NPA

NEW

Member IMC Group Ingersoll Cutting Tools

New Product Announcement

TURNING

Number of Cutting Edges

6

Insert Series

TNMV-BM
(general purpose steel)
TNMV-BS
(stainless steel)

Feed Rates

Forward Turning:
.008"-.024" ipr
Backward Turning:
.024"-.047" ipr

Cutting Depths

Forward Turning:
.020"-.138"
Backward Turning:
.028" - .080"

Grades

CVD:
TT8115B, TT8125B, TT9225
PVD:
TT9080

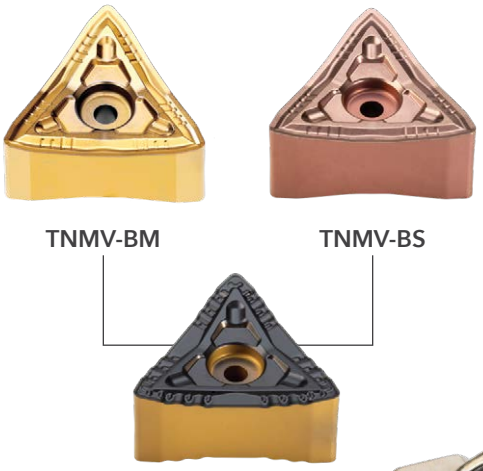
Materials

- Steel
- Stainless Steel

Holders

1.00" and 1.25"
Left and right;
with or without thru coolant

WINTURN™



6-Edge Inserts and Holders for All-Directional and Hi-Feed Turning

- Multi-directional turning applications including backward and forward longitudinal turning and facing.
- Hi-feed capabilities; up to .047 ipr when backward turning.
- Serrated cutting edge enables excellent chip control at a variety of cutting depths.

See it in action! »

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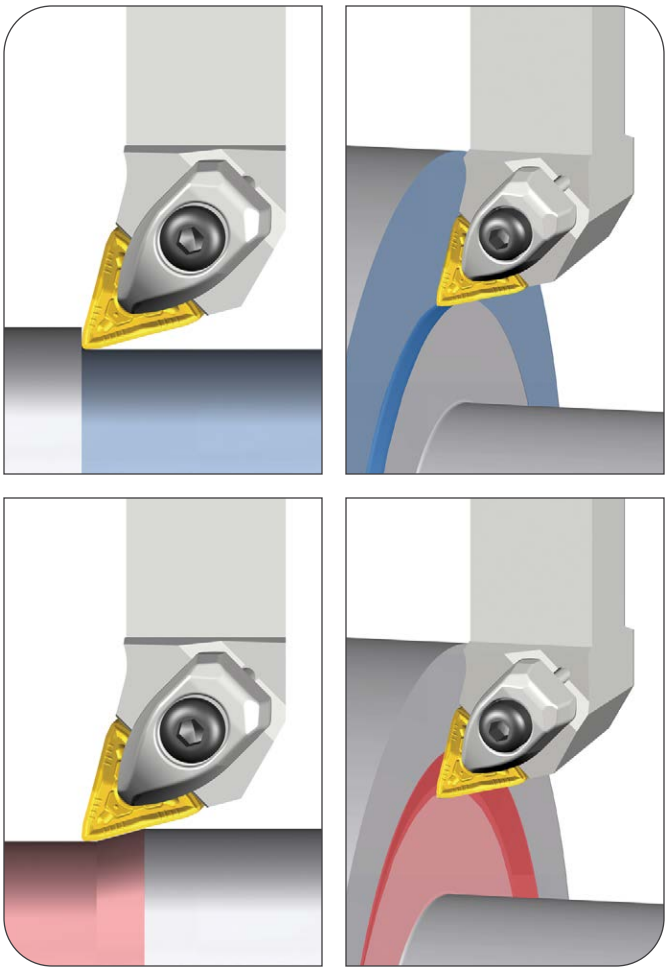
Overview

Ingersoll is pleased to expand its line of multi-direction, hi-feed turning tools. **WinTurn** (formerly SuperTurnT) offers similar functionality as the previously introduced SuperTurnZ, but features an insert that provides six cutting edges instead of four.

