



**ISO Insert Styles:**  
VBMT 331/332  
VNMG 331/332

**Grades:**  
CT3000  
PV3010  
TT8115  
TT8125

**Features:**

- Narrow chip breaker design for optimal chip control
- Helix geometry and high positive cutting edge for low cutting force
- Variable cutting edge design ensures optimal chip control during pulley and ball stud machining



## FX Chip Breaker

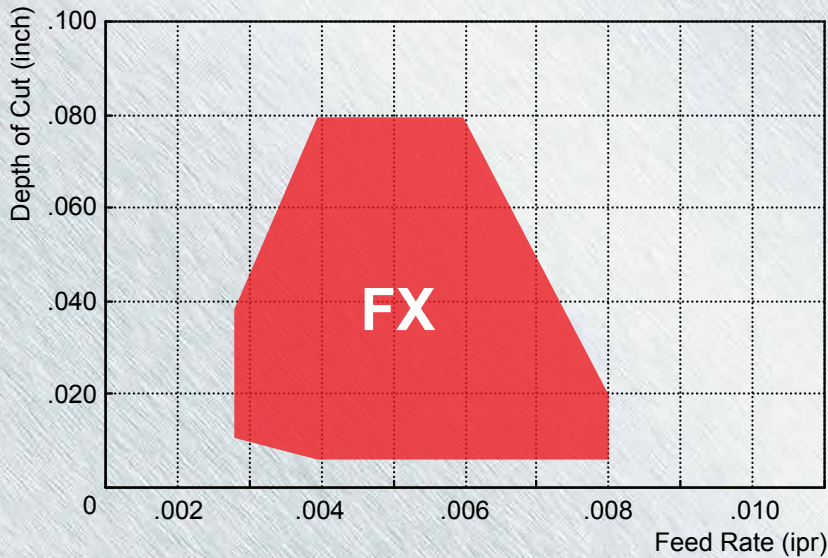
Ingersoll has launched a new FX chip breaker that takes ball stud and pulley machining to a new level.

The FX chip breaker features a high positive cutting edge and helix geometry that reduces most of the cutting forces related to ball stud and pulley machining. The narrow chip breaker design and variable "wave" cutting edge promotes optimal chip control during both linear and profile cuts.

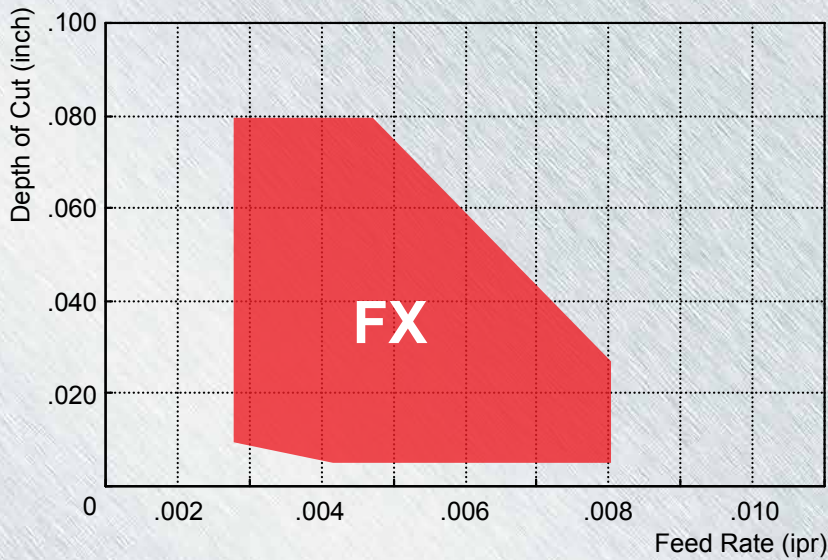
This chip breaker is available in single sided (VBMT) and double sided (VNMG) style inserts, with .016" and .031" nose radii. These inserts can be mounted on ISO standard holders for improved economy, productivity and surface finish.



## CHIP BREAKER RANGE


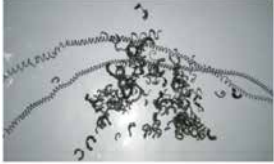


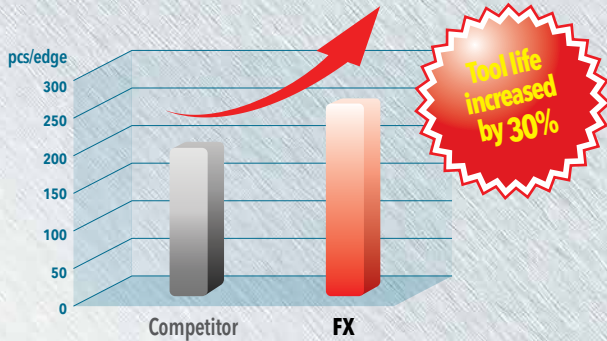
- Insert : VNMG 160408(332) FX
- Cutting speed (V) : 650 sfm
- Material : 0.45% Carbon Steel (HB200~230)





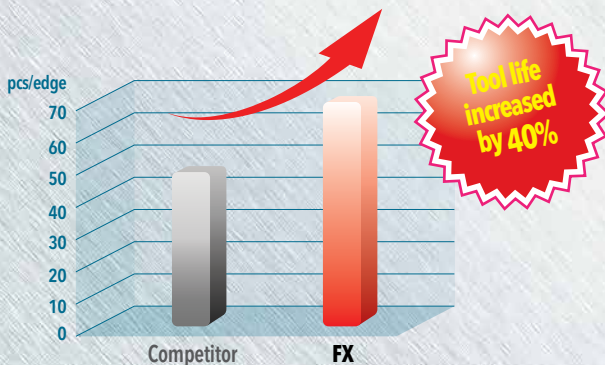
- Insert : VBMT 160404(331) FX
- Cutting speed (V) : 650 sfm
- Material : 0.45% Carbon Steel (HB200~230)

## TEST RESULTS



Case Story 1	Competitor	Ingersoll
Workpiece		Ball Stud
Material		0.20% Carbon Steel
Cutting speed (V)		770 sfm
Feedrate (f)		0.009" ipr
Depth of cut (ap)		0.040" - 0.060"
Operation		External Turning
<b>Tool-life</b>	VNMG 332 P15 Grade 200pcs/edge	VNMG 332 <b>FX</b> TT8115 260 pcs/edge
Chip Shape		



Case Story 2	Competitor	Ingersoll
Workpiece		Pulley
Material		0.20% Carbon Steel
Cutting speed (V)		1370 sfm
Feedrate (f)		0.010" - 0.012" ipr
Depth of cut (ap)		0.060"
Operation		External Turning
<b>Tool-life</b>	VNMG 332 P15 Grade 50pcs/edge	VNMG 332 <b>FX</b> TT8115 70 pcs/edge
Chip Shape		



## FX CHIPBREAKERS

Insert	ANSI Number	feed (ipr)	DOC (inch)	Grade	CT3000	PV3010	TT8115	TT8125
	VBMT 331 FX	.002 - .008	.008 - .080		•		•	•
	VBMT 332 FX	.003 - .008	.008 - .080		•		•	•
	VNMG 331 FX	.002 - .008	.008 - .080		•		•	•
	VNMG 332 FX	.003 - .008	.008 - .080		•	•	•	•

\* Inserts can be mounted on ISO standard holders.  
 • Marked as Standard Items.

