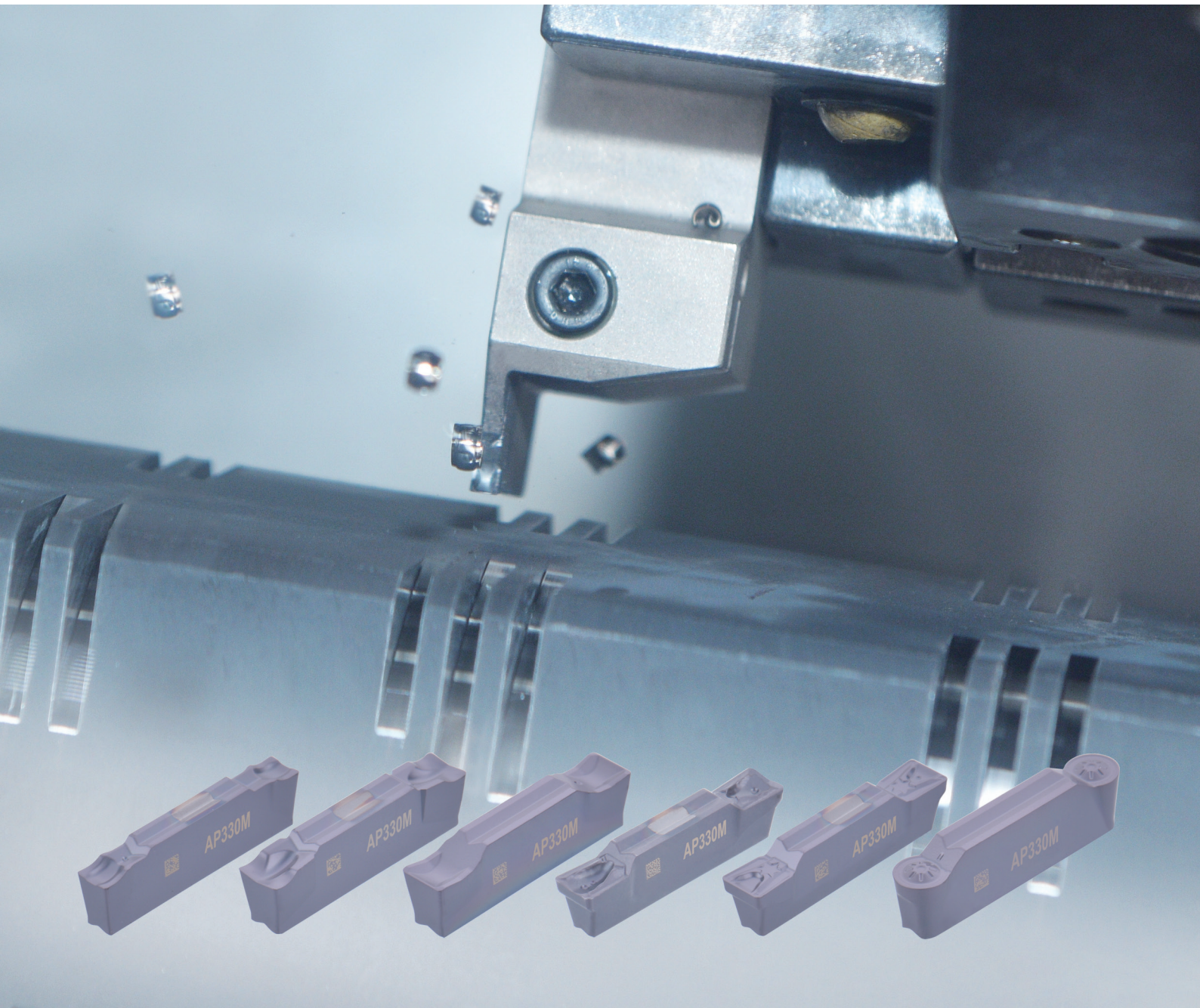
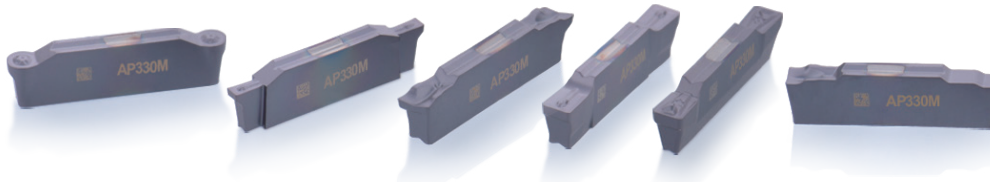


