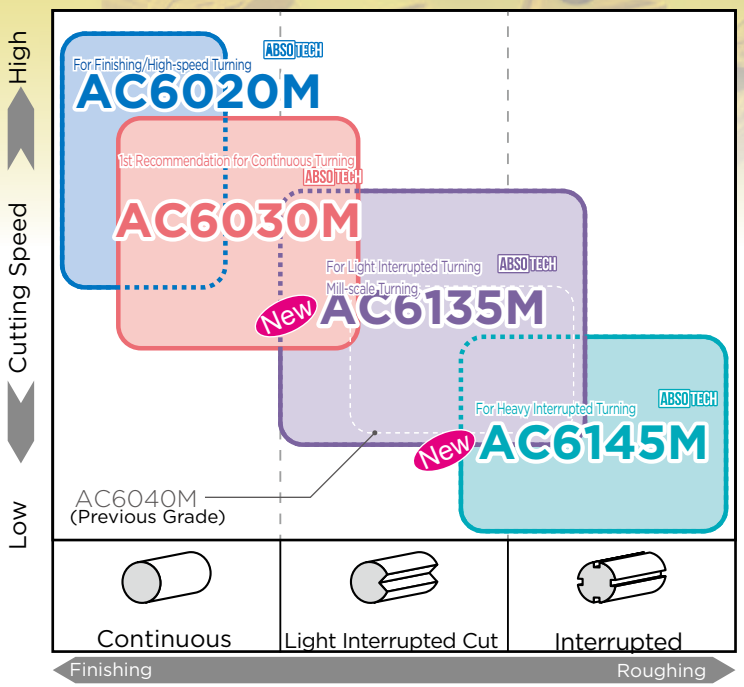
Coated Grades For Stainless Steel

AC6020M/AC6030M/AC6135M/AC6145M

Product Video

■ Application Range



AC6020M CVD ABSOTECH

The combination of a CVD coating and a high-hardness carbide substrate realises long and stable tool life in **finishing and high-speed turning.**

AC6030M CVD ABSOTECH

1st recommended grade for continuous turning, using CVD coating to drastically reduce the occurrence of abnormal damage, a problem in stainless steel turning, to achieve a long and stable tool life.

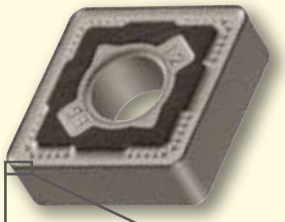
AC6135M New PVD ABSOTECH

Balances excellent wear resistance and fracture resistance in light Interrupted turning and casted or or forged skin turning through the use of new PVD coating.

AC6145M New PVD ABSOTECH

The combination of a PVD coating and a high-toughness carbide substrate realises absolute stability in **heavy interrupted turning.**

■ Features of AC6020M/AC6030M



AC6020M/AC6030M CVD ABSOTECH

Stainless steel turning grades with significantly improved chipping and adhesion resistance through the use of our proprietary insert surface smoothing treatment

Surface Smoothing Treatment

Surface smoothing treatment improves adhesion resistance, significantly suppressing adhesion and the resulting chipping

High Toughness Alumina Layer

Realises stable long tool life through the use of an alumina layer with excellent toughness

High Hardness Fine Grained TiCN Layer

Fine and uniform crystal structure significantly improves the coating hardness

High Adhesion Technology Layer

Significantly improves adhesion strength through a smooth interface between the coating and carbide substrate

■ Applications of AC6000M Series / AC6100M Series (Example: Stainless Steel)

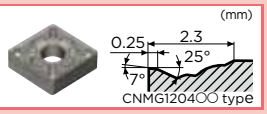
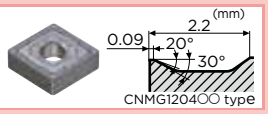
Applicable Work Materials (1st Recommendation)

Ferritic (X6CrAl13/ X6Cr17 etc.)
Martensitic (X12Cr13/X30Cr13/X105CrMo17 etc.)
Precipitation Hardened Structure (X5CrNiCuNb16-4/X7CrNiAl17-7/ X8CrNiMoAl15-7-2 etc.)

Applicable Work Materials (1st Recommendation)

Austenitic (X5CrNi18-10/X5CrNiMo17-12-2 /X6CrNiTi18-10 etc.)
Duplex (X2CrNiMoN29-7-2/X2CrNiMoN22-5-3 / X2CrNiMoCuN25-6-3 etc.)

