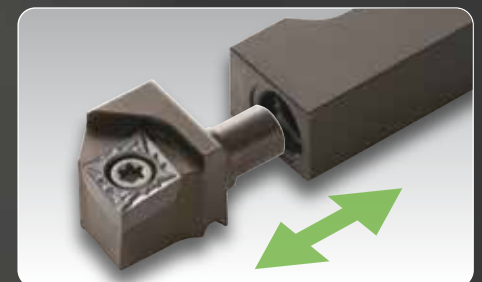


## Indexable Head Type Quick Change Tool Holder **APM** type

# Sharply reduces changeover time with outstanding change repeatability

Polygon taper shape realises mounting/removal accuracy within 5 $\mu$ m



Small Lathe/Autolathe Tool series

**SumiSmill**

# APM type



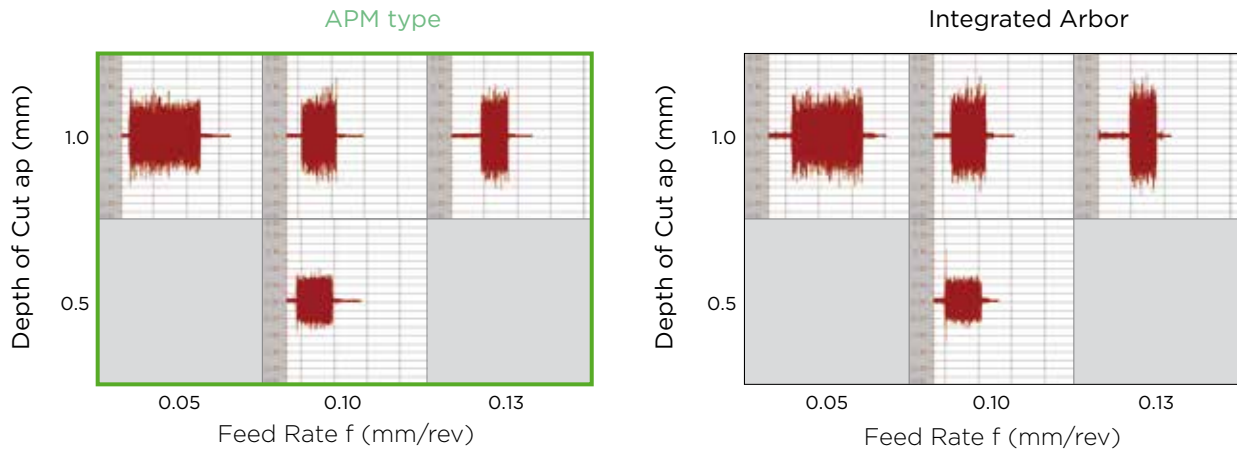
## ■ Features

- Tool changeover time reduced  
Mounting/removal of the head alone improves workability and safety when changing the insert, reducing equipment stop time at changeovers to contribute to increased productivity
- Excellent head change repeatability  
High-accuracy polygon taper shape realises change repeatability within 5µm
- Lineup including shank sizes of 10, 12, and 16mm supports a wide range of CNC autolathes, etc.
- Supports front turning, back turning, grooving, and cut-off
- Internal coolant supply design, supporting coolant supply without hose

## ■ Cutting Performance

- Low vibration

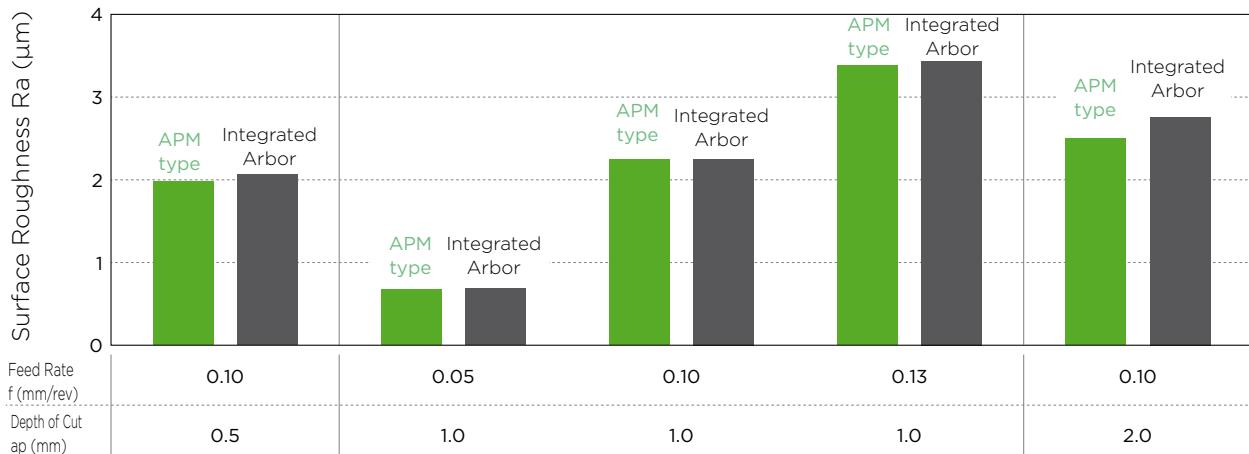
The APM type realises low vibration performance equivalent to that of integrated holders



Work Material: SUS420J2 Tool: Shank: APM-R1212X84J Head: APM12-SDJCR11T3J Insert: DCGT11T302MN-SI (AC1030U)  
Cutting Conditions:  $vc = 80\text{m/min}$   $f = 0.05, 0.10, 0.13\text{mm/rev}$   $ap=0.5, 1.0\text{mm}$  Wet

## ● Machined surface roughness

The APM type realises machined surface roughness equivalent to that of integrated holders

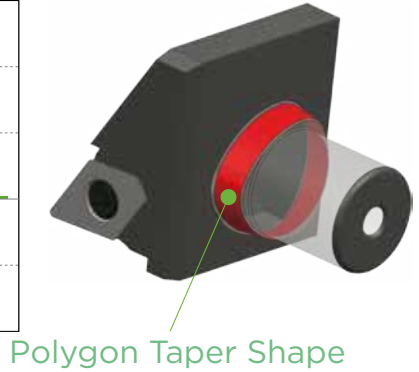
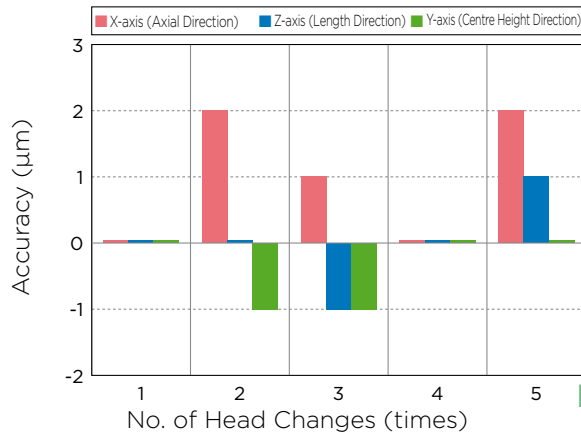
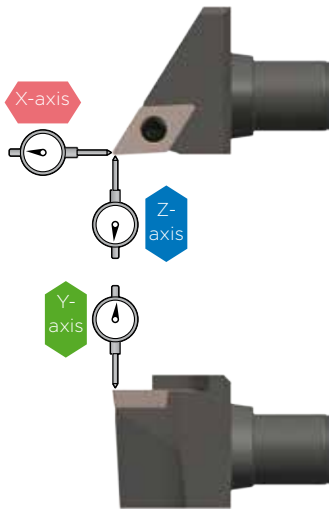


Work Material: SUS420J2 Tool: Shank: APM-R1212X84J Head: APM12-SDJCR11T3J Insert: DCGT11T302MN-SI (AC1030U)  
Cutting Conditions:  $vc = 80\text{m/min}$   $f = 0.05, 0.10, 0.13\text{mm/rev}$   $ap=0.5, 1.0, 2.0\text{mm}$  Wet

# APM type

## Head Change Repeatability

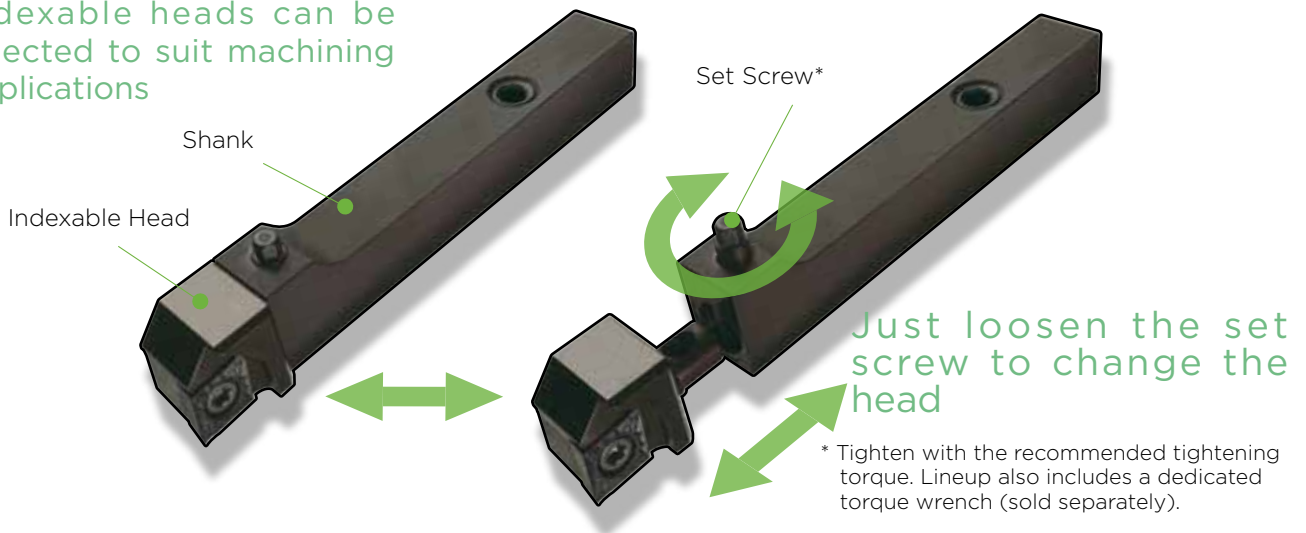
Polygon taper shape realizes change repeatability within 5 μm



\* Measured using the same shank, the same head, and the same insert corner

## Head Change Structure

Indexable heads can be selected to suit machining applications



Just loosen the set screw to change the head

\* Tighten with the recommended tightening torque. Lineup also includes a dedicated torque wrench (sold separately).