# AP330M

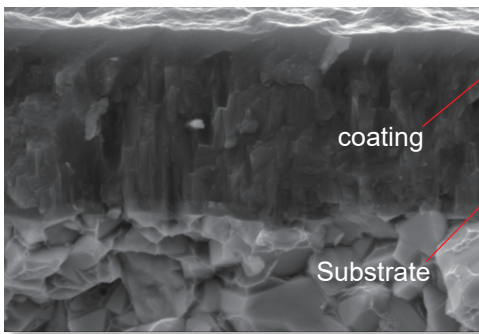
**New Tougher Grooving Grade**



## Ultra high heat stability and wear resistance, Excellent Impact resistance



### Grade Features



New PVD coating for stainless steel turning, with ultra-high heat stability and wear resistance, excellent thermal crack resistance and coating adhesion force.

New substrate with fine sized particle additive with high Cobalt and high Chromium, obtaining excellent impact resistance meanwhile having high hardness, which can decrease cutting edge breakage on high request cutting condition.

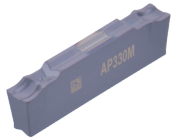

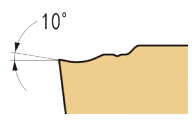

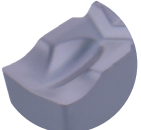
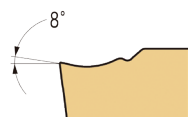
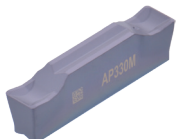
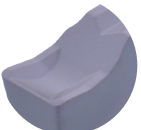
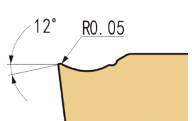


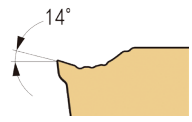
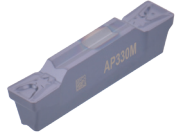

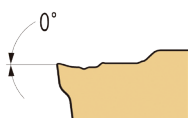


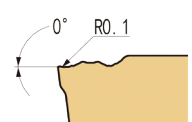
With new coating and substrate, AP330M is the first choice of stainless steel turning, can be also used in steel turning

### Recommended Applications and Cutting Parameter

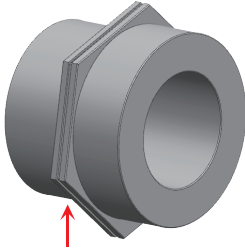
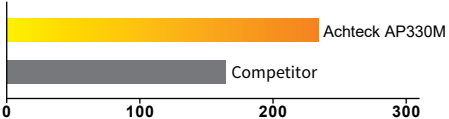
| Materials | Stainless Steel |     |     |     |        | Steel    |     |           |     |     |  |  |          |
|-----------|-----------------|-----|-----|-----|--------|----------|-----|-----------|-----|-----|--|--|----------|
|           | Finishing       |     | ↔   |     |        | Roughing |     | Finishing |     | ↔   |  |  | Roughing |
| ISO       | M10             | M20 | M30 | M40 | P50    | P10      | P20 | P30       | P40 | P50 |  |  |          |
| AP330M    | AP301U          |     |     | New | AP301U |          |     |           |     | New |  |  |          |
|           | AP330M          |     |     |     | AP330M |          |     |           |     |     |  |  |          |

| Workpiece Material |   | Brinell Hardness | Vc (m/min) |
|--------------------|---|------------------|------------|
| M                  | Duplex Stainless Steel                  | HB 200-300       | 60-180     |
|                    | Austenitic Stainless Steel              |                  |            |
|                    | Precipitation-hardening stainless steel |                  |            |
| P                  | Unalloyed Steel                         | HB 180-280       | 60-180     |
|                    | Alloyed Steel                           | HB 200-415       |            |

