



Aluminum turning chip breaker

New

TA & AK

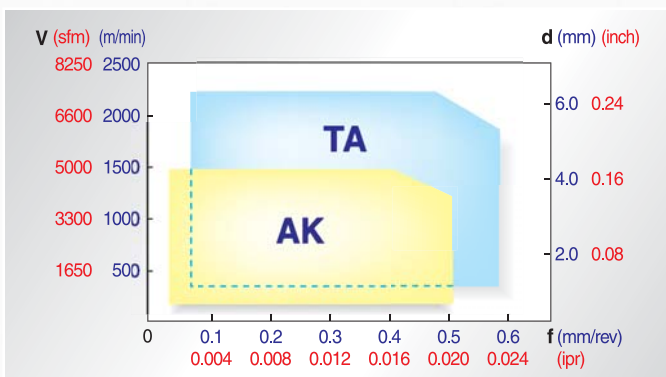


Feature

- **TA C/B** with high stability of cutting edge secures great performance in high speed and intermittent machining.
- **AK C/B** with high rake angle and low resistance cutting type secures long tool life in continuous cutting of aluminum turning.



Application area

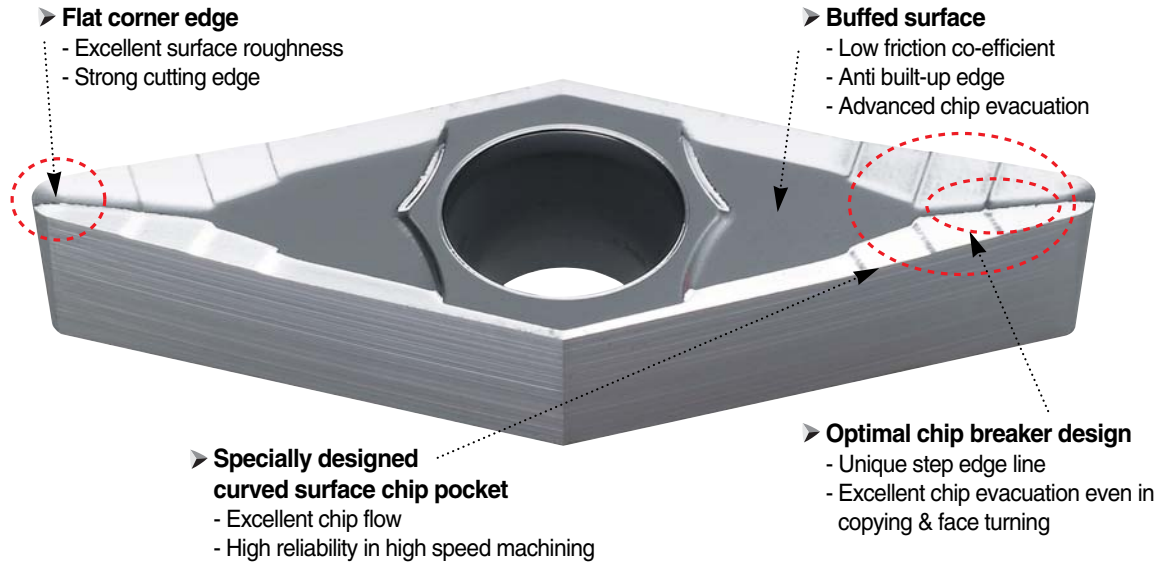


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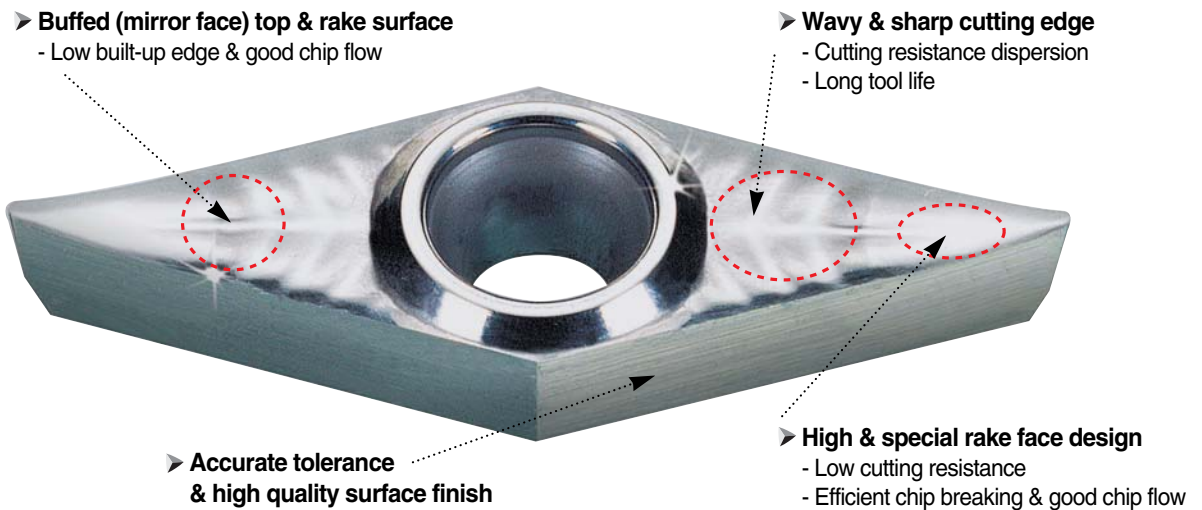
New TA & AK

