SFEEDUP HIGH SPEED & FEED

INDUSTRY 4.0 PRODUCT ANNOUNCEMENT UPDATE 2023

SUPERTURNT™

TURNING PRODUCTS

Number of Cutting Edges
6

Inserts
TNMV-BM: Gen 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" - .079"

Grades
TT8115B, TT8125B, TT9225
CVD-coated for steel & stainless steel

TT9080
PVD-coated for stainless steel

Holders
1.00" & 1.25"
Left & Right
With or without thru coolant

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

Ingersoll's is pleased to expand its line of multi-direction, hi-feed turning tools. SuperTurnT offers similar functionality of previously introduced SuperTurnZ but features an insert that provides six cutting edges instead of four.

SuperTurnT 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.

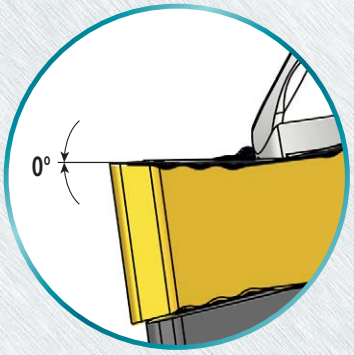
The SuperTurn family of tools provide an excellent way to increase productivity and reduce the number of tool holders in the turret thanks to its multi-functional capabilities.

Features & Benefits:

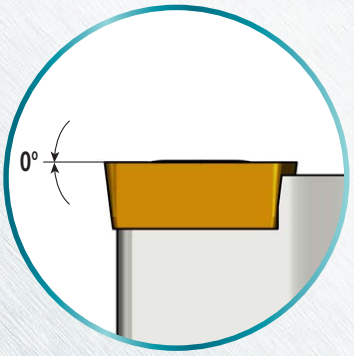
- Optimally designed negative (double-sided) insert with 6 cutting edges and 80° tip!
- Multidirectional turning applications including backward and forward longitudinal turning and facing without exchanging the tool holder
- Higher productivity:
  - o Hi-feed capabilities, up to .047 ipr.
  - o Reduced downtime
  - o Less holder inventory required
- When mounted to the holder, SuperTurnT 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