## Geometries

| Application      | Geometry | Insert  | Geometry amplified view   | Shape of cutting edge  | Description   |
|------------------|----------|---|---|--|---|
| Finishing        | CS       |    |    |    | <ol 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> </ol>  |
| Medium           | CM       |    |    |    | <ol 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> </ol>  |
|                  | CH       |    |    |    | <ol style="list-style-type: none"> <li>Used in parting off and grooving steel with high hardness and toughness, alloy steel and stainless steel</li> <li>First choice for parting off and grooving at medium rate</li> <li>Strong cutting edge</li> </ol>   |
| Low Feed         | TS       |  |  |  | <ol 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> <li>There is a wider machining diameter range in the internal grooving and face grooving</li> </ol> |
| Medium & General | TM       |  |  |  | <ol 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> <li>There is a wider machining diameter range in the internal grooving and face grooving</li> </ol>   |
|                  | RM       |  |  |  | <ol style="list-style-type: none"> <li>External grooving, turning, profiling</li> <li>Medium feed rate</li> </ol>   |

## ● Machining Cases

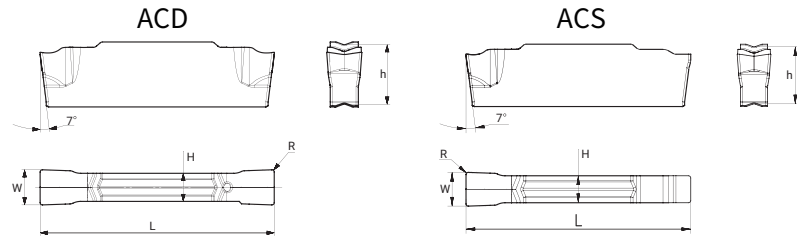
|           |  |
|-----------|--|
| Insert    | ACD 302-CH AP330M  |
| Workpiece | Pin   |
| Material  | SUS316   |
| Vc        | 157m/min   |
| fz        | 0.05mm/rev   |
| ap        | -  |
| Coolant   | Oil  |
| Results   |  <p>AP330M machining is very stable, Tool life increased</p> |


|           |   |
|-----------|---|
| Insert    | ACD 302-CM-K AP330M   |
| Workpiece | Handle   |
| Material  | SUS303  |
| Vc        | 95m/min   |
| fz        | 0.05mm/rev  |
| ap        | 6mm   |
| Coolant   | Oil   |
| Results   |  <p>AP330M machining is very stable, same tool life, lower cost per part</p> |

|           |   |
|-----------|---|
| Insert    | ACD 302-CH-K AP330M   |
| Workpiece | Hydraulic component    |
| Material  | 42CrMo (Alloy Steel)  |
| Vc        | 104m/min  |
| fz        | 0.06mm/rev  |
| ap        | 5mm   |
| Coolant   | Oil   |
| Results   |  <p>AP330M machining is very stable, Tool life increased</p> |

|           |   |
|-----------|---|
| Insert    | ACD 302-CH-K AP330M   |
| Workpiece | Spring cap   |
| Material  | Low Carbon Alloy Steel  |
| Vc        | 127m/min  |
| fz        | 0.05mm/rev  |
| ap        | 4mm   |
| Coolant   | Oil   |
| Results   |  <p>AP330M tool life is stable, same tool life, lower cost per part</p> |

