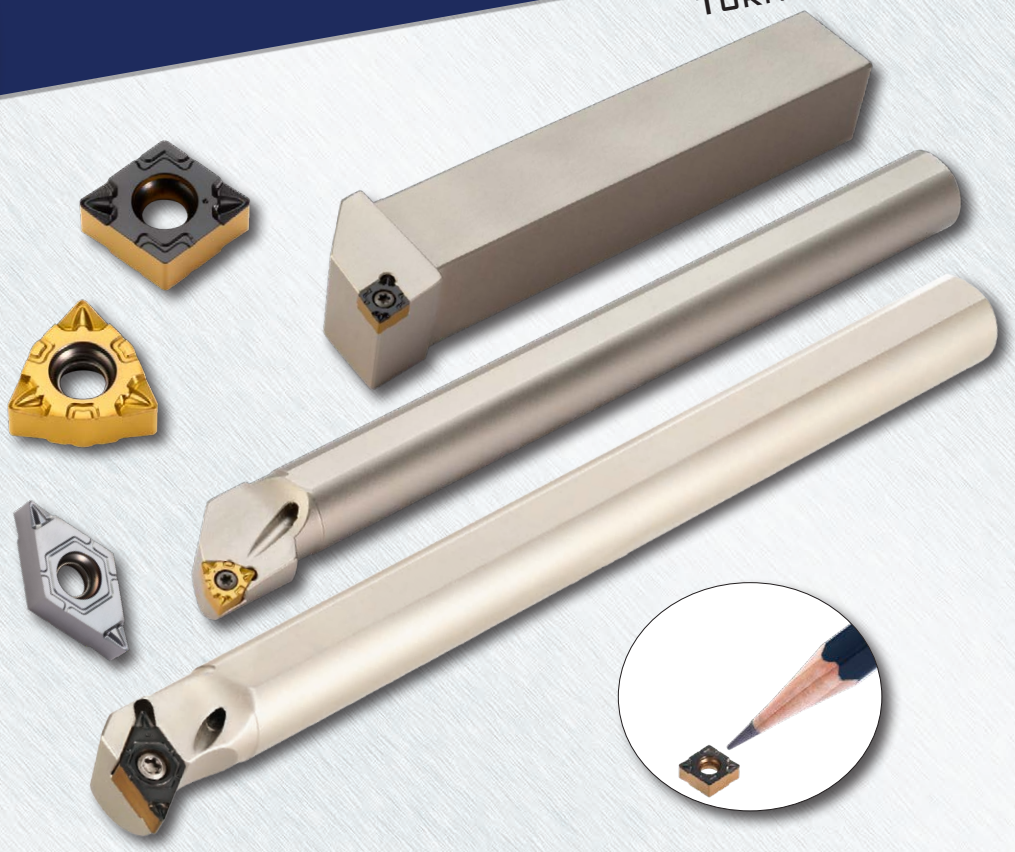
SFEEDUP HIGH SPEED & FEED

INDUSTRY 4.0 PRODUCT ANNOUNCEMENT UPDATE 2021

RHINOTURNM™

TURNING PRODUCTS



Inserts:
CNMX
DNGX
DNMX
WNMX

Corner Radii:
.004", .008", .016", .031"

Grades:
CT3000 - Uncoated Cermet
PV3010/20 – Coated Cermet
TT8115B, TT8125B – CVD for Steel
TT5080 – PVD for SS & High Temp
TT9020 – PVD for Universal

External Holders:
Swiss Automatics:
.500", .625", 12mm, 16mm
Conventional lathes:
.625", .750"

Boring Bars:
Conventional lathes:
.500", .625"

A New Double-Sided Mini-Size Insert and Holder Line, an Economical Alternative to Standard Positive Turning and Boring Inserts

RhinoTurnM is a compact, double-sided mini size insert that is suitable for the internal and external turning of small parts and can replace standard positive small inserts like CCMT 21.5x and DCMT 21.5x.

