 0.001$
 $m \pm 0.001$
 $s \pm 0.001$



**Fixing
Chip breaker**

OFER Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
3954421	OFER 070405 TN	LT 30	0.268	0.187	0.031	Right

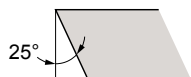
Face Milling Insert with 45° Lead Angle.

Multi purpose 45° Milling insert with 8 cutting edges and flat rake surface.

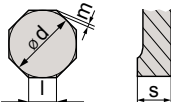
Suitable for roughing to finishing-face milling, plunging and ramping down operations.



Shape

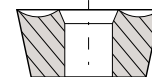


Clearance Angle



Tolerance

$s \pm 0.005$
 For $l = 05$, $d \pm 0.003$ $m \pm 0.005$
 For $l = 07$, $d \pm 0.004$ $m \pm 0.006$



**Fixing
Chip breaker**

OFMT Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
3954431	OFMT 05T305 TN	LT 30	0.207	0.156	0.031	Right
3954441	OFMT 050405 TR	LT 30	0.217	0.187	0.021	Right
3954435	OFMT 070405 TN	LT 30	0.268	0.187	0.020	Right

Face Milling Insert with 45° Lead Angle.

Multi purpose 45° milling insert with 8 cutting edges and flat rake surface.

Suitable for roughing to finishing-face milling, plunging and ramping down operations.

Application Guide

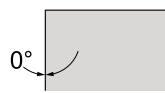


Go to <http://bit.ly/2c5a8U1>
 or scan the QR code to find the
 speeds & feeds for your inserts.

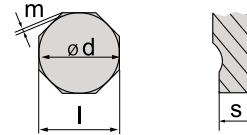
ONKX & PNEG Milling Inserts



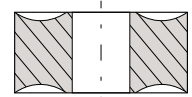
Shape



Clearance Angle



Tolerance
 $d \pm 0.05$
 $m \pm 0.013$
 $s \pm 0.025$



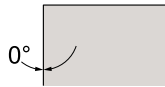
**Fixing
Chip breaker**

ONKX Milling Inserts

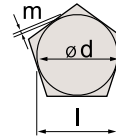
Description	Grade	l	s	r	Direction
ONKX 0806-45 LT 30	LT 30	.795	.228	.031	Neutral



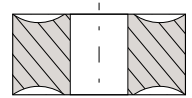
Shape



Clearance Angle



Tolerance
 $d \pm 0.05$
 $m \pm 0.013$
 $s \pm 0.025$



**Fixing
Chip breaker**

PNEG Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
3959999	PNEG 110512 R CM	152	0.213	0.219	0.047	Right

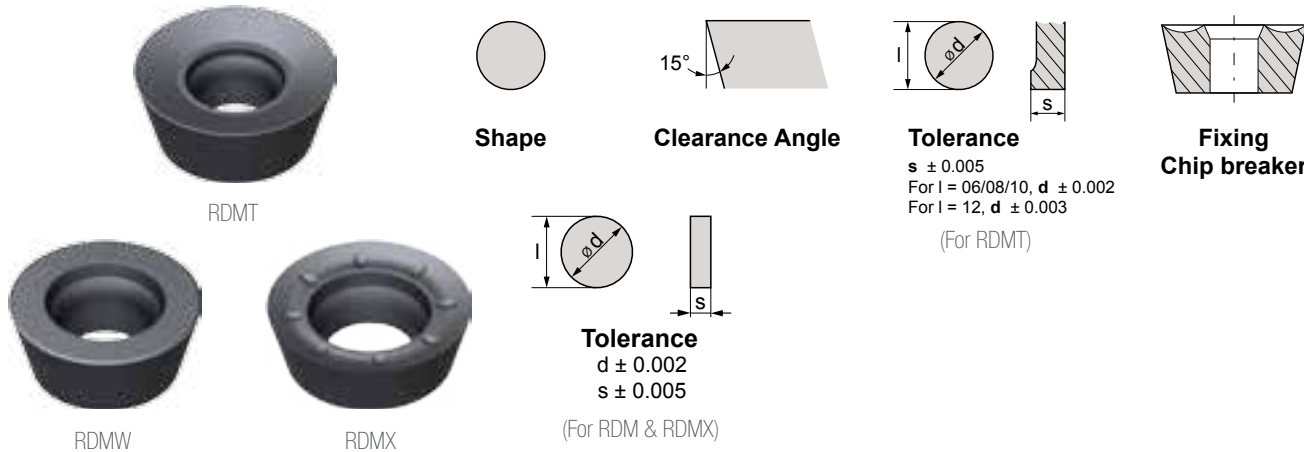
Use PNEG inserts with Cast Iron Cutter on page 12.

Application Guide



Go to <http://bit.ly/2c5a8U1>
or scan the QR code to find the
speeds & feeds for your inserts.

RDMT, RDMW, & RDMX Milling Inserts



Part No.	Description	Grade	l	s	r	Direction
3355528	RDMT 0602 M0	LT 30	0.236	0.094	-	Neutral
3351882	RDMT 0702 M0	LT 30	0.276	0.094	-	Neutral
3355531	RDMT 0803 M0	LT 30	0.315	0.125	-	Neutral
3355533	RDMT 1003 M0	LT 30	0.394	0.125	-	Neutral
3355536	RDMT 10T3 M0	LT 30	0.394	0.156	-	Neutral
3355543	RDMT 12T3 M0	LT 30	0.472	0.156	-	Neutral
3355541	RDMT 1204 M0	LT 30	0.472	0.187	-	Neutral
3351881	RDMT 1604 M0	LT 30	0.630	0.187	-	Neutral
3355546	RDMW 10T3 M0	LT 30	-	0.156	-	Neutral
3355548	RDMW 1204 M0	LT 30	-	0.187	-	Neutral
3351552	RDMX 10T3 M0	LT 30	0.394	0.156	-	Neutral
3355549	RDMX 1204 M0	LT 30	0.472	0.187	-	Neutral

Face milling Insert with 90° lead angle.

Multi purpose round insert with flat rake surface, designed for hard materials.

Suitable for roughing to semi-finishing copying of 3D surfaces and face milling operations for hard materials & cast iron.

Application Guide

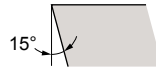


Go to <http://bit.ly/2c5a8U1>
 or scan the QR code to find the
 speeds & feeds for your inserts.

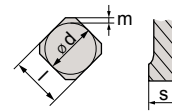
SDKT Milling Inserts



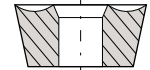
Shape



Clearance Angle



Tolerance
 $d \pm 0.003$
 $m \pm 0.0005$
 $s \pm 0.0001$



Fixing
Chip breaker

SDKT Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
3254411	SDKT 1204 AETN	LT 30	0.500	0.187	Chamfer	Neutral

Face Milling Insert with 45° Lead Angle.

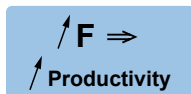
Multi purpose 45° milling insert, designed for high depths of cut.

Suitable for roughing to finishing-face milling, plunging and ramping down milling operations.

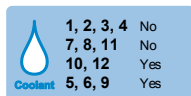
Application Guide



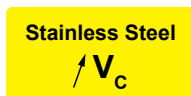
Use these tips to help get the best productivity using Techniks' inserts.



To increase productivity, it is recommended to increase feed (f) and respect cutting speed.



When milling materials from groups 1, 2, 3, 4, 7, 8 and 11, coolant is not recommended. When machining materials from groups 5, 6, 9, 10 and 12, it is recommended to use coolant.



In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

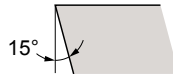


Go to <http://bit.ly/2c5a8U1>
 or scan the QR code to find the
 speeds & feeds for your inserts.

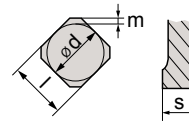
SDKX Milling Inserts



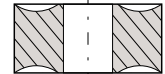
Shape



Clearance Angle



Tolerance
 $d \pm 0.08$
 $m \pm 0.013$
 $s \pm 0.025$



**Fixing
Chip breaker**

SDKX Milling Inserts

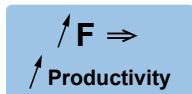
Part No.	Description	Grade	l	s	Pr. R.	Direction
2503095	SDKX 0904 HF	LT 30	0.375	0.187	0.078	Right
2503096	SDKX 1205 HF	LT 30	0.500	0.219	0.098	Right

Pr. R = Programming Radius

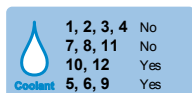
Application Guide



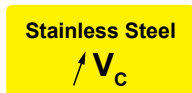
Use these tips to help get the best productivity using Techniks' inserts.



To increase productivity, it is recommended to increase feed (f) and respect cutting speed.



When milling materials from groups 1, 2, 3, 4, 7, 8 and 11, coolant is not recommended. When machining materials from groups 5, 6, 9, 10 and 12, it is recommended to use coolant.



In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

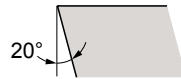


Go to <http://bit.ly/2c5a8U1>
 or scan the QR code to find the
 speeds & feeds for your inserts.

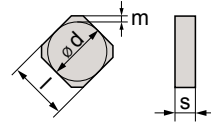
SEKN & SEKR Milling Inserts



Shape

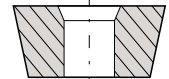


Clearance Angle



Tolerance

$m \pm 0.0005$
 $s \pm 0.001$
 For $l = 12$, $d \pm 0.003$
 For $l = 15$, $d \pm 0.004$



**Fixing
Chip breaker**

SEKN Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
3254415	SEKN 42 AFTN (ANSI) SEKN 1203 AFTN (ISO)	LT 30	0.500	0.125	Chamfer	Neutral
3254417	SEKN 43 AFTN (ANSI) SEKN 1204 AFTN (ISO)	LT 30	0.500	0.187	Chamfer	Neutral
3254421	SEKN 53 AFTN (ANSI) SEKN 1504 AFTN (ISO)	LT 30	0.625	0.187	Chamfer	Neutral

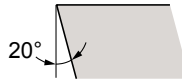
Face milling insert with 45° lead angle.

Multi purpose 45° milling insert, designed for high depths of cut.

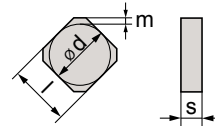
Suitable for roughing to finishing-face milling, plunging and ramping down milling operations



Shape

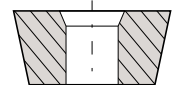


Clearance Angle



Tolerance

$d \pm 0.003$
 $m \pm 0.0005$
 $s \pm 0.0001$



Insert Type
Clamping
Chip breaker

SEKR Milling Inserts

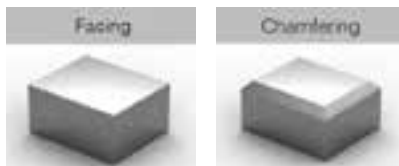
Part No.	Description	Grade	l	s	r	Direction
3254431	SEKR 42 AFTN (ANSI) SEKR 1203 AFTN (ISO)	LT 30	0.500	0.125	Chamfer	Neutral
3254433	SEKR 43 AFTN (ANSI) SEKR 1204 AFTN (ISO)	LT 30	0.500	0.187	Chamfer	Neutral

Face milling insert with 45° lead angle.

Multi purpose 45° milling insert, designed for high depths of cut and materials that generate long chips.

Suitable for roughing to finishing-face, plunging and ramping down milling operations of stainless steel.

Application Guide

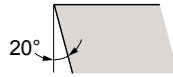


Go to <http://bit.ly/2c5a8U1>
 or scan the QR code to find the
 speeds & feeds for your inserts.

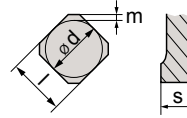
SEKT Milling Inserts



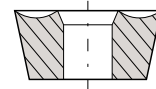
Shape



Clearance Angle



Tolerance
 $d \pm 0.003$
 $m \pm 0.0005$
 $s \pm 0.0001$



**Fixing
Chip breaker**

SEKT Milling Inserts

Part No.	Description	Grade	I	s	r	Direction
2506169	SEKT 12T3 AGSN	LT 30	0.528	0.156	Chamfer	Neutral
3254435	SEKT 1204 AFTN	LT 30	0.528	0.187	Chamfer	Neutral

Face Milling Insert with 90° Lead Angle.

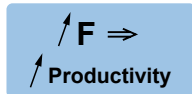
Multi purpose 45° milling insert, designed for high depths of cut.

Suitable for roughing to finishing-face, plunging and ramping down milling operations.

Application Guide



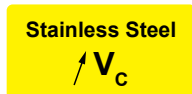
Use these tips to help get the best productivity using Techniks' inserts.



To increase productivity, it is recommended to increase feed (f) and respect cutting speed.



When milling materials from groups 1, 2, 3, 4, 7, 8 and 11, coolant is not recommended. When machining materials from groups 5, 6, 9, 10 and 12, it is recommended to use coolant.



In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.



Go to <http://bit.ly/2c5a8U1>
 or scan the QR code to find the
 speeds & feeds for your inserts.

SNKX 45° Heavy Duty & High Feed Milling Inserts



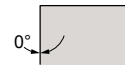
45° Heavy Duty



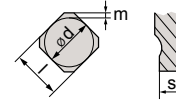
High Feed



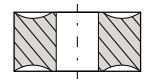
Shape



Clearance Angle



Tolerance
d ± 0.0002
m ± 0.0005
s ± 0.0001



Fixing
Chip breaker

Face Mill for SNKX 09T3 see page 11.

High Feed Indexable End mill for SNKX 09T3 see page 24.

Part No.	Description	Grade	l	s	r	Pr. R.	Direction
2502203	SNKX 1205-45°	LT 30	.0500	0.252	-	-	Right
2502205	SNKX 1607-45°	LT 30	0.658	0.269	-	0.165	Right
2502115	SNKX 09T3-HF	LT 30	0.381	0.146	-	0.165	Right

Pr. R. = Programming Radius.

Exclusive and unique design insert with 8 cutting edges for high feed.

Suitable for roughing to semi-finishing copying of 3D surfaces and face milling operations.

Application Guide



Facing



Copying



Pocket Milling

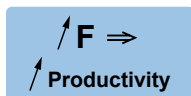


Slotting

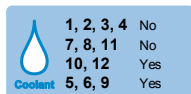


Helical Interpolation

Use these tips to help get the best productivity using Techniks' inserts.



To increase productivity, it is recommended to increase feed (f) and respect cutting speed.

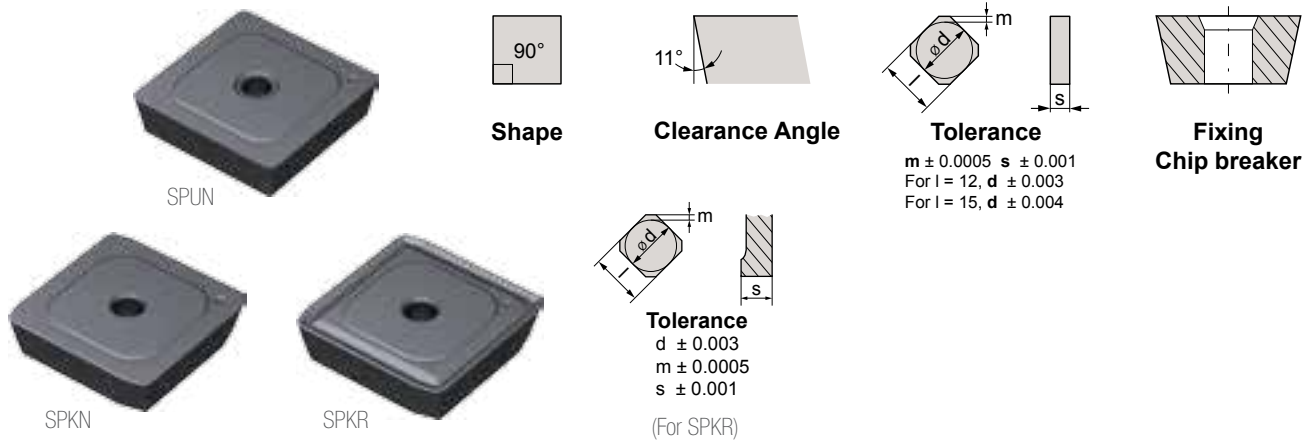


When milling materials from groups 1, 2, 3, 4, 7, 8 and 11, coolant is not recommended. When machining materials from groups 5, 6, 9, 10 and 12, it is recommended to use coolant.