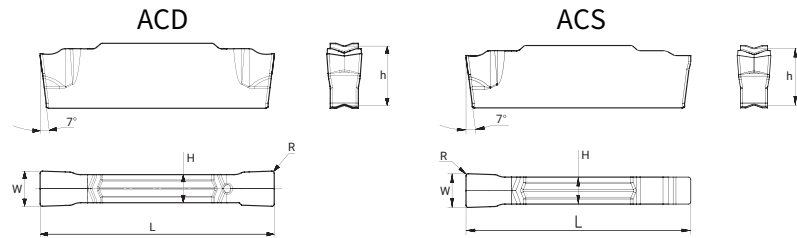
## Product List





| Inserts   | Product code   | Cutting Parameter |               | Dimension (mm) |     |      |     |     | Grade  |                       |
|---|----------------|-------------------|---------------|----------------|-----|------|-----|-----|--------|-----------------------|
|   |                | Tmax              | Feed (mm/rev) | W              | R   | L    | H   | h   | AP301U | AP330M <sup>New</sup> |
|    | ACD 202 CS     | 19.7              | 0.04-0.13     | 2              | 0.2 | 20   | 1.7 | 5.1 | ●      | ○                     |
|   | ACD 302 CS     | 19.7              | 0.05-0.15     | 3              | 0.2 | 20   | 2.4 | 5.1 | ●      | ○                     |
|  | ACD 202-CM     | 19.7              | 0.04-0.15     | 2              | 0.2 | 20   | 1.7 | 5.1 | ●      | ○                     |
|   | ACD 202-CM-K   | 19.7              | 0.04-0.15     | 2              | 0.2 | 20   | 1.7 | 5.1 | ●      | ●                     |
|   | ACD 202-CM-6R  | 19.7              | 0.03-0.09     | 2              | 0.2 | 20.7 | 1.7 | 5.1 | ●      | ○                     |
|   | ACD 202-CM-6L  | 19.7              | 0.03-0.09     | 2              | 0.2 | 20.7 | 1.7 | 5.1 | ●      | ○                     |
|   | ACD 202-CM-15R | 19.7              | 0.03-0.09     | 2              | 0.2 | 21   | 1.7 | 5.1 | ●      | ○                     |
|   | ACD 202-CM-15L | 19.7              | 0.03-0.09     | 2              | 0.2 | 21   | 1.7 | 5.1 | ●      | ○                     |
|   | ACD 302-CM     | 19.7              | 0.05-0.16     | 3              | 0.2 | 20   | 2.4 | 5.1 | ●      | ●                     |
|   | ACD 302-CM-K   | 19.7              | 0.05-0.16     | 3              | 0.2 | 20   | 2.4 | 5.1 | ●      | ○                     |
|   | ACD 302-CM-6R  | 19.7              | 0.04-0.14     | 3              | 0.2 | 20.7 | 2.4 | 5.1 | ●      | ○                     |
|   | ACD 302-CM-6L  | 19.7              | 0.04-0.14     | 3              | 0.2 | 20.7 | 2.4 | 5.1 | ●      | ○                     |
|   | ACD 302-CM-15R | 19.7              | 0.04-0.14     | 3              | 0.2 | 21   | 2.4 | 5.1 | ●      | ○                     |
|   | ACD 302-CM-15L | 19.7              | 0.04-0.14     | 3              | 0.2 | 21   | 2.4 | 5.1 | ●      | ○                     |
|   | ACD 403-CM     | 19.7              | 0.06-0.18     | 4              | 0.3 | 20   | 3   | 5.1 | ●      | ○                     |
|   | ACD 403-CM-4R  | 19.7              | 0.05-0.16     | 4              | 0.3 | 20.7 | 3   | 5.1 | ●      | ○                     |
|   | ACD 403-CM-4L  | 19.7              | 0.05-0.16     | 4              | 0.3 | 20.7 | 3   | 5.1 | ●      | ○                     |
|   | ACD 503-CM     | 24.7              | 0.06-0.20     | 5              | 0.3 | 25   | 4   | 5.0 | ●      | ○                     |
|   | ACD 503-CM-4R  | 24.7              | 0.06-0.18     | 5              | 0.3 | 25.7 | 4   | 5.0 | ○      | ○                     |
|   | ACD 503-CM-4L  | 24.7              | 0.06-0.18     | 5              | 0.3 | 25.7 | 4   | 5.0 | ○      | ○                     |
| ACD 603-CM  | 29.7           | 0.06-0.22         | 6             | 0.3            | 25  | 5    | 5.0 | ●   | ○      |                       |
|  | ACS 202-CM     | 19.7              | 0.04-0.15     | 2              | 0.2 | 20   | 1.7 | 5.1 | ●      | ○                     |
|   | ACS 302-CM     | 19.7              | 0.05-0.16     | 3              | 0.2 | 20   | 2.4 | 5.1 | ●      | ○                     |
|   | ACS 403-CM     | 19.7              | 0.06-0.18     | 4              | 0.3 | 20   | 3   | 5.1 | ○      | ○                     |
|   | ACS 503-CM     | 24.7              | 0.06-0.20     | 5              | 0.3 | 25   | 4   | 5.0 | ○      | ○                     |
|   | ACS 603-CM     | 29.7              | 0.06-0.22     | 6              | 0.3 | 25   | 5   | 5.0 | ○      | ○                     |

