

NEW

Member IMC Group
Ingersoll
Cutting Tools

SPEED UP
HIGH SPEED & FEED

SUPERTURN²

DOUBLE-SIDED 4 CORNERS
NEGATIVE INSERT AND HOLDERS

**4 CUTTING EDGE INSERTS AND HOLDERS
FOR ALL-DIRECTIONAL TURNING INCLUDING
HIGH FEED BACKWARD TURNING**

- Excellent chip control •*
- Higher productivity •*
- Strong insert clamping force •*
- High-pressure coolant supplying •*
- Improved machining performance •*



Product Overview

A new SuperTurn² line for all-directional turning including high feed backward turning.

Conventional turning requires the tool to move in one direction, then be exchanged to go in the reverse direction. As a result, productivity decreases with the increased downtime resulting from changing the tool. Ingersoll has solved this problem with the release of an innovative line that covers both forward and backward turning with one tool. The innovative ZNMV inserts and holders are capable of effective turning for longitudinal and facing operations in both forward and backward directions.

The double-sided **SuperTurn²** inserts have the same axial and radial rake angle and capabilities as standard positive inserts when mounted to holders, allowing for low cutting force with double the number of cutting edges. In addition, it is a multi-functional, flexible line capable of all directional turning, profile and undercut machining without the required exchanging of holders.

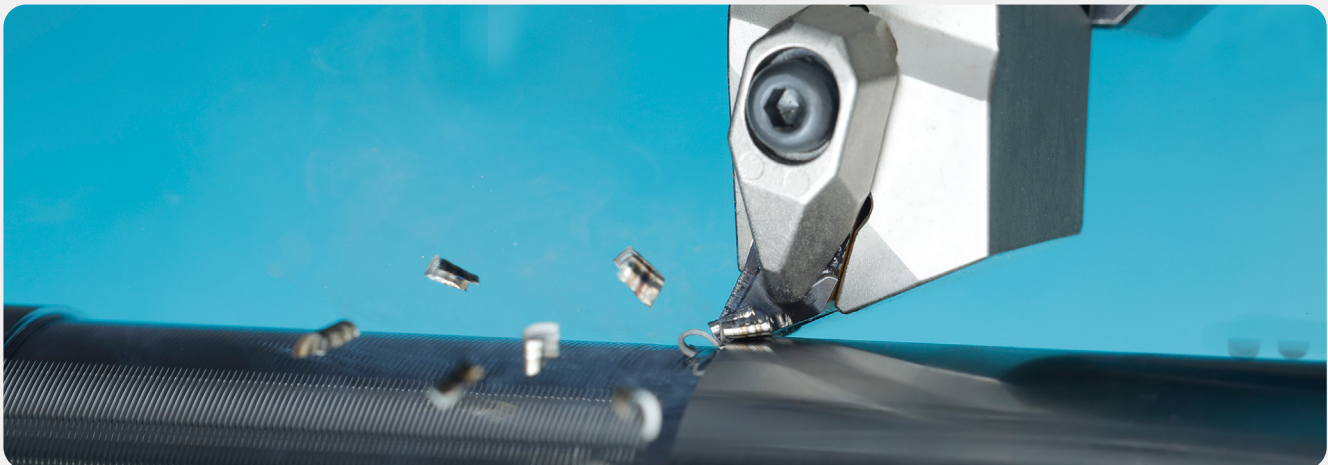
Moreover, the outstanding high feed feature is due to the small entering angle, and this enables higher productivity for both longitudinal turning and facing in the backward direction (BWT & BWF).

Using the same T-holder design, this holder is user-friendly and has strong clamping force. Inserts are available in three chip breaker types: BM for general purpose in steel, BS for super alloy and BF for finishing in steel, which are compatible with TZQNR/L holders.

They are an optimal replacement for the standard VBMT insert and SVVBN holder when using the BF insert and TZXNN holder, doubling the number of cutting edges.

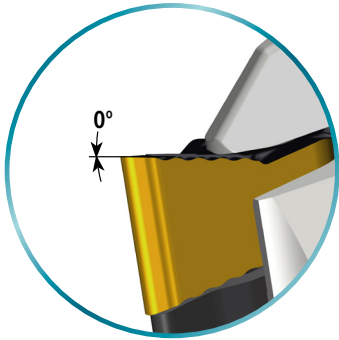
Advantages

- Double-sided 4 corners negative insert with optimized design
- The same axial and radial rake angle as standard positive inserts with low cutting force when mounted to holders
- Serrated cutting edge enables excellent chip control in variable depth of cut operations
- All directional turning and multiple applications including backward and forward longitudinal turning, face turning, profile and undercutting without exchanging the tool holder
 - Higher productivity due to reduced down time and reduced holder inventory
- High feed, backward longitudinal and face turning solution that maximizes productivity
- The same T-holder's simple clamping operation and strong clamping force
- High-pressure coolant supplying **CoolBurst** holders are available as standard holders
- TT8105, TT8115, TT8125 are bi-colored CVD coated grades for improved machining performance

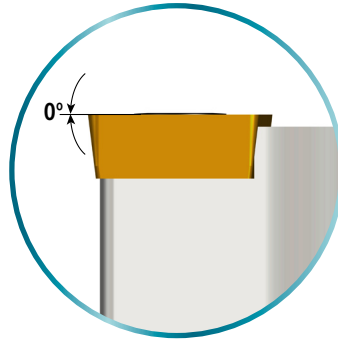


Technical Features

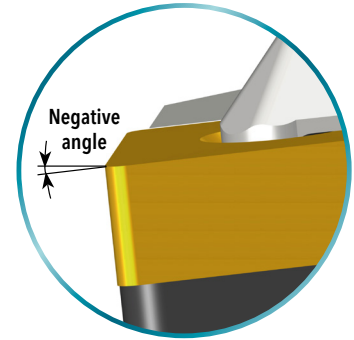
Same cutting edge angle as a standard positive insert when mounted to the holder