Go to <http://bit.ly/2c5a8U1>
or scan the QR code to find the
speeds & feeds for your inserts.

SPUN, SPKN, & SPKR Milling Inserts



Part No.	Description	Grade	l	s	r	Direction
3263333	SPUN 422 (ANSI) SPUN 120308 (ISO)	LT 30	0.500	0.125	0.031	Neutral
3263336	SPKN 42 EDTR (ANSI) SPKN 1203 EDTR (ISO)	LT 30	0.500	0.125	-	Right
3263341	SPKN 43 EDTR (ANSI) SPKN 1204 EDTR (ISO)	LT 30	0.500	0.187	-	Right
3266029	SPKN 53 EDTR (ANSI) SPKN 1504 EDTR (ISO)	LT 30	0.625	0.187	-	Right
3253346	SPKR 42 EDTR (ANSI) SPKR 1203 EDTR (ISO)	LT 30	0.500	0.125	-	Right
3263351	SPKR 43 EDTR (ANSI) SPKR 1204 EDTR (ISO)	LT 30	0.500	0.187	-	Right

Application Guide



Square inserts, with 75° lead angle designed for high depths of cut and materials that generate long chips.
 Suitable for roughing to finishing-face milling operations.



Go to <http://bit.ly/2c5a8U1>
 or scan the QR code to find the
 speeds & feeds for your inserts.

SPMT Milling Inserts



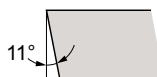
SPMT with wiper



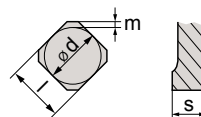
SPMT without wiper



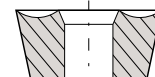
Shape



Clearance Angle



Tolerance
d ± 0.003
m ± 0.005
s ± 0.005



**Fixing
Chip breaker**

Part No.	Description	Grade	l	s	r	Direction
3263347	SPMT12T308 TN	LT 30	0.523	0.156	0.031	Right
3263349	SPMT060304 TN	LT30	0.250	0.126	0.016	Right
3263348	SPMT120408 TN	LT30	0.500	0.189	0.031	Right

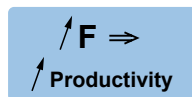
Face Mill Insert with 90° Lead Angle.

Multi purpose 90° milling insert with 4 cutting edges. Suitable for roughing to finishing-slotting, shoulder and face milling operations.

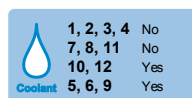
Application Guide



Use these tips to help get the best productivity using Techniks' inserts.



To increase productivity, it is recommended to increase feed (f) and respect cutting speed.



When milling materials from groups 1, 2, 3, 4, 7, 8 and 11, coolant is not recommended. When machining materials from groups 5, 6, 9, 10 and 12, it is recommended to use coolant.



Go to <http://bit.ly/2c5a8U1>
or scan the QR code to find the
speeds & feeds for your inserts.

TPKN & TPKR Milling Inserts



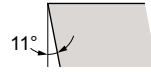
TPKN



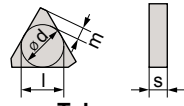
TPKR



Shape

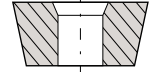


Clearance Angle



Tolerance

$m \pm 0.013$ $s \pm 0.0005$
For $l = 16$, $d \pm 0.002$
For $l = 22$, $d \pm 0.003$



Fixing
Chip breaker

Part No.	Description	Grade	l	s	r	Direction
3567741	TPKN 32 PDTR (ANSI) TPKN 1603 PDTR (ISO)	LT 30	0.650	0.650	0.125	Right
3567745	TPKN 43 PDTR (ANSI) TPKN 2204 PDTR (ISO)	LT 30	0.866	0.866	0.187	Right
3567751	TPKR 323 PDTR (ANSI) TPKR 1603 PDTR (ISO)	LT 30	0.650	0.125	-	Right
3567755	TPKR 43 PDTR (ANSI) TPKR 2204 PDTR (ISO)	LT 30	0.866	0.187	-	Right

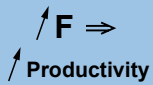
Multi purpose 90° milling insert with designed for materials that generate long chips.

Suitable for roughing to finishing-slotting, shoulder and face filling operations.

Application Guide



Use these tips to help get the best productivity using Techniks' inserts.



To increase productivity, it is recommended to increase feed (f) and respect cutting speed.



When milling materials from groups 1, 2, 3, 4, 7, 8 and 11, coolant is not recommended. When machining materials from groups 5, 6, 9, 10 and 12, it is recommended to use coolant.

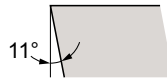


Go to <http://bit.ly/2c5a8U1>
or scan the QR code to find the
speeds & feeds for your inserts.

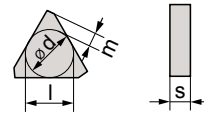
TPUN & WPGT Milling Inserts



Shape

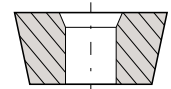


Clearance Angle



Tolerance

$d \pm 0.003$
 $m \pm 0.005$
 $s \pm 0.005$



Fixing
Chip breaker

TPUN Milling Inserts

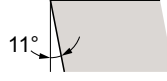
Part No.	Description	Grade	l	s	r	Direction
3567761	TPUN 322 (ANSI) TPUN 160308 (ISO)	LT 30	0.650	0.125	0.031	Right

Multi purpose 90° milling insert with 3 cutting edges and corner radius.

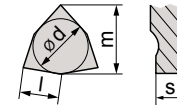
Suitable for roughing to finishing-slotting, shoulder and face milling operations.



Shape

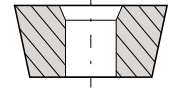


Clearance Angle



Tolerance

$s \pm 0.005$
 For $l = 04/05/06$, $d \pm 0.002$ $m \pm 0.003$
 For $l = 08$, $d \pm 0.003$ $m \pm 0.005$



Fixing
Chip breaker

WPGT Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
3451112	WPGT 050315 ZSR HF	351	0.197	0.138	0.059	Neutral

HF = High Feed

See the back of the box for speeds and feeds.

Application Guide



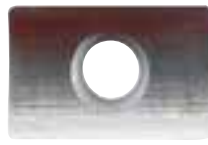
Go to <http://bit.ly/2c5a8U1>
 or scan the QR code to find the
 speeds & feeds for your inserts.

APET, APEX, & APGT Aluminum Milling Inserts

Polished and ground



APET



APEX

Face Mill for AP__ see page 7 7.

End Mill for AP__. see page 20.

PowerLOC End Mill for AP__ 1003 See page 27.

APET & APEX Aluminum Milling Inserts

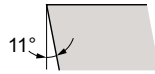
Part No.	Description	Grade	l	s	r	Direction
3151232	APET 160402 LH	101	0.704	0.227	0.008	Neutral
3151236	APEX 100304 PDR F01 HP	5005	0.393	0.125	0.016	Right
3151239	APEX 1604 PDR F01 HP	GH05	0.704	0.227	Sharp	Right

Green indicates aluminum.

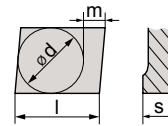
HP = High Polish



Shape

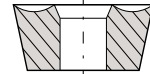


Clearance Angle



Tolerance

d ± 0.001
m ± 0.001
s ± 0.005



Fixing
Chip breaker

APGT Aluminum Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
1506502	APGT 100304 PDER ALU	LT 05	0.409	0.136	0.016	Right
1506506	APGT 160408 PDER ALU	LT 05	0.606	0.187	0.031	Right

Green indicates aluminum.

Face milling Insert with 90° lead angle.

Highly positive inserts with a unique coating and 90° lead angle for aluminum.

Suitable for roughing to finishing-slotting, shoulder and face milling operations.

Application Guide

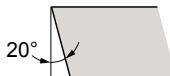


Go to <http://bit.ly/2c5a8U1>
or scan the QR code to find the
speeds & feeds for your inserts.

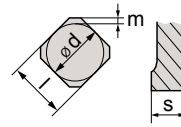
SEET & SEGT Aluminum Milling Inserts



Shape

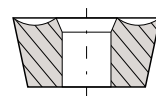


Clearance Angle



Tolerance

d ± 0.001
m ± 0.001
s ± 0.005

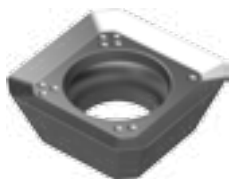


Fixing
Chip breaker

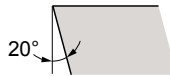
SEET Aluminum Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
3251239	SEET 13T3 HP	WSK10	0.528	0.158	Chamfer	Neutral

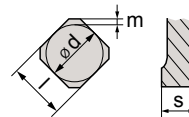
Green indicates aluminum.



Shape

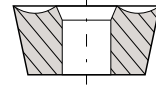


Clearance Angle



Tolerance

d ± 0.003
m ± 0.0005
s ± 0.0001



Fixing
Chip breaker

SEGT Aluminum Milling Inserts

Part No.	Description	Grade	l	s	r	Direction
2506509	SEGT 1204 AFEN ALU	LT 05	0.500	0.187	Chamfer	Neutral

Green indicates aluminum.

Face Milling Insert with 45° Lead Angle.

Highly positive inserts with a unique coating and 90° lead angle for aluminum.

Suitable for roughing to finishing-slotting, shoulder and face milling operations.

Application Guide



Go to <http://bit.ly/2c5a8U1>
or scan the QR code to find the
speeds & feeds for your inserts.

Turning and Boring Tools and Inserts



If you have to change inserts before the job is done, your insert has let you down. Techniks turning inserts excel in the most demanding applications to cut deeper, faster, and longer in machining steels, stainless steels, aluminum and exotics. The unparalleled strength and toughness of our inserts virtually eliminates premature insert failure saving you both time and money.



Positive turning



Negative turning



Positive Boring



Negative boring

Key Points:

- free cutter body program
- tooling package specials
- high-performance & value

Techniks vs other brand

When tested under the same cutting conditions, Techniks inserts retained their sharpness and ran over twice as long before showing visible wear.



Techniks CNMG insert - After 22 min.



Other brand CNMG - After 11 min.

See for yourself. Request test inserts.

Turning Tools	Application	Lead Angle	Shank	L & R Hand	2-Side Insert	All Material
Negative Tool Holder	turning & facing	93°, 95°	1" square	✓	✓	✓
Negative Boring Bars*	boring & facing	93°, 95°	1" 1.25" 1.5"	✓	✓	✓
Positive Tool Holder	turning & facing	91°, 93°, 95°	.5" & .75"	✓		✓
Positive Boring Bars*	boring & facing	91°, 93°, 95°	.375" to .75"	✓		✓

*Coolant-thru is standard for better chip evacuation.



CNMG



TNMG



VNMG



WNMG



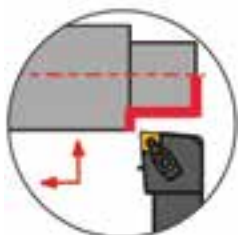
CCMT



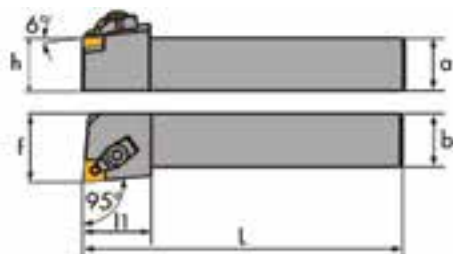
TCMT

Insert Type	Test Inserts	Package Deals	All-Material	ISO Compatible	PVD 3.5X
Milling Inserts	✓	✓	✓	✓	✓
Turning Inserts	✓	✓	✓	✓	✓
Boring Inserts	✓	✓	✓	✓	✓

Negative Turning Toolholders



turning facing



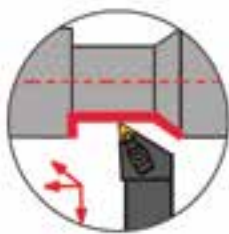
right hand shown - see table for left hand

Product Information

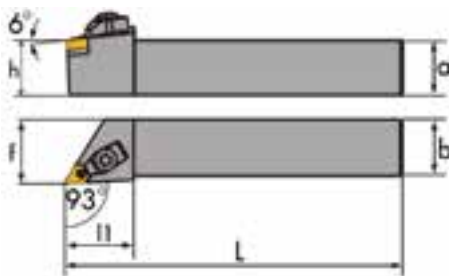
- Left and right hand holders
- Takes CN__43_ inserts (4 corners)
- 95° lead angle
- 1" square shanks
- For turning and facing operations.
- Uses two-sided inserts

MCLNR/L 95°

Part No.	Description	a=h	b	L	l1	f	Insert	Clamp Screw	Shim	Clamp	Lock Pin	Wrench
8669911	MCLNR-16-4D	1.00	1.00	6.00	1.25	1.25	CN__43_	9344888	9333111	9344111	9344666	9322121
8669912	MCLNL-16-4D	1.00	1.00	6.00	1.25	1.25	CN__43_	9344888	9333111	9344111	9344666	9322121



profile turning



right hand shown - see table for left hand

Product Information

- Left and right hand holders
- 16-3D Takes DN__33_ inserts
- 16-4D takes DN__43_ inserts (4 corners)
- 93° lead angle
- 1" square shanks
- For profiling and turning operations.
- Uses two-sided inserts

MDJNR/L 93°

Part No.	Description	a=h	b	L	l1	f	Insert	Clamp Screw	Shim	Clamp	Lock Pin	Wrench
8679923	MDJNR16-3D	1.00	1.00	6.00	1.25	1.25	DN__33_	9344888	9333225	9344111	9344555	9322121
8679924	MDJNL16-3D	1.00	1.00	6.00	1.25	1.25	DN__33_	9344888	9333225	9344111	9344555	9322121
8679921	MDJNR-16-4D	1.00	1.00	6.00	1.50	1.25	DN__43_	9344888	9333444	9344222	9344777	9322121
8679922	MDJNL-16-4D	1.00	1.00	6.00	1.50	1.25	DN__43_	9344888	9333444	9344222	9344777	9322121



Cuts
ALL THESE
Materials

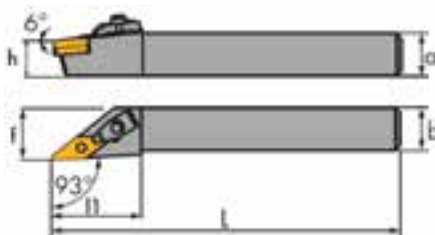
HIGH-PERFORMANCE
3x the Thickness of Conventional PVD!

CCMT
CPMT
CNMG
CNMM
CNMP
DCMT
DNMG
DNUX
EPGT
EPMT
KNUX
RCMT
SCMT
SNMG
TCMT
TNMG
TNMP
TNUX
TPGH
TPGT
TPMR
VBMT
VCMT
VNMG
WNMG
WNMP
CCGX
CNGG
DCGX
DNGG
TCGX
TNGG
VNGG
WCMX

Negative Turning Toolholders



profile turning



right hand shown - see table for left hand

Product Information

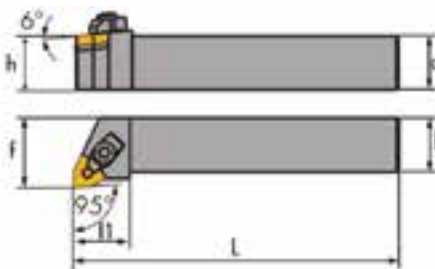
- Left and right hand holders
- Takes VN__33_ inserts (4 corners)
- 93° lead angle
- 1" square shanks
- For profiling and turning operations.
- Uses two-sided inserts

MVJNR/L 93°

Part No.	Description	a=h	b	L	l1	f	Insert	Clamp Screw	Shim	Clamp	Lock Pin	Wrench
8689931	MVJNR-16-3D	1.00	1.00	6.00	1.77	1.25	VN__33_	9344888	9333666	9344333	9344555	9322121
8689932	MVJNL-16-3D	1.00	1.00	6.00	1.77	1.25	VN__33_	9344888	9333666	9344333	9344555	9322121



turning & facing



right hand shown - see table for left hand

Product Information

- Left and right hand holders
- Takes WN__43_ inserts (6 corners)
- 95° lead angle
- 1" square shanks
- For turning and facing operations
- Uses two-sided inserts

MWLNR/L 95°

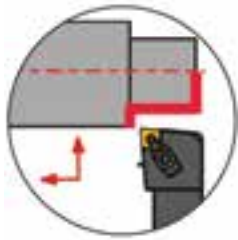
Part No.	Description	a=h	b	L	l1	f	Insert	Clamp Screw	Shim	Clamp	Lock Pin	Wrench
8649941	MWLNR-16-4D	1.00	1.00	6.00	1.38	1.25	WN__43_	9344888	9333888	9344111	9344666	9322121
8649942	MWLN-16-4D	1.00	1.00	6.00	1.38	1.25	WN__43_	9344888	9333888	9344111	9344666	9322121



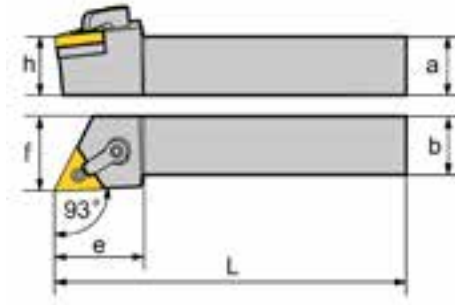
Cuts
ALL THESE
Materials

HIGH-PERFORMANCE
3x the Thickness of Conventional PVD!