WinTurn is a thick, triangle-shaped, negative insert that's optimally designed to use both sides of the insert for extreme productivity. The aggressive lead angle enables high feed rates to be applied in both longitudinal and face turning in a forward or backward direction.

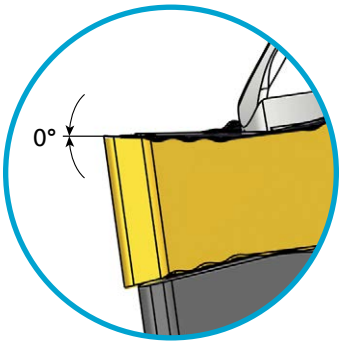
The WinTurn family of tools provide an excellent way to increase productivity and reduce the number of tool holders in the turret thanks to its multi-functional capabilities.



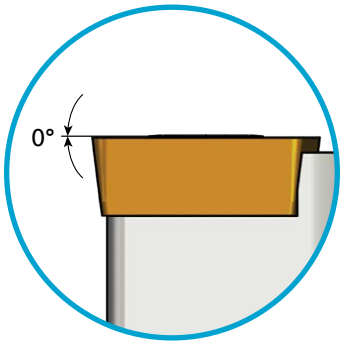
INSERT FEATURES & BENEFITS:

- Optimally designed negative (double-sided) insert with 6 cutting edges and 80° tip!
- Multidirectional turning applications including backward and forward longitudinal turning and facing without exchanging the tool holder.
- Higher productivity:
  - » Hi-feed capabilities, up to .047 ipr.
  - » Reduced downtime
  - » Less holder inventory required
- When mounted to the holder, WinTurn features the same axial and radial rake angle as standard positive inserts, lowering cutting forces.
- Serrated cutting edge enables excellent chip control at a variety of cutting depths.
- Holders with or without high pressure COOLBURST™ thru coolant.

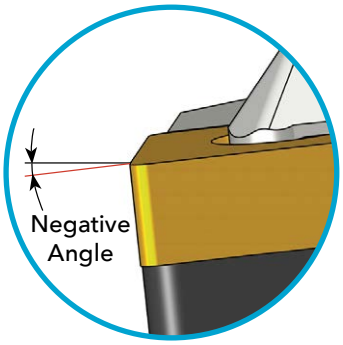
Cutting Edge Angle Comparison



TNMV insert's cutting edge angle



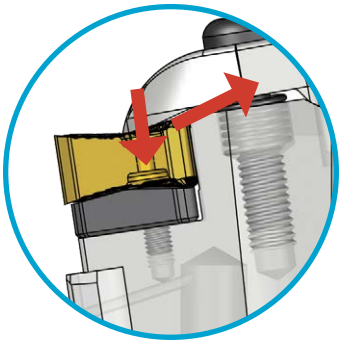
Standard positive insert's cutting edge angle



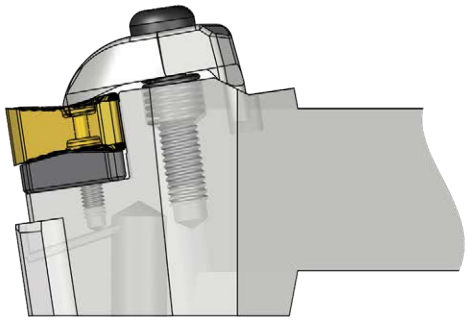
Cutting edge angle of a standard negative insert

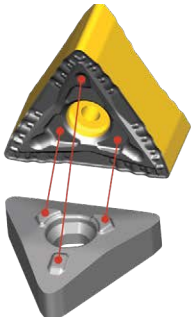
T-Type Clamping Design

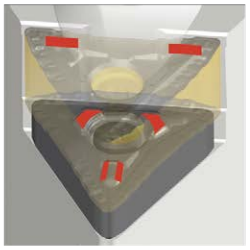
Traditional holders for triangle inserts have a single side wall of seating, making them somewhat unstable during the cut, particularly during high feed applications. WinTurn overcomes this by using raised pads on the seat that have an inverse shape to the mounting surface of the insert. Combined with the secure and user-friendly T-Type clamping system, this results in six locating points that keep the insert locked firmly in place.