Cutting edge angle of a SuperTurn² insert



Cutting edge angle of a standard positive insert



Cutting edge angle of a standard negative insert

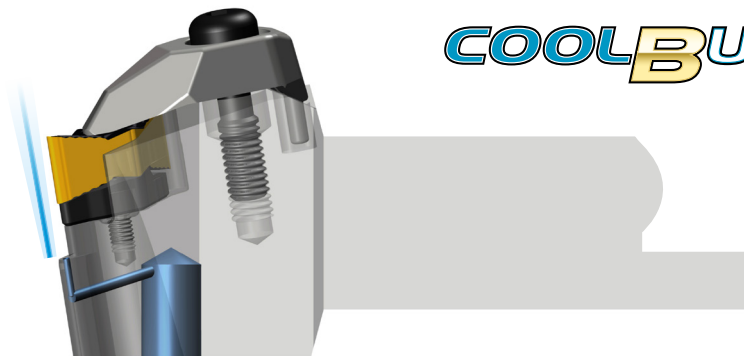
T-Holder clamping design



Strong 2 directional clamping force



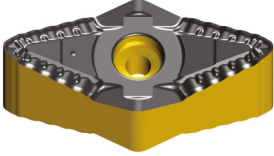
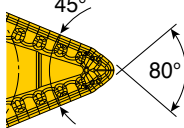
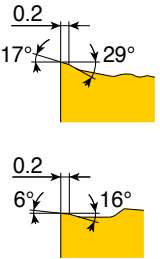
COOL-BURST high pressure coolant supply holder



Stable and long tool life

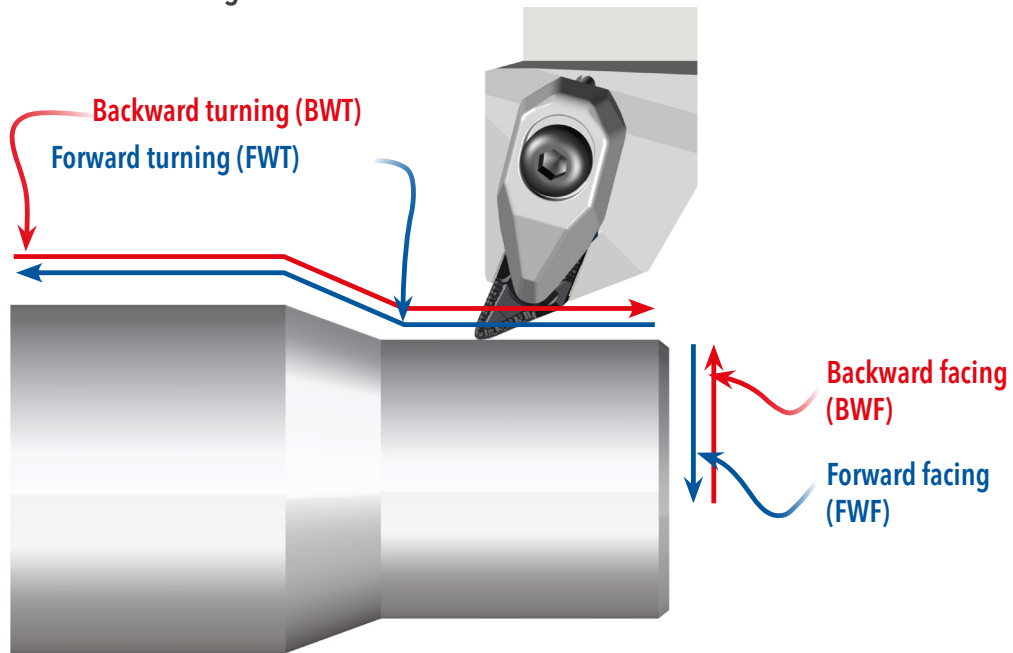
COOLBURST

ZNMV-BM insert geometry

Chip breaker	Cutting edge geometry	
 <p>For general purpose steel machining</p>		

Application range of ZNMV-BM insert

Application range of ZNMV-BM insert with TZQNL holder
 - Capable of all directional turning



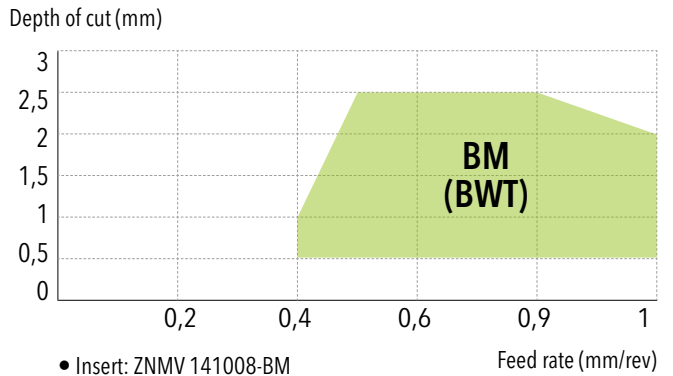
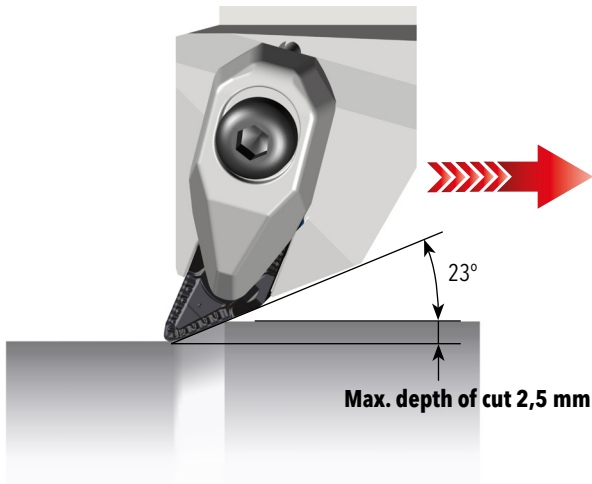
	BWT	BWF	FWT	FWF
f_{Min} (mm/rev)	0,4	0,4	0,2	0,2
$f_{Recom.}$ (mm/rev)	0,7	0,7	0,3	0,3
f_{Max} (mm/rev)	1,0	1,0	0,6	0,6
ap_{Min} (mm)	0,5	0,5	0,5	0,5
$ap_{Recom.}$ (mm)	1,5	1,0	1,5	1,5
ap_{Max} (mm)	2,5	1,2	2,0	2,0

