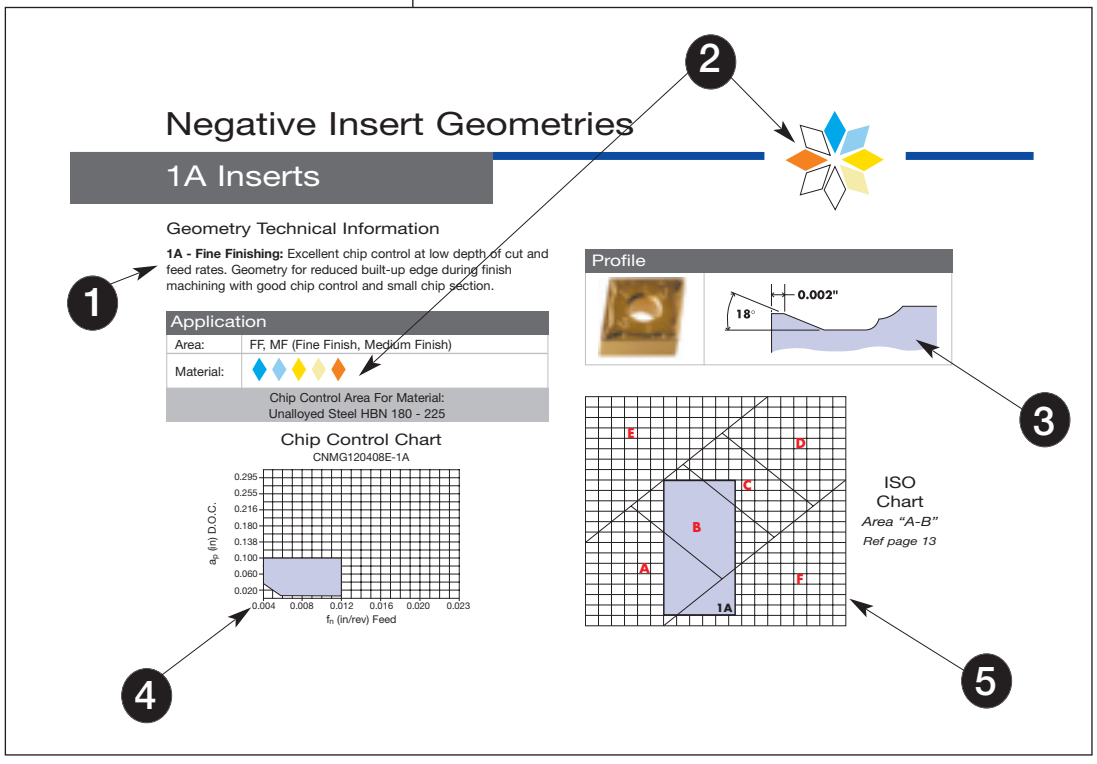
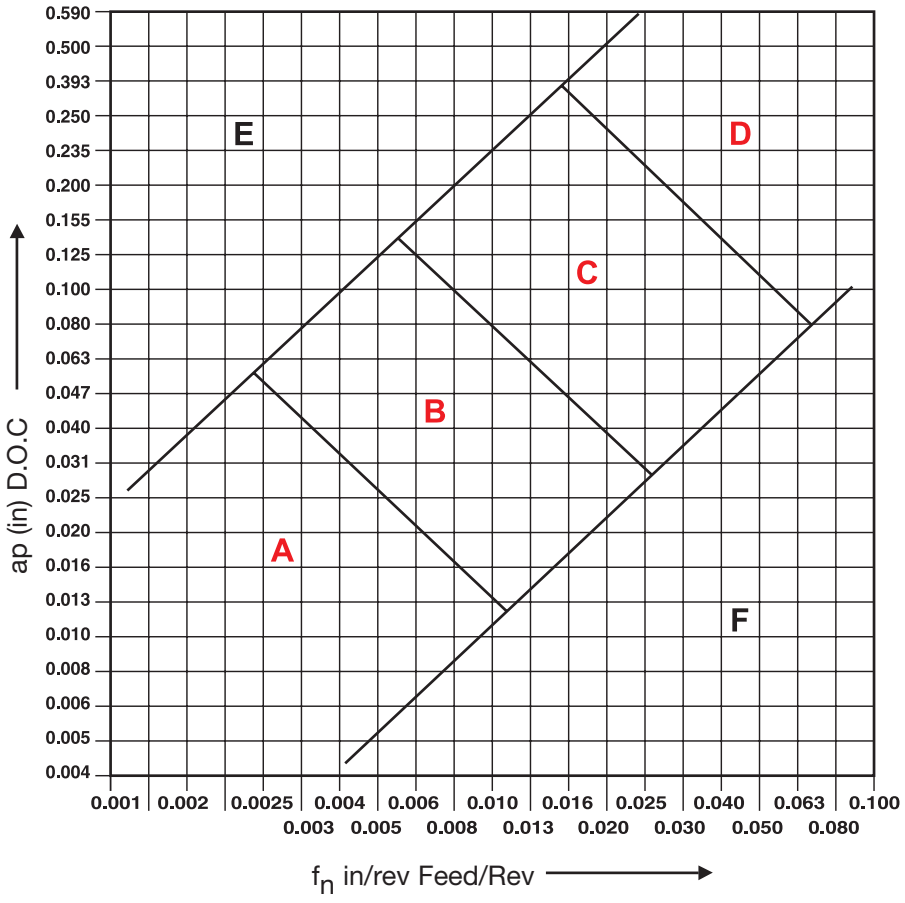
1st Choice

Star point will indicate the recommended insert for each material. Stellram's Star Guide™ enables you to find the right insert for your machining requirements.