## APM type Combination Examples

### Indexable Head

For ISO Turning Inserts	For Dedicated Inserts
<p><b>Positive</b></p> <p>SCLC type SDJC type SVJB type SVJC type SVJP type</p>	<p><b>Back Turning</b></p> <p>SBT series </p> <p><b>Grooving/Threading</b></p> <p>GWC series </p>
<p><b>Negative</b></p> <p>PTGN type </p>	<p><b>Grooving/Cut-Off</b></p> <p>GNDM type GNDL type </p>

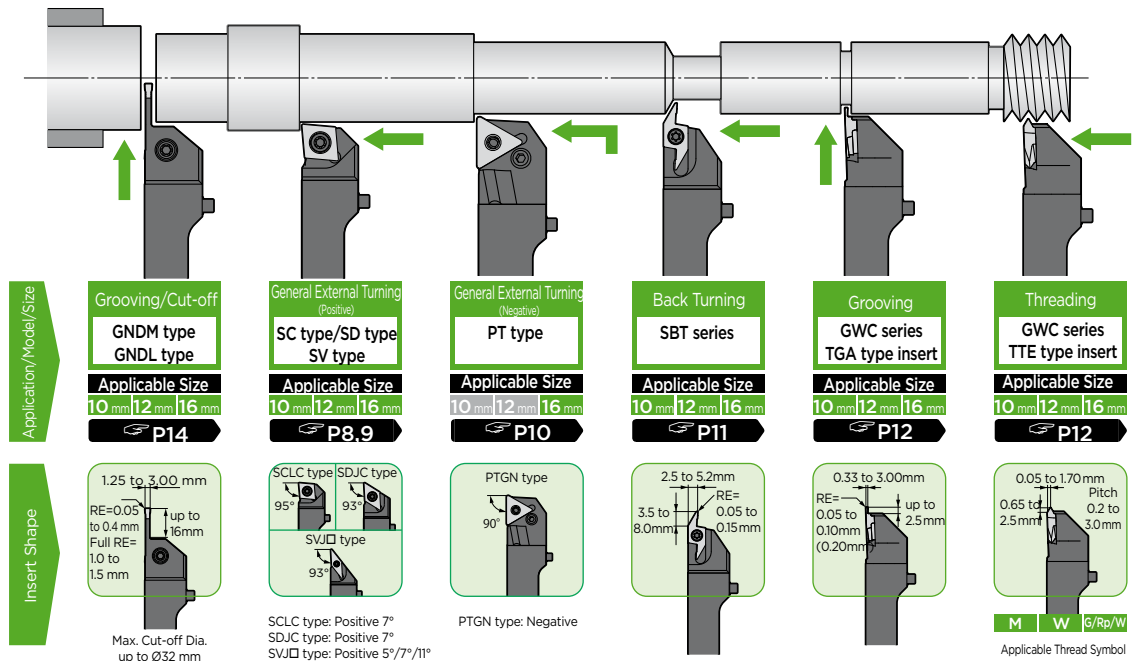
### Shank

APM-R1010X84J	Height H: 10 mm	Width B: 10 mm
APM-R1212X84J	Height H: 12 mm	Width B: 12 mm
APM-R1616X84J	Height H: 16 mm	Width B: 16 mm

The product appearance may vary in colour, but these variations do not affect the performance.

# APM type

## Head Lineup



## Tooling Selection

Applications	External Turning				
	General Turning/Facing	General Turning/Profiling		General Turning	Back Turning
Insert Shape	80° Diamond type (Positive) <b>G</b>	55° Diamond type (Positive) <b>D</b>	35° Diamond type (Positive) <b>Δ</b>	Triangular type (Negative) <b>△</b>	Dedicated Insert (BT type)
Clamp Mechanism					
Screw-on	 SCLC type P8	 SDJC type P8	 SVJB type/SVJC type SVJP type P9		 SBT type P11-
Lever Lock	—	—	—	 PTGN type P10	—

Applications	External Grooving/Threading/Cut-off		
	Grooving	Threading	Grooving/Cut-off
Insert Shape	Dedicated Insert (TGA type)	Dedicated Insert (TTE type)	Dedicated Insert (GCM type/GCG type)
Clamp Mechanism			
Screw-on	 GWC series P12-	 GWC series P12-	—
Clamp-on	—	—	 GNDM type GNDL type P14-

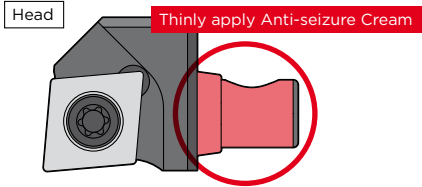
# APM type

## Quick Change Holder APM type Precautions for Use

### ■ Anti-seizure Cream (APM-P)

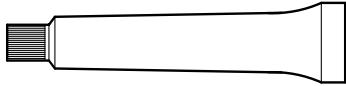
When removing the head, it may be difficult to take off even when the set screw has been loosened. As a countermeasure, use dedicated Anti-seizure Cream APM-P to enable smooth removal.

#### Application Method



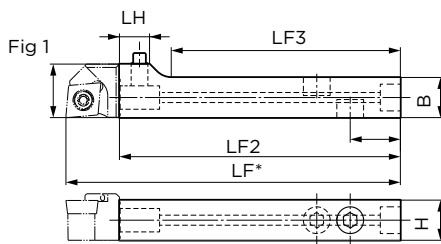
After cleaning the head polygon taper and shaft, use a rag, etc. to apply a thin layer of dedicated Anti-seizure Cream APM-P.  
 \* Anti-seizure Cream (APM-P) has been applied as of shipping.

#### Anti-seizure Cream

Cat. No.	Stock	
<b>APM-P</b>	●	

Anti-seizure Cream is sold separately.

# APM type



## Shank

Cat. No.	Stock	Height H	Weight B	Overall Length LF2	Head BH	Width LH	Neck LF3	Applicable Size	Fig	Parts		Torque Wrench	
										Set Screw	Plug		
<b>APM-R1010X84J</b>	●	10	10	84	13.5	9	69.0	10	1	BTT0507H	3.0	APM-M8P	TRDRS3530(*)
<b>APM-R1212X84J</b>	●	12	12	84	16.0	9	68.5	12	1	BTT0510H			
<b>APM-R1616X84J</b>	●	16	16	84	20.0	10	68.0	16	1	BTT0611H		4.0	APM-G1/8P

Use a suitable combination of the applicable head and shank sizes. \* See the head dimensions for dimension LF (set dimensions).

\* Torque wrench is sold separately from the main body.

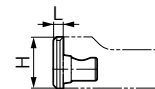
Fig 1



Fig 2



Fig 1



## Parts (Set Screw)

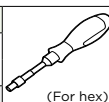
Dimensions (mm)

Cat. No.	Stock	Screw Standard	Overall length	Applicable Shank	Nm	Fig
<b>BTT 0507H</b>	●	SW3.5	10.0	APM-R1010X84J	3.0	1
<b>BTT 0510H</b>	●	SW3.5	12.5	APM-R1212X84J	3.0	1
<b>BTT 0611H</b>	●	SW4.5	14.5	APM-R1616X84J	4.0	1
<b>BTT 0507T</b>	●	T10	7.0	APM-R1010X84J	3.0	2
<b>BTT 0510T</b>	●	T10	9.5	APM-R1212X84J	3.0	2
<b>BTT 0611T</b>	●	T20	10.5	APM-R1616X84J	4.0	2

H at end: Hex T at end: Torx (sold separately; use a commercially available wrench)

## Set Screw Torque Wrench

Cat. No.	Stock	Screw Standard	Torque Value (N m)	Applicable Shank
<b>TRDRS3530</b>	●	SW3.5	3.0	APM-R1010X84J APM-R1212X84J
<b>TRDRS4540</b>	●	SW4.5	4.0	APM-R1616X84J



(For hex)

Torque wrench is sold separately. Dedicated for set screw part number suffix H.

Fig 1



Fig 1

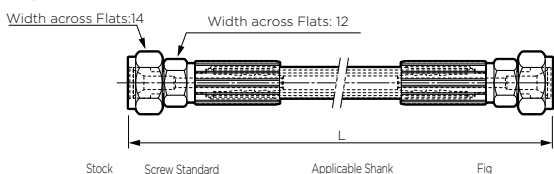


## Piping Parts (Plug)

Cat. No.	Stock	Screw Standard	Applicable Shank	Fig
<b>APM-M8P</b>	●	M8	APM-R1010X84J APM-R1212X84J	1
<b>APM-G1/8P</b>	●	G1/8	APM-R1616X84J	1

The shank is shipped with two plugs mounted.