Features & Benefits:

- Double-sided miniature inserts (7mm IC) for 2x the number of cutting edges!
- Optimized turning for low depths of cut (up to 2mm)
- Inserts feature the same cutting edge angle as standard positive inserts (zero degrees)
- Low cutting forces promotes very good surface finish
- Excellent chip control at lower depths of cut
- Stable screw clamping
- Suitable for general purpose machining of small parts, especially on Swiss type automatic lathes

Member IMC Group Ingersoll Cutting Tools

RHINOTURN™ FEATURES

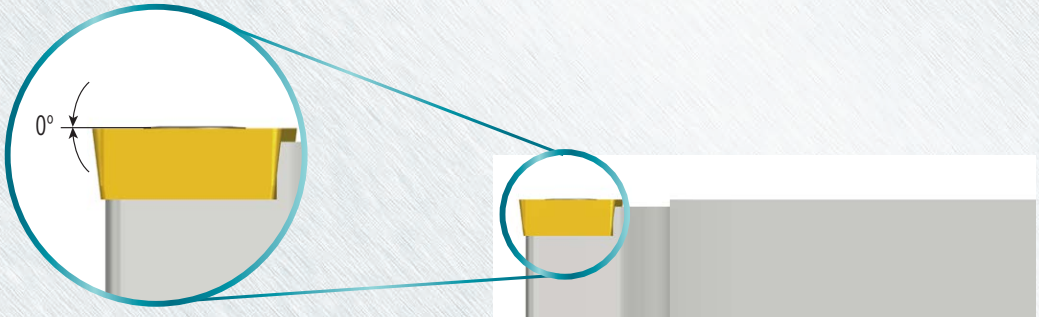
Although the insert is double-sided, it has the same edge angle as a conventional positive insert type when mounted to the holder. This results in low cutting forces which reduces vibration and produces excellent workpiece surface finish and machining accuracy, particularly at low depths of cut. The strong screw clamping design provides stable machining during manufacturing.

The inserts are available as CNMX, DNMX, WNMX type for finishing, and a precise DNGX type suitable for Swiss type automatic lathes.

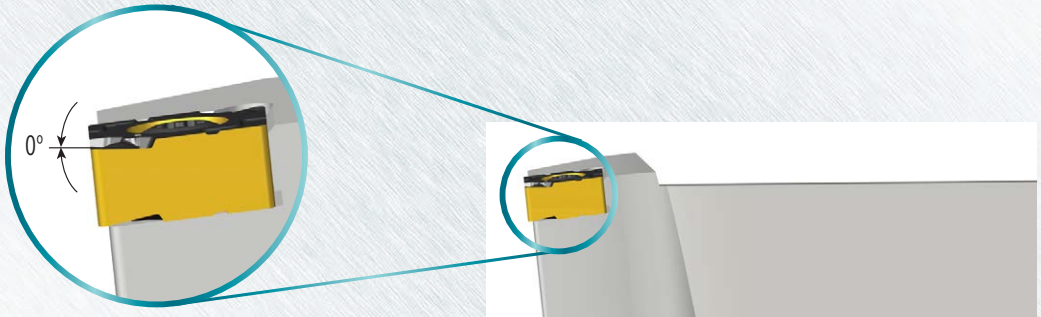
For external machining with Swiss type automatics, holders are available with inch (.500" & .625") and metric shanks (12mm & 16mm).

For conventional lathes, external holders are available with .625" & .750" shanks. For internal applications, boring bars are available with .500" & .625" shanks. Metric tools are also available from our international warehouse.

RHINOTURNM™ SAME CUTTING EDGE ANGLE AS STANDARD POSITIVE INSERT



Standard Positive Insert



RhinoTurnM Negative Insert

RHINOTURNM™ NEW CHIP BREAKER PART NUMBER

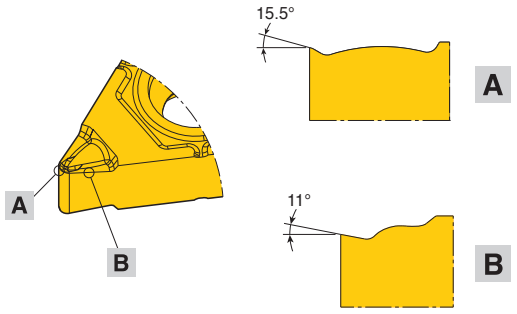
F	G	P
1	2	3

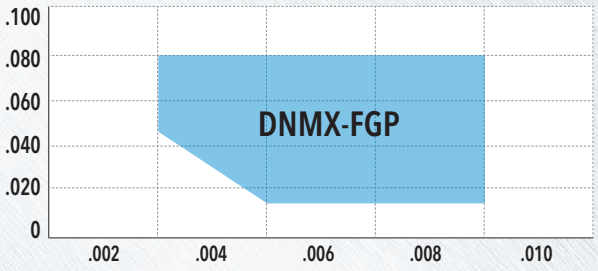
1 - Applications	
F	Finishing
M	Medium
R	Roughing

