

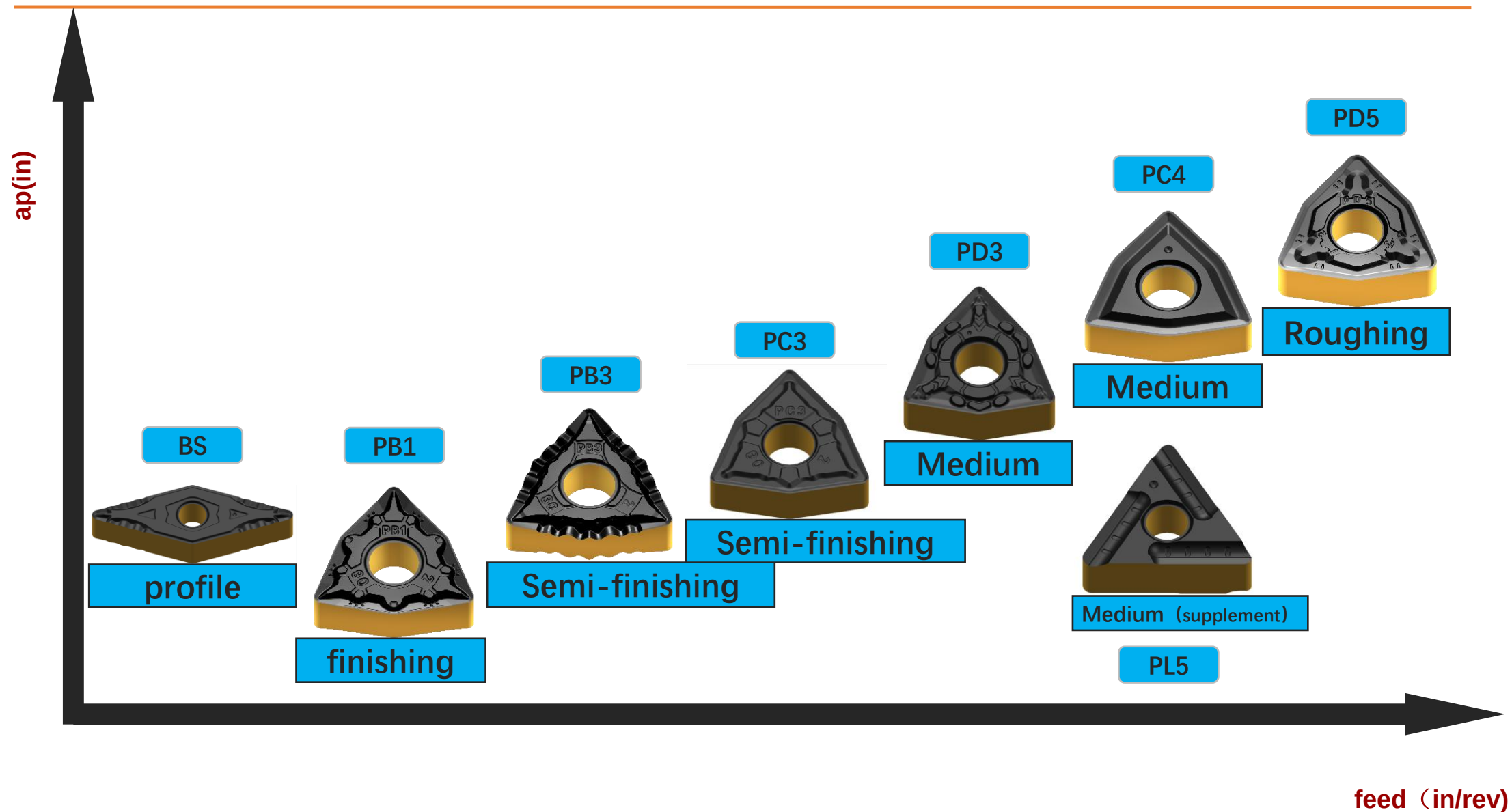
# Non-rotating product introduction

01

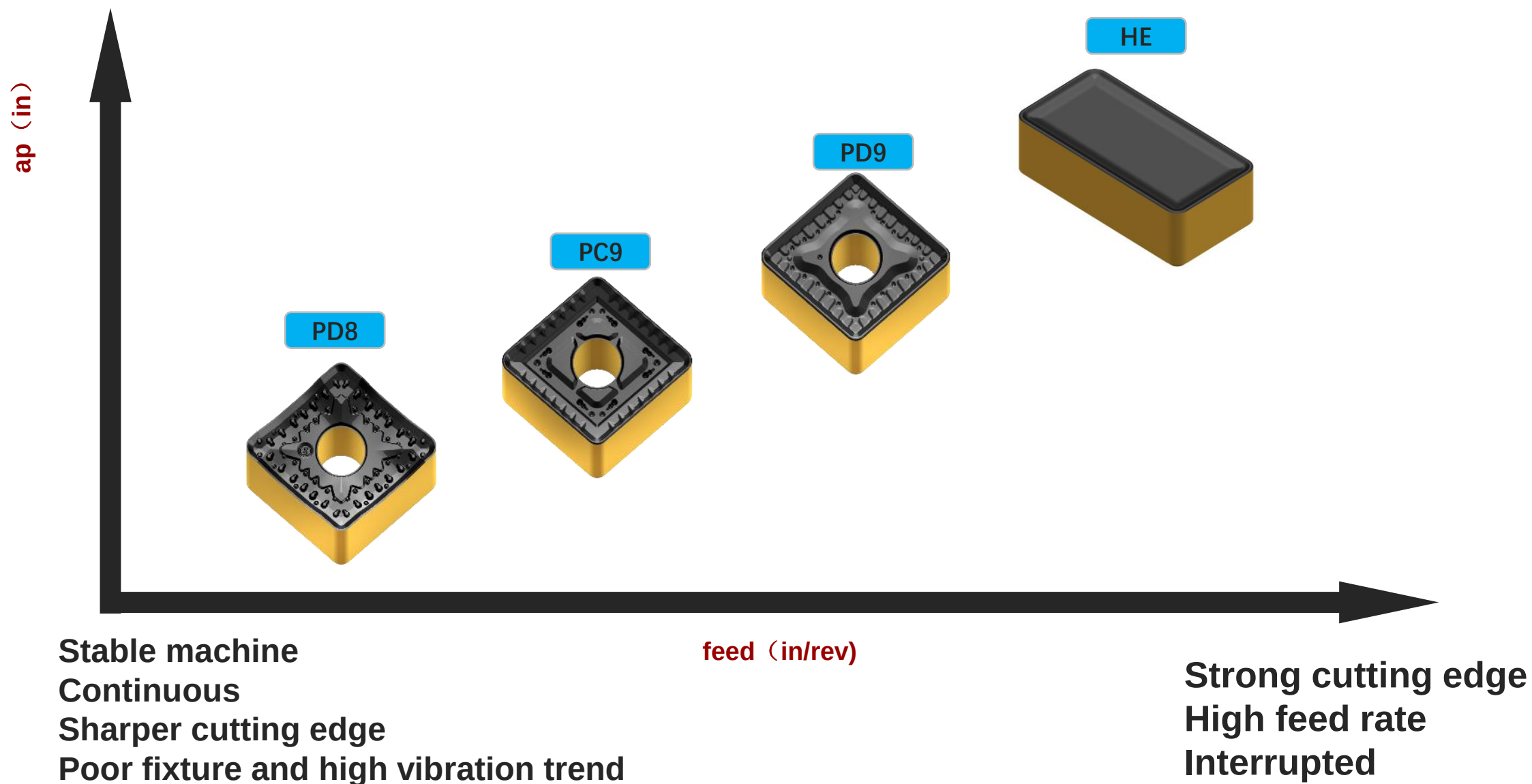
# ISO Turning



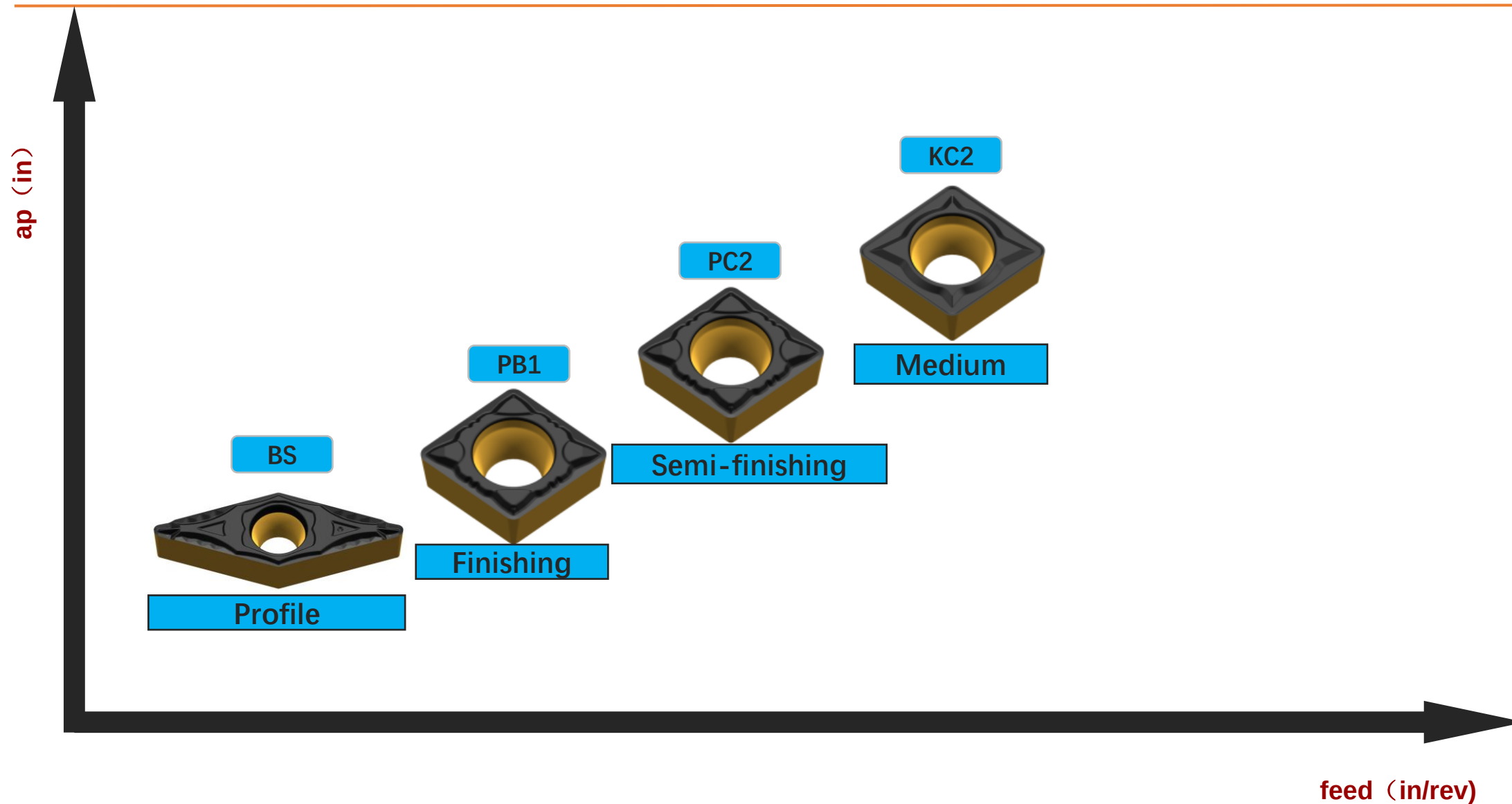
# Negative geometries for steel turning



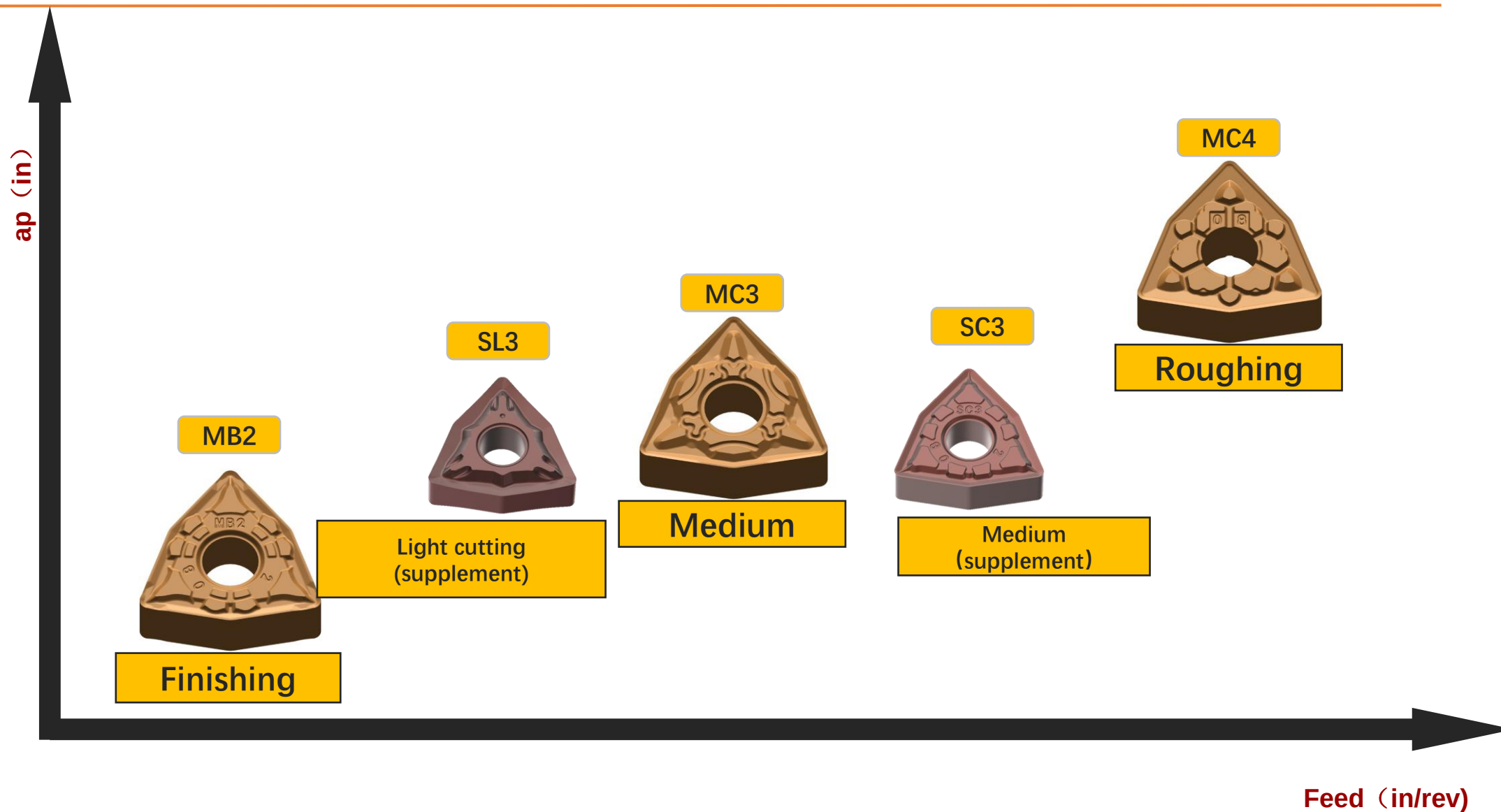
# Negative heavy duty-geometries for steel turning



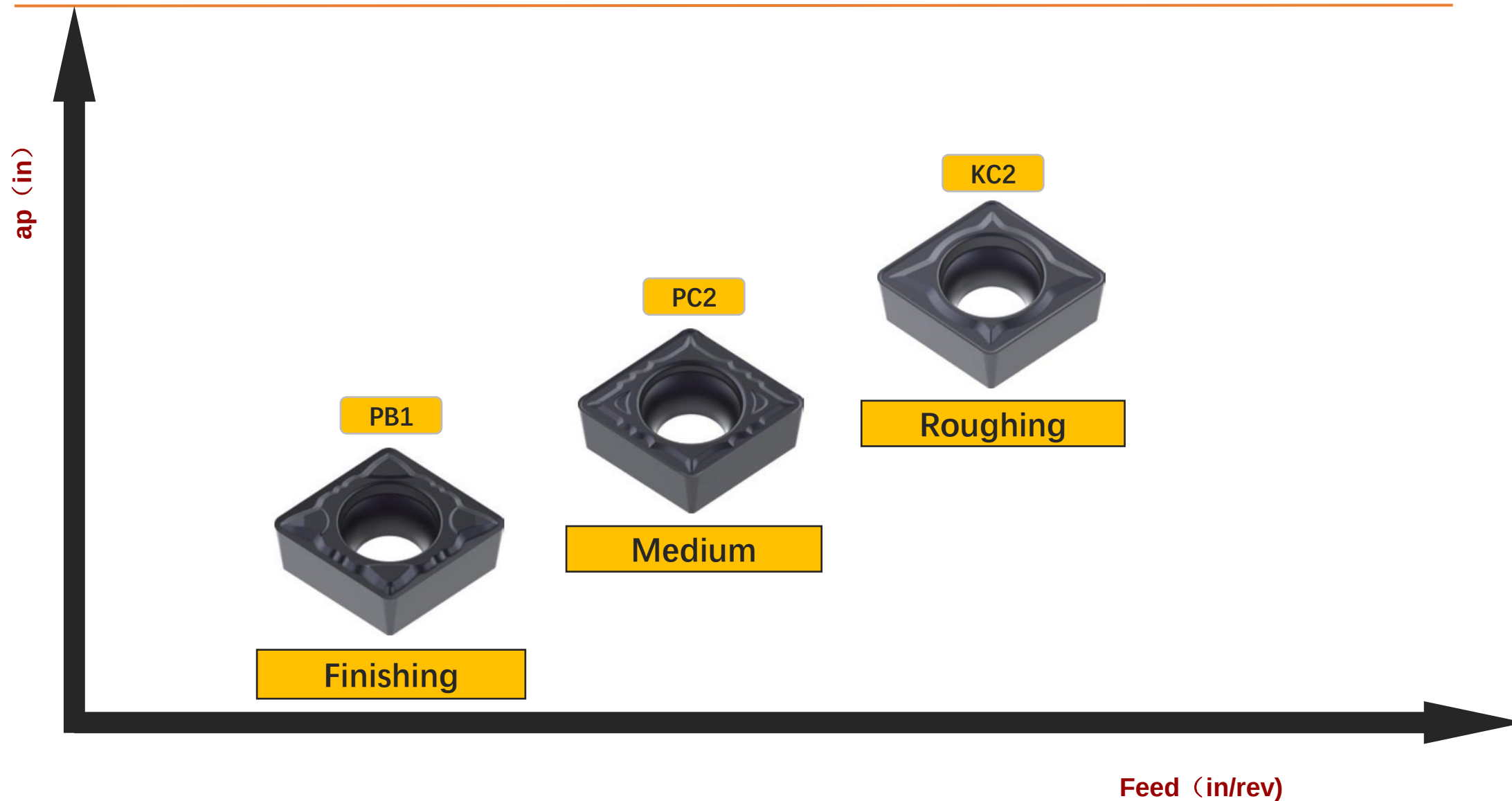
# Positive geometries for steel turning



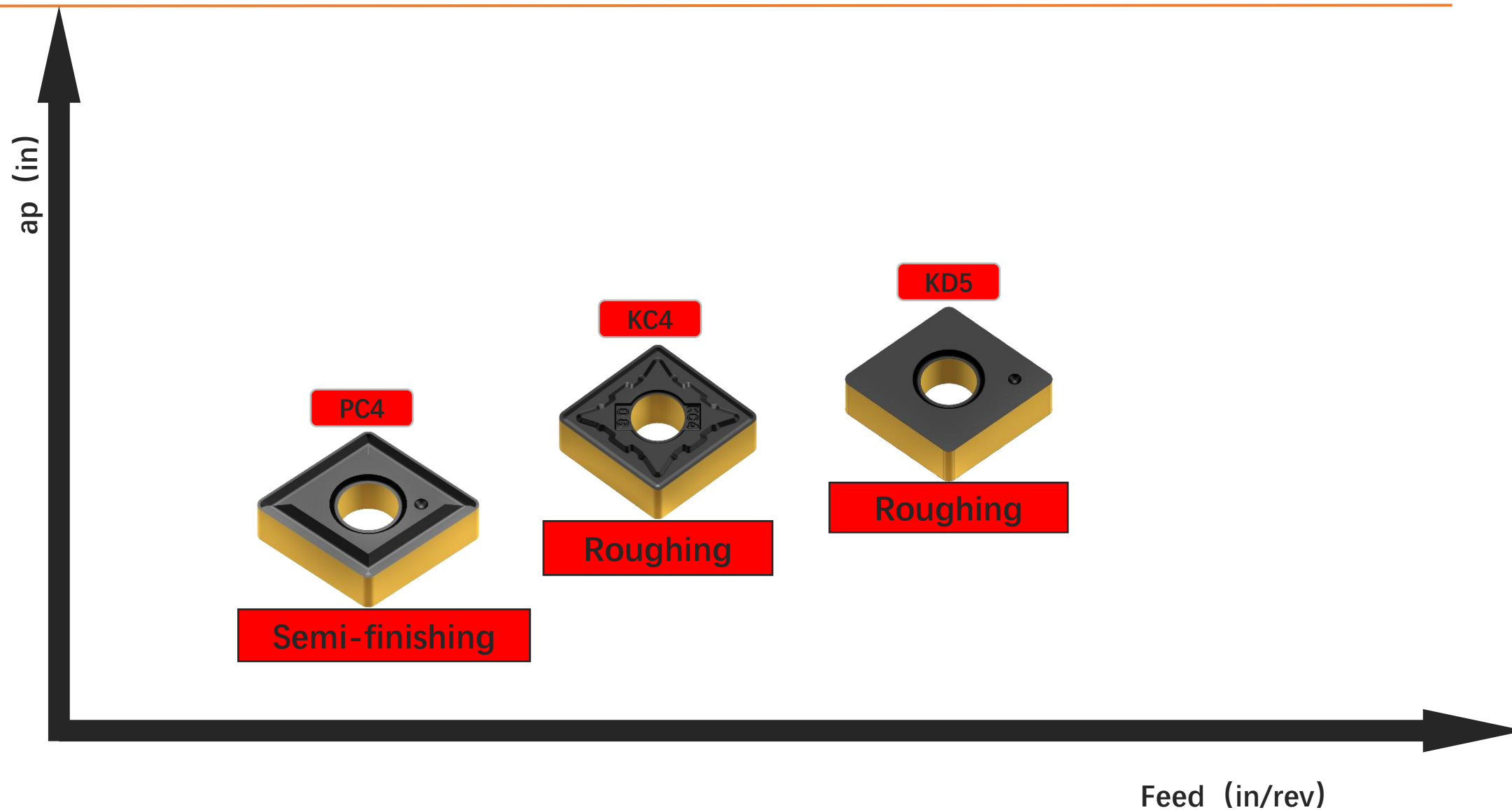
# Negative geometries for stainless steel turning