Fig 1



## Piping Parts (Adapter)

Dimensions (mm)

Cat. No.	Stock	Screw Standard	Screw Standard	External Diameter	Applicable Shank	Fig
<b>J-M8-G1/8-U</b>	●	M8	G1/8	ø15	APM-R1010X84J APM-R1212X84J	1
<b>J-G1/8-G1/8-U</b>	●	G1/8	G1/8	ø18	APM-R1616X84J	1

Adapter is sold separately.

Fig 1

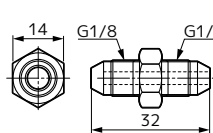
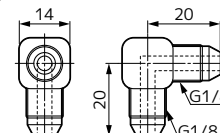


Fig 2



## Piping Parts (Hose)

Dimensions (mm)

Cat. No.	Stock	L	Screw Standard	Screw Standard	Fig
<b>J-HOSE-G1/8-G1/8-200</b>	●	200	G1/8	G1/8	1
<b>J-HOSE-G1/8-G1/8-300</b>	●	300	G1/8	G1/8	1

Hoses are sold separately.

## Piping Parts (Connector)

Dimensions (mm)

Cat. No.	Stock	Screw Standard	Screw Standard	Fig
<b>J-G1/8-G1/8-00</b>	●	G1/8	G1/8	1
<b>J-G1/8-G1/8-90</b>	●	G1/8	G1/8	2

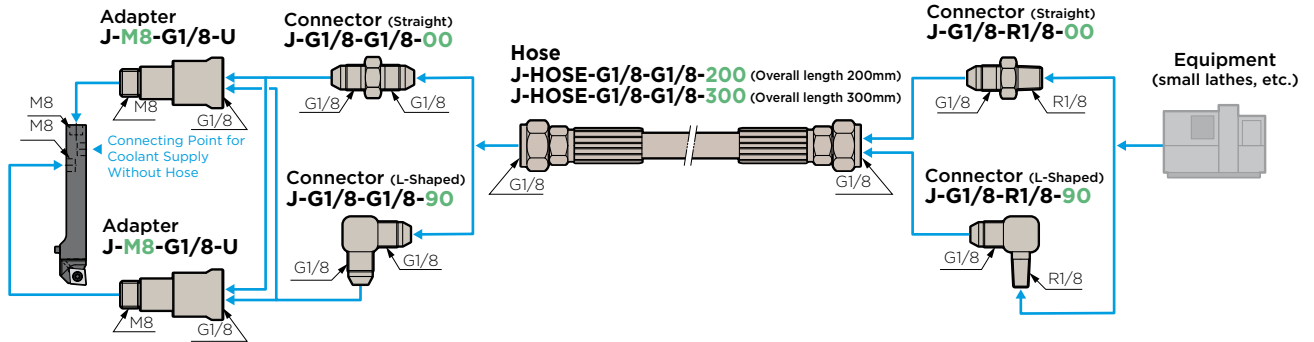
Connectors are sold separately.

● mark: Standard stocked item Recommended Tightening Torque (N·m)

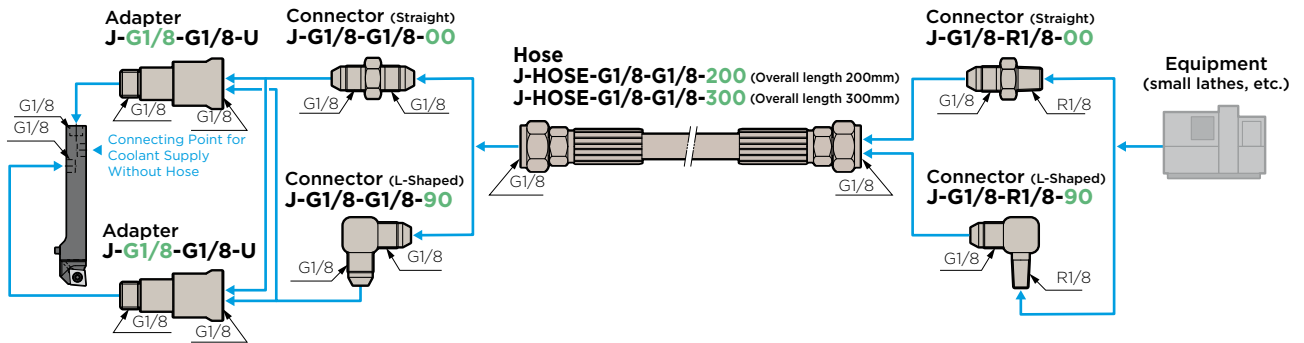
# APM type

## ■ Piping Method for Hoses, Connectors, and Adapters

APM type Shank  
**APM-R1010X84J** (10mm square) / **APM-R1212X84J** (12mm square)

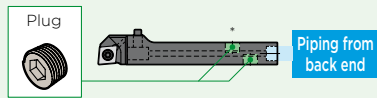


APM type Shank  
**APM-R1616X84J** (16mm square)



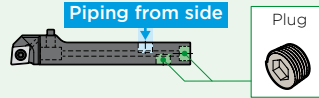
- Use an adapter suited to the equipment specifications.
- Apply sealant such as commercial sealing tape to the piping connection parts.
- For plug mounting when piping, see the figure below. (For Plug Cat. No. 10/12mm square: **APM-M8P**, 16mm square: **APM-G1/8P**)

### Piping from back end (at shipping)

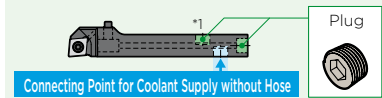


\* The plug may protrude a few millimetres when mounted on the side.

### Piping from side



### Coolant Supply without Hose

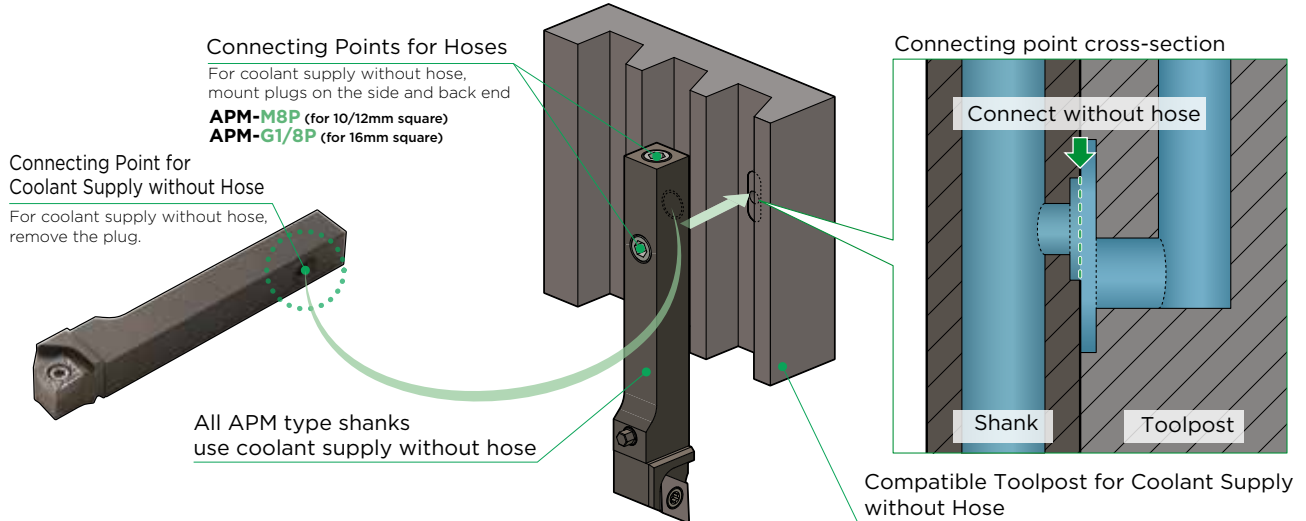


\*1 The plug may protrude a few millimetres when mounted on the side.

\*2 The plug is mounted at shipping, so remove it for use with coolant supply without hose.

## Coolant Supply without Hose

Coolant can be supplied directly from the toolpost without a hose



Note: When using external coolant supply, mount a plug on the end as well.

# APM type



External Turning  
Screw-on, Internal Coolant Supply

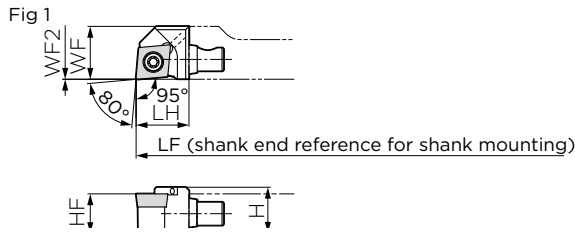
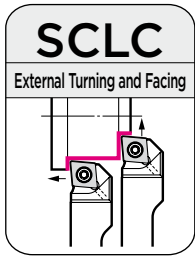


Figure shows right-handed (R) tool.