- BWT (main machining) and FWT machining
- BWF (main machining) and FWF machining

- Capable of profile turning
- Capable of high feed turning in BWT and BWF

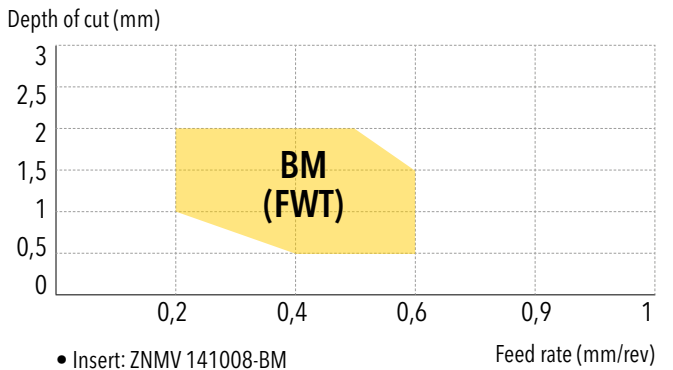
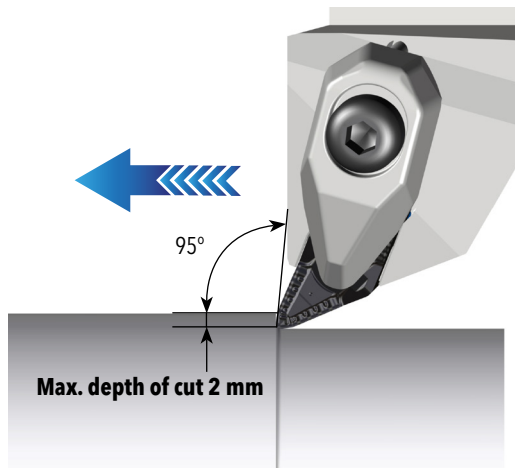
Application & chip control range

TZQNL holder's **backward** turning (BWT) and ZNMV-BM's chip control range



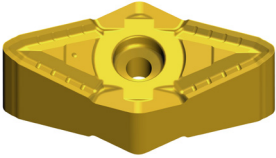
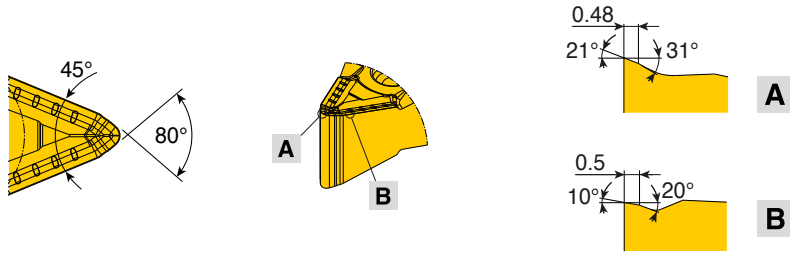
- Insert: ZNMV 141008-BM
- Cutting speed (V): 200 m/min
- Material: AISI 4140 (HB230-260)

TZQNL holder's **forward** turning (FWT) and ZNMV-BM's chip control range



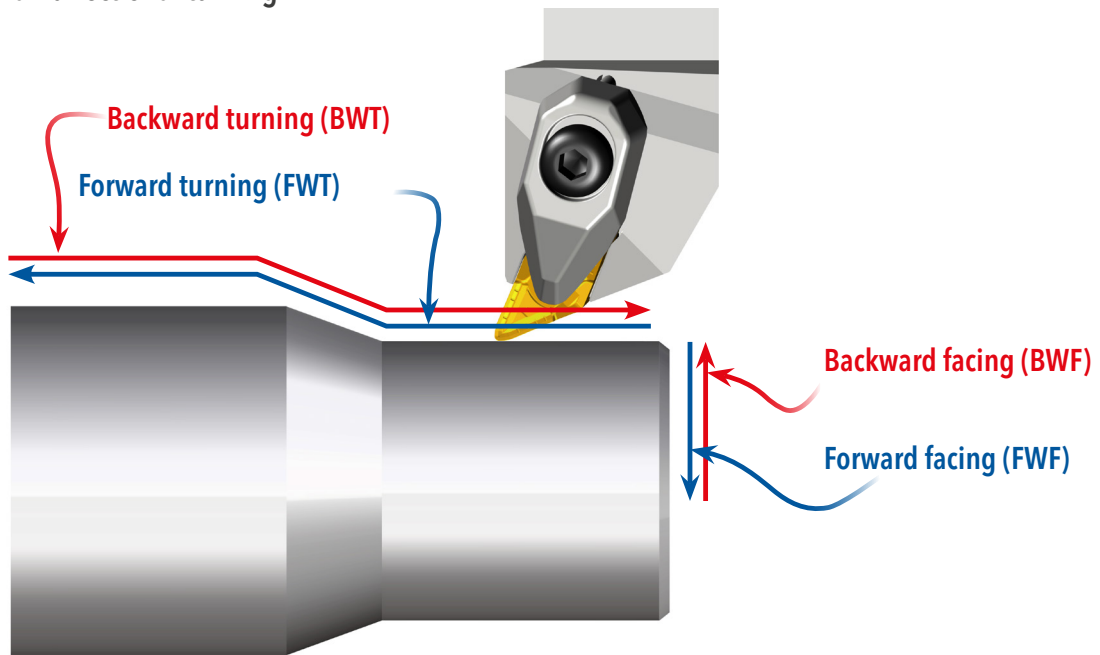
- Insert: ZNMV 141008-BM
- Cutting speed (V): 200 m/min
- Material: AISI 4140 (HB230-260)

ZNMV-BS insert geometry

Chip breaker	Cutting edge geometry
 <p>For heat-resistant super alloys</p>	

Application range of ZNMV-BS insert

Application range of ZNMV-BS insert with TZQNL holder
 - Capable of all directional turning