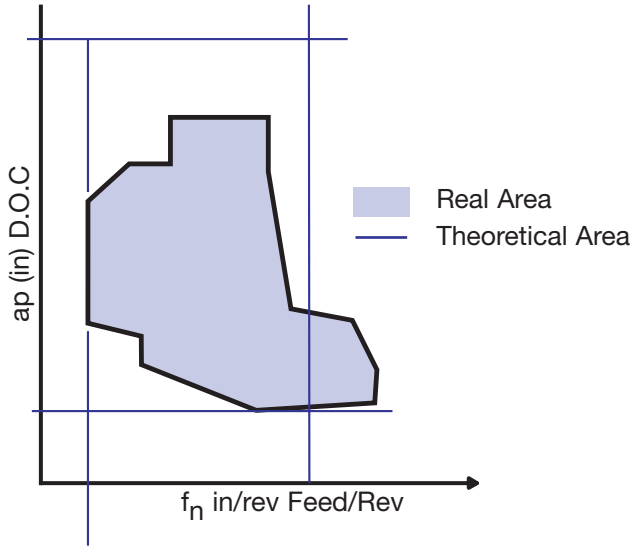


1. **Application information**
2. **Star Guide™ information – star points indicate the recommended materials related to the geometry.**
3. **Detail outline of geometry profile.**
4. **Identifies depth of cut (D.O.C) and feed rate range applicable to the geometry.**
5. **ISO/DIN geometry standards chart.**



The following pages show the above chart in conjunction with Stellram geometries. The charts show the ISO/DIN standard reference position relative to each geometry by defining a letter for each zone - A. B. C. D. E & F. These zones are represented by depth of cut (a_p in) and a feed (f_n in/rev) ranges. Each geometry has its own operating range represented by the chip control area, or footprint. These zones classify the application area of a given geometry.

Example of a geometry chip control area or footprint



The following are Stellram's guideline classification for each zone of ISO/DIN 10 910:

A	Fine Finishing
A/B	Finishing
B	Medium Finishing
B/C	Light Roughing
C	Medium Roughing
C/D	Heavy Roughing

Negative Insert Geometries

1A Inserts

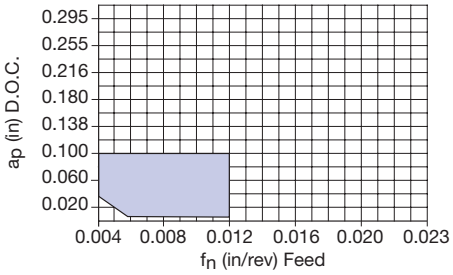
Geometry Technical Information

1A - Fine Finishing: Excellent chip control at low depth of cut and feed rates. Geometry for reduced built-up edge during finish machining with good chip control and small chip section.

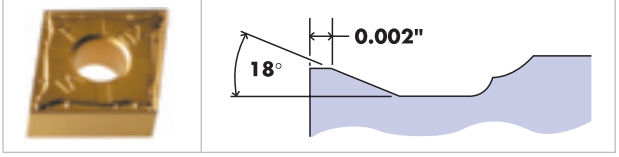
Application	
Area:	FF, MF (Fine Finish, Medium Finish)
Material:	
Chip Control Area For Material: Unalloyed Steel HBN 180 - 225	

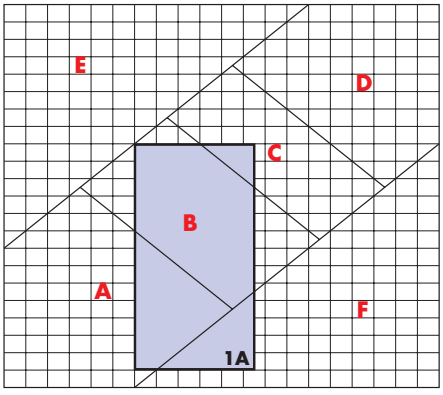
Chip Control Chart

CNMG432A-1A



Profile





ISO Chart
Area "A-B"
Ref page 14

2B Inserts

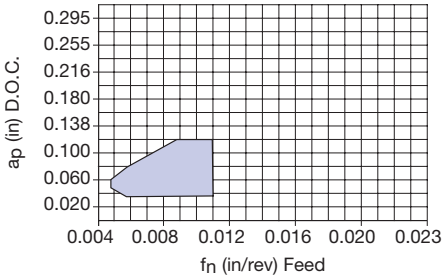
Geometry Technical Information

2B - Finishing: Positive cutting action for very light depths of cut and feeds. Positive rake provides lower cutting pressures allowing increased tool life.

Application	
Area:	MF (Medium Finish)
Material:	
Chip Control Area For Material: Alloyed Steel HBN 230 - 340	

Chip Control Chart

CNMG432A-2B



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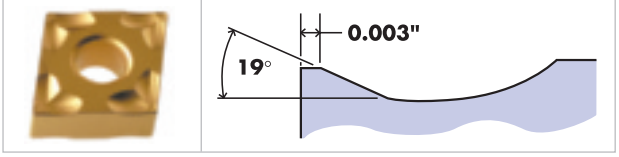
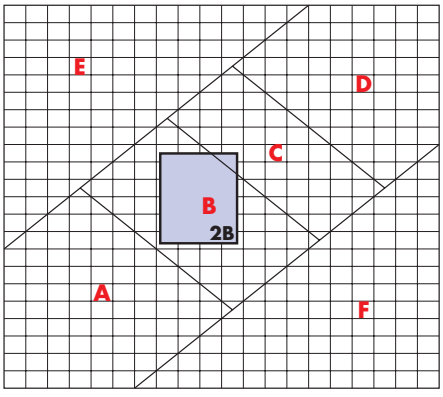




ISO Chart
Area "B"
Ref page 14

Star Guide — Key to Recommended Inserts

Material Designations			
P Unalloyed Steels	M Stainless Steels	K Cast Irons	S High Temp. Alloys
P Alloyed Steels	M PH Stainless	N Aluminum & Alloys	H Hard Materials

Negative Insert Geometries

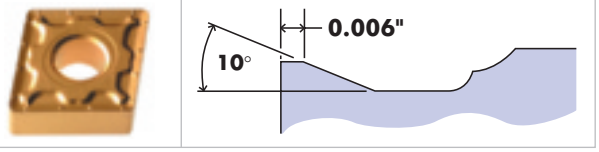
2N Inserts

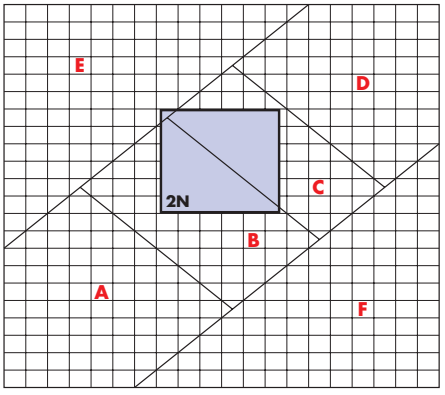
Geometry Technical Information

2N - Light to Medium Roughing: Positive rake angle provides a positive cutting action and reduced cutting pressure, this makes 2N a good starting geometry for a wide range of application / materials.

