

PCD inserts

**DX110**

Tungaloy Report No. 351S1-G

TurnLine

# PCD tipped turning inserts with NS chipbreaker for higher productivity and secure machining

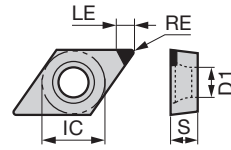




Positive type

Rhombic, 55°  
with hole  
Positive 7°

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloy
H	Hard material



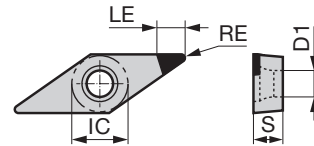
Shape	Designation	DX110	Dimension (mm)					Edge prep.			Chipbreaker
			No. of corners	LE	RE	IC	S	D1	Sharp edge		
	<b>DCGT**-NS</b> 1QP-DCGT070204-NS	●	1	3	0.4	6.35	2.38	2.8	○		○
	1QP-DCGT11T304-NS	●	1	3	0.4	9.525	3.97	4.4	○		○
	1QP-DCGT11T308-NS	●	1	3	0.8	9.525	3.97	4.4	○		○

● : New product

Positive type

Rhombic, 35°  
with hole  
Positive 7°

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloy
H	Hard material



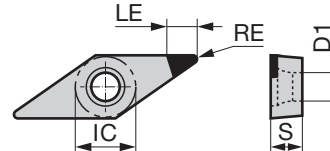
Shape	Designation	DX110	Dimension (mm)					Edge prep.			Chipbreaker
			No. of corners	LE	RE	IC	S	D1	Sharp edge		
	<b>VCGT**-NS</b> 1QP-VCGT160404-NS	●	1	3	0.4	9.525	4.76	4.4	○		○
	1QP-VCGT160408-NS	●	1	3	0.8	9.525	4.76	4.4	○		○

● : New product

Positive type

Rhombic, 35°  
with hole  
Positive 5°

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloy
H	Hard material



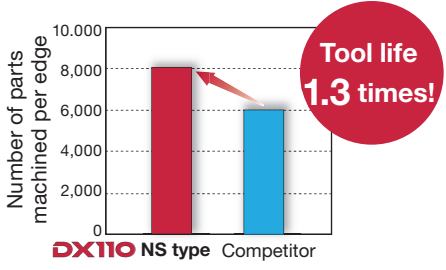
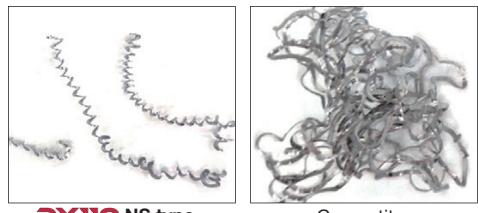
Shape	Designation	DX110	Dimension (mm)					Edge prep.			Chipbreaker
			No. of corners	LE	RE	IC	S	D1	Sharp edge		
	<b>VBGT**-NS</b> 1QP-VBGT160404-NS	●	1	3	0.4	9.525	4.76	4.4	○		○
	1QP-VBGT160408-NS	●	1	3	0.8	9.525	4.76	4.4	○		○

● : New product

## STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Grades	Cutting speed Vc (m/min)	Depth of cut ap (mm)	Feed f (mm/rev)
<b>N</b>	Aluminum alloys (Si < 12%)	DX110	1,500 (500 - 2,500)	0.5 (0.1 - 2)	0.1 (0.05 - 0.3)
	Copper and bronze	DX110	800 (500 - 1,500)	0.5 (0.1 - 2)	0.1 (0.05 - 0.3)


## PRACTICAL EXAMPLES

Workpiece type		Aluminum alloy die cast	Aluminum alloy pipe
Insert		1QP-VCGT160404-NS	1QP-DCGT11T304-NS
Grade		DX110	DX110
Workpiece material		A2011 / AlCu6BiPb	A5052S / AlMg2.5
Cutting conditions			
Cutting speed: Vc (m/min)		1,400	400
Feed : f (mm/rev)		0.08	0.1
Depth of cut : ap (mm)		0.08	1
Coolant		Wet	Wet
Results		 <p><b>DX110 NS type</b> Competitor</p> <p><b>DX110 with NS chipbreaker provided 1.3x tool life over the competitor with superior chip control.</b></p>	 <p><b>DX110 NS type</b> Competitor</p> <p><b>DX110 with NS chipbreaker eliminated chip entanglement, which was the case with the competitor's PCD insert with no chipbreaker.</b></p>



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