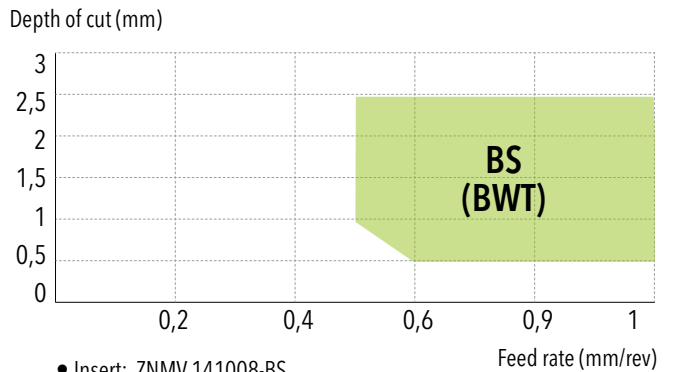
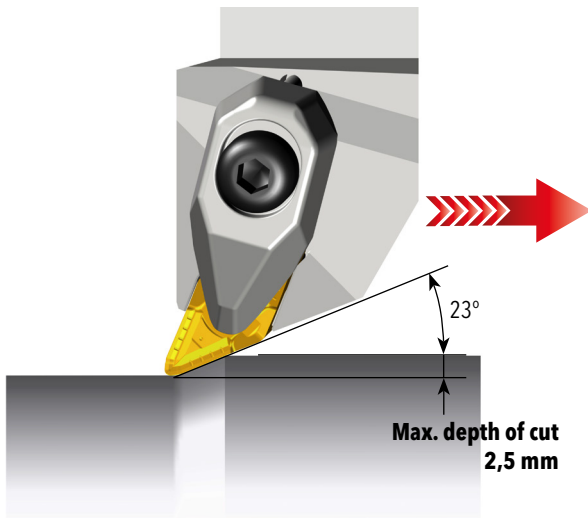


	BWT	BWF	FWT	FWF
f_{Min} (mm/rev)	0,5	0,5	0,2	0,2
$f_{Recom.}$ (mm/rev)	0,7	0,7	0,25	0,25
f_{Max} (mm/rev)	1,0	1,0	0,4	0,4
ap_{Min} (mm)	0,5	0,5	1,0	1,0
$ap_{Recom.}$ (mm)	1,5	1,0	1,2	1,2
ap_{Max} (mm)	2,5	1,2	2,0	2,0

- BWT (main machining) and FWT machining
- BWF (main machining) and FWF machining
- Capable of profile turning
- Capable of high feed turning in BWT and BWF

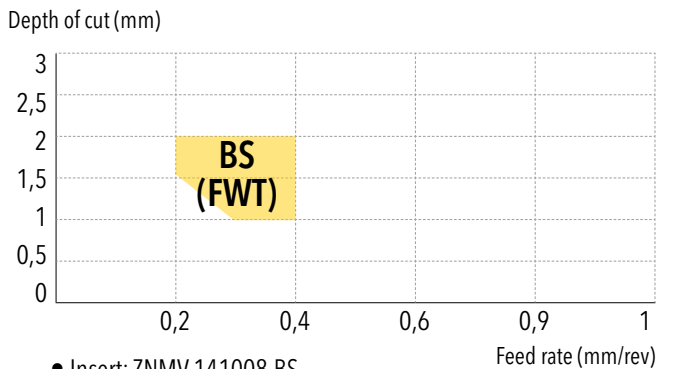
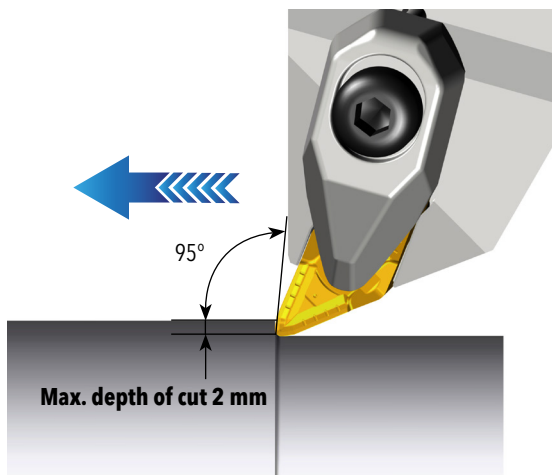
Application & chip control range

TZQNL holder's **backward** turning (BWT) and ZNMV-BS's chip control range



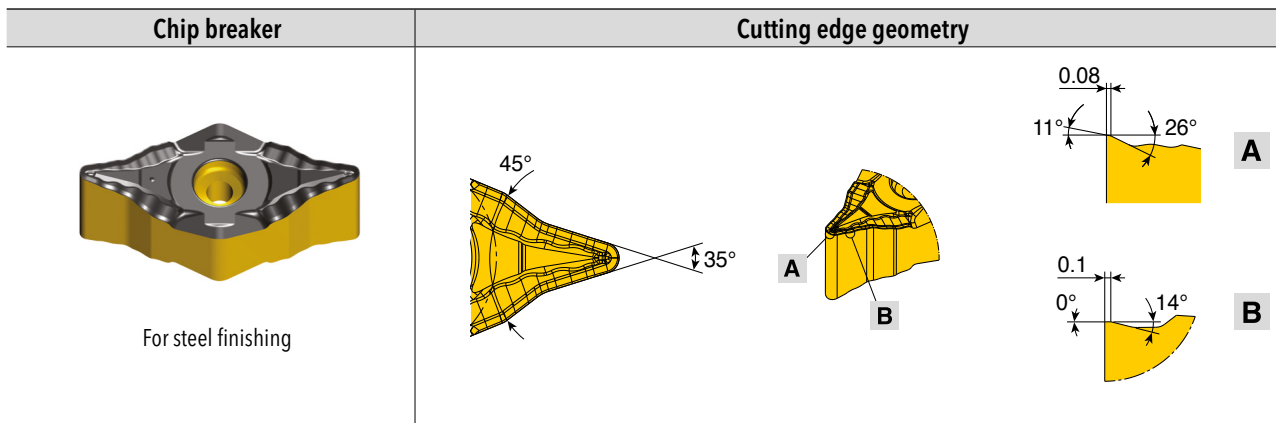
- Insert: ZNMV 141008-BS
- Cutting speed (V): 30m/min
- Material: INCONEL 718 (HB340-360)

