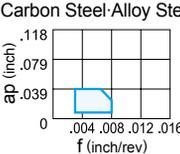
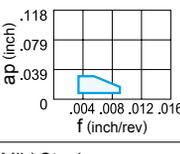
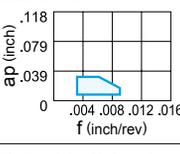
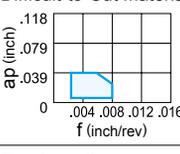
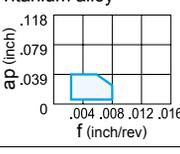
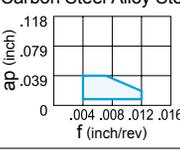
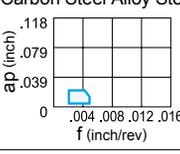
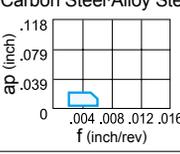
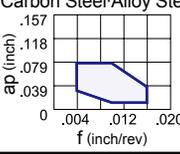


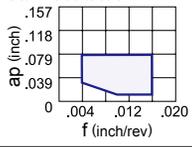
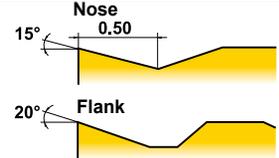
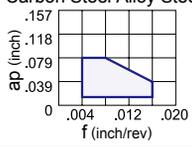
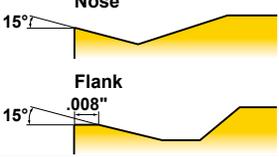
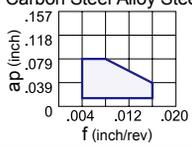
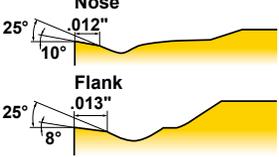
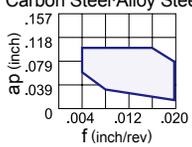
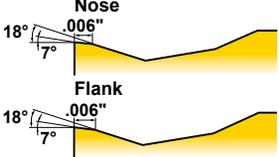
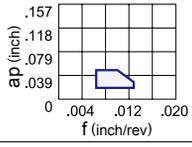
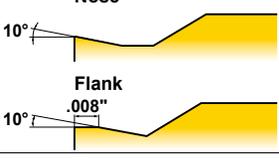
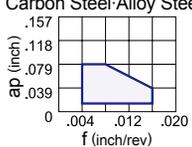
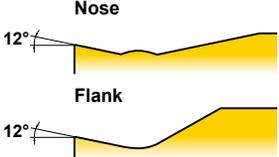
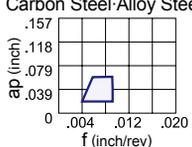
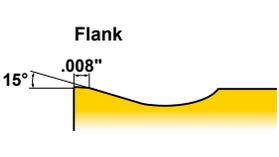
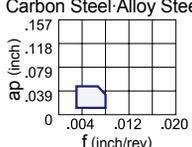
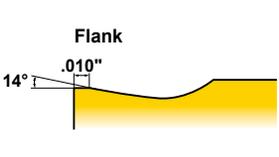
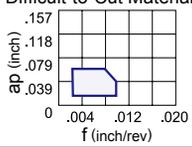
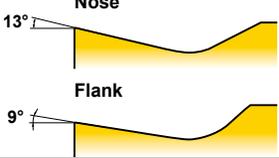
CLASSIFICATION

NEGATIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features		Cross Section Geometry	
Finish Cutting	M Class	FH 	First recommendation for finishing carbon steel, alloy steel and stainless steel Double sided chipbreaker. Stable chip control even at small depth of cut.	Carbon Steel-Alloy Steel 	Nose 12° Flank 12°	
		FS 	Alternative breaker for finishing mild steel Double sided chipbreaker. Stable chip control even at small depth of cut. Sharp edge gives best performance.	Mild Steel 	Nose 16° Flank 8°	
		FY 	First recommendation for finishing mild steel Double sided chipbreaker. Effectively controls chips. Suitable for mild steel finishing.	Mild Steel 	Nose 15° Flank 15° .008"	
	G Class	FJ 	First recommendation for finishing difficult-to-cut materials Double sided chipbreaker. Ideal for heat-resistant alloy. The sharp edge produces good cutting surface. The curved edge allows smooth chip discharge.	Difficult-to-Cut Materials 	Nose 14° Flank 9°	
		FJ-P 	First recommendation for finishing titanium alloy Double sided chipbreaker. Ideal for aluminum and copper. The sharp edge produces excellent surface finishes. The curved edge allows smooth chip discharge. The polished insert face prevents built up edge.	Titanium alloy 	Nose 14° Flank 9°	
		PK 	Alternative breaker for finishing carbon steel and alloy steel Double sided chipbreaker. G class insert tolerance is suitable for workpieces requiring close dimensional tolerances. Stable chip control even at small depth of cut.	Carbon Steel-Alloy Steel 	Nose 15° Flank 15°	
		R/L FS 	Precise finishing Double sided chipbreaker. A narrow angled chipbreaker for good control. The sharp edge produces a good surface finish.	Carbon Steel-Alloy Steel 	Flank 14°	
	Light Cutting	M Class	R/L F 	Finishing Double sided chipbreaker. Angled chipbreaker controls chip flow. The sharp edge produces a good chip discharge.	Carbon Steel-Alloy Steel 	Flank 14°
			NEW LP 	First recommendation for light cutting of carbon steel and alloy steel Double sided chipbreaker. Stable chip control in light cutting range. The curved edge allows smooth chip discharge.	Carbon Steel-Alloy Steel 	Nose 15° 0.1 Flank 11° 0.2