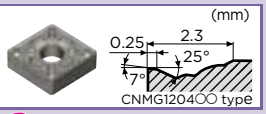
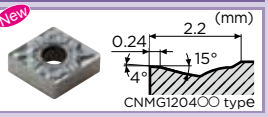
AC6030M — CVD

General-Purpose (1st Recommendation)	NGU type	
General-Purpose Chip Control Emphasized	NEG type	

For Light Interrupted Turning and Forged or Casted Skin

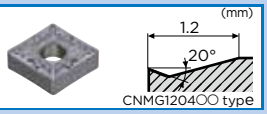
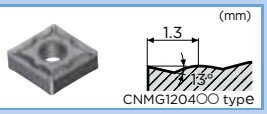
For Continuous Turning

AC6135M — New — PVD

General-Purpose (1st Recommendation)	NGU type	
Stable Machining Emphazised	NEH type (New)	

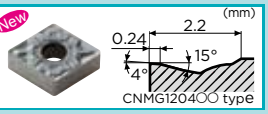
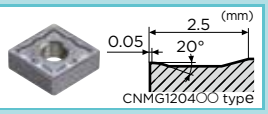
For Finishing/High-speed Turning

AC6020M — CVD

Chip Control Emphasized (1st Recommendation)	NEF type	
Cutting Force Supressed	NSU type	

For Heavy Interrupted Turning

AC6145M — New — PVD

Chip Control Emphasized (1st Recommendation)	NEH type (New)	
Rapid Fractures Suppressed	NEM type	

■ Features of AC6135M/AC6145M New

AC6135M/AC6145M PVD ABSOTECH

AlTiBN-based multi-layered coating provides excellent wear, fracture and adhesion resistance and exhibits absolute stability in the turning of stainless steels.

Adhesion Resistance Layer

The use of a TiCN-based composition with excellent lubricity suppresses adhesion and the resulting chipping

Wear Resistance Layer

The use of our proprietary high-hardness AlTiBN-based super multi-layered coating significantly suppresses crater wear and flank wear

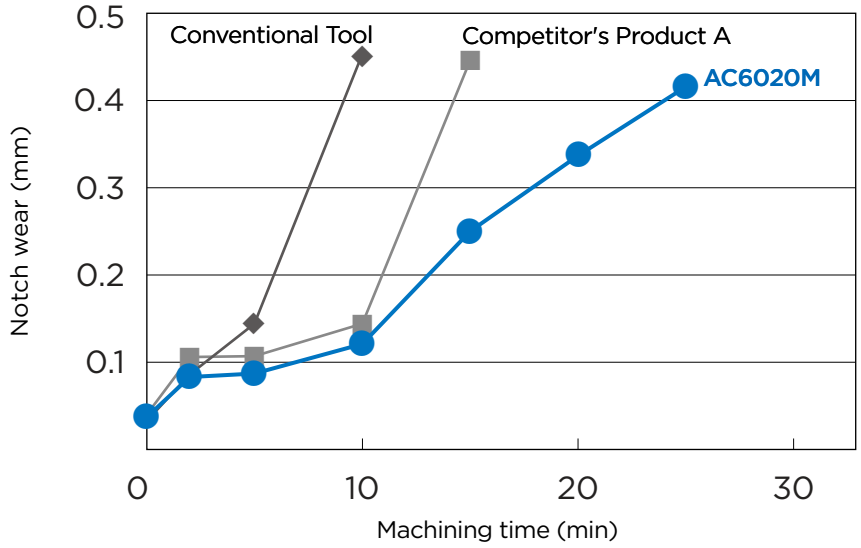
Chipping Resistance Layer

The use of an ultra-fine grain AlTiBN-based composition with excellent toughness suppresses unexpected chipping

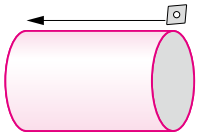
High Adhesion Technology

Improved stability with special technology enhancing coating adhesion strength

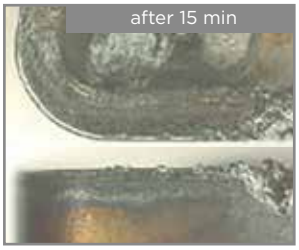
■ Wear Resistance of AC6020M (Continuous Turning of Stainless Steel)



Work Material: X2CrNiMo17-12-2 Continuous Turning
Insert: CNMG120408
Cutting Conditions: Vc = 150m/min, f = 0.3mm/rev, ap = 2.0mm, Wet