## Head

## Parts

Dimensions (mm)

Cat. No.	Stock	Height H	Head LH	Cutting Edge Distance WF	Cutting Edge Height HF	Offset WF2	Overall Length LF	Applicable Insert Cat. No.	Applicable Size	Fig	Flat Insert Screw		Wrench
<b>APM10-SCLC R0602J</b>	●	11.9	16	13.5	10	0	100	CC□T0602	10	1	BFTX02506N	1.5	TRX08(*)
<b>APM12-SCLC R0602J</b>	●	13.9	16	16.0	12	0	100		12	1			
<b>APM16-SCLC R0602J</b>	●	17.9	16	20.0	16	0	100		16	1			
<b>APM10-SCLC R09T3J</b>	●	11.9	16	13.5	10	0	100	CC□T09T3	10	1	BFTX0409N	3.4	TRX15(*)
<b>APM12-SCLC R09T3J</b>	●	13.9	16	16.0	12	0	100		12	1			
<b>APM16-SCLC R09T3J</b>	●	17.9	16	20.0	16	0	100		16	1			

Refer to shank applicable sizes on P6 for applicable shanks.  
\* Wrenches are sold separately from heads.



External Turning  
Screw-on, Internal Coolant Supply

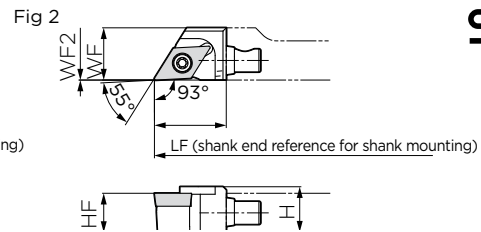
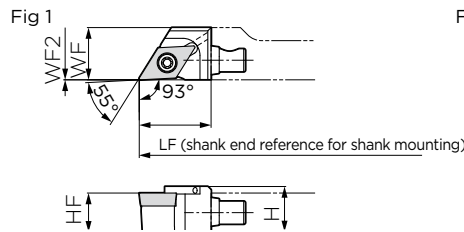
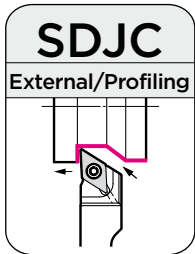


Figure shows right-handed (R) tool.

## Head

## Parts

Dimensions (mm)

Cat. No.	Stock	Height H	Head LH	Cutting Edge Distance WF	Cutting Edge Height HF	Offset WF2	Overall Length LF	Applicable Insert Cat. No.	Applicable Size	Fig	Flat Insert Screw		Wrench
<b>APM10-SDJC R0702J</b>	●	11.9	16	13.5	10	0	100	DC□T0702	10	1	BFTX02506N	1.5	TRX08(*)
<b>APM12-SDJC R0702J</b>	●	13.9	16	16.0	12	0	100		12	1			
<b>APM16-SDJC R0702J</b>	●	17.9	16	20.0	16	0	100		16	1			
<b>APM10-SDJC R11T3J</b>	●	11.9	20	13.5	10	0	104	DC□T11T3	10	1	BFTX0409N	3.4	TRX15(*)
<b>APM12-SDJC R11T3J</b>	●	13.9	22	16.0	12	0	106		12	2			
<b>APM16-SDJC R11T3J</b>	●	17.9	22	20.0	16	0	106		16	2			

Refer to shank applicable sizes on P6 for applicable shanks.  
\* Wrenches are sold separately from heads.

# APM type

New Positive External  $35^\circ$   $93^\circ$  Zero Offset Indexable Head Internal Coolant

External Turning  
Screw-on, Internal Coolant Supply

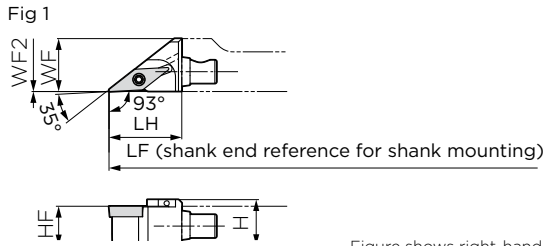
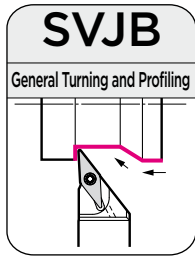


Figure shows right-handed (R) tool.

## Head

## Parts

Dimensions (mm)

Cat. No.	Stock	Height H	Head LH	Cutting Edge Distance WF	Cutting Edge Height HF	Offset WF2	Overall Length LF	Applicable Insert		Flat Insert Screw		Wrench	
								Cat. No.	Applicable Size	Fig			
<b>APM10-SVJB R1103J</b>	●	11.9	22	13.5	10	0	106	VB□T1103	10	1		1.5	TRX08(*)
<b>APM12-SVJB R1103J</b>	●	13.9	22	16.0	12	0	106						
<b>APM16-SVJB R1103J</b>	●	17.9	22	20.0	16	0	106						

Refer to shank applicable sizes on P6 for applicable shanks. \* Wrenches are sold separately from heads.

New Positive External  $35^\circ$   $93^\circ$  Zero Offset Indexable Head Internal Coolant

External Turning  
Screw-on, Internal Coolant Supply

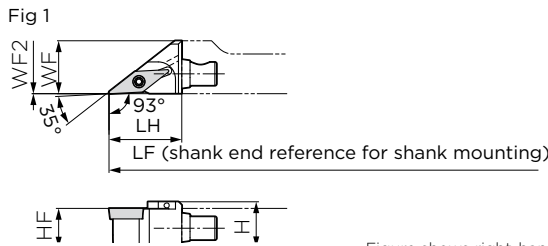
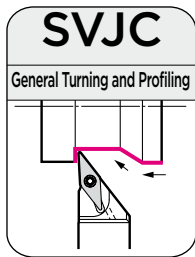


Figure shows right-handed (R) tool.

## Head

## Parts

Dimensions (mm)

Cat. No.	Stock	Height H	Head LH	Cutting Edge Distance WF	Cutting Edge Height HF	Offset WF2	Overall Length LF	Applicable Insert		Flat Insert Screw		Wrench	
								Cat. No.	Applicable Size	Fig			
<b>APM10-SVJC R1103J</b>	●	11.9	22	13.5	10	0	106	VC□T1103	10	1		1.5	TRX08(*)
<b>APM12-SVJC R1103J</b>	●	13.9	22	16.0	12	0	106						
<b>APM16-SVJC R1103J</b>	●	17.9	22	20.0	16	0	106						

Refer to shank applicable sizes on P6 for applicable shanks. \* Wrenches are sold separately from heads.

New Positive External  $35^\circ$   $93^\circ$  Zero Offset Indexable Head Internal Coolant

External Turning  
Screw-on, Internal Coolant Supply

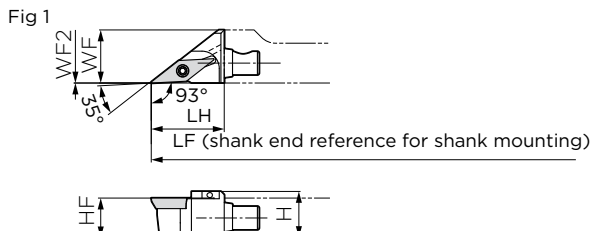
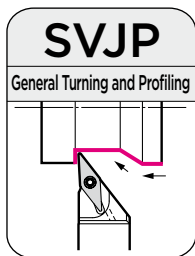


Figure shows right-handed (R) tool.

## Head

## Parts

Dimensions (mm)

Cat. No.	Stock	Height H	Head LH	Cutting Edge Distance WF	Cutting Edge Height HF	Offset WF2	Overall Length LF	Applicable Insert		Flat Insert Screw		Wrench	
								Cat. No.	Applicable Size	Fig			
<b>APM10-SVJP R1103J</b>	●	11.9	22	13.5	10	0	106	VP□T1103	10	1		1.5	TRX08(*)
<b>APM12-SVJP R1103J</b>	●	13.9	22	16.0	12	0	106						
<b>APM16-SVJP R1103J</b>	●	17.9	22	20.0	16	0	106						

Refer to shank applicable sizes on P6 for applicable shanks. \* Wrenches are sold separately from heads. Refer to the chapter on "Indexable Inserts" in the General Catalogue for applicable inserts.

# APM type



External Turning  
Lever Lock, Internal Coolant Supply

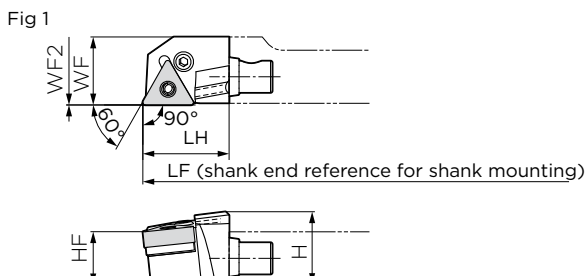
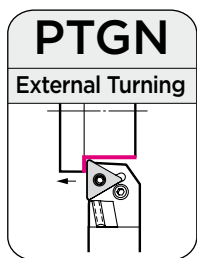


Figure shows right-handed (R) tool.

## Head

## Parts

Dimensions (mm)

Cat. No.	Stock	Height H	Head LH	Cutting Edge Distance WF	Cutting Edge Height HF	Offset WF2	Overall Length LF	Applicable Insert Cat. No.	Applicable Size	Fig	Parts					
											Lever	Bolt	Tightening Torque (N·m)	Shim	Shim	Wrench
<b>APM16-PTGN R1604J</b>	●	22	26	20.5	16	0.5	110	TN□□1604	16	1	LCL3APM	LCS3APM	<b>3.5</b>	LST317APM	LSP3APM	LH025(*) (For hexagonal hole)

Refer to shank applicable sizes on P6 for applicable shanks. \* Wrenches are sold separately from heads.