Negative Turning Toolholders



turning facing



right hand shown - see table for left hand

Product Information

- Left and right hand holders
- 163D takes TN__33_ inserts
- 16-4D takes TN__43_ inserts
- 93° lead angle
- 1" square shanks
- For turning and facing operations.
- Uses two-sided inserts

MTJNR/L93°

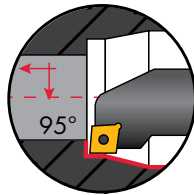
Part No.	Description	a=h	b	L	l1	f	Insert	Clamp Screw	Shim	Clamp	Lock Pin	Wrench
8699911	MTJNR16-3D	1.00	1.00	6.00	1.25	1.25	TN__33_	9344888	9333889	9344111	9344555	9322121
8699915	MTJNL16-3D	1.00	1.00	6.00	1.25	1.25	TN__33_	9344888	9333889	9344111	9344555	9322121
8699921	MTJNR16-4D	1.00	1.00	6.00	1.42	1.25	TN__43_	9344888	9333889	9344222	9344666	9322121
8699925	MTJNL16-4D	1.00	1.00	6.00	1.42	1.25	TN__43_	9344888	9333889	9344222	9344666	9322121



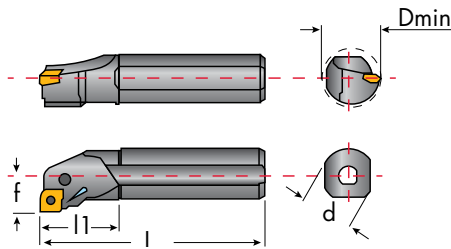
Cuts
ALL THESE
Materials

HIGH-PERFORMANCE
3x the Thickness of Conventional PVD!

Negative Boring Bars – Coolant Thru



boring & facing



right hand shown - see table for left hand

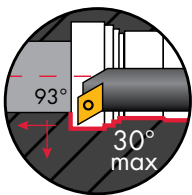
Product Information

- Comes in 1", 1-1/4", 1-1/2" diameter shanks
- Left and right hand bars
- Takes CN__43_ inserts (4 Corners)
- 95° lead angle
- 'P' style clamping and coolant thru for better chip evacuation
- Used for boring and facing
- Uses two-sided inserts

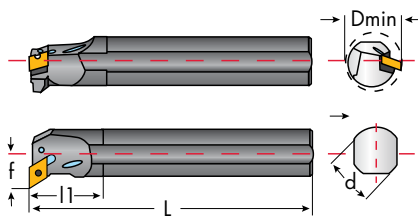
PCLNR/L 95° Coolant Thru

Part No.	Description	d	Dmin	L	l1	f	Insert	Shim	Shim Pin	Lever	Lock Screw	Wrench
8168811	A16T-PCLNR-4	1.00	1.280	12	1.570	0.640	CN__43_	-	-	9335333	9345222	9322116
8168821	A16T-PCLNL-4	1.00	1.400	12	1.570	0.640	CN__43_	-	-	9335333	9345222	9322116
8168812	A20T-PCLNR-4	1.25	1.460	12	1.970	0.77	CN__43_	9333252	9333999	9335222	9345333	9322121
8168822	A20T-PCLNL-4	1.25	1.530	12	1.570	0.77	CN__43_	9333252	9333999	9335222	9345333	9322121
8168813	A24U-PCLNR-4	1.50	1.760	14	2.360	0.890	CN__43_	9333252	9333999	9335222	9345333	9322121
8168823	A24U-PCLNL-4	1.50	1.760	14	2.360	0.890	CN__43_	9333252	9333999	9335222	9345333	9322121

Blue indicates coolant.



profile boring



right hand shown - see table for left hand

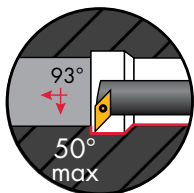
Product Information

- Comes in 1", 1-1/4", 1-1/2" diameter shanks
- Left and right hand bars
- A16T-PDUNR/L -3 takes DN__33_ inserts (4 corners)
- A20T-PDUNR/L-4 and A24U-PDUNR/L take DN__43_ inserts (4 corners)
- 93° lead angle
- 'P' style clamping and coolant thru for better chip evacuation
- Used for profile boring (30° max)
- Uses two-sided inserts

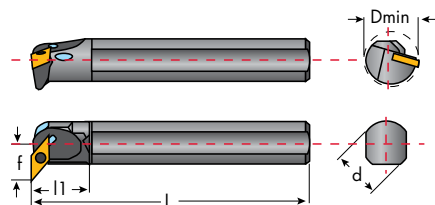
PDUNR/L 93° Coolant Thru

Part No.	Description	d	Dmin	L	l1	f	Insert	Shim	Shim Pin	Lever	Lock Screw	Wrench
8178831	A16T-PDUNR-3	1.00	1.300	12	1.380	0.750	DN__33_	-	-	9335111	9345111	9322111
8178841	A16T-PDUNL-3	1.00	1.300	12	1.380	0.750	DN__33_	-	-	9335111	9345111	9322111
8178832	A20T-PDUNR-4	1.25	1.700	12	1.970	1.000	DN__43_	9333353	9333999	9335222	9345333	9322121
8178842	A20T-PDUNL-4	1.25	1.700	12	1.970	1.000	DN__43_	9333353	9333999	9335222	9345333	9322121
8178833	A24U-PDUNR-4	1.50	2.000	14	1.970	1.13	DN__43_	9333353	9333999	9335222	9345333	9322121
8178843	A24U-PDUNL-4	1.50	2.000	14	1.970	1.13	DN__43_	9333353	9333999	9335222	9345333	9322121

Negative Boring Bars – Coolant Thru



profile boring



right hand shown - see table for left hand

Product Information

- Comes in 1" and 1-1/4" diameter shanks
- Left and right hand bars
- Takes VN__33_ inserts (4 corners)
- 93° lead angle
- 'P' style clamping and coolant thru for better chip evacuation
- Used for profile boring (50° max)
- Uses two-sided inserts

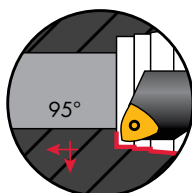
PVUNR/L 93° Coolant Thru

Part No.	Description	d	Dmin	L	l1	f	Insert	Lever	Lock Screw	Wrench
8188851	A16T-PVUNR-3	1.00	1.500	12	1.380	0.800	VN__33_	9335111	9345111	9322111
8188861	A16T-PVUNL-3	1.00	1.500	12	1.380	0.800	VN__33_	9335111	9345111	9322111
8188852	A20T-PVUNR-3	1.25	2.250	12	1.570	1.13	VN__33_	9335111	9345111	9322111
8188862	A20T-PVUNL-3	1.25	2.250	12	1.570	1.13	VN__33_	9335111	9345111	9322111

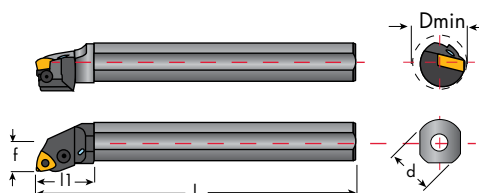
Blue indicates coolant.



Cuts
ALL THESE
Materials



boring & facing



right hand shown - see table for left hand

Product Information

- Comes in 1", 1-1/4", 1-1/2" diameter shanks
- Left and right hand bars
- Takes WN__43_ inserts (6 corners)
- 95° lead angle
- 'P' style clamping and coolant thru for better chip evacuation
- Used for boring and facing
- Uses two-sided inserts

PWLNR/L 95° Coolant Thru

Part No.	Description	d	Dmin	L	l1	f	Insert	Shim	Shim Pin	Lever	Lock Screw	Wrench
8148871	A16T-PWLNR-4	1.00	1.300	12	1.770	0.750	WN__43_	-	-	9335333	9345222	9322116
8188881	A16T-PWLNL-4	1.00	1.300	12	1.770	0.750	WN__43_	-	-	9335333	9345222	9322116
8148872	A20T-PWLNR-4	1.25	1.700	12	1.970	1.000	WN__43_	9333757	9333999	9335222	9345333	9322121
8188882	A20T-PWLNL-4	1.25	1.700	12	1.970	1.000	WN__43_	9333757	9333999	9335222	9345333	9322121
8188873	A24U-PWLNR-4	1.50	2.000	14	2.360	1.000	WN__43_	9333757	9333999	9335222	9345333	9322121
8188883	A24U-PWLNL-4	1.50	2.000	14	2.360	1.000	WN__43_	9333757	9333999	9335222	9345333	9322121

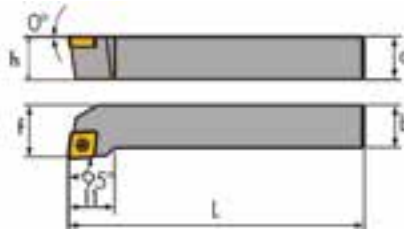
Blue indicates coolant.

Positive Turning Toolholders



SCLCR/L 95°

turning & facing



right hand shown - see table for left hand

Product Information

- Comes in 1/2" and 3/4" shanks
- Left and right hand holders
- SCLCR/L-08-3J takes CC__32.5_ inserts (2 corners)
- SCLCR/L-12-4C takes CC__43_ inserts (2 corners)
- 95° lead angle
- Screw clamping
- Used for turning and facing operations
- Uses only one side of insert

Part No.	Description	a=h	b	L	l1	f	Insert	Screw	Shim	Shim Screw	Wrench
8665511	SCLCR-08-3J	0.500	0.500	3.500	0.630	0.630	CC__32.5_	9317446	-	-	9355555
8665522	SCLCL-08-3J	0.500	0.500	3.500	0.630	0.630	CC__32.5_	9317446	-	-	9355555
8665533	SCLCR-12-4C	0.750	0.750	5.000	1.000	1.000	CC__43_	9319446	9333222	9319648	9355555
8665544	SCLCL-12-4C	0.750	0.750	5.000	1.000	1.000	CC__43_	9319446	9333222	9319648	9355555



STGCR/L 91°

turning & facing



right hand shown - see table for left hand

Product Information

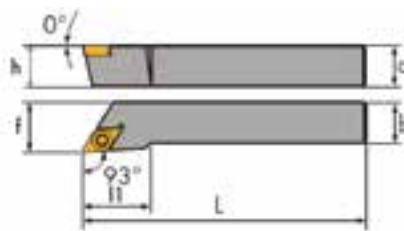
- Comes in 1/2" and 3/4" shanks
- Left and right hand holders
- STGCR/L-08-2J takes TC__21.5_ inserts (3 Corners)
- STGCR/L-12-3C Takes TC__32.5_ inserts (3 Corners)
- 91° Lead Angle
- Screw clamping
- Used for turning & facing operations
- Uses only one side of insert

Part No.	Description	a=h	b	L	l1	f	Insert	Screw	Shim	Shim Screw	Wrench
8655512	STGCR-08-2J	0.500	0.500	3.500	0.550	0.630	TC__21.5_	9316547	-	-	9355222
8655523	STGCL-08-2J	0.500	0.500	3.500	0.550	0.630	TC__21.5_	9316547	-	-	9355222
8655534	STGCR-12-3C	0.750	0.750	5.000	0.830	1.000	TC__32.5_	9318446	9333555	9319547	9355555
8655545	STGCL-12-3C	0.750	0.750	5.000	0.830	1.000	TC__32.5_	9318446	9333555	9319547	9322126



SDJCR/L 93°

profile turning



right hand shown - see table for left hand

Product Information

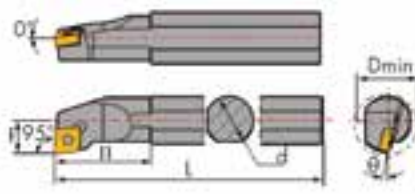
- Comes in 1/2" and 3/4" shanks
- Left and right hand holders
- SDJCR/L-08-2J takes DC__21.5_ inserts (2 Corners)
- SDJCR/L-12-3C takes DC__32.5_ inserts (2 corners)
- 93° lead angle
- Screw clamping
- Used for profile turning
- Uses only one side of insert

Part No.	Description	a=h	b	L	l1	f	Insert	Screw	Shim	Shim Screw	Wrench
8675555	SDJCR-08-2J	0.500	0.500	3.500	0.600	0.630	DC__21.5_	9316547	-	-	9355222
8675566	SDJCL-08-2J	0.500	0.500	3.500	0.600	0.630	DC__21.5_	9316547	-	-	9355222
8675577	SDJCR-12-3C	0.750	0.750	5.000	0.950	1.000	DC__32.5_	9318446	9333333	9319547	9355555
8675588	SDJCL-12-3C	0.750	0.750	5.000	0.950	1.000	DC__32.5_	9318446	9333333	9319547	9322126

Positive Boring Bars – Coolant Thru



boring & facing



right hand shown - see table for left hand

Product Information

- Comes in 3/8", 1/2", 5/8", and 3/4" diameter shanks
- Left and right hand bars
- A06H-SCLCR/L-2 and A08K-SCLCR/L-2 take CC__21.5_ Inserts (2 corners)
- A10M-SCLCR/L-3 and A12Q-SCLCR/L-3 take CC__32.5_ Inserts (2 corners)
- 95° lead angle
- Screw clamping and coolant thru for better chip evacuation
- Used for boring and facing
- Uses only one side of insert

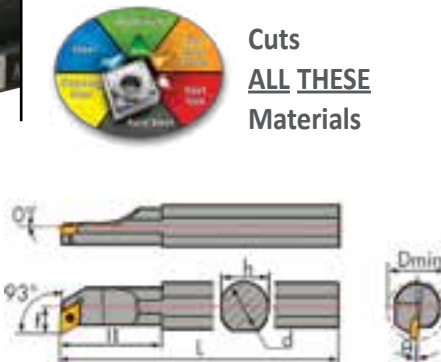
SCLCR/L 95° Coolant Thru

Part No.	Description	d	Dmin	L	l1	f	Insert	Screw	Wrench
8167711	A06H-SCLCR-2	0.375	0.472	4.00	0.551	0.236	CC__21.5_	9311455	9355222
8167722	A06H-SCLCL-2	0.375	0.472	4.00	0.551	0.236	CC__21.5_	9311455	9355222
8167733	A08K-SCLCR-2	0.500	0.630	5.00	0.984	0.354	CC__21.5_	9311455	9355222
8167744	A08K-SCLCL-2	0.500	0.630	5.00	0.984	0.354	CC__21.5_	9311455	9355222
8167755	A10M-SCLCR-3	0.625	0.787	6.00	1.280	0.433	CC__32.5_	9317446	9355555
8167766	A10M-SCLCL-3	0.625	0.787	6.00	1.280	0.433	CC__32.5_	9317446	9355555
8167777	A12Q-SCLCR-3	0.750	0.984	7.00	1.496	0.512	CC__32.5_	9317446	9355555
8167788	A12Q-SCLCL-3	0.750	0.984	7.00	1.496	0.512	CC__32.5_	9317446	9355555

Blue indicates coolant.



profile boring



right hand shown - see table for left hand

Cuts
ALL THESE
Materials

Product Information

- Comes in 3/8", 1/2", 5/8", and 3/4" diameter shanks
- Left and right hand bars
- A06H-SDUCR/L-2, A08K-SDUCR/L-2, and A10M-SDUCR/L-2 all take DC__21.5_ inserts (2 corners)
- A12Q-SDUCR/L-3 takes DC__32.5_ inserts (2 corners)
- 93° lead angle
- Screw clamping and coolant thru for better chip evacuation
- Used for profile boring (30° max)
- Uses only one side of insert

SDUCR/L 93° Coolant Thru

Part No.	Description	d	Dmin	L	l1	f	Insert	Screw	Wrench
8177711	A06H-SDUCR-2	0.375	0.512	4.00	-	0.276	DC__21.5_	9311455	9355222
8177722	A06H-SDUCL-2	0.375	0.512	4.00	-	0.276	DC__21.5_	9311455	9355222
8177733	A08K-SDUCR-2	0.500	0.625	5.00	0.866	0.354	DC__21.5_	9316547	9355222
8177744	A08K-SDUCL-2	0.500	0.625	5.00	0.866	0.354	DC__21.5_	9316547	9355222
8177755	A10M-SDUCR-2	0.625	0.787	6.00	1.063	0.433	DC__21.5_	9316547	9355222
8177766	A10M-SDUCL-2	0.625	0.787	6.00	1.063	0.433	DC__21.5_	9316547	9355222
8177777	A12Q-SDUCR-3	0.750	0.984	7.00	1.575	0.512	DC__32.5_	6811259	9355555
8177788	A12Q-SDUCL-3	0.750	0.984	7.00	1.575	0.512	DC__32.5_	6811259	9355555

Satisfaction guaranteed on all our CNC tooling solutions from spindle to workpiece.