# Positive geometries for stainless steel turning

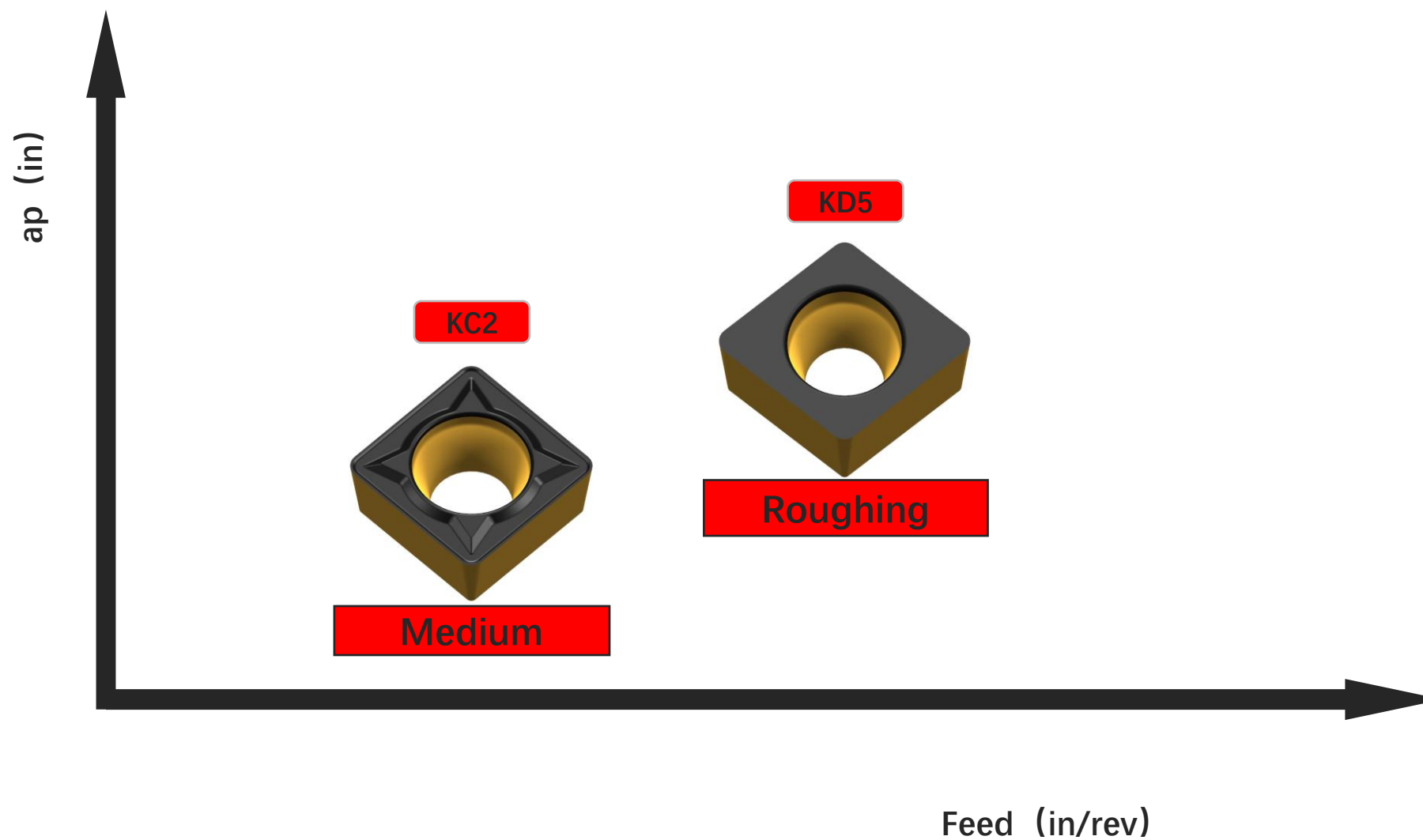


# Negative geometries for cast iron turning

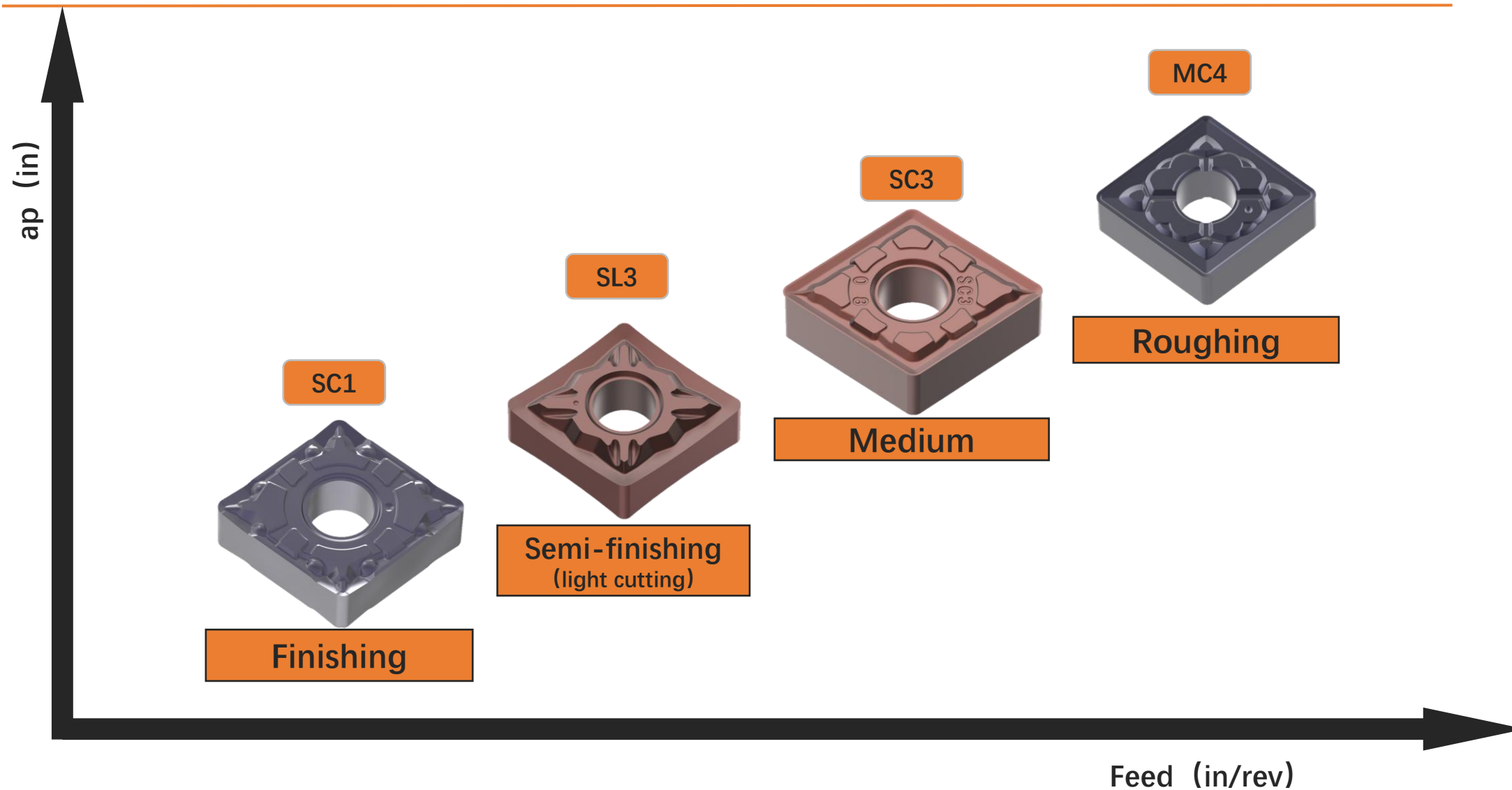




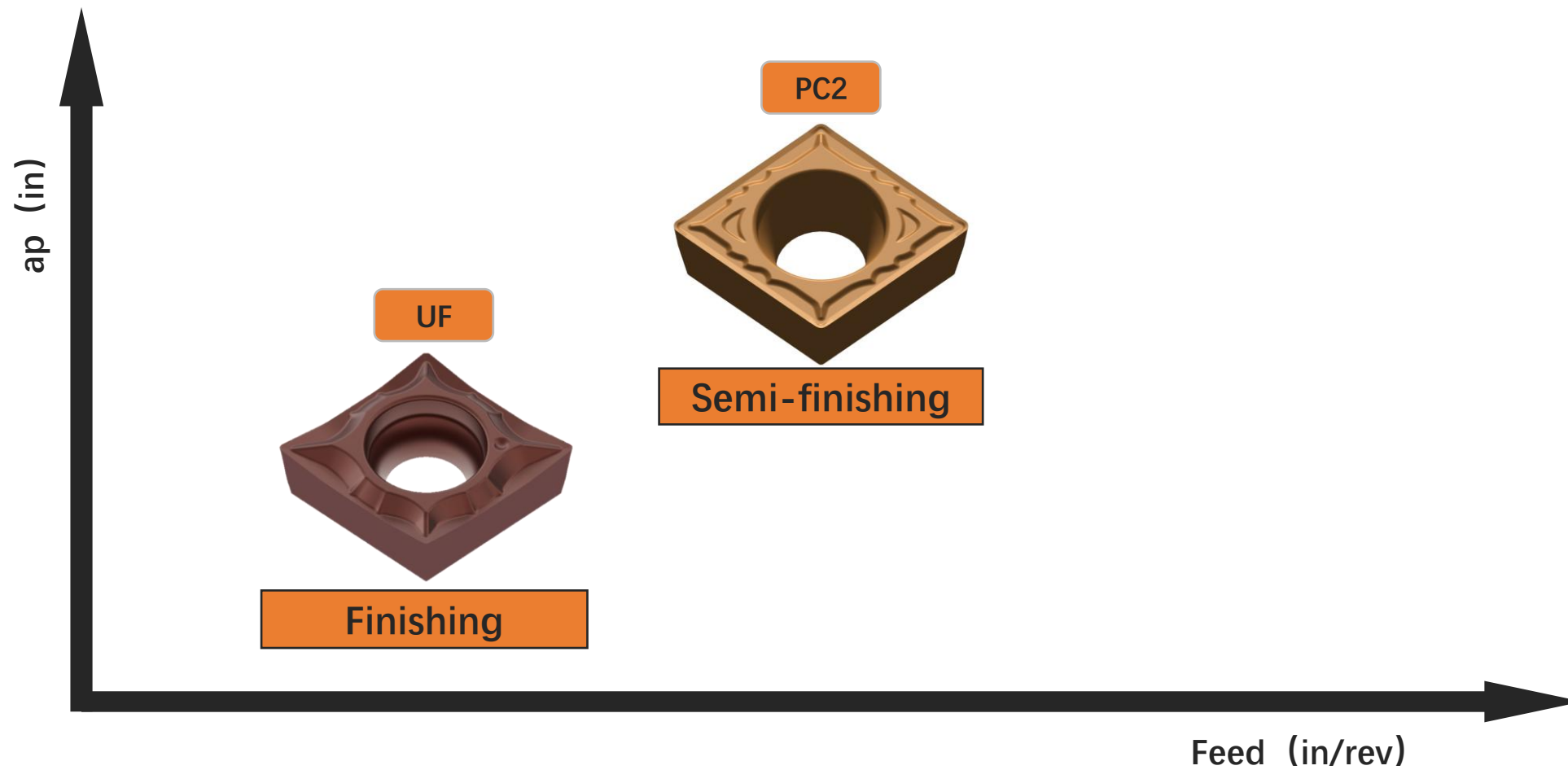
# Positive geometries for cast iron turning



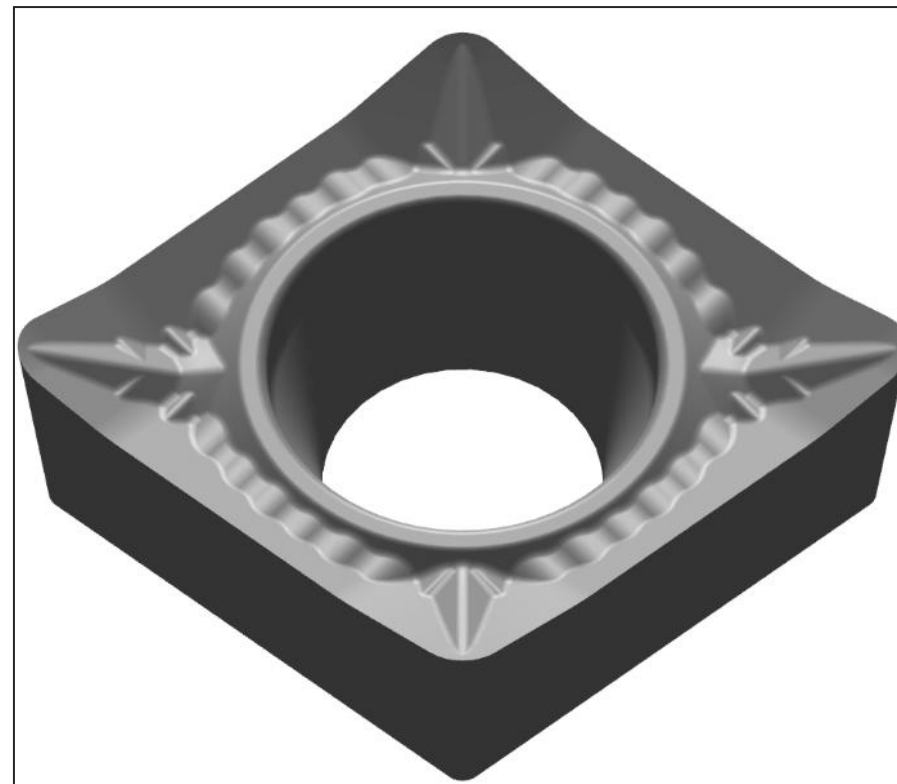
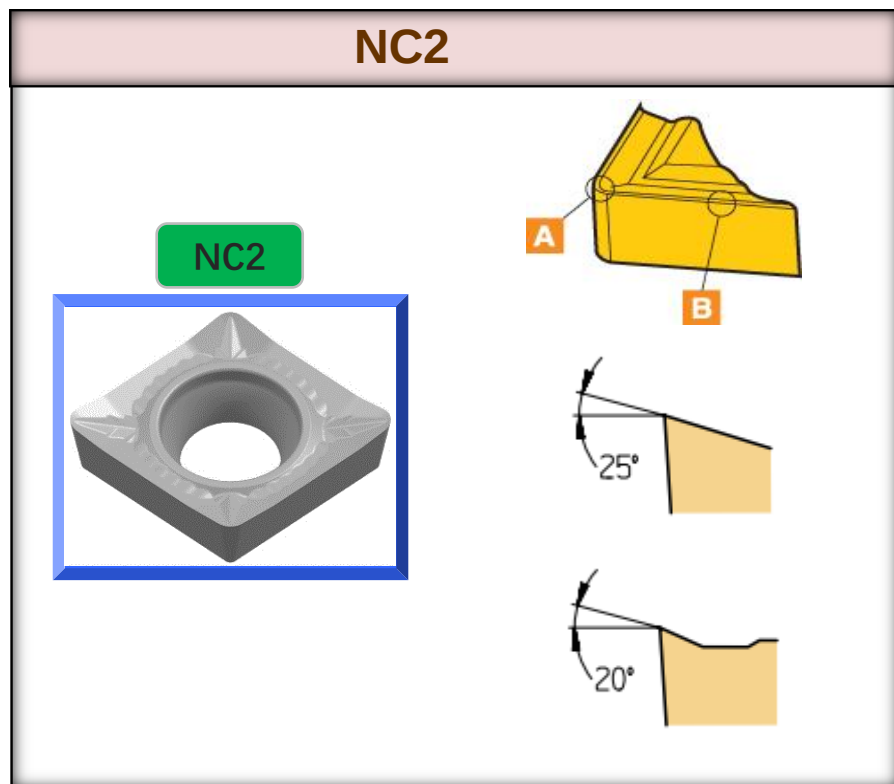
# Negative geometries for super-alloy turning



# Positive geometries for superalloy turning

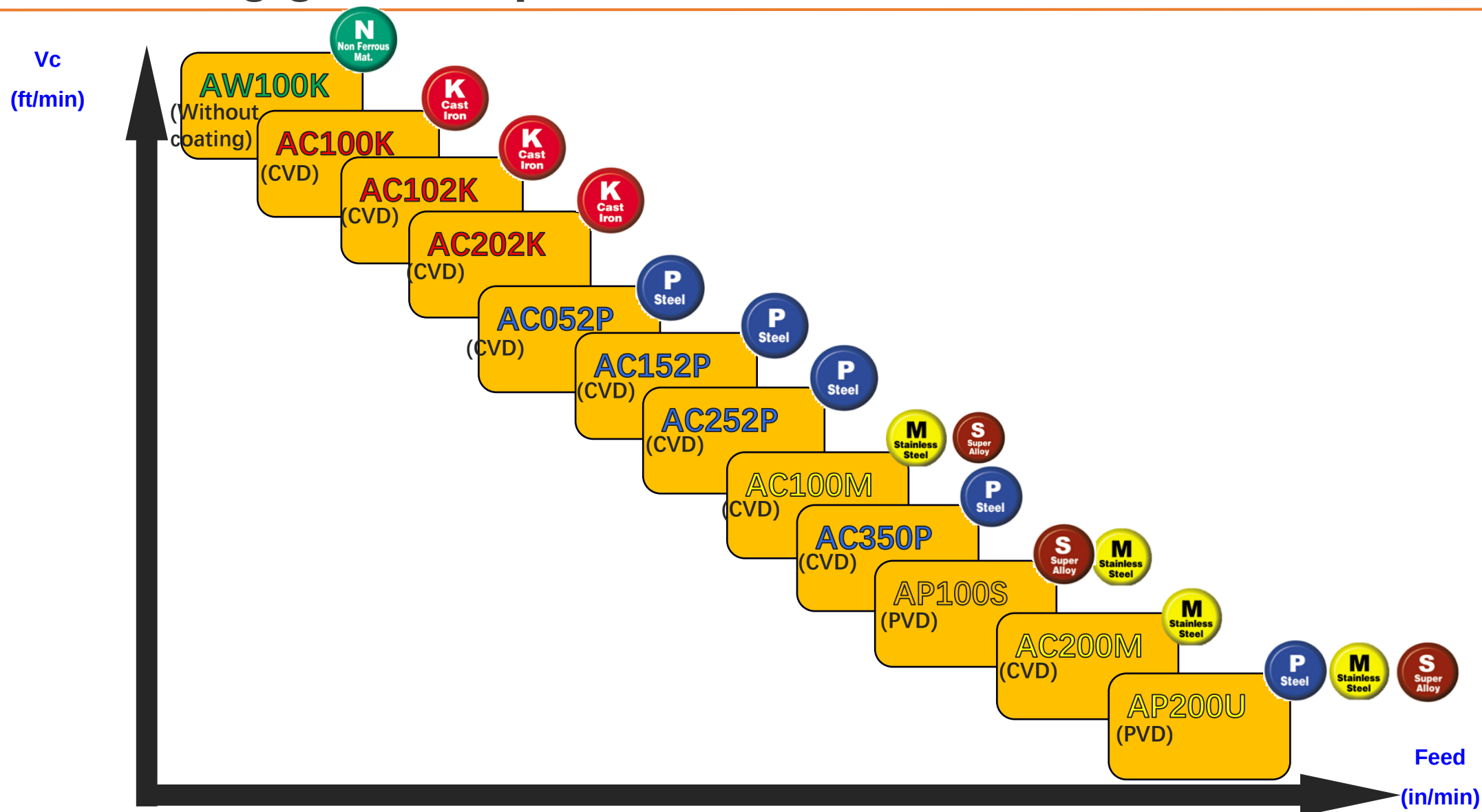


# Positive geometry for aluminium turning



- Semi-finishing for aluminium
- Ground and polished inserts, first choice for aluminium machining

# ISO turning grade map

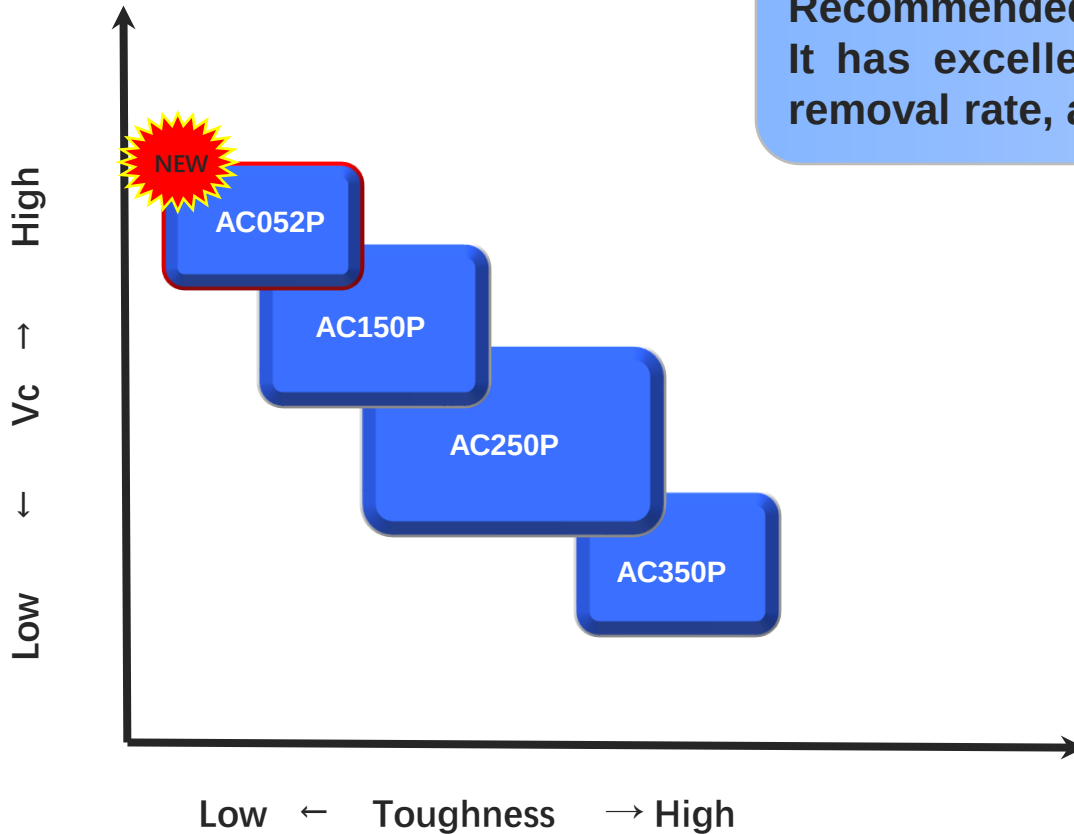


# New Grade for Steel Turning-AC052P



·ACHTECK·

- AC052P Application



## AC052P

Recommended for steel finish to semi-finish turning under stable conditions. It has excellent resistance to wear and plastic deformation, high metal removal rate, and can withstand high temperature.