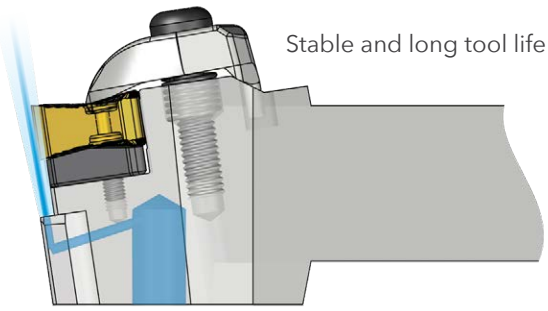
Strong multidirectional clamping force





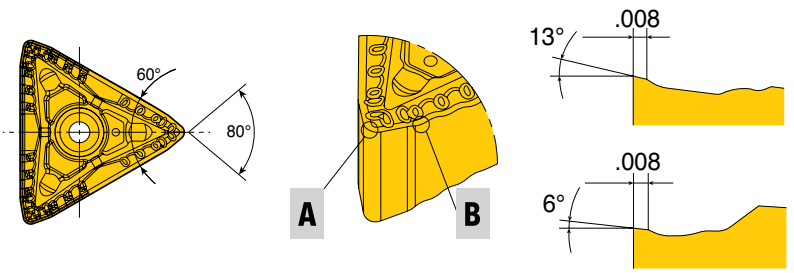
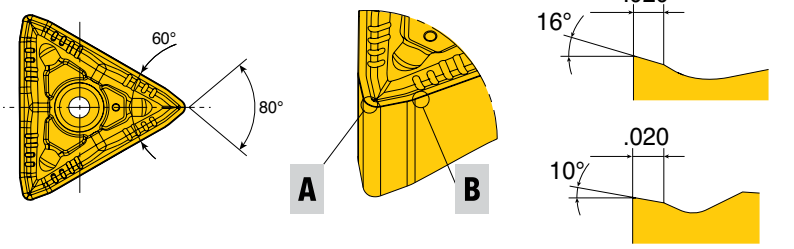


High Pressure Coolant Holder

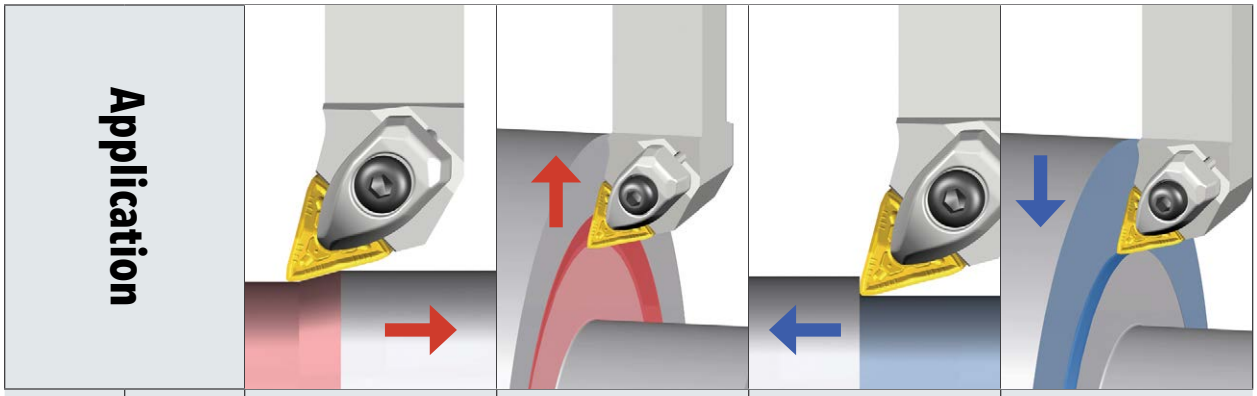


Stable and long tool life

TNMV-BM/BS Insert Geometry

Material	Chip Breaker	Cutting Edge Geometry	
P	 BM: For Steel		A B
M	 BS: For stainless steel Not recommended for super alloy		A B