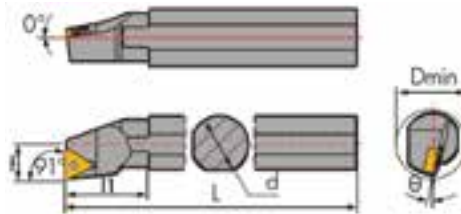
www.techniksusa.com

CCMT
CPMT
CNMG
CNMM
CNMP
DCMT
DNMG
DNUX
EPGT
EPMT
KNUX
RCMT
SCMT
SNMG
TCMT
TNMG
TNMP
TNUX
TPGH
TPGT
TPMR
VBMT
VCMT
VNMG
WNMG
WNMP
CCGX
CNGG
DCGX
DNGG
TCGX
TNGG
VNGG
WCMX

Positive Boring Bars – Coolant Thru



boring & facing



right hand shown

Product Information

- Comes in 1/2", 5/8", and 3/4" diameter shanks
- Right hand bars only
- All Take TC_21.5_ inserts (2 corners)
- 91° lead angle
- Screw clamping and coolant thru for better chip evacuation
- Used for boring and facing
- Uses only one side of insert

STFCR/L 91° Coolant Thru

Part No.	Description	d	Dmin	L	l1	f	Insert	Screw	Wrench
8157711	A08K-STFCR-2	0.500	0.630	5.00	1.024	0.354	TC_21.5_	9316547	9355555
8157722	A10M-STFCR-2	0.625	0.787	6.00	1.181	0.434	TC_21.5_	9316547	9355555
8157733	A12Q-STFCR-2	0.750	0.984	7.00	1.417	0.512	TC_21.5_	9316547	9355555

Blue indicates coolant.

Turning Tips

- The cutting conditions are Techniks guidelines for optimal machining, however our inserts can work in a wider range of cutting conditions to meet special machining needs.
- According to our recommended cutting conditions, A-max should be used for optimum results.
- When machining stainless steel, make sure your speed is over the minimum requirement. Stainless steel can be gummy. Running it too slowly can cause gaulding (weldment of the chip to the insert).
- Coolant recommendations:
 - Use coolant with materials from groups 6, 7, 8, 9, 10, 11, 12.
 - Do not use coolant with materials from groups 1, 2, 4. Use coolant with materials from groups 3, 5 — depending on the application.
- Always verify that the toolholder and shim are in good condition (not damaged).
- If chips are too long, we recommend increasing feed rate.
- If chips are not controlled (vary in shape and size), we recommend increasing feed rate and reducing depth of cut.
- For the internal boring operations, the toolholder should be as short as possible and shank as big as possible.
- In the case of chatter, we recommend reducing cutting speed, and increasing feed rate.
- Reduce the feed rate for heavy interrupted cuts.



**Cuts
ALL THESE
Materials**

HIGH-PERFORMANCE
3x the Thickness of Conventional PVD!

Techniks Turning & Boring Inserts

HIGH-PERFORMANCE
3x the Thickness of Conventional PVD!

Techniks out-performs!

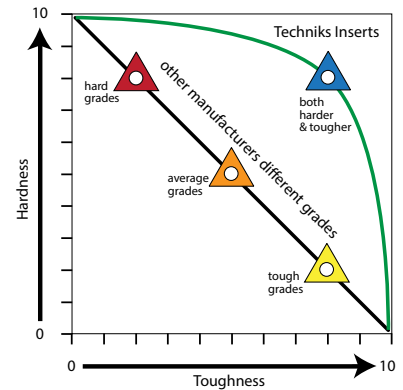
When tested under the same cutting conditions, Techniks inserts retained their sharpness and ran over twice as long before showing visible wear. See for yourself. Request test inserts.



Techniks CNMG insert - After 22 min.



Other brand CNMG - After 11 min.



Techniks inserts are both HARDER & TOUGHER



CNMG



TNMG



VNMG



WNMG



CCMT



TCMT

Insert Type	Test Inserts	Package Deals	All-Material	ISO Compatible	PVD 3.5X
Milling Inserts	✓	✓	✓	✓	✓
Turning Inserts	✓	✓	✓	✓	✓
Boring Inserts	✓	✓	✓	✓	✓

Changing jobs? Don't change inserts!

Just run our inserts at the speeds and feeds on the back of the package for increased productivity AND reduced cutting tool costs.

Cuts
ALL THESE
Materials

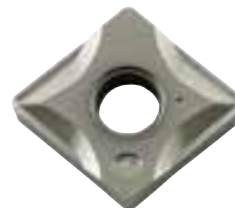


LT30 and LT1000 All Material Grade

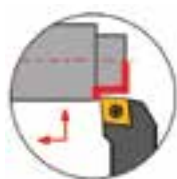


Use LT30 or LT1000 for cutting all materials

LT05 Aluminum Grade



Use LT05 for best results cutting Aluminum



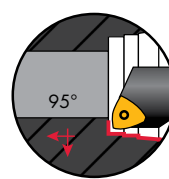
turning & facing



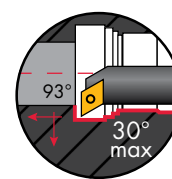
profile turning



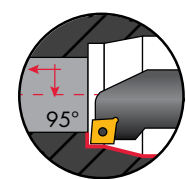
profile boring



boring & facing



profile boring



boring & facing

CCMT
CPMT
CNMG
CNMM
CNMP
DCMT
DNMG
DNUX
EPGT
EPMT
KNUX
RCMT
SCMT
SNMG
TCMT
TNMG
TNMP
TNUX
TPGH
TPGT
TPMR
VBMT
VCMT
VNMG
WNMG
WNMP
CCGX
CNGX
DCGX
DNGX
TCGX
TNGX
VNGX
WCMX

Technical Formulas

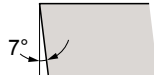
Definition	Formula
Inches Per Tooth (IPT or Chip Load) The thickness of material that is removed by one tooth in one complete revolution.	
Inches Per Revolution (IPR) The linear distance that a tool advances in one complete revolution.	$IPR = IPT \times \text{NUMBER OF TEETH}$
Inches Per Minute (IPM) The linear distance, in inches, that the tool advances in one minute.	$IPM = IPR \times RPM$
Surface Feet Per Minute (SFPM) The linear distance, in feet, that the cutting edge of the tool travels in one minute.	$SFPM = \frac{RPM \times DIA}{3.82}$
Revolutions Per Minute (RPM) The number of times a tool rotates 360° in one minute.	$RPM = \frac{SFPM \times 3.82}{DIA}$
Meters Per Minute (M/MIN) The linear distance, in meters, that the cutting edge of the tool travels in one minute.	$M/M = RPM \times .003 \times DIA$
Convert Millimeters to Inches	$INCHES = \frac{MM}{25.4}$
Convert Inches to Millimeters	$MM = INCHES \times 25.4$
Convert Meters Per Minute to Surface Feet Per Minute	$SFPM = M/M \times 3.3$
Convert Surface Feet Per Minute to Meters Per Minute	$MM = \frac{SFPM}{3.3}$
Depth Of Cut (DOC) The amount of material removed, in thickness, by one pass of the cutting tool.	
Metal Removal Rate ("Q" or IN³/MIN). The amount of cubic inches of material removed in one minute.	$Q = DOC \times WOC \times IPM$
Balancing Feed and DOC A given value that allows an end user to balance feed rate and depth of cut.	$AMAX = DOC \times IPR$

CCMT Turning & Boring Inserts

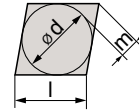
CCMT



Shape

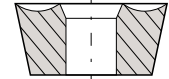


Clearance Angle



Tolerance

$s \pm 0.005$
For $l = 06/09$, $d \pm 0.002$ $m \pm 0.003$
For $l = 12$, $d \pm 0.003$ $m \pm 0.005$



Fixing
Chip breaker

CCMT Turning & Boring Inserts

Part No.	Description	Grade	l	r	r	Direction
3663311	CCMT 2(1.5)0 HF	251	0.252	0.094	0.008	0.008
3664411	CCMT 2(1.5)1 NN	LT 10	0.254	0.094	0.016	0.016
3668011	CCMT 2(1.5)1 NN	LT 1000	0.254	0.094	0.016	0.016
3663399	CCMT 2(1.5)2 HM	251	0.252	0.094	0.031	0.031
3663344	CCMT 3(2.5)0 HF	251	0.382	0.156	0.008	0.008
3664413	CCMT 3(2.5)1 NN	LT 10	0.381	0.156	0.016	0.016
3668021	CCMT 3(2.5)1 NN	LT 1000	0.381	0.156	0.016	0.016
3664416	CCMT 3(2.5)2 NN	LT 10	0.381	0.156	0.036	0.036
3668026	CCMT 3(2.5)2 NN	LT 1000	0.381	0.156	0.036	0.036
3664422	CCMT 431 NN	LT 1000	0.508	0.187	0.016	0.016
3664421	CCMT 431 NN	LT 10	0.508	0.187	0.016	0.016
3664427	CCMT 432 NN	LT 1000	0.508	0.187	0.036	0.036
3664425	CCMT 432 NN	LT 10	0.508	0.187	0.036	0.036
3664429	CCMT 433 NN	LT 1000	0.508	0.187	0.047	0.047
3631083	CCMT 433 NN	LT 10	0.508	0.187	0.047	0.047

NN All purpose Chipbreaker. 80° Diamond shape inserts, with positive chipbreaker geometry.

Very popular and useful for boring small diameters, facing and external turning.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
CCMT 2(1.5)1 NN	●	●	●
CCMT 3(2.5)1 NN	●	●	●
CCMT 3(2.5)2 NN	●	●	●
CCMT 431 NN	●	●	●
CCMT 432 NN	●	●	●
CCMT 433 NN	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
f_n = 0.003 - 0.008 inch/rev

Medium:
d.o.c. = 0.028 - 0.177 inch
f_n = 0.006 - 0.018 inch/rev

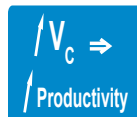
Roughing:
d.o.c. = 0.118 - 0.276 inch
f_n = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.
Each tip is symbolized by an icon which appears in the catalog with each insert.

Stainless Steel



In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.



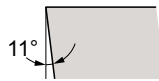
To increase machining productivity, it is recommended to increase speed (Vc) while respecting chip size calculation.

CPMT
CNMG
CNMM
CNMP
DCMT
DNMG
DNUX
EPGT
EPMT
KNUX
RCMT
SCMT
SNMG
TCMT
TNMG
TNMP
TNUX
TPGH
TPGT
TPMR
VBMT
VCMT
VNMG
WNMG
WNMP
CCGX
CNGG
DCGX
DNGG
TCGX
TNGG
VNGG
WCMX

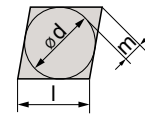
CPMT Turning Inserts



Shape

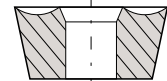


Clearance Angle



Tolerance

$s \pm 0.005$
For $l = 06/09$, $d \pm 0.002$ $m \pm 0.003$
For $l = 12$, $d \pm 0.003$ $m \pm 0.005$



**Fixing
Chip breaker**

CPMT Turning Inserts

Part No.	Description	Grade	l	s	r
3668010	CPMT21.51NN LT1000	LT1000	.254	.094	.016
3668020	CPMT32.51NN LT1000	LT1000	.381	.156	.016
3668025	CPMT32.52NN LT1000	LT1000	.381	.156	.031

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
CPMT 2(1.5)1 NN	●	●	●
CPMT 3(2.5)1 NN	●	●	●
CPMT 3(2.5)2 NN	●	●	●

● = Good ● = Acceptable ● = Not Recommended

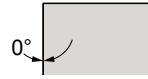


Go to <http://bit.ly/2bMPVkJ>
or scan the QR code to find the
speeds & feeds for your inserts.

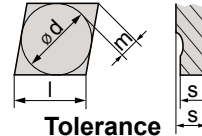
CNMG Turning & Boring Inserts



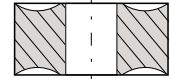
Shape



Clearance Angle



Tolerance
d $\pm$ 0.003
m $\pm$ 0.005
s $\pm$ 0.005



Fixing
Chip breaker

CNMG Turning & Boring Inserts

Part No.	Description	Grade	l	s	r
6607029	CNMG 431 NN	LT 10	0.508	0.187	0.016
6608011	CNMG 431 NN	LT 1000	0.508	0.187	0.016
6607033	CNMG 432 NN	LT 10	0.508	0.187	0.031
6608016	CNMG 432 NN	LT 1000	0.508	0.187	0.031
6601436	CNMG 432 NM	LT 10	0.508	0.187	0.031
6601437	CNMG 432 NM	LT 1000	0.508	0.187	0.031
6608026	CNMG 432 NX	LT 1000	0.508	0.187	0.031
6607037	CNMG 433 NN	LT 10	0.508	0.187	0.047
6608021	CNMG 433 NN	LT 1000	0.508	0.187	0.047

NN All purpose Chipbreaker **NM** Steel and Cast Iron **NR** Steel and Cast Iron **NX** All purpose Chipbreaker

The most popular general purpose turning inserts. Use for turning, facing and boring operations.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
CNMG 431 NN	●	●	●
CNMG 432 NN	●	●	●
CNMG 432 NM	●	●	●
CNMG 433 NR	●	●	●
CNMG 432 NX	●	●	●
CNMG 433 NN	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
fn = 0.003 - 0.008 inch/rev

Medium:
d.o.c. = 0.028 - 0.177 inch
fn = 0.006 - 0.018 inch/rev

Roughing:
d.o.c. = 0.118 - 0.276 inch
fn = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts. Each tip is symbolized by an icon which appears in the catalog with each insert.

Stainless Steel

$\uparrow V_c$

In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

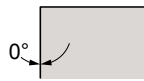
$\uparrow F \rightarrow$
 $\uparrow$ Productivity

To increase productivity, it is recommended to increase feed (f) and respect cutting speed.