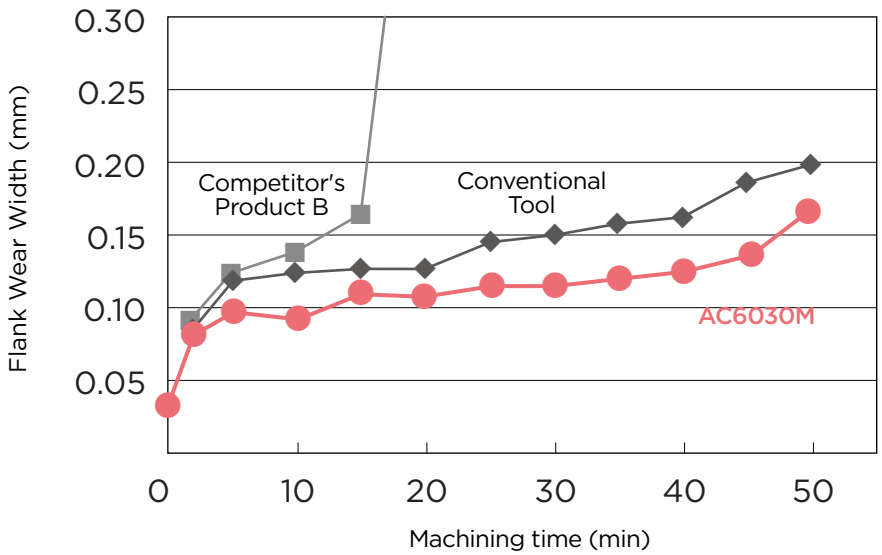


AC6020M

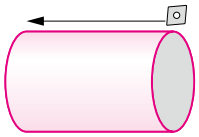


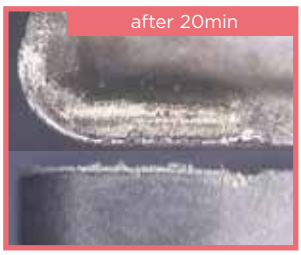
Competitor's Product A

■ Wear Resistance of AC6030M (Continuous Turning of Stainless Steel)

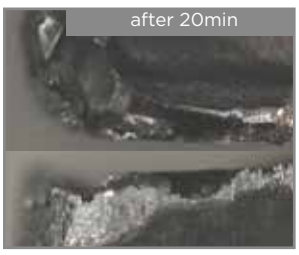


Work Material: X5CrNiMo17-12-2 Continuous Turning CNMG120408
Insert: vc = 200m/min
Cutting Conditions: f = 0.2mm/rev, ap = 2.0mm, Wet



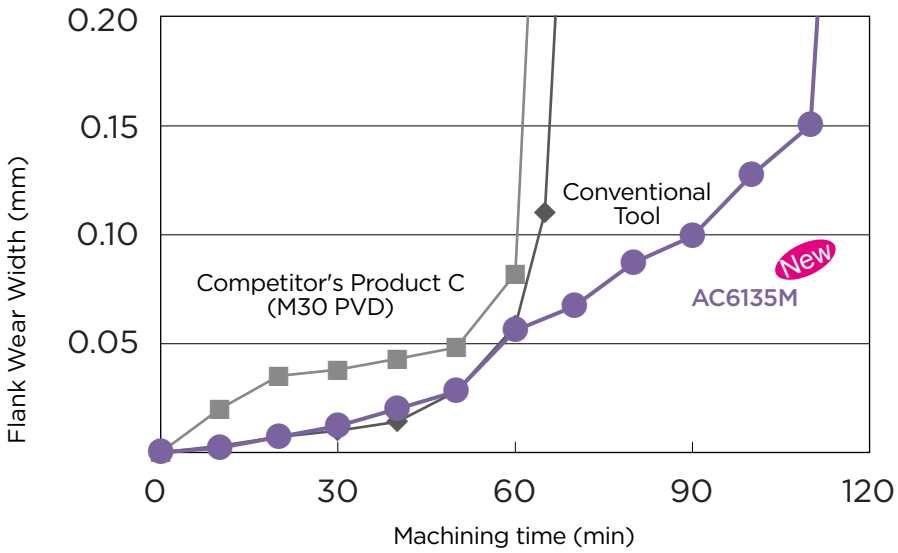


AC6030M

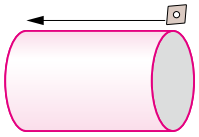


Competitor's Product B

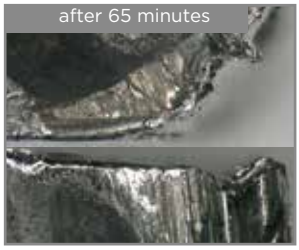
■ Wear Resistance of AC6135M (Continuous Turning of Stainless Steel)