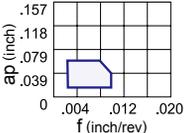
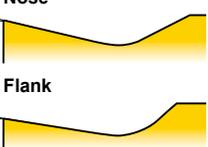
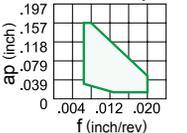
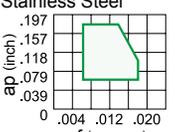
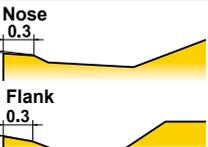
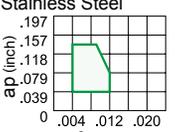
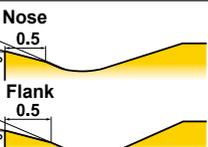
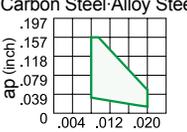
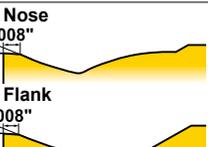
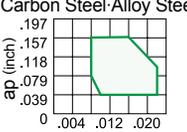
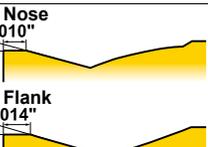
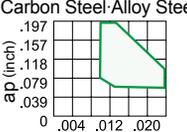
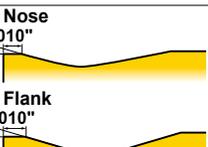
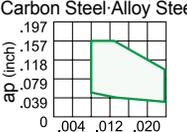
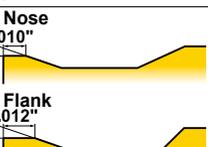
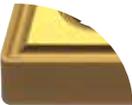
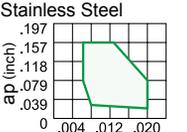
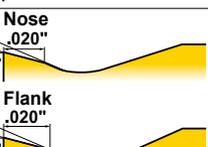
CLASSIFICATION

NEGATIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry	
Light Cutting	M Class	NEW LM 	First recommendation for light cutting of stainless steel Double sided chipbreaker. Stable chip control in light cutting range. Breaker with high rake angle provides excellent burr control.	Stainless Steel 	
		SH 	First recommendation for light cutting of carbon steel, alloy steel and stainless steel Double sided chipbreaker. Can be used at low depth of cuts and high feed rates. The curved edge allows smooth chip discharge. Recommended for workpieces in the 160–250HB range.	Carbon Steel-Alloy Steel 	
		SA 	Alternative breaker for light cutting of carbon steel and alloy steel Double sided chipbreaker. Superior chip control at small depth of cuts. Covers copying and back turning with wavy edge. Recommended for workpieces in the 200–300HB range.	Carbon Steel-Alloy Steel 	
		SW 	Wiper insert for light cutting of carbon steel and alloy steel Double sided chipbreaker. The wiper allows up to two times higher feed. Wiper design for increased productivity and improved surface finish.	Carbon Steel-Alloy Steel 	
		SY 	First recommendation for light cutting of mild steel Double sided chipbreaker. Effectively controls chips. Recommended for workpieces in the 200–300HB range.	Mild Steel 	
		C 	Alternative breaker for light cutting of carbon steel and alloy steel Double sided chipbreaker. Can be used at small depth of cuts. The curved edge allows smooth chip discharge.	Carbon Steel-Alloy Steel 	
		R/L 1G 	Alternative chipbreaker for light cutting of carbon steel and alloy steel Double sided chipbreaker. Angled chipbreaker controls chip flow. Excellent chip control at low to medium feed rates.	Carbon Steel-Alloy Steel 	
G Class	R/L K 	Light cutting Double sided chipbreaker. Parallel chipbreaker. Excellent chip control at low to medium feed rates.	Carbon Steel-Alloy Steel 		
M Class	MJ 	First recommendation for light cutting of difficult-to-cut materials Double sided chipbreaker. Ideal for heat-resistant alloy and titanium alloy. The sharp edge produces excellent surface finishes. The curved edge allows smooth chip discharge.	Difficult-to-Cut Materials 		

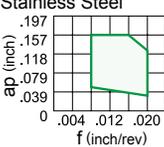
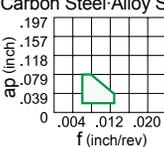
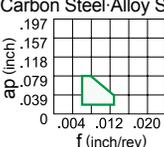
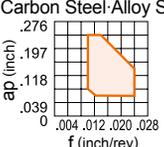
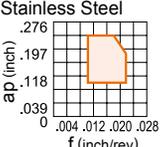
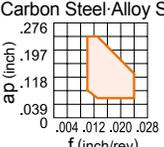
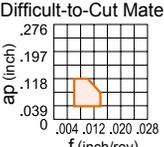
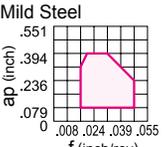
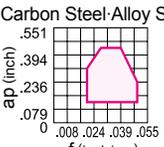
CLASSIFICATION

NEGATIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features		Cross Section Geometry
Light Cutting	G Class	MJ 	First recommendation for light cutting of difficult-to-cut materials Double sided chipbreaker, Single sided chipbreaker. G class insert tolerance is suitable for workpieces requiring close dimensional tolerances. Ideal for heat-resistant alloy and titanium alloy. The sharp edge produces excellent surface finishes.	Difficult-to-Cut Materials 	13° Nose 9° Flank 
		MP 	Alternative breaker for medium cutting of carbon steel and alloy steel Double sided chipbreaker. Suitable for medium to light cutting. Breaker geometry appropriate for copying and back turning. Good balance of sharpness and strength.	Carbon Steel-Alloy Steel 	15° Nose .006" 11° Flank .008" 
Medium Cutting	M Class	NEW MM 	Breaker with high rake angle reduces burr formation Double sided chipbreaker. Simulation analysis technology assisted in the development of an optimized cutting edge land geometry, preventing plastic deformation and extending tool life.	Stainless Steel 	6° Nose 0.3 10° Flank 0.3 
		NEW GM 	Alternative chip breaker for light to medium cutting of stainless steel Double sided chipbreaker. Alternate chip breaker to main chip breakers LM and MM. Excellent notch wear resistance for light to medium cutting.	Stainless Steel 	25° Nose 0.5 15° Flank 0.5 25° Flank 0.5 
		MA 	First recommendation for medium cutting of carbon steel and alloy steel First recommendation for finish to light cutting of cast iron Double sided chipbreaker. Positive land provides sharp cutting action.	Carbon Steel-Alloy Steel 	22° Nose .008" 6° Flank .008" 22° Flank .008" 
		MH 	First recommendation for medium-heavy cutting of mild steel Alternative breaker for medium cutting of carbon steel and alloy steel Double sided chipbreaker. Flat land offers high edge strength. A wide chip pocket prevents chip jamming at large depth of cut.	Carbon Steel-Alloy Steel 	16° Nose .010" 16° Flank .014" 
		Standard 	First recommendation for medium cutting of cast iron Alternative breaker for medium cutting of carbon steel and alloy steel Double sided chipbreaker. Flat land offers high edge strength.	Carbon Steel-Alloy Steel 	15° Nose .010" 15° Flank .010" 
		MW 	Wiper insert for medium cutting carbon steel and alloy steel Double sided chipbreaker. The wiper allows up to two times higher feed. A wide chip pocket prevents chip jamming.	Carbon Steel-Alloy Steel 	19° Nose .010" 19° Flank .012" 
		MS 	First recommendation for medium cutting of stainless steel, mild steel and difficult-to-cut materials Double sided chipbreaker. The sharp edge gives best performance.	Stainless Steel 	25° Nose .020" 15° Flank .020" 25° Flank .020" 

