

# CLASSIFICATION OF GRADES AND CHIP BREAKERS FOR TURNING

CLASSIFICATION OF GRADES AND CHIP BREAKERS FOR TURNING

## ● Selection of optimum inserts for turning

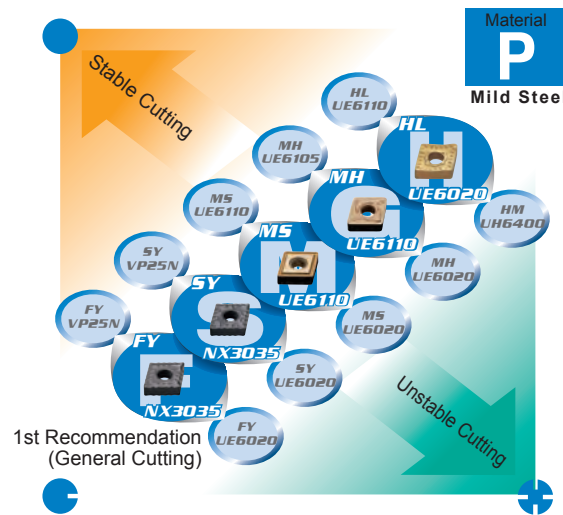
The following diagrams show for each type of work material, the optimal combination of suitable grades and chip breakers for each application area in turning.

### CUTTING CONDITIONS

	<b>Stable Cutting</b>	Continuous Cutting Constant Depth of Cut Pre-Machined Securely Clamped Component Cutting
	<b>General Cutting</b>	
	<b>Unstable Cutting</b>	Heavy Interrupted Cutting Irregular Depth of Cut Low Clamping Rigidity Cutting

### CUTTING AREA

<b>F</b>	Finish Cutting (ap≤0.5mm)
<b>S</b>	Light Cutting (ap=0.5—1.5mm)
<b>M</b>	Medium Cutting (ap=1.5—4.0mm)
<b>G</b>	Semi-Heavy Cutting (ap=4.0—7.0mm)
<b>H</b>	Heavy Cutting (ap=7.0—10mm)



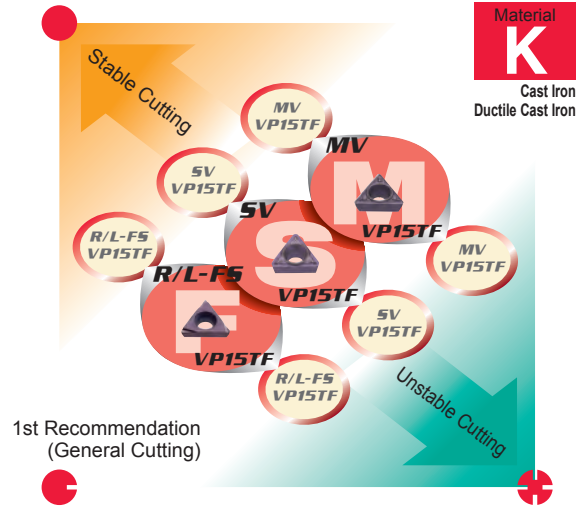
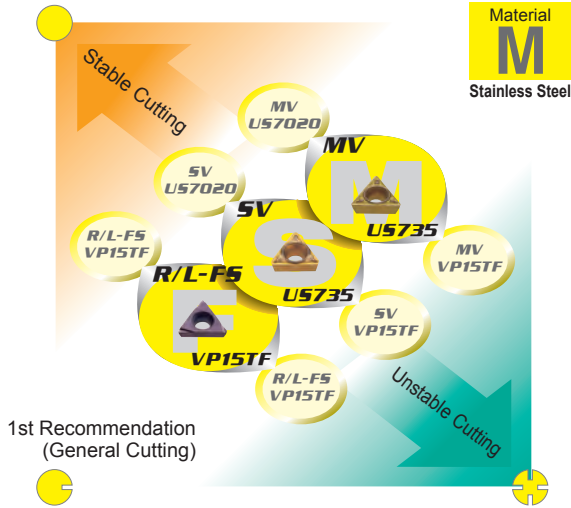
## **P** Mild Steel NEGATIVE INSERTS

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips	Chip Jamming
	<b>F</b>	<b>FY VP25N</b>	vc ↘	FY NX3035	f ↗, vc ↘	SY VP25N
	<b>S</b>	<b>SY VP25N</b>	vc ↘	SY NX3035	FY VP25N	MS NX3035
	<b>M</b>	<b>MS UE6110</b>	vc ↘	MS UE6020	SY VP25N	MH UE6110
	<b>G</b>	<b>MH UE6105</b>	vc ↘	MH UE6110	MA UE6105	GH UE6105
	<b>H</b>	<b>HL UE6110</b>	vc ↘	HL UE6020	GH UE6110	HX UE6110
	<b>F</b>	<b>FY NX3035</b>	FY VP25N	FY UE6020	f ↗, vc ↘	SY NX3035
	<b>S</b>	<b>SY NX3035</b>	SY VP25N	SY UE6020	FY NX3035	MS NX3035
	<b>M</b>	<b>MS UE6110</b>	vc ↘	MS UE6020	SY UE6020	MH UE6110
	<b>G</b>	<b>MH UE6110</b>	MH UE6105	MH UE6020	MA UE6110	GH UE6110
	<b>H</b>	<b>HL UE6020</b>	HL UE6110	HM UE6020	GH E6020	HX UE6020
	<b>F</b>	<b>FY UE6020</b>	FY NX3035	SY UE6020	f ↗, vc ↘	SY UE6020
	<b>S</b>	<b>SY UE6020</b>	SY NX3035	MS UE6020	FY UE6020	MS UE6020
	<b>M</b>	<b>MS UE6020</b>	MS UE6110	MH UE6020	SY UE6020	MH UE6020
	<b>G</b>	<b>MH UE6020</b>	MH UE6110	MH UE6035	MA UE6020	GH UE6020
	<b>H</b>	<b>HM UH6400</b>	HM UE6020	ap, f ↘	HL UE6020	HX UH6400