Member IMC Group Ingersoll Cutting Tools

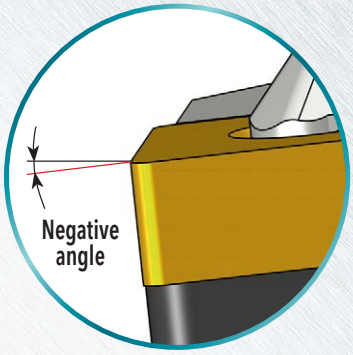
SUPERTURNT™ CUTTING EDGE ANGLE COMPARISON



TNMV insert's cutting edge angle

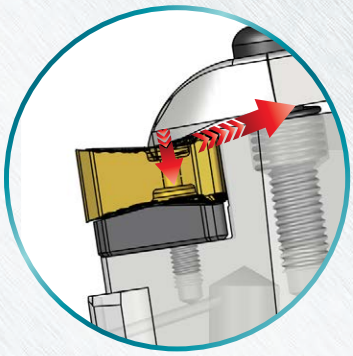


Standard positive insert's cutting edge angle

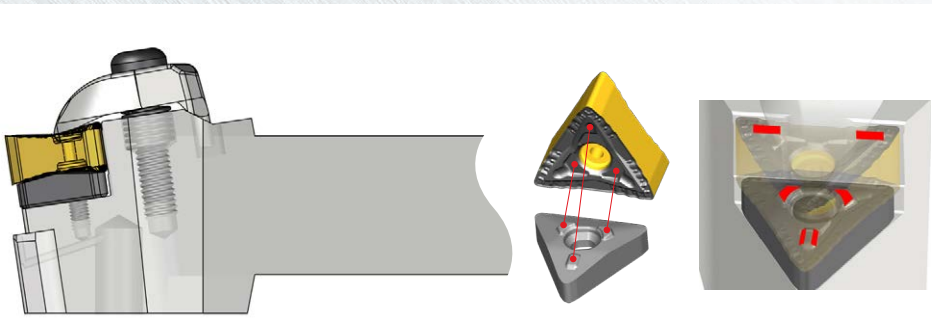


Cutting edge angle of a standard negative insert

SUPERTURNT™ T-TYPE CLAMPING DESIGN

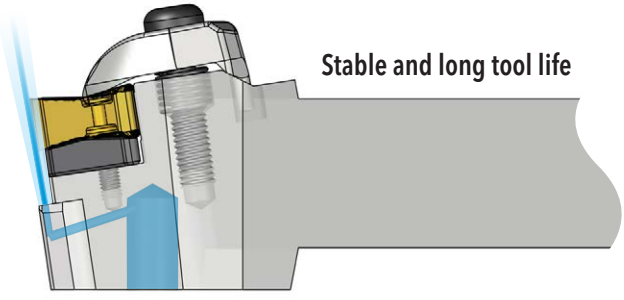


Strong multidirectional clamping force

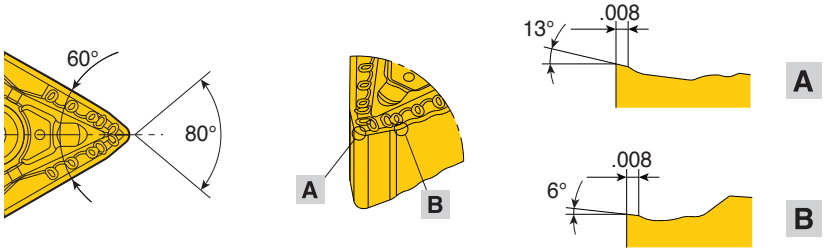
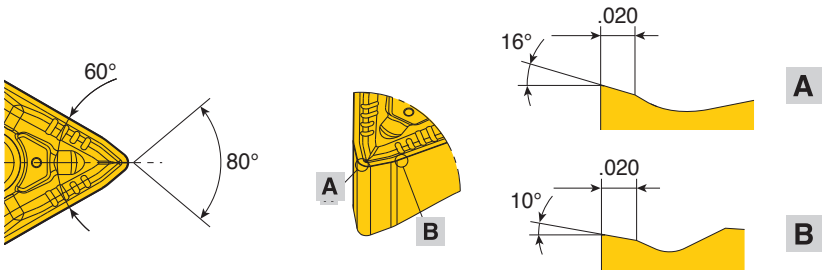


Traditional holders for triangle inserts have a single side wall of seating, making them somewhat unstable during the cut, particularly during high feed applications. SuperTurnT overcomes this by using raised pads on the seat that have an inverse shape to the mounting surface of the insert. Combined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

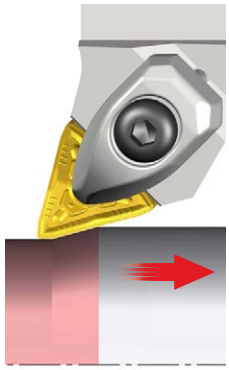
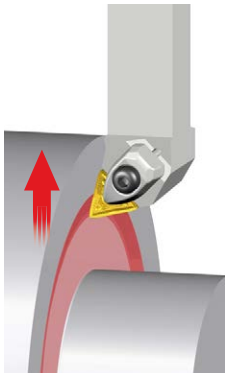
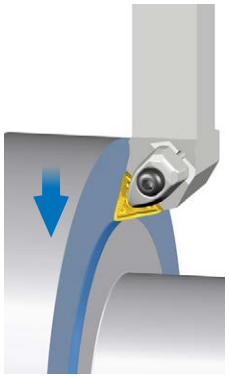
SUPERTURNT™ COOLBURST™ HIGH PRESSURE COOLANT HOLDER



SUPERTURN™ TNMV-BM INSERT GEOMETRY

Material	Chip breaker	Cutting edge geometry
P	 BM: For Steel	
M	 BS: For stainless steel *Not recommended for super alloy	