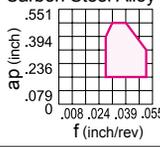
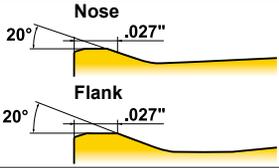
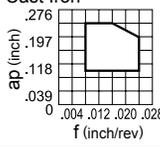
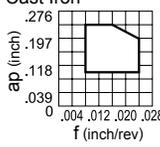
CLASSIFICATION

NEGATIVE INSERTS WITH HOLE

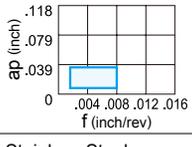
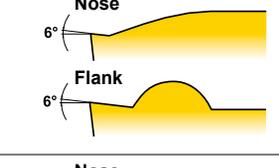
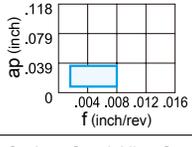
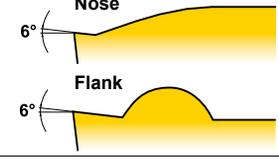
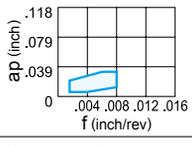
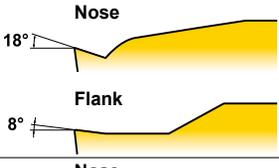
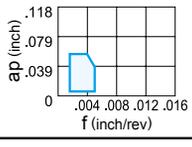
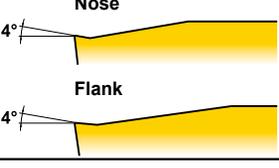
Application	Tolerance	Breaker Name and Picture	Features		Cross Section Geometry
Medium Cutting	M Class	R/L ES 	Alternative chipbreaker for medium cutting of stainless steel Double sided chipbreaker. Good balance of edge strength and sharpness. Right- or left-hand breaker for unidirectional chip control.	Stainless Steel 	Flank 15° .006"
		R/L 2G 	Alternative chipbreaker for medium cutting of carbon steel and alloy steel Double sided chipbreaker. Parallel chipbreaker controls chip flow. Good chip control for medium feed rates.	Carbon Steel-Alloy Steel 	Flank 14° .008"
	G Class	R/L 	Medium cutting Double sided chipbreaker. Parallel chipbreaker. Good chip control for medium feed rate.	Carbon Steel-Alloy Steel 	Flank 14° .010"
Rough Cutting	M Class	NEW RP 	First recommendation for rough cutting of carbon and alloy steel Double sided chipbreaker. For interrupted cutting and cutting through scale. Good balance of cutting edge strength and low cutting resistance.	Carbon Steel-Alloy Steel 	Nose 3° 0.33 Flank 0.33
		NEW RM 	First recommendation for rough cutting of stainless steel Double sided chipbreaker. Excellent fracture resistance during interrupted cutting due to the optimum cutting edge land angle and honing geometry.	Stainless Steel 	Nose 3° 0.32 Flank 6° 0.32
		GH 	First recommendation for rough cutting of carbon steel, alloy steel and stainless steel Double sided chipbreaker. For interrupted cut and removing scale. A combination of wide land and large chip pocket allows high feeds.	Carbon Steel-Alloy Steel 	Nose 18° .013" Flank 18° .013"
		GJ 	First recommendation for rough cutting of difficult-to-cut materials Double sided chipbreaker. Excellent balance of edge sharpness and strength. Edge geometry with high face wear resistance.	Difficult-to-Cut Materials 	Nose 18° .006" Flank 18° .006"
Heavy Cutting	M Class	HZ 	First recommendation for heavy cutting of mild steel and stainless steel Single sided chipbreaker. Appropriate for the lower end of the heavy cutting region. Low cutting resistance due to positive land and curved edge. Teardrop dots improve chip control without increasing cutting resistance.	Mild Steel 	Nose 22° .017" 6° Flank 22° .017" 6°
		HX 	First recommendation for heavy cutting of carbon steel and alloy steel Single sided chipbreaker. Appropriate for the medium range of the heavy cutting region. The flat edge and chamfer, provide a balance of sharpness and strength. Variable land and a wavy chipbreaker for good chip control.	Carbon Steel-Alloy Steel 	Nose 23° .017" Flank 21° .020"