2 - Cutting Conditions	
L	Light cutting
G	General cutting
T	Tough cutting

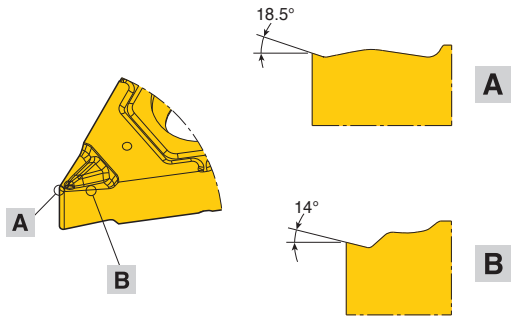
3 - Workpiece Materials	
P	Steel
M	Stainless steel
K	Cast iron
S	High temperature alloys

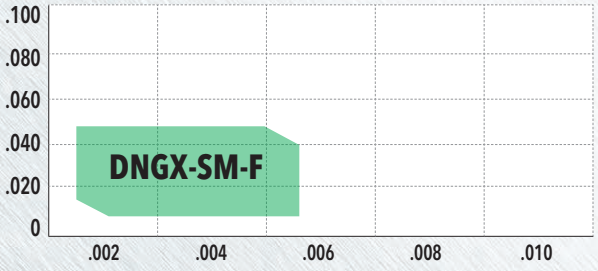
RHINOTURN™ DNMX/DNGX CHIP BREAKER GEOMETRY/CHIP CONTROL RANGE

Chip breaker	Cutting edge geometry
DNMX-FGP For finishing to semi-finishing	



- Insert : DNMX 2.221 FGP
- Cutting speed (sfm) : 650
- Material : AISI 4140 (HB235~255)

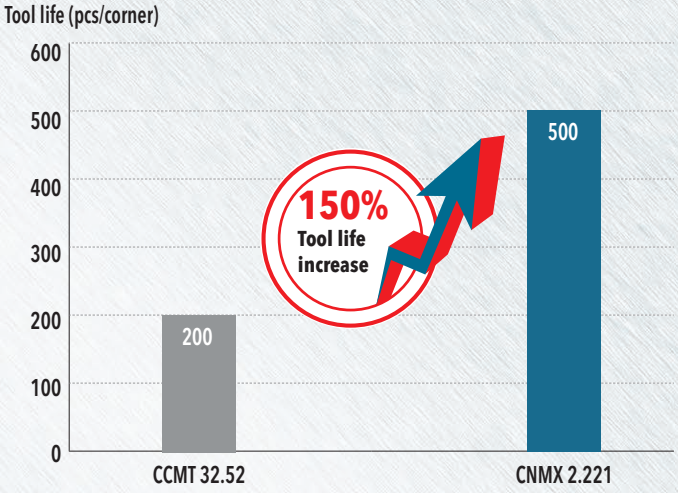
Chip breaker	Cutting edge geometry
DNGX-SM-F General purpose for Swiss type automatic lathes	



- Insert : DNGX 2.220 SM-F
- Cutting speed (sfm) : 260
- Material : AISI 304 (HB140~160)

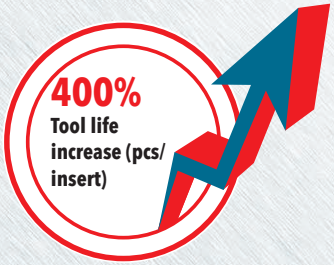
RHINOTURN™ CASE STUDY 1

		Ingersoll	Ingersoll
Material		AISI 1045	
Boring Bar		S16R SCLCL 09	A16Q SCLNR 0703
Insert		CCMT (32.52) MT TT8115	CNMX (2.221) FGP CT3000
Cutting speed	V (sfm)	705	705
Feed rate	f (ipr)	.008	.008
Depth of cut	ap (inch)	.020	.020
Coolant		wet	wet
Tool life (min)		200	500