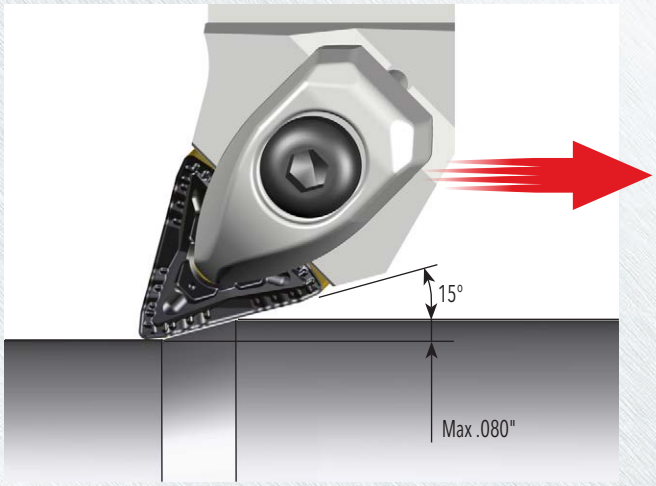
SUPERTURN™ RECOMMENDED CUTTING CONDITIONS

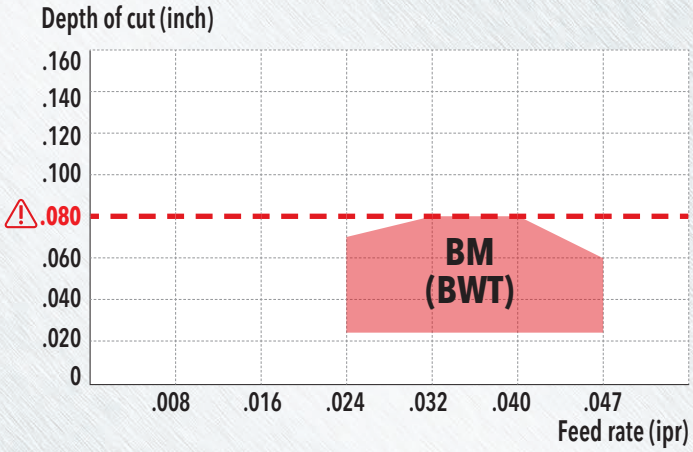
Application				

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")	
BS	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.

SUPERTURNT™ -BM BACKWARD TURNING

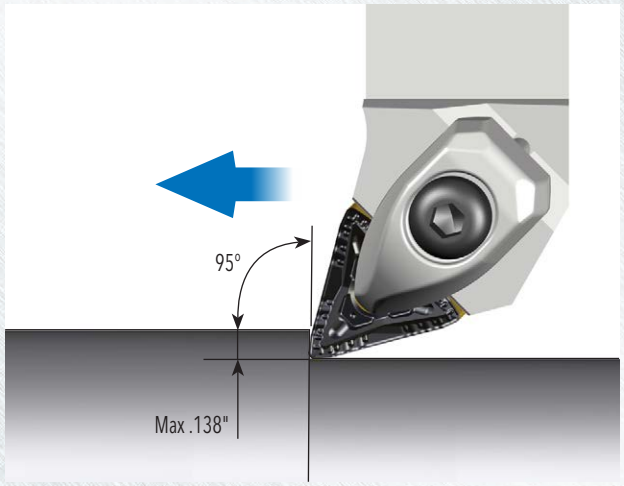


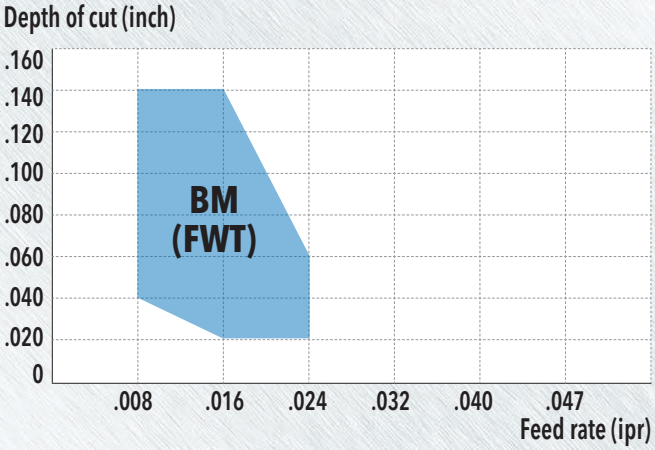


⚠ **CAUTION**
Be sure to check the limit of the depth of cut when backward machining. Inserts may break if the depth of cut is exceeded.