CLASSIFICATION

NEGATIVE INSERTS WITH HOLE

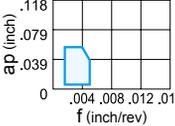
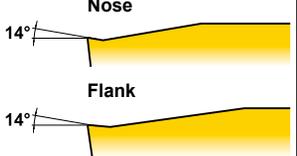
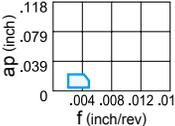
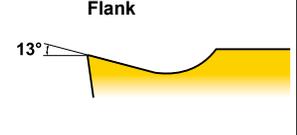
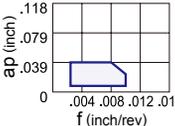
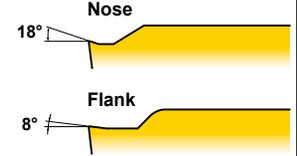
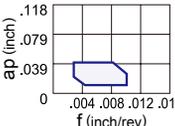
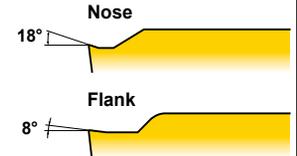
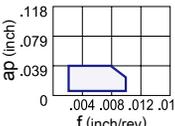
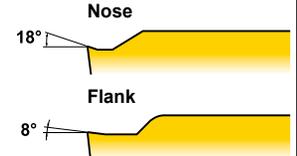
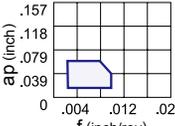
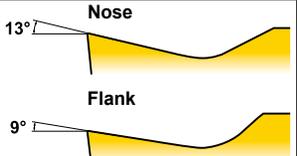
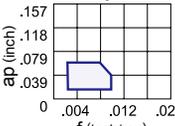
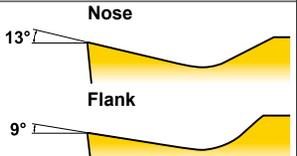
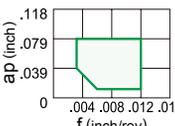
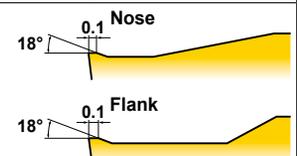
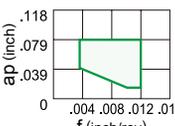
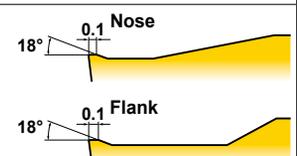
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Heavy Cutting	M Class	HV 	Alternative chipbreaker for heavy cutting of carbon steel and alloy steel Single sided chipbreaker. Appropriate for the upper end of the heavy cutting region. Wide land and large chamfer offer high edge strength. A wide chipbreaker prevents chip jamming.	Carbon Steel-Alloy Steel  
		Flat Top 	First recommendation for rough cutting of cast iron Double sided flat insert. Most effective in unstable machining i.e. interrupted cuts due to high edge strength and stable fitting on the shim.	Cast Iron  
For Cast Iron	G Class	Flat Top 	For cast iron Double sided flat insert. Most effective in unstable machining i.e. interrupted cuts due to high edge strength and stable fitting on the shim. G class tolerance for use on workpieces requiring close tolerances.	Cast Iron  

5° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	M Class	NEW FP 	First recommendation for finishing carbon steel and alloy steel Chip breaker peninsula controls chips even at small depth of cut. Maintains the edge strength at the corner and prevents sudden fractures.	Carbon Steel-Alloy Steel  
		NEW FM 	First recommendation for finishing stainless steel Chip breaker peninsula controls chips even at small depth of cut. Maintains the edge strength at the corner and prevents sudden fractures.	Stainless Steel  
		FV 	First recommendation for finishing carbon steel, alloy steel, mild steel and stainless steel Suitable for low depth of cut and feed rate applications. Sharp cutting edge and low resistance design provide excellent cutting performance.	Carbon Steel-Alloy Steel  
	G Class	FJ 	Finishing difficult-to-cut materials The curved cutting edges support changes in cutting depth-smooth chip discharge and disposal. The high rake angle is highly suitable for finishing difficult-to-cut materials.	Difficult-to-Cut Materials  

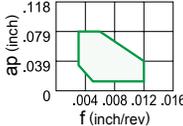
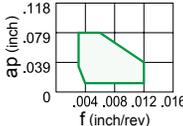
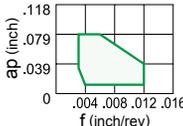
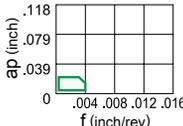
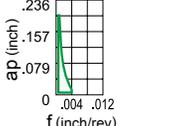
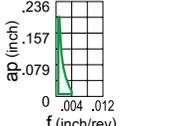
CLASSIFICATION

5° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features		Cross Section Geometry
Finish Cutting	G Class	FJ-P 	Finishing titanium alloy Ideal for aluminum and copper. The sharp edge produces excellent surface finishes. The curved edge allows smooth chip discharge. The polished insert face prevents built up edge.	Titanium alloy 	
		R/L F 	Finishing carbon steel and alloy steel Angled chipbreaker controls chip flow. Sharp cutting edge produces excellent surface finishes.	Carbon Steel-Alloy Steel 	
Light Cutting	M Class	NEW LP 	First recommendation for light cutting of carbon and alloy steel Sharp cutting edge due to a high rake angle. Prevents chip welding on cutting edge and controls cloudiness of surface finish. Chip breaker peninsula matched to depth of cut capability provides excellent chip control.	Carbon Steel-Alloy Steel 	
		NEW LM 	First recommendation for light cutting of carbon and alloy steel Sharp cutting edge due to a high rake angle. Prevents chip welding on cutting edge and controls cloudiness of surface finish. Chip breaker peninsula matched to depth of cut capability provides excellent chip control.	Stainless Steel 	
	G Class	SV 	Light cutting of carbon steel, alloy steel, mild steel and stainless steel The double breaker design promotes chip discharge for mild steel low depth of cut applications.	Carbon Steel-Alloy Steel 	
		MJ 	Light cutting of difficult-to-cut materials Ideal for heat-resistant alloy and titanium alloy The curved cutting edges support changes in cutting depth-smooth chip discharge and disposal. The high rake angle is highly suitable for finish-light cutting difficult-to-cut materials.	Difficult-to-Cut Materials 	
		MJ-P 	Light cutting for titanium alloy Ideal for aluminum and copper. The sharp edge produces excellent surface finishes. The curved edge allows smooth chip discharge. The polished insert face prevents built up edge.	Titanium alloy 	
		NEW MP 	First recommendation for light cutting of carbon and alloy steel Small, flat, land at cutting edge provides an excellent balance of wear and fracture resistance. The wide chip gullet decreases cutting resistance, reduces vibration and chip jamming in elevated depth of cut applications.	Carbon Steel-Alloy Steel 	
Medium Cutting	M Class	NEW MM 	First recommendation for medium cutting of stainless steel Good balance of wear resistance and fracture resistance because of the flat land cutting edge. A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depth of cut.	Stainless Steel 	