TA C/B

New



AK C/B



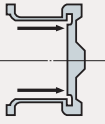
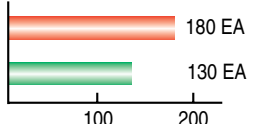
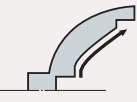
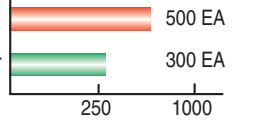

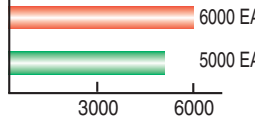
Comparison of TA & AK application

Category	TA		AK	
Application range	Medium & roughing		Finish (medium)	
Condition	Interrupted		Continuous	
V	High speed		Medium speed, High speed of finish	
	Max. 2200 m/min	Max. 7300 sfm	Max. 1500 m/min	Max. 5000 sfm
f	Max 0.6 mm/rev	Max. 0.024 ipr	Max. 0.5 mm/rev	Max. 0.020 ipr
d	Deep		Shallow	
	Max. 6 mm	Max. 0.24 inch	Max. 4 mm	Max. 0.16 inch

Aluminum turning chip breaker

New **TA & AK**

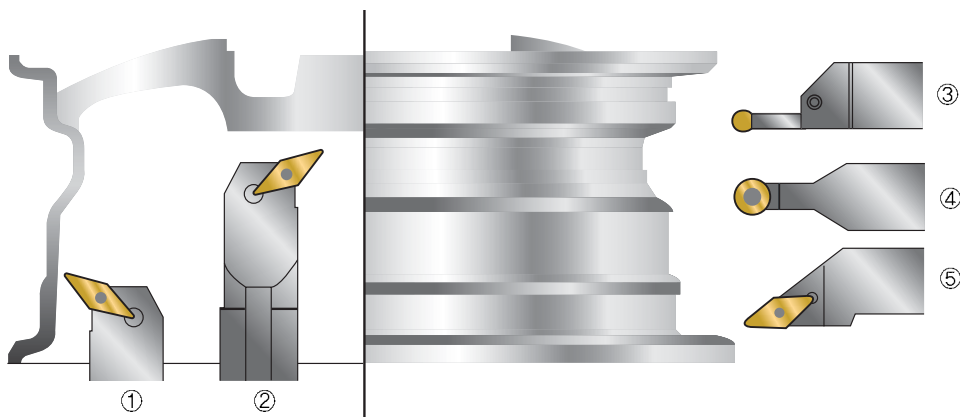
Aluminum C/B machining examples

	Material	Insert designation	Cutting condition			Result
			Unit : pieces / corner			
	Aluminium wheel	VCGT 160408-TA 332-TA	V	2200 m/min	7260 sfm	
		H01	f	0.25 mm/rev	0.01 ipr	
		d	2.0 mm	0.08 inch		
	Cap (Al-Si alloy)	CCGT 09T308-AK 32.52-AK	V	500 m/min	1650 sfm	
		H01	f	0.16 mm/rev	0.0064 ipr	
		d	2.0 mm	0.08 inch		
	Piston (Aluminium)	VCGT 160404-AK 331-AK	V	120 m/min	400 sfm	
		H01	f	0.15 mm/rev	0.006 ipr	
		d	1.5 mm	0.06 inch		

Available grades for TA & AK

Grade		Features	Note
H01	Uncoated carbide + buffed top face	H01 is exclusive uncoated carbide for aluminum turning and milling operation. H01 guarantees excellent performance thanks to its mirroring surface and AK, TA chip breaker.	
ND1000	Diamond coating	ND 1000 grade can be applied to aluminum alloy which contains 7~14% silicon. ND 1000 guarantees 10 times longer tool life than uncoated carbide grade.	
PD1000	DLC(Diamond Like Carbon)	PD 1000 grade can be applied to aluminum alloy which contains 1~7% silicon. PD 1000 guarantees 10 times longer tool life and better surface roughness than uncoated carbide grade.	
PC230	PVD(TiAlN) coating	PC230 has ideal combination of special substrate and PVD(TiAlN) coating film.	