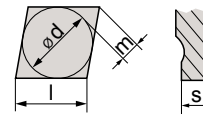
CNMM Turning Inserts



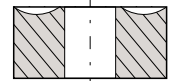
Shape



Clearance Angle



Tolerance
 $d \pm 0.003$
 $m \pm 0.005$
 $s \pm 0.005$



**Fixing
Chip breaker**

CNMM Turning Inserts

Part No.	Description	Grade	l	s	r
6602011	CNMM 432 NR	LT10	0.508	0.187	0.031
6602013	CNMM 432 NR	LT1000	0.508	0.187	0.031
6602022	CNMM 433 NR	LT10	0.508	0.187	0.047
6602023	CNMM 433 NR	LT1000	0.508	0.187	0.047

NR Steel and Cast Iron. 80° Diamond shape, single sided inserts.

Strong cutting edge for roughing operations which includes interrupted cut, high feeds and high depth of cut.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
CNMM 432 NR LT10	●	●	●
CNMM 432 NR LT1000	●	●	●
CNMM 433 NR LT10	●	●	●
CNMM 433 NR LT1000	●	●	●

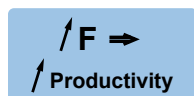
● = Good ● = Acceptable ● = Not Recommended

Finishing:
 $d.o.c. = 0.012 - 0.059$ inch
 $f_n = 0.003 - 0.008$ inch/rev

Medium:
 $d.o.c. = 0.028 - 0.177$ inch
 $f_n = 0.006 - 0.018$ inch/rev

Roughing:
 $d.o.c. = 0.118 - 0.276$ inch
 $f_n = 0.014 - 0.028$ inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.
 Each tip is symbolized by an icon which appears in the catalog with each insert.



To increase productivity, it is recommended to increase feed (f) and respect cutting speed.

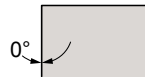


Go to <http://bit.ly/2bMPVkJ>
 or scan the QR code to find the
 speeds & feeds for your inserts.

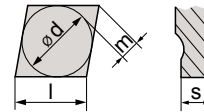
CNMP Turning Inserts



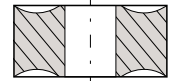
Shape



Clearance Angle



Tolerance
 $d \pm 0.003$
 $m \pm 0.005$
 $s \pm 0.005$



Fixing
Chip breaker

CNMP Turning Inserts

Part No.	Description	Grade	l	s	r
6607045	CNMP 432 NN	LT 10	0.508	0.187	0.031
6608031	CNMP 432 NN	LT 1000	0.508	0.187	0.031
3665525	CNMP 433 NN	LT 10	0.508	0.187	0.047
6608036	CNMP 433 NN	LT 1000	0.508	0.187	0.047

NN All purpose Chipbreaker. 80° Diamond shape, double sided inserts with positive chipbreaker geometry.

Generates low cutting forces, suitable for high temperature alloys and stainless steel.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
CNMP 432 NN	●	●	●
CNMP 433 NN	●	●	●

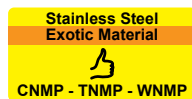
● = Good ● = Acceptable ● = Not Recommended

Finishing:
 $d.o.c. = 0.012 - 0.059$ inch
 $f_n = 0.003 - 0.008$ inch/rev

Medium:
 $d.o.c. = 0.028 - 0.177$ inch
 $f_n = 0.006 - 0.018$ inch/rev

Roughing:
 $d.o.c. = 0.118 - 0.276$ inch
 $f_n = 0.014 - 0.028$ inch/rev

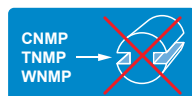
Use these tips to help get the best productivity using Techniks' cutting inserts.
 Each tip is symbolized by an icon which appears in the catalog with each insert.



In machining Stainless Steel or Exotic Materials, P geometry inserts (CNMP, TNMP, WNMP), are recommended as first choice.



In machining Exotic Materials, it is important to verify cutting conditions of the specific insert.



P geometry inserts (CNMP, TNMP, WNMP) are not recommended when machining with interrupted cut.

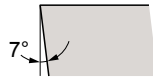


Go to <http://bit.ly/2bMPVkl>
 or scan the QR code to find the
 speeds & feeds for your inserts.

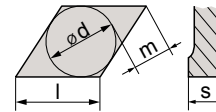
DCMT Turning Inserts



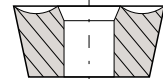
Shape



Clearance Angle



Tolerance
 $d \pm 0.002$
 $m \pm 0.003$
 $s \pm 0.005$



Fixing
Chip breaker

DCMT Turning Inserts

Part No.	Description	Grade	l	s	r
3764421	DCMT 2(1.5)1 NN	LT 10	0.305	0.094	0.016
3768811	DCMT 2(1.5)1 NN	LT 1000	0.305	0.094	0.016
3764424	DCMT 3(2.5)1 NN	LT 10	0.458	0.156	0.016
3768821	DCMT 3(2.5)1 NN	LT 1000	0.458	0.156	0.016
3764427	DCMT 3(2.5)2 NN	LT 10	0.458	0.156	0.031
3768826	DCMT 3(2.5)2 NN	LT 1000	0.458	0.156	0.031

NN All purpose Chipbreaker. 55° diamond shape inserts, suitable for internal turning due to a unique chip removal geometry.

Generates low cutting forces, most suitable for small work-pieces.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
DCMT 2(1.5)1 NN	●	●	●
DCMT 3(2.5)1 NN	●	●	●
DCMT 3(2.5)2 NN	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
 d.o.c. = 0.012 - 0.059 inch
 fn = 0.003 - 0.008 inch/rev

Medium:
 d.o.c. = 0.028 - 0.177 inch
 fn = 0.006 - 0.018 inch/rev

Roughing:
 d.o.c. = 0.118 - 0.276 inch
 fn = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts. Each tip is symbolized by an icon which appears in the catalog with each insert.

Stainless Steel



In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

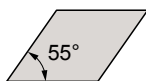


Go to <http://bit.ly/2bMPVkJ>
 or scan the QR code to find the
 speeds & feeds for your inserts.

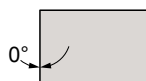


Appropriate for boring operation.

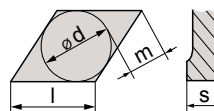
DNMG Turning Inserts



Shape

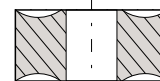


Clearance Angle



Tolerance

$s \pm 0.005$
For $l = 11$, $d \pm 0.002$ $m \pm 0.003$
For $l = 15$, $d \pm 0.003$ $m \pm 0.005$



Fixing
Chip breaker

DNMG Turning Inserts

Part No.	Description	Grade	l	s	r
7607061	DNMG 331 NN	LT 10	0.458	0.187	0.016
7608011	DNMG 331 NN	LT 1000	0.458	0.187	0.016
7607065	DNMG 332 NN	LT 10	0.458	0.187	0.031
7608016	DNMG 332 NN	LT 1000	0.458	0.187	0.031
7607069	DNMG 431 NN	LT 10	0.610	0.187	0.016
7608021	DNMG 431 NN	LT 1000	0.610	0.187	0.016
7607073	DNMG 432 NN	LT 10	0.610	0.187	0.031
7608026	DNMG 432 NN	LT 1000	0.610	0.187	0.031
7608029	DNMG 432 NX	LT 1000	0.610	0.187	0.031
7607077	DNMG 433 NN	LT 10	0.610	0.187	0.047
7608031	DNMG 433 NN	LT 1000	0.610	0.187	0.047
7608036	DNMG 441 NN	LT 10	0.610	0.250	0.016
7601910	DNMG 441 NN	LT 1000	0.610	0.250	0.016
7608041	DNMG 442 NN	LT 10	0.610	0.250	0.031
7601911	DNMG 442 NN	LT 1000	0.610	0.250	0.031
7608046	DNMG 443 NN	LT 10	0.610	0.250	0.047
7601912	DNMG 443 NN	LT 1000	0.610	0.250	0.047

NN All Purpose Chipbreaker. LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert De- scription	Finishing	Medium	Roughing / Interrupted Cut LT 10	Roughing / Interrupted Cut LT 1000
DNMG 331 NN	●	●	●	●
DNMG 332 NN	●	●	●	●
DNMG 431 NN	●	●	●	●
DNMG 432 NN	●	●	●	●
DNMG 433 NN	●	●	●	●
DNMG 441 NN	●	●	●	●
DNMG 442 NN	●	●	●	●
DNMG 443 NN	●	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
f_n = 0.003 - 0.008 inch/rev

Medium:
d.o.c. = 0.028 - 0.177 inch
f_n = 0.006 - 0.018 inch/rev

Roughing:
d.o.c. = 0.118 - 0.276 inch
f_n = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.

Stainless Steel

V_c

In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

$V_c \Rightarrow$
Productivity

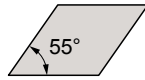
To increase machining productivity, it is recommended to increase speed (V_c) while respecting chip size calculation.

Satisfaction guaranteed on all our CNC tooling solutions from spindle to workpiece.

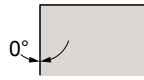
www.techniksusa.com

CCMT
CPMT
CNMG
CNMM
CNMP
DCMT
DNMG
DNUX
EPGT
EPMT
KNUX
RCMT
SCMT
SNMG
TCMT
TNMG
TNMP
TNUX
TPGH
TPGT
TPMR
VBMT
VCMT
VNMG
WNMG
WNMP
CCGX
CNGG
DCGX
DNGG
TCGX
TNGG
VNGG
WCMX

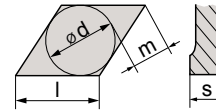
DNUX Turning Inserts



Shape

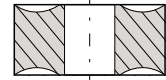


Clearance Angle



Tolerance

d ± 0.003
m ± 0.005
s ± 0.005



**Fixing
Chip breaker**

DNUX Turning Inserts

Part No.	Description	Grade	l	s	r
7602157	DNUX 442 R11	LT 10	0.610	0.250	0.031
7602793	DNUX 442 R11	LT 1000	0.610	0.250	0.031

R11 All Purpose Chipbreaker. 55° nose angle insert with four cutting edges.

Excellent chip control and low cutting forces, suitable for conventional turning operations and long shafts.

T1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
DNUX 150608 R11	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
fn = 0.003 - 0.008 inch/rev

Medium:
d.o.c. = 0.028 - 0.177 inch
fn = 0.006 - 0.018 inch/rev

Roughing:
d.o.c. = 0.118 - 0.276 inch
fn = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.

Feed x d.o.c.
= Amax

It is important to verify and respect Amax, which is the maximum chip section. Feed x d.o.c. must be lower than the number noted as Amax.

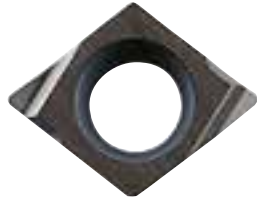
↑ V_c ⇒
↑ Productivity

To increase machining productivity, it is recommended to increase speed (V_c) while respecting chip size calculation.

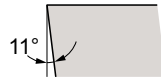


Go to <http://bit.ly/2bMPVkJ>
or scan the QR code to find the
speeds & feeds for your inserts.

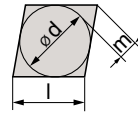
EPGT & EPMT Turning Inserts



Shape

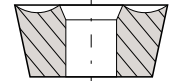


Clearance Angle



Tolerance

$s \pm 0.005$
For $l = 06/09$, $d \pm 0.002$ $m \pm 0.003$
For $l = 12$, $d \pm 0.003$ $m \pm 0.005$



**Fixing
Chip breaker**

EPGT Turning Inserts

Part No.	Description	Grade	l	s	r
3934020	EPGT 1.2(1).5L W08 (ANSI) EPGT 040102L W08 (ISO)	NS53	0.161	0.063	0.008

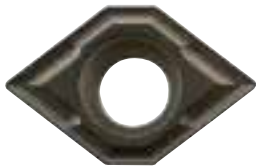
Application Guide

Insert Description

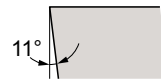
EPGT 1.2(1).5L W08 (ANSI)

EPGT 040102L W08 (ISO)

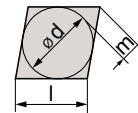
See the back of the box for speeds & feeds



Shape

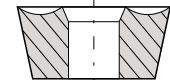


Clearance Angle



Tolerance

$s \pm 0.005$
For $l = 06/09$, $d \pm 0.002$ $m \pm 0.003$
For $l = 12$, $d \pm 0.003$ $m \pm 0.005$



**Fixing
Chip breaker**

EPMT Turning Inserts

Part No.	Description	Grade	l	s	r
3934030	EPMT 1.5(3).5 PM5 (ANSI) EPMT 050202 PM5 (ISO)	5625	0.224	0.094	0.008

Application Guide

Insert Description

EPMT 1.5(3).5 PM5 (ANSI)

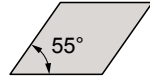
EPMT 050202 PM5 (ISO)

See the back of the box for speeds & feeds

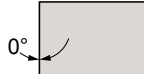


Go to <http://bit.ly/2bMPVkJ>
or scan the QR code to find the
speeds & feeds for your inserts.

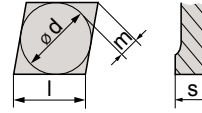
KNUX Turning Inserts



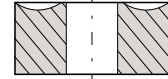
Shape



Clearance Angle



Tolerance
 $d \pm 0.003$
 $m \pm 0.005$
 $s \pm 0.005$



**Fixing
Chip breaker**

KNUX Turning Inserts

Part No.	Description	Grade	l	s	r
3164420	KNUX 160405 R11	LT 10	0.630	0.187	0.020

R11 All Purpose Chipbreaker

A 55° nose angle insert with two cutting edges.

Popular insert with excellent chip control and low cutting forces, suitable for conventional turning operations.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
KNUX 160405 R11	●	●	●
● = Good ● = Acceptable ● = Not Recommended			
	Finishing: d.o.c. = 0.012 - 0.059 inch fn = 0.003 - 0.008 inch/rev	Medium: d.o.c. = 0.028 - 0.177 inch fn = 0.006 - 0.018 inch/rev	Roughing: d.o.c. = 0.118 - 0.276 inch fn = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.

**Feed x d.o.c.
=
Amax**

It is important to verify and respect Amax, which is the maximum chip section. Feed x d.o.c. must be lower than the number noted as Amax.

**V_c ⇒
Productivity**

To increase machining productivity, it is recommended to increase speed (Vc) while respecting chip size calculation.

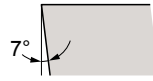


Go to <http://bit.ly/2bMPVkJ>
 or scan the QR code to find the
 speeds & feeds for your inserts.

RCMT Turning Inserts



Shape

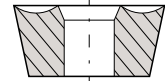


Clearance Angle



Tolerance

$s \pm 0.005$
For $l = 06/08/10$, $d \pm 0.002$ $m \pm 0.003$
For $l = 12$, $d \pm 0.003$ $m \pm 0.005$



Fixing
Chip breaker

RCMT Turning Inserts

Part No.	Description	Grade	l	s	r
3355511	RCMT 0602 M0	LT 10	0.236	0.094	0.118
3351914	RCMT 0602 M0	LT 1000	0.236	0.094	0.118
3355516	RCMT 0803 M0	LT 10	0.315	0.125	0.158
3351915	RCMT 0803 M0	LT 1000	0.315	0.125	0.158
3355521	RCMT 10T3 M0	LT 10	0.394	0.156	0.197
3351916	RCMT 10T3 M0	LT 1000	0.394	0.156	0.197
3355525	RCMT 1204 M0	LT 10	0.472	0.187	0.236
3351917	RCMT 1204 M0	LT 1000	0.472	0.187	0.236

Round inserts with positive rake angle and excellent edge resistance.

Suitable for Profiling operations of mill rolls and aerospace parts.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
RCMT 0602	●	●	●
RCMT 0803	●	●	●
RCMT 10T3	●	●	●
RCMT 1204	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
f_n = 0.003 - 0.008 inch/rev

Medium:
d.o.c. = 0.028 - 0.177 inch
f_n = 0.006 - 0.018 inch/rev

Roughing:
d.o.c. = 0.118 - 0.276 inch
f_n = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.

Stainless Steel

↑ V_c

In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

↑ V_c ⇒
↑ Productivity

To increase machining productivity, it is recommended to increase speed (V_c) while respecting chip size calculation.

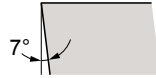


Go to <http://bit.ly/2bMPvKl>
or scan the QR code to find the
speeds & feeds for your inserts.