Marked: ● Stocked  
○ Non-stocked

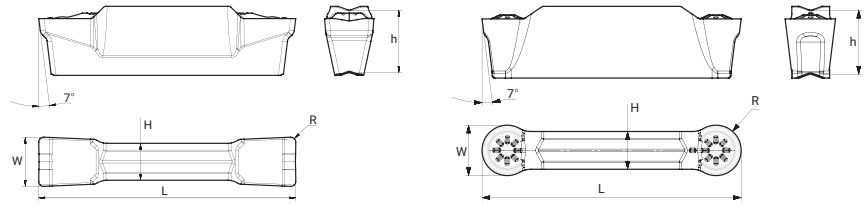
## Product List



| Inserts   | Product code   | Cutting Parameter |               | Dimension (mm) |      |      |     |     | Grade  |                       |
|---|----------------|-------------------|---------------|----------------|------|------|-----|-----|--------|-----------------------|
|   |                | Tmax              | Feed (mm/rev) | W              | R    | L    | H   | h   | AP301U | AP330M <sup>New</sup> |
|  | ACD 202-CH     | 19.7              | 0.05-0.20     | 2              | 0.2  | 20   | 1.7 | 5.1 | ●      | ○                     |
|   | ACD 202-CH-K   | 19.7              | 0.05-0.20     | 2              | 0.2  | 20   | 1.7 | 5.1 | ●      | ●                     |
|   | ACD 202-CH-6R  | 19.7              | 0.04-0.16     | 2              | 0.2  | 20.7 | 1.7 | 5.1 | ●      | ○                     |
|   | ACD 202-CH-6L  | 19.7              | 0.04-0.16     | 2              | 0.2  | 20.7 | 1.7 | 5.1 | ●      | ○                     |
|   | ACD 202-CH-15R | 19.7              | 0.04-0.15     | 2              | 0.2  | 21   | 1.7 | 5.1 | ●      | ○                     |
|   | ACD 202-CH-15L | 19.7              | 0.04-0.15     | 2              | 0.2  | 21   | 1.7 | 5.1 | ●      | ○                     |
|   | ACD 302-CH     | 19.7              | 0.07-0.25     | 3              | 0.2  | 20   | 2.4 | 5.1 | ●      | ●                     |
|   | ACD 302-CH-K   | 19.7              | 0.07-0.25     | 3              | 0.2  | 20   | 2.4 | 5.1 | ●      | ●                     |
|   | ACD 302-CH-6R  | 20.7              | 0.05-0.20     | 3              | 0.2  | 20.7 | 2.4 | 5.1 | ●      | ○                     |
|   | ACD 302-CH-6L  | 21.7              | 0.05-0.20     | 3              | 0.2  | 20.7 | 2.4 | 5.1 | ●      | ○                     |
|   | ACD 302-CH-15R | 20                | 0.05-0.18     | 3              | 0.2  | 21   | 2.4 | 5.1 | ●      | ○                     |
|   | ACD 302-CH-15L | 20                | 0.05-0.18     | 3              | 0.2  | 21   | 2.4 | 5.1 | ●      | ○                     |
|   | ACD 403-CH     | 19                | 0.08-0.30     | 4              | 0.3  | 20   | 3.0 | 5.1 | ●      | ○                     |
|   | ACD 403-CH-K   | 19                | 0.08-0.30     | 4              | 0.3  | 20   | 3.0 | 5.1 | ●      | ○                     |
|   | ACD 403-CH-4R  | 19.7              | 0.06-0.25     | 4              | 0.3  | 20.7 | 3.0 | 5.1 | ●      | ○                     |
|   | ACD 403-CH-4L  | 19.7              | 0.06-0.25     | 4              | 0.3  | 20.7 | 3.0 | 5.1 | ●      | ○                     |
|   | ACD 503-CH     | 24                | 0.09-0.35     | 5              | 0.3  | 25   | 4.0 | 5.0 | ●      | ○                     |
|   | ACD 503-CH-4R  | 24.7              | 0.08-0.30     | 5              | 0.3  | 25.7 | 4.0 | 5.0 | ●      | ○                     |
| ACD 503-CH-4L   | 25.7           | 0.08-0.30         | 5             | 0.3            | 25.7 | 4.0  | 5.0 | ●   | ○      |                       |
| ACD 603-CH  | 24             | 0.12-0.40         | 6             | 0.3            | 25   | 5    | 5.0 | ●   | ○      |                       |
| ACD 804-CH  | 29             | 0.15-0.45         | 8             | 0.4            | 30   | 6    | 6.1 | ●   | ○      |                       |
|  | ACS 202-CH     | 19.7              | 0.05-0.20     | 2              | 0.2  | 20   | 1.7 | 5.1 | ●      | ○                     |
|   | ACS 302-CH     | 19.7              | 0.07-0.25     | 3              | 0.2  | 20   | 2.4 | 5.1 | ●      | ○                     |
|   | ACS 403-CH     | 19.7              | 0.08-0.30     | 4              | 0.3  | 20   | 3.0 | 5.1 | ●      | ○                     |
|   | ACS 503-CH     | 19.7              | 0.09-0.35     | 5              | 0.3  | 20   | 4.0 | 5.0 | ●      | ○                     |
|   | ACS 603-CH     | 24.7              | 0.12-0.40     | 6              | 0.3  | 25   | 5   | 5.0 | ○      | ○                     |