Work Material:	X5CrNiMo17-12-2 Continuous Turning
Insert:	CNMG120408
Cutting Conditions:	Vc = 150m/min f = 0.2mm/rev ap = 2.0mm Wet

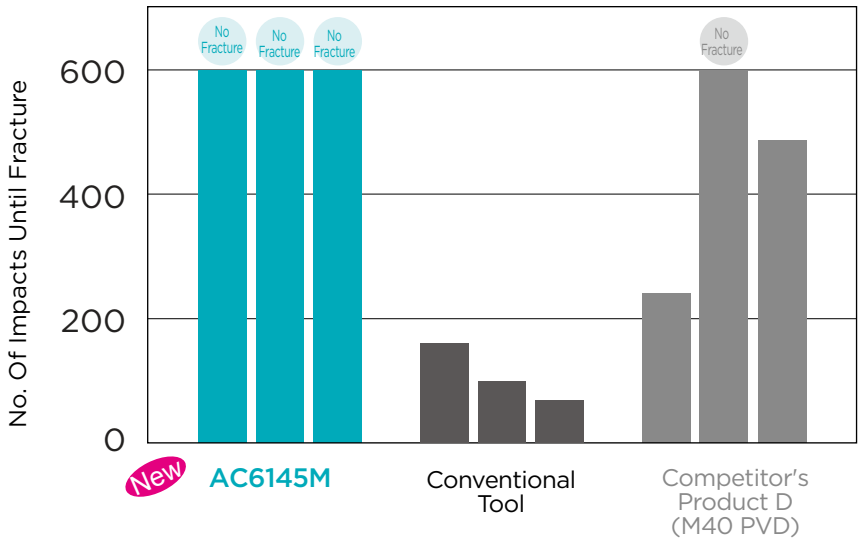


AC6135M New

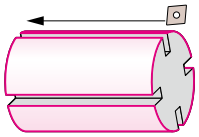


Competitor's Product C (M30 PVD)

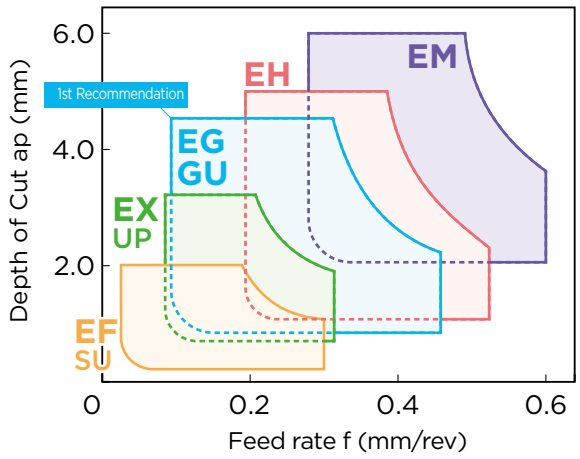
■ Fracture Resistance of AC6145M (Interrupted Turning of Stainless Steel)



Work Material:	X5CrNiMo17-12-2 Interrupted Turning
Insert:	CNMG120408
Cutting Conditions:	vc = 70m/min f = 0.25mm/rev ap = 1.0mm Wet



■ Chipbreaker Application Range



Chipbreaker series for stainless steel turning includes EF type for finishing, EX type for finishing to medium cutting, EG and GU types for medium cutting, and EM type for roughing. In addition, EH type for medium cutting to roughing and interrupted applications is also available

The entire series meets various needs such as chip control performance, wear resistance performance, fracture resistance performance and so on, realising stability in stainless steel turning

■ Features of Chipbreakers

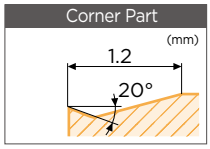
EF — For Finishing

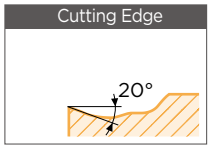
Main chipbreaker exhibits excellent chip evacuation performance even with small depths of cut

Cutting edge designed with an emphasis on sharpness (20° rake angle) to suppress wear