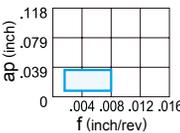
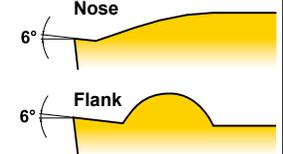
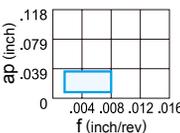
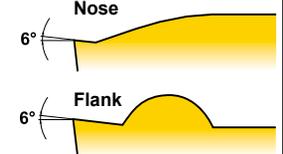
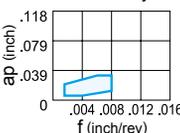
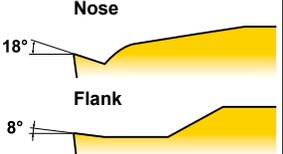
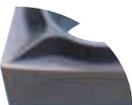
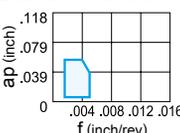
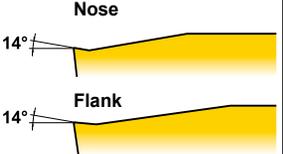
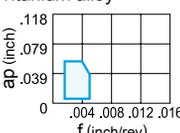
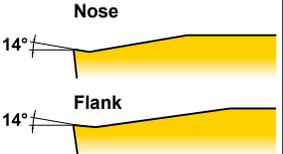
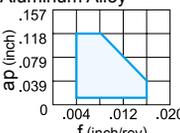
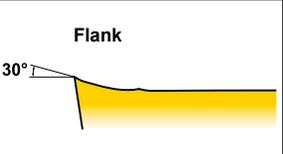
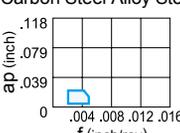
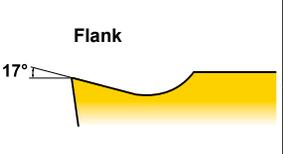
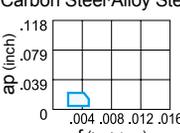
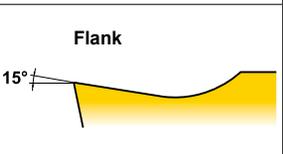
CLASSIFICATION

5° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting	M Class	Standard 	Medium cutting of carbon steel, alloy steel and stainless steel The high rake angle combined with a small flat land provide a balance of strength and sharpness.	Carbon Steel-Alloy Steel  Cross Section Geometry: Nose .004", Flank .004", Rake angles 18°.
		MV 	Medium cutting of carbon steel, alloy steel, mild steel and stainless steel A positive land and the high rake angle provides sharp cutting edge performance. The double breakers and round-shaped dots in the rake face provide a wide range of chip control.	Carbon Steel-Alloy Steel  Cross Section Geometry: Nose .004", Flank .004", Rake angles 18°, 10°.
		R/L MV 	Medium cutting of carbon steel, alloy steel, mild steel and stainless steel A positive land and the high rake angle provides sharp cutting edge performance. The double breakers and round-shaped dots in the rake face provide a wide range of chip control.	Carbon Steel-Alloy Steel  Cross Section Geometry: Nose .006", Flank .006", Rake angles 20°, 8°.
	E Class	R/L SR 	Medium cutting for Swiss type lathe machining Features a high angled chipbreaker. Low resistance insert design controls chip flow.	Carbon Steel-Alloy Steel  Cross Section Geometry: Flank, Rake angle 30°.
		R/L SN 	General purpose for Swiss type lathe machining The parallel chipbreaker. Excellent chip control for low to midium feed rates.	Carbon Steel-Alloy Steel  Cross Section Geometry: Flank, Rake angle 20°.
		R/LW SN 	General purpose for Swiss type lathe machining The parallel chipbreaker. Excellent chip control for low to medium feed rates. The wiper produces good surface finishes.	Carbon Steel-Alloy Steel  Cross Section Geometry: Flank, Rake angle 20°.

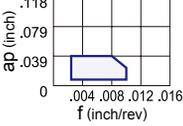
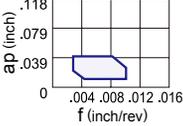
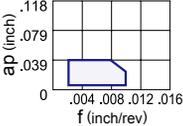
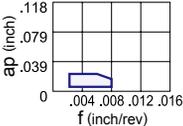
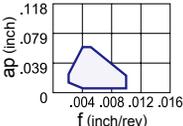
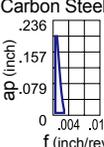
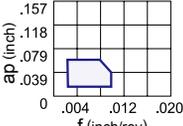
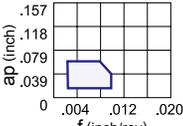
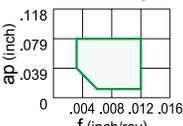
CLASSIFICATION

7° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
M Class		NEW FP 	First recommendation for finishing carbon steel and alloy steel Chip breaker peninsula controls chips even at small depth of cut. Maintains the edge strength at the corner and prevents sudden fractures.	Carbon Steel-Alloy Steel  
		NEW FM 	First recommendation for finishing stainless steel Chip breaker peninsula controls chips even at small depth of cut. Maintains the edge strength at the corner and prevents sudden fractures.	Stainless Steel  
		FV 	First recommendation for finishing carbon steel, alloy steel and mild steel Sharp cutting edge and low resistance design provides excellent cutting performance. Suitable for low depth of cut and feed rate applications.	Carbon Steel-Alloy Steel  
Finish Cutting		FJ 	First recommendation for finishing difficult-to-cut materials The curved cutting edges support changes in cutting depth and allow smooth chip discharge and disposal. The high rake angle is highly suitable for finishing difficult-to-cut materials.	Difficult-to-Cut Materials  
		FJ-P 	Finishing titanium alloy Ideal for aluminum and copper. The sharp edge produces excellent surface finishes. The curved edge allows smooth chip discharge. The polished insert face prevents built up edge.	Titanium alloy  
		AZ 	First recommendation for aluminium alloy The high rake angle and 3D curved cutting edge provides sharpness at the cutting point. Additionally the 3D shape of the rake face enables excellent chip control. The polished insert face prevents built up edge.	Aluminum Alloy  
G Class		R/L F 	Finishing carbon steel and alloy steel Angled chipbreaker controls chip flow. Sharp cutting edge provides excellent surface finishes.	Carbon Steel-Alloy Steel  
		R/L 	Finishing Angled chipbreaker. Excellent chip control at low feed rates.	Carbon Steel-Alloy Steel  