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## M Stainless Steel

11° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips	Chip Jamming
Stable Cutting	F	R/L-F5 VP15TF	vc ↓	ap, f ↓	—	f ↓
	S	SV US7020	vc ↓	SV US735	—	MV US7020
	M	MV US7020	vc ↓	MV US735	SV US7020	f ↓
General Cutting	F	R/L-F5 VP15TF	vc ↓	ap, f ↓	—	f ↓
	S	SV US735	SV US7020	SV VP15TF	—	MV US735
	M	MV US735	MV US7020	MV VP15TF	SV US735	f ↓
Unstable Cutting	F	R/L-F5 VP15TF	vc ↓	ap, f ↓	—	f ↓
	S	SV VP15TF	SV US7020	MV VP15TF	—	MV VP15TF
	M	MV VP15TF	MV US7020	ap, f ↓	SV VP15TF	f ↓

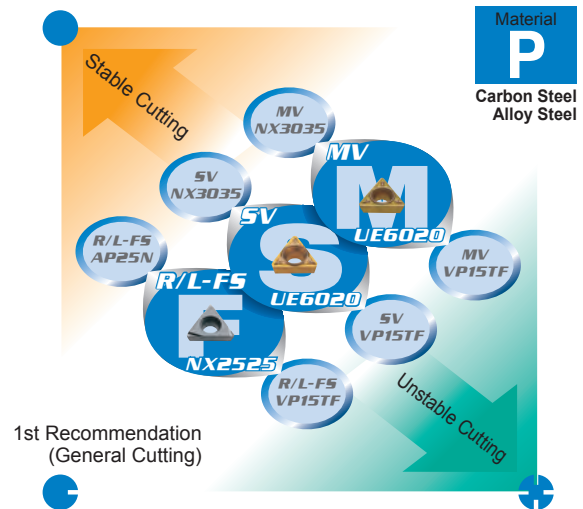
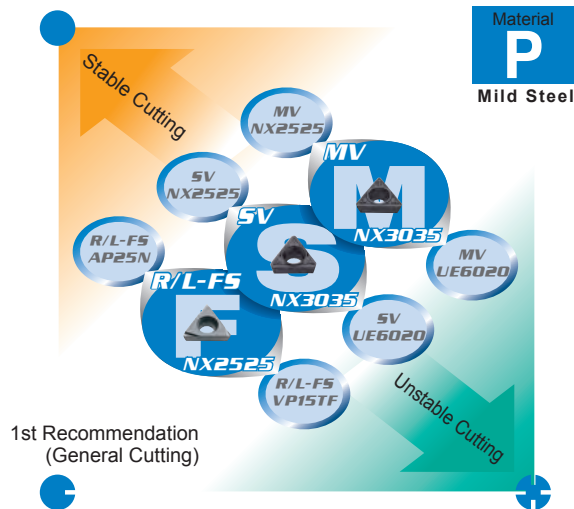
## K Cast Iron • Ductile Cast Iron

11° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture
Stable Cutting	F	R/L-F5 VP15TF	vc ↓	ap, f ↓
	S	SV VP15TF	vc ↓	MV VP15TF
	M	MV VP15TF	vc ↓	ap, f ↓
General Cutting	F	R/L-F5 VP15TF	vc ↓	ap, f ↓
	S	SV VP15TF	vc ↓	MV VP15TF
	M	MV VP15TF	vc ↓	ap, f ↓
Unstable Cutting	F	R/L-F5 VP15TF	vc ↓	ap, f ↓
	S	SV VP15TF	vc ↓	MV VP15TF
	M	MV VP15TF	vc ↓	ap, f ↓

●	Stable Cutting	<b>F</b>	Finish Cutting
○	General Cutting	<b>S</b>	Light Cutting
⊕	Unstable Cutting	<b>M</b>	Medium Cutting



## **P** Mild Steel

11° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips	Chip Jamming
Stable Cutting	<b>F</b>	<b>R/L-FS AP25N</b>	vc ↘	RL-FS VP15TF	f ↗, vc ↘	f ↘
	<b>S</b>	<b>SV NX2525</b>	vc ↘	SV NX3035	f ↗, vc ↘	MV NX2525
	<b>M</b>	<b>MV NX2525</b>	MV AP25N	MV NX3035	SV NX2525	f ↘
General Cutting	<b>F</b>	<b>R/L-FS NX2525</b>	L-FS AP25N	RL-FS VP15TF	f ↗, vc ↘	f ↘
	<b>S</b>	<b>SV NX3035</b>	SV NX2525	SV VP45N	f ↗, vc ↘	MV NX3035
	<b>M</b>	<b>MV NX3035</b>	MV NX2525	MV VP25N	SV NX3035	f ↘
Unstable Cutting	<b>F</b>	<b>R/L-FS VP15TF</b>	RL-FS NX2525	ap, f ↘	f ↗, vc ↘	f ↘
	<b>S</b>	<b>SV UE6020</b>	SV US7020	SV VP15TF	f ↗, vc ↘	MV UE6020
	<b>M</b>	<b>MV UE6020</b>	MV US7020	MV VP15TF	SV UE6020	f ↘