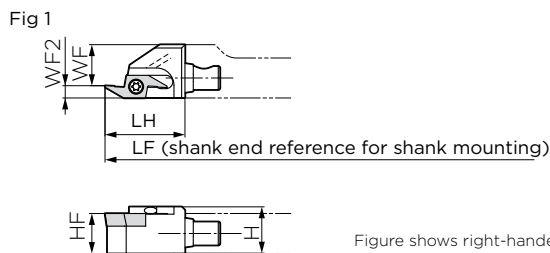
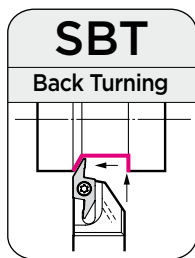
Refer to the chapter on "Indexable Inserts" in the General Catalogue for applicable inserts.

● mark: Standard stocked item Recommended Tightening Torque (N·m)

# APM type



Back Turning  
Screw-on, Internal Coolant Supply



## Head

## Parts

Dimensions (mm)

Cat. No.	Stock	Height H	Head LH	Cutting Edge Distance WF	Cutting Edge Height HF	Offset WF2	Overall Length LF	Applicable Insert Cat. No.	Applicable Size	Fig	Flat Insert Screw		Wrench
											Fig	N·m	(For Torx hole)
<b>APM10-SBT R-35J</b>	●	11.9	22	11.0	10	2.5	106	BTR3500	10	1	BFTX0307N	2.0	TRX10(*)
<b>APM12-SBT R-35J</b>	●	13.9	22	13.5	12	2.5	106		12	1			
<b>APM16-SBT R-35J</b>	●	17.9	22	17.5	16	2.5	106		16	1			
<b>APM10-SBT R-55J</b>	●	11.9	22	9.8	10	3.7	106	BTR5500	10	1	BFTX0307N	2.0	TRX10(*)
<b>APM12-SBT R-55J</b>	●	13.9	24	12.3	12	3.7	108		12	1			
<b>APM16-SBT R-55J</b>	●	17.9	24	16.3	16	3.7	108		16	1			
<b>APM12-SBT R-80J</b>	●	13.9	30	10.8	12	5.2	114	BTR8000	12	1	BFTX0307N	2.0	TRX10(*)
<b>APM16-SBT R-80J</b>	●	17.9	30	14.8	16	5.2	114		16	1			

## Insert ( Coated Carbide/ DLC/ Cermet)

Dimensions (mm)

Cat. No.	AC5015S	AC5025S	AC1030U	AC530U	ACZ150	DL1500	T1500A	Overall Length L	Maximum Depth of Cut CDX	Width of Cut CW	Corner Radius RE	Applicable Heads	Fig	Fig 1			
														3°	15°		
<b>BT R3505</b>	○	○	○	○	○	○	○	15	3.5	2.5	0.05	APM00-SBTR- <b>35J</b>	1	0.5	15°		
<b>BT R3508</b> <small>New</small>	○	○	○	○	○	○	○	15	3.5	2.5	0.08					1	60°
<b>BT R3515</b>	○	○	○	○	○	○	○	15	3.5	2.5	0.15					1	
<b>BT R5505</b>	○	○	○	○	○	○	○	19	5.5	3.7	0.05	APM00-SBTR- <b>55J</b>	1	3.8	4.0		
<b>BT R5508</b> <small>New</small>	○	○	○	○	○	○	○	19	5.5	3.7	0.08					1	
<b>BT R5515</b>	○	○	○	○	○	○	○	19	5.5	3.7	0.15					1	
<b>BT R8005</b>	○	○	○	○	○	○	○	24	8.0	5.2	0.05	APM00-SBTR- <b>80J</b>	1	ø6.8	3.8		
<b>BT R8008</b> <small>New</small>	○	○	○	○	○	○	○	24	8.0	5.2	0.08					1	
<b>BT R8015</b>	○	○	○	○	○	○	○	24	8.0	5.2	0.15					1	

## Recommended Cutting Conditions

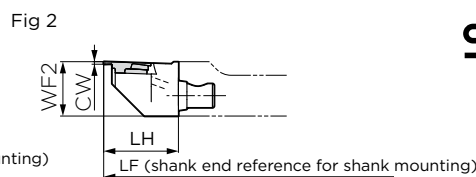
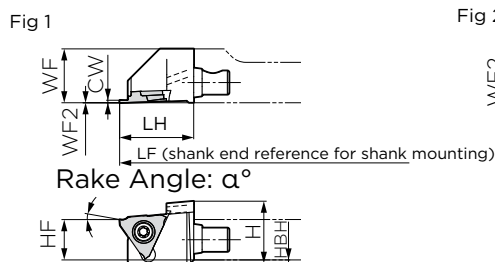
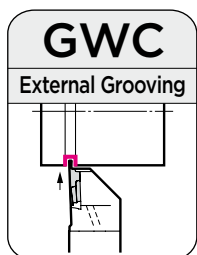
Work Material	P Free-Cutting Steel		P Carbon Steel		M Stainless Steel		S Exotic Alloy		N Non-Ferrous Metal	
	Plunging	Traverse Cut	Plunging	Traverse Cut	Plunging	Traverse Cut	Plunging	Traverse Cut	Plunging	Traverse Cut
Tool Grades	AC1030U/ACZ150 T1500A		AC1030U/AC530U/ACZ150 T1500A		AC1030U/AC5015S/AC5025S AC530U/ACZ150		AC5015S AC5025S		DL1500	
Cutting Speed vc (m/min)	50 to 150		50 to 150		50 to 150		20 to 80		150 to 300	
Feed Rate f (mm/rev)	0.02 to 0.10	0.02 to 0.15	0.02 to 0.05	0.02 to 0.10	0.02 to 0.04	0.02 to 0.06	0.01 to 0.03	0.01 to 0.04	0.02 to 0.05	0.02 to 0.10

● mark: Standard stocked item ○ mark: Planned stock (around summer 2024) — mark: Not available Blank: Made-to-order item Recommended Tightening Torque (N·m)

# APM type

New
External
Grooving
Threading
Zero Offset
Indexable Head
Internal Coolant

External Shallow Grooving Screw-on



## Head

## Parts

Cat. No.	Stock	Height H	Head LH	Cutting Edge Distance WF	Cutting Edge Height HF	Step HBH	Offset WF2	Overall Length LF	Width of Cut CW	Maximum Groove Depth	Applicable Size	Applicable Insert		Flat Insert Screw		Wrench
												Cat. No.	Fig	Flat Insert Screw	Wrench	
<b>APM10-GWC R-R3J</b>	●	18.3	20	13.5	10	3	0	104	0.33 to 3.00	0.8 to 2.5	10	TGAR3...	1	BFTX0409N	3.4 <sup>†1</sup>	TRX15(*2)
<b>APM12-GWC R-R3J</b>	●	18.4	22	16.0	12	1	0	106	0.33 to 3.00	0.8 to 2.5	12					
<b>APM16-GWC R-R3J</b>	●	21.4	22	20.0	16	—	0	106	0.33 to 3.00	0.8 to 2.5	16					
<b>APM10-GWC R13.5-L3J</b>	●	18.3	20	—	10	3	13.5	104	0.33 to 3.00	0.8 to 2.5	10	TGAL3...	2	BFTX0409N	3.4 <sup>†1</sup>	TRX15(*2)
<b>APM12-GWC R16-L3J</b>	●	18.4	22	—	12	1	16.0	106	0.33 to 3.00	0.8 to 2.5	12					
<b>APM16-GWC R20-L3J</b>	●	21.4	22	—	16	—	20.0	106	0.33 to 3.00	0.8 to 2.5	16					

Refer to shank applicable sizes on P6 for applicable shanks. Refer to P13 for applicable inserts.  
 \*1 Cermet inserts have a recommended tightening torque of 4N·m.  
 Right-handed (part number suffix: -R3J) heads can be used with right-handed (R) inserts.  
 \*2 Wrenches are sold separately from heads.

## Selecting GWC series Heads

Integrated Arbor	Right-handed (R)	Left-handed (L)
APM type	Right-handed (R) No Offset	Right-handed (R) With Offset
APM type Shank	APM-R00X84J (Common)	
GWC series Head	APM00-GWC R-R3J	APM00-GWC R:000-L3J <i>Offset Dimensions</i>
Applicable Insert	TGA R3000	TGA L3000
GWC series Head Mounted Appearance	<p>Shank: Common Head: No Offset, Right-handed Insert: Right-handed</p> <p>No Offset</p>	<p>Shank: Common Head: With Offset, Right-handed Insert: Left-handed</p> <p>With Offset</p>

## Rake Angle When Mounted on Holder ( $\alpha^\circ$ )

Coated Carbide	Carbide	DLC	Coated Cermet	Cermet
AC5015S AC5025S AC530U	H1	DL1500	T2500Z	T1500A
10°	20°	10°	10°	5°

● mark: Standard stocked item Recommended Tightening Torque (N·m)

# APM type

Figure shows right-handed (R) tool.

Fig 1 (Grooving)

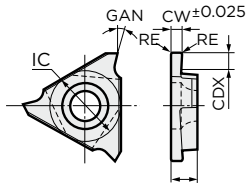
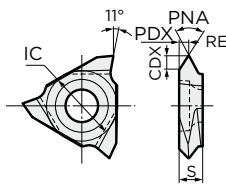


Fig 2 (Threading)



Rake Angle by Grade (Grooving)

Grade	Cutting Edge Shape	GAN
Coated Carbide AC5015S	Honing	15°
Coated Carbide AC5025S	Honing	15°
Coated Carbide AC530U	Honing	15°
Carbide H1	Sharp Edged	25°
DLC DL1500	Sharp Edged	25°
Coated Cermet T2500Z	Honing	15°
Cermet T1500A	Sharp Edged	10°

\* For the rake angle with head mounted, refer to P12.