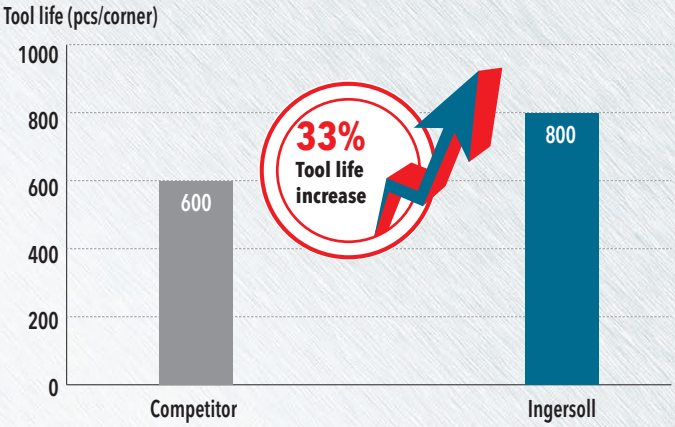
CCMT 32.52: 2 corners X 200 pcs = 400 pcs

CNMX 2.221: 4 corners X 500 pcs = 2,000 pcs



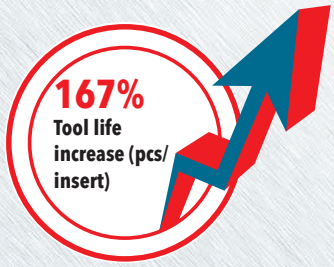
RHINOTURN™ CASE STUDY 2

		Competitor	Ingersoll
Material		AISI 1045	
Boring Bar		Ø16	A16Q SDUNR 0803
Insert		DCMT (21.51) (CVD coated)	DNMX (2.221) FGP TT8125
Cutting speed	V (sfm)	390-515	390-515
Feed rate	f (ipr)	.005-.009	.005-.009
Depth of cut	ap (inch)	.002-.006	.002-.006
Coolant		wet	wet
Tool life (min)		600	800

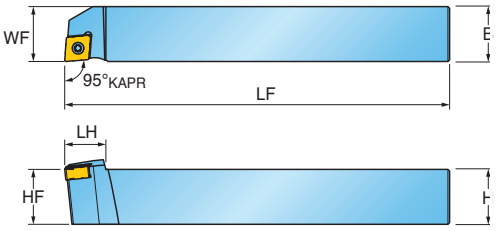


DCMT 21.51: 2 corners X 600 pcs = 1,200 pcs

DNMX 2.221: 4 corners X 800 pcs = 3,200 pcs

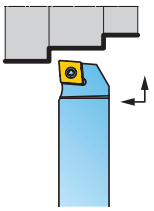


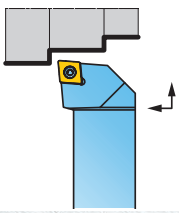
RHINOTURN™ SCLNR/L-SH, SCLNR/L SCREW TYPE HOLDERS (CNMX INSERT)



SCLNR-SH

SCLNR

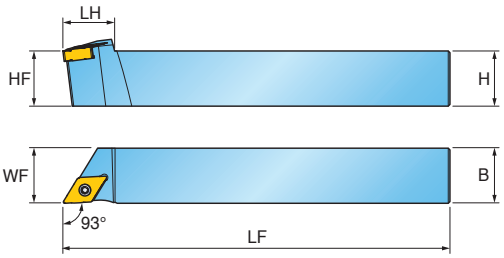
Approach angle	Part Number	Dimension (inch)						Insert
		H Shank Height	HF Functional Height	B Shank Width	LF Functional Length	WF Functional Width	LH Head Length	
95° 	SCLNR/L 08-2.2C-SH	.500	.500	.500	5.0	.500	.47	CNMX 2.22_
	SCLNR/L 10-2.2C-SH	.625	.625	.625	5.0	.625	.47	

Approach angle	Part Number	Dimension (inch)						Insert
		H Shank Height	HF Functional Height	B Shank Width	LF Functional Length	WF Functional Width	LH Head Length	
95° 	SCLNR/L 10-2.2B	.625	.625	.625	4.5	.750	.63	CNMX 2.22_
	SCLNR/L 12-2.2B	.750	.750	.750	4.5	1.000	.78	