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

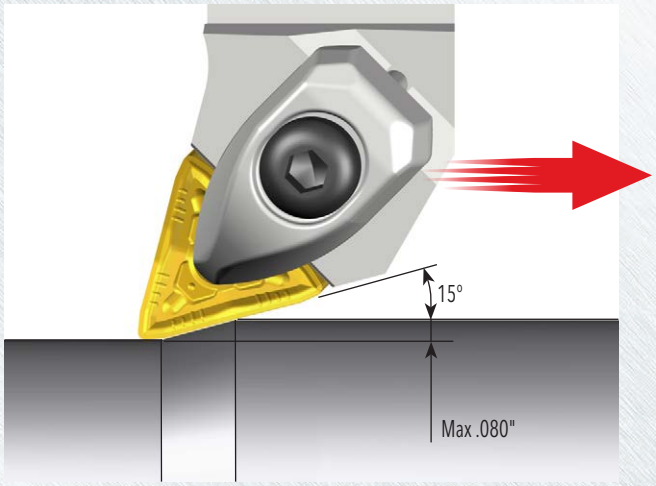
SUPERTURNT™ -BM FORWARD TURNING

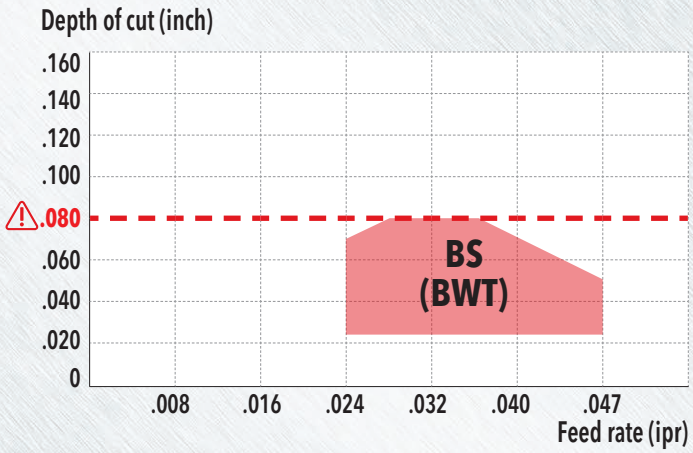




- Insert: TNMV 3.95.72-BM
- Cutting speed(V): 650 sfm
- Workpiece: 4140 (HB230~260)

SUPERTURN™ -BS BACKWARD TURNING

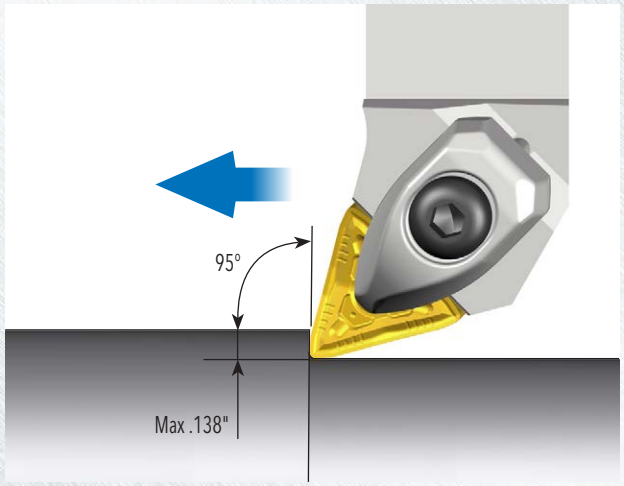


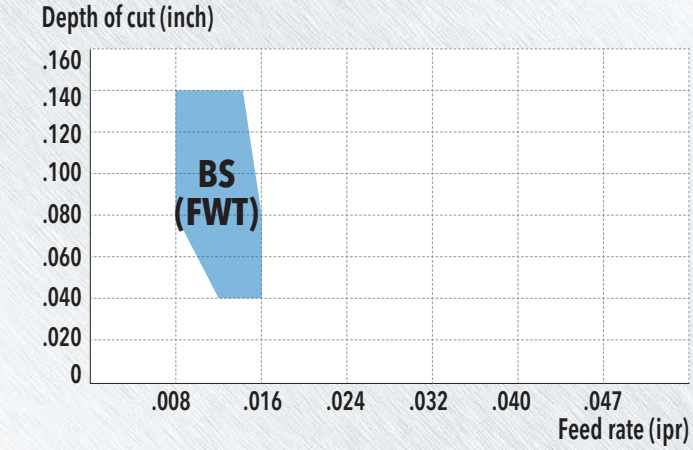


⚠ **CAUTION**
Be sure to check the limit of the depth of cut when backward machining. Inserts may break if the depth of cut is exceeded.