Insert (Grooving) (      Coated Carbide /  Cemented Carbide /      DLC /      Cermet )

Dimensions (mm)

Cat. No. <sup>1</sup>	AC5015S		AC5025S		AC530U		H1		DL1500		T2500Z		T1500A		Width of Cut CW	Maximum Groove Depth CDX	Corner Radius RE	Inscribed Circle IC	Thickness S	Applicable Heads	Fig
	R	L	R	L	R	L	R	L	R	L	R	L	R	L							
TGA R/L3033(E)					○	○	○	○			○	○	○	○	0.33	0.8	0.05	9.525	3.18	APMOO-GWCR-R3J	1
TGA R/L3043(E) <sup>New</sup>					○	○								○	0.43	0.8	0.05	9.525	3.18		1
TGA R/L3050(E)					○	○	○	○	○	○	○	○	○	○	0.50	1.2	0.05	9.525	3.18		1
TGA R/L3053(E) <sup>New</sup>					○	○								○	0.53	1.2	0.05	9.525	3.18		1
TGA R/L3065(E) <sup>New</sup>					○	○								○	0.65	1.2	0.05	9.525	3.18		1
TGA R/L3075(E)					○	○	○	○	○	○	○	○	○	○	0.75	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3080(E) <sup>New</sup>					○	○								○	0.80	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3095(E)					○	○	○	○			○	○	○	○	0.95	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3100(E)	○	○	○	○	○	○			○	○	○	○	○	○	1.00	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3110(E)	○	○	○	○	○	○					○	○	○	○	1.10	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3120(E) <sup>New</sup>					○	○								○	1.20	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3125(E)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.25	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3130(E) <sup>New</sup>					○	○								○	1.30	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3135(E)					○	○					○	○	○	○	1.35	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3140(E) <sup>New</sup>					○	○								○	1.40	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3145(E)					○	○	○	○			○	○	○	○	1.45	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3150(E)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	1.50	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3160(E) <sup>New</sup>					○	○								○	1.60	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3165(E)					○	○					○	○	○	○	1.65	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3175(E)					○	○					○	○	○	○	1.75	2.0	0.1 <sup>2</sup>	9.525	3.18		1
TGA R/L3185(E)					○	○	○	○			○	○	○	○	1.85	2.0	0.1 <sup>2</sup>	9.525	3.18	1	
TGA R/L3200(E)	○	○	○	○	○	○	○	○	○	○	○	○	○	○	2.00	2.5	0.1 <sup>2</sup>	9.525	3.18	1	
TGA R/L3220(E)					○	○					○	○	○	○	2.20	2.5	0.1 <sup>2</sup>	9.525	3.18	1	
TGA R/L3230(E)					○	○	○	○			○	○	○	○	2.30	2.5	0.1 <sup>2</sup>	9.525	3.18	1	
TGA R/L3250(E)					○	○	○	○			○	○	○	○	2.50	2.5	0.1 <sup>2</sup>	9.525	3.18	1	
TGA R/L3265(E)					○	○					○	○	○	○	2.65	2.5	0.1 <sup>2</sup>	9.525	3.18	1	
TGA R/L3270(E)					○	○					○	○	○	○	2.70	2.5	0.1 <sup>2</sup>	9.525	3.18	1	
TGA R/L3280(E)					○	○					○	○	○	○	2.80	2.5	0.1 <sup>2</sup>	9.525	3.18	1	
TGA R/L3300(E) <sup>New</sup>	○	○	○	○	○	○			○	○			○	3.00	2.5	0.1 <sup>2</sup>	9.525	3.18	1		

<sup>1</sup> Add E as the part number suffix for T1500A. Right-handed (R) inserts can be used with right-handed (part number suffix: -R3J) heads.

<sup>2</sup> T1500A is RE = 0.2

## Recommended Cutting Conditions

Work Material	P General Steel			M Stainless Steel			S Exotic Alloy	N Non-Ferrous Metal		
Tool Grades	AC530U		T2500Z	T1500A		AC5015S AC5025S	AC530U	AC5015S AC5025S	H1	DL1500
Cutting Speed vc (m/min)	50 to 200		100 to 180	100 to 180		50 to 200	50 to 200	20 to 80	up to 300	up to 300
Feed Rate f (mm/rev)	0.02 to 0.10		0.05 to 0.10	0.05 to 0.08		0.02 to 0.10	0.02 to 0.10	0.01 to 0.03	0.05	0.15

Insert (60°/55° General Screw for Threading) (      Coated Carbide /      DLC /      Cermet )

Dimensions (mm)

Cat. No.	AC5015S		AC5025S		AC1030U		DL1500		T1500A		Pitch		Corner Radius RE	X Direction PDX	Depth of Cut CDX	Included Angle PNA	Inscribed Circle IC	Thickness S	Applicable Heads	Fig
	R	L	R	L	R	L	R	L	R	L	mm	Threads/Inch								
TTE R/L36002075	○	○	○	○	○	○	○	○	○	○	0.20 to 0.75	80 to 32	0.05	0.55	0.65	60	9.525	3.18	APMOO-GWCR-R3J	2
TTE R/L36005125	○	○	○	○	○	○	○	○	○	○	0.50 to 1.25	56 to 20	0.05	1.00	1.30	60	9.525	3.18		2
TTE R/L3601015	○	○	○	○	○	○	○	○	○	○	1.00 to 1.50	24 to 16	0.10	1.30	1.80	60	9.525	3.18	2	
TTE R/L3601530	○	○	○	○	○	○	○	○	○	○	1.50 to 3.00	16 to 8	0.20	1.70	2.40	60	9.525	3.18	2	
TTE R/L3554816	○	○	○	○	○	○	○	○	○	○	—	48 to 16	0.05	1.00	1.50	55	9.525	3.18	APMOO-GWCR...-L3J	2
TTE R/L3552008	○	○	○	○	○	○	○	○	○	○	—	20 to 8	0.10	1.50	2.40	55	9.525	3.18		2

Right-handed (R) inserts can be used with right-handed (part number suffix: -R3J) heads.

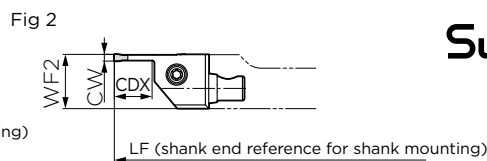
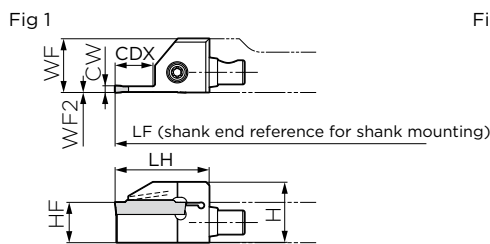
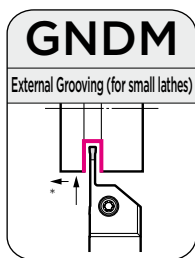
● mark: Standard stocked item ○ mark: Planned stock (around summer 2024) Blank: Made-to-order item

# APM type

**New** External Grooving Zero Offset Indexable Head Internal Coolant

\* For traverse cutting (groove expansion), use a multi-functional or profiling insert.

For Small Lathes, External Multi-Functional (Grooving, Traverse Cutting and Profiling) Clamp-on



## Head

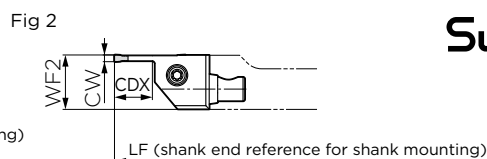
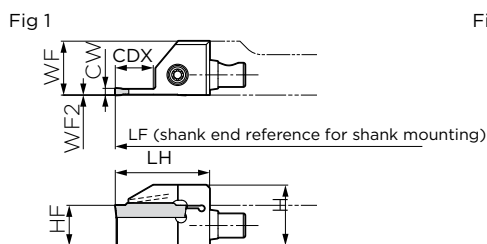
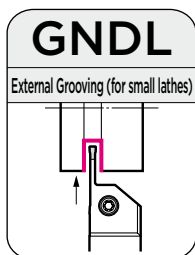
## Parts Dimensions (mm)

Cat. No.	Stock	Height	Head	Cutting Edge Distance	Cutting Edge Height	Offset	Overall Length	Width of Cut	Maximum Groove Depth	Max. Cut-off Dia.	Applicable Size	Fig	Flat Insert Screw		Wrench
		H	LH	WF	HF	WF2	LF	CW	CDX						
APM16-GNDMR-213J	●	21.9	28	20	16	0	112	2.00	13	25	16	1	BX0515	4.0	LH040(*)
APM16-GNDMR-313J	●	21.9	28	20	16	0	112	3.00	13	25	16	1			
APM16-GNDMR20-213J	●	21.9	28	—	16	20	112	2.00	13	25	16	2			
APM16-GNDMR20-313J	●	21.9	28	—	16	20	112	3.00	13	25	16	2			

Refer to shank applicable sizes on P6 for applicable shanks. Select heads and inserts with matching width of cut CW. Refer to P15 for applicable inserts. Refer to P16 for head feed direction selection. \* Wrenches are sold separately from heads. The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to P16.