## **P** Carbon Steel • Alloy Steel

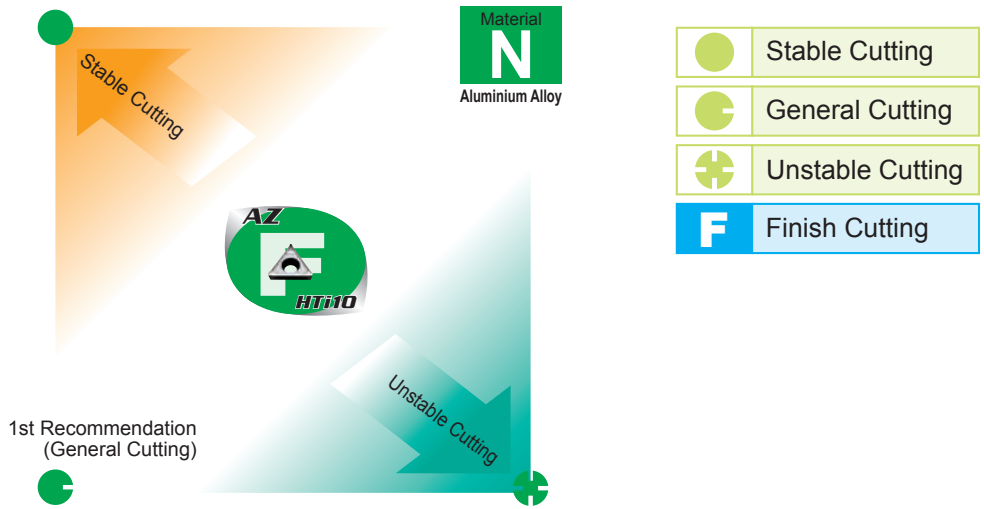
11° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips	Chip Jamming
Stable Cutting	<b>F</b>	<b>R/L-FS AP25N</b>	vc ↘	RL-FS VP15TF	f ↗, vc ↘	f ↘
	<b>S</b>	<b>SV NX3035</b>	SV NX2525	SV VP45N	f ↗, vc ↘	MV NX3035
	<b>M</b>	<b>MV NX3035</b>	MV NX2525	MV VP45N	SV NX3035	f ↘
General Cutting	<b>F</b>	<b>R/L-FS NX2525</b>	L-FS AP25N	RL-FS VP15TF	f ↗, vc ↘	f ↘
	<b>S</b>	<b>SV UE6020</b>	SV US7020	SV VP15TF	f ↗, vc ↘	MV UE6020
	<b>M</b>	<b>MV UE6020</b>	MV US7020	MV VP15TF	SV UE6020	f ↘
Unstable Cutting	<b>F</b>	<b>R/L-FS VP15TF</b>	RL-FS NX2525	ap, f ↘	f ↗, vc ↘	f ↘
	<b>S</b>	<b>SV VP15TF</b>	SV UE6020	MV VP15TF	f ↗, vc ↘	MV VP15TF
	<b>M</b>	<b>MV VP15TF</b>	MV UE6020	ap, f ↘	SV VP15TF	f ↘

## CLASSIFICATION OF GRADES AND CHIP BREAKERS FOR TURNING

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### N Aluminium Alloy 7° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips	Chip Jamming
● Stable Cutting	<b>F</b>	<b>AZ HTi10</b>	vc ↓	ap, f ↓	f ↑, vc ↓	f ↓
● General Cutting	<b>F</b>	<b>AZ HTi10</b>	vc ↓	ap, f ↓	f ↑, vc ↓	f ↓
⊕ Unstable Cutting	<b>F</b>	<b>AZ HTi10</b>	vc ↓	ap, f ↓	f ↑, vc ↓	f ↓



### S Titanium Alloy 7° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips
● Stable Cutting	<b>F</b>	* <b>FJ RT9010</b>	vc ↓	ap, f ↓	f ↓
● General Cutting	<b>F</b>	* <b>FJ RT9010</b>	vc ↓	ap, f ↓	f ↓
⊕ Unstable Cutting	<b>F</b>	* <b>FJ RT9010</b>	vc ↓	ap, f ↓	f ↓

\*Non stock, produced to order only.