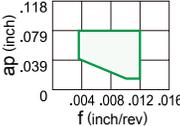
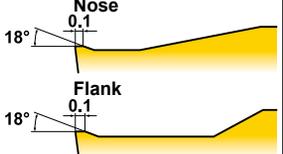
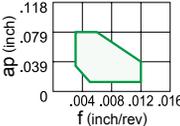
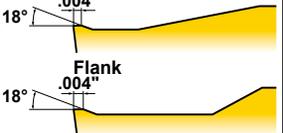
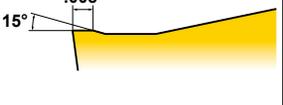
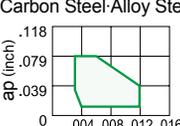
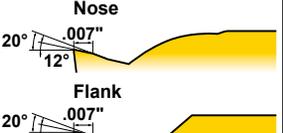
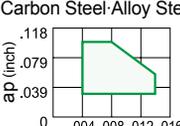
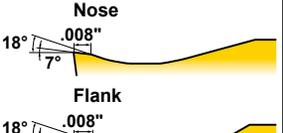
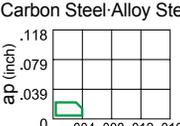
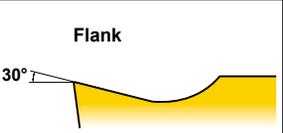
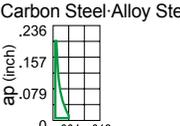
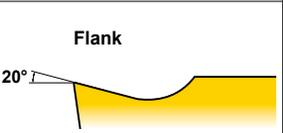
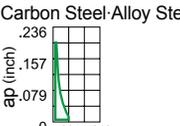
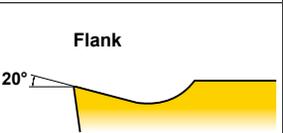
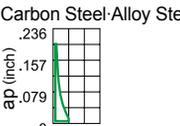
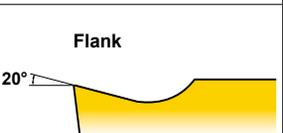
CLASSIFICATION

7° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry		
Light Cutting	M Class	NEW LP 	First recommendation for light cutting of carbon and alloy steel Sharp cutting edge due to a high rake angle. Prevents chip welding on cutting edge and controls cloudiness of surface finish. Chip breaker peninsula matched to depth of cut capability provides excellent chip control.	Carbon Steel-Alloy Steel 	Nose 18° Flank 8°	
		NEW LM 	First recommendation for light cutting of stainless steel Sharp cutting edge due to a high rake angle. Prevents chip welding on cutting edge and controls cloudiness of surface finish. Chip breaker peninsula matched to depth of cut capability provides excellent chip control.	Stainless Steel 	Nose 18° Flank 8°	
		SV 	Alternative chipbreaker for light cutting of carbon steel, alloy steel, mild steel and stainless steel The double breaker design promotes chip control in mild steel and low depth of cut machining applications.	Carbon Steel-Alloy Steel 	Nose 18° Flank 8°	
		SVX 	Light cutting of carbon steel and alloy steel Breaker geometry appropriate for copying. Excellent chip control.	Carbon Steel-Alloy Steel 	Nose 18° Flank 8°	
		SW 	Wiper insert for light cutting of carbon steel, alloy steel, mild steel and stainless steel The wiper allows up to two times higher feed. Positive land improves sharpness.	Carbon Steel-Alloy Steel 	Nose 20° 12° 0.005" Flank 16° 8° 0.005"	
	G Class	R/L SS 	Light cutting for Swiss type lathe machining The parallel chipbreaker. Excellent chip control at low feed rate.	Carbon Steel-Alloy Steel 	Flank 14°	
		MJ 	Light cutting of difficult-to-cut materials Ideal for heat-resistant alloy and titanium alloy The curved cutting edges support changes in cutting depth-smooth chip discharge and disposal. The high rake angle is highly suitable for finish- light cutting difficult-to-cut materials.	Difficult-to-Cut Materials 	Nose 13° Flank 9°	
		MJ-P 	Light cutting for titanium alloy Ideal for aluminum and copper. The sharp edge produces excellent surface finishes. The curved edge allows smooth chip discharge. The polished insert face prevents built up edge.	Titanium alloy 	Nose 13° Flank 9°	
	Medium Cutting	M Class	NEW MP 	First recommendation for medium cutting of carbon and alloy steel Small, flat, land at cutting edge provides an excellent balance of wear and fracture resistance. The wide chip gullet decreases cutting resistance, reduces vibration and chip jamming in elevated depth of cut applications.	Carbon Steel-Alloy Steel 	Nose 18° 0.1 Flank 18° 0.1

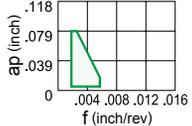
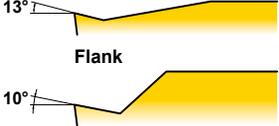
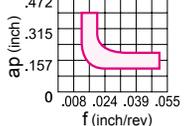
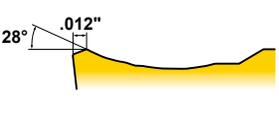
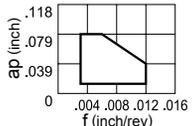
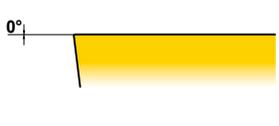
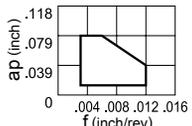
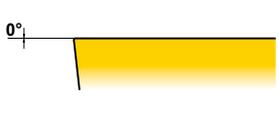
CLASSIFICATION

7° POSITIVE INSERTS WITH HOLE

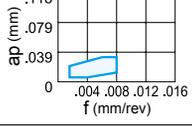
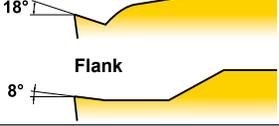
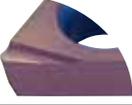
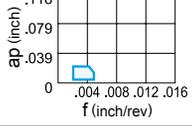
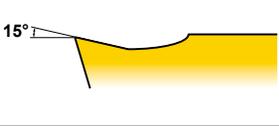
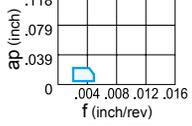
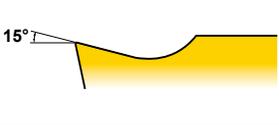
Application	Tolerance	Breaker Name and Picture	Features		Cross Section Geometry
Medium Cutting	M Class	NEW MM 	First recommendation for medium cutting of stainless steel Small, flat, land at cutting edge provides an excellent balance of wear and fracture resistance. The wide chip gullet decreases cutting resistance, reduces vibration and chip jamming in elevated depth of cut applications.	Stainless Steel 	
		Standard 	First recommendation for medium cutting of carbon steel, alloy steel, mild steel, stainless steel and cast iron The high rake angle combined with a small, flat land provide a balance of strength and sharpness.	Carbon Steel-Alloy Steel 	
					