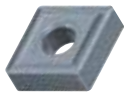
Grooved rake face suppresses heat generation and uneven contact

Chipbreaker Cross Section (CNMG1204SS type)





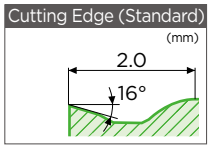
EX — For Light to Medium Cutting



Curvefaced chipbreaker reduces contact with chips to decrease heat generation and cutting load

Straight cutting edge and large rake angle (16°) improve cutting edge sharpness and notch damage resistance performance

Chipbreaker Cross Section (CNMG1204SS type)

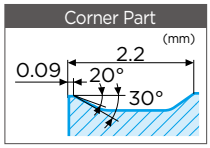


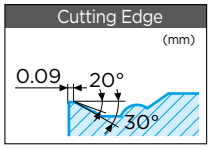
EG — For Medium Cutting

Spherical protrusions exhibit excellent chip control performance over a wide range of conditions

Cutting edge shape that retains its strength even after wear progresses

Chipbreaker Cross Section (CNMG1204SS type)



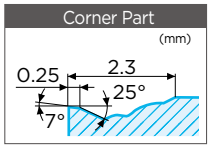


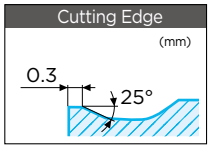
GU — For Medium Cutting

Wide chip control range with grooved spherical protrusions

2step rake face shape suppresses wear progress

Chipbreaker Cross Section (CNMG1204SS type)



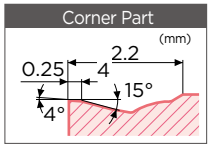


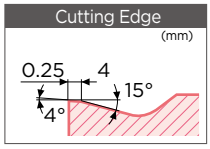
EH — New — For Medium Cutting to Roughing

Spherical protrusions suppress resistance while controlling chips

2step rake face shape enhances fracture resistance

Chipbreaker Cross Section (CNMG1204SS type)



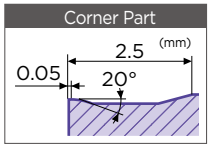


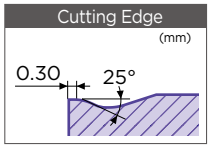
EM — ForRoughing

Large convex rake face design keeps its cutting edge strength while suppressing crater wear