Marked: ● Stocked  
○ Non-stocked

## Product List



| Inserts    | Product code | Cutting Parameter            |                  |                  |            | Dimension (mm) |      |      |     |     | Grade  |        |
|------------|--------------|------------------------------|------------------|------------------|------------|----------------|------|------|-----|-----|--------|--------|
|            |              | Grooving<br>Feed<br>(mm/rev) | T <sub>max</sub> | Turning          |            | W              | R    | L    | H   | h   | AP301U | AP330M |
|            |              |                              |                  | Feed<br>(mm/rev) | AP<br>(mm) |                |      |      |     |     |        |        |
|            | ATD 203-TS   | 0.04-0.20                    | 19.7             | 0.12-0.19        | 0.40-1.50  | 2              | 0.3  | 20.7 | 1.7 | 5.1 | ●      | ○      |
|            | ATD 303-TS   | 0.05-0.25                    | 19.7             | 0.15-0.23        | 0.45-2.0   | 3              | 0.3  | 20.7 | 2.2 | 5.1 | ●      | ●      |
|            | ATD 404-TS   | 0.06-0.27                    | 19.7             | 0.18-0.25        | 0.50-2.50  | 4              | 0.4  | 20.7 | 3.0 | 5.1 | ●      | ○      |
|            | ATD 404-TS-K | 0.06-0.27                    | 19.7             | 0.18-0.25        | 0.50-2.50  | 4              | 0.4  | 20.7 | 3.0 | 5.1 | ●      | ○      |
|            | ATD 408-TS   | 0.06-0.27                    | 19.7             | 0.18-0.25        | 1.0-2.50   | 4              | 0.8  | 20.7 | 3.0 | 5.1 | ●      | ○      |
|            | ATD 504-TS   | 0.07-0.30                    | 24.7             | 0.20-0.30        | 0.55-3.50  | 5              | 0.4  | 25.7 | 4.0 | 5.0 | ●      | ○      |
|            | ATD 508-TS   | 0.07-0.30                    | 24.7             | 0.20-0.30        | 1.0-3.50   | 5              | 0.8  | 25.7 | 4.0 | 5.0 | ●      | ○      |
|            | ATD 604-TS   | 0.10-0.40                    | 24.7             | 0.22-0.45        | 0.65-3.80  | 6              | 0.4  | 25.7 | 5.0 | 5.0 | ●      | ○      |
|            | ATD 608-TS   | 0.10-0.40                    | 24.7             | 0.22-0.45        | 1.0-3.80   | 6              | 0.8  | 25.7 | 5.0 | 5.0 | ○      | ○      |
|            | ATD 808-TS   | 0.12-0.45                    | 30.5             | 0.28-0.50        | 1.0-4.50   | 8              | 0.8  | 31.5 | 6   | 6.1 | ○      | ○      |
|            | ATD 304-TM   | 0.1-0.25                     | 19.7             | 0.15-0.22        | 0.5-2.0    | 3              | 0.4  | 20.7 | 2.2 | 5.1 | ●      | ○      |