TZQNL holder's **forward** turning (FWT) and ZNMV-BS's chip control range



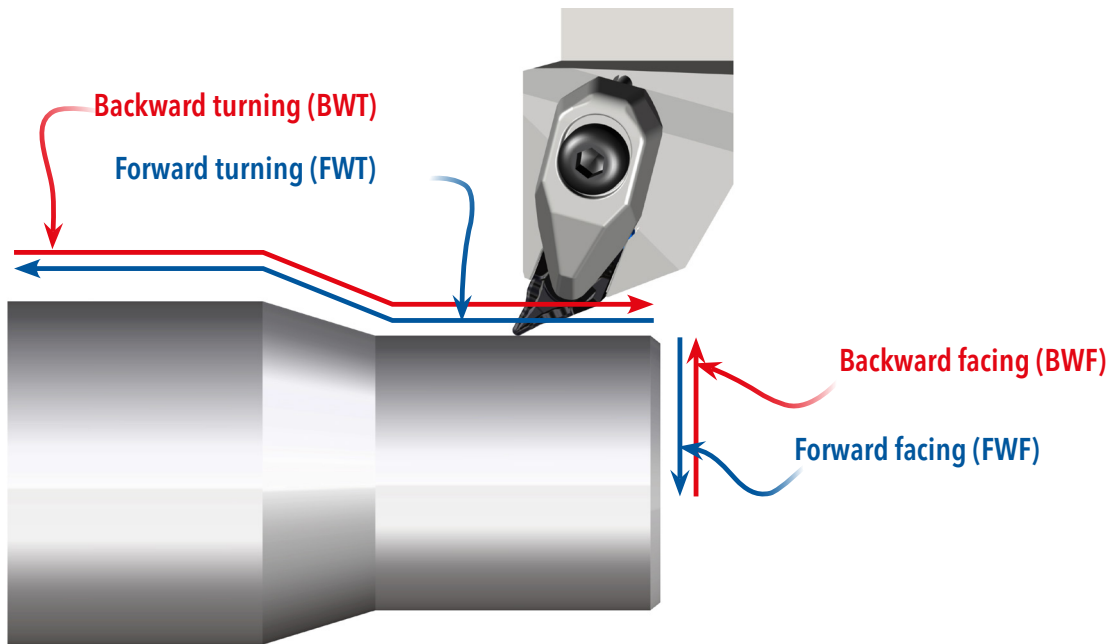
- Insert: ZNMV 141008-BS
- Cutting speed (V): 30m/min
- Material: INCONEL 718 (HB340-360)

ZNMV Y-BF insert geometry



Application range of ZNMV Y-BF insert

Application range of ZNMV Y-BF insert with TZQNL holder
 - Capable of all directional turning



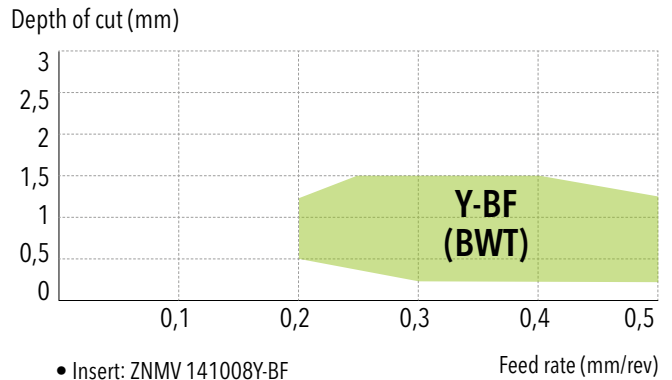
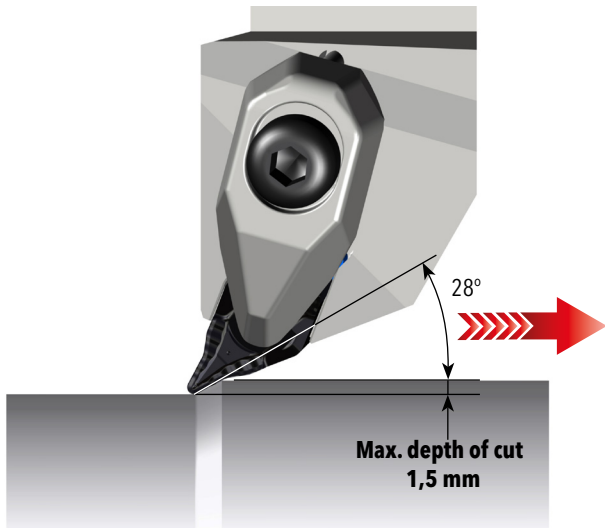
	BWT	BWF	FWT	FWF
f_{Min} (mm/rev)	0,2	0,2	0,2	0,2
$f_{Recom.}$ (mm/rev)	0,4	0,4	0,25	0,25
f_{Max} (mm/rev)	0,5	0,5	0,35	0,35
ap_{Min} (mm)	0,25	0,25	0,25	0,25
$ap_{Recom.}$ (mm)	1,2	1	0,6	0,6
ap_{Max} (mm)	1,5	1,2	1	1

- BWT (main machining) and FWT machining
- BWF (main machining) and FWF machining

- Capable of undercut and profile turning
- Capable of high-feed turning in BWT and BWF