Application	
Area:	MF, MR (Medium Finish, Medium Roughing)
Material:	
Chip Control Area For Material: Alloyed Steel HBN 260 - 340	

Profile

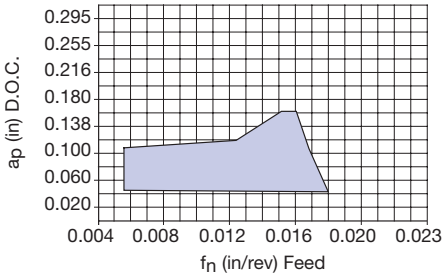




ISO Chart
Area "B-C"
Ref page 14

Chip Control Chart

CNMG432A-2N



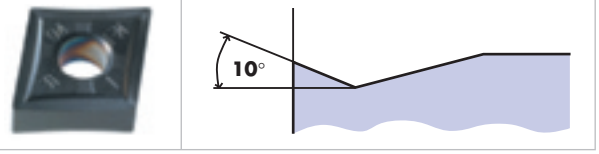
3F Inserts

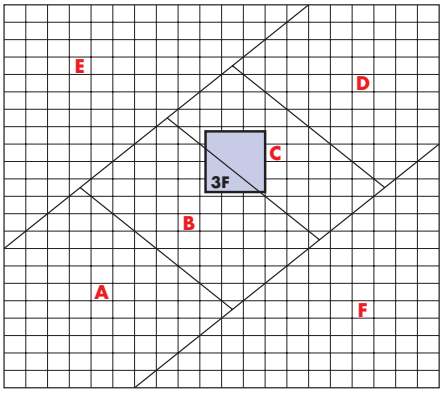
Geometry Technical Information

3F - Finishing to Light Roughing: 3F geometry has periphery ground edges to maintain accurate profiles and insert indexabillty. A sharp edge treatment reduces built-up edge and improves surface finishes.

Application	
Area:	MF, MR (Medium Finish, Medium Roughing)
Material:	
Chip Control Area For Material: Stainless Steel HBN 120 - 180	

Profile

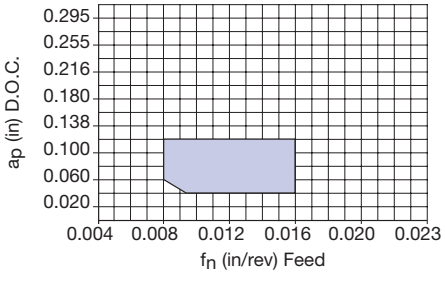




ISO Chart
Area "B-C"
Ref page 14

Chip Control Chart

CNGP432-3F



Star Guide — Key to Recommended Inserts

Material Designations			
P Unalloyed Steels	M Stainless Steels	K Cast Irons	S High Temp. Alloys
P Alloyed Steels	M PH Stainless	N Aluminum & Alloys	H Hard Materials

STELLRAM®

Negative Insert Geometries

3G Inserts

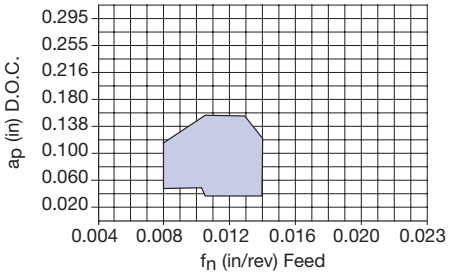
Geometry Technical Information

3G - Medium Finishing to Light Roughing: Versatile all purpose geometry, used with light depths of cuts and feed rates for trouble free machining.

Application	
Area:	MF, MR (Medium Finish, Medium Roughing)
Material:	
Chip Control Area For Material: Alloyed Steel HBN 230 - 340	

Chip Control Chart

CNMG432A-3G



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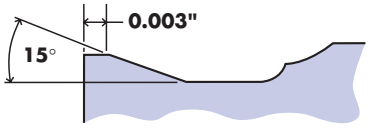
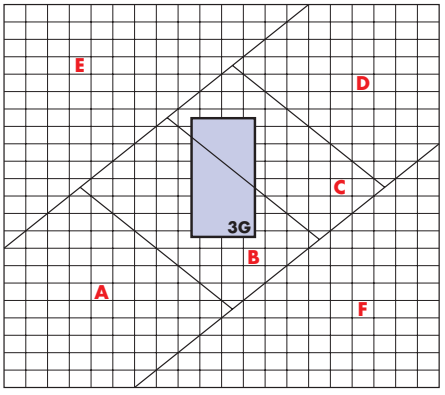




ISO Chart
Area "B-C"
Ref page 14

3J Inserts

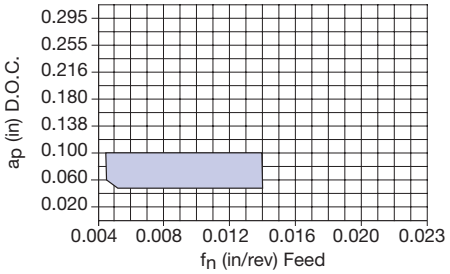
Geometry Technical Information

3J - Medium-finishing to Light Roughing: The smooth cutting action of 3J reduces cutting forces, improves surface finishes and increases tool life.