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

SUPERTURN™ -BS FORWARD TURNING

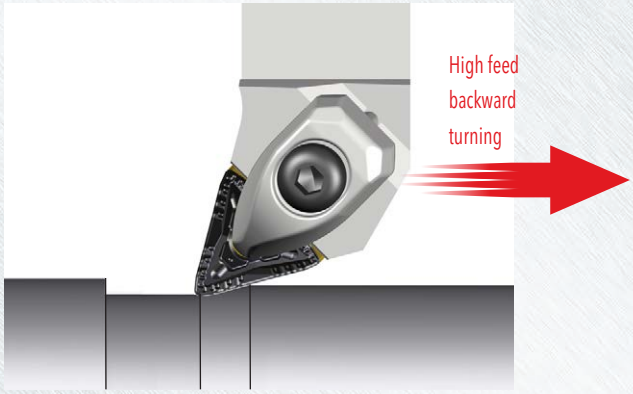




- Insert: TNMV 3.95.72-BS
- Cutting speed(V): 650 sfm
- Workpiece: SUS 304 (HB140~160)

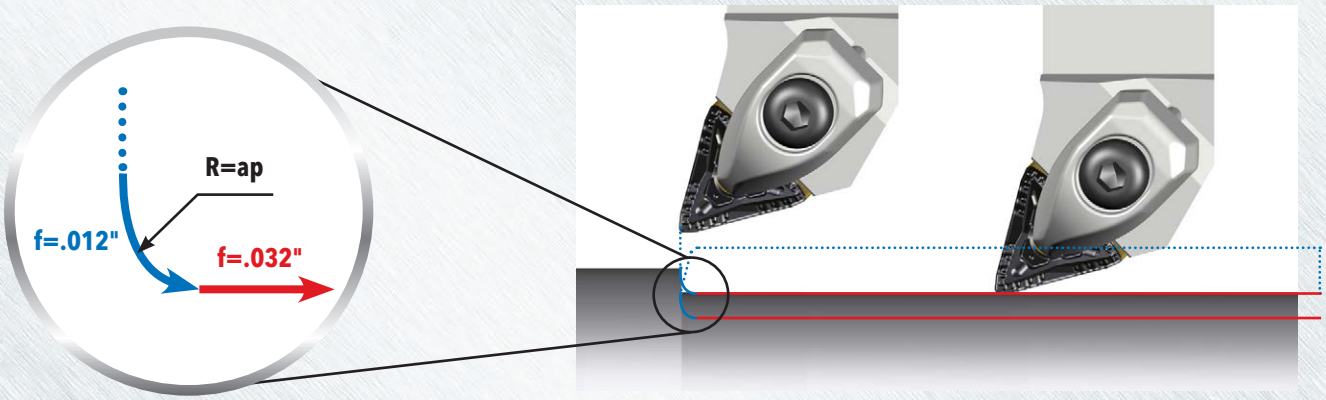
SUPERTURN™ RADIAL ENTRY RECOMMENDATIONS

- 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.

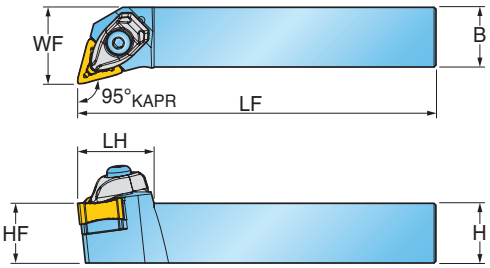


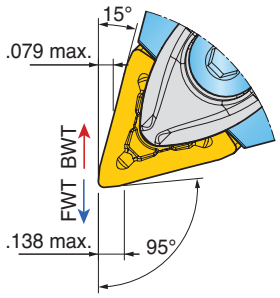
SUPERTURN™ RADIAL ENTRY TOOL PATH RECOMMENDATIONS

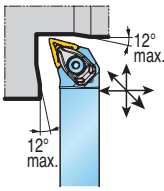
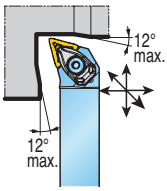
- Circular interpolation tool path radius must be equal to the depth of cut with .012 ipr feed rate. Circular interpolation prevents rapid load changes, insert chipping and tool damage. Also, as the cutting depth is kept constant, proper chip control is achieved.