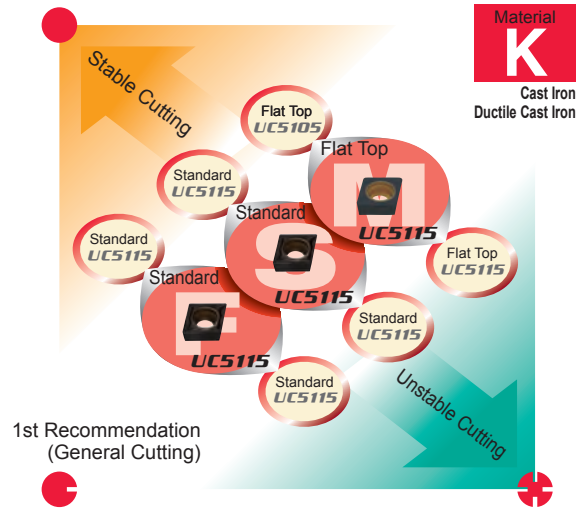
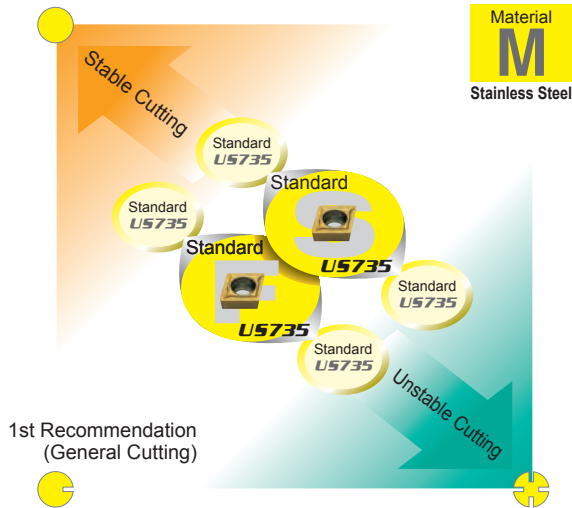
### S Ni, Co-Based Alloy 7° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips
● Stable Cutting	<b>F</b>	* <b>FJ VP10RT</b>	vc ↓	ap, f ↓	f ↓
● General Cutting	<b>F</b>	* <b>FJ VP10RT</b>	vc ↓	ap, f ↓	f ↓
⊕ Unstable Cutting	<b>F</b>	* <b>FJ VP10RT</b>	vc ↓	ap, f ↓	f ↓

\*Non stock, produced to order only.

●	Stable Cutting	<b>F</b>	Finish Cutting
○	General Cutting	<b>S</b>	Light Cutting
⊕	Unstable Cutting	<b>M</b>	Medium Cutting



## M Stainless Steel

7° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips	Chip Jamming
● Stable Cutting	<b>F</b>	Standard <b>US735</b>	vc ↓	ap, f ↓	f ↑, vc ↓	f ↓
	<b>S</b>	Standard <b>US735</b>	vc ↓	ap, f ↓	f ↑, vc ↓	f ↓
○ General Cutting	<b>F</b>	Standard <b>US735</b>	vc ↓	ap, f ↓	f ↑, vc ↓	f ↓
	<b>S</b>	Standard <b>US735</b>	vc ↓	ap, f ↓	f ↑, vc ↓	f ↓
⊕ Unstable Cutting	<b>F</b>	Standard <b>US735</b>	vc ↓	ap, f ↓	f ↑, vc ↓	f ↓
	<b>S</b>	Standard <b>US735</b>	vc ↓	ap, f ↓	f ↑, vc ↓	f ↓

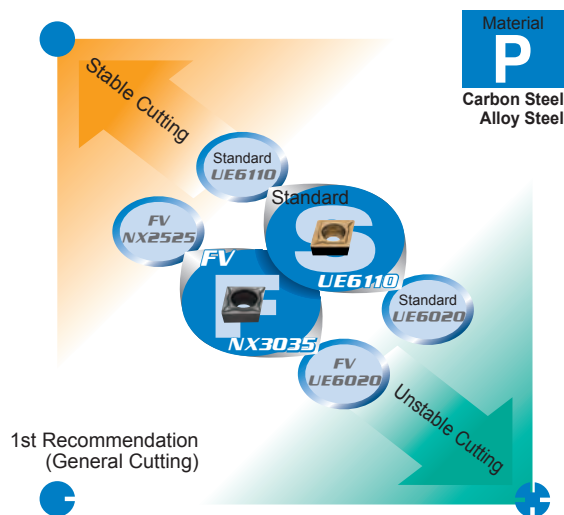
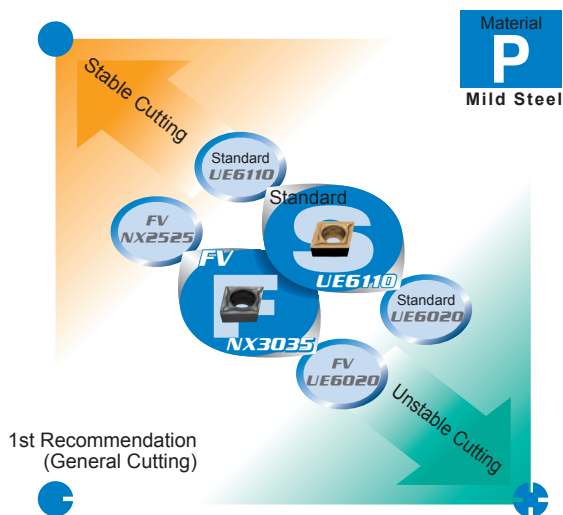
## K Cast Iron • Ductile Cast Iron

7° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture
● Stable Cutting	<b>F</b>	Standard <b>UC5115</b>	vc ↓	Standard UE6110
	<b>S</b>	Standard <b>UC5115</b>	vc ↓	Standard UE6110
	<b>M</b>	Flat Top <b>UC5105</b>	vc ↓	Flat Top UC5115
○ General Cutting	<b>F</b>	Standard <b>UC5115</b>	vc ↓	Standard UE6110
	<b>S</b>	Standard <b>UC5115</b>	vc ↓	Standard UE6110
	<b>M</b>	Flat Top <b>UC5115</b>	Flat Top UC5105	ap, f ↓
⊕ Unstable Cutting	<b>F</b>	Standard <b>UC5115</b>	vc ↓	Standard UE6110
	<b>S</b>	Standard <b>UC5115</b>	vc ↓	Standard UE6110
	<b>M</b>	Flat Top <b>UC5115</b>	Flat Top UC5105	ap, f ↓

# CLASSIFICATION OF GRADES AND CHIP BREAKERS FOR TURNING



## P Mild Steel

7° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips	Chip Jamming
Stable Cutting	<b>F</b>	<b>FV NX2525</b>	FV AP25N	FV NX3035	<b>f</b> ↗ , <b>vc</b> ↘	Standard NX2525
	<b>S</b>	<b>Standard UE6110</b>	vc ↘	Standard UE6020	FV UE6020	<b>f</b> ↘
General Cutting	<b>F</b>	<b>FV NX3035</b>	FV NX2525	FV UE6020	<b>f</b> ↗ , <b>vc</b> ↘	Standard UE6110
	<b>S</b>	<b>Standard UE6110</b>	vc ↘	Standard UE6020	FV UE6020	<b>f</b> ↘
Unstable Cutting	<b>F</b>	<b>FV UE6020</b>	vc ↘	Standard UE6020	<b>f</b> ↗ , <b>vc</b> ↘	Standard UE6020
	<b>S</b>	<b>Standard UE6020</b>	Standard UE6110	Standard US735	FV UE6020	<b>f</b> ↘

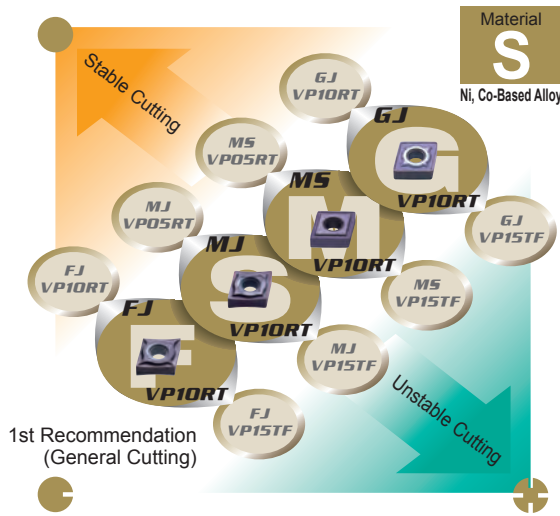
## P Carbon Steel • Alloy Steel

7° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips	Chip Jamming
Stable Cutting	<b>F</b>	<b>FV NX2525</b>	FV AP25N	FV NX3035	<b>f</b> ↗ , <b>vc</b> ↘	Standard NX2525
	<b>S</b>	<b>Standard UE6110</b>	vc ↘	Standard UE6020	FV UE6020	<b>f</b> ↘
General Cutting	<b>F</b>	<b>FV NX3035</b>	FV NX2525	FV UE6020	<b>f</b> ↗ , <b>vc</b> ↘	Standard UE6110
	<b>S</b>	<b>Standard UE6110</b>	vc ↘	Standard UE6020	FV UE6020	<b>f</b> ↘
Unstable Cutting	<b>F</b>	<b>FV UE6020</b>	vc ↘	Standard UE6020	<b>f</b> ↗ , <b>vc</b> ↘	Standard UE6020
	<b>S</b>	<b>Standard UE6020</b>	Standard UE6110	Standard US735	FV UE6020	<b>f</b> ↘