## AC150P

Recommended for steel finish to rough turning, it is used in continuous turning as well as light interrupted turning with high metal removal rate.

## AC250P

Recommended for steel finish to rough turning, it is used in continuous turning as well as interrupted turning. First choice for steel part turning.

# New Grade for Steel Turning-AC052P

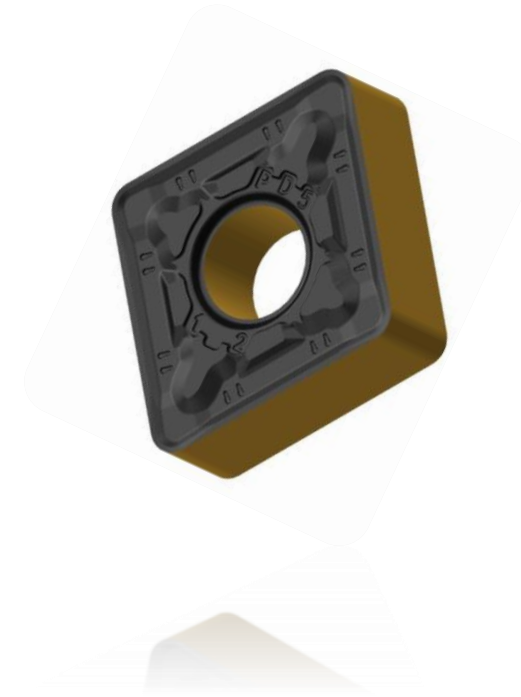


·ACHTECK·

- AC052P Technical Features

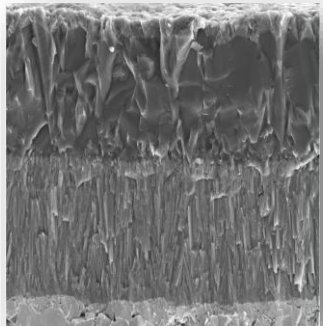
## Substrate with excellent toughness and wear resistance

- Excellent resistance to plastic deformation and high temperature
- Excellent toughness and improved impact resistance
- Cobalt-enriched layer with gradient sintering technology enhanced reliability



## Newly developed nano-coating

- Controlled growth direction of  $\text{Al}_2\text{O}_3$  coating crystal get the hardest surface of alumina coating crystal which improved plastic deformation resistance and edge strength along the cutting direction.
- The wear is more uniform and the wear resistance has been significantly improved.
- Coating adhesion is greatly improved and coating peeling is reduced.



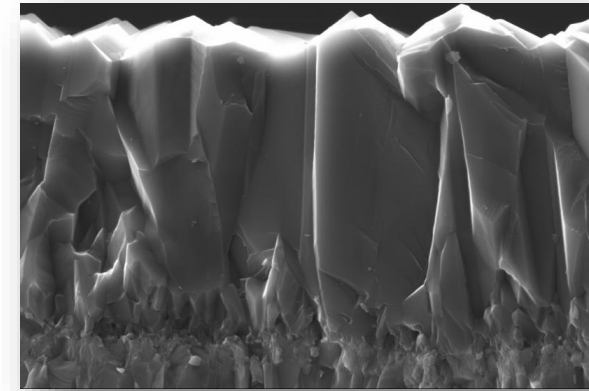
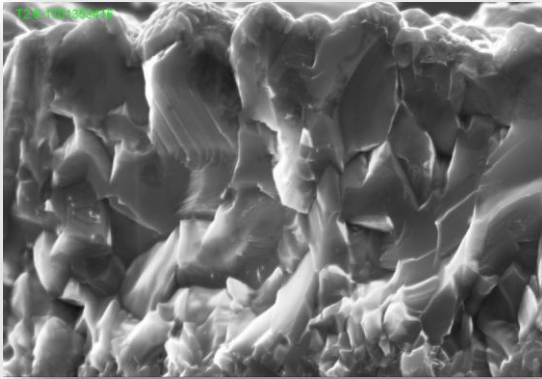
## New Grade for Steel Turning-AC052P



·ACHTECK·

- **New coating technology**

Controlled growth direction of  $\text{Al}_2\text{O}_3$  coating crystal improved wear resistance and got longer tool life.



### Previous coating technology

The crystal growth direction is random for CVD alumina coating that is not uniform.

### Newly developed coating

All the crystal in aluminum oxide coating is in the same direction, to get stronger cutting edge

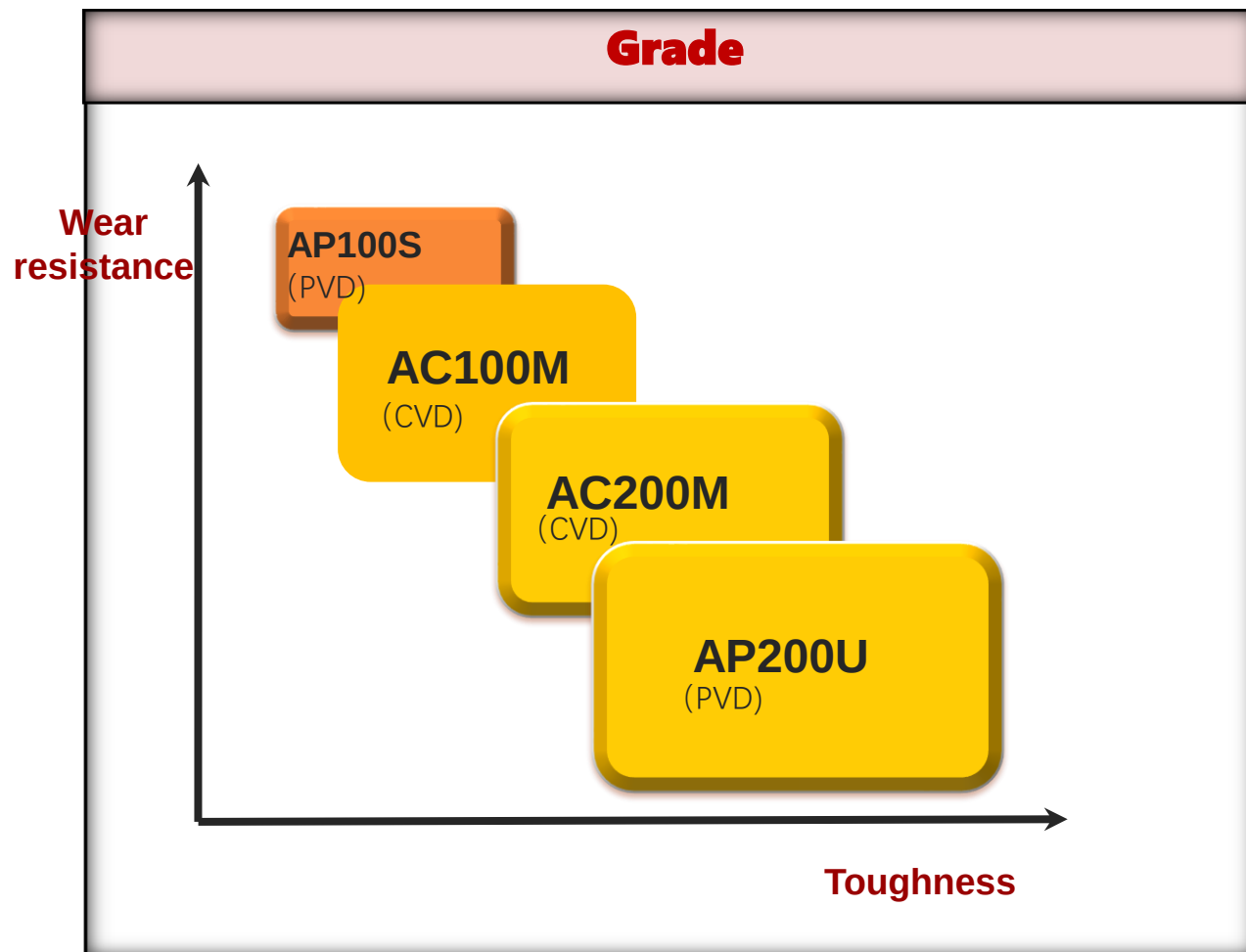




| Brand              | Competitor                                                                                                                                      | ACHTECK                 |
|--------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| Machine            | Horizontal CNC Machine                                                                                                                          |                         |
| Material           | 40MnB                                                                                                                                           |                         |
| Tool Holder        | 2525                                                                                                                                            | 2525                    |
| Insert             | WNMG 080408-TM T9115                                                                                                                            | WNMG 080408E-PD3 AC052P |
| Geometry           | TM                                                                                                                                              | PD3                     |
| Application        | Rough external turning                                                                                                                          | Rough external turning  |
| Vc(ft/min)         | 1050                                                                                                                                            | 1050                    |
| f(in/rev)          | 0.01                                                                                                                                            | 0.01                    |
| ap(in)             | 0.06                                                                                                                                            | 0.06                    |
| Coolant            | Emulsion                                                                                                                                        | Emulsion                |
| Tool life (pieces) | 15                                                                                                                                              | 25                      |
| Result             | Under the same cutting conditions, the tool life is 66% higher than the customer's current tool; the customer has reduced the tool change time. |                         |



# ISO M turning grades



## AP100S(PVD): M05-M25

Is suitable for finish turning due to its high hardness and plastic deformation resistance.

## AC100M(CVD): M10-M20

Is suitable for finish turning and light rough turning, at medium to high cutting speed due to its heat resistance feature of wear resistant coating.

## AC200M(CVD): M15-M30

Is suitable for semi-finish to rough turning, with interrupted turning with good edge reliability due to good thermal shock resistance and mechanical shock resistance.

## AP200U(PVD): M15-35

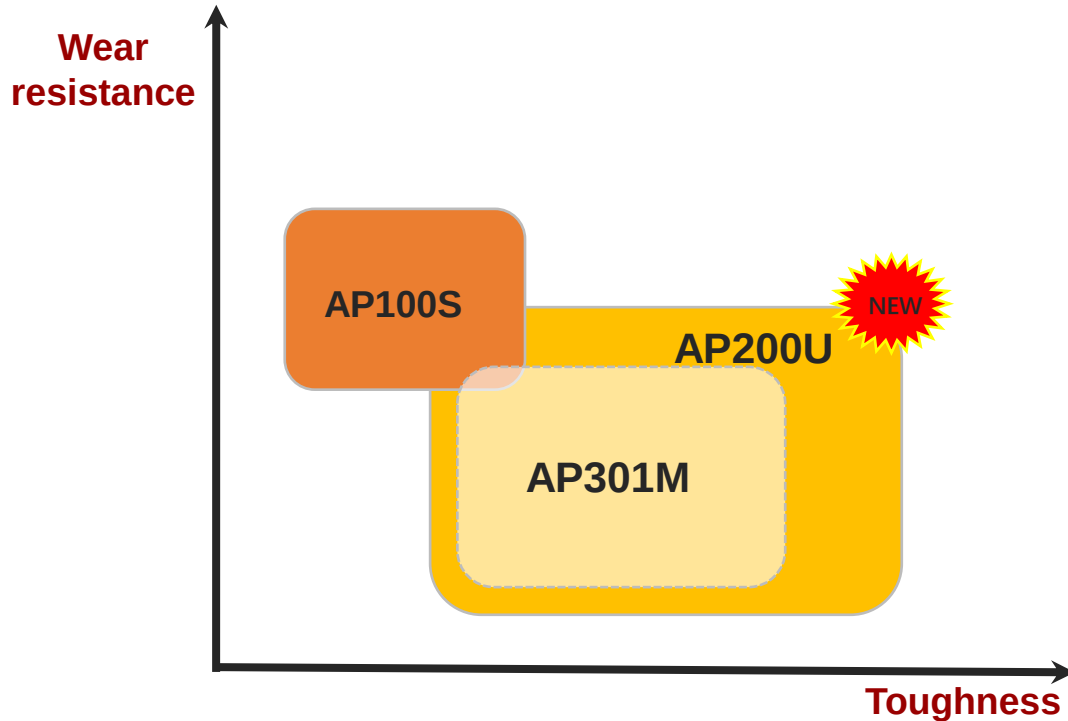
Is suitable for finish turning at low to medium speed with interrupted turning. It has excellent thermal stability, outstanding performance in machining when sharp edge and edge toughness or good surface quality are requested.

## New universal grade AP200U



·ACHTECK·

- AP200U Applications



### **AP100S: S05-25/M05-M25**

High wear resistance, used in heat resistant alloy semi-finishing, and stainless steel finishing. First choice for heat resistant alloys.

### **AP200U: M15-35/S15-35/P15-P35**

Universal grade, used in stainless steel and high temperature alloy semi-finishing and rough machining, and steel turning at low cutting speeds (<150m/min). First choice for stainless steel machining. It's a replacement of AP301M

### **AP301M: M15-35/S15-35**

Universal grade for stainless steel and high-temperature alloy semi-finishing and roughing



| Brand              | Current Cutting Tool I                                    | ACHTECK                 |
|--------------------|-----------------------------------------------------------|-------------------------|
| Machine            | Horizontal CNC Machine                                    |                         |
| Material           | 17-4                                                      |                         |
| Tool Holder        | 2525                                                      | 2525                    |
| Insert             | CNMG 120404-MA VP15TF                                     | CNMG 120404E-MB2 AP200U |
| Geometry           | MA                                                        | MB2                     |
| Application        | Finishing end face                                        | Finishing end face      |
| Vc(ft/min)         | 131-721                                                   | 131-721                 |
| f(in/rev)          | 0.003                                                     | 0.003                   |
| ap(in)             | 0.012                                                     | 0.012                   |
| Coolant            | Emulsion                                                  | Emulsion                |
| Tool life (pieces) | 25                                                        | 35                      |
| Result             | 40% longer tool life than the customer's current product. |                         |



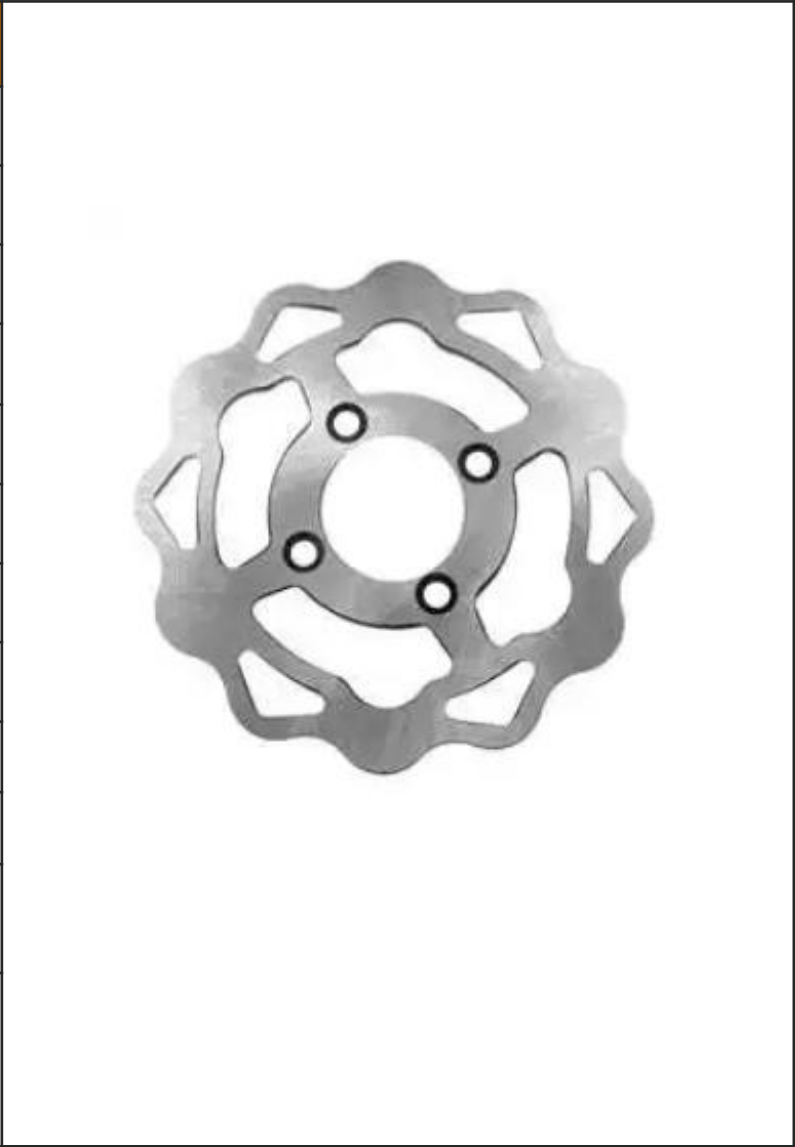


| Brand              | Current Cutting Tool I                                                      | ACHTECK                 |
|--------------------|-----------------------------------------------------------------------------|-------------------------|
| Machine            | Horizontal CNC Machine                                                      |                         |
| Material           | 316L                                                                        |                         |
| Tool Holder        | 2525                                                                        | 2525                    |
| Insert             | CNMG 120408-EM TT9080                                                       | CNMG 120412E-SC3 AP200U |
| Geometry           | EM                                                                          | SC3                     |
| Application        | Rough external turning                                                      | Rough external turning  |
| Vc(ft/min)         | 393                                                                         | 393                     |
| f(in/rev)          | 0.012                                                                       | 0.012                   |
| ap(in)             | 0.059                                                                       | 0.059                   |
| Coolant            | Emulsion                                                                    | Emulsion                |
| Tool life (pieces) | 3                                                                           | 4                       |
| Result             | Reduced tool change time, reduced tool cost and increased tool life by 33%. |                         |





| Brand              | Current Cutting Tool I                                       | ACHTECK                 |
|--------------------|--------------------------------------------------------------|-------------------------|
| Machine            | Horizontal CNC Machine                                       |                         |
| Material           | 12Cr13                                                       |                         |
| Tool Holder        | 2525                                                         | 2525                    |
| Insert             | SCMT 120408 VP15TF                                           | SCMT 120408E-PC2 AP200U |
| Geometry           | –                                                            | SC3                     |
| Application        | End face finish turning                                      | End face finish turning |
| Vc(ft/min)         | 476                                                          | 492                     |
| f(in/rev)          | 0.004                                                        | 0.005                   |
| ap(in)             | 0.012                                                        | 0.03                    |
| Coolant            | Emulsion                                                     | Emulsion                |
| Tool life (pieces) | 600                                                          | 700                     |
| Result             | Increased tool life by 16% over the customer's current tool. |                         |

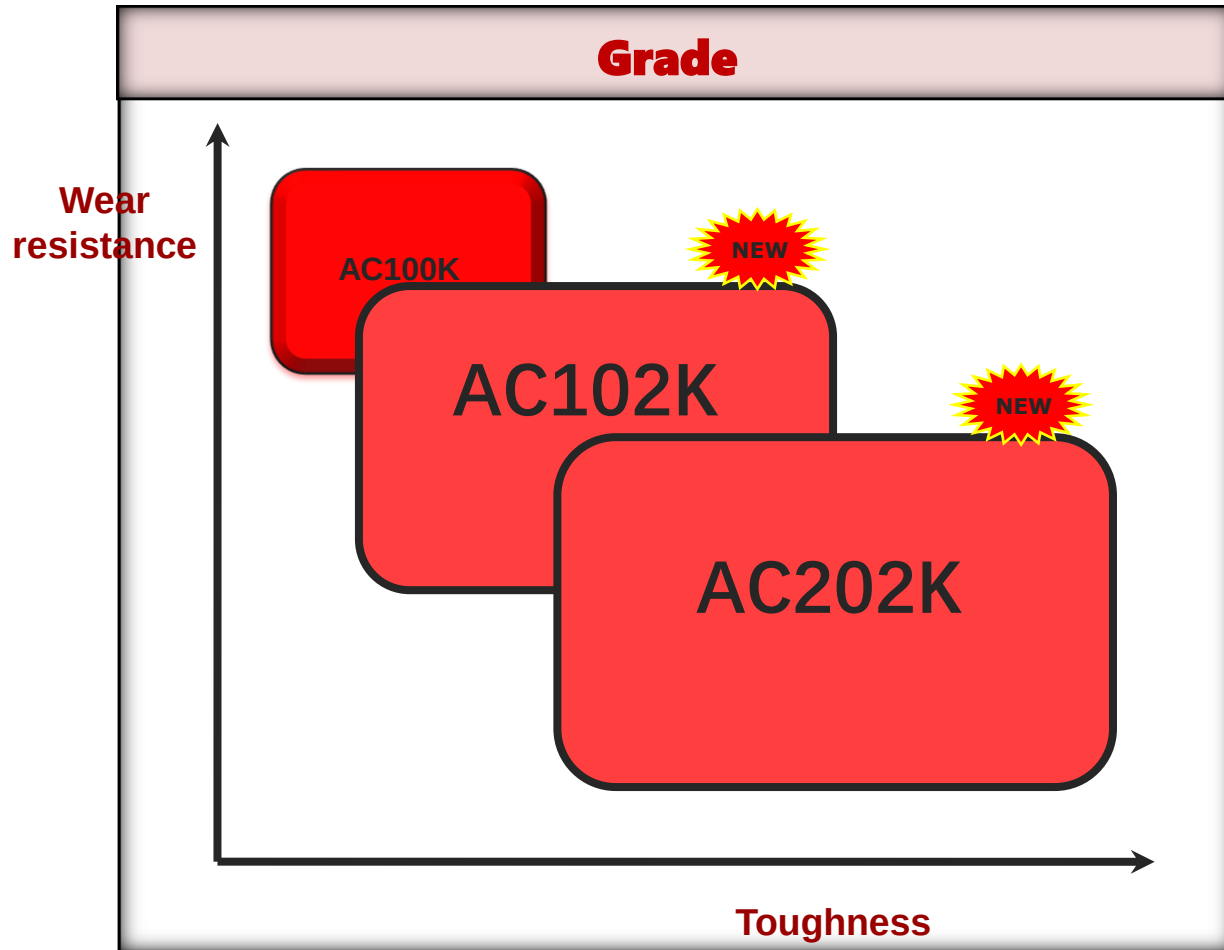




| Brand              | Current Cutting Tool I                                                     | ACHTECK                 |
|--------------------|----------------------------------------------------------------------------|-------------------------|
| Machine            | Horizontal CNC Machine                                                     |                         |
| Material           | Flange 304                                                                 |                         |
| Tool Holder        | 2525                                                                       | 2525                    |
| Insert             | CCMT 120408 VP15                                                           | CCMT 120408E-PC2 AP200U |
| Geometry           | –                                                                          | SC3                     |
| Application        | Finish external turning                                                    | Finish external turning |
| Vc(ft/min)         | 492                                                                        | 492                     |
| f(in/rev)          | 0.005                                                                      | 0.005                   |
| ap(in)             | 0.03                                                                       | 0.03                    |
| Coolant            | Emulsion                                                                   | Emulsion                |
| Tool life (pieces) | 15                                                                         | 25                      |
| Result             | Reduced tool change time; reduced tool cost and improved tool life by 66%. |                         |



# ISO K turning grades



## AC100K : K01-K15

CVD coated grade, has thick and smooth wear resistant coating and hard substrate, recommended for grey cast iron high speed turning.