Aluminum wheel machining examples



➤ Insert application

① VCGT1103□□-AK
④ RCGT10T3M0-AK

② VCGT1604□□-TA
⑤ VCGT2205□□-AK

③ MRGN□□□-A

TA & AK list and recommended cutting condition

Designation		AK								TA							
ISO	ASA	Available grade				Cutting condition (grade : H01)				Available grade				Cutting condition (grade : H01)			
		H01	ND1000	PD1000	PC230	f (mm/rev)	D.O.C (mm)	f (ipr)	D.O.C (inch)	H01	ND1000	PD1000	PC230	f (mm/rev)	D.O.C (mm)	f (ipr)	D.O.C (inch)
CCGT060202-□□	21.50.5	●	○	○		0.10(0.05-0.25)	1.0(0.3-2.5)	0.004(0.002-0.01)	0.04(0.012-0.1)								
CCGT060204-□□	21.51	●	○	○		0.10(0.05-0.25)	1.0(0.3-2.5)	0.004(0.002-0.01)	0.04(0.012-0.1)								
CCGT060208-□□	21.52	●	○	○		0.10(0.05-0.25)	1.0(0.3-2.5)	0.004(0.002-0.01)	0.04(0.012-0.1)								
CCGT09T302-□□	32.50.5	●	○	○		0.10(0.05-0.25)	1.0(0.3-3.5)	0.004(0.002-0.01)	0.04(0.012-0.14)								
CCGT09T304-□□	32.51	●	○	○		0.15(0.05-0.25)	1.0(0.3-3.5)	0.006(0.002-0.01)	0.04(0.012-0.14)	●	○	○		0.15(0.05-0.30)	1.0(0.3-4.0)	0.006(0.002-0.012)	0.04(0.012-0.16)
CCGT09T308-□□	32.52	●	○	○		0.15(0.05-0.25)	1.0(0.3-3.5)	0.006(0.002-0.01)	0.04(0.012-0.14)	●	○	○		0.15(0.05-0.30)	1.0(0.3-4.0)	0.006(0.002-0.012)	0.04(0.012-0.16)
CCGT120402-□□	430.5	●	○	○		0.15(0.05-0.25)	1.0(0.3-6.0)	0.006(0.002-0.01)	0.04(0.012-0.24)								
CCGT120404-□□	431	●	○	○		0.15(0.05-0.25)	1.5(0.3-6.0)	0.006(0.002-0.01)	0.06(0.012-0.24)	●	○	○		0.15(0.05-0.30)	1.5(0.5-7.0)	0.006(0.002-0.012)	0.06(0.02-0.28)
CCGT120408-□□	432	●	○	○		0.15(0.05-0.30)	1.5(0.3-6.0)	0.006(0.002-0.012)	0.06(0.012-0.24)	●	○	○		0.20(0.05-0.40)	1.5(0.5-7.0)	0.008(0.002-0.016)	0.06(0.02-0.28)
CCGT120412-□□	433	●	○	○		0.15(0.05-0.35)	1.0(0.3-6.0)	0.006(0.002-0.014)	0.04(0.012-0.24)	●	○	○		0.20(0.05-0.50)	1.5(0.5-6.0)	0.008(0.002-0.02)	0.06(0.02-0.24)
DCGT070202-□□	21.50.5	●	○	○		0.15(0.05-0.25)	1.0(0.3-4.0)	0.006(0.002-0.01)	0.04(0.012-0.16)	●	○	○		0.15(0.05-0.30)	1.5(0.5-4.5)	0.006(0.002-0.012)	0.06(0.02-0.18)
DCGT070204-□□	21.51	●	○	○		0.15(0.05-0.25)	1.0(0.3-4.0)	0.006(0.002-0.01)	0.04(0.012-0.16)	●	○	○		0.15(0.05-0.30)	1.5(0.5-4.5)	0.006(0.002-0.012)	0.06(0.02-0.18)
DCGT070208-□□	21.52	●	○	○		0.15(0.05-0.25)	1.0(0.3-4.0)	0.006(0.002-0.01)	0.04(0.012-0.16)								