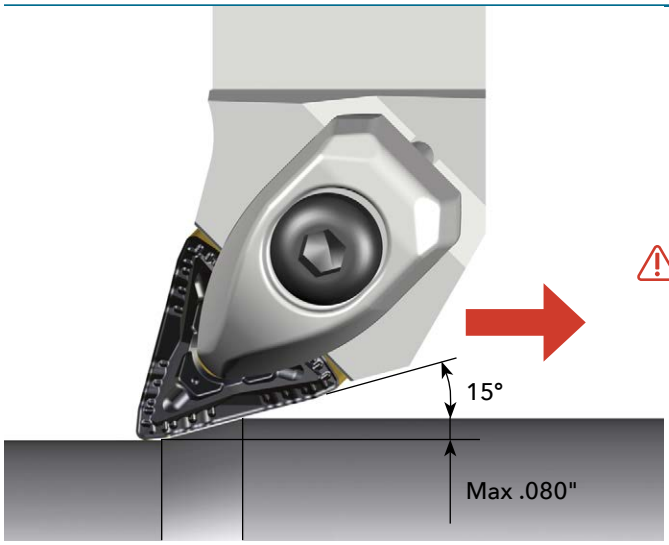
Recommended Cutting Conditions



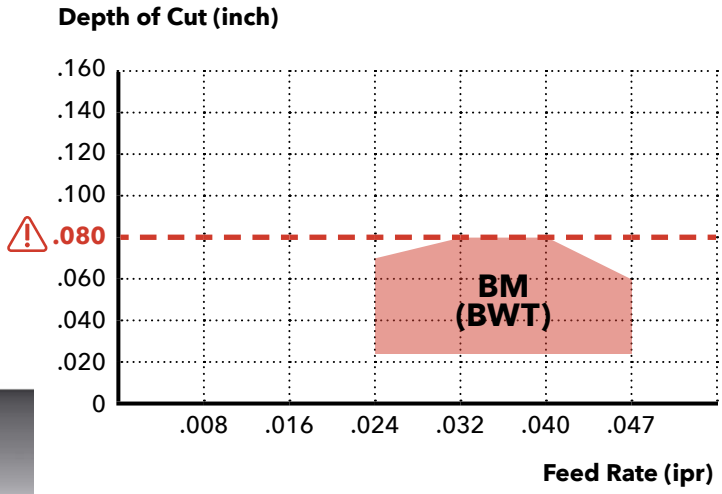
Chip Breaker	Cutting Condition	High-Feed Backward Turning (BWT)	High-Feed Backward Facing (BWF)	Deep Depth of Cut Forward Turning (FWT)	Deep Depth of Cut Forward Facing (FWF)
BM	feed (ipr)	.040" (.024-.047")		.012" (.008-.024")	
	ap(inch)	.060" (.028-.080")		.080" (.020-.138")	
BW	feed (ipr)	.040" (.024-.047")		.012" (.008-.016")	
	ap(inch)	.060" (.028-.080")		.080" (.040-.138")	
Entering angle (°)		15		95	
Ramping angle (°)		12		12	

- *Capable of high feed turning in BWT and BWF.*
- = *Be aware that the insert may be damaged if the depth of cut is exceeded in high feed backward turning.*