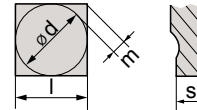
SCMT Turning Inserts



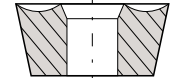
Shape



Clearance Angle



Tolerance
 $d \pm 0.002$
 $m \pm 0.003$
 $s \pm 0.005$



**Fixing
Chip breaker**

SCMT Turning Inserts

Part No.	Description	Grade	l	s	r
8661459	SCMT 3(2.5)1 NN	LT 10	0.375	0.156	0.016
8661918	SCMT 3(2.5)1 NN	LT 1000	0.375	0.156	0.016
8661458	SCMT 3(2.5)2 NN	LT 10	0.375	0.156	0.031
8661919	SCMT 3(2.5)2 NN	LT 1000	0.375	0.156	0.031

NN All Purpose Chipbreaker.

Square inserts with a positive rake angle with excellent cutting edge resistance, suitable for Boring.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
SCMT 3(2.5)1 NN	●	●	●
SCMT 3(2.5)2 NN	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
 f_n = 0.003 - 0.008 inch/rev

Medium:
d.o.c. = 0.028 - 0.177 inch
 f_n = 0.006 - 0.018 inch/rev

Roughing:
d.o.c. = 0.118 - 0.276 inch
 f_n = 0.014 - 0.028 inch/rev

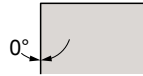


Go to <http://bit.ly/2bMPVkJ>
or scan the QR code to find the
speeds & feeds for your inserts.

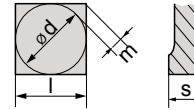
SNMG Turning Inserts



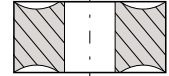
Shape



Clearance Angle



Tolerance
d $\pm$ 0.003
m $\pm$ 0.005
s $\pm$ 0.005



Fixing
Chip breaker

SNMG Turning Inserts

Part No.	Description	Grade	l	s	r
3263311	SNMG 432 NN	LT 10	0.500	0.187	0.031
3261921	SNMG 432 NN	LT 1000	0.500	0.187	0.031
3263322	SNMG 433 NN	LT 10	0.500	0.187	0.047
3263011	SNMG 432 NX	LT 1000	0.500	0.187	0.031
3263326	SNMG 433 NN	LT 1000	0.500	0.187	0.047

NN All Purpose Chipbreaker.

Square inserts with strong cutting edge, suitable for roughing operations.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
SNMG 432 NN LT10	●	●	●
SNMG 432 NN LT1000	●	●	●
SNMG 432 NX LT1000	●	●	●
SNMG 433 NN LT10/LT1000	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
f_n = 0.003 - 0.008 inch/rev

Medium:
d.o.c. = 0.028 - 0.177 inch
f_n = 0.006 - 0.018 inch/rev

Roughing:
d.o.c. = 0.118 - 0.276 inch
f_n = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.

Feed x d.o.c.
= Amax

It is important to verify and respect Amax, which is the maximum chip section. Feed x d.o.c. must be lower than the number noted as Amax.

↑ V_c →
↑ Productivity

To increase machining productivity, it is recommended to increase speed (Vc) while respecting chip size calculation.

↑ F →
↑ Productivity

To increase productivity, it is recommended to increase feed (f) and respect cutting speed.

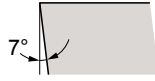


Go to <http://bit.ly/2bMPVkl>
or scan the QR code to find the
speeds & feeds for your inserts.

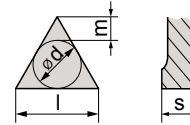
TCMT Turning & Boring Inserts



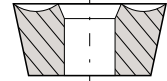
Shape



Clearance Angle



Tolerance
 $d \pm 0.002$
 $m \pm 0.003$
 $s \pm 0.005$



Fixing Chip breaker

TCMT Turning & Boring Inserts

Part No.	Description	Grade	l	s	r	Machining Recommendations
3533010	TCMT 1.2(1).50	5615	0.378	0.094	0.004	see back of box for speeds and feeds
3533020	TCMT 1.2(1)1	5625	0.378	0.094	0.008	see back of box for speeds and feeds
3563311	TCMT 1.8(1.5)0 HF	251	0.378	0.094	0.008	see back of box for speeds and feeds
3563388	TCMT 1.8(1.5)2 HM	251	0.378	0.094	0.031	see back of box for speeds and feeds
3563399	TCMT 1.8(1.5)1 HF	251	0.378	0.094	0.016	see back of box for speeds and feeds
3533030	TCMT 1.8(1.5)1 PF4	5625	0.378	0.094	0.016	see back of box for speeds and feeds
3564431	TCMT 2(1.5)1 NN	LT 10	0.433	0.094	0.016	see tables on following pages
3568831	TCMT 2(1.5)1 NN	LT 1000	0.433	0.094	0.016	see tables on following pages
3564435	TCMT 2(1.5)2 NN	LT 10	0.433	0.094	0.031	see tables on following pages
3568841	TCMT 2(1.5)2 NN	LT 1000	0.433	0.094	0.031	see tables on following pages
3564438	TCMT 3(2.5)1 NN	LT 10	0.650	0.156	0.016	see tables on following pages
3568851	TCMT 3(2.5)1 NN	LT 1000	0.650	0.156	0.016	see tables on following pages
3564441	TCMT 3(2.5)2 NN	LT 10	0.650	0.156	0.031	see tables on following pages
3568861	TCMT 3(2.5)2 NN	LT 1000	0.650	0.156	0.031	see tables on following pages
3561774	TCMT 3(2.5)3 NN	LT 10	0.650	0.156	0.047	see tables on following pages
3561929	TCMT 3(2.5)3 NN	LT 1000	0.650	0.156	0.047	see tables on following pages

60° triangle shaped inserts, with positive rake angle. Suitable for boring and internal turning.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut LT 10	Roughing / Interrupted Cut LT 1000
TCMT 2(1.5)1 NN	●	●	●	●
TCMT 2(1.5)2 NN	●	●	●	●
TCMT 3(2.5)1 NN	●	●	●	●
TCMT 3(2.5)2 NN	●	●	●	●
TCMT 3(2.5)3 NN	●	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
 $d.o.c. = 0.012 - 0.059$ inch
 $f_n = 0.003 - 0.008$ inch/rev

Medium:
 $d.o.c. = 0.028 - 0.177$ inch
 $f_n = 0.006 - 0.018$ inch/rev

Roughing:
 $d.o.c. = 0.118 - 0.276$ inch
 $f_n = 0.014 - 0.028$ inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.

Stainless Steel
 V_c

In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

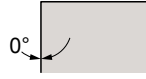


Appropriate for boring operation.

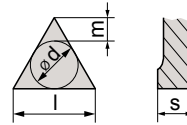
TNMG Turning Inserts



Shape

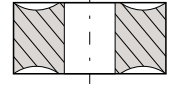


Clearance Angle



Tolerance

$s \pm 0.005$
For $l = 16$, $d \pm 0.002$ $m \pm 0.003$
For $l = 22$, $d \pm 0.003$ $m \pm 0.005$



Fixing
Chip breaker

Turning Inserts

Part No.	Description	Grade	l	s	r
3577715	TNMG 331 NN	LT 10	0.650	0.187	0.016
3578011	TNMG 331 NN	LT 1000	0.650	0.187	0.016
3567721	TNMG 332 NN	LT 10	0.650	0.187	0.031
3578016	TNMG 332 NN	LT 1000	0.650	0.187	0.031
3573012	TNMG 332 NX	LT 1000	0.650	0.187	0.031
3561734	TNMG 333 NN	LT 10	0.650	0.187	0.047
3578021	TNMG 333 NN	LT 1000	0.650	0.187	0.047
3578031	TNMG 431 NN	LT 10	0.866	0.187	0.016
3571934	TNMG 431 NN	LT 1000	0.866	0.187	0.016
3573036	TNMG 432 NN	LT 10	0.866	0.187	0.031
3571935	TNMG 432 NN	LT 1000	0.866	0.187	0.031
3573013	TNMG 432 NX	LT 1000	0.866	0.187	0.031
3578036	TNMG 433 NN	LT 10	0.866	0.187	0.047
3571936	TNMG 433 NN	LT 1000	0.866	0.187	0.047

NN All Purpose Chipbreaker. 60° triangle shape inserts. Suitable for general purpose turning and copying operations.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut LT 10	Roughing / Interrupted Cut LT 1000
TNMG 331 NN	●	●	●	●
TNMG 332 NN	●	●	●	●
TNMG 332 NX	●	●	-	●
TNMG 333 NN	●	●	●	●
TNMG 431 NN	●	●	●	●
TNMG 432 NN	●	●	●	●
TNMG 432 NX	●	●	-	●
TNMG 433 NN	●	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
f_n = 0.003 - 0.008 inch/rev

Medium:
d.o.c. = 0.028 - 0.177 inch
f_n = 0.006 - 0.018 inch/rev

Roughing:
d.o.c. = 0.118 - 0.276 inch
f_n = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.

Stainless Steel

V_c

In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

Feed x d.o.c.
= Amax

It is important to verify and respect Amax, which is the maximum chip section. Feed x d.o.c. must be lower than the number noted as Amax.

Satisfaction guaranteed on all our CNC tooling solutions from spindle to workpiece.

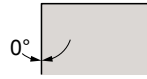
www.technikusa.com

CCMT
CPMT
CNMG
CNMM
CNMP
DCMT
DNMG
DNUX
EPGT
EPMT
KNUX
RCMT
SCMT
SNMG
TCMT
TNMG
TNMP
TNUX
TPGH
TPGT
TPMR
VBMT
VCMT
VNMG
WNMG
WNMP
CCGX
CNGG
DCGX
DNGG
TCGX
TNGG
VNGG
WCMX

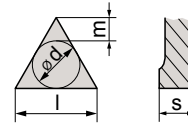
TNMP Turning Inserts



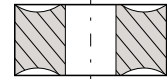
Shape



Clearance Angle



Tolerance
 $d \pm 0.002$
 $m \pm 0.003$
 $s \pm 0.005$



**Fixing
Chip breaker**

TNMP Turning Inserts

Part No.	Description	Grade	l	s	r
3567735	TNMP 332 NN	LT 10	0.650	0.187	0.031
3578026	TNMP 332 NN	LT 1000	0.650	0.187	0.031

NN All Purpose Chipbreaker.

60° triangle shape inserts, with positive chip breaker geometry for considerably low cutting forces.

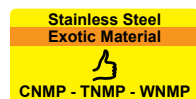
Suitable for general purpose, copying, high temperature alloys and stainless steel turning operations.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
TNMP 332 NN	●	●	●
● = Good ● = Acceptable ● = Not Recommended Finishing: d.o.c. = 0.012 - 0.059 inch f_n = 0.003 - 0.008 inch/rev Medium: d.o.c. = 0.028 - 0.177 inch f_n = 0.006 - 0.018 inch/rev Roughing: d.o.c. = 0.118 - 0.276 inch f_n = 0.014 - 0.028 inch/rev			

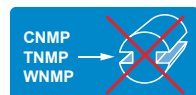
Use these tips to help get the best productivity using Techniks' cutting inserts.



In machining Stainless Steel or Exotic Materials, P geometry inserts (CNMP, TNMP, WNMP), are recommended as first choice.



In machining Exotic Materials, it is important to verify cutting conditions of the specific insert.



P geometry inserts (CNMP, TNMP, WNMP) are not recommended when machining with interrupted cut.

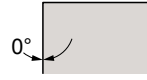


Go to <http://bit.ly/2bMPVkJ>
or scan the QR code to find the
speeds & feeds for your inserts.

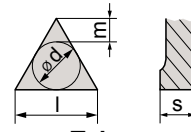
TNUX Turning Inserts



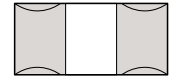
Shape



Clearance Angle



Tolerance
d ± 0.003
m ± 0.005
s ± 0.005



Fixing
Chip breaker

TNUX Turning Inserts

Part No.	Description	Grade	l	s	r
3567737	TNUX 331 R	LT 10	0.650	0.187	0.016
3561938	TNUX 331 R	LT 1000	0.650	0.187	0.016
3561877	TNUX 331 L	LT 10	0.650	0.187	0.016
3562794	TNUX 331 L	LT 1000	0.650	0.187	0.016
3567739	TNUX 332 R	LT 10	0.650	0.187	0.031
3561939	TNUX 332 R	LT 1000	0.650	0.187	0.031
3561878	TNUX 332 L	LT 10	0.650	0.187	0.031
3562795	TNUX 332 L	LT 1000	0.650	0.187	0.031

60° triangle shape inserts.

Suitable for general turning and longitudinal operations, where there is a concern for work piece vibrations.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
TNUX 331 R	●	●	●
TNUX 331 L	●	●	●
TNUX 332 R	●	●	●
TNUX 332 L	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
f_n = 0.003 - 0.008 inch/rev

Medium:
d.o.c. = 0.028 - 0.177 inch
f_n = 0.006 - 0.018 inch/rev

Roughing:
d.o.c. = 0.118 - 0.276 inch
f_n = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.

Feed x d.o.c.
= Amax

It is important to verify and respect Amax, which is the maximum chip section. Feed x d.o.c. must be lower than the number noted as Amax.

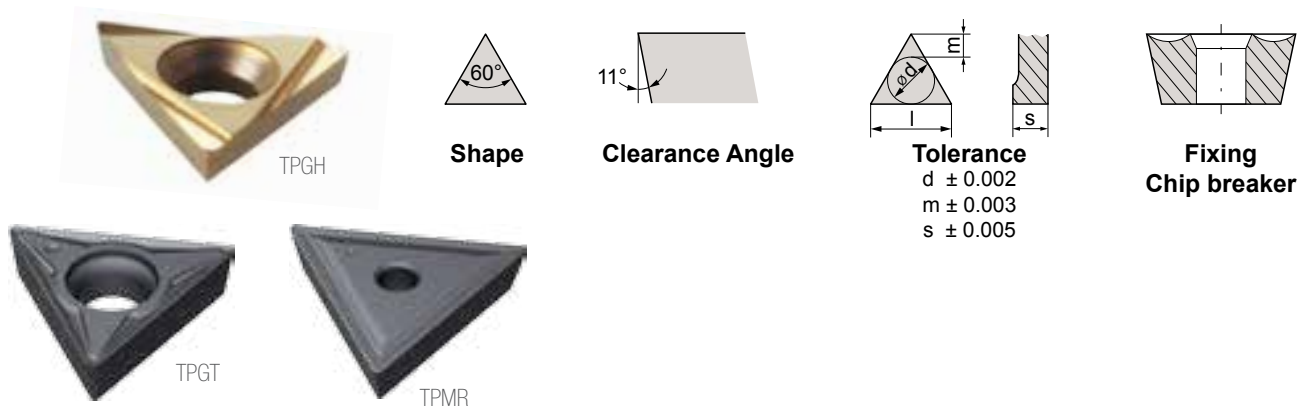
V_c ⇒
Productivity

To increase machining productivity, it is recommended to increase speed (V_c) while respecting chip size calculation.



Go to <http://bit.ly/2bMPvKl>
or scan the QR code to find the
speeds & feeds for your inserts.

TPGH, TPGT, & TPMR Turning and Boring Inserts



TPGH and TPGT Turning & Boring Inserts

Part No.	Description	Grade	l	s	r	Machining Recommendations
3533033	TPGH 1.8(1.5)0L	102	.378	.094	.008	see back of box for speeds and feeds
3533034	TPGH 1.8(1.5)1L	102	.378	.094	.016	see back of box for speeds and feeds
3933040	TPGH221L	102	.433	.125	.016	see back of box for speeds and feeds
3533032	TPGT 1.8(1.5)1-SF	151	.378	.094	.016	see back of box for speeds and feeds
3567758	TPMR 321 NN	LT 10	0.650	0.125	0.016	see back of box for speeds and feeds
3567759	TPMR 322 NN	LT 10	0.650	0.125	0.031	see back of box for speeds and feeds

NN All Purpose Chipbreaker

60° Triangle shape inserts, with positive rake angle. Suitable for boring and internal turning operations.