DCGT11T302-□□	32.50.5	●	○	○		0.15(0.05-0.25)	1.0(0.3-5.0)	0.006(0.002-0.01)	0.04(0.012-0.2)	●	○	○		0.15(0.05-0.30)	1.5(0.5-5.0)	0.006(0.002-0.012)	0.06(0.02-0.22)
DCGT11T304-□□	32.51	●	○	○		0.15(0.05-0.25)	1.0(0.3-5.0)	0.006(0.002-0.01)	0.04(0.012-0.2)	●	○	○		0.15(0.05-0.30)	1.5(0.5-5.0)	0.006(0.002-0.012)	0.06(0.02-0.22)
DCGT11T308-□□	32.52	●	○	○		0.15(0.05-0.25)	1.0(0.3-5.0)	0.006(0.002-0.01)	0.04(0.012-0.2)	●	○	○		0.20(0.05-0.40)	1.5(0.5-5.0)	0.008(0.002-0.016)	0.06(0.02-0.22)
DCGT11T312-□□	32.53	●	○	○		0.15(0.05-0.25)	1.0(0.3-5.0)	0.006(0.002-0.01)	0.04(0.012-0.2)	●	○	○		0.20(0.05-0.45)	1.5(0.5-5.0)	0.008(0.002-0.018)	0.06(0.02-0.22)
RCGT0602M0-□□		●	○	○		0.30(0.10-0.80)	1.0(0.3-3.3)	0.012(0.004-0.032)	0.04(0.012-0.132)								
RCGT0803M0-□□		●	○	○		0.35(0.10-1.00)	1.5(0.7-3.3)	0.014(0.004-0.04)	0.06(0.028-0.132)								
RCGT1003M0-□□		●	○	○		0.4(0.20-1.30)	2.0(0.9-4.0)	0.016(0.008-0.052)	0.08(0.036-0.16)	●	○	○		0.4(0.20-1.30)	2.0(0.9-4.0)	0.016(0.008-0.052)	0.08(0.036-0.16)
RCGT10T3M0-□□		●	○	○		0.4(0.20-1.30)	2.0(0.9-4.0)	0.016(0.008-0.052)	0.08(0.036-0.16)	●	○	○		0.4(0.20-1.30)	2.0(0.9-4.0)	0.016(0.008-0.052)	0.08(0.036-0.16)
RCGT1204M0-□□		●	○	○		0.5(0.25-1.5)	2.0(1.0-5.0)	0.02(0.01-0.06)	0.08(0.04-0.2)	●	○	○		0.5(0.25-1.5)	2.0(1.0-5.0)	0.02(0.01-0.06)	0.08(0.04-0.2)
SCGT09T304-□□	32.51	●	○	○		0.20(0.10-0.30)	1.5(0.5-4.0)	0.008(0.004-0.012)	0.06(0.02-0.16)	●	○	○		0.20(0.10-0.35)	1.5(0.5-4.5)	0.008(0.004-0.014)	0.06(0.02-0.18)
SCGT09T308-□□	32.52	●	○	○		0.20(0.10-0.30)	1.5(0.5-4.0)	0.008(0.004-0.012)	0.06(0.02-0.16)	●	○	○		0.20(0.10-0.35)	1.5(0.5-5.0)	0.008(0.004-0.014)	0.06(0.02-0.2)
SCGT120404-□□	431	●	○	○		0.20(0.10-0.35)	1.5(0.5-4.0)	0.008(0.004-0.014)	0.06(0.02-0.16)	●	○	○		0.20(0.10-0.35)	1.5(0.5-5.5)	0.008(0.004-0.014)	0.06(0.02-0.22)
SCGT120408-□□	432	●	○	○		0.20(0.10-0.40)	1.5(0.5-6.0)	0.008(0.004-0.016)	0.06(0.02-0.24)	●	○	○		0.20(0.10-0.50)	1.5(0.5-7.0)	0.008(0.004-0.02)	0.06(0.02-0.28)
SCGT120416-□□	434	●	○	○		0.40(0.80-1.00)	1.5(0.5-6.0)	0.016(0.032-0.04)	0.06(0.02-0.24)								
TCGT090202-□□	1.81.50.5	●	○	○		0.10(0.05-0.25)	1.0(0.3-3.0)	0.004(0.002-0.01)	0.04(0.012-0.12)	●	○	○		0.10(0.05-0.25)	1.0(0.3-3.0)	0.004(0.002-0.01)	0.04(0.012-0.12)