**New** External Grooving Zero Offset Indexable Head Internal Coolant

External Deep Grooving & Cut-off Clamp-on



## Head

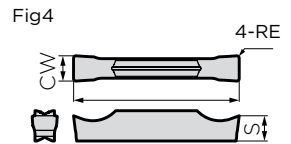
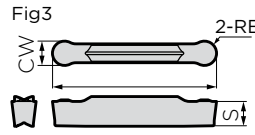
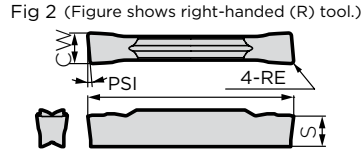
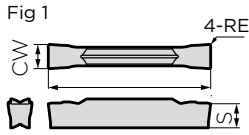
## Parts Dimensions (mm)

Cat. No.	Stock	Height	Head	Cutting Edge Distance	Cutting Edge Height	Offset	Overall Length	Width of Cut	Maximum Groove Depth	Max. Cut-off Dia.	Applicable Size	Fig	Flat Insert Screw		Wrench
		H	LH	WF	HF	WF2	LF	CW	CDX						
APM10-GNDLR-1.2509J	●	13.9	22	13.5	10	0	106	1.25	9.0	18	10	1	BFTX0412N	3.0	LT15-10(*)
APM10-GNDLR-1.509J	●	13.9	22	13.5	10	0	106	1.50	9.0	18	10	1			
APM10-GNDLR-209J	●	13.9	22	13.5	10	0	106	2.00	9.0	18	10	1			
APM10-GNDLR-309J	●	13.9	22	13.5	10	0	106	3.00	9.0	18	10	1			
APM10-GNDLR13.5-1.2509J	●	13.9	22	—	10	13.5	106	1.25	9.0	18	10	2			
APM10-GNDLR13.5-1.509J	●	13.9	22	—	10	13.5	106	1.50	9.0	18	10	2			
APM10-GNDLR13.5-209J	●	13.9	22	—	10	13.5	106	2.00	9.0	18	10	2			
APM10-GNDLR13.5-309J	●	13.9	22	—	10	13.5	106	3.00	9.0	18	10	2			
APM12-GNDLR-1.2512J	●	17.9	28	16	12	0	112	1.25	12.0	24	12	1	BFTX0412N	3.0	LT15-10(*)
APM12-GNDLR-1.512J	●	17.9	28	16	12	0	112	1.50	12.0	24	12	1			
APM12-GNDLR-213J	●	17.9	28	16	12	0	112	2.00	13.0	25	12	1			
APM12-GNDLR-313J	●	17.9	28	16	12	0	112	3.00	13.0	25	12	1			
APM12-GNDLR16-1.2512J	●	17.9	28	—	12	16	112	1.25	12.0	24	12	2			
APM12-GNDLR16-1.512J	●	17.9	28	—	12	16	112	1.50	12.0	24	12	2			
APM12-GNDLR16-213J	●	17.9	28	—	12	16	112	2.00	13.0	25	12	2			
APM12-GNDLR16-313J	●	17.9	28	—	12	16	112	3.00	13.0	25	12	2			
APM16-GNDLR-1.2512.5J	●	21.9	33	20	16	0	117	1.25	12.5	25	16	1	BX0515	4.0	LH040(*)
APM16-GNDLR-1.512.5J	●	21.9	33	20	16	0	117	1.50	12.5	25	16	1			
APM16-GNDLR-216J	●	21.9	33	20	16	0	117	2.00	16.0	32	16	1			
APM16-GNDLR-316J	●	21.9	33	20	16	0	117	3.00	16.0	32	16	1			
APM16-GNDLR20-1.2512.5J	●	21.9	33	—	16	20	117	1.25	12.5	25	16	2			
APM16-GNDLR20-1.512.5J	●	21.9	33	—	16	20	117	1.50	12.5	25	16	2			
APM16-GNDLR20-216J	●	21.9	33	—	16	20	117	2.00	16.0	32	16	2			
APM16-GNDLR20-316J	●	21.9	33	—	16	20	117	3.00	16.0	32	16	2			

Refer to shank applicable sizes on P6 for applicable shanks. Select heads and inserts with matching width of cut CW. Refer to P15 for applicable inserts. Refer to P16 for head feed direction selection. \* Wrenches are sold separately from heads. The maximum groove depth CDX is the figure during grooving. For maximum depth of cut during traverse cutting and profiling, refer to P16.

# APM type

Inserts for GNDM-J type / GNDL-J type ( ■ Coated Carbide / □ Cemented Carbide / ■ DLC / ■ Cermet )



## Grooving / Traverse Cutting

Dimensions (mm)

Cat. No.	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	Width of Cut		Corner Radius	Overall Length	Thickness	Pcs/ Pack	Fig
										CW						
										Width of Cut	Tolerance	RE	L	S		
GCM N3002-MG	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	5	1
N3004-MG	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	5	1
GCM N2002-ML	—	—	—	—	●	●	●	●	●	2.0	±0.03	0.2	21.1	3.6	—	1
GCM N3002-ML	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.2	21.1	3.8	5	1
N3004-ML	●	●	●	●	●	●	●	●	●	3.0	±0.03	0.4	21.1	3.8	—	1

## Cut-off (Handed Edge)

Dimensions (mm)

Cat. No.	AC8025P	AC8035P	AC830P	AC5015S	AC5025S	AC520U	AC530U	AC1030U	Lead Angle	Width of Cut		Corner Radius	Overall Length	Thickness	Pcs/ Pack	Fig
										CW						
										Width of Cut	Tolerance	RE	L	S		
GCM R2002-CG-05	●	●	●	●	●	●	●	●	5°	2.0	±0.03	0.2	21.1	3.6	—	2
GCM L2002-CG-05	●	●	●	●	●	●	●	●	5°	2.0	±0.03	0.2	21.1	3.6	5	2
GCM R3002-CG-05	●	●	●	●	●	●	●	●	5°	3.0	±0.03	0.2	21.3	3.8	—	2
GCM L3002-CG-05	●	●	●	●	●	●	●	●	5°	3.0	±0.03	0.2	21.3	3.8	—	2
GCM R20003-CF-10	—	—	—	●	●	●	●	●	10°	2.0	±0.08	0.03	22.4	3.6	—	2
GCM L20003-CF-10	—	—	—	●	●	●	●	●	10°	2.0	±0.08	0.03	22.4	3.6	—	2
GCM R30003-CF-10	—	—	—	●	●	●	●	●	10°	3.0	±0.08	0.03	22.4	3.8	—	2
GCM L30003-CF-10	—	—	—	●	●	●	●	●	10°	3.0	±0.08	0.03	22.4	3.8	—	2
GCM R20003-CF-15	—	—	—	●	●	●	●	●	15°	2.0	±0.08	0.03	22.4	3.6	—	2
GCM L20003-CF-15	—	—	—	●	●	●	●	●	15°	2.0	±0.08	0.03	22.4	3.6	—	2
GCM R30003-CF-15	—	—	—	●	●	●	●	●	15°	3.0	±0.08	0.03	22.4	3.8	—	2
GCM L30003-CF-15	—	—	—	●	●	●	●	●	15°	3.0	±0.08	0.03	22.4	3.8	—	2

GCMR: Right-handed, GCML: Left-handed

## Grooving / Cut-off

Dimensions (mm)

Cat. No.	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	Width of Cut		Corner Radius	Overall Length	Thickness	Pcs/ Pack	Fig
										CW						
										Width of Cut	Tolerance	RE	L	S		
GCM N2002-GG	—	●	●	—	●	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	—	1
GCM N3002-GG	—	●	●	—	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	5	1
N3004-GG	—	●	●	—	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	—	1
GCM N2002-GL	—	●	●	—	●	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	—	1
N2004-GL	—	●	●	—	●	●	●	●	—	2.0	±0.03	0.4	21.1	3.6	5	1
GCM N3002-GL	—	●	●	—	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	—	1
N3004-GL	—	●	●	—	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	—	1
GCM N125005-GF	—	—	—	—	—	—	—	●	—	1.25	±0.03	0.05	17.4	3.2	—	1
GCM N150005-GF	—	—	—	—	—	—	—	●	—	1.5	±0.03	0.05	17.8	3.7	—	1
GCM N2002-GF	—	—	—	—	●	●	●	●	—	2.0	±0.03	0.2	21.1	3.6	—	1
N2004-GF	—	—	—	—	●	●	●	●	—	2.0	±0.03	0.4	21.1	3.6	5	1
GCM N3002-GF	—	●	●	—	●	●	●	●	—	3.0	±0.03	0.2	21.1	3.8	—	1
N3004-GF	—	●	●	—	●	●	●	●	—	3.0	±0.03	0.4	21.1	3.8	—	1

## External Profiling / External Radius Grooving

Dimensions (mm)

Cat. No.	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	T2500A	Width of Cut		Corner Radius	Overall Length	Thickness	Pcs/ Pack	Fig
										CW						
										Width of Cut	Tolerance	RE	L	S		
GCM N3015-RG	●	●	●	●	●	●	●	●	●	3.0	±0.03	1.5	21.1	3.8	5	3

## Profiling / Radius Grooving / Necking

Dimensions (mm)

Cat. No.	AC8025P	AC8035P	AC830P	AC425K	AC5015S	AC5025S	AC520U	AC530U	Width of Cut		Corner Radius	Overall Length	Thickness	Pcs/ Pack	Fig	
									CW							
									Width of Cut	Tolerance	RE	L	S			
GCM N2010-RN	—	—	—	—	●	●	●	●	—	2.0	±0.03	1.0	21.7	3.6	5	3
N3015-RN	●	●	●	●	●	●	●	●	—	3.0	±0.03	1.5	22.6	3.8	—	3

## Non-Ferrous Metals

Dimensions (mm)

Cat. No.	H10	DL1500	Width of Cut		Corner Radius	Overall Length	Thickness	Pcs/ Pack	Fig
			CW						
			Width of Cut	Tolerance	RE	L	S		
GCG N2002-GA	●	○	2.0	±0.025	0.2	21.1	3.6	5	4
N3002-GA	●	○	3.0	±0.025	0.2	21.1	3.8	—	4

## Part Number Suffix Code (Chipbreakers)

Type	Symbol	Applications
Grooving / Traverse Cutting	MG	Multi-functional / General-purpose
	ML	Multi-functional / Low-feed
Grooving / Cut-off	GG	Grooving / General-purpose
	GL	Grooving / Low-feed
	GF	Grooving / Low cutting force

Type	Symbol	Applications
Cut-off (Handed Edge)	CG	Cut-off / General-purpose
	CF	Cut-off / Low cutting force
External Profiling / External Radius Grooving	RG	Profiling / General-purpose
Profiling / Radius Grooving / Necking	RN	Facing / Necking / General-purpose
For Non-Ferrous Metals	GA	Non-Ferrous Metals / General-purpose

Chipbreaker Selection Recommended Cutting Conditions

Select heads and inserts with matching width of cut (CW).