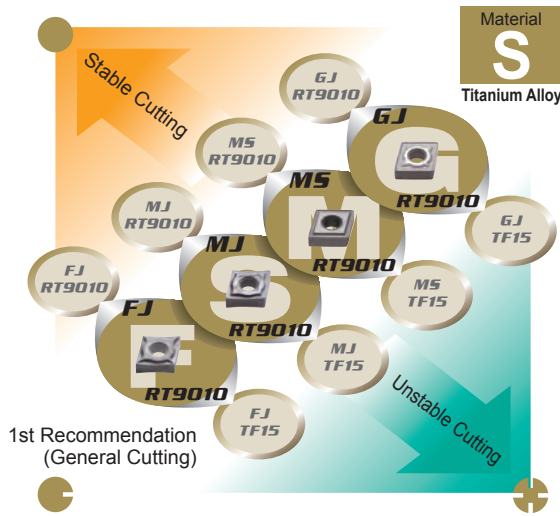


**S** Ni, Co-Based Alloy  
NEGATIVE INSERTS

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips	Chip Jamming
Stable Cutting	<b>F</b>	<b>FJ VP10RT</b>	vc ↓	FJ VP15TF	—	MJ VP10RT
	<b>S</b>	<b>MJ VP05RT</b>	MJ US905	MJ VP10RT	FJ VP10RT	f ↓
	<b>M</b>	<b>MS VP05RT</b>	MS US905	MS VP10RT	—	GJ VP10RT
	<b>G</b>	<b>GJ VP10RT</b>	GJ US905	GJ VP15TF	—	f ↓
General Cutting	<b>F</b>	<b>FJ VP10RT</b>	vc ↓	FJ VP15TF	—	MJ VP10RT
	<b>S</b>	<b>MJ VP10RT</b>	MJ VP05RT	MJ VP15TF	FJ VP10RT	f ↓
	<b>M</b>	<b>MS VP10RT</b>	MS VP05RT	MS VP15TF	—	GJ VP10RT
Unstable Cutting	<b>G</b>	<b>GJ VP10RT</b>	GJ US905	GJ VP15TF	—	f ↓
	<b>F</b>	<b>FJ VP15TF</b>	FJ VP10RT	MJ VP15TF	—	MJ VP15TF
	<b>S</b>	<b>MJ VP15TF</b>	MJ VP10RT	MS VP15TF	FJ VP15TF	f ↓
	<b>M</b>	<b>MS VP15TF</b>	MS VP10RT	GJ VP15TF	—	GJ VP15TF
	<b>G</b>	<b>GJ VP15TF</b>	GJ VP10RT	ap, f ↓	—	f ↓

# CLASSIFICATION OF GRADES AND CHIP BREAKERS FOR TURNING

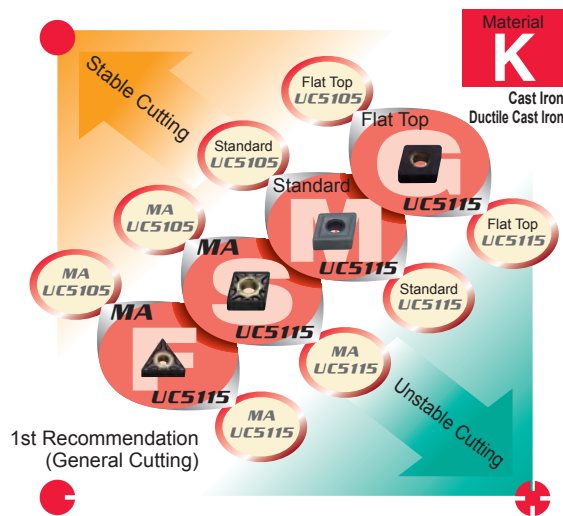


## S Titanium Alloy NEGATIVE INSERTS

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips	Chip Jamming
Stable Cutting	F	<b>FJ RT9010</b>	vc ↓	FJ TF15	—	MJ RT9010
	S	<b>MJ RT9010</b>	vc ↓	MJ TF15	FJ RT9010	f ↓
	M	<b>MS RT9010</b>	vc ↓	MS TF15	—	GJ RT9010
	G	<b>GJ RT9010</b>	vc ↓	GJ TF15	—	f ↓
General Cutting	F	<b>FJ RT9010</b>	vc ↓	FJ TF15	—	MJ RT9010
	S	<b>MJ RT9010</b>	vc ↓	MJ TF15	FJ RT9010	f ↓
	M	<b>MS RT9010</b>	vc ↓	MS TF15	—	GJ RT9010
Unstable Cutting	G	<b>GJ RT9010</b>	vc ↓	GJ TF15	—	f ↓
	F	<b>FJ TF15</b>	FJ RT9010	MJ TF15	—	MJ TF15
	S	<b>MJ TF15</b>	MJ RT9010	MS TF15	FJ TF15	f ↓
	M	<b>MS TF15</b>	MS RT9010	GJ TF15	—	GJ TF15
	G	<b>GJ TF15</b>	GJ RT9010	ap, f ↓	—	f ↓





●	Stable Cutting
○	General Cutting
⊕	Unstable Cutting
F	Finish Cutting
S	Light Cutting
M	Medium Cutting
G	Semi-Heavy Cutting

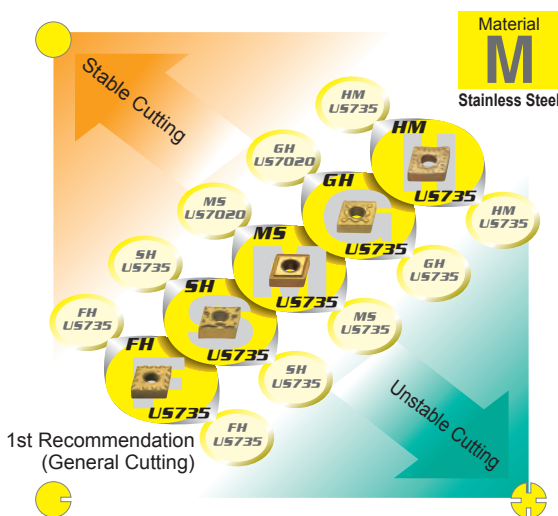
## **K** Cast Iron • Ductile Cast Iron

### NEGATIVE INSERTS

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture
Stable Cutting	F	<b>MA UC5105</b>	vc ↓	MA UC5115
	S	<b>MA UC5105</b>	vc ↓	MA UC5115
	M	<b>Standard UC5105</b>	vc ↓	Standard UC5115
	G	<b>Flat Top UC5105</b>	vc ↓	Flat Top UC5115
General Cutting	F	<b>MA UC5115</b>	MA UC5105	Standard UC5115
	S	<b>MA UC5115</b>	MA UC5105	Standard UC5115
	M	<b>Standard UC5115</b>	Standard UC5105	Flat Top UC5115
	G	<b>Flat Top UC5115</b>	Flat Top UC5105	ap, f ↓
Unstable Cutting	F	<b>MA UC5115</b>	MA UC5105	Standard UC5115
	S	<b>MA UC5115</b>	MA UC5105	Standard UC5115
	M	<b>Standard UC5115</b>	Standard UC5105	Flat Top UC5115
	G	<b>Flat Top UC5115</b>	Flat Top UC5105	ap, f ↓