TCGT090204-□□	1.81.51	●	○	○		0.10(0.05-0.25)	1.0(0.3-3.0)	0.004(0.002-0.01)	0.04(0.012-0.12)	●	○	○		0.10(0.05-0.25)	1.0(0.3-3.0)	0.004(0.002-0.01)	0.04(0.012-0.12)
TCGT110202-□□	21.50.5	●	○	○		0.15(0.05-0.25)	1.0(0.3-4.0)	0.006(0.002-0.01)	0.04(0.012-0.16)	●	○	○		0.15(0.05-0.25)	1.0(0.3-4.0)	0.006(0.002-0.01)	0.04(0.012-0.16)
TCGT110204-□□	21.51	●	○	○		0.20(0.10-0.30)	1.5(0.5-4.0)	0.008(0.004-0.012)	0.06(0.02-0.16)	●	○	○		0.20(0.10-0.35)	1.5(0.5-4.0)	0.008(0.004-0.014)	0.06(0.02-0.16)
TCGT110208-□□	21.52	●	○	○		0.25(0.10-0.40)	1.5(0.5-4.0)	0.01(0.004-0.016)	0.06(0.02-0.16)	●	○	○		0.25(0.10-0.40)	1.5(0.5-4.0)	0.01(0.004-0.016)	0.06(0.02-0.16)
TCGT16T302-□□	32.50.5	●	○	○		0.15(0.05-0.25)	1.0(0.3-6.0)	0.006(0.002-0.01)	0.04(0.012-0.24)								
TCGT16T304-□□	32.51	●	○	○		0.20(0.10-0.30)	1.5(0.5-6.0)	0.008(0.004-0.012)	0.06(0.02-0.24)	●	○	○		0.20(0.10-0.40)	1.5(0.5-7.0)	0.008(0.004-0.016)	0.06(0.02-0.28)
TCGT16T308-□□	32.52	●	○	○		0.30(0.10-0.45)	1.5(0.8-6.0)	0.012(0.004-0.018)	0.06(0.032-0.24)	●	○	○		0.30(0.10-0.50)	1.5(0.8-7.0)	0.012(0.004-0.02)	0.06(0.032-0.28)
TCGT16T312-□□	32.53	●	○	○		0.30(0.10-0.70)	1.5(0.8-6.0)	0.012(0.004-0.028)	0.06(0.032-0.24)								
TCGT16T316-□□	32.54	●	○	○		0.40(0.10-1.0)	1.5(0.8-5.0)	0.016(0.004-0.04)	0.06(0.032-0.2)								
VBGT110302-□□	220.5	●	○	○		0.15(0.05-0.25)	1.0(0.3-3.5)	0.006(0.002-0.01)	0.04(0.012-0.14)	●	○	○		0.15(0.05-0.27)	1.0(0.3-3.5)	0.006(0.002-0.011)	0.04(0.012-0.14)
VBGT110304-□□	221	●	○	○		0.20(0.10-0.30)	1.5(0.5-3.5)	0.008(0.004-0.012)	0.06(0.02-0.14)	●	○	○		0.20(0.10-0.35)	1.5(0.5-3.5)	0.008(0.004-0.014)	0.06(0.02-0.14)
VBGT110308-□□	222	●	○	○		0.30(0.15-0.45)	1.5(0.5-3.5)	0.012(0.006-0.018)	0.06(0.02-0.14)	●	○	○		0.30(0.15-0.50)	1.5(0.5-4.0)	0.012(0.006-0.02)	0.06(0.02-0.16)
VBGT160402-□□	330.5	●	○	○		0.15(0.05-0.25)	1.0(0.3-5.0)	0.006(0.002-0.01)	0.04(0.012-0.2)	●	○	○		0.15(0.05-0.30)	1.0(0.3-5.0)	0.006(0.002-0.012)	0.04(0.012-0.2)
VBGT160404-□□	331	●	○	○		0.20(0.10-0.30)	1.5(0.5-5.0)	0.008(0.004-0.012)	0.06(0.02-0.2)	●	○	○		0.20(0.10-0.35)	1.5(0.5-6.0)	0.008(0.004-0.014)	0.06(0.02-0.24)
VBGT160408-□□	332	●	○	○		0.30(0.15-0.50)	1.5(0.5-5.0)	0.012(0.006-0.02)	0.06(0.02-0.2)	●	○	○		0.30(0.15-0.50)	1.5(0.5-6.0)	0.012(0.006-0.02)	0.06(0.02-0.24)