## AC102K : K05-K15

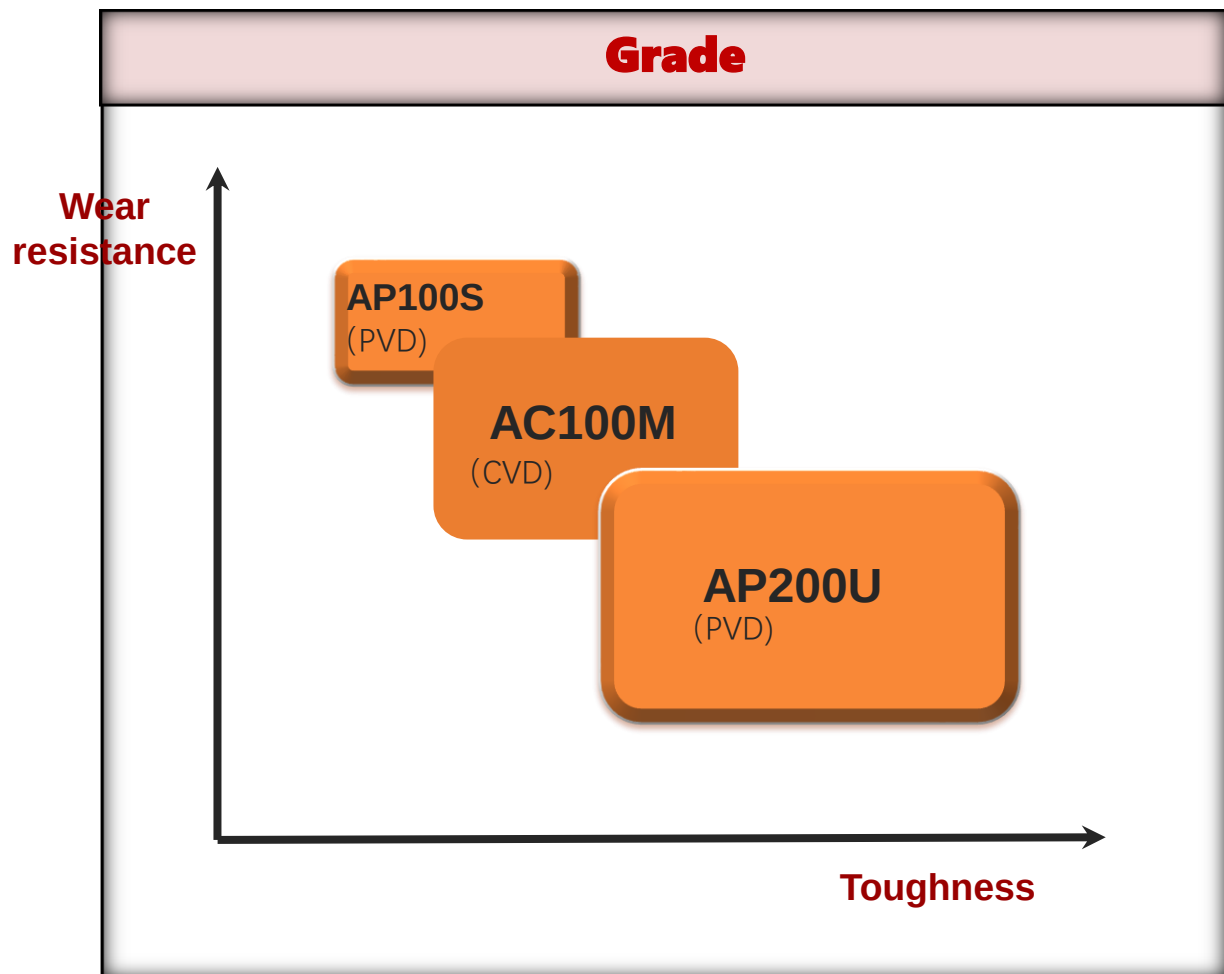
CVD coated grade, has thick and smooth wear resistant coating and hard substrate, recommended for nodular cast iron high speed turning

## AC202K : K10-30

1st choice for cast iron turning. It can deal with interrupted cutting due to its high wear-resistant CVD coating. It is used in finish to rough turning on cast iron at low to medium cutting speed.



# ISO S turning grades



## AP100S : S05-S25

1st choice for heat resistant alloy turning. PVD coated grade has high hardness and plastic deformation resistance, can get high performance and good wear resistance.

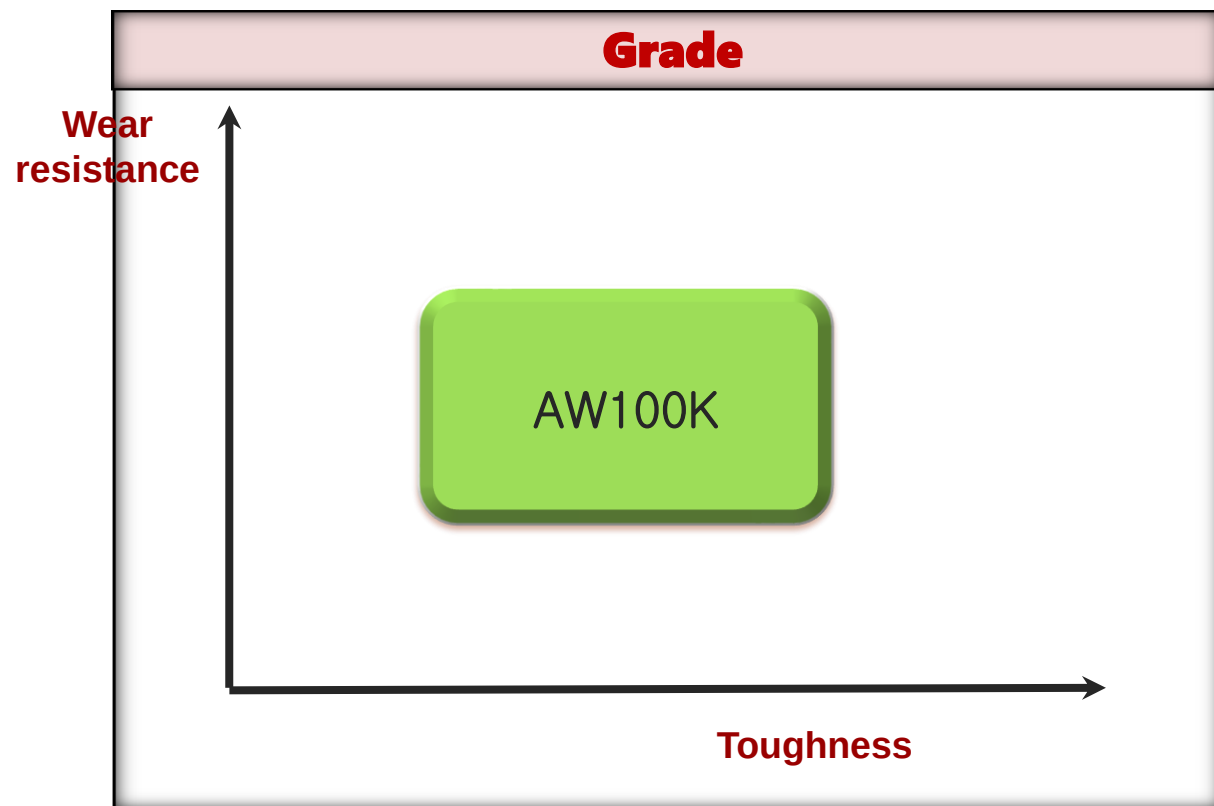
## AC100M : S10-S25

CVD coated grade, suitable for heat resistant alloy continuous high speed turning

## AP200U : S15-S35

PVD coated grade. Used in low cutting speed or light interrupted cutting. Suitable for semi-roughing or continuous turning for a short time due to its good notch wear resistance and anti-heat shock capability

# ISO N turning grade

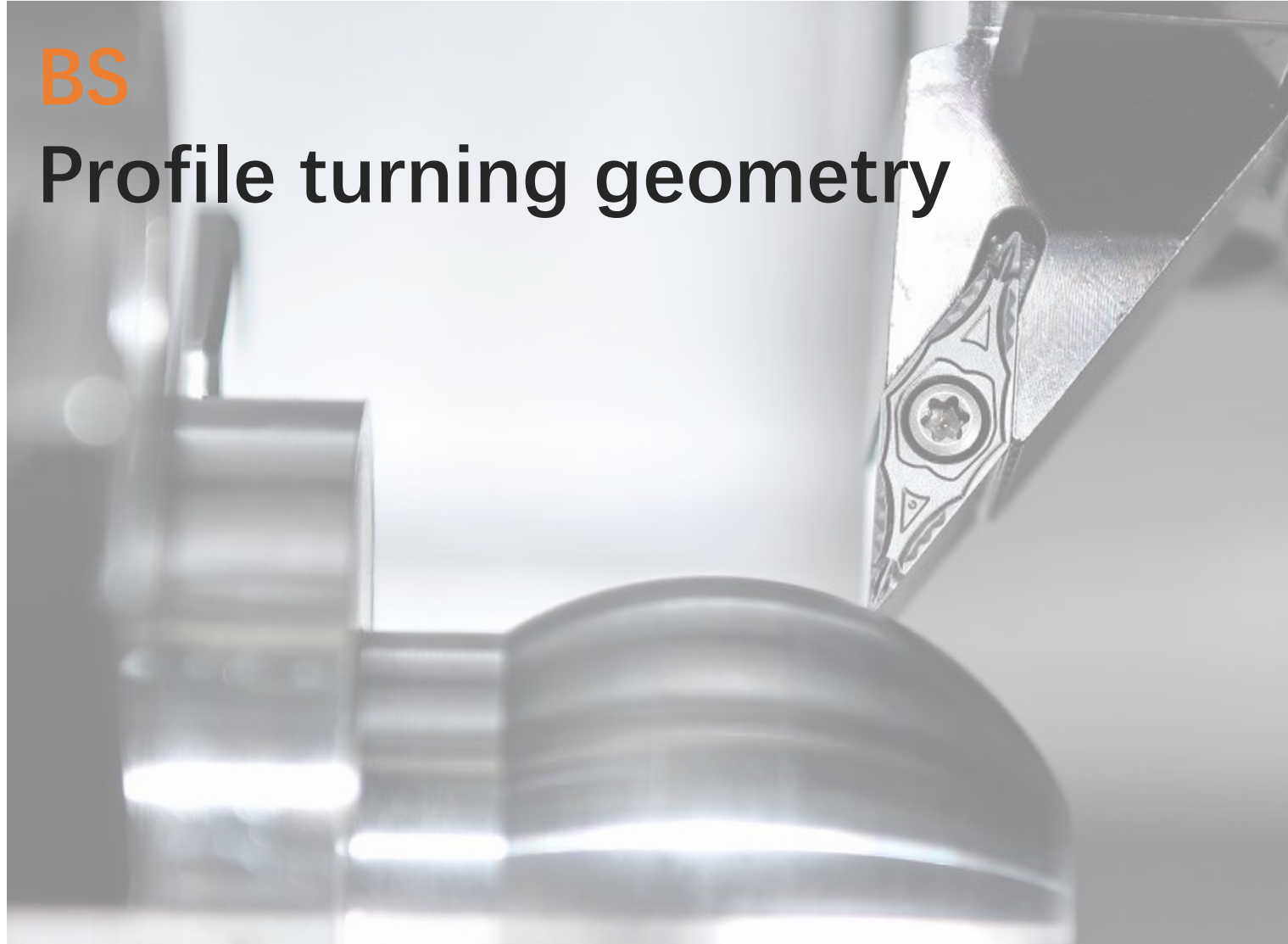


## AW100K : N05-N25

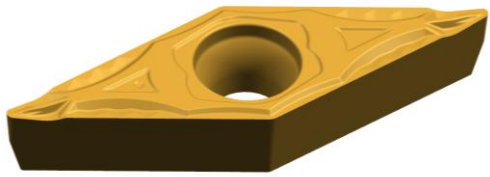
uncoated cemented carbide grade. It has excellent resistance to abrasive wear, and sharp cutting edges. Used in aluminum alloy rough to finish turning.

**BS**

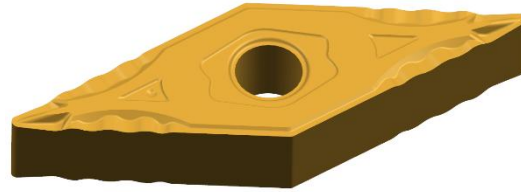
## Profile turning geometry



# Profile turning geometry-BS



Positive  
insert



Negative  
insert

Applications:

- Low cutting force, reduced vibration
- Suitable for long shaft and unstable machining conditions
- Profile turning with difference cutting depth
- 



## Profile turning geometry-BS

- Improvement on spherical surface turning

PB1



BS



Holder : PVLNL2525M-16Q

Insert : VNMG160408PB1/BS (AC052P)

Material : 4340

Cutting data :  $v_c=656$  ft/min,  $a_p=0.02\sim0.059$  in,  $f=0.006$  in/rev, DRY



## Profile turning geometry-BS

- V shaped slot machining improvement



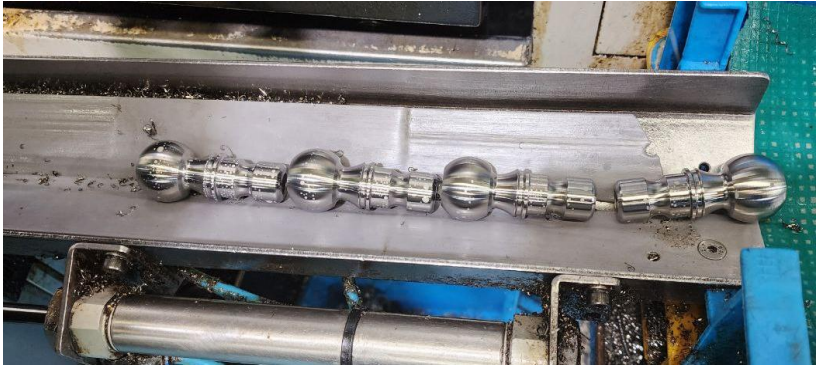
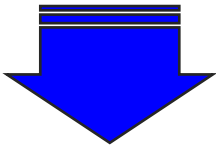
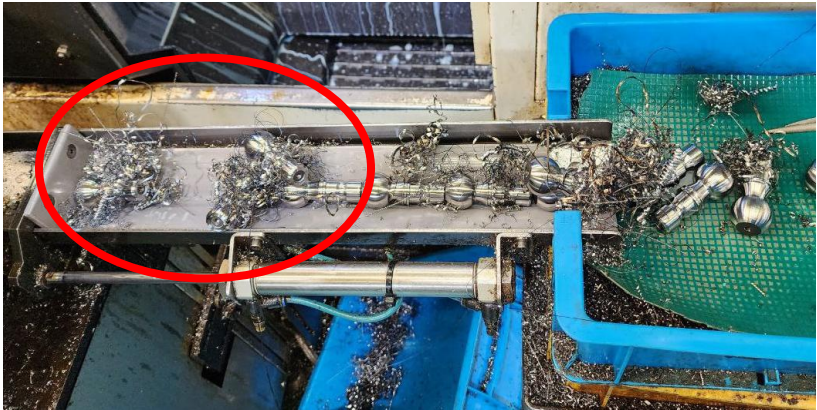
Holder : PVVNL2525M-16Q

Insert : VNMG160408PB1/BS (AC052P)

Material : 4340

Cutting data :  $v_c=1312$  ft/min,  $a_p=0.008$  in,  $f=0.008$  in/rev, DRY

| Brand           | Competitor                                                                                                                                                                                                                                       | ACHTECK                                            |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|
| Machine Tool    | Automatic CNC Lathe                                                                                                                                                                                                                              |                                                    |
| Workpiece       | Ball shaft                                                                                                                                                                                                                                       |                                                    |
| Holder          |                                                                                                                                                                                                                                                  |                                                    |
| Insert          | VNMG160404-FX TT8115                                                                                                                                                                                                                             | VBMT 160408E-BS AC052P                             |
| Geometry        | FX                                                                                                                                                                                                                                               | BS                                                 |
| Application     | Finish turning<br>( $\phi 0.787'' - \phi 1.22''$ )                                                                                                                                                                                               | Finish turning<br>( $\phi 0.787'' - \phi 1.22''$ ) |
| Vc(ft/min)      | 958                                                                                                                                                                                                                                              | 958                                                |
| f(in/rev)       | 0.006                                                                                                                                                                                                                                            | 0.006                                              |
| ap(in)          | 0.008                                                                                                                                                                                                                                            | 0.008                                              |
| Coolant         | Emulsion                                                                                                                                                                                                                                         | Emulsion                                           |
| Tool life (pcs) | 200 pcs/edge                                                                                                                                                                                                                                     | 200 pcs/edge                                       |
| 39 Result       | The current tool faced long chip problem. The operator had to remove the chips manually which is very time consuming and affects the productivity. BS geometry dramatically improved chip breaking and productivity. The insert had normal wear. |                                                    |

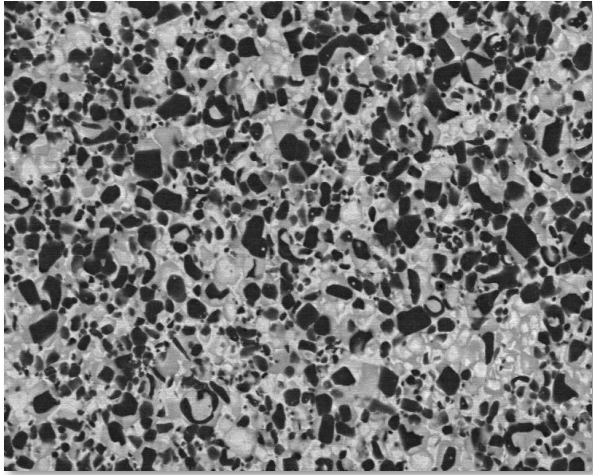


# 02

## Cermet





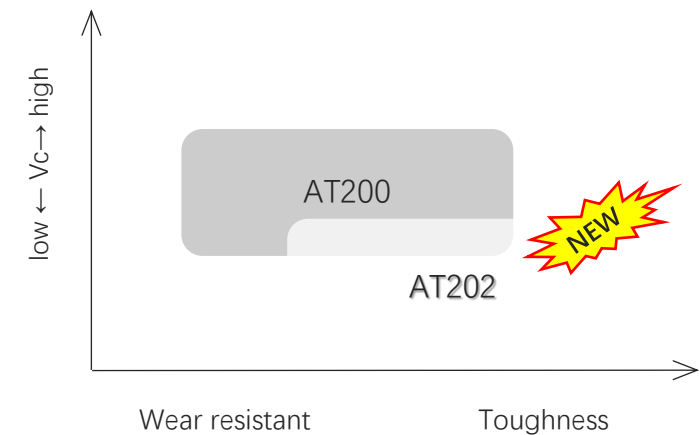


## High stability

The hot hardness and thermal shock resistance are greatly improved. Therefore, constant tool life can be obtained under difficult cutting conditions.

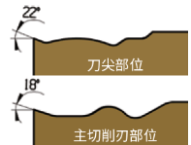
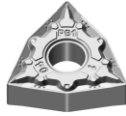
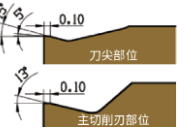
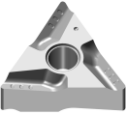
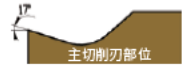
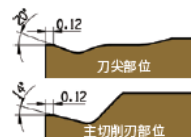
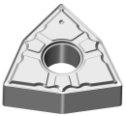
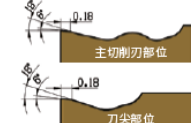
## Excellent performance

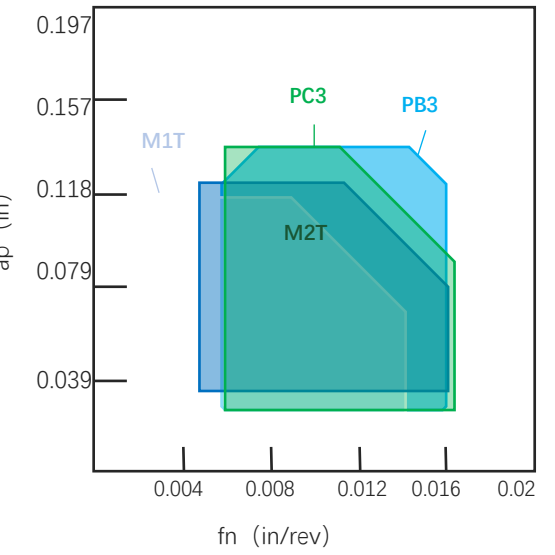
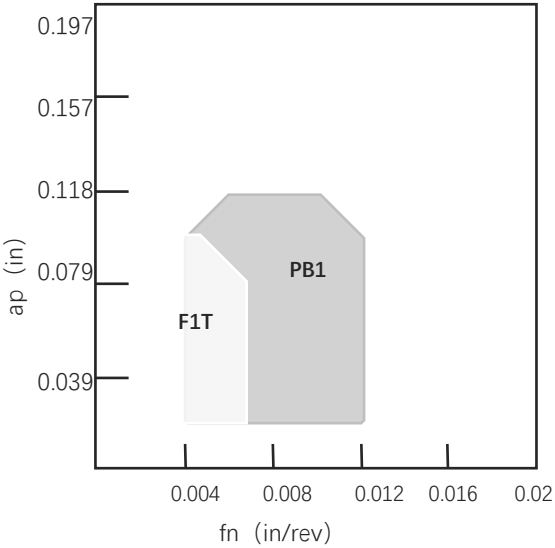
Edge chipping is minimized for excellent cutting performance.