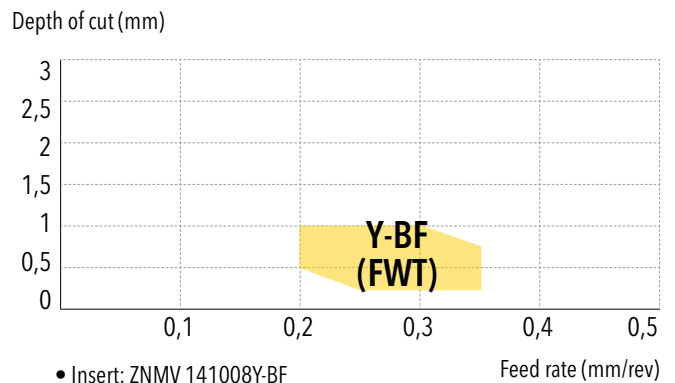
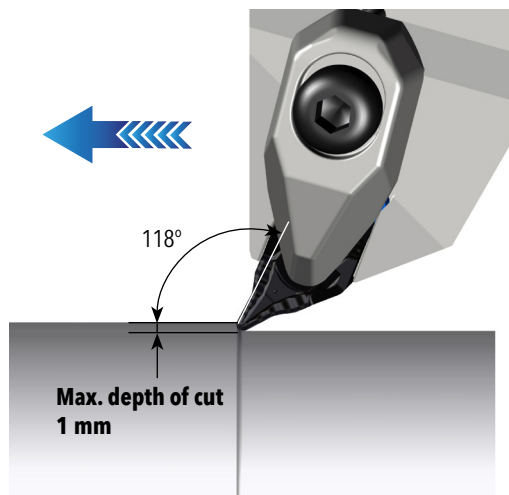
Application & chip control range

TZQNL holder's **backward** turning (BWT) and ZNMV Y-BF's chip control range



- Insert: ZNMV 141008Y-BF
- Cutting speed (V): 200 m/min
- Material: AISI 4140 (HB230-260)

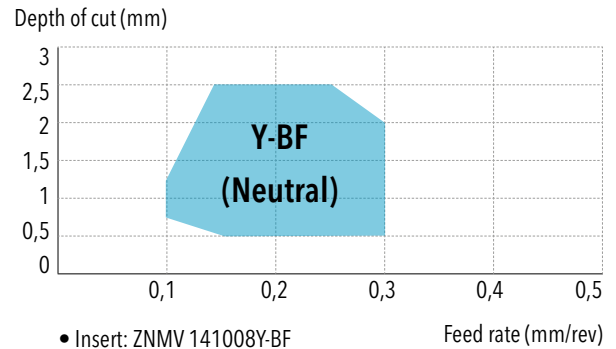
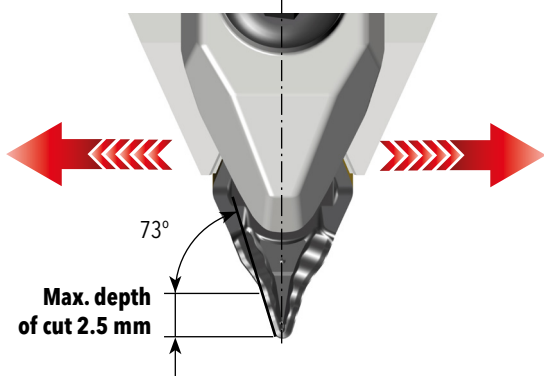
TZQNL holder's **forward** turning (FWT) and ZNMV Y-BF's chip control range



- Insert: ZNMV 141008Y-BF
- Cutting speed (V): 200 m/min
- Material: AISI 4140 (HB230-260)

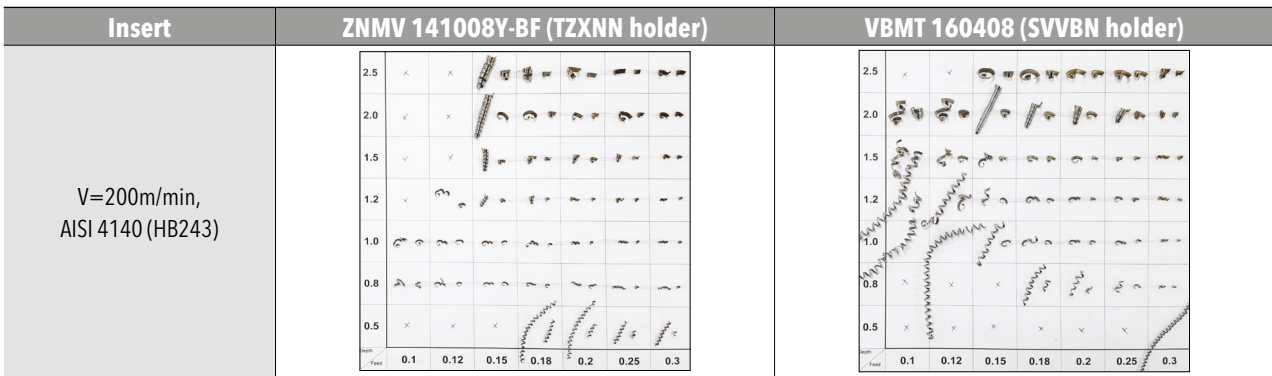
Application & chip control range

TZXNN holder's left and right bi-directional turning and ZNMV Y-BF's chip control



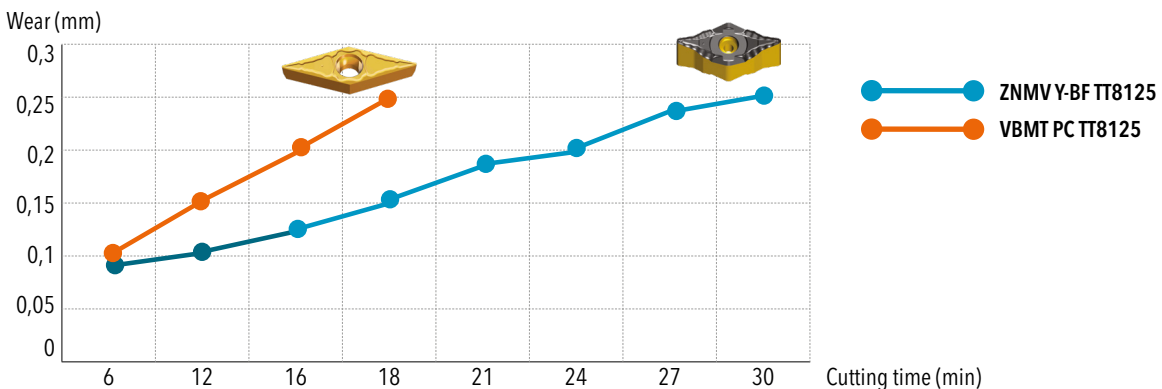
- Insert: ZNMV 141008Y-BF
- Cutting speed (V): 200 m/min
- Material: AISI 4140 (HB230-260)