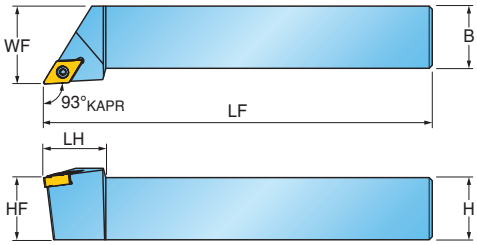
Spare Parts

Part Number	Shim Screw	Wrench	Recommended Torque	
				
SCLNR/L	SM25-060-90	T 7P	8 in-lbs	

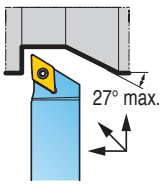
RHINOTURN™ SDJNR/L-SH, SDJNR/L SCREW TYPE HOLDERS (DN_X INSERT)

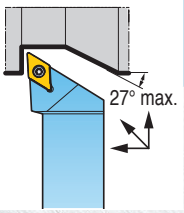


SDJNR-SH



SDJNR

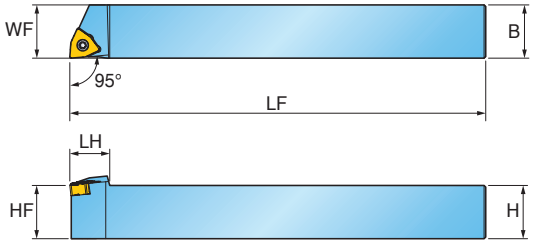
Approach angle	Part Number	Dimension (inch)						Insert
		H Shank Height	HF Functional Height	B Shank Width	LF Functional Length	WF Functional Width	LH Head Length	
93° 	SDJNR/L 08-2.2C-SH	.500	.500	.500	5.0	.500	.59	DN...X 2.22_
	SDJNR/L 10-2.2C-SH	.625	.625	.625	5.0	.625	.59	

Approach angle	Part Number	Dimension (inch)						Insert
		H Shank Height	HF Functional Height	B Shank Width	LF Functional Length	WF Functional Width	LH Head Length	
93° 	SDJNR/L 10-2.2B	.625	.625	.625	4.5	.750	.63	DN...X 2.22_
	SDJNR/L 12-2.2B	.750	.750	.750	4.5	1.000	.78	

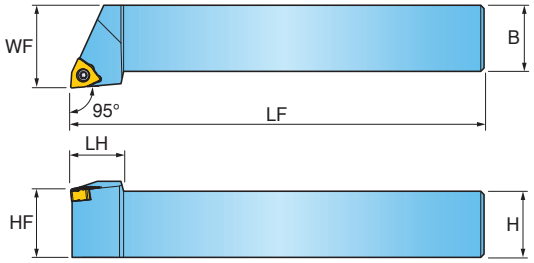
Spare Parts

Part Number	Shim Screw	Wrench	Recommended Torque	
				
SDJNR/L	SM25-060-90	T7P	8 in-lbs	

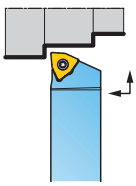
RHINOTURN™ SWLNR/L-SH, SWLNR/L SCREW TYPE HOLDERS (WNMX INSERT)

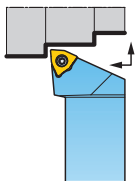


SWLNR-SH



SWLNR

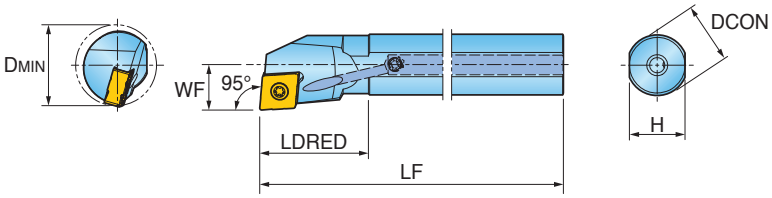
Approach angle	Part Number	Dimension (inch)						Insert
		H Shank Height	HF Functional Height	B Shank Width	LF Functional Length	WF Functional Width	LH Head Length	
95° 	SWLNR/L 08-2.2C-SH	.500	.500	.500	5.0	.500	.47	WNMX 2.22_
	SWLNR/L 10-2.2C-SH	.625	.625	.625	5.0	.625	.47	