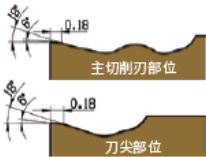
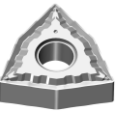
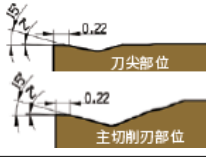
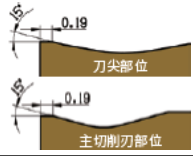
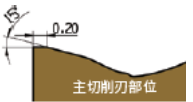
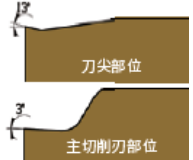
|   | Material                                              | Hardness      | Cutting speed (ft/min) |
|---|-------------------------------------------------------|---------------|------------------------|
| P | Soft steel<br>ASTM A36,<br>C10...                     | HB $\leq$ 180 | 492-984                |
|   | Carbon steel<br>Alloyed<br>steel<br>C45,<br>40CrMo... | HB $\geq$ 180 | 393-853                |

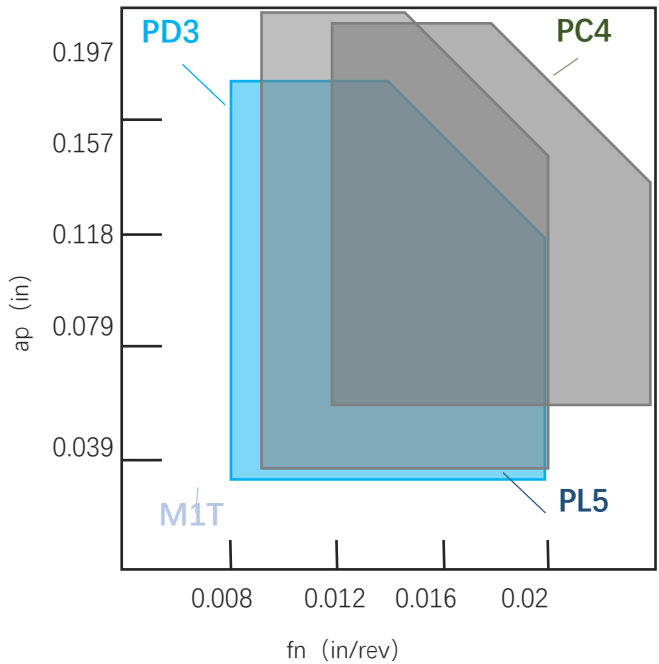
Chip breakers - Negative

| Application    | Chip breaker |                                                                                     | Features                                                                                                                                     | Cross section                                                                         |
|----------------|--------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Finishing      | F1T          |    | Finish machining. Very good chip control at small cutting depth                                                                              |    |
|                | PB1          |    | General purpose finish geometry. Good stability                                                                                              |    |
| Semi-finishing | M1T          |    | Big positive rake angle, low cutting force, suitable for different cutting depth                                                             |    |
|                | PB3          |    | First choice for steel semi-finishing turning, can be used in profile turning with different cutting depth, and offer excellent chip control |    |
|                | M2T          |  | Designed for low cutting force, combined strengthened cutting edge. Suitable for medium turning with big cutting depth.                      |  |
|                | PC3          |  | 2nd choice for steel semi-finish turning                                                                                                     |  |

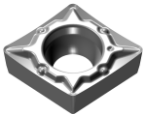
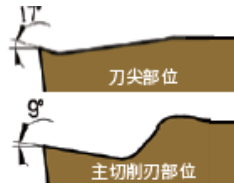
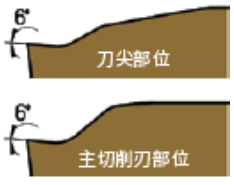
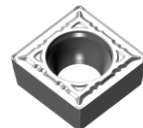
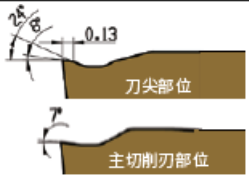
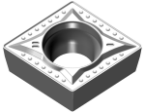
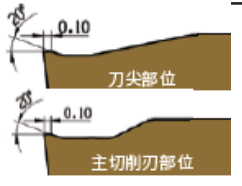
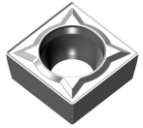
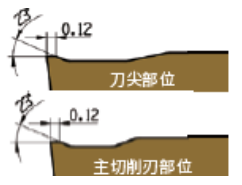


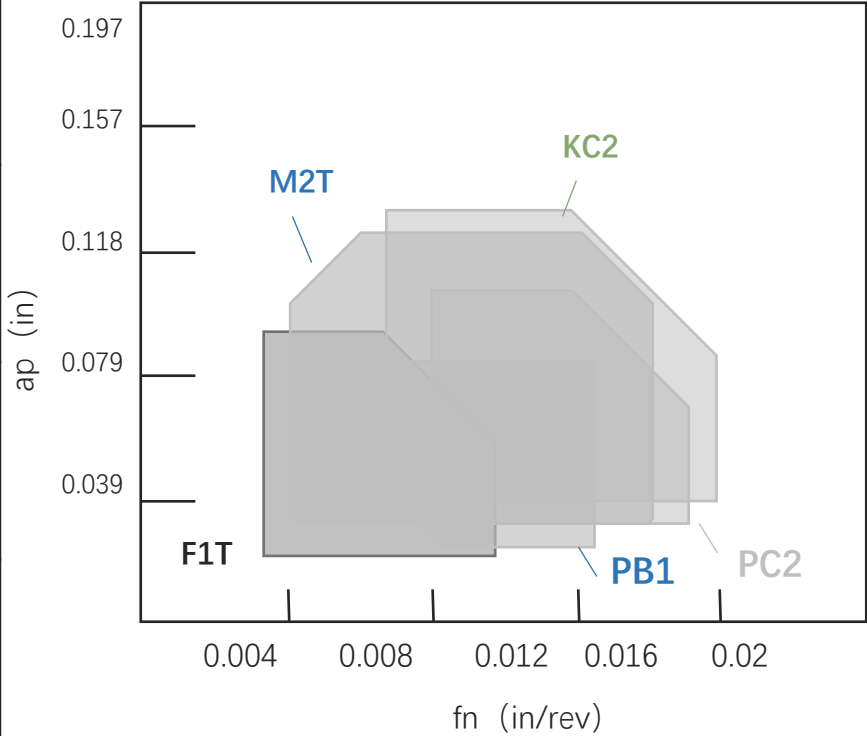
Chip breakers - Negative

| Application | Chip breaker |                                                                                     | Features                                                                                                 | Cross section                                                                         |
|-------------|--------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Medium      | PD3          |    | Guaranteed stability, stronger cutting edge, can be used in interrupted turning                          |    |
|             | M3T          |    | Smooth rake surface, suitable for medium turning with high feed rate.                                    |    |
|             | PC4          |    | Reduced cutting force, suitable for steel and cast iron general purpose machining                        |    |
|             | PL5          |    | Suitable for medium machining with low cutting force, big cutting depth. Suitable for long shaft turning |    |
| Profiling   | BS           |  | Suitable for profile turning with changing cutting depth. Smooth chip evacuation                         |  |



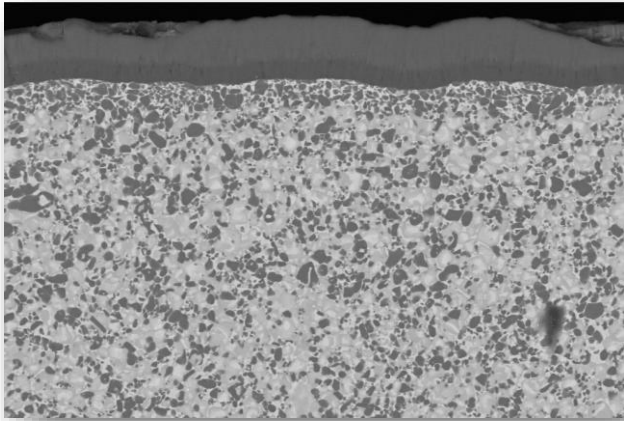
Chip breakers - Positive

| Application    | Chip breaker |                                                                                     | Features                                                                            | Cross section                                                                         |
|----------------|--------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| Finishing      | F1T          |    | Low cutting force, excellent chip control                                           |    |
|                | PB1          |    | General purpose geometry for finish machining with good stability                   |    |
| Semi-finishing | PC2          |    | 1 <sup>st</sup> choice for semi-finish turning. Good edge strength and chip control |    |
|                | M2T          |   | Designed for high feed turning with smooth chip evacuation                          |   |
|                | KC2          |  | Big chip breaker design, suitable for machining with big cutting depth              |  |

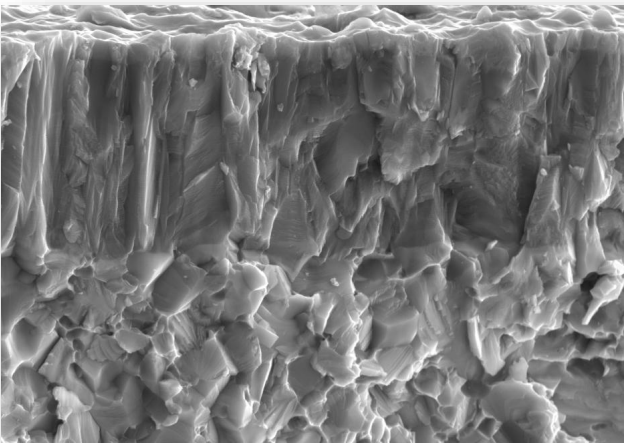


# AT210A grade features:

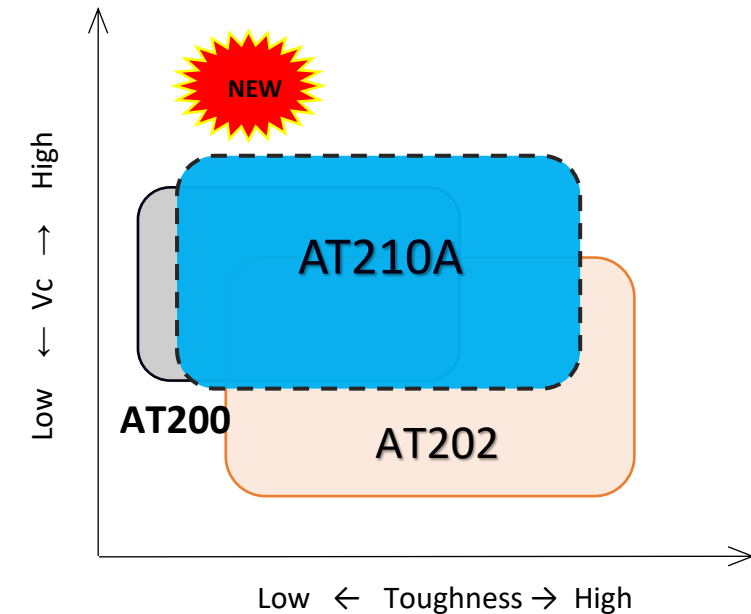
The substrate is a combination of super-fine crystal and complex binder. Nano-structured coating is good for the steel finish turning and high productivity.



- Gradient transition layer balanced the wear resistance and toughness.
- Super fine crystal combined with complex binder for excellent surface finish.



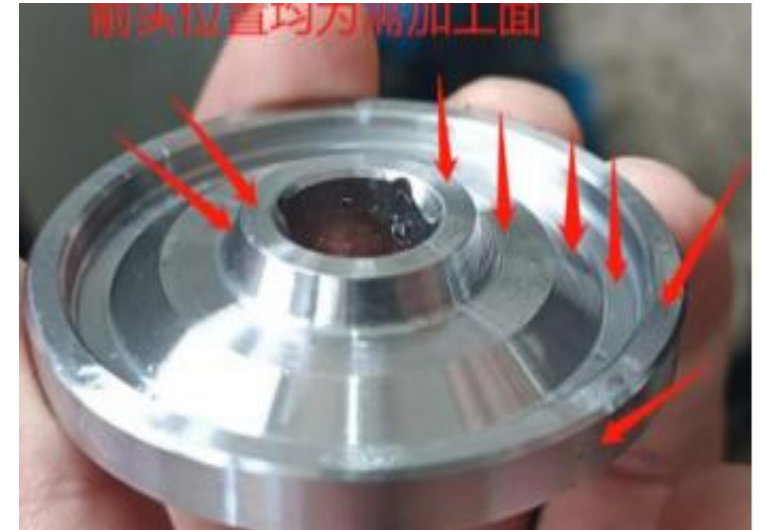
- Nano-structure coating has higher coating adhesion, anti-oxidation and longer tool life.
- Suitable for steel continuous and light medium turning.



# AT210A Success story

·ACHTECK·

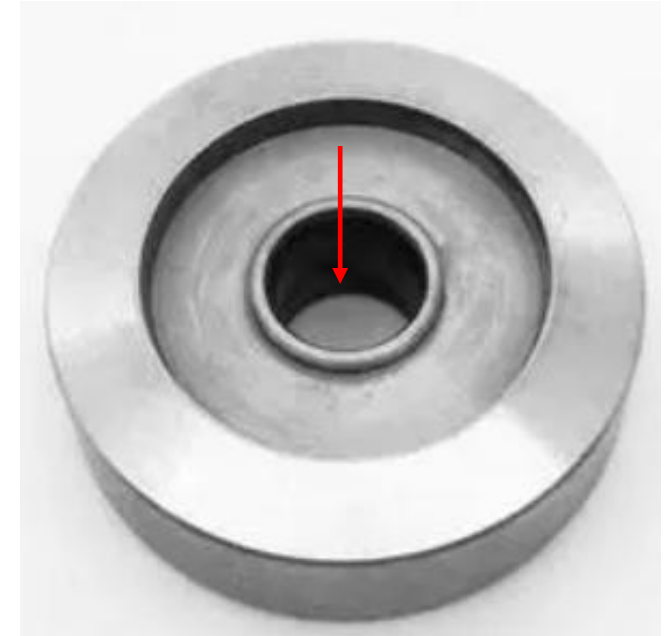
| Brand           | Current tool                                                            | ACHTECK                   |
|-----------------|-------------------------------------------------------------------------|---------------------------|
| Machine Tool    | Horizontal CNC lathe                                                    |                           |
| Material        | C45                                                                     |                           |
| Holder          | 2525                                                                    | 2525                      |
| Insert          | VBMT 110304 PP PV720                                                    | VBMT 110304E-PB1 AT210A   |
| Geometry        | PP                                                                      | PB1                       |
| Application     | OD and face rough turning                                               | OD and face rough turning |
| Vc(ft/min)      | 250-1030                                                                | 250-1030                  |
| f(in/rev)       | 0.006                                                                   | 0.006                     |
| ap(in)          | 0.012                                                                   | 0.012                     |
| Coolant         | Emulsion                                                                | Emulsion                  |
| Tool life (pcs) | 143                                                                     | 172                       |
| Result          | Reduced tool changing time and tooling cost. Increased tool life by 20% |                           |



# AT210A Success story

·ACHTECK·

| Brand           | Current tool                                                                 | ACHTECK                   |
|-----------------|------------------------------------------------------------------------------|---------------------------|
| Machine tool    | Horizontal CNC Lathe                                                         |                           |
| Workpiece       | Gear 20CrMo                                                                  |                           |
| Holder          | 2525                                                                         | 2525                      |
| Insert          | CCMT 09T304 HQ PV720                                                         | CCMT 09T304E-PB1 AT210A   |
| Geometry        | HQ                                                                           | PB1                       |
| Application     | OD and face rough turning                                                    | OD and face rough turning |
| Vc(ft/min)      | 407                                                                          | 407                       |
| f(in/rev)       | 0.003                                                                        | 0.003                     |
| ap(in)          | 0.02                                                                         | 0.02                      |
| Coolant         | Emulsion                                                                     | Emulsion                  |
| Tool life (pcs) | 220                                                                          | 280                       |
| Result          | Reduced tool changing time, reduced tool cost and increased tool life by 27% |                           |





# 03

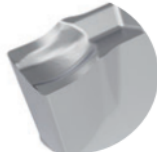
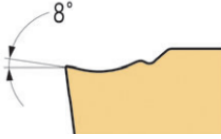
## Grooving





# Geometry-double cutting edges

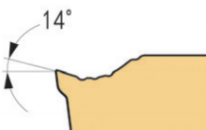
·ACHTECK·

| Geometry | Insert                                                                              | Shape of cutting edge                                                               | Description                                                                                                                                                                                                                                                  | Insert Width (in) |             |         |           |               |               |         |                   |         |
|----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------|---------|-----------|---------------|---------------|---------|-------------------|---------|
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | External grooving |             |         |           |               | Face grooving |         | Internal grooving |         |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | Grooving          | Parting off | Turning | Profiling | Under cutting | Grooving      | Turning | Grooving          | Turning |
| CS       |    |    | <ul style="list-style-type: none"><li>● Used in parting off &amp; grooving stainless steel, heat resistant alloy and low carbon steel</li><li>● For low feed rate application</li></ul>                                                                      | 0.079             | 0.079       | -       | -         | -             | 0.118         | -       | 0.118             | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.118             | 0.118       | -       | -         | -             | -             | -       | -                 | -       |
| CM       |    |    | <ul style="list-style-type: none"><li>● Used in parting off &amp; grooving low carbon steel and stainless steel</li><li>● For sticky material, pipe fitting, thin-walled part parting off, low cutting force</li><li>● For low to medium feed rate</li></ul> | 0.079             | 0.079       | -       | -         | -             | -             | -       | -                 | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.118             | 0.118       | -       | -         | -             | 0.118         | -       | 0.118             | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.157             | 0.157       | -       | -         | -             | 0.157         | -       | 0.157             | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.197             | 0.197       | -       | -         | -             | 0.197         | -       | 0.197             | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.236             | 0.236       | -       | -         | -             | 0.236         | -       | 0.236             | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.315             | 0.315       | -       | -         | -             | -             | -       | -                 | -       |
| CH       |  |  | <ul style="list-style-type: none"><li>● Used in parting off and grooving steel, alloy steel and stainless steel with high hardness and toughness.</li><li>● Strong cutting edge</li><li>● For parting off and grooving at medium to high feed rate</li></ul> | 0.079             | 0.079       | -       | -         | -             | -             | -       | -                 | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.118             | 0.118       | -       | -         | -             | 0.118         | -       | 0.118             | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.157             | 0.157       | -       | -         | -             | 0.157         | -       | 0.157             | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.197             | 0.197       | -       | -         | -             | 0.197         | -       | 0.197             | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.236             | 0.236       | -       | -         | -             | 0.236         | -       | 0.236             | -       |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                              | 0.315             | 0.315       | -       | -         | -             | -             | -       | 0.315             | -       |



# Geometry-double cutting edges

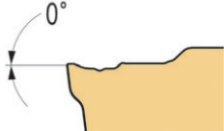
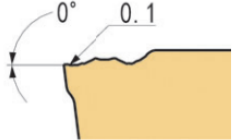
·ACHTECK·

| Geometry | Insert                                                                              | Shape of cutting edge                                                               | Description                                                                                                                                                                                                                                                                                  | Insert Width (in)   |                     |                     |           |               |                     |                     |                     |                     |
|----------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|---------------------|---------------------|-----------|---------------|---------------------|---------------------|---------------------|---------------------|
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | External grooving   |                     |                     |           |               | Face grooving       |                     | Internal grooving   |                     |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | Grooving            | Parting off         | Turning             | Profiling | Under cutting | Grooving            | Turning             | Grooving            | Turning             |
| GS       |    |    | <ul style="list-style-type: none"><li>● Excellent chip breaking, suitable for grooving and finish turning.</li><li>● Geometry for finish machining, low cutting force, low feed, excellent surface quality.</li><li>● Ground insert, high precision and positioning repeatability.</li></ul> | 0.079<br> <br>0.281 | 0.079<br> <br>0.281 | 0.079<br> <br>0.281 | -         | -             | 0.118<br> <br>0.236 | 0.118<br> <br>0.236 | 0.079<br> <br>0.281 | 0.079<br> <br>0.281 |
| TS       |  |  | <ul style="list-style-type: none"><li>● Multifunctional insert for external, internal turning and grooving, parting off, face grooving and face turning</li><li>● Excellent chip control</li><li>● For low and medium feed rate.</li></ul>                                                   | 0.079               | 0.079               | 0.079               | -         | -             | 0.118               | 0.118               | 0.079               | 0.079               |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | 0.118               | 0.118               | 0.118               |           |               | 0.118               | 0.118               | 0.118               | 0.118               |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | 0.157               | 0.157               | 0.157               |           |               | 0.157               | 0.157               | 0.157               | 0.157               |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | 0.197               | 0.197               | 0.197               |           |               | 0.197               | 0.197               | 0.197               | 0.197               |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | 0.236               | 0.236               | 0.236               |           |               | 0.236               | 0.236               | 0.236               | 0.236               |
|          |                                                                                     |                                                                                     |                                                                                                                                                                                                                                                                                              | 0.315               | 0.315               | 0.315               |           |               |                     |                     | 0.315               | 0.315               |



# Geometry-double cutting edges

·ACHTECK·

| Geometry | Insert                                                                             | Shape of cutting edge                                                              | Description                                                                                                                                                                                                                             | Insert Width (in) |             |         |           |               |               |         |                   |         |  |
|----------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------|---------|-----------|---------------|---------------|---------|-------------------|---------|--|
|          |                                                                                    |                                                                                    |                                                                                                                                                                                                                                         | External grooving |             |         |           |               | Face grooving |         | Internal grooving |         |  |
|          |                                                                                    |                                                                                    |                                                                                                                                                                                                                                         | Grooving          | Parting off | Turning | Profiling | Under cutting | Grooving      | Turning | Grooving          | Turning |  |
| TM       |   |   | <ul style="list-style-type: none"><li>● Multifunctional insert for external, internal turning and grooving, parting off, face grooving and face turning</li><li>● Stronger cutting edge design</li><li>● For medium feed rate</li></ul> | 0.079             | 0.079       | 0.079   | -         | -             | 0.118         | 0.118   | 0.079             | 0.079   |  |
|          |                                                                                    |                                                                                    |                                                                                                                                                                                                                                         | 0.118             | 0.118       | 0.118   |           |               |               |         | 0.118             | 0.118   |  |
|          |                                                                                    |                                                                                    |                                                                                                                                                                                                                                         | 0.157             | 0.157       | 0.157   |           |               |               |         | 0.157             | 0.157   |  |
|          |                                                                                    |                                                                                    |                                                                                                                                                                                                                                         | 0.197             | 0.197       | 0.197   |           |               |               |         | 0.197             | 0.197   |  |
|          |                                                                                    |                                                                                    |                                                                                                                                                                                                                                         | 0.236             | 0.236       | 0.236   |           |               |               |         | 0.236             | 0.236   |  |
|          |                                                                                    |                                                                                    |                                                                                                                                                                                                                                         | 0.315             | 0.315       | 0.315   |           |               |               |         | 0.315             | 0.315   |  |
| RM       |  |  | <ul style="list-style-type: none"><li>● External grooving, turning, profiling</li><li>● Medium feed rate</li></ul>                                                                                                                      | 0.079             | -           | 0.079   | 0.079     | 0.079         | 0.118         | 0.118   | 0.079             | 0.079   |  |
|          |                                                                                    |                                                                                    |                                                                                                                                                                                                                                         | 0.118             |             | 0.118   | 0.118     | 0.118         |               |         | 0.118             |         |  |
|          |                                                                                    |                                                                                    |                                                                                                                                                                                                                                         | 0.157             |             | 0.157   | 0.157     | 0.157         |               |         | 0.157             |         |  |
|          |                                                                                    |                                                                                    |                                                                                                                                                                                                                                         | 0.197             |             | 0.197   | 0.197     | 0.197         |               |         | 0.197             |         |  |
|          |                                                                                    |                                                                                    |                                                                                                                                                                                                                                         | 0.236             |             | 0.236   | 0.236     | 0.236         |               |         | 0.236             |         |  |
|          |                                                                                    |                                                                                    |                                                                                                                                                                                                                                         | 0.315             |             | 0.315   | 0.315     | 0.315         |               |         | 0.315             |         |  |