-BM Backward Turning

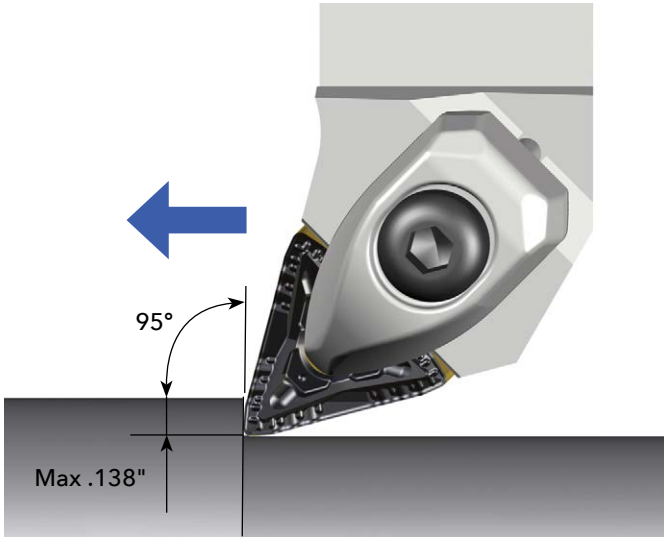


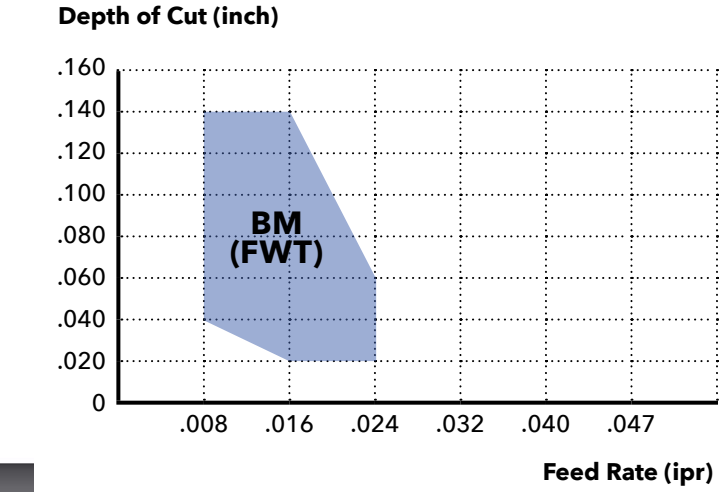
⚠ **CAUTION:** Be sure to check the limit of the depth of cut when backward machining. Inserts may break if the depth of cut is exceeded.



- Insert: TNMV 3.95.72-BM
- Cutting speed(V): 650 sfm
- Workpiece: 4140 (HB230~260)

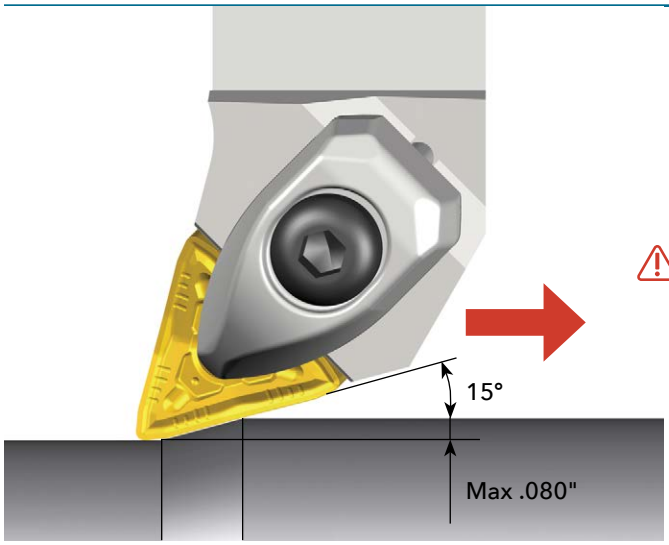
-BM Forward Turning





- Insert: TNMV 3.95.72-BM
- Cutting speed(V): 650 sfm
- Workpiece: 4140 (HB230~260)