Application	
Area:	MF, MR (Medium Finish, Medium Roughing)
Material:	
Chip Control Area For Material: Stainless Steel HBN 120 - 180	

Chip Control Chart

CNMG432A-3J



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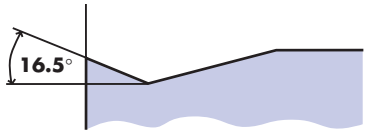
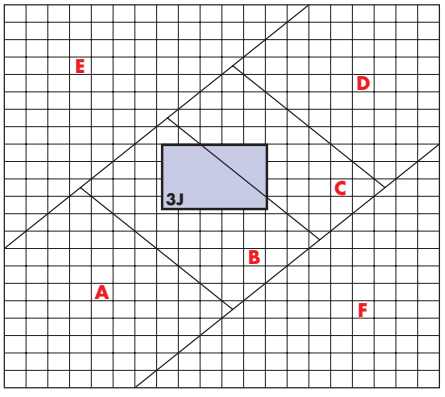




ISO Chart
Area "B-C"
Ref page 14

Star Guide — Key to Recommended Inserts

Material Designations			
P Unalloyed Steels	M Stainless Steels	K Cast Irons	S High Temp. Alloys
P Alloyed Steels	M PH Stainless	N Aluminum & Alloys	H Hard Materials

Negative Insert Geometries

3M Inserts

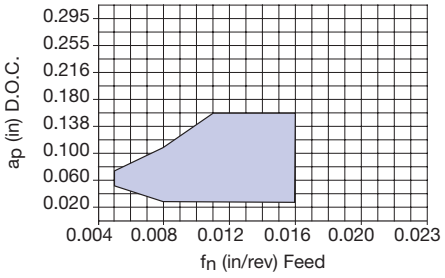
Geometry Technical Information

3M - Semi Finishing to Light Roughing: All Purpose geometry suitable for precision forged and cast components, offering excellent chip control at varying depths of cut.

Application	
Area:	MF, MR (Medium Finish, Medium Roughing)
Material:	
Chip Control Area For Material: Steel 4140 267HBN	

Chip Control Chart

CNMG432A-3M



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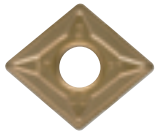
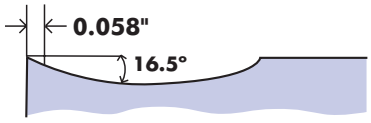
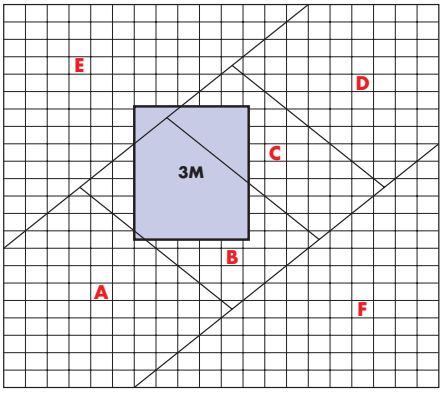






ISO Chart
Area "B-C"
Ref page 14

4M Inserts

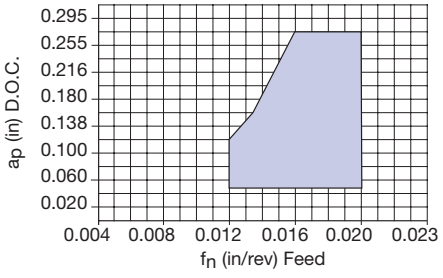
Geometry Technical Information

4M - Medium to Heavy Roughing: Single sided inserts for stability and strength with a soft cutting action, which allows for high feed rates.

Application	
Area:	MR, HR (Medium Roughing, Heavy Roughing)
Material:	
Chip Control Area For Material: Alloyed Steel HBN 230 - 340	

Chip Control Chart

CNMG432A-4M



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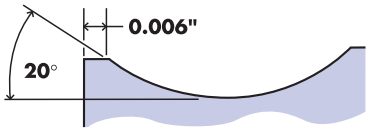
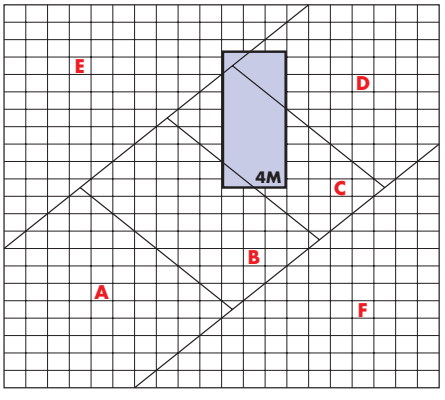




ISO Chart
Area "C-D"
Ref page 14

Star Guide — Key to Recommended Inserts

Material Designations			
P Unalloyed Steels	M Stainless Steels	K Cast Irons	S High Temp. Alloys
P Alloyed Steels	M PH Stainless	N Aluminum & Alloys	H Hard Materials

STELLRAM®

Negative Insert Geometries

4T Inserts

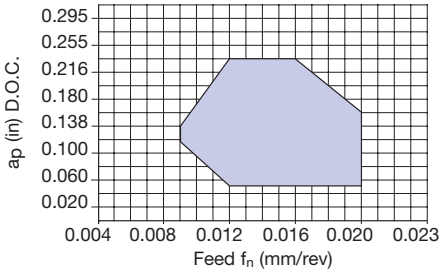
Geometry Technical Information

4T - General Purpose Roughing: New designed version of 4T with improved surface contact, a good all round negative roughing geometry for a wide range of application.

Application	
Area:	MF, MR, HR (Medium Finish, Medium Roughing, Heavy Roughing)
Material:	
Chip Control Area For Material: Alloyed Steel HBN 230 - 340	

Chip Control Chart

CNMG432A-4T



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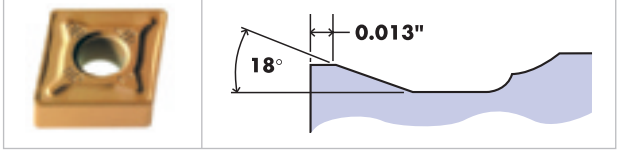
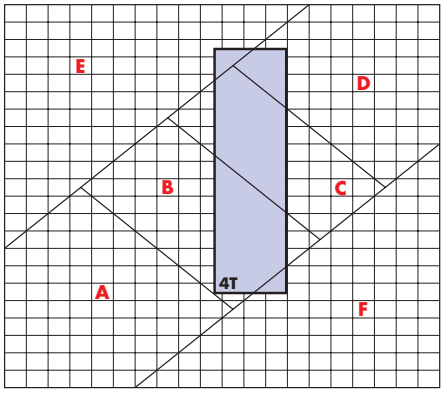




ISO Chart
Area "B-C-D"
Ref page 14

4U Inserts

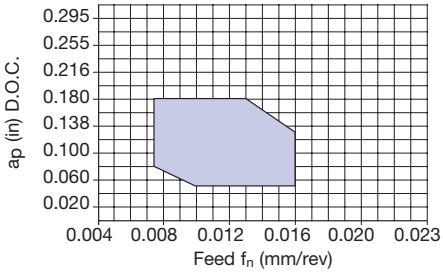
Geometry Technical Information

4U - Medium and Roughing: This geometry is ideal from roughing applications, excellent chip control with low cutting pressure to extend tooling life in steels alloys and spheroidal irons.