Chip control comparison



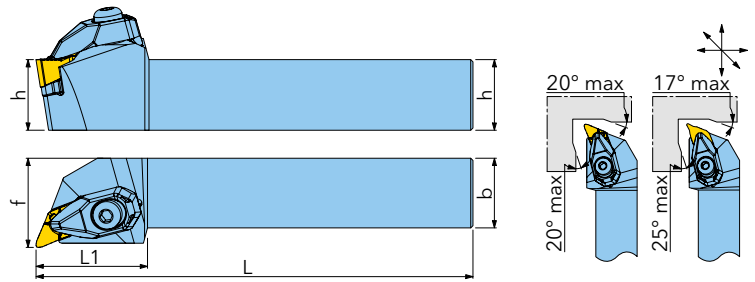
Wear resistance comparison

V=300 m/min, ap=1,5 mm, f=0,2 mm/rev, AISI 4140 (HB245)



SUPERTURN^Z TZQNR/L

EXTERNAL TOOL HOLDER WITH T-TYPE CLAMPING SYSTEM FOR NEGATIVE ZNMV INSERT



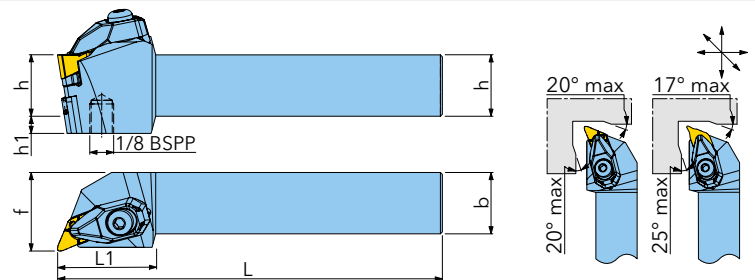
Designation	L	L1	f	h	b	kg
TZQNL 2525 M1410	150	40	32	25	25	0,83
TZQNL 3232 P1410	170	40	40	32	32	1,41
TZQNR 2525 M1410	150	40	32	25	25	0,83
TZQNR 3232 P1410	170	40	40	32	32	1,41

Designation	①	②	③	④	⑤	⑥	⑦	
TZQNL 2525 M1410	ZNMV_1410_	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083/HG	LW 4	T 10
TZQNL 3232 P1410	ZNMV_1410_	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083/HG	LW 4	T 10
TZQNR 2525 M1410	ZNMV_1410_	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083/HG	LW 4	T 10
TZQNR 3232 P1410	ZNMV_1410_	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083/HG	LW 4	T 10

① = Clamp ② = Clamp screw ③ = Spring ④ = Shim ⑤ = Clamp screw ⑥ = Wrench ⑦ = Wrench

SUPERTURN^Z TZQNR/L-TB

EXTERNAL TOOL HOLDER WITH T-TYPE CLAMPING SYSTEM WITH HIGH PRESSURE COOLING FOR NEGATIVE ZNMV INSERT



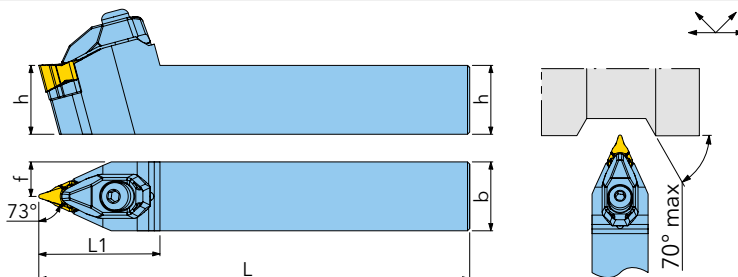
Designation	L	L1	f	h	h1	b	kg	IK
TZQNL 2525 M1410-TB	150	40	32	25	7	25	0,88	✓
TZQNL 3232 P1410-TB	170	40	40	32	-	32	1,41	✓
TZQNR 2525 M1410-TB	150	40	32	25	7	25	0,88	✓
TZQNR 3232 P1410-TB	170	40	40	32	-	32	1,41	✓

Designation	①	②	③	④	⑤	⑥	⑦	
TZQNL 2525 M1410-TB	ZNMV_1410_	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083/HG	LW 4	T 10
TZQNL 3232 P1410-TB	ZNMV_1410_	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083/HG	LW 4	T 10
TZQNR 2525 M1410-TB	ZNMV_1410_	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083/HG	LW 4	T 10
TZQNR 3232 P1410-TB	ZNMV_1410_	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083/HG	LW 4	T 10

① = Clamp ② = Clamp screw ③ = Spring ④ = Shim ⑤ = Clamp screw ⑥ = Wrench ⑦ = Wrench

SUPERTURN^Z TZXNN

EXTERNAL TOOL HOLDER WITH T-TYPE CLAMPING SYSTEM FOR NEGATIVE 35° ZNMV -Y INSERT



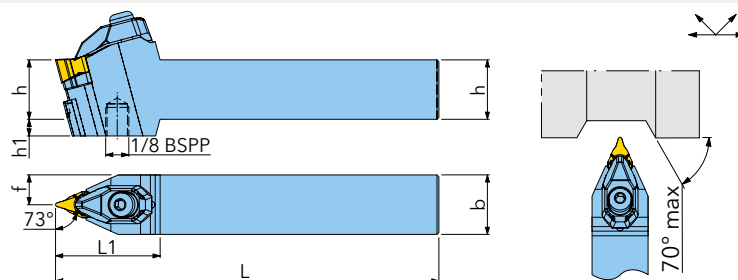
Designation	L	L1	f	h	b	kg
TZXNN 2525 M1410	150	44	12,5	25	25	0,75
TZXNN 3232 P1410	170	44	16	32	32	1,31