Approach angle	Part Number	Dimension (inch)						Insert
		H Shank Height	HF Functional Height	B Shank Width	LF Functional Length	WF Functional Width	LH Head Length	
95° 	SWLNR/L 10-2.2B	.625	.625	.625	4.5	.750	.63	WNMX 2.22_
	SWLNR/L 12-2.2B	.750	.750	.750	4.5	1.000	.63	

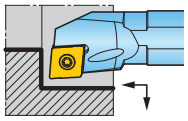
Spare Parts

Part Number	Shim Screw	Wrench	Recommended Torque	
				
SWLNR/L	SM25-060-90	T7P	8 in-lbs	

RHINOTURN™ A-SCLNR/L SCREW TYPE BORING BARS WITH THRU COOLANT (CNMX INSERT)



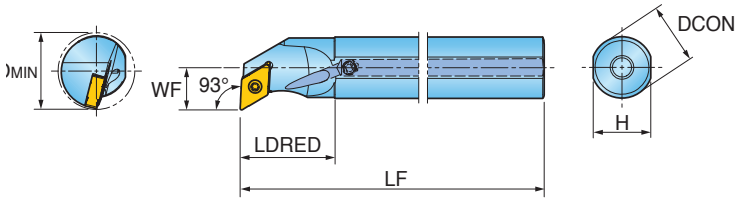
Coolant

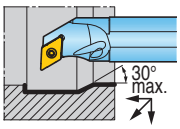
Approach angle	Part Number	Dimension (inch)						Insert
		DCON Shank Diameter	DMIN Min. Bore Diameter	LF Functional Length	WF Functional Width	LDRED Reduced Body Dia. Length	H Shank Height	
95° 	A08M-SCLNR/L-2.2	.500	.63	6.00	.312	.84	.46	CNMX 2.22
	A10R-SCLNR/L-2.2	.625	.81	8.00	.406	.96	.58	

Spare Parts

Part Number	Shim Screw	Wrench	Recommended Torque	
				
A-SCLNR/L	SM25-060-90	T7P	8 in-lbs	

RHINOTURN™ A-SDUNR/L SCREW TYPE BORING BARS WITH THRU COOLANT (DN_X INSERT)

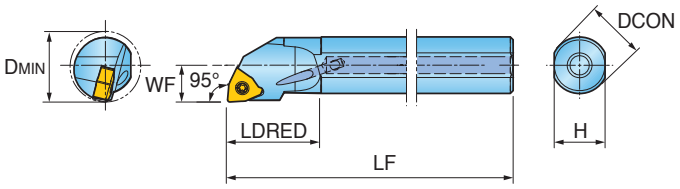


Approach angle	Part Number	Dimension (inch)						Insert
		DCON Shank Diameter	DMIN Min. Bore Diameter	LF Functional Length	WF Functional Width	LDRED Reduced Body Dia. Length	H Shank Height	
93° 	A08M-SDUNR/L-2.2	.500	.63	6.00	.312	.84	.46	DN_X 2.22
	A10R-SDUNR/L-2.2	.625	.81	8.00	.406	.96	.58	

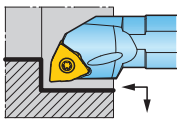
Spare Parts

Part Number	Shim Screw	Wrench	Recommended Torque	
				
A-SDUNR/L	SM25-060-90	T7P	8 in-lbs	

RHINOTURN™ A-SWLNR/L SCREW TYPE BORING BARS WITH THRU COOLANT (WNMX INSERT)



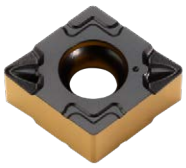
Coolant

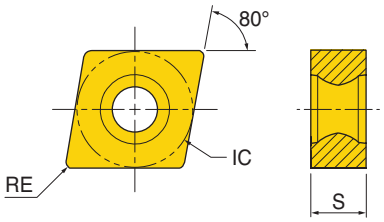
Approach angle	Part Number	Dimension (inch)						Insert
		DCON Shank Diameter	DMIN Min. Bore Diameter	LF Functional Length	WF Functional Width	LDRED Reduced Body Dia. Length	H Shank Height	
95° 	A08M-SWLNR/L-2.2	.500	.75	6.00	.375	.84	.46	WNMX 2.22
	A10R-SWLNR/L-2.2	.625	.85	8.00	.438	.96	.58	