SUPERTURNT™ SERIES TTQNR/L T-HOLDERS FOR TNMV INSERTS





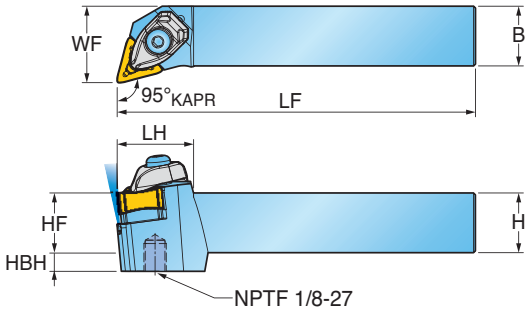
Approach Angle	Part Number	Dimension (inch)						Insert
		H Shank Height	HF Functional Height	B Shank Width	LF Functional Length	LH Head Length	WF Functional Width	
INCH								
TNMV 15°(BWT) 95°(FWT) 	**TTQNR/L 16-3.9D**	1.000	1.000	1.000	6.0	1.26	1.25	TNMV 3.95.72 (TNMV210908)
	TTQNR/L 20-3.9D	1.250	1.250	1.250	6.0	1.26	1.50	
METRIC (mm)								
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	

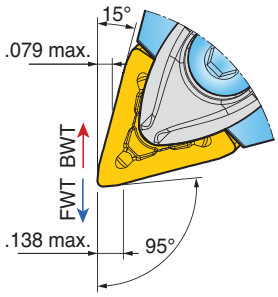
BWT: Backward turning
FWT: Forward turning

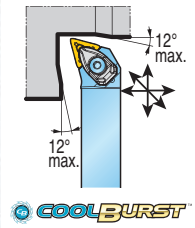
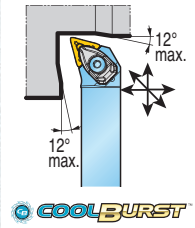
Spare Parts

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

SUPERTURNT™ SERIES TTQNR/L-TB T-HOLDERS FOR TNMV INSERTS WITH HIGH PRESSURE COOLANT





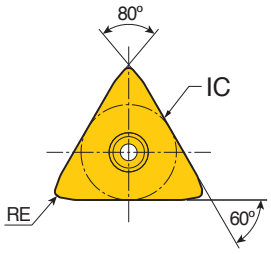
Approach Angle	Part Number	Dimension (inch)						Insert
		H Shank Height	HF Functional Height	B Shank Width	LF Functional Length	LH Head Length	WF Functional Width	
INCH								
TNMV 15°(BWT) 95°(FWT)  COOLBURST	**TTQNR/L 16-3.9D-TB**	1.000	1.000	1.000	6.0	1.26	1.25	TNMV 3.95.72 (TNMV210908)
	TTQNR/L 20-3.9D-TB	1.250	1.250	1.250	6.0	1.26	1.50	
METRIC (mm)								
TNMV 15°(BWT) 95°(FWT)  COOLBURST	**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

Spare Parts

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

SUPERTURNT™ SERIES TNMV-BM NEGATIVE TRIANGULAR INSERTS FOR STEEL



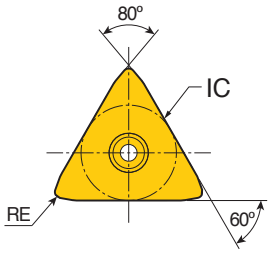
Size	Dimensions (inch)		
	IC Insert Size	S Thickness	RE Corner Radius
3.95.7	.492	.354	.031

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-.079	.024-.047	.020-.138	.008-.024	•	•

•: Standard items

For operating parameters, refer to pages 3 & 4.

SUPERTURNT™ 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	
	ap (inch)	Feed (ipr)	ap (inch)	Feed (ipr)	TT9225	TT9080
TNMV 3.95.72 (210908)-BS	.040-.138	.008-.016	.040-.138	.008-.016	•	•

•: Standard items

For operating parameters, refer to pages 3 & 4.