Designation								
TZXNN 2525 M1410	ZNMV 1410_Y-BF	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083/HG	L-W 4	T 10
TZXNN 3232 P1410	ZNMV 1410_Y-BF	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083/HG	L-W 4	T 10

① = Clamp ② = Clamp screw ③ = Spring ④ = Shim ⑤ = Clamp screw ⑥ = Wrench ⑦ = Wrench

SUPERTURN^Z TZXNN -TB

EXTERNAL TOOL HOLDER WITH T-TYPE CLAMPING SYSTEM WITH HIGH PRESSURE COOLING FOR NEGATIVE 35° ZNMV -Y INSERT



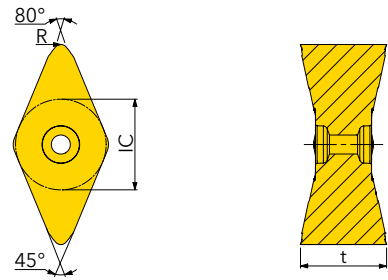
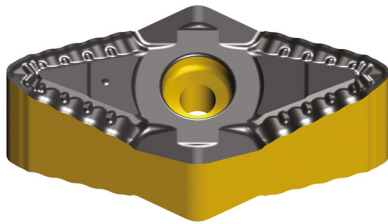
Designation	L	L1	f	h	b	kg	IK
TZXNN 2525 M1410-TB	150	44	12,5	25	25	0,78	✓
TZXNN 3232 P1410-TB	170	44	16	32	32	1,31	✓

Designation								
TZXNN 2525 M1410-TB	ZNMV 1410_Y-BF	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083/HG	L-W 4	T 10
TZXNN 3232 P1410-TB	ZNMV 1410_Y-BF	DLM 3.3Z-NV	DLS 5	DSP 5	TSZ 140310	TS 35083/HG	L-W 4	T 10

① = Clamp ② = Clamp screw ③ = Spring ④ = Shim ⑤ = Clamp screw ⑥ = Wrench ⑦ = Wrench

SUPERTURN^Z ZNMV BM

NEGATIVE 80° RHOMBIC INSERT

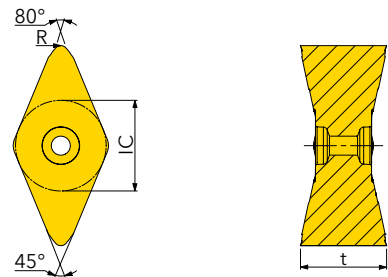
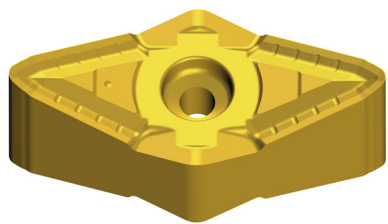


Designation	f (min/max)	ap (min/max)	t	R	IC	Grade	TT8105	TT8115	TT8125
ZNMV 141008-BM	0,80 (0,40/1,00)	1,0 (0,5/2,5)	10,0	0,8	10,5		<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

= P
 = M
 = K
 = N
 = S
 = H

SUPERTURN^Z ZNMV BS

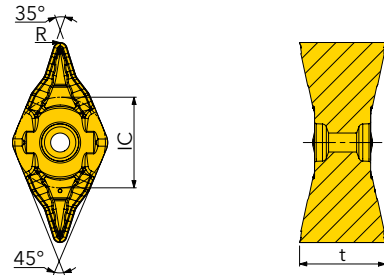
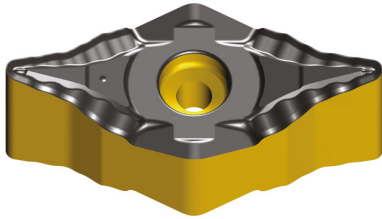
NEGATIVE 80° RHOMBIC INSERT



Designation	f (min/max)	ap (min/max)	t	R	IC	Grade	TT3005	TT3010	TT3020
ZNMV 141008-BS	0,40 (0,20/1,00)	1,0 (0,5/2,5)	10,0	0,8	10,0		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

= P
 = M
 = K
 = N
 = S
 = H

NEGATIVE 35° RHOMBIC INSERT



Designation	f (min/max)	ap (min/max)	t	R	IC	Grade	TT8105	TT8115	TT8125
ZNMV 141008Y-BF	0,30 (0,20/0,50)	0,50 (0,25/1,50)	10,0	0,8	10,5		<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>

= P
 = M
 = K
 = N
 = S
 = H

A large, empty rectangular box with rounded corners and a light gray border, intended for taking notes.

Ingersoll Cutting Tools

Marketing & Technology

Germany

Ingersoll Werkzeuge GmbH

Main Office:

Kalteiche-Ring 21-25

35708 Haiger, Germany

Telefon: +49 (0)2773-742-0

Telefax: +49 (0)2773-742-812

E-Mail: info@ingersoll-imc.de

Internet: www.ingersoll-imc.de

Office South:

Florianstraße 13-17

71665 Vaihingen-Horrheim, Germany

Telefon: +49 (0)7042-8316-0

Telefax: +49 (0)7042-8316-26

E-Mail: horrheim@ingersoll-imc.de

Office Wulften:

Steinstraße 11

37199 Wulften

Telefon: +49 (0)556-99 55 98-0

Telefax: +49 (0)556-99 55 98-25

E-Mail: wulften@ingersoll-imc.de

USA

Ingersoll Cutting Tools

845 S. Lyford Road

Rockford, Illinois 61108-2749, USA

Telefon: +1-815-387-6600

Telefax: +1-815-387-6968

E-Mail: info@ingersoll-imc.com

Internet: www.ingersoll-imc.com

France

Ingersoll France

22, rue Albert Einstein

F-77420 CHAMPS-sur-MARNE

Telefon: +33 (0) 1 64 68 45 36

Telefax: +33 (0) 1 64 68 45 24

E-Mail: info@ingersoll-imc.fr

Internet: www.ingersoll-imc.fr

SUPERTURN²