For MacroBOHR fine finishing. See MacroBOHR boring tools in Techniks Tooling Solutions catalog or at www.techniksusa.com for plates, heads, cartridges, holders, adapters and extensions.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
TPMR 321 NN	●	●	●
TPMR 322 NN	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
f_n = 0.003 - 0.008 inch/rev

Medium:
d.o.c. = 0.028 - 0.177 inch
f_n = 0.006 - 0.018 inch/rev

Roughing:
d.o.c. = 0.118 - 0.276 inch
f_n = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.

Stainless Steel

V_c

In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

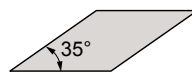
$V_c \rightarrow$
Productivity

To increase machining productivity, it is recommended to increase speed (V_c) while respecting chip size calculation.

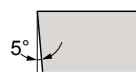


Go to <http://bit.ly/2bMPVkJ>
or scan the QR code to find the
speeds & feeds for your inserts.

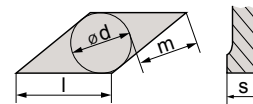
VBMT Turning Inserts



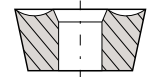
Shape



Clearance Angle



Tolerance
d ± 0.002
m ± 0.003
s ± 0.005



Fixing
Chip breaker

VBMT Turning Inserts

Part No.	Description	Grade	l	s	r
3862215	VBMT 221 NN	LT 10	0.433	0.125	0.016
3861942	VBMT 221 NN	LT 1000	0.433	0.125	0.016
3862221	VBMT 331 NN	LT 10	0.654	0.187	0.016
3861943	VBMT 331 NN	LT 1000	0.654	0.187	0.016
3862225	VBMT 332 NN	LT 10	0.654	0.187	0.031
3861944	VBMT 332 NN	LT 1000	0.654	0.187	0.031

NN All Purpose Chipbreaker. 35° shape inserts with positive rake angle.

Suitable for internal and external copying operations of complex geometries.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
VBMT 221 NN	●	●	●
VBMT 331 NN	●	●	●
VBMT 332 NN	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
f_n = 0.003 - 0.008 inch/rev

Medium:
d.o.c. = 0.028 - 0.177 inch
f_n = 0.006 - 0.018 inch/rev

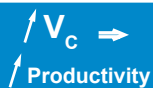
Roughing:
d.o.c. = 0.118 - 0.276 inch
f_n = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.

Stainless Steel



In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

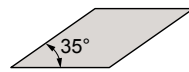


To increase machining productivity, it is recommended to increase speed (Vc) while respecting chip size calculation.

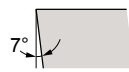


Go to <http://bit.ly/2bMPVkJ>
or scan the QR code to find the
speeds & feeds for your inserts.

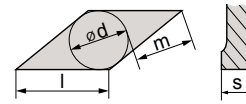
VCMT Turning Inserts



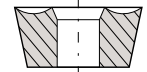
Shape



Clearance Angle



Tolerance
 $d \pm 0.002$
 $m \pm 0.003$
 $s \pm 0.005$



Fixing
Chip breaker

VCMT Turning Inserts

Part No.	Description	Grade	l	s	r
8608828	VCMT 331 NN	LT 10	0.654	0.187	0.016
8608831	VCMT 331 NN	LT 1000	0.654	0.187	0.016
8608833	VCMT 332 NN	LT 10	0.654	0.187	0.031
8608836	VCMT 332 NN	LT 1000	0.654	0.187	0.031

NN All Purpose Chipbreaker. 35° shape inserts with positive rake angle.

Suitable for internal and external copying operations of complex geometries.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
VCMT 331 NN	●	●	●
VCMT 332 NN	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
 d.o.c. = 0.012 - 0.059 inch
 fn = 0.003 - 0.008 inch/rev

Medium:
 d.o.c. = 0.028 - 0.177 inch
 fn = 0.006 - 0.018 inch/rev

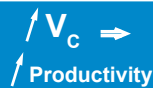
Roughing:
 d.o.c. = 0.118 - 0.276 inch
 fn = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.

Stainless Steel



In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

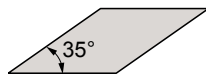


To increase machining productivity, it is recommended to increase speed (Vc) while respecting chip size calculation.

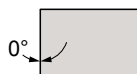


Go to <http://bit.ly/2bMPVkJ>
 or scan the QR code to find the
 speeds & feeds for your inserts.

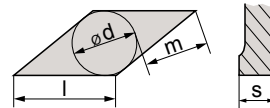
VNMG Turning Inserts



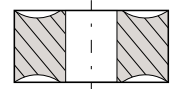
Shape



Clearance Angle



Tolerance
 $d \pm 0.002$
 $m \pm 0.003$
 $s \pm 0.005$



Fixing
Chip breaker

VNMG Turning Inserts

Part No.	Description	Grade	l	s	r
8607241	VNMG 331 NN	LT 10	0.654	0.187	0.016
8608011	VNMG 331 NN	LT 1000	0.654	0.187	0.016
8607245	VNMG 332 NN	LT 10	0.654	0.187	0.031
8608016	VNMG 332 NN	LT 1000	0.654	0.187	0.031

NN All Purpose Chipbreaker. 35° shape inserts.

Suitable for semi-roughing sxternal copying operations.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
VNMG 331 NN	●	●	●
VNMG 332 NN	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
 $d.o.c. = 0.012 - 0.059$ inch
 $f_n = 0.003 - 0.008$ inch/rev

Medium:
 $d.o.c. = 0.028 - 0.177$ inch
 $f_n = 0.006 - 0.018$ inch/rev

Roughing:
 $d.o.c. = 0.118 - 0.276$ inch
 $f_n = 0.014 - 0.028$ inch/rev

Use these tips to help get the best productivity using Techniks' cutting inserts.

Stainless Steel



In machining Stainless Steel, please verify and follow the cutting speed recommended for the insert, as there is a tendency to machine at speeds that are too low.

Feed x d.o.c.
= Amax

It is important to verify and respect Amax, which is the maximum chip section. Feed x d.o.c. must be lower than the number noted as Amax.

$V_c \Rightarrow$
Productivity

To increase machining productivity, it is recommended to increase speed (V_c) while respecting chip size calculation.

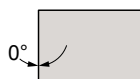


Go to <http://bit.ly/2bMPVkl>
or scan the QR code to find the speeds & feeds for your inserts.

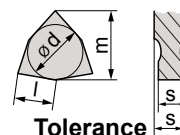
WNMG Turning & Boring Inserts



Shape

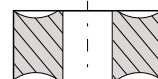


Clearance Angle



Tolerance

$s \pm 0.005$
For $l = 06$, $d \pm 0.002$ $m \pm 0.003$
For $l = 08$, $d \pm 0.003$ $m \pm 0.005$



Fixing
Chip breaker

WNMG Turning & Boring Inserts

Part No.	Description	Grade	l	s	r
3463311	WNMG 331 NN	LT 10	0.256	0.187	0.016
3461949	WNMG 331 NN	LT 1000	0.256	0.187	0.016
3463315	WNMG 332 NN	LT 10	0.256	0.187	0.031
3461950	WNMG 332 NN	LT 1000	0.256	0.187	0.031
3463014	WNMG 332 NX	LT 1000	0.256	0.187	0.031
4607257	WNMG 431 NN	LT 10	0.343	0.187	0.016
4608011	WNMG 431 NN	LT 1000	0.343	0.187	0.016
4607261	WNMG 432 NN	LT 10	0.343	0.187	0.031
4608016	WNMG 432 NN	LT 1000	0.343	0.187	0.031
4601967	WNMG 432 NM	LT 10	0.343	0.187	0.031
4608023	WNMG 432 NM	LT 1000	0.343	0.187	0.031
4608021	WNMG 432 NX	LT 1000	0.343	0.187	0.031
4607265	WNMG 433 NN	LT 10	0.343	0.187	0.047
4608026	WNMG 433 NN	LT 1000	0.343	0.187	0.047

NN All Purpose Chipbreaker **NM** Steel and Cast Iron **NX** All Purpose Chipbreaker

80° trigon shape inserts, with 6 cutting edges. Suitable for all-purpose turning, facing and boring operations.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut LT 10	Roughing / Interrupted Cut LT 1000
WNMG 331 NN	●	●	●	●
WNMG 332 NN	●	●	●	●
WNMG 332 NX	●	●	●	●
WNMG 431 NN	●	●	●	●
WNMG 432 NN	●	●	●	●
WNMG 432 NM	●	●	●	●
WNMG 432 NX	●	●	●	●
WNMG 433 NN	●	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
f_n = 0.003 - 0.008 inch/rev

Medium:
d.o.c. = 0.028 - 0.177 inch
f_n = 0.006 - 0.018 inch/rev

Roughing:
d.o.c. = 0.118 - 0.276 inch
f_n = 0.014 - 0.028 inch/rev

Use these tips to help get the best productivity using
Techniks' cutting inserts.

Stainless Steel

V_c

In machining Stainless Steel, please verify
and follow the cutting speed recommend-
ed for the insert, as there is a tendency to
machine at speeds that are too low.

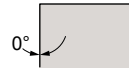
$V_c \Rightarrow$
Productivity

To increase machining productivity, it is
recommended to increase speed (V_c) while
respecting chip size calculation.

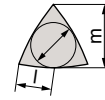
WNMP Turning Inserts



Shape

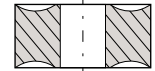


Clearance Angle



Tolerance

$s \pm 0.005$
For $l = 06$, $d \pm 0.002$ $m \pm 0.003$
For $l = 08$, $d \pm 0.003$ $m \pm 0.005$



Fixing
Chip breaker

WNMP Turning Inserts

Part No.	Description	Grade	l	s	r
4608029	WNMP 331 NN	LT 10	0.256	0.187	0.016
4601954	WNMP 331 NN	LT 1000	0.256	0.187	0.016
4608030	WNMP 332 NN	LT 10	0.256	0.187	0.031
4601955	WNMP 332 NN	LT 1000	0.256	0.187	0.031
4607277	WNMP 432 NN	LT 10	0.343	0.187	0.031
4608031	WNMP 432 NN	LT 1000	0.343	0.187	0.031

NN All Purpose Chipbreaker. 80° trigon shape inserts with positive chipbreaker geometry.

Generates lower cutting forces, suitable for high temperature alloys and stainless steel operations.

LT1000 Grade = 4X thicker PVD coating for extended tool life.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
WNMP 331 NN	●	●	●
WNMP 332 NN	●	●	●
WNMP 432 NN	●	●	●

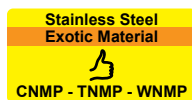
● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
f_n = 0.003 - 0.008 inch/rev

Medium:
d.o.c. = 0.028 - 0.177 inch
f_n = 0.006 - 0.018 inch/rev

Roughing:
d.o.c. = 0.118 - 0.276 inch
f_n = 0.014 - 0.028 inch/rev

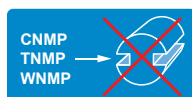
Use these tips to help get the best productivity using Techniks' cutting inserts.



In machining Stainless Steel or Exotic Materials, P geometry inserts (CNMP, TNMP, WNMP), are recommended as first choice.



In machining Exotic Materials, it is important to verify cutting conditions of the specific insert.



P geometry inserts (CNMP, TNMP, WNMP) are not recommended when machining with interrupted cut.

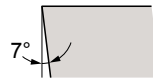


Go to <http://bit.ly/2bMPVkl>
or scan the QR code to find the
speeds & feeds for your inserts.

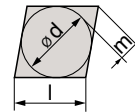
CCGX & CNGG Aluminum Turning Inserts



Shape

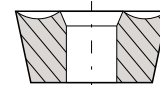


Clearance Angle



Tolerance

$s \pm 0.005$
For $l = 06/09$, $d \pm 0.002$ $m \pm 0.003$
For $l = 12$, $d \pm 0.003$ $m \pm 0.005$



Fixing
Chip breaker

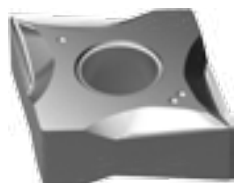
CCGX Aluminum Turning Inserts

Part No.	Description	Grade	l	s	r
3663336	CCGX 2(1.5)1 LH	101	0.252	0.094	0.016
3663337	CCGX 3(2.5)1 LH	101	0.382	0.156	0.016
3663338	CCGX 3(2.5)2 LH	101	0.382	0.156	0.031
3663340	CCGX 431-LH	101	0.508	0.187	0.016
3663339	CCGX 432 LH	101	0.508	0.187	0.031

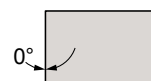
Green indicates aluminum. HP = High Polish

Application Guide

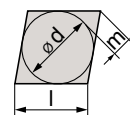
Insert Description	
CCGX 2(1.5)1 LH HP 101	See the back of the box for speeds & feeds.
CCGX 3(2.5)1 LH HP 101	
CCGX 3(2.5)2 LH HP 101	
CCGX431-LH 101 101	
CCGX 432 LH HP 101	



Shape

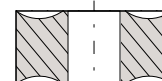


Clearance Angle



Tolerance

$d \pm 0.001$
 $m \pm 0.001$
 $s \pm 0.005$



Fixing
Chip breaker

CNGG Aluminum Turning Inserts

Part No.	Description	Grade	l	s	r
6607901	CNGG 431 ALU	LT 05	0.508	0.187	0.016
6607905	CNGG 432 ALU	LT 05	0.508	0.187	0.031

Green indicates aluminum. **ALU** All purpose Chipbreaker

ISO standard with extreme and unique positive chipbreaker geometry for aluminum turning operations.

Suitable mostly for external operations but good also for internal, roughing and finishing operations.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
CNGG 431 ALU	●	●	●
CNGG 432 ALU	●	●	●

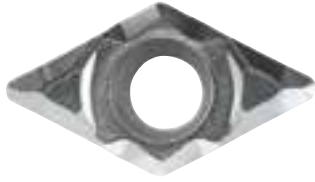
● = Good ● = Acceptable ● = Not Recommended

Finishing:
d.o.c. = 0.012 - 0.059 inch
f_n = 0.003 - 0.008 inch/rev

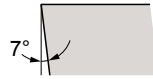
Medium:
d.o.c. = 0.028 - 0.177 inch
f_n = 0.006 - 0.018 inch/rev

Roughing:
d.o.c. = 0.118 - 0.276 inch
f_n = 0.014 - 0.028 inch/rev

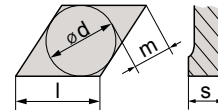
DCGX & DNGG Aluminum Turning Inserts



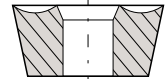
Shape



Clearance Angle



Tolerance
 $d \pm 0.002$
 $m \pm 0.003$
 $s \pm 0.005$



**Fixing
Chip breaker**

DCGX Aluminum Turning Inserts

Part No.	Description	Grade	l	s	r
3763336	DCGX 2(1.5)1 LH HP	101	0.037	0.094	0.016
3763337	DCGX 3(2.5)2 LH HP	101	0.457	0.156	0.031

Green indicates aluminum. HP = High Polish

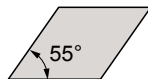
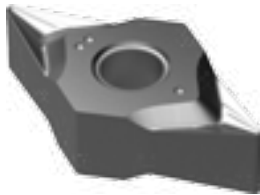
Application Guide

Insert Description

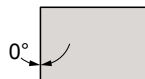
DCGX 2(1.5)1 LH HP

DCGX 3(2.5)2 LH HP

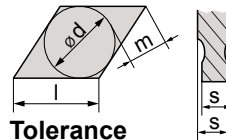
See the back of the box for speeds & feeds.



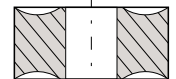
Shape



Clearance Angle



Tolerance
 $d \pm 0.001$
 $m \pm 0.001$
 $s \pm 0.005$



**Fixing
Chip breaker**

DNGG Aluminum Turning Inserts

Part No.	Description	Grade	l	s	r
7607909	DNGG 331 ALU	LT 05	0.457	0.187	0.016
7607913	DNGG 332 ALU	LT 05	0.457	0.187	0.031

Green indicates aluminum. **ALU** All purpose Chipbreaker

ISO standard with extreme and unique positive chipbreaker geometry for aluminum turning operations.