# CLASSIFICATION OF GRADES AND CHIP BREAKERS FOR TURNING

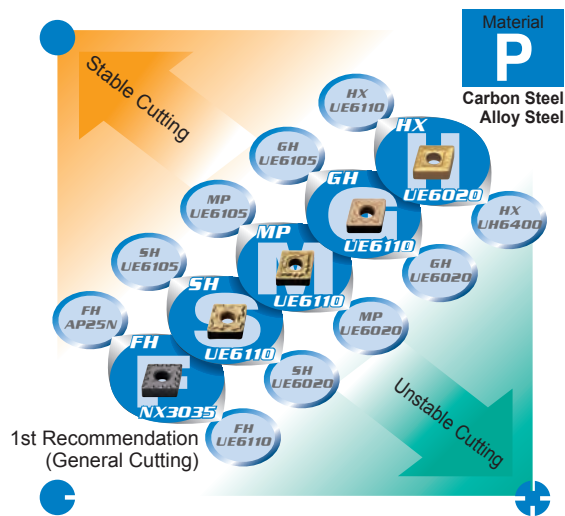


●	Stable Cutting
◐	General Cutting
⊕	Unstable Cutting
<b>F</b>	Finish Cutting
<b>S</b>	Light Cutting
<b>M</b>	Medium Cutting
<b>G</b>	Semi-Heavy Cutting
<b>H</b>	Heavy Cutting

## M Stainless Steel NEGATIVE INSERTS

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips	Chip Jamming
Stable Cutting	<b>F</b>	<b>FH US735</b>	vc ↓	SH US735	—	SH US735
	<b>S</b>	<b>SH US735</b>	vc ↓	MS US735	FH US735	MS US7020
	<b>M</b>	<b>MS US7020</b>	vc ↓	MS US735	MA US7020	MH US7020
	<b>G</b>	<b>GH US7020</b>	vc ↓	GH US735	MH US7020	f ↓
	<b>H</b>	<b>HM US735</b>	vc ↓	ap, f ↓	GH US7020	f ↓
General Cutting	<b>F</b>	<b>FH US735</b>	vc ↓	SH US735	—	SH US735
	<b>S</b>	<b>SH US735</b>	vc ↓	MS US735	FH US735	MS US735
	<b>M</b>	<b>MS US735</b>	MS US7020	MA US735	MA US735	GH US735
	<b>G</b>	<b>GH US735</b>	GH US7020	ap, f ↓	MA US735	f ↓
	<b>H</b>	<b>HM US735</b>	vc ↓	ap, f ↓	GH US735	f ↓
Unstable Cutting	<b>F</b>	<b>FH US735</b>	vc ↓	SH US735	—	SH US735
	<b>S</b>	<b>SH US735</b>	vc ↓	MS US735	FH US735	MS US735
	<b>M</b>	<b>MS US735</b>	MS US7020	MA US735	MA US735	GH US735
	<b>G</b>	<b>GH US735</b>	GH US7020	ap, f ↓	MA US735	f ↓
	<b>H</b>	<b>HM US735</b>	vc ↓	ap, f ↓	GH US735	f ↓



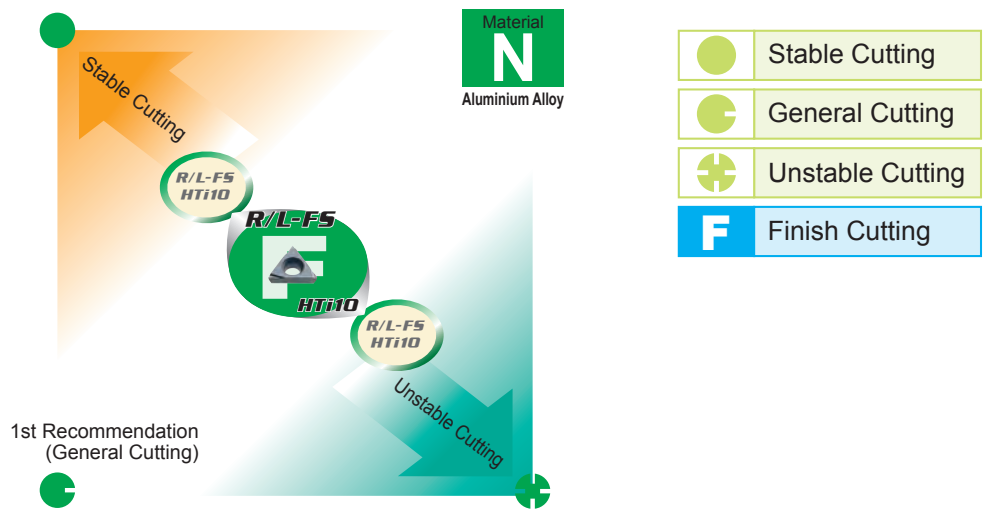
●	Stable Cutting
○	General Cutting
⊕	Unstable Cutting
<b>F</b>	Finish Cutting
<b>S</b>	Light Cutting
<b>M</b>	Medium Cutting
<b>G</b>	Semi-Heavy Cutting
<b>H</b>	Heavy Cutting