VBGT160412-□□	333	●	○	○		0.40(0.15-0.80)	1.5(0.5-5.0)	0.016(0.006-0.032)	0.06(0.02-0.2)	●	○	○		0.40(0.15-1.00)	1.5(0.5-5.5)	0.016(0.006-0.04)	0.06(0.02-0.22)
VCGT110302-□□	220.5	●	○	○		0.15(0.05-0.25)	1.0(0.3-3.5)	0.006(0.002-0.01)	0.04(0.012-0.14)	●	○	○		0.15(0.05-0.27)	1.0(0.3-3.5)	0.006(0.002-0.011)	0.04(0.012-0.14)
VCGT110304-□□	221	●	○	○		0.20(0.10-0.30)	1.5(0.5-3.5)	0.008(0.004-0.012)	0.06(0.02-0.14)	●	○	○		0.20(0.10-0.35)	1.5(0.5-3.5)	0.008(0.004-0.014)	0.06(0.02-0.14)
VCGT110308-□□	222	●	○	○		0.30(0.15-0.45)	1.5(0.5-3.5)	0.012(0.006-0.018)	0.06(0.02-0.14)	●	○	○		0.30(0.15-0.50)	1.5(0.5-4.0)	0.012(0.006-0.02)	0.06(0.02-0.16)
VCGT130302-□□	2.520.5	●	○	○		0.15(0.05-0.25)	1.0(0.3-3.5)	0.006(0.002-0.01)	0.04(0.012-0.14)	●	○	○		0.15(0.05-0.25)	1.0(0.3-4.0)	0.006(0.002-0.01)	0.04(0.012-0.16)
VCGT130304-□□	2.521	●	○	○		0.20(0.10-0.30)	1.5(0.5-3.5)	0.008(0.004-0.012)	0.06(0.02-0.14)	●	○	○		0.20(0.10-0.35)	1.5(0.5-4.0)	0.008(0.004-0.014)	0.06(0.02-0.16)
VCGT130308-□□	2.522	●	○	○		0.30(0.15-0.45)	1.5(0.5-4.0)	0.012(0.006-0.018)	0.06(0.02-0.16)	●	○	○		0.30(0.15-0.45)	1.5(0.5-4.0)	0.012(0.006-0.018)	0.06(0.02-0.16)
VCGT160402-□□	330.5	●	○	○		0.15(0.05-0.25)	1.0(0.3-5.0)	0.006(0.002-0.01)	0.04(0.012-0.2)	●	○	○		0.15(0.05-0.30)	1.0(0.3-5.0)	0.006(0.002-0.012)	0.04(0.012-0.2)
VCGT160404-□□	331	●	○	○		0.20(0.10-0.30)	1.5(0.5-5.0)	0.008(0.004-0.012)	0.06(0.02-0.2)	●	○	○		0.20(0.10-0.35)	1.5(0.5-6.0)	0.008(0.004-0.014)	0.06(0.02-0.24)
VCGT160408-□□	332	●	○	○		0.30(0.15-0.50)	1.5(0.5-5.0)	0.012(0.006-0.02)	0.06(0.02-0.2)	●	○	○		0.30(0.15-0.50)	1.5(0.5-6.0)	0.012(0.006-0.02)	0.06(0.02-0.24)
VCGT160412-□□	333	●	○	○		0.40(0.15-0.80)	1.5(0.5-5.0)	0.016(0.006-0.032)	0.06(0.02-0.2)	●	○	○		0.40(0.15-1.00)	1.5(0.5-5.5)	0.016(0.006-0.04)	0.06(0.02-0.22)
VCGT22025-□□	43.56.3	●	○	○		0.40(0.20-1.00)	1.5(0.8-8.0)	0.016(0.008-0.04)	0.06(0.032-0.32)	●	○	○		0.50(0.20-1.5)	1.5(1.0-8.0)	0.02(0.008-0.06)	0.06(0.04-0.32)
VCGT220530-□□	43.57.6	●	○	○		0.45(0.20-1.2)	1.5(0.8-8.0)	0.018(0.008-0.048)	0.06(0.032-0.32)	●	○	○		0.50(0.20-1.5)	1.5(1.0-8.0)	0.02(0.008-0.06)	0.06(0.04-0.32)

● Stock item, ○ Under preparing for stock
 Order-made items are available.