# Geometry-double cutting edges

·ACHTECK·

| Geometry         | Insert | Shape of cutting edge | Description                                                                                                                                                                                       | Insert Width (in)   |             |                     |           |               |               |         |                     |                     |
|------------------|--------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|-------------|---------------------|-----------|---------------|---------------|---------|---------------------|---------------------|
|                  |        |                       |                                                                                                                                                                                                   | External grooving   |             |                     |           |               | Face grooving |         | Internal grooving   |                     |
|                  |        |                       |                                                                                                                                                                                                   | Grooving            | Parting off | Turning             | Profiling | Under cutting | Grooving      | Turning | Grooving            | Turning             |
| RA               |        |                       | <ul style="list-style-type: none"><li>● For turning and profiling aluminum alloy</li><li>● High positive rake angle and sharp cutting edge</li><li>● Ground inserts with high precision</li></ul> | 0.118               | -           | 0.118               | 0.118     | 0.118         | 0.118         | 0.118   | 0.118               | 0.118               |
|                  |        |                       |                                                                                                                                                                                                   | 0.157               |             | 0.157               | 0.157     | 0.157         | 0.157         | 0.157   | 0.157               |                     |
|                  |        |                       |                                                                                                                                                                                                   | 0.197               |             | 0.197               | 0.197     | 0.197         | 0.197         | 0.197   | 0.197               |                     |
|                  |        |                       |                                                                                                                                                                                                   | 0.236               |             | 0.236               | 0.236     | 0.236         | 0.236         | 0.236   | 0.236               |                     |
|                  |        |                       |                                                                                                                                                                                                   | 0.315               |             | 0.315               | 0.315     | 0.315         |               |         | 0.315               | 0.315               |
| Precision ground |        |                       | <ul style="list-style-type: none"><li>● Ground insert with high precision</li><li>● Complete product offering</li><li>● Good surface quality</li></ul>                                            | 0.039<br> <br>0.315 | -           | 0.087<br> <br>0.315 | 0.118     | 0.118         | 0.118         | 0.118   | 0.087<br> <br>0.315 | 0.087<br> <br>0.315 |
|                  |        |                       |                                                                                                                                                                                                   |                     |             |                     | 0.157     | 0.157         | 0.157         | 0.157   |                     |                     |
|                  |        |                       |                                                                                                                                                                                                   |                     |             |                     | 0.189     | 0.189         | 0.189         | 0.189   |                     |                     |
|                  |        |                       |                                                                                                                                                                                                   |                     |             |                     | 0.197     | 0.197         | 0.197         | 0.197   |                     |                     |
|                  |        |                       |                                                                                                                                                                                                   |                     |             |                     | 0.236     | 0.236         | 0.236         | 0.236   |                     |                     |
|                  |        |                       |                                                                                                                                                                                                   |                     |             |                     | 0.315     | 0.315         |               |         |                     |                     |



# Grade introduction

·ACHTECK·

| No. | ISO range | Grade  | Coat<br>ing | Main<br>Applica<br>tion | Description                                                                                                                                                                  | Supple-<br>ment | Description                                                                      |
|-----|-----------|--------|-------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------|
| 1   | S01-20    | AP130S | PVD         | S                       | PVD coating with hard superfine substrate, with excellent wear resistance. Suitable for super alloy, titanium alloy and hardened steel                                       | M               |                                                                                  |
| 2   | M10-30    | AP301U | PVD         | M                       | Grade with versatility, can be used in different material and various grooving applications                                                                                  | P/S             | Universal for steel grooving, continuous to interrupted                          |
| 3   | M20-40    | AP330M | PVD         | M                       | High toughness, suitable for low speed to medium speed deep grooving and parting off. In the deep grooving and interrupted grooving conditions, it has excellent performance | P               | Suitable for steel deep grooving and interrupted grooving at low to medium speed |
| 4   | P10-30    | AC230P | CVD         | P                       | Suitable for high cutting speed grooving, with excellent wear resistance.                                                                                                    | K               | Suitable for gray cast iron and nodular cast iron high cutting speed grooving    |
| 5   | N01-20    | AW100K | —           | N                       | For aluminum alloy rough to finishing grooving                                                                                                                               | —               |                                                                                  |
| 6   | K10-K30   | AC130K | CVD         | K                       | Suitable for gray cast iron and nodular cast iron high cutting speed grooving                                                                                                | P               | Suitable for high cutting speed grooving, with excellent wear resistance         |

# 04

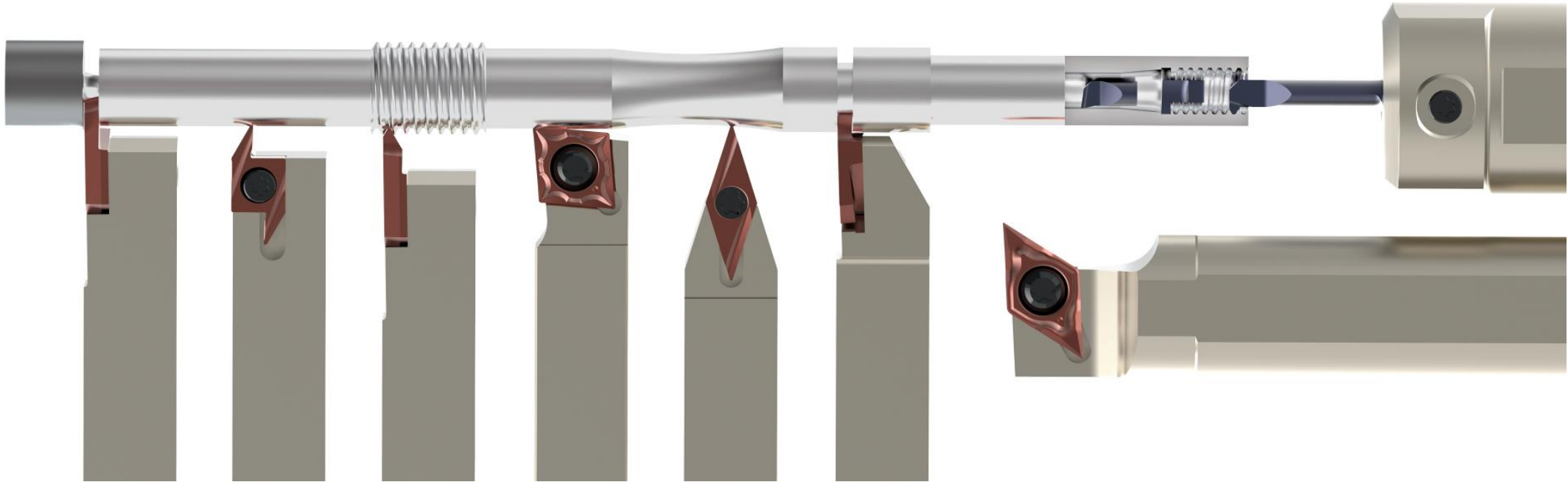
## Swiss tool



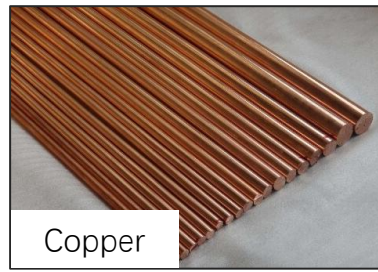


## ◆ Swiss tool machining materials

·ACHTECK·



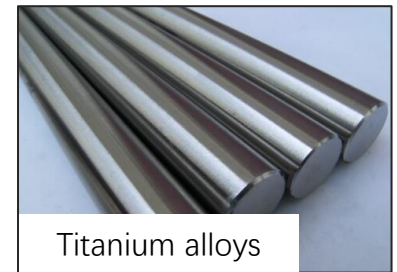
Stainless steel



Copper



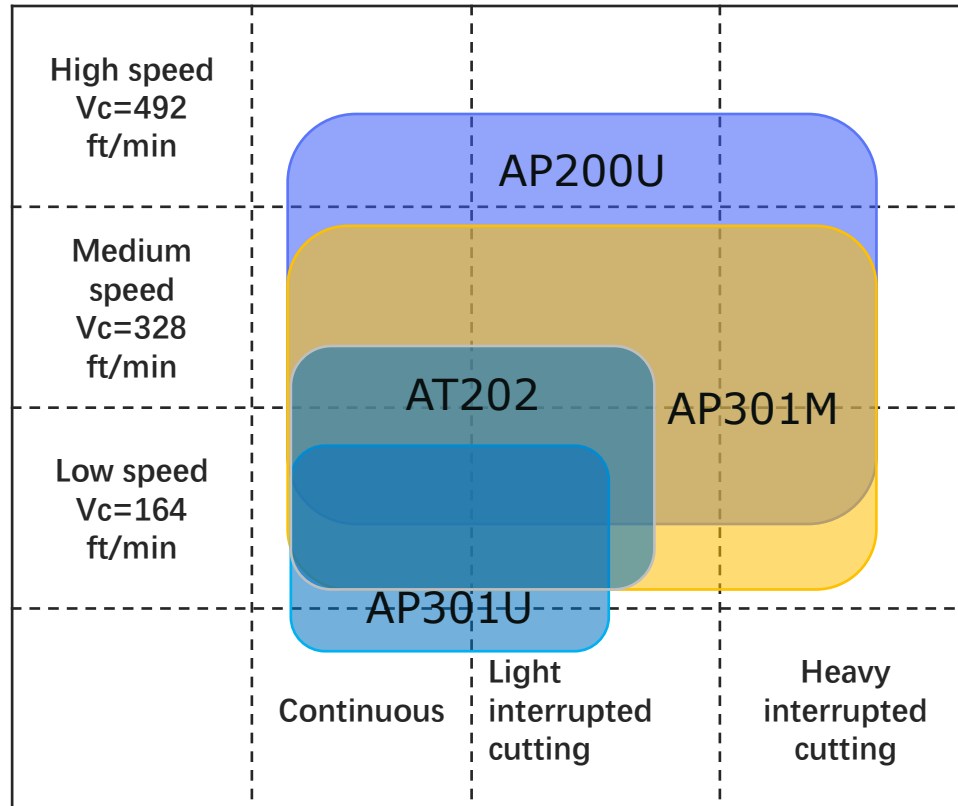
Aluminum alloys



Titanium alloys

## ■ Swiss tool-workpiece materials

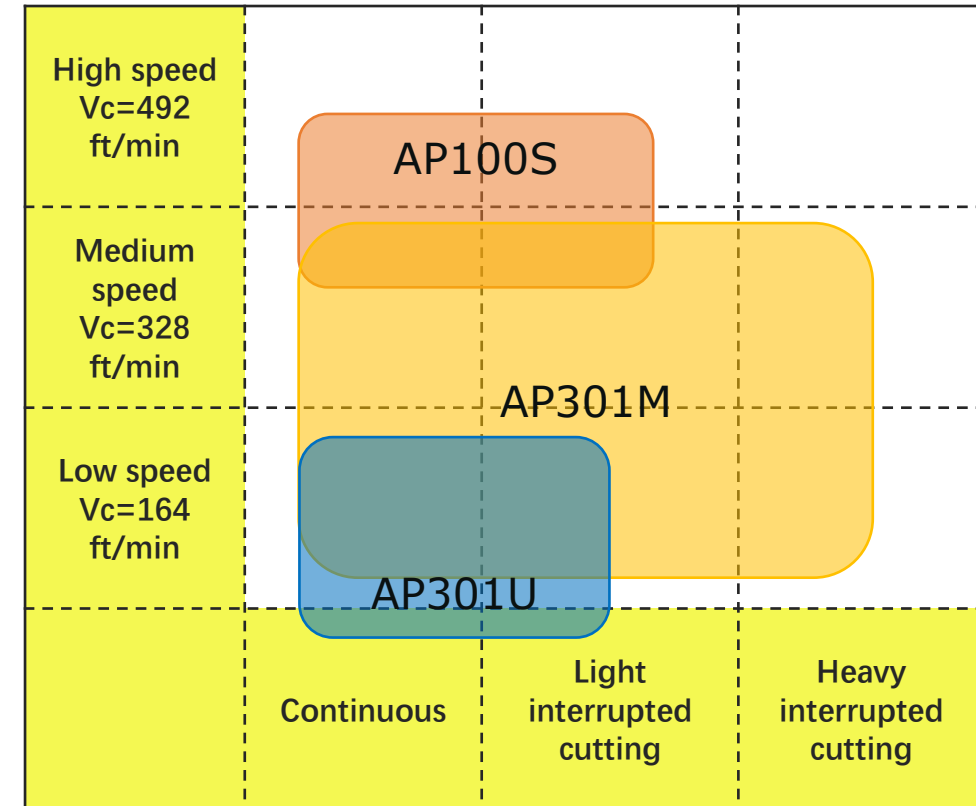
### Steel (carbon steel, soft steel)



- **First Recommended Grade: AP200U**
- Recommended grade for general purpose: AP301M
- Recommended grade for continuous cutting at low to medium speed: AP301U

### Stainless steels

·ACHTECK·



- **1<sup>st</sup> Recommended Grade: AP301M**
- Recommended grade for continuous cutting at high speed: AP100S
- Recommended grade for continuous cutting at low to medium speed: AP301U

## ◆ Chip Breakers for Swiss tool

·ACHTECK·



### PC2

Steel and stainless steel semi-finish turning. The design of the rake angle makes the cutting lighter, and the design of the sharp edge effectively avoids the built-up edge and with good chip removal.



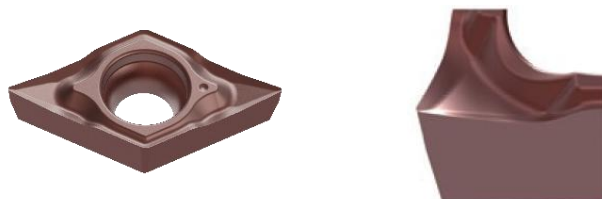
### PB1

Positive rake angle reduces the tendency of built-up-edge. Good surface quality can be obtained for stainless steel and steel turning



### UF

Sharp cutting edge and large rake angle ensure good cutting result



### LF

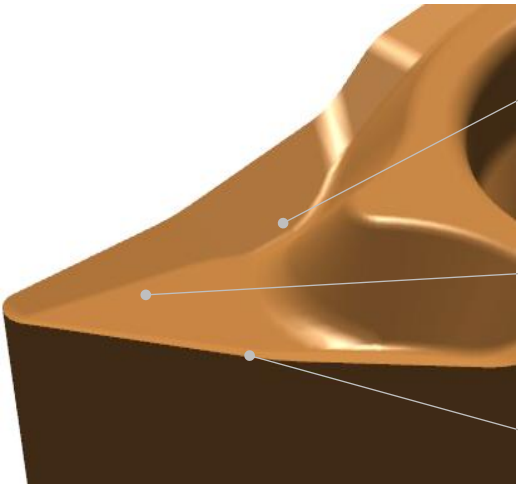
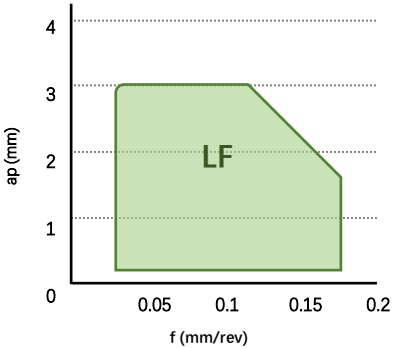
Large rake angle and wide chip breaker design reduced cutting force and improved chip breaking, bi-directional cutting for Swiss machine tool

# Low cutting force Geometry-LF

LF Geometry

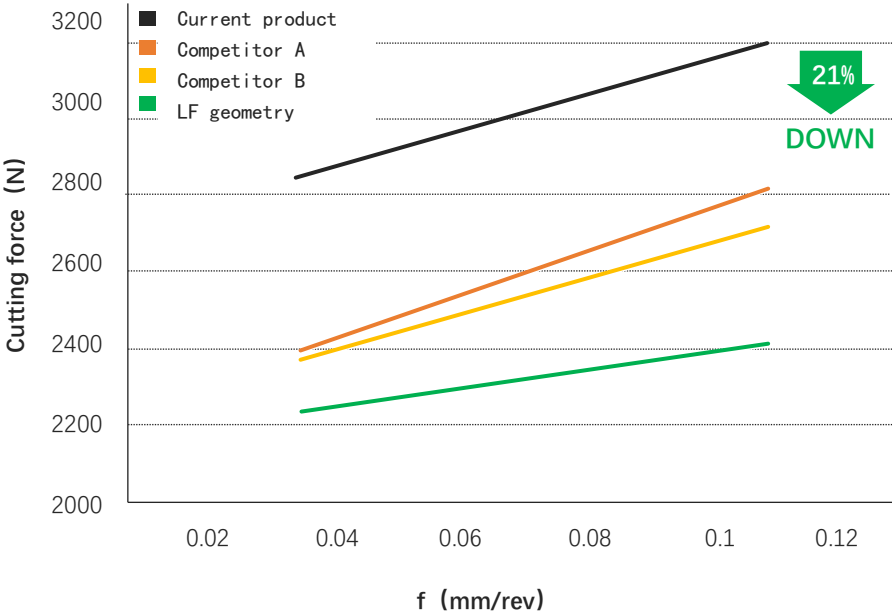


Large depth of cut, low cutting force



- Large chip space with mirror finish
- Effectively reduces built-up edge
- Sharp, large rake angle; low cutting force design
- Large depth of cut and stable chip evacuation.
- Sharp edge with big inclination
- Excellent surface finish

Large rake angle ensures smooth chip evacuation  
Depth of cut 0.012~0.12 in

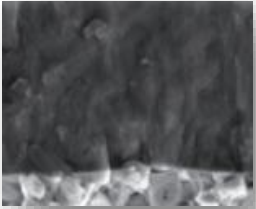


Cutting parameters:  $V_c=393$  ft/min,  $f=0.003$  in/rev,  $a_p=0.039$  in, wet  
Workpiece material: SUS316L

## Low cutting force Geometry-LF

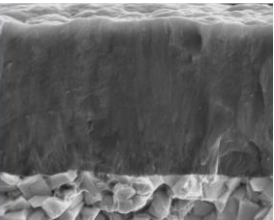


·ACHTECK·



- Smooth coating surface makes cutting more constant, reduces built-up edge, effectively reduces burrs, and get excellent surface finish.

- Sub-micron substrate, good wear resistance, suitable for carbon steel, alloy steel and stainless steel turning.



- New nano-structured coating with high density and strong adhesion force can effectively increase insert hardness and oxidation resistance.

- Sub-micron substrate, good wear resistance, suitable for carbon steel, alloy steel and stainless steel turning.

### ■ Features

1<sup>st</sup> choice for general purpose

M15-M35  
P15-P35

# AP301M

Specialized grade for Swiss Tool, suitable for steel and stainless steel turning, with good built-up edge resistance.

1<sup>st</sup> choice for heat-resistant alloy

S05-S25  
M05-M25

# AP100S

A PVD grade with high hardness and good resistance to plastic deformation, which ensures uniform wear and excellent performance.

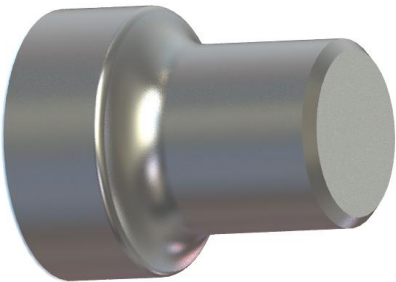


| Brand              | Original tool                                                                                  |  | ACHTECK                 |
|--------------------|------------------------------------------------------------------------------------------------|--|-------------------------|
| Machine            | STAR CNC Automatic Lathe                                                                       |  |                         |
| Component          | Connecting part, 440C                                                                          |  |                         |
| Insert             | DCGT 11T302N-JS AH725                                                                          |  | DCGT 11T302FP-LF AP200U |
| Application        | External Finish Turning                                                                        |  | External Finish Turning |
| Vc(ft/min)         | 328                                                                                            |  | 328                     |
| f(in/rev)          | 0.002                                                                                          |  | 0.002                   |
| ap(in)             | 0.004                                                                                          |  | 0.004                   |
| Coolant            | Emulsion                                                                                       |  | Emulsion                |
| Tool life (pieces) | 5 pieces                                                                                       |  | 50 pieces               |
| Result             | The surface finish request was not reached in the past, and LF successfully machined 50 pieces |  |                         |





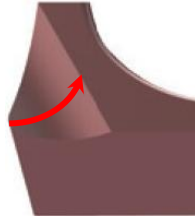
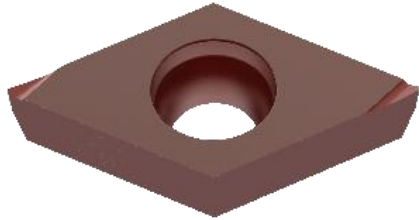
| Brand              | Original tool                        |  | ACHTECK                 |
|--------------------|--------------------------------------|--|-------------------------|
| Machine            | Hardinger CNC Machine                |  |                         |
| Component          | Screws, TC4                          |  |                         |
| Insert             | CCGT 09T304-F BQ320                  |  | CCGT 09T304FP-LF AP301M |
| Application        | External Finish Turning              |  | External Finish Turning |
| Vc(ft/min)         | 98                                   |  | 98                      |
| f(in/rev)          | 0.002                                |  | 0.002                   |
| ap(in)             | 0.008                                |  | 0.008                   |
| Coolant            | Emulsion                             |  | Emulsion                |
| Tool life (pieces) | 100 pieces/edge                      |  | 150 pieces/edge         |
| Result             | Tool life has been increased by 50%. |  |                         |





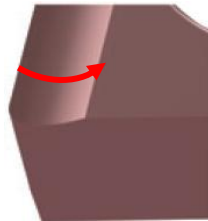
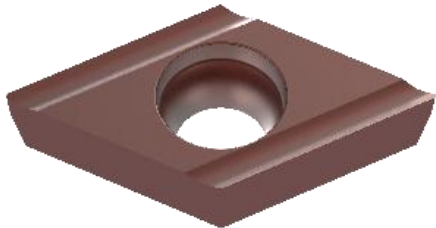
## ◆ Chip Breakers for Swiss tool

·ACHTECK·



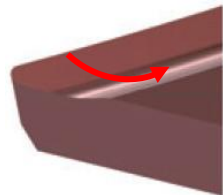
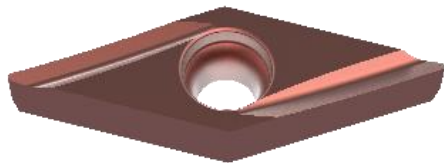
**F**

Low cutting force, controlled chip breaking, used in external and internal finish turning



**M**

Good chip control even when depth of cut changes at low feed conditions

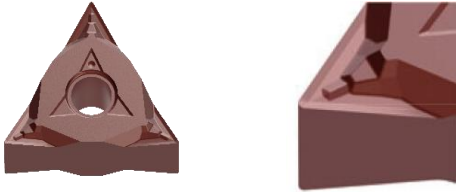


**Y**

Semi-finishing geometry, excellent cutting result, wide application range

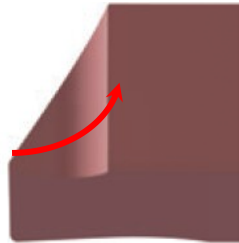
## ◆ Chip Breakers for Swiss tool

·ACHTECK·



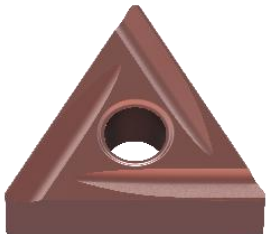
### UF

Chipbreaker for semi-finishing, very positive. Segmented chipbreaker design for a wide range of depth of cut and excellent chipbreaking control.