Application	
Area:	FF, MF, MR (Fine Finish, Medium Finish, Medium Roughing)
Material:	
Chip Control Area For Material: Ductile Iron HBN 170	

Chip Control Chart

CNMG432A-4U



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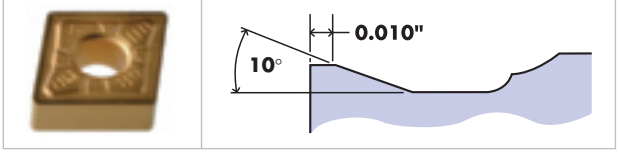
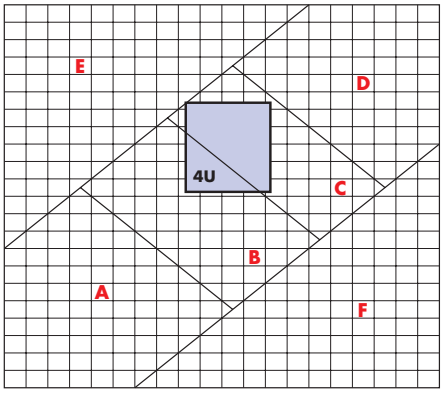




ISO Chart
Area "B-C"
Ref page 14

Star Guide — Key to Recommended Inserts

Material Designations			
P Unalloyed Steels	M Stainless Steels	K Cast Irons	S High Temp. Alloys
P Alloyed Steels	M PH Stainless	N Aluminum & Alloys	H Hard Materials

Negative Insert Geometries

5V Inserts

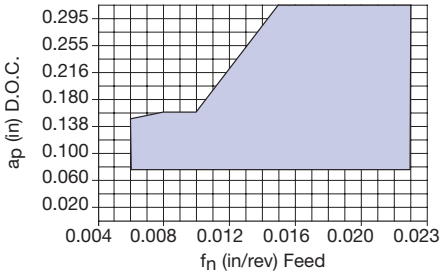
Geometry Technical Information

5V - Heavy Roughing: Negative cutting action with extra edge support for superb roughing performance with very heavy feeds and depths of cut.

Application	
Area:	MR, HR (Medium Roughing, Heavy Roughing)
Material:	
Chip Control Area For Material: Alloyed Steel HBN 260 - 340	

Chip Control Chart

CNMG432A-5V



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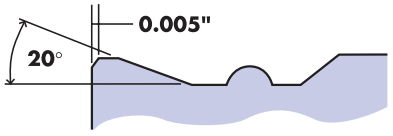
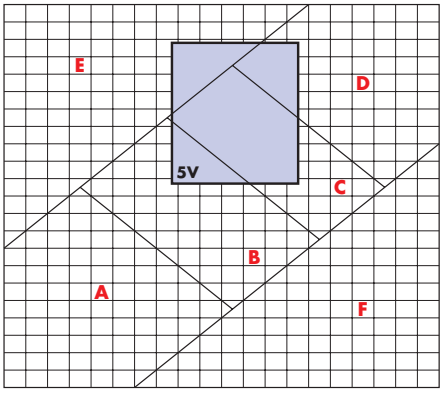




ISO Chart
Area "C-D"
Ref page 14

91 Inserts

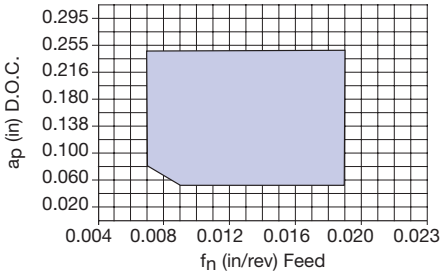
Geometry Technical Information

91 - Finishing to Light Roughing: Open, positive geometry produces excellent chip control with low cutting forces in high temperture alloys like titanium and inconel.

Application	
Area:	MF, MR (Medium Finish, Medium Roughing)
Material:	
Chip Control Area For Material: Titanium Ti-6Al-4V	

Chip Control Chart

CNMG432A-91



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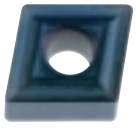
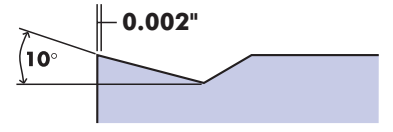
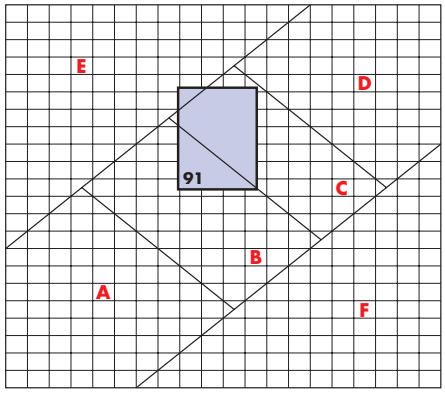






ISO Chart
Area "B-C"
Ref page 14

Star Guide — Key to Recommended Inserts

Material Designations			
P Unalloyed Steels	M Stainless Steels	K Cast Irons	S High Temp. Alloys
P Alloyed Steels	M PH Stainless	N Aluminum & Alloys	H Hard Materials

STELLRAM®

Positive Insert Geometries

15 Inserts

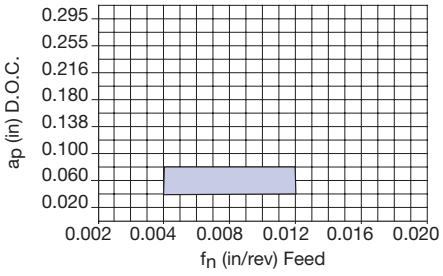
Geometry Technical Information

15 - Medium-finishing: Sharp edge and ground geometry for finish machining at light depths of cut and feeds. Designed to reduce vibration.

