

For Small Tools

VPET/VPGT Type Inserts

11degree positive V type insert geometry now available.
External turning/Facing/Copying/Recessing
Ideal for the complicated small parts machining with the automatic lathes.

SMG Breaker

A combination of a curved cutting edge and the protrusion type breaker promotes efficient chip breaking.



- Peripheral grand, G class and moulded breaker insert enable superior chip control and accurate cutting edge positioning, making it ideal for high precision machining.
- It is suitable for precision parts applications that corner radii designed with minus tolerance (from 0 to -0.05mm).

SRF Breaker

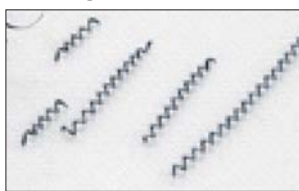
Lead breaker promotes high quality surface finishes.



- Overall grind, E class and high rake angle lead breaker insert enable superior surface finishes and accurate cutting edge positioning, making it ideal for high precision machining.
- It is suitable for precision parts applications that corner radii designed with minus tolerance (from 0 to -0.02mm).

Cutting performance

● Chip control comparison



SMG Breaker



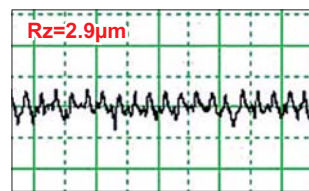
Competitor's

<Cutting conditions>

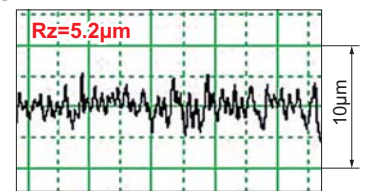
Workpiece : S45C (External cutting)
Insert : VPGT110302-0-000
Cutting speed : 100m/min
Depth of cut : 0.5mm
Feed : 0.1mm/rev
Wet cutting

SMG breaker shows good chip breaking

● Surface finish comparison



SMG Breaker




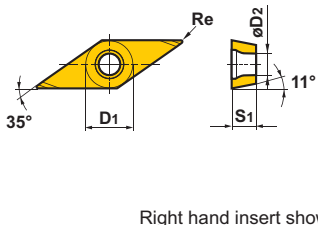

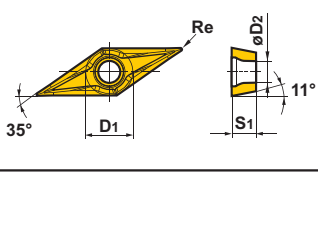
Competitor's

<Cutting conditions>

Workpiece : S45C (External cutting)
Insert : VPGT110302-0-000
Cutting speed : 100m/min
Depth of cut : 0.3mm
Feed : 0.05mm/rev
Wet cutting

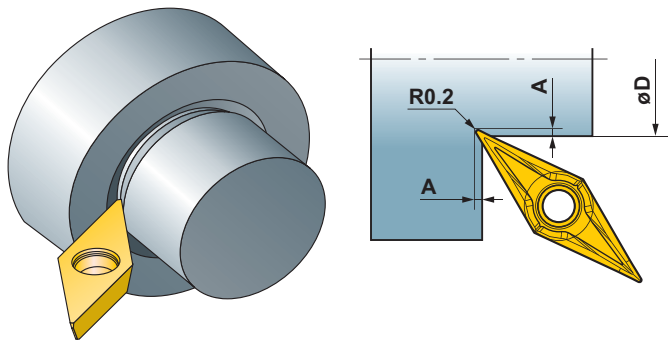
SMG breaker shows high quality surface finishes

Inserts

Shape	Order Number	Stock	Dimensions (mm)				Geometry
		VPI5TF	D1	S1	Re	D2	
SRF Breaker 	VPET080201R-SRF	●	4.76	2.38	0.1	2.4	 Right hand insert shown.
	080201L-SRF	●	4.76	2.38	0.1	2.4	
	080202R-SRF	●	4.76	2.38	0.2	2.4	
	080202L-SRF	●	4.76	2.38	0.2	2.4	
	1103V3R-SRF	●	6.35	3.18	0.03	2.9	
	1103V3L-SRF	●	6.35	3.18	0.03	2.9	
	110301R-SRF	●	6.35	3.18	0.1	2.9	
	110301L-SRF	●	6.35	3.18	0.1	2.9	
Finish Cutting	110302R-SRF	●	6.35	3.18	0.2	2.9	
	110302L-SRF	●	6.35	3.18	0.2	2.9	
SMG Breaker 	VPGT080201M-SMG	●	4.76	2.38	0.1	2.4	
	080202M-SMG	●	4.76	2.38	0.2	2.4	
	110301M-SMG	●	6.35	3.18	0.1	2.9	
	110302M-SMG	●	6.35	3.18	0.2	2.9	
Finish Cutting							

● : Inventory maintained. (10 inserts in a case)

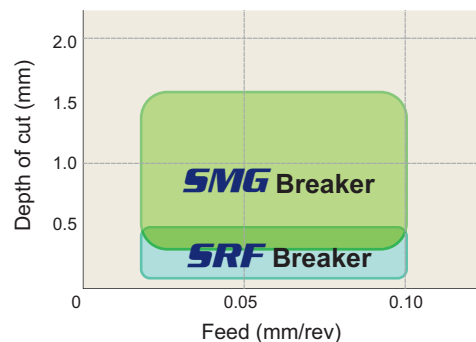
The point of recessing



Corner radius Re (mm)	Max. depth of recessing A (mm)	Cutting diameter øD (mm)
0.2	0.5	ø20
	1.0	ø25

(Note 1) Please use inserts with corner radius Re 0.2mm for recessing.
 (Note 2) Maximum depth of recessing has the limit of machining diameter.
 This table shows referential machining diameter when the depth of recessing is 0.5 and 1.0mm.

Application Range



Recommended Cutting Conditions

	Work Material	Hardness	Cutting Speed (m/min)
P	Mild Steel	≤180HB	130 (90-160)
	Carbon Steel Alloy Steel	180-280HB	100 (70-120)
M	Stainless Steel	≤200HB	100 (70-120)

(Note) The above cutting conditions are general guide lines.
 Adjustments maybe necessary depending on machine rigidity,
 workpiece geometry and clamping.

For Your Safety

●Don't handle inserts and chips without gloves. ●Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage. ●Please use safety covers and wear safety glasses. ●When using compounded cutting oils, please take fire precautions. ●When attaching inserts or spare parts, please use only the correct wrench or spanner.

MITSUBISHI MATERIALS CORPORATION

MITSUBISHI MATERIALS CORPORATION Area Marketing & Operations Dept.

KFC bldg., 8F, 1-6-1, Yokoami, Sumida-ku, Tokyo 130-0015, Japan
 TEL +81-3-5819-8772 FAX +81-3-5819-8774

Mitsubishi Carbide Home page : <http://www.mitsubishicarbide.com>
 (Tools specifications subject to change without notice.)