		MV 	Alternative chipbreaker for medium cutting of carbon steel, alloy steel, mild steel and stainless steel A positive land and the high rake angle provides sharp cutting edge performance. The double breakers and round-shaped in the rake face provide a wide range of chip control.	Carbon Steel-Alloy Steel 	
		MW 	Wiper insert for medium cutting of carbon steel, alloy steel, mild steel and stainless steel The wiper allows up to two times higher feed. A wide chip pocket prevents chip jamming.	Carbon Steel-Alloy Steel 	
	E Class	R/L SR 	Medium cutting for Swiss style lathe machining The wide angled chipbreaker. Low resistance insert design controls chip flow.	Carbon Steel-Alloy Steel 	
		R/L SN 	General purpose for Swiss style lathe machining The parallel chipbreaker. Excellent chip control at low to medium feed rates.	Carbon Steel-Alloy Steel 	
		R/L SN 	General purpose for Swiss style lathe machining The parallel chipbreaker. Excellent chip control for low to medium feed rates.	Carbon Steel-Alloy Steel 	
	E Class	R/LW SN 	General purpose for Swiss style lathe machining The parallel chipbreaker. Excellent chip control for low to medium feed rates. The wiper produces good surface finish.	Carbon Steel-Alloy Steel 	

CLASSIFICATION

7° POSITIVE INSERTS WITH HOLE

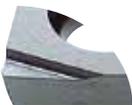
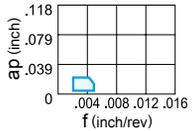
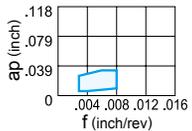
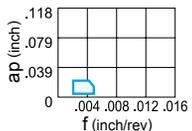
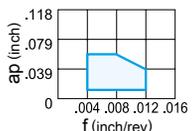
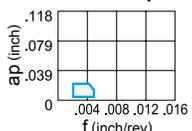
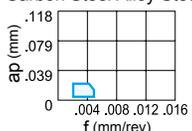
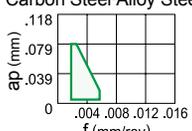
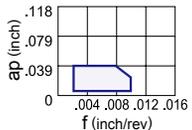
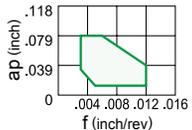
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry	
Medium Cutting	G Class	SMG 	Medium cutting for Swiss style lathes machining 3D molded chipbreaker provides good chip control. G class insert gives sharp cutting action, allowing high precision machining. Breaker geometry appropriate for copying and back turning.	Carbon Steel-Alloy Steel  .118 .079 .039 0 .004 .008 .012 .016 f (inch/rev)	Nose  13° Flank 10°
		RR 	Heavy cutting of carbon steel and alloy steel A wide groove chipbreaker prevents chips from jamming at large depths of cut. Small dimples improve chip control at small depths of cut.	Carbon Steel-Alloy Steel  .472 .315 .157 0 .008 .024 .039 .055 f (inch/rev)	28°  .012"
For Cast Iron	M Class	Flat Top 	For cast iron Most effective in unstable machining due to high edge strength.	Cast Iron  .118 .079 .039 0 .004 .008 .012 .016 f (inch/rev)	0°  0°
		Flat Top 	For cast iron Most effective in unstable machining due to high edge strength. G class tolerance for use on workpieces requiring close tolerances.	Cast Iron  .118 .079 .039 0 .004 .008 .012 .016 f (inch/rev)	0°  0°

11° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry	
Finish Cutting	M Class	FV 	First recommendation for finishing carbon steel, alloy steel, mild steel and stainless steel Suitable for low depth of cut and low feed rate applications. Sharp cutting edge and low resistance design achieves excellent cutting performance.	Carbon Steel-Alloy Steel  .118 .079 .039 0 .004 .008 .012 .016 f (mm/rev)	Nose  18° Flank 8°
		R/L FS 	First recommendation for finishing carbon steel, alloy steel, stainless steel, cast iron and aluminum alloy Small angled chipbreaker. For precision finishing. Sharp cutting edge produces excellent surface finishes.	Carbon Steel-Alloy Steel  .118 .079 .039 0 .004 .008 .012 .016 f (inch/rev)	Flank  15°
		R/L F 	Finishing carbon steel and alloy steel Angled chipbreaker controls chip flow. Sharp cutting edge produces excellent surface finishes.	Carbon Steel-Alloy Steel  .118 .079 .039 0 .004 .008 .012 .016 f (inch/rev)	Flank  15°

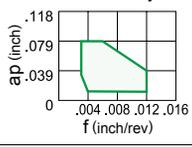
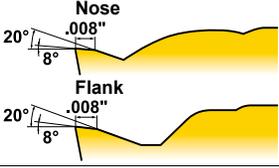
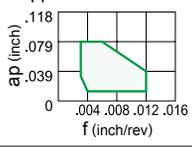
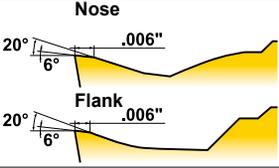
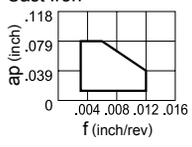
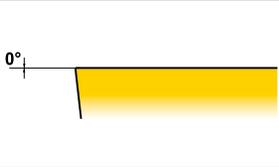
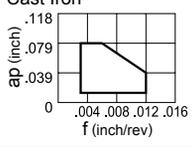
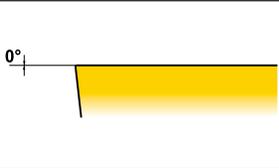
CLASSIFICATION