### F

Low cutting force design presents excellent cutting result and ensures smooth and controllable chip breaking during finishing applications.

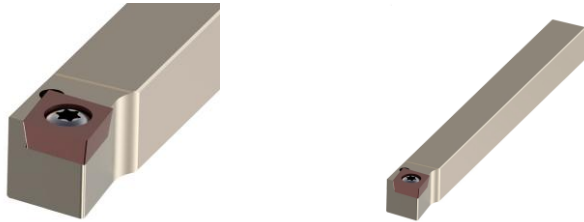


### H

Strong cutting edge for higher feed and versatility

◆ Swiss tool holders for external turning

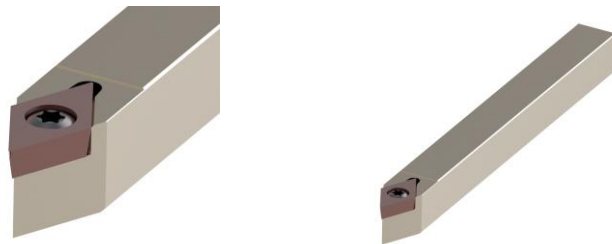
Without offset head



With offset head



Neutral

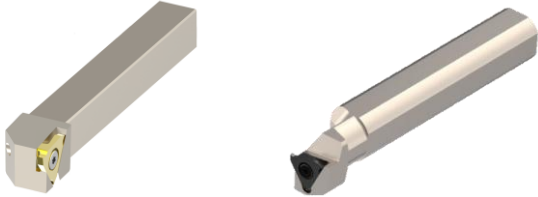


For sleeve holder



## ◆ ASG triangular grooving insert for Swiss tool

·ACHTECK·



Square toolholder

Customized lengths for CNC automatic lathe, high positioning accuracy, universal toolholder

Round toolholder

Flexible, suitable for limited space in CNC automatic lathes



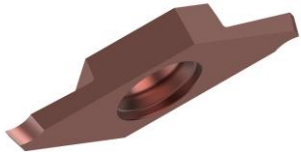
ASG Triangular groove insert

Three edges, precise ground insert, sharp and large rake angle for good surface finish



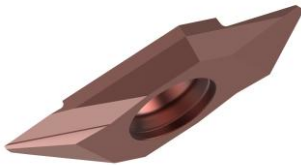
**ASW tool holder**

Multi-purpose, can cover parting, back turning and threading applications, reduce tooling cost



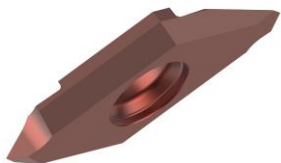
**ASWP parting tool**

Various cutting edge designs for various machining conditions.



**ASWB Back turning tool**

Sharp cutting edge, large rake angle, with large depth of cut and low cutting force

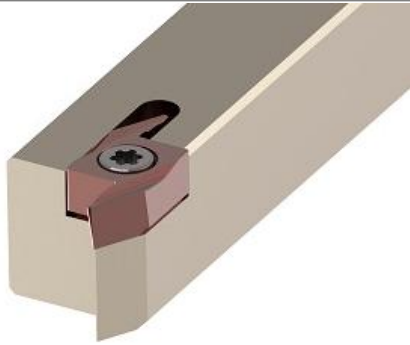


**ASWT threading tool**

Strong cutting edge for big feed and versatility

◆ Swiss tool ABF for back turning

·ACHTECK·



**ABF tool holder**

High-precision tool holder, back-turning tool for CNC automatic lathe

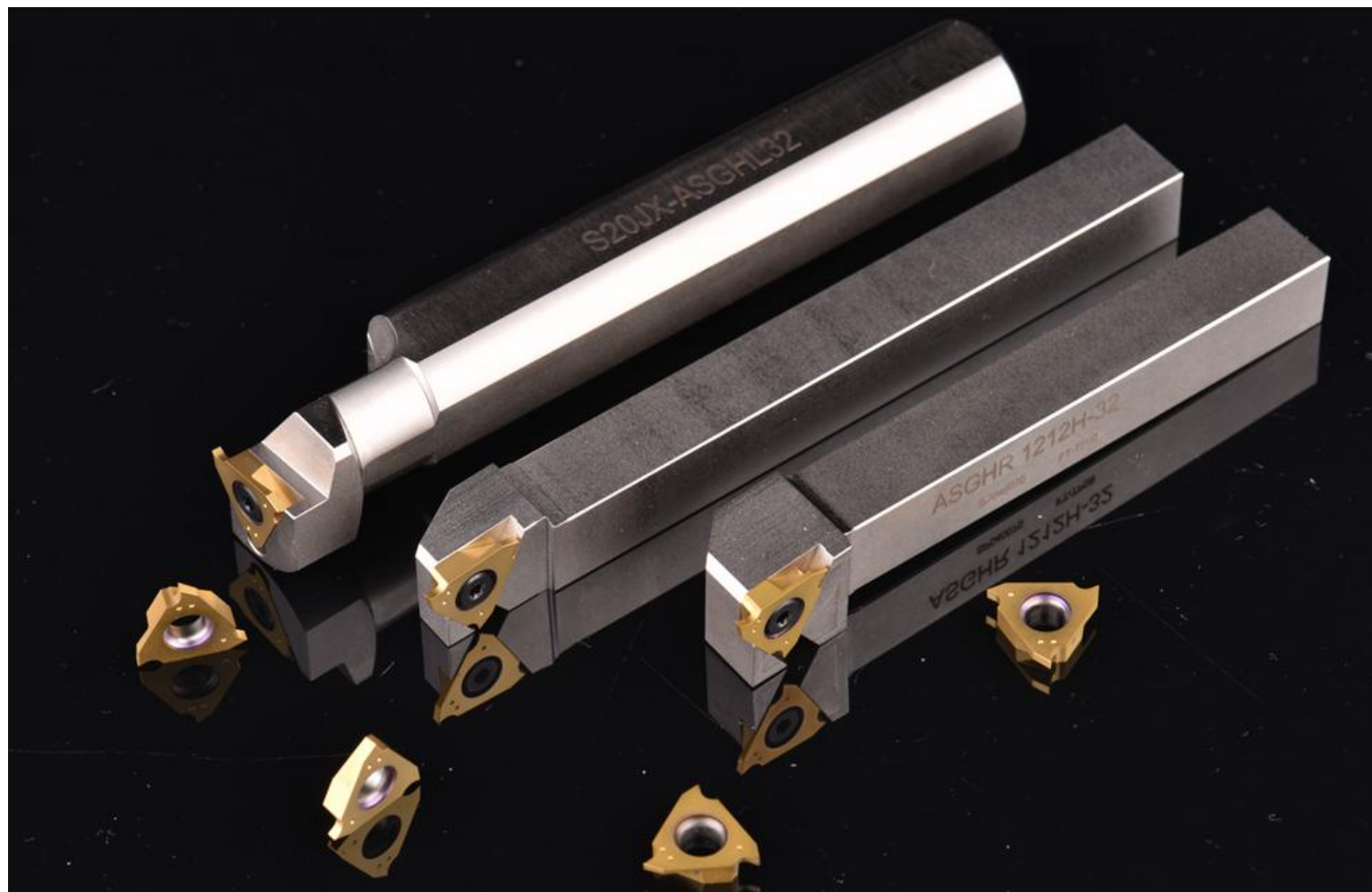


**ABF back turning tool**

Sharp cutting edge, fully ground inserts, reliable chip control, maximum cutting depth at 4mm.

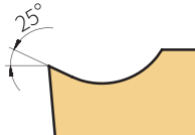
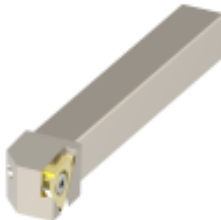
Grooving tools for Swiss Tool automatic lathe

# ASG 32 Series



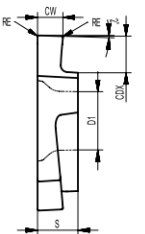
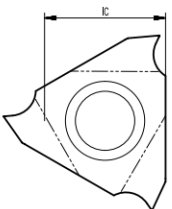


# 3 edge shallow grooving insert-ASG

| Geometry  | Insert                                                                              | Edge shape                                                                        | Features                                                                                        | Groove width (in)   |    |                                                                                       |    |                     |                |                     |                     |    |
|-----------|-------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|---------------------|----|---------------------------------------------------------------------------------------|----|---------------------|----------------|---------------------|---------------------|----|
|           |                                                                                     |                                                                                   |                                                                                                 | OD machining        |    |                                                                                       |    |                     | Face machining |                     | Internal machining  |    |
|           |                                                                                     |                                                                                   |                                                                                                 | 切槽                  | 切断 | 车削                                                                                    | 仿形 | 越程槽                 | 切槽             | 车削                  | 切槽                  | 车削 |
| ASG       |    |  | ● Precision insert<br>● Big rake angle, sharp edge for better surface finish<br>● 3 edge design | 0.031<br> <br>0.098 | -  | -                                                                                     | -  | -                   | -              | -                   | 0.031<br> <br>0.098 | -  |
| Shank     |                                                                                     |                                                                                   | Size (mm)                                                                                       | Max. ap (in)        |    | Insert (ATG)                                                                          |    | Insert width(in)    |                | ap(in)              |                     |    |
| ASGHR/L   |   |                                                                                   | □10X10<br> <br>□25X25                                                                           | 0.098               |    |    |    | 0.013<br> <br>0.098 |                | 0.031<br> <br>0.098 |                     |    |
| S...ASGHL |  |                                                                                   | ∅12<br> <br>∅25.4                                                                               | 0.098               |    |  |    | 0.33<br> <br>0.098  |                | 0.031<br> <br>0.098 |                     |    |

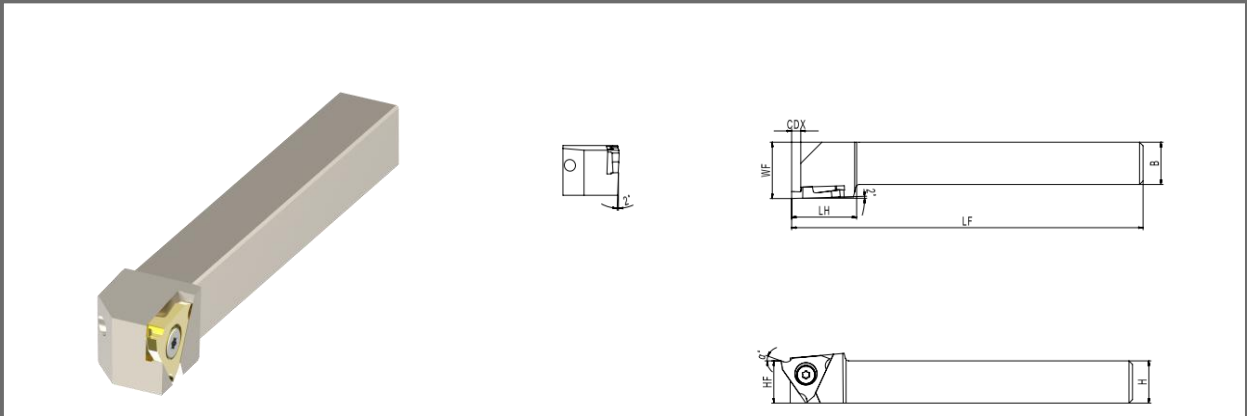
# ASG-Insert

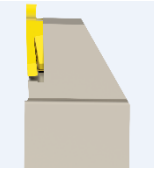
| Product code | IC    | S     | D1    |
|--------------|-------|-------|-------|
| ASG 32-      | 0.375 | 0.125 | 0.181 |

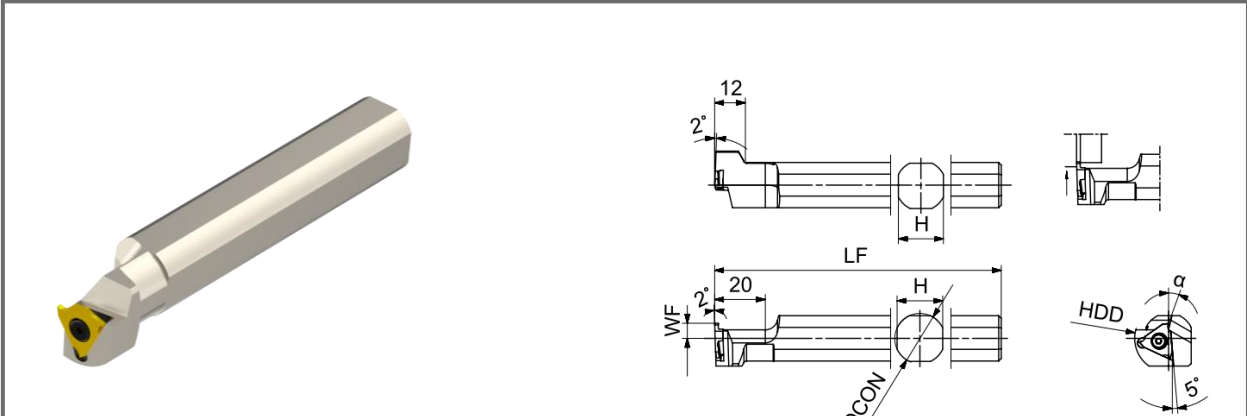


| Product code         | Cutting data |       | Size   |        | AP301U |
|----------------------|--------------|-------|--------|--------|--------|
|                      | Grooving     | CDX   | CW     | RE     |        |
|                      | f (in/rev)   |       |        |        |        |
| ASG 32R/L033T08-R005 | 0.0004-0.002 | 0.031 | 0.013  | 0.002  | ●      |
| ASG 32R/L050T12-R005 | 0.0004-0.002 | 0.047 | 0.02   | 0.002  | ●      |
| ASG 32R/L075T20-R010 | 0.001-0.003  | 0.079 | 0.030  | 0.004  | ●      |
| ASG 32R/L095T20-R010 | 0.001-0.003  | 0.079 | 0.037  | 0.0039 | ●      |
| ASG 32R/L100T20-R010 | 0.001-0.003  | 0.079 | 0.039  | 0.004  | ●      |
| ASG 32R/L120T20-R010 | 0.001-0.003  | 0.079 | 0.0472 | 0.004  | ●      |
| ASG 32R/L125T20-R010 | 0.001-0.003  | 0.079 | 0.049  | 0.004  | ●      |
| ASG 32R/L140T20-R010 | 0.001-0.003  | 0.079 | 0.055  | 0.004  | ●      |
| ASG 32R/L145T20-R010 | 0.001-0.003  | 0.079 | 0.057  | 0.004  | ●      |
| ASG 32R/L150T20-R010 | 0.001-0.003  | 0.079 | 0.059  | 0.004  | ●      |
| ASG 32R/L175T20-R010 | 0.001-0.003  | 0.079 | 0.069  | 0.004  | ●      |
| ASG 32R/L200T25-R010 | 0.001-0.003  | 0.098 | 0.079  | 0.004  | ●      |
| ASG 32R/L250T25-R010 | 0.001-0.003  | 0.098 | 0.098  | 0.004  | ●      |

ASG-Holder



| Product code                                                                                |            | Size /in |       |       |       |       | Accessory                                                                           |                                                                                     |
|---------------------------------------------------------------------------------------------|------------|----------|-------|-------|-------|-------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                                             |            | H        | B     | LF    | LH    | CDX   | Screw                                                                               | Key                                                                                 |
|                                                                                             |            |          |       |       |       |       |                                                                                     |                                                                                     |
| <br>ASGHR/L | 1010JX-32F | 0.394    | 0.394 | 4.724 | 0.728 | 0.098 |  |  |
|                                                                                             | 1212FX-32F | 0.472    | 0.472 | 3.346 | 0.728 | 0.098 |                                                                                     |                                                                                     |
|                                                                                             | 1212JX-32F | 0.472    | 0.472 | 4.724 | 0.728 | 0.098 |                                                                                     |                                                                                     |
|                                                                                             | 1616JX-32F | 0.630    | 0.630 | 4.724 | 0.728 | 0.098 |                                                                                     |                                                                                     |
|                                                                                             | 2020JX-32F | 0.630    | 0.630 | 4.724 | 0.728 | 0.098 |                                                                                     |                                                                                     |
|                                                                                             | 1010F-32   | 0.394    | 0.394 | 3.150 | 0.728 | 0.098 |                                                                                     |                                                                                     |
|                                                                                             | 1212H-32   | 0.472    | 0.472 | 3.937 | 0.728 | 0.098 |                                                                                     |                                                                                     |
|                                                                                             | 1616H-32   | 0.630    | 0.630 | 3.937 | 0.728 | 0.098 |                                                                                     |                                                                                     |
|                                                                                             | 2020K-32   | 0.787    | 0.787 | 4.921 | 0.787 | 0.098 |                                                                                     |                                                                                     |
|                                                                                             | 2525M-32   | 0.984    | 0.984 | 5.906 | 0.787 | 0.098 |                                                                                     |                                                                                     |
|                                                                                             |            |          |       |       |       |       |                                                                                     |                                                                                     |



| Product code    |  | Size /in   |       |       |       |      | Accessory                                                                           |                                                                                     |
|-----------------|--|------------|-------|-------|-------|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                 |  | DCON       | LF    | WF    | HDD   | DMIN | Screw                                                                               | Key                                                                                 |
|                 |  |            |       |       |       |      |                                                                                     |                                                                                     |
| S12F-ASGHL32    |  | 0.472      | 3.150 | 0.236 | 0.433 | 1.06 |  |  |
| S14H-ASGHL32    |  | 0.551      | 3.937 |       | 0.512 |      |                                                                                     |                                                                                     |
| S15.0H-ASGHL32  |  | 0.625      |       |       | 0.575 |      |                                                                                     |                                                                                     |
| S16H-ASGHL32    |  | 0.629<br>9 |       |       |       |      |                                                                                     |                                                                                     |
| S19.0JX-ASGHL32 |  | 0.750      | 4.724 |       | 0.693 |      |                                                                                     |                                                                                     |
| S20JX-ASGHL32   |  | 0.787      | 4.724 |       | 0.732 |      |                                                                                     |                                                                                     |
| S22JX-ASGHL32   |  | 0.866      | 4.724 |       |       |      |                                                                                     |                                                                                     |
| S25JX-ASGHL32   |  | 0.984      | 4.724 |       | 0.929 |      |                                                                                     |                                                                                     |
| S25.0JX-ASGHL32 |  | 1.000      | 4.724 | 0.394 | 0.929 | 1.46 |                                                                                     |                                                                                     |
|                 |  |            |       |       |       |      |                                                                                     |                                                                                     |
|                 |  |            |       |       |       |      |                                                                                     |                                                                                     |

## ASG Success story

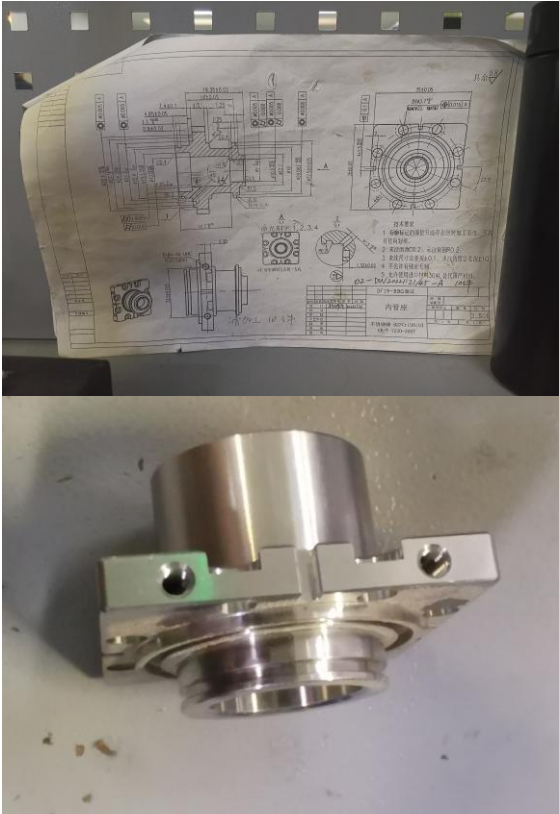
·ACHTECK·

| Brand           | Competitor                                          | ACHTECK                   |
|-----------------|-----------------------------------------------------|---------------------------|
| Machine tool    |                                                     |                           |
| Workpiece       | Valve shaft ( 42CrMn)                               |                           |
| Holder          | interchangeable                                     |                           |
| Insert          | TGF32R-030                                          | ASG 32R033T08-R005 AP301U |
| Geometry        |                                                     |                           |
| Application     | OD shallow grooving                                 | OD shallow grooving       |
| Vc(ft/min)      | 275                                                 | 301                       |
| f(in/rev)       | 0.0004                                              | 0.001                     |
| ap(in)          | 0.02                                                | 0.02                      |
| Coolant         | Coolant                                             | Coolant                   |
| Tool life (pcs) | 40-50 pcs                                           | 120 pcs (OK)              |
| Result          | The tool life is 3 times compared with competitor's |                           |

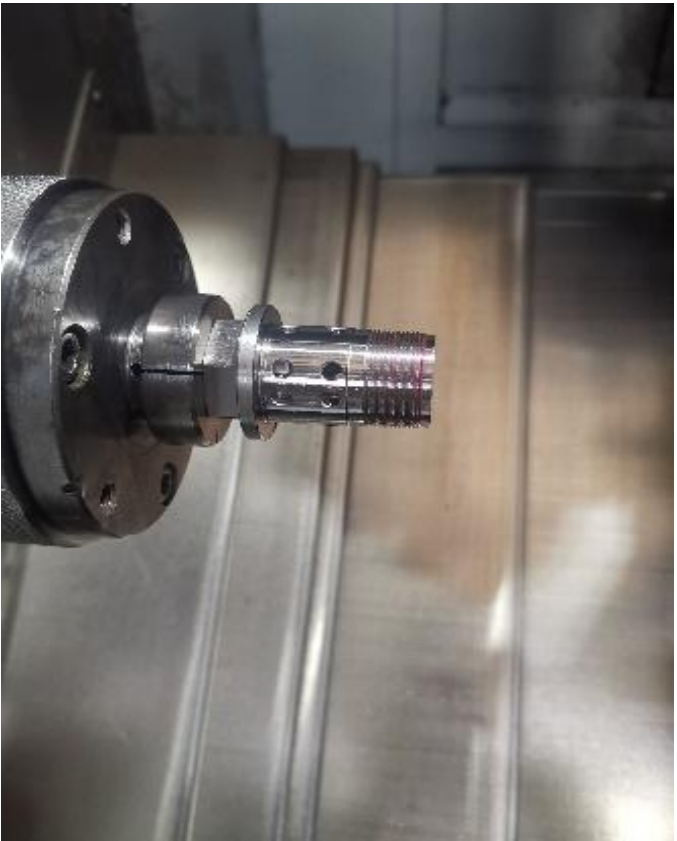


# ASG Success story

| Brand           | Competitor                    | ACHTECK                   |
|-----------------|-------------------------------|---------------------------|
| Machine tool    |                               |                           |
| Workpiece       | Internal pipe seat ( SUS316 ) |                           |
| Holder          | Interchangeable               |                           |
| Insert          | TGF32R-150                    | ASG 32R150T20-R010 AP301U |
| Geometry        |                               |                           |
| Application     | OD shallow grooving           | OD shallow grooving       |
| Vc(ft/min)      | 230                           | 230                       |
| f(in/rev)       | 0.002                         | 0.002                     |
| ap(in)          | 0.02                          | 0.02                      |
| Coolant         | Coolant                       | Coolant                   |
| Tool life (pcs) | 80 pcs                        | 100 pcs (OK)              |
| Result          | Longer tool life              |                           |