-BS Backward Turning



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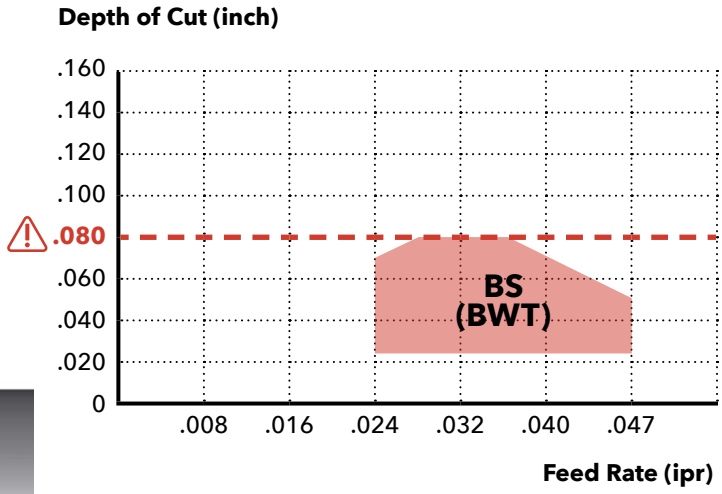
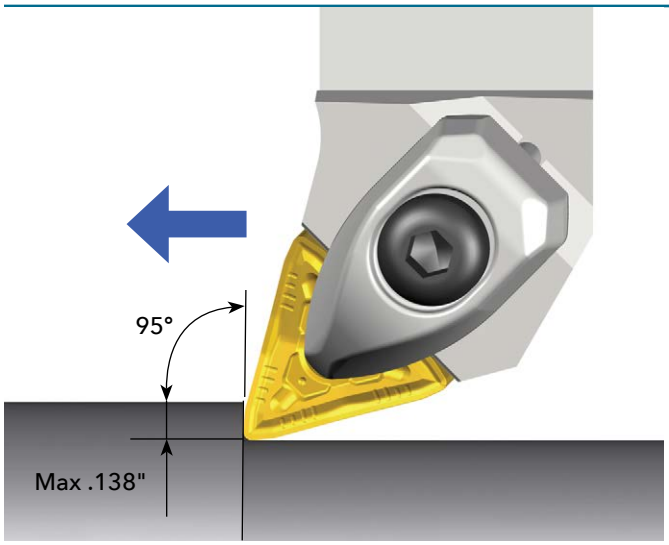
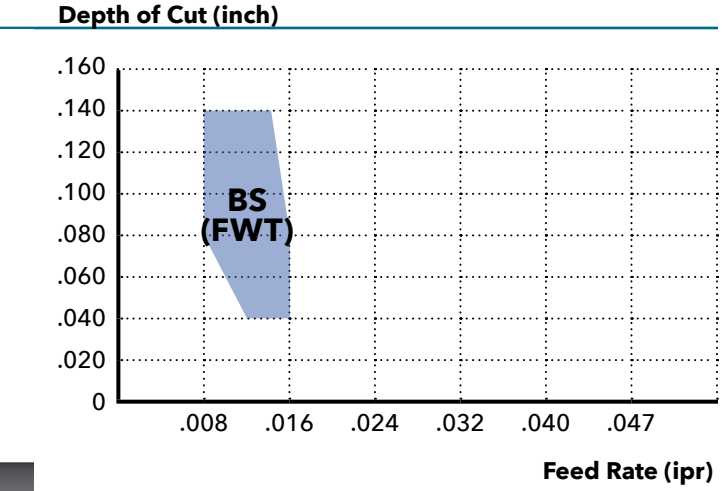


- Insert: TNMV 3.95.72-BS
- Cutting speed(V): 650 sfm
- Workpiece: SUS 304 (HB140~160)

-BS Forward Turning

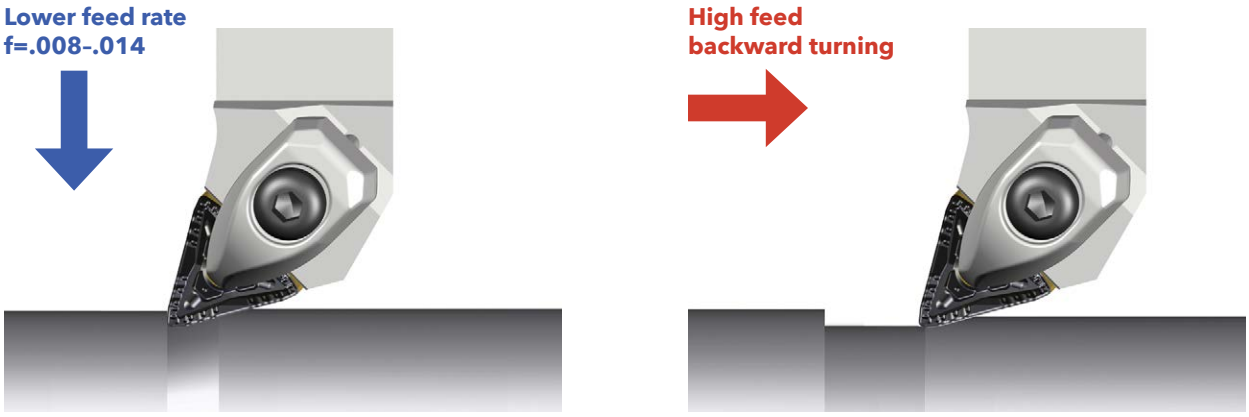




- Insert: TNMV 3.95.72-BS
- Cutting speed(V): 650 sfm
- Workpiece: SUS 304 (HB140~160)