|            | ATD 404-TM   | 0.15-0.30                    | 19.7             | 0.18-0.27        | 0.5-2.50   | 4              | 0.4  | 20.7 | 3.0 | 5.1 | ●      | ●      |
|            | ATD 408-TM   | 0.15-0.30                    | 19.7             | 0.18-0.27        | 1.0-2.50   | 4              | 0.8  | 20.7 | 3.0 | 5.1 | ●      | ○      |
|            | ATD 408-TM-K | 0.15-0.30                    | 19.7             | 0.18-0.27        | 1.0-2.50   | 4              | 0.8  | 20.7 | 3.0 | 5.1 | ●      | ○      |
|            | ATD 504-TM   | 0.18-0.35                    | 24.7             | 0.20-0.35        | 0.55-3.50  | 5              | 0.4  | 25.7 | 4.0 | 5.0 | ●      | ●      |
|            | ATD 508-TM   | 0.18-0.35                    | 24.7             | 0.20-0.35        | 1.0-3.50   | 5              | 0.8  | 25.7 | 4.0 | 5.0 | ●      | ●      |
|            | ATD 508-TM-K | 0.18-0.35                    | 24.7             | 0.20-0.35        | 1.0-3.50   | 5              | 0.8  | 25.7 | 4.0 | 5.0 | ●      | ○      |
|            | ATD 604-TM   | 0.20-0.45                    | 24.7             | 0.22-0.45        | 0.65-4.0   | 6              | 0.4  | 25.7 | 5.0 | 5.0 | ●      | ○      |
|            | ATD 608-TM   | 0.20-0.45                    | 24.7             | 0.22-0.45        | 1.0-4.0    | 6              | 0.8  | 25.7 | 5.0 | 5.0 | ●      | ○      |
|            | ATD 808-TM   | 0.22-0.50                    | 30.5             | 0.28-0.5         | 1.0-5.0    | 8              | 0.8  | 31.5 | 6.0 | 6.1 | ○      | ○      |
| ATD 812-TM | 0.22-0.50    | 30.5                         | 0.28-0.5         | 1.5-5.0          | 8          | 1.2            | 31.5 | 6.0  | 6.1 | ●   | ○      |        |
|            | ATD 210-RM   | 0.06-0.15                    | -                | 0.12-0.25        | 0.4-1.0    | 2              | 1    | 20.7 | 1.7 | 5.1 | ●      | ●      |
|            | ATD 315-RM   | 0.08-0.18                    | -                | 0.15-0.3         | 0.5-1.5    | 3              | 1.5  | 20.7 | 2.2 | 5.1 | ●      | ○      |
|            | ATD 420-RM   | 0.1-0.2                      | -                | 0.18-0.35        | 0.6-2.0    | 4              | 2    | 20.7 | 3   | 5.1 | ●      | ○      |
|            | ATD 525-RM   | 0.12-0.25                    | -                | 0.2-0.4          | 0.7-2.5    | 5              | 2.5  | 25.7 | 4   | 5.0 | ●      | ●      |
|            | ATD 630-RM   | 0.15-0.3                     | -                | 0.25-0.5         | 0.9-3.0    | 6              | 3    | 25.7 | 5   | 5.0 | ●      | ○      |
|            | ATD 840-RM   | 0.18-0.35                    | -                | 0.3-0.6          | 1.0-4.0    | 8              | 4    | 31.5 | 6   | 6.1 | ●      | ○      |

Marked: ● Stocked  
○ Non-stocked