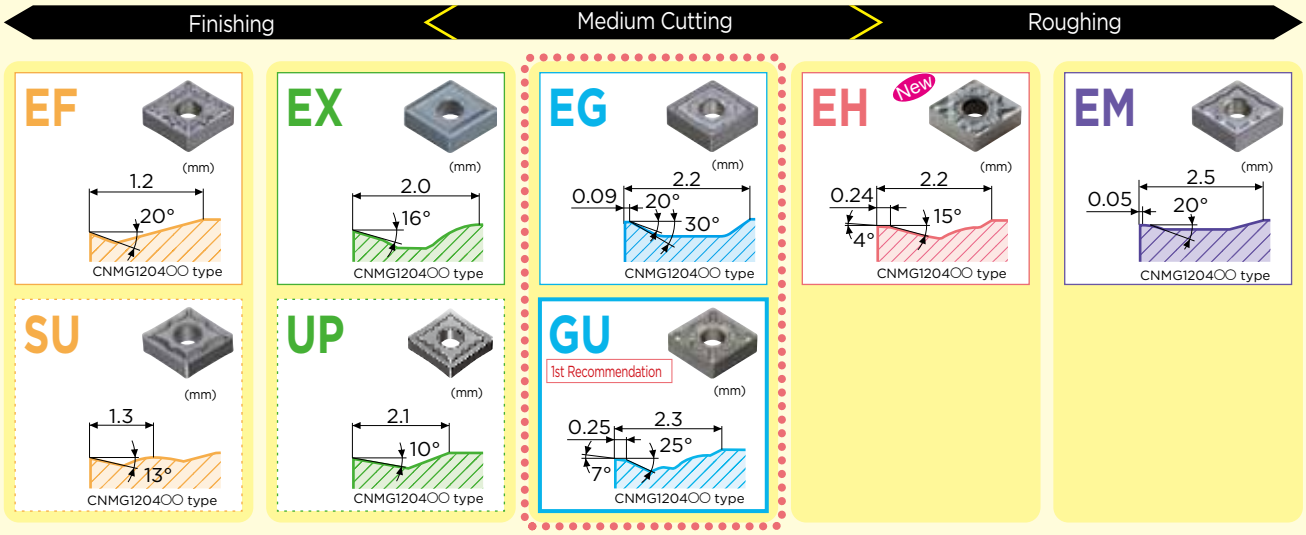
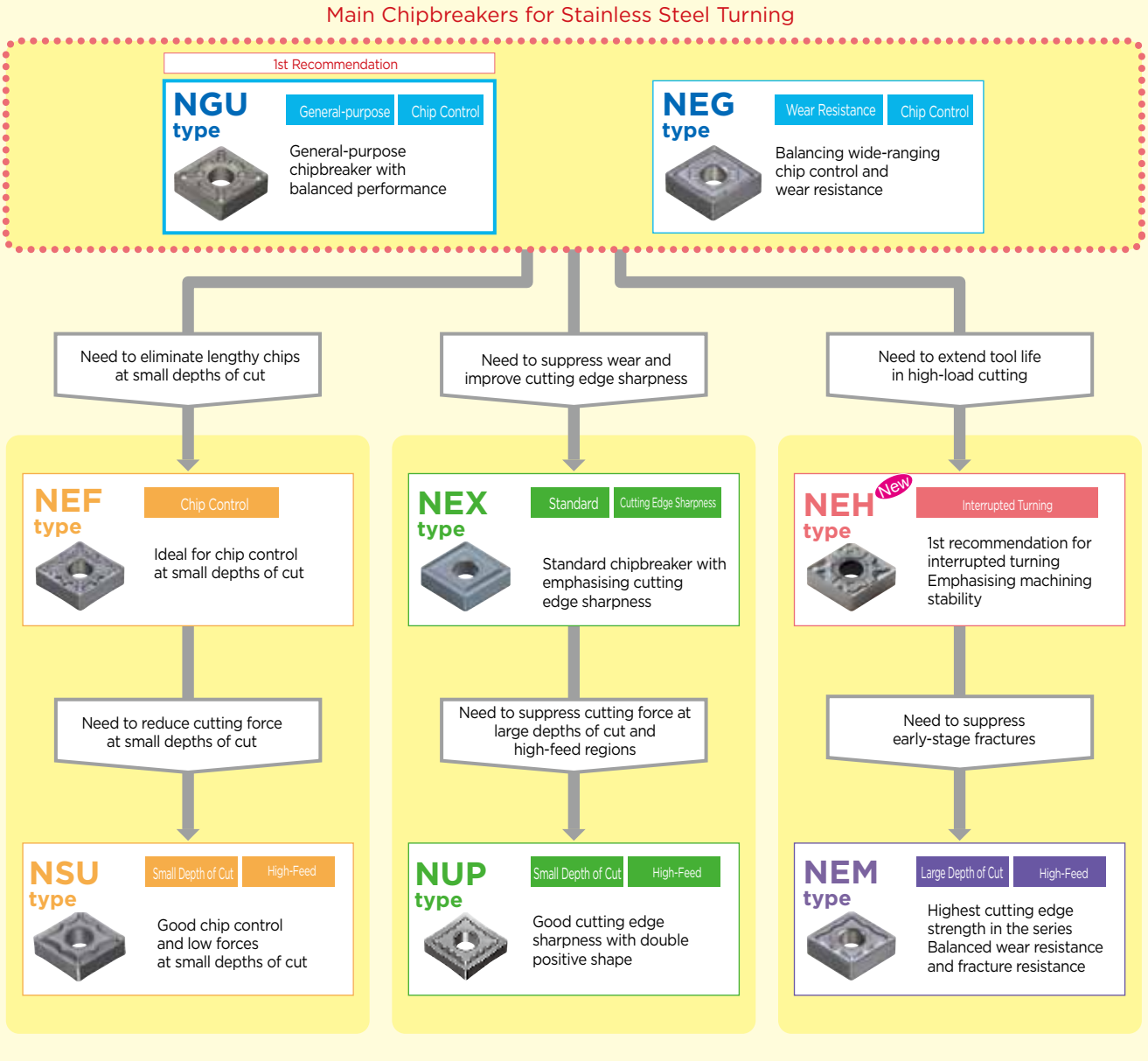
Suppresses notch wear by eliminating the change of cutting points on the cutting edge

Chipbreaker Cross Section (CNMG1204SS type)





■ Applications of Chipbreakers (Negative Inserts): Application Range



■ Applications of Chipbreakers (Negative Inserts): Troubleshooting