Application	
Area:	FF, MF (Fine Finish, Medium Finish)
Material:	
Chip Control Area For Material: Aluminum <16% HBN 116	

Chip Control Chart

EPEX040404F-15



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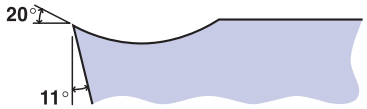
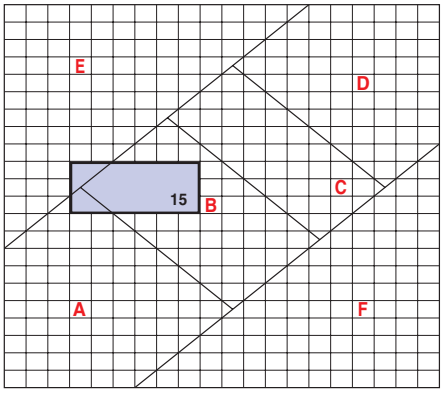




ISO Chart *Area "B"*

Ref page 14

61 Inserts

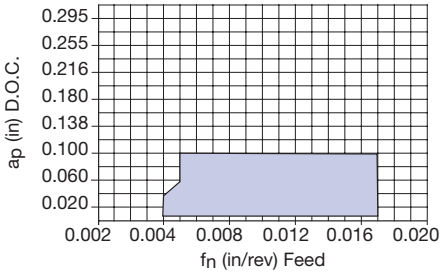
Geometry Technical Information

61 - Finishing: A sintered insert with pressed in chipbreaker provides good chip control and surface finish.

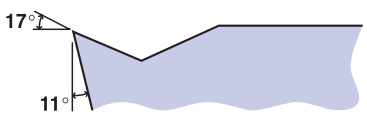
Application	
Area:	FF, MF, MR (Fine Finish, Medium Finish, Medium Roughing)
Material:	
Chip Control Area For Material: Unalloyed Steel HBN 220 - 270	

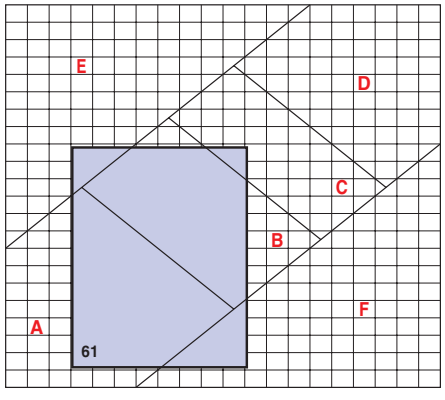
Chip Control Chart

WPMT050304E-61



Profile





ISO Chart *Area "A-B"*

Ref page 14

Star Guide Key to Recommended Inserts

Material Designations							
P	Unalloyed Steels	M	Stainless Steels	K	Cast Irons	S	High Temp. Alloys
P	Alloyed Steels	M	PH Stainless	N	Aluminum & Alloys	H	Hard Materials

Positive Insert Geometries

62 Inserts

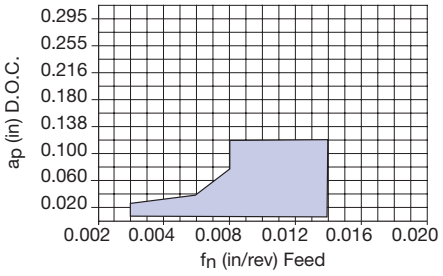
Geometry Technical Information

62 - Finishing: A periphery ground geometry with optimized chipbreaker for close tolerances and surface finishes.

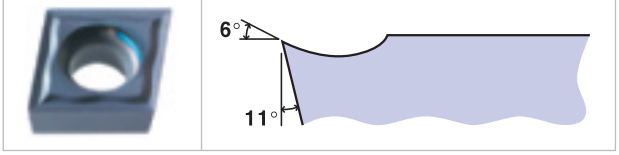
Application	
Area:	FF, MF, MR (Fine Finish, Medium Finish, Medium Roughing)
Material:	
Chip Control Area For Material: Unalloyed Steel HBN 220 - 270	

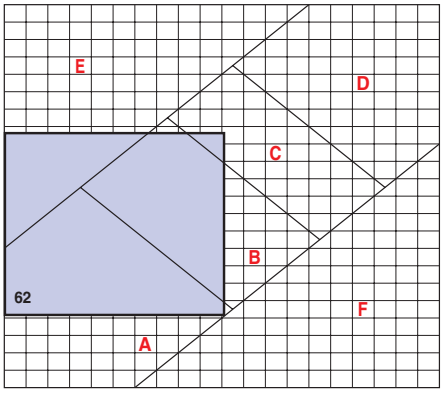
Chip Control Chart

EPGT060204E-62



Profile





ISO Chart

Area "A-B"

Ref page 14

64 Inserts

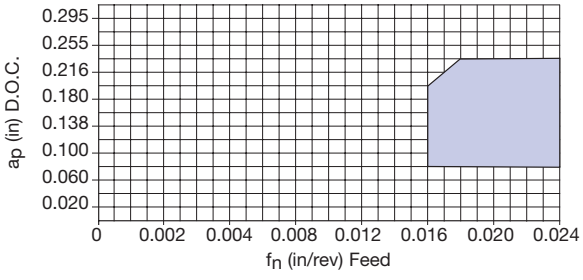
Geometry Technical Information

64 - Medium Roughing: A highly positive, periphery ground geometry with a polished top rake for machining aluminum.

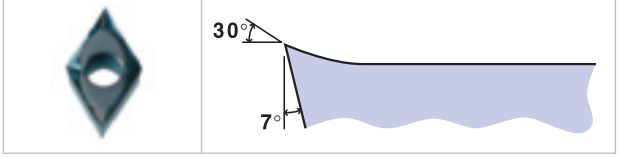
Application	
Area:	MR (Medium Roughing)
Material:	
Chip Control Area For Material: Aluminum <16% HBN 116	

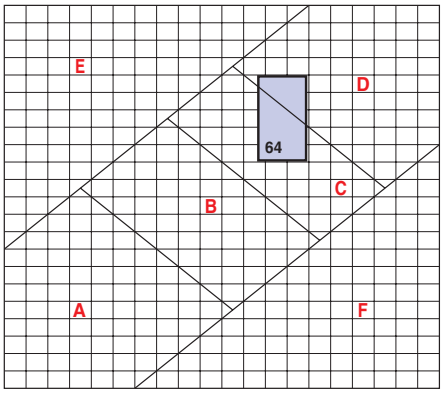
Chip Control Chart

DCGT11T308F-64



Profile





ISO Chart

Area "C-D"

Ref page 14

Star Guide — Key to Recommended Inserts

Material Designations			
P Unalloyed Steels	M Stainless Steels	K Cast Irons	S High Temp. Alloys
P Alloyed Steels	M PH Stainless	N Aluminum & Alloys	H Hard Materials

STELLRAM®

Positive Insert Geometries

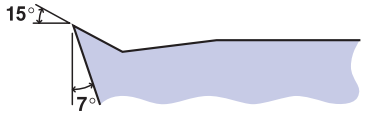
66 Inserts

Geometry Technical Information

66 - Medium Finishing: A periphery ground geometry with pressed in chipbreaker and sharp cutting edge ideally suited to fine chip control.