● mark: Standard stocked item ○ mark: Planned stock (around summer 2024) Blank: Made-to-order item — mark: Not available



# APM type

## Chipbreaker Selection Guide for GND series Head Inserts

	Grooving / Traverse Cutting	Grooving	Cut-off	
1st Recommendation	<b>MG type</b> General-purpose	<b>GG type</b> General-purpose	<b>GG type</b> General-purpose	
	Improved Chip Control Chipping Prevention	Improved Chip Control Chipping Prevention	Central Burr Prevention Improved Chip Control	Improved Chip Control Chipping Prevention
2nd Recommendation	<b>ML type</b> Low-Feed Chip Control Emphasized Cutting Edge Width: Up to 4.0 mm Cutting Edge Width: 5.0 mm and greater	<b>GL type</b> General-purpose Chip Control Emphasized	<b>CG type</b> Allg. Empfehlung Feed Direction Lead Angle 5°	<b>GL type</b> Allg. Empfehlung Chip Control Emphasized
		Improved Chip Control Reduced Chattering Chipping Prevention	Central Burr Prevention Chipping Prevention	Improved Chip Control Reduced Chattering Chipping Prevention
		<b>GF type</b> Low Cutting Force	<b>CF type</b> Low Cutting Force Feed Direction Lead Angle 10°/15°	<b>GF type</b> Low Cutting Force

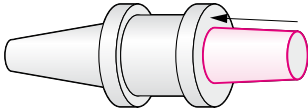
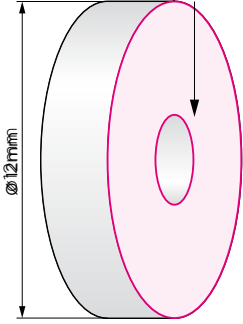
	External Profiling / External Radius Grooving	Facing / Internal Profiling / Radius Grooving / Necking	For Non-Ferrous Metals
Recommendation	<b>RG type</b> General-purpose 1st Recommendation	<b>RN type</b> General-purpose 2nd Recommendation 2mm Width Supported	<b>GA type</b> General-purpose 1st Recommendation

## Grade Selection Guide for GND series Head Inserts

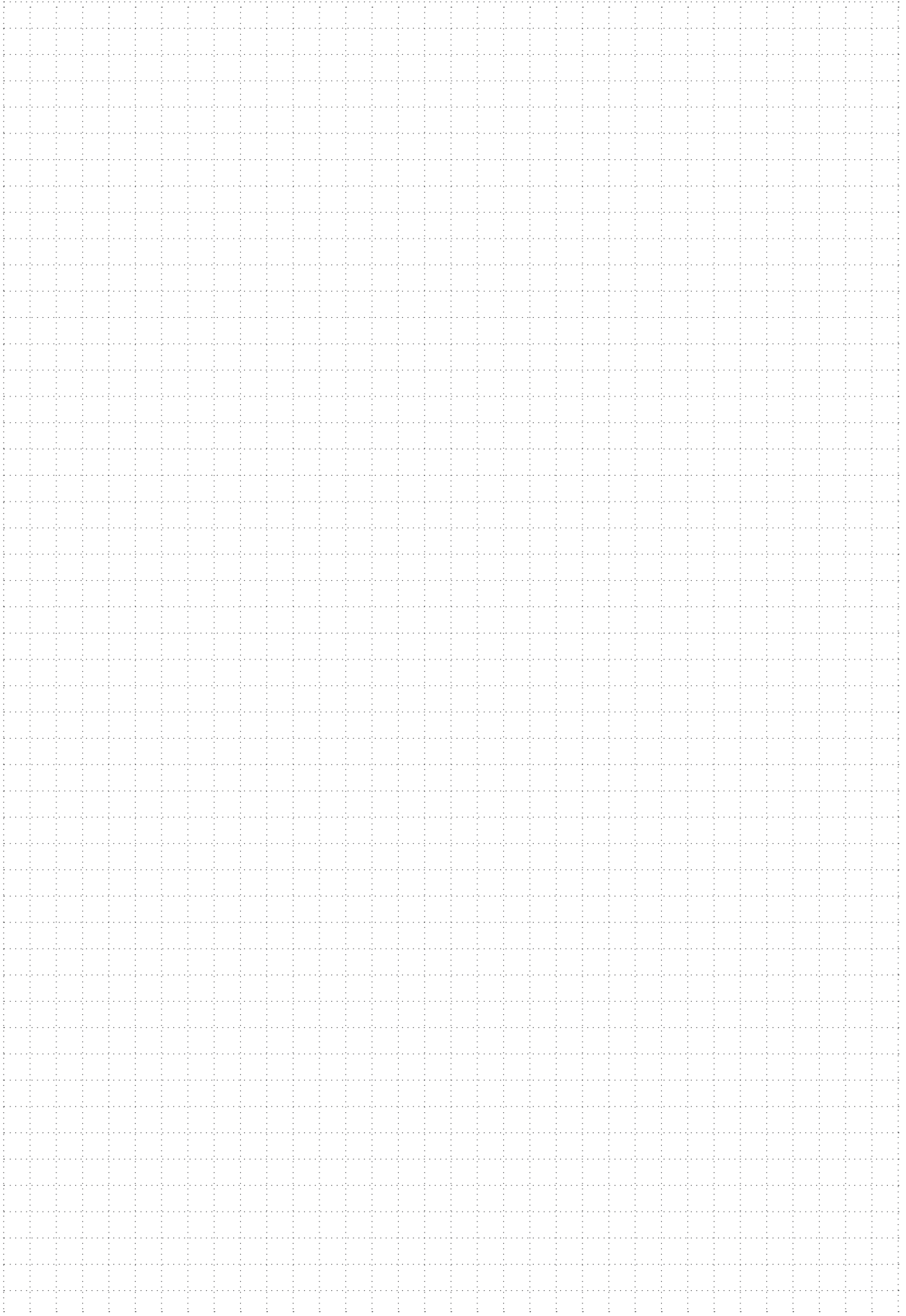
Applications	<b>P</b> Steel	<b>M</b> Stainless Steel	<b>K</b> Cast Iron	<b>S</b> Exotic Alloy	<b>N</b> Non-Ferrous Metal
Continuous/High-speed	<b>AC8025P</b> CVD Surface Finish Emphasized	<b>AC8035P</b> (AC830P) CVD	<b>AC425K</b> CVD 1st Recommendation	<b>AC5015S</b>	
	<b>AC8035P</b> (AC830P) CVD Cermet	<b>AC5015S</b> PVD	<b>AC8025P</b> CVD	<b>AC5025S</b> (AC520U) PVD 1st Recommendation	<b>DL1500</b> 1st Recommendation
Interrupted/Unstable	<b>AC5025S</b> (AC520U) PVD	<b>AC5025S</b> (AC520U) PVD 1st Recommendation	<b>AC5015S</b> PVD	<b>AC530U</b> AC1030U PVD	<b>H10</b> Uncoated Carbide
	<b>AC530U/AC1030U</b> PVD 1st Recommendation	<b>AC530U</b> AC1030U PVD	<b>AC5025S</b> (AC520U) PVD		

# APM type

## Application Examples

Titanium Alloy Medical Component	Kovar Semiconductor Component <span style="float: right; border: 1px solid black; padding: 2px;">S</span>
<p>Machined surface quality equivalent to integrated type in vibration cutting of titanium alloy</p> 	<p>Realises accuracy equivalent to integrated type in facing</p> 
<p>Shank: APM-R1212X84J Head: APM12-SDJCR11T3J                      Insert: DCGT11T302                      Cutting Conditions: <math>v_c = 50\text{m/min}</math> <math>f = 0.03\text{mm/rev}</math>  <math>a_p = 1.0\text{mm}</math> Vibration Cutting Wet</p>	<p>Shank: APM-R1212X84J Head: APM12-SCLCR09T3J                      Insert: CCGT09T301                      Cutting Conditions: <math>v_c = 60\text{m/min}</math> <math>f = 0.06\text{mm/rev}</math>  <math>a_p = 0.5\text{mm}</math> Wet</p>

# Notizen

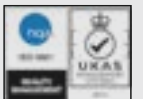




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