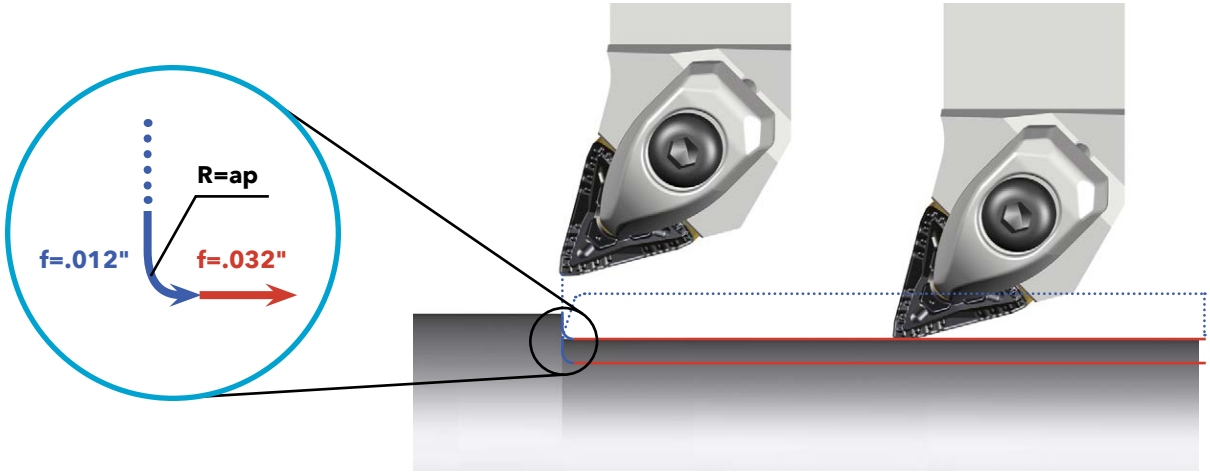
Radial Entry Recommendations

For correct high feed backward turning, remember to enter the workpiece in a radial direction with a lower feed rate (.008–.014 ipr) to avoid decreasing the tool life and damaging the tool.



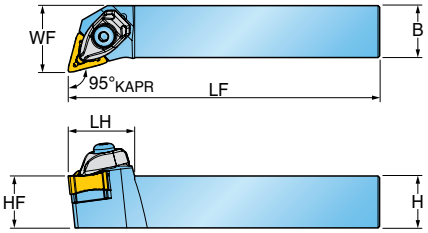
Radial Entry Tool Path Recommendations

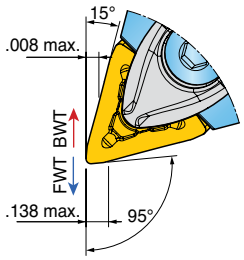
Circular interpolation tool path radius must be equal to the depth of cut with .012 ipr feed rate.
Circular interpolation prevents rapid load changes, insert chipping and tool damage.
Also, as the cutting depth is kept constant, proper chip control is achieved.

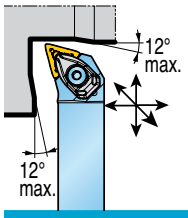
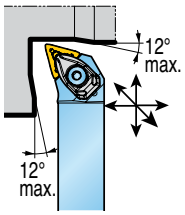


Series TTQNR/L

T-HOLDERS FOR TNMV INSERTS





Approach Angle	Part Number	Dimension (inch)						Insert
		H Shank Height	HF Functional Height	B Shank Width	LF Functional Length	LH Head Length	WF Functional Width	
INCH								
TNMV 15°(BWT); 95°(FWT) 	TTQNR/L 16-3.9D	1.000	1.000	1.000	6.0	1.26	1.25	TNMV 3.95.72 (TNMV210908)
	TTQNR/L 20-3.9D	1.250	1.250	1.250	6.0	1.26	1.50	
METRIC								
TNMV 15°(BWT); 95°(FWT) 	TTQNR/L 2525 M2109	25	25	25	150	32	32	TNMV 3.95.72 (TNMV210908)
	TTQNR/L 3232 P2109	32	32	32	170	32	40	