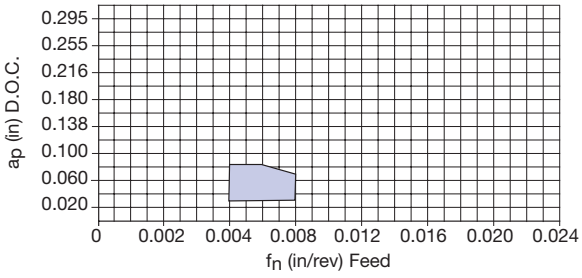
Application	
Area:	MF (Medium Finish)
Material:	
Chip Control Area For Material: Stainless Steel HBN 120 - 180	

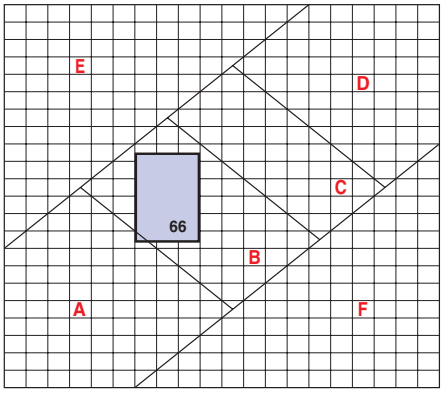
Profile



Chip Control Chart

VCGT130304-66





ISO Chart *Area "B"*

Ref page 14

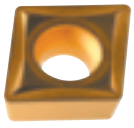
73 Inserts

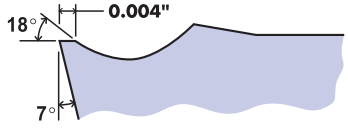
Geometry Technical Information

73 - Medium Finishing to Medium Roughing: Sintered geometry covering a wide range of application and materials. Ideal starter geometry for most applications.

Application	
Area:	FF, MF, MR (Fine Finish, Medium Finish, Medium Roughing)
Material:	
Chip Control Area For Material: Alloyed Steel HBN 260 - 340	

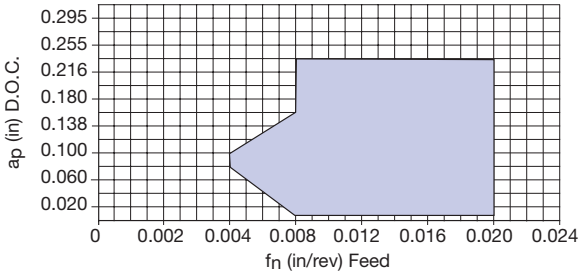
Profile

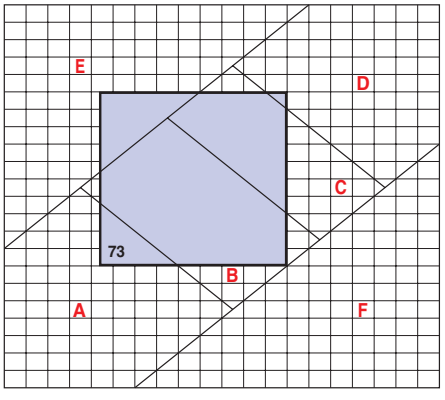




Chip Control Chart

TCMT32.52A-73





ISO Chart *Area "B-C"*

Ref page 14

Star Guide — Key to Recommended Inserts

Material Designations			
P Unalloyed Steels	M Stainless Steels	K Cast Irons	S High Temp. Alloys
P Alloyed Steels	M PH Stainless	N Aluminum & Alloys	H Hard Materials

Positive Insert Geometries

3G Inserts

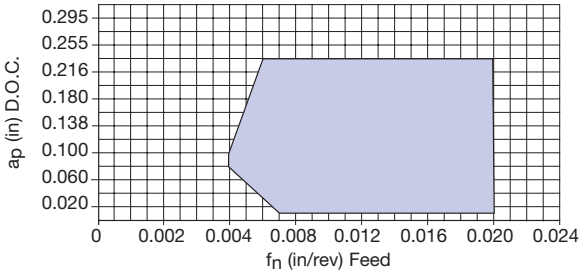
Geometry Technical Information

3G Medium Finishing to Light Roughing: Versatile all purpose geometry used with light depths of cuts and feed rates for trouble free machining.

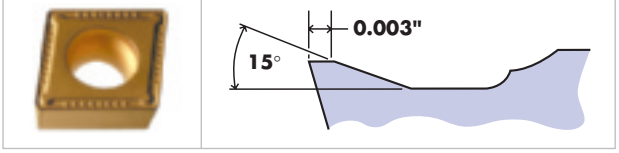
Application	
Area:	FF, MF (Fine finish, Medium finish)
Material:	
Chip Control Area For Material: Unalloyed Steel HBN 220 - 270	

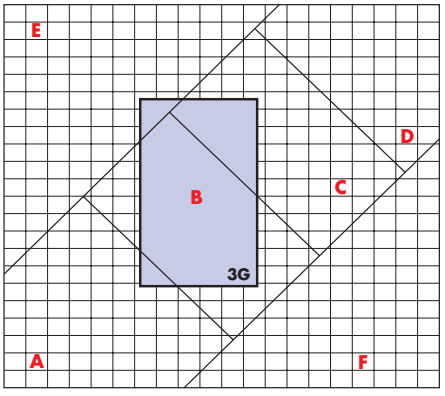
Chip Control Chart

CCMT432A-3G



Profile





ISO Chart
Area "B-C"
Ref page 14

M Inserts

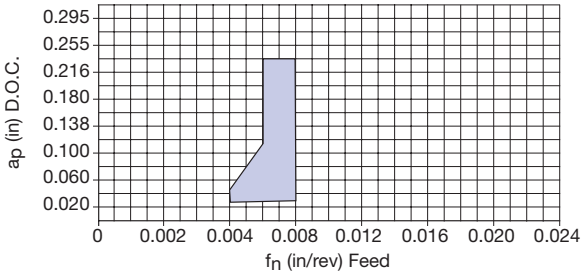
Geometry Technical Information

M - Medium Finishing: A sintered insert with pressed mini chipbreaker offering a soft cutting action and good chip control.