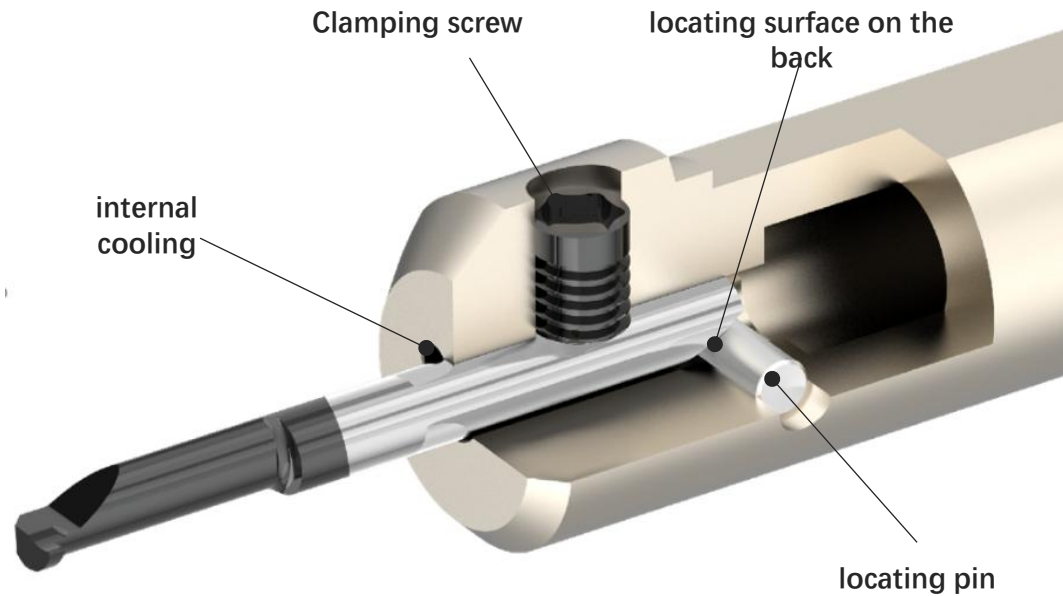


| Brand           | Competitor                          | ACHTECK                   |
|-----------------|-------------------------------------|---------------------------|
| Machine tool    | Horizontal CNC lathe                |                           |
| Workpiece       | Bolt ( 35CrMn)                      |                           |
| Holder          | Interchangeable                     |                           |
| Insert          | TGF32R200-010 PR930                 | ASG 32R200T25-R010 AP301U |
| Geometry        |                                     |                           |
| Application     | OD shallow grooving                 | OD shallow grooving       |
| Vc(ft/min)      | 328                                 | 328                       |
| f(in/rev)       | 0.002                               | 0.002                     |
| ap(in)          | 0.039                               | 0.039                     |
| Coolant         | Coolant                             | Coolant                   |
| Tool life (pcs) | 320-350 pcs                         | 330-350 pcs (OK)          |
| Result          | Same tool life, lower tooling cost. |                           |

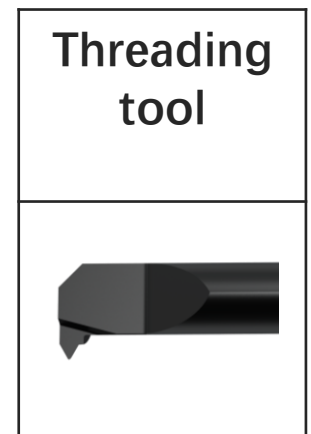
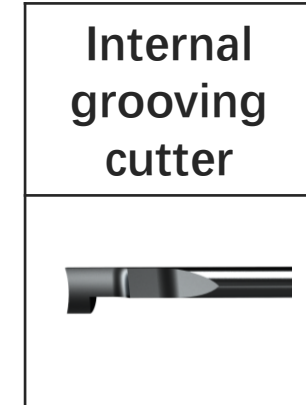


# Solid carbide tools for small diameter boring-ASI series

·ACHTECK·



- ✓ Sleeve holder with cooling holes
- ✓ With positioning function

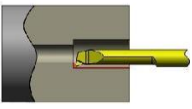
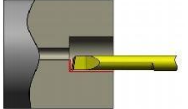
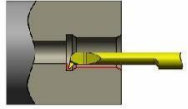
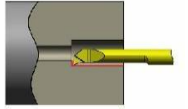


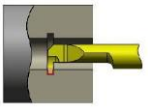
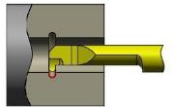
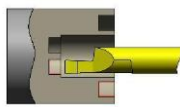
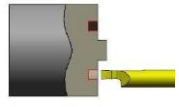
- Small diameter boring
- Solid carbide tools
- Min. machining diameter 0.5mm

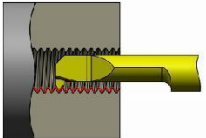


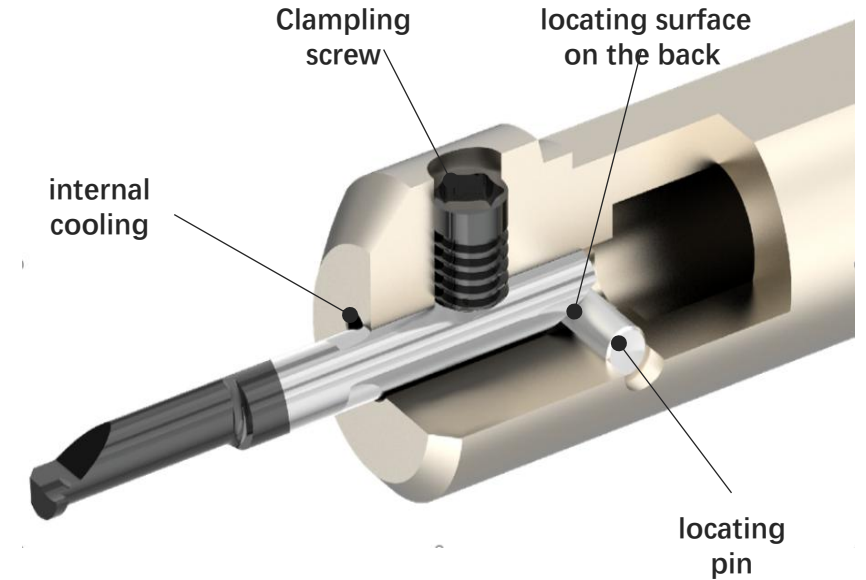
# External tool holders for Swiss Tool

·ACHTECK·

|              | T type                                                                            | E type                                                                            | V type                                                                             | S type                                                                              |
|--------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Boring tools |  |  |  |  |

|                | Internal S type                                                                   | Internal R type                                                                   | End facing A type                                                                   | End facing B type                                                                   |
|----------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Grooving tools |  |  |  |  |

| Threading tools                                                                     | V type           | M type     | U type    | W type       | N type     | T type       |
|-------------------------------------------------------------------------------------|------------------|------------|-----------|--------------|------------|--------------|
|  | Universal thread | ISO thread | UN thread | WORTH thread | NPT thread | TR 30°thread |



# Sensor components

**Materials:**  
**316L**

**Boring**

Tool holder: ASI 0020-06  
Insert: ASIBR 06T020-6225 AP220U

**Drilling**

Drill: D151 03-06000A1

**Milling hexagon**

Solid carbide endmill: M100-4ES-030

01

**External turning**

Tool holder: SDJCR 1616JX-11F  
Insert: DCGT 11T302E-UF AP301M

02

**Profile turning**

Tool holder: SDNCN 1616JX-11  
Insert: DCGT 11T302E-UF AP301M

03

**Drilling**

Drill: D151-03-03000A1

04

**chamfering**

Solid carbide chamfering tool:

05

**Threading**

Tool holder: ASWSR 1616-09  
Insert: ASWT 09R60005-FR AP301M

06

**Interaction hole drilling**

Drill: D1 Special drill

07

**Parting off**

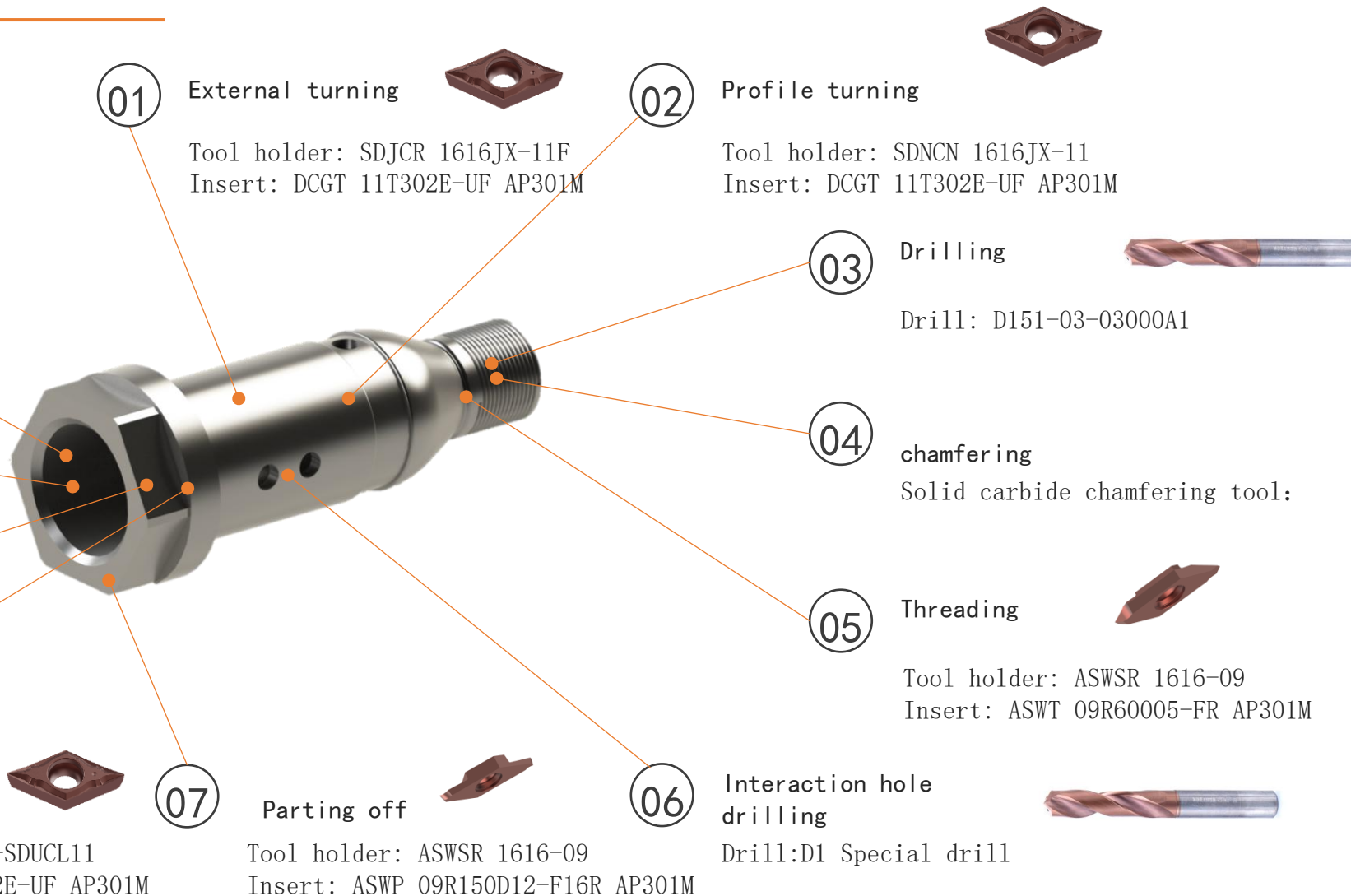
Tool holder: ASWSR 1616-09  
Insert: ASWP 09R150D12-F16R AP301M

08

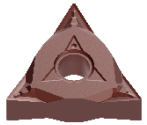
**External turning**

Tool holder: S20JX-SDUCL11  
Insert: DCGT 11T302E-UF AP301M

11



Materials:  
304



External turning

Tool holder: WTJNR2020K-16N  
Insert: TNGG 160402FP-UF  
AP301M



Parting off

Tool holder: ASWSR 1616-09  
Insert: ASWP 09R150D12-F16R AP301M

04

05

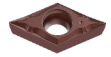
External grooving



Tool holder: ASGHR 2020K-32  
Insert: ASG 32R150T20-R010  
AP301U

01

External rough turning



Tool holder: SDJCR 2020JX-11F  
Insert: DCGT 11T302E-UF AP301M

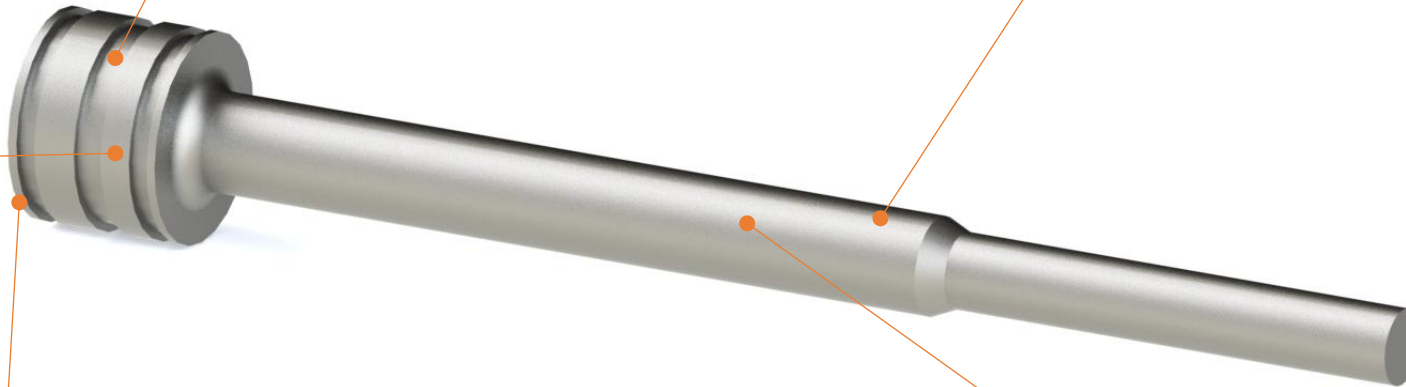
02

External finish turning



Tool holder: SVJPR 2020JX-11F  
Insert: VPGT 110302FP-UF AP301M

03



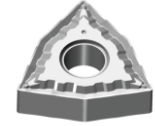
# Hydraulic Valve Components

Materials:  
40Cr



01

External turning



Tool holder: PWLNR 1616H-08  
Insert: WNMG 080404-M3T AT202

02

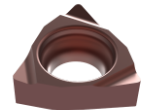
Drilling



Drill: D106 03-07000A1

03

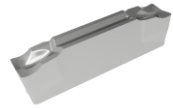
Boring



Tool holder: BAR1606-24  
Insert: WBET 060104FL-F AP301M

05

Parting off



Tool holder: ATSER 1616-2D32-SW  
Insert: ACD 202-CM AP301U

04

Drilling

Drill: D106 03-03200A1  
D2 special drill



## Lens Ring

Materials:  
316L



Parting off

08

Tool holder: S20JX-ASGHL32  
Insert: NSG32R060-000AA AP301M



External  
grooving

07

Tool holder: S20JX-ASGHL32  
Insert: NSG32R060-004AA AP301M



Internal grooving

06

Tool holder: NS20H-SSW10R14AA  
Insert: NSW10L065-005AA AP301M

01

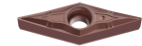
External rough  
grooving



Tool holder: S20JX-ASGHL32  
Insert: NSG32R160-020AA AP301M

02

External finish  
turning



Tool holder: SVPBR 2020K-11  
Insert: VBGT 110302E-UF AP301M

03

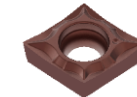
Drilling



Drill: D151-03-10000A1

04

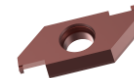
Boring



Tool holder: S08H-SCLCR06-10  
Insert: CCGT 060204E-UF AP301M

05

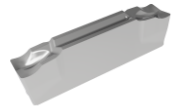
Internal  
grooving



Tool holder: NS20H-SSW10R14AA  
Insert: NSW10L105-020AA AP301M  
(roughing)  
NSW10L080-005AA AP301M  
(finishing)



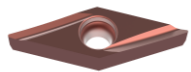
Materials:  
304



Parting off

05

Tool holder: ATSER 1616-2D32-SW  
Insert: ACD 202-CM-6R AP301U



Boring

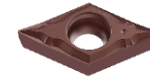
04

Tool holder: A12M-SVUCR08-  
16AE  
Insert: NVC08L000-005AA  
AP301M



01

External turning



Tool holder: SDJCR 1616JX-11F  
Insert: DCGT 11T302E-UF AP301M

02

Threading



Tool holder: ASWSR 1616-09  
Insert: ASWT 09R60005-FR AP301M

03

Drilling



Drill: D151-03-19000A1

# Watch Bezel

Materials:  
316L



Face finish  
turning

04

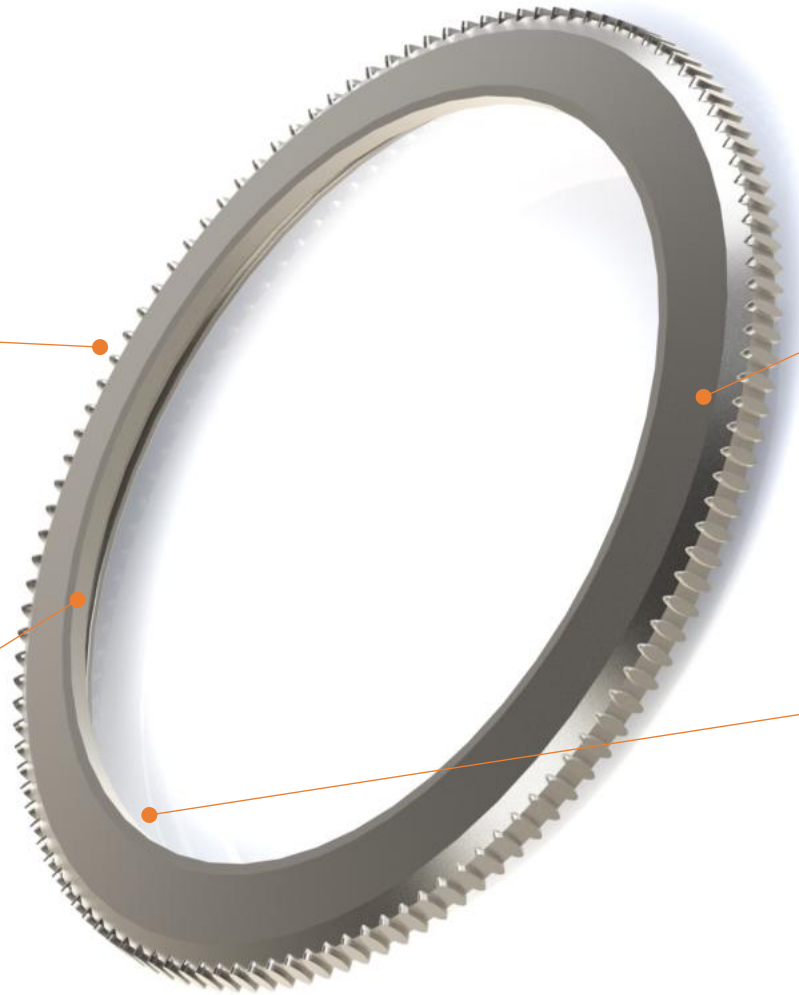
Tool holder: PTGNR 2525M-16  
Insert: TNGG 160402FR-F AP301M



Internal grooving

03

Tool holder: ATGIR 25R32-35T28  
Insert: ATG 32R033T08-R005  
AP301U



01

Back finish  
turning

Tool holder: PTGNR 2525M-16  
Insert: TNGG 160402FR-F AP301M



02

Boring

Tool holder: BAR1620-83  
Insert: TPEH 110302FL-F AP301M



# Connecting Pin

Materials: Ti-alloy

## Drilling 08

Drill: D151 03-03000A1

## Bayonet milling 07

Solid carbide endmill: M100-4ES-030

## Threading 06

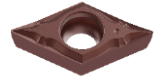
Insert: ASIBR 06T020-6225  
AP220U

## Drilling 05

Drill: D151 03-07000A1

01

## External turning

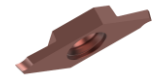


Tool holder: SDJCR 1616JX-11F  
Insert: DCGT 11T302E-UF AP100S

02

## Threading

Holder: ASWSR 1616-10  
Insert: NSW10R210-008AA AP301M



03

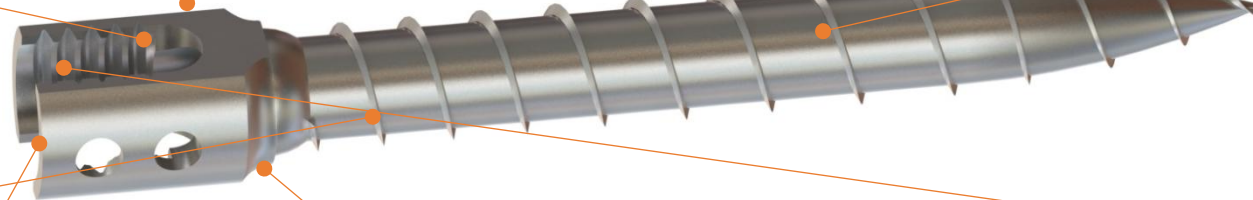
## Parting off

Tool holder: ASWSR 1616-09  
Insert: ASWP 09R150D12-F16R AP301M

04

## External turning

Tool holder: SDJCR 1616JX-11F  
Insert: DCGT 11T302E-UF AP100S





THANKS