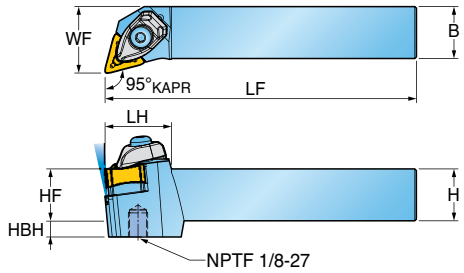
BWT= backward turning • FWT = forward turning

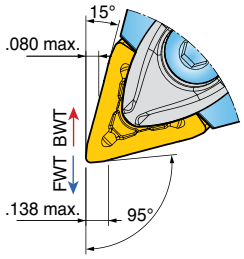
Hardware

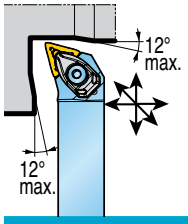
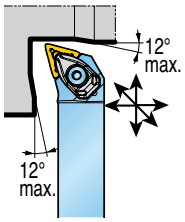
	Clamp	Clamp Screw	Spring	Shim	Shim Screw	Hex Wrench	Wrench
TTQNR/L	DLM 4.4T-NV	DLS 5	DSP 5	TSTV 210510	TS 35083I/HG	L-W 4	T 10

Series TTQNR/L-TB

T-HOLDERS FOR TNMV INSERTS WITH HIGH PRESSURE COOLANT – COOLBURST™





Approach Angle	Part Number	Dimension (inch)						Insert
		H Shank Height	HF Functional Height	B Shank Width	LF Functional Length	LH Head Length	WF Functional Width	
INCH								
TNMV 15°(BWT); 95°(FWT) 	TTQNR/L 16-3.9D-TB	1.000	1.000	1.000	6.0	1.26	1.25	TNMV 3.95.72 (TNMV210908)
	TTQNR/L 20-3.9D-TB	1.250	1.250	1.250	6.0	1.26	1.50	
METRIC								
TNMV 15°(BWT); 95°(FWT) 	TTQNR/L 2525 M2109-TB	25	25	25	150	32	32	TNMV 3.95.72 (TNMV210908)
	TTQNR/L 3232 P2109-TB	32	32	32	170	32	40	

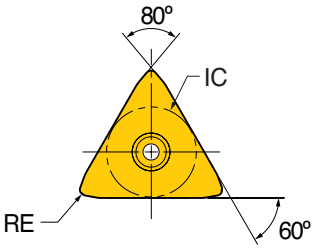
BWT= backward turning • FWT = forward turning

Hardware

	Clamp	Clamp Screw	Spring	Shim	Shim Screw	Hex Wrench	Wrench
TTQNR/L-TB	DLM 4.4T-NV	DLS 5	DSP 5	TSTV 210510	TS 35083I/HG	L-W 4	T 10

Series TNMV-BM

NEGATIVE TRIANGULAR INSERTS FOR STEEL



Size	Dimensions (inch)		
	IC Insert Size	S Thickness	RE Corner Radius
3.95.7	.492	.354	.031

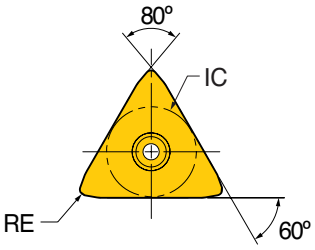
Part Number	Backward Turning		Forward Turning		CVD Coated	
	ap (inch)	Feed (ipr)	ap (inch)	Feed (ipr)	TT8115B	TT8125B
TNMV 3.95.72 (210908)-BM	.028 - .080	.024 - .047	.020-.138	.008-.024	•	•

For operating parameters, refer to pages 4-6.

• = standard items

Series TNMV-BS

NEGATIVE TRIANGULAR INSERTS FOR STAINLESS STEEL



Size	Dimensions (inch)		
	IC Insert Size	S Thickness	RE Corner Radius
3.95.7	.492	.354	.031

Part Number	Backward Turning		Forward Turning		CVD Coated	PVD Coated
	ap (inch)	Feed (ipr)	ap (inch)	Feed (ipr)	TT9225	TT9080
TNMV 3.95.72 (210908)-BS	.028 - .080	.024 - .047	.040-.138	.008-.016	•	•

For operating parameters, refer to pages 4-6.

• = standard items