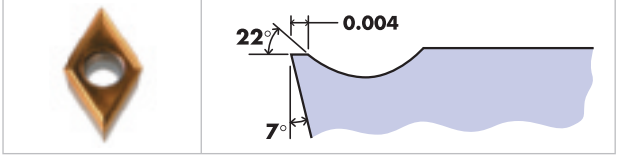
Application	
Area:	FF, MF, MR (Fine Finish, Medium Finish, Medium Roughing)
Material:	
Chip Control Area For Material: Unalloyed Steel HBN 220 - 270	

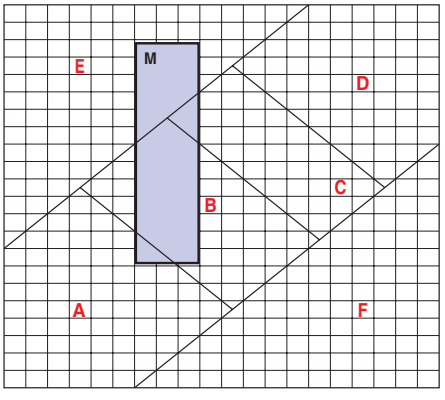
Chip Control Chart

VCMT332A-M



Profile





ISO Chart
Area "B"
Ref page 14

Star Guide — Key to Recommended Inserts

Material Designations			
P Unalloyed Steels	M Stainless Steels	K Cast Irons	S High Temp. Alloys
P Alloyed Steels	M PH Stainless	N Aluminum & Alloys	H Hard Materials

STELLRAM®

Positive Insert Geometries

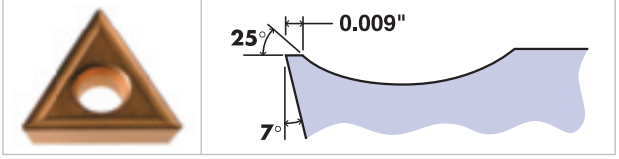
T Inserts

Geometry Technical Information

T - Medium Finishing to Medium Roughing: A utility geometry giving a stable cutting action in demanding conditions.

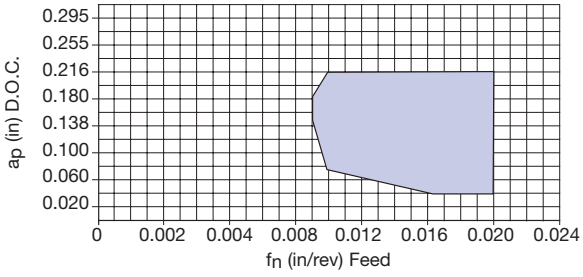
Application	
Area:	MF, MR (Medium Finish, Medium Roughing)
Material:	
Chip Control Area For Material: Unalloyed Steel HBN 220 - 270	

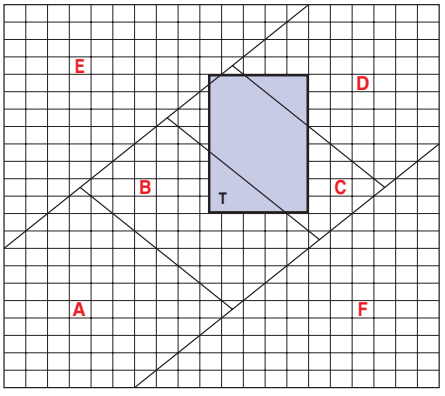
Profile



Chip Control Chart

TCMT32.52A





ISO Chart
Area "B-C"
Ref page 14

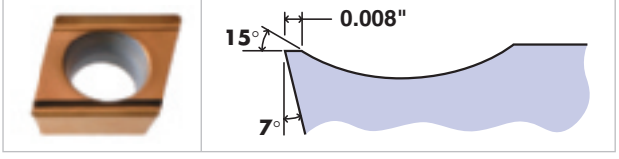
X Inserts

Geometry Technical Information

X - Medium Finishing to Medium Roughing: Precision ground parallel chip groove available with a fully ground periphery or as pressed, and with a sharp or honed edge condition. This geometry can machine a variety of materials in vibration sensitive operations.

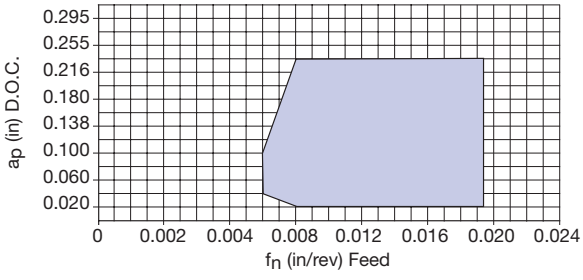
Application	
Area:	MF, MR (Medium Finish, Medium Roughing)
Material:	
Chip Control Area For Material: Aluminum <16% HBN 116	

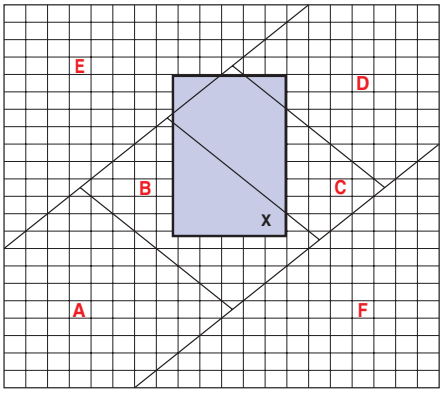
Profile



Chip Control Chart

ECMX12T308EL-25





ISO Chart
Area "B-C"
Ref page 14

Star Guide — Key to Recommended Inserts

Material Designations			
P Unalloyed Steels	M Stainless Steels	K Cast Irons	S High Temp. Alloys
P Alloyed Steels	M PH Stainless	N Aluminum & Alloys	H Hard Materials