11° POSITIVE INSERTS WITH HOLE

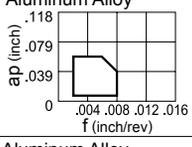
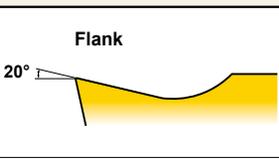
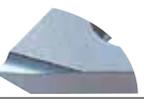
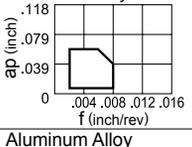
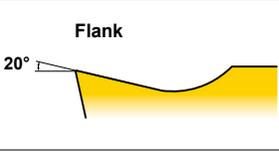
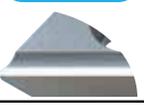
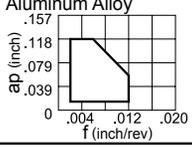
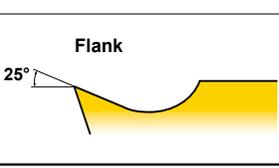
Application	Tolerance	Breaker Name and Picture	Features		Cross Section Geometry
Finish Cutting	G Class	R/L F 	Finishing carbon steel and alloy steel Angled chipbreaker controls chip flow. Sharp cutting edge produces excellent surface finishes.	Carbon Steel-Alloy Steel 	Flank 15°
	M Class	SQ 	Finishing carbon steel, alloy steel and stainless steel For small depth of cut and low feed.	Copper 	Nose 6° Flank 6°
	G Class	R/L 	Light cutting of carbon steel and alloy steel Angled chipbreaker. Good chip control for low to medium feed rates.	Carbon Steel-Alloy Steel 	Flank 10°
	G Class	Standard 	Finishing aluminum alloy Lead chipbreaker controls chip flow. Good chip control for low to medium feed rates.	Aluminum Alloy 	Flank 25°
	M Class	L 	Finishing Angled chipbreaker controls chip flow. Good chip control for low to medium feed rates.	Carbon Steel-Alloy Steel 	Flank 10°
	E Class	SRF 	Finishing Lead chipbreaker controls chip flow. Sharp cutting edge produces excellent surface finishes.	Carbon Steel-Alloy Steel 	Flank 15°
	G Class	SMG 	Medium cutting for Swiss style lathes machining 3D molded chipbreaker provides good chip control. G class insert gives sharp cutting action, allowing high precision machining. Breaker geometry appropriate for copying and back turning.	Carbon Steel-Alloy Steel 	Nose 11° Flank 10°
	M Class	SV 	First recommendation for light cutting of carbon steel, alloy steel, mild steel, stainless steel and cast iron The double breaker design promotes chip discharge for mild steel and low depth of cut machining applications.	Carbon Steel-Alloy Steel 	Nose 18° Flank 8°
	M Class	Standard 	Alternative chipbreaker for medium cutting of carbon steel, alloy steel and stainless steel Standard, general purpose chipbreaker.	Carbon Steel-Alloy Steel 	Nose 10° Flank 10°

CLASSIFICATION

11° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Medium Cutting	M Class	MV 	First recommendation for medium cutting of carbon steel, alloy steel, mild steel, stainless steel and cast iron A positive land and the high rake angle provides sharp cutting edge performance. Double breakers in the rake face achieve a wide range of chip control.	Carbon Steel-Alloy Steel  
		MQ 	Medium cutting of carbon steel, alloy steel and stainless steel Can be used under a wide range of cutting conditions.	Copper  
For Cast Iron	M Class	Flat Top 	Heavy cutting of cast iron Flat top. Most effective for unstable machining due to high edge strength.	Cast Iron  
		Flat Top 	For cast iron Most effective in unstable machining due to high edge strength. G class tolerance allows use on workpieces requiring close tolerances.	Cast Iron  

15–20° POSITIVE INSERTS WITH HOLE

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
For Aluminum Alloy	G Class	R/L 	For aluminum cutting Angled chipbreaker. Sharp cutting edge produces excellent surface finishes.	Aluminum Alloy  
		R/L F 	For aluminum cutting Angled chipbreaker. Sharp cutting edge produces excellent surface finishes.	Aluminum Alloy  
		R/L 	For aluminum cutting Parallel chipbreaker. Sharp cutting edge produces excellent surface finishes.	Aluminum Alloy  

CLASSIFICATION

NEGATIVE INSERTS WITHOUT HOLE

Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Rough Cutting M Class	M1 	Medium cutting of carbon steel and alloy steel Single sided chipbreaker. Can be used for copying. An angled chipbreaker for controlling chip flow. (M1)	Carbon Steel-Alloy Steel Graph: ap (inch) vs f (inch/rev) Cross Section Geometry: Flank, 12°, .012"
	Flat Top 	Heavy cutting of cast iron Double sided flat insert. Most effective for unstable machining due to high edge strength and stable insert clamping.	Cast Iron Graph: ap (inch) vs f (inch/rev) Cross Section Geometry: 0°
For Cast Iron G Class	Flat Top 	For cast iron Double sided flat insert. Most effective for unstable machining due to high edge strength and stable insert clamping. Use on workpieces requiring close tolerance inserts.	Cast Iron Graph: ap (inch) vs f (inch/rev) Cross Section Geometry: 0°

7° POSITIVE INSERTS WITHOUT HOLE

Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
For Cast Iron G Class	Flat Top 	For cast iron Double sided flat insert. Most effective for unstable machining due to high edge strength and stable insert clamping. Use on workpieces requiring close tolerance inserts.	Cast Iron Graph: ap (inch) vs f (inch/rev) Cross Section Geometry: 0°

11° POSITIVE INSERTS WITHOUT HOLE

Application Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting G Class	R/L 	Finishing A parallel chipbreaker. Good chip control for low to medium feed rates.	Carbon Steel-Alloy Steel Graph: ap (inch) vs f (inch/rev) Cross Section Geometry: Flank, 15°
Light to Medium Cutting M Class	Standard 	Light to medium cutting of carbon steel, alloy steel and stainless steel Standard, general purpose chipbreaker.	Carbon Steel-Alloy Steel Graph: ap (inch) vs f (inch/rev) Cross Section Geometry: Nose, Flank, 0°
	For Cast Iron M Class	Flat Top 	Heavy cutting of cast iron Flat top. Most effective for unstable machining due to high edge strength and stable insert clamping.
For Cast Iron G Class		Flat Top 	For cast iron Flat top. Most effective for unstable machining due to high edge strength and stable insert clamping. Use on workpieces requiring close tolerance inserts.