## **P** Carbon Steel • Alloy Steel

### NEGATIVE INSERTS

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips	Chip Jamming
Stable Cutting	<b>F</b>	<b>FH AP25N</b>	vc ↓	FH NX3035	f ↑	SH AP25N
	<b>S</b>	<b>SH UE6105</b>	vc ↓	SH UE6110	FH UE6110	MP UE6105
	<b>M</b>	<b>MP UE6105</b>	vc ↓	MP UE6110	SH UE6105	MH UE6105
	<b>G</b>	<b>GH UE6105</b>	vc ↓	GH UE6110	MH UE6105	HL UE6110
	<b>H</b>	<b>HX UE6110</b>	vc ↓	HX UE6020	HM UE6110	HV UE6110
General Cutting	<b>F</b>	<b>FH NX3035</b>	FH AP25N	FH UE6110	f ↑	SH NX3035
	<b>S</b>	<b>SH UE6110</b>	SH UE6105	SH UE6020	FH UE6110	MP UE6110
	<b>M</b>	<b>MP UE6110</b>	MP UE6105	MP UE6020	SH UE6110	MH UE6110
	<b>G</b>	<b>GH UE6110</b>	GH UE6105	GH UE6020	MH UE6110	HL UE6110
	<b>H</b>	<b>HX UE6020</b>	HX UE6110	HX UH6400	HM UE6020	HV UE6020
Unstable Cutting	<b>F</b>	<b>FH UE6110</b>	vc ↓	FH UE6020	f ↑	SH UE6110
	<b>S</b>	<b>SH UE6020</b>	SH UE6110	MV UE6020	FH UE6020	MP UE6020
	<b>M</b>	<b>MP UE6020</b>	MP UE6110	MH UE6020	SH UE6020	MH UE6020
	<b>G</b>	<b>GH UE6020</b>	GH UE6110	GH US735	MH UE6020	HL UE6020
	<b>H</b>	<b>HX UH6400</b>	HX UE6020	ap, f ↓	HM UH6400	HV UH6400

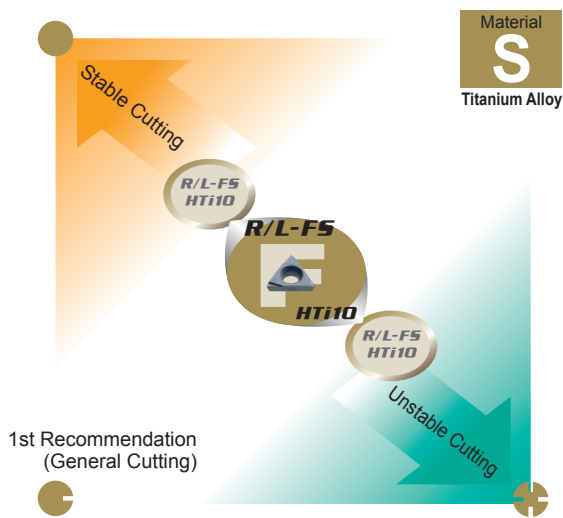


## N Aluminium Alloy

### 11° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips	Chip Jamming
● Stable Cutting	<b>F</b>	<b>R/L-FS HTi10</b>	vc ↓	ap, f ↓	f ↑, vc ↓	f ↓
● General Cutting	<b>F</b>	<b>R/L-FS HTi10</b>	vc ↓	ap, f ↓	f ↑, vc ↓	f ↓
⊕ Unstable Cutting	<b>F</b>	<b>R/L-FS HTi10</b>	vc ↓	ap, f ↓	f ↑, vc ↓	f ↓



## S Titanium Alloy

### 11° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips
● Stable Cutting	<b>F</b>	<b>R/L-FS HTi10</b>	vc ↓	ap, f ↓	f ↓
● General Cutting	<b>F</b>	<b>R/L-FS HTi10</b>	vc ↓	ap, f ↓	f ↓
⊕ Unstable Cutting	<b>F</b>	<b>R/L-FS HTi10</b>	vc ↓	ap, f ↓	f ↓

## S Ni, Co-Based Alloy

### 11° POSITIVE INSERT TYPE

vc : Cutting Speed  
f : Feed  
ap : Depth of Cut

	Cutting Area	1st Recommendation	Heavy Wear	Fracture	Long Chips
● Stable Cutting	<b>F</b>	<b>R/L-FS VP15TF</b>	vc ↓	ap, f ↓	f ↓
● General Cutting	<b>F</b>	<b>R/L-FS VP15TF</b>	vc ↓	ap, f ↓	f ↓
⊕ Unstable Cutting	<b>F</b>	<b>R/L-FS VP15TF</b>	vc ↓	ap, f ↓	f ↓