Suitable mostly for external operations but good also for Internal operations, roughing and finishing operations.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
DNGG 331 ALU	●	●	●
DNGG 332 ALU	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:
 $d.o.c. = 0.012 - 0.059$ inch
 $f_n = 0.003 - 0.008$ inch/rev

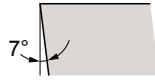
Medium:
 $d.o.c. = 0.028 - 0.177$ inch
 $f_n = 0.006 - 0.018$ inch/rev

Roughing:
 $d.o.c. = 0.118 - 0.276$ inch
 $f_n = 0.014 - 0.028$ inch/rev

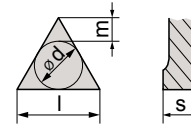
TCGX & TNGG Aluminum Turning Inserts



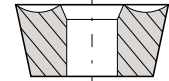
Shape



Clearance Angle



Tolerance
d $\pm$ 0.002
m $\pm$ 0.003
s $\pm$ 0.005



**Fixing
Chip breaker**

TCGX Aluminum Turning Inserts

Part No.	Description	Grade	l	s	r
3563335	TCGX21.50-LH	101	0.433	0.94	0.008
3563336	TCGX21.51-LH	101	0.433	0.94	0.016
3563338	TCGX32.51-LH	101	0.650	0.156	0.016
3563337	TCGX32.52-LH	101	0.650	0.156	0.031

Green indicates aluminum. HP = High Polish

Application Guide

Insert Description

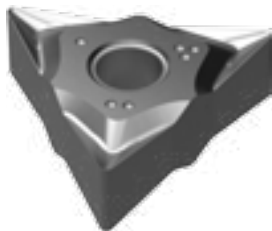
TCGX21.50-LH101-HP

TCGX21.51-LH-101-HP

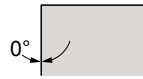
TCGX32.52-LH-101-HP

TCGX32.51-LH-101-HP

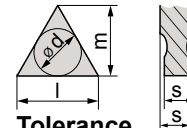
See the back of the box for speeds & feeds.



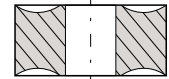
Shape



Clearance Angle



Tolerance
d $\pm$ 0.001
m $\pm$ 0.001
s $\pm$ 0.005



**Fixing
Chip breaker**

TNGG Aluminum Turning Inserts

Part No.	Description	Grade	l	s	r
3567711	TNGG 331 ALU	LT 05	0.457	0.187	0.031

Green indicates aluminum. **ALU** All purpose Chipbreaker

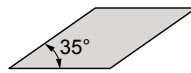
ISO standard with extreme and unique positive chipbreaker geometry for aluminum turning operations.

Suitable mostly for external operations but good also for Internal operations, roughing and finishing operations.

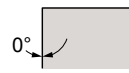
Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
TNGG 331 ALU	●	●	●
● = Good ● = Acceptable ● = Not Recommended	Finishing: d.o.c. = 0.012 - 0.059 inch fn = 0.003 - 0.008 inch/rev	Medium: d.o.c. = 0.028 - 0.177 inch fn = 0.006 - 0.018 inch/rev	Roughing: d.o.c. = 0.118 - 0.276 inch fn = 0.014 - 0.028 inch/rev

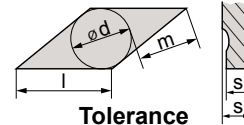
VNKG Aluminum Turning Inserts



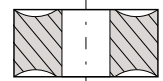
Shape



Clearance Angle



Tolerance
 $d \pm 0.001$
 $m \pm 0.001$
 $s \pm 0.005$



Fixing
Chip breaker

VNKG Aluminum Turning Inserts

Part No.	Description	Grade	l	s	r
8607921	VNKG 331 ALU	LT 05	0.654	0.187	0.016
8607925	VNKG 332 ALU	LT 05	0.654	0.187	0.031

Green indicates aluminum. **ALU** All purpose Chipbreaker

ISO standard with extreme and unique positive chipbreaker geometry for aluminum turning operations.

Suitable mostly for external operations but good also for Internal operations, roughing and finishing operations.

Application Guide

Insert Description	Finishing	Medium	Roughing / Interrupted Cut
VNKG 331 ALU	●	●	●
VNKG 332 ALU	●	●	●

● = Good ● = Acceptable ● = Not Recommended

Finishing:

d.o.c. = 0.012 - 0.059 inch
 f_n = 0.003 - 0.008 inch/rev

Medium:

d.o.c. = 0.028 - 0.177 inch
 f_n = 0.006 - 0.018 inch/rev

Roughing:

d.o.c. = 0.118 - 0.276 inch
 f_n = 0.014 - 0.028 inch/rev



Go to <http://bit.ly/2bMPVkl>
or scan the QR code to find the
speeds & feeds for your inserts.

Indexable Drills & WCMX Drilling Inserts



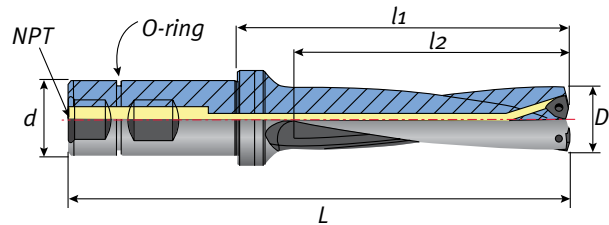
WCMX
inserts



Cuts ALL THESE Materials.

Features

- Coolant fed through center
- Special -ring design to help seal coolant
- H13 steel for rigidity and tool life
- 4x depth to diameter
- High-performance inserts reduce setup time and inventory of inserts

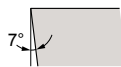


4WD Indexable Drills

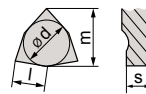
Part No.	Description	NTP Thread P	D	d	Drill Depth l2	l1	L	Insert	Screw	Torx
1741234	4WD.625-.750C-2.50-3	1/8"	0.625"	0.750"	2.50"	3.44"	5.48"	WC_0302	9315446	9355333
1751244	4WD.750-.750C-3.00-3	1/8"	0.750"	0.750"	3.00"	3.94"	6.00"	WC_0302	9315446	9355333
1751254	4WD.875-1.00C-3.50-4	1/8"	0.875"	1.00"	3.50"	4.43"	6.72"	WC_0402	9315446	9355333
1761264	4WD1.00-1.00C-4.00-4	1/8"	1.00"	1.00"	4.00"	4.94"	7.23"	WC_0402	9315446	9355333
1771284	4WD1.25-1.25C-5.00-6	1/4"	1.25"	1.25"	5.00"	6.14"	8.43"	WC_06T3	9317547	9355555
1771294	4WD1.375-1.25C-5.50-6	1/4"	1.375"	1.25"	5.50"	6.64"	8.92"	WC_06T3	9317547	9355555
1781334	4WD1.50-1.25C-6.00-6	1/4"	1.50"	1.25"	6.00"	7.26"	9.54"	WC_06T3	9317547	9355555
1781354	4WD1.75-1.50C-7.00-6	1/4"	1.75"	1.50"	7.00"	8.26"	10.95"	WC_06T3	9317547	9355555
1781374	4WD2.00-1.50C-8.00-8	1/4"	2.00"	1.50"	8.00"	9.34"	12.03"	WC_0804	9319345	9355555
1791394	4WD2.25-1.50C-9.00-8	1/4"	2.25"	1.50"	9.00"	10.34"	13.03"	WC_0804	9319345	9355555



Shape

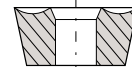


Clearance Angle



Tolerance

s ± 0.005
For l = 04/05/06, d ± 0.002 m ± 0.003
For l = 08, d ± 0.003 m ± 0.005



Fixing
Chip breaker

WCMX Drilling Inserts

Part No.	Description	Grade	l	s	r	Direction
3441111	WCMX 030208 R53 *	201	0.150	0.094	0.031	Neutral
3441121	WCMX 040208 NN	LT 30	0.169	0.094	0.031	Neutral
3441125	WCMX 050308 NN	LT 30	0.199	0.125	0.031	Neutral
3441131	WCMX 06T308 NN	LT 30	0.256	0.156	0.031	Neutral
3441135	WCMX 080412 NN	LT 30	0.343	0.187		Neutral

Trigon inserts for drilling. Strong cutting edges for high feeds.

* See back of box for speeds & feeds

Part Number Index

Part	Page	Part	Page	Part	Page	Part	Page
22253.....	29	1761264.....	94	3153325.....	40	3441121.....	94
22255.....	29	1771284.....	94	3154411.....	21	3441125.....	94
22261.....	29	1771294.....	94	3154411.....	38	3441131.....	94
22311.....	29	1781334.....	94	3154422.....	21	3441135.....	94
22313.....	29	1781354.....	94	3154422.....	38	3451112.....	53
22321.....	29	1781374.....	94	3154433.....	21	3461949.....	88
22331.....	29	1791394.....	94	3154433.....	38	3461950.....	88
1500300.....	7	2139910.....	12	3154435.....	21	3463014.....	88
1500300.....	21	2149920.....	12	3154435.....	38	3463311.....	88
1500300.....	38	2159930.....	12	3154444.....	21	3463315.....	88
1506065.....	39	2169940.....	12	3154444.....	38	3533010.....	80
1506073.....	7	2321234.....	15	3154455.....	21	3533020.....	80
1506073.....	21	2331235.....	15	3154455.....	38	3533030.....	80
1506073.....	38	2341236.....	15	3161989.....	40	3533032.....	84
1506075.....	7	2351237.....	15	3164420.....	76	3533033.....	84
1506075.....	21	2421234.....	16	3251239.....	8	3533034.....	84
1506075.....	38	2431235.....	16	3251239.....	55	3561734.....	81
1506077.....	38	2441236.....	16	3253346.....	50	3561774.....	80
1506078.....	7	2451237.....	16	3254411.....	45	3561877.....	83
1506078.....	21	2502115.....	49	3254415.....	47	3561878.....	83
1506078.....	38	2502203.....	49	3254417.....	47	3561929.....	80
1506079.....	7	2502205.....	49	3254421.....	47	3561938.....	83
1506079.....	21	2503095.....	10	3254431.....	47	3561939.....	83
1506079.....	38	2503095.....	46	3254433.....	47	3562794.....	83
1506502.....	54	2503096.....	10	3254435.....	48	3562795.....	83
1506506.....	7	2503096.....	46	3261921.....	79	3563311.....	80
1506506.....	54	2506169.....	8	3263011.....	79	3563335.....	92
1631234.....	20	2506169.....	48	3263311.....	79	3563336.....	92
1632234.....	20	2506509.....	55	3263322.....	79	3563337.....	92
1632345.....	27	2506509.....	57	3263326.....	79	3563338.....	92
1633345.....	27	2521234.....	8	3263333.....	50	3563388.....	80
1641235.....	20	2531235.....	8	3263336.....	50	3563399.....	80
1641236.....	20	2531237.....	9	3263341.....	50	3564431.....	80
1642235.....	20	2541236.....	8	3263347.....	51	3564435.....	80
1651236.....	20	2541238.....	9	3263348.....	51	3564438.....	80
1651237.....	20	2551237.....	8	3263349.....	51	3564441.....	80
1651238.....	25	2551239.....	9	3263351.....	50	3567711.....	92
1652236.....	20	2561240.....	9	3266029.....	50	3567721.....	81
1652336.....	20	2621234.....	7	3351552.....	44	3567735.....	82
1654345.....	27	2621244.....	7	3351881.....	44	3567737.....	83
1655345.....	27	2621246.....	7	3351882.....	44	3567739.....	83
1658810.....	22	2631235.....	7	3351914.....	77	3567741.....	52
1661237.....	20	2641236.....	7	3351915.....	77	3567745.....	52
1661238.....	20	2651237.....	7	3351916.....	77	3567751.....	52
1662237.....	20	2661239.....	7	3351917.....	77	3567755.....	52
1662250.....	20	2825635.....	13	3355511.....	77	3567758.....	84
1662251.....	25	2828825.....	10	3355516.....	77	3567759.....	84
1665345.....	27	2835640.....	13	3355521.....	77	3567761.....	53
1666345.....	27	2928820.....	10	3355525.....	77	3568831.....	80
1666350.....	27	2938830.....	10	3355528.....	44	3568841.....	80
1671239.....	20	2948840.....	10	3355531.....	44	3568851.....	80
1672237.....	25	3151134.....	40	3355533.....	44	3568861.....	80
1672238.....	20	3151232.....	54	3355536.....	44	3571934.....	81
1676238.....	20	3151236.....	54	3355541.....	44	3571935.....	81
1682239.....	20	3151239.....	7	3355543.....	44	3571936.....	81
1686239.....	20	3151239.....	54	3355546.....	44	3573012.....	81
1741234.....	94	3153311.....	39	3355548.....	44	3573013.....	81
1751244.....	94	3153317.....	40	3355549.....	44	3573036.....	81
1751254.....	94	3153321.....	40	3441111.....	94	3577715.....	81

Part Number Index

Part	Page	Part	Page	Part	Page	Part	Page
3578011	81	4608023	88	8157722	64	8665522	62
3578016	81	4608026	88	8157733	64	8665533	62
3578021	81	4608029	89	8167711	63	8665544	62
3578026	82	4608030	89	8167722	63	8679921	57
3578031	81	4608031	89	8167733	63	8679922	57
3578036	81	6601436	69	8167744	63	8679923	57
3631083	67	6601437	69	8167755	63	8679924	57
3663311	67	6602011	70	8167766	63	8689931	58
3663336	90	6602013	70	8167777	63	8689932	58
3663337	90	6602022	70	8167788	63	8699911	59
3663338	90	6602023	70	8168811	60	8699915	59
3663339	90	6602117	24	8168812	60	8699921	59
3663340	90	6602118	24	8168813	60	8699925	59
3663344	67	6602119	23	8168821	60	9202123	11
3663399	67	6602120	23	8168822	60	9212124	11
3664411	67	6602121	23	8168823	60	9223123	17
3664413	67	6602122	23	8177711	63	9233124	17
3664416	67	6607029	69	8177722	63	9353123	11
3664421	67	6607033	69	8177733	63	9363123	17
3664422	67	6607037	69	8177744	63	9474123	11
3664425	67	6607045	71	8177755	63	9484123	17
3664427	67	6607901	90	8177766	63	9851125	18
3664429	67	6607905	90	8177777	63	9851135	18
3665525	71	6608011	69	8177788	63	SNKX09T3	11
3668010	68	6608016	69	8178831	60	WFC1-0.5	18
3668011	67	6608021	69	8178832	60	WFC1-0.75	18
3668020	68	6608026	69	8178833	60	WFC1-1	18
3668021	67	6608031	71	8178841	60	WFC1-1.25	18
3668025	68	6608036	71	8178842	60	WFC1-1.5	18
3668026	67	6612117	28	8178843	60	WFC1-2	18
3763336	91	6612118	28	8188851	61	WF0.5	18
3763337	91	6702119	24	8188852	61	WF0.75	18
3861942	85	6702120	24	8188861	61	WF1	18
3861943	85	6712119	28	8188862	61	WF1.25	18
3861944	85	6712120	28	8188873	61	WF1.5	18
3862215	85	7601910	73	8188881	61	WF2	18
3862221	85	7601911	73	8188882	61		
3862225	85	7601912	73	8188883	61		
3933040	84	7602157	74	8607241	87		
3934020	75	7602793	74	8607245	87		
3934030	75	7607061	73	8607921	93		
3954406	41	7607065	73	8607925	93		
3954411	41	7607069	73	8608011	87		
3954415	41	7607073	73	8608016	87		
3954421	42	7607077	73	8608828	86		
3954431	42	7607909	91	8608831	86		
3954435	42	7607913	91	8608833	86		
3954441	42	7608011	73	8608836	86		
3959999	43	7608016	73	8649941	58		
4601954	89	7608021	73	8649942	58		
4601955	89	7608026	73	8655512	62		
4601967	88	7608029	73	8655523	62		
4607257	88	7608031	73	8655534	62		
4607261	88	7608036	73	8655545	62		
4607265	88	7608041	73	8661458	78		
4607277	89	7608046	73	8661459	78		
4608011	88	8148871	61	8661918	78		
4608016	88	8148872	61	8661919	78		
4608021	88	8157711	64	8665511	62		