Spare Parts

Part Number	Shim Screw	Wrench	Recommended Torque	
				
A-SWLNR/L	SM25-060-90	T7P	8 in-lbs	

RHINOTURN™ CNMX NEGATIVE 80° RHOMBIC INSERTS



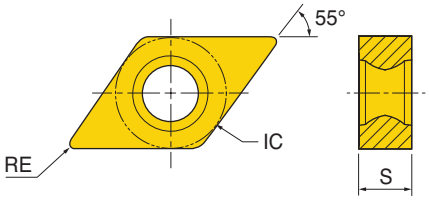


Size	Dimensions (inch)		
	IC Inscribed Circle Dia.	S Thickness	RE Corner Radius
2.221	.276	.125	.016
2.222	.276	.125	.031

Part Number ANSI (ISO)	ap (inch)	Feed (ipr)	Cermet			CVD Coated		PVD Coated	
			CT3000	PV3010	PV3020	TT8115B	TT8125B	TT5080	TT3020
CNMX 2.221 (070304) FGP	.012-.080	.002-.010	•	•	•	•	•	•	•
CNMX 2.222 (070308) FGP	.016-.080	.003-.010				•	•	•	•

•: Standard items

RHINOTURN™ DNGX NEGATIVE 55° RHOMBIC GROUND INSERTS

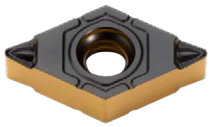


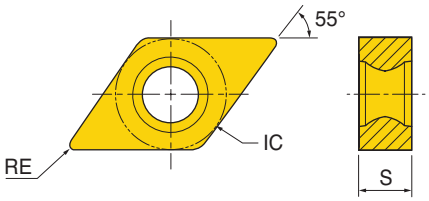
Size	Dimensions (inch)		
	IC Inscribed Circle Dia.	S Thickness	RE Corner Radius
2.220	.276	.125	.004
2.220.5	.276	.125	.008
2.221	.276	.125	.016

Part Number ANSI (ISO)	ap (inch)	Feed (ipr)	PVD Coated	
			TT5080	TT9020
DNGX 2.220 (080301) M-SM-F	.004-.040	.0008-.004	•	•
DNGX 2.220.5 (080302) M-SM-F	.008-.047	.0008-.005	•	•
DNGX 2.221 (080304) M-SM-F	.008-.060	.0008-.006	•	•

•: Standard items

RHINOTURN™ DNMX NEGATIVE 55° RHOMBIC INSERTS



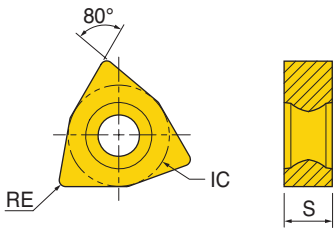


Size	Dimensions (inch)		
	IC Inscribed Circle Dia.	S Thickness	RE Corner Radius
2.221	.276	.125	.016
2.222	.276	.125	.031

Part Number ANSI (ISO)	ap (inch)	Feed (ipr)	Cermet			CVD Coated		PVD Coated	
			CT3000	PV3010	PV3020	TT8115B	TT8125B	TT5080	TT3020
DNMX 2.221 (080304) FGP	.012-.080	.002-.010	•	•	•	•	•	•	•
DNMX 2.222 (080308) FGP	.016-.080	.003-.010		•		•	•	•	•

•: Standard items

RHINOTURN™ WNMX NEGATIVE 80° TRIGON INSERTS



Size	Dimensions (inch)		
	IC Inscribed Circle Dia.	S Thickness	RE Corner Radius
2.221	.276	.125	.016
2.222	.276	.125	.031

Part Number ANSI (ISO)	ap (inch)	Feed (ipr)	Cermet	CVD Coated		PVD Coated	
			PV3010	TT8115B	TT8125B	TT5080	TT3020
WNMX 2.221 (040304) FGP	.012-.080	.002-.010	•	•	•	•	•
WNMX 2.222 (040308) FGP	.016-.080	.003-.010	•	•	•	•	•

•: Standard items