

THE NEW VALUE FRONTIER

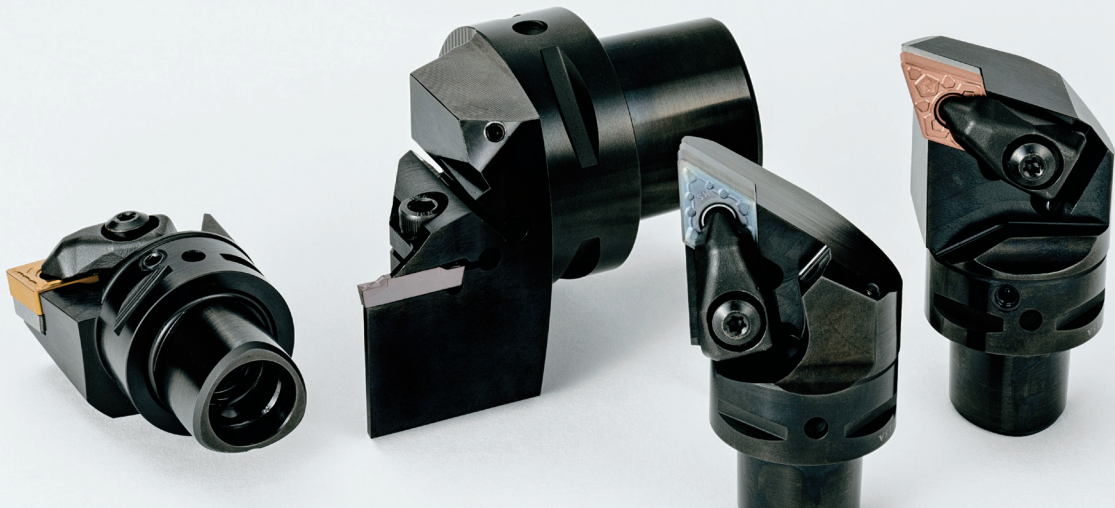


Polygon Taper Shank | **KPC Series**

Polygon Taper Shank

# KPC Series

**NEW**



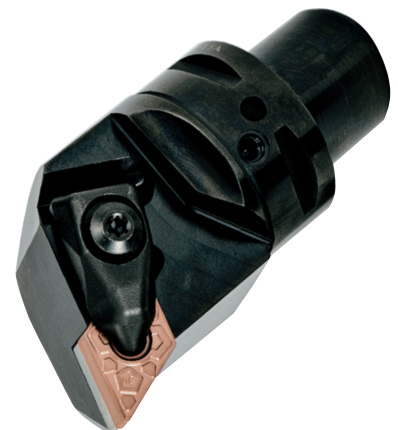
**Polygon Taper Shank with High Rigidity and High Precision**

Polygon taper design and dual contact between the taper and the flange face for high rigidity

Locational accuracy within  $\pm 2\mu\text{m}$

Turning, grooving, cut-off and threading styles available

**Lineup Expansion**



Polygon Taper Shank

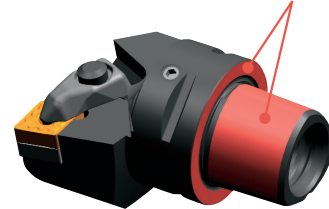
# KPC Series

Polygon Taper Shank with High Rigidity and High Precision

## PSC Shank Tools

JIS B 6066-1 Dual contact between polygon taper shank and the main spindle face  
ISO26623-1 Polygonal taper interface with flange contact surface

Dual contact between taper face and flange face



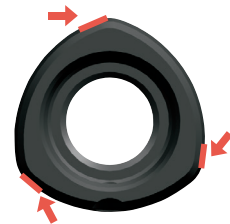
### 1 High Rigidity

Polygon taper design and dual contact between the taper and the flange face for high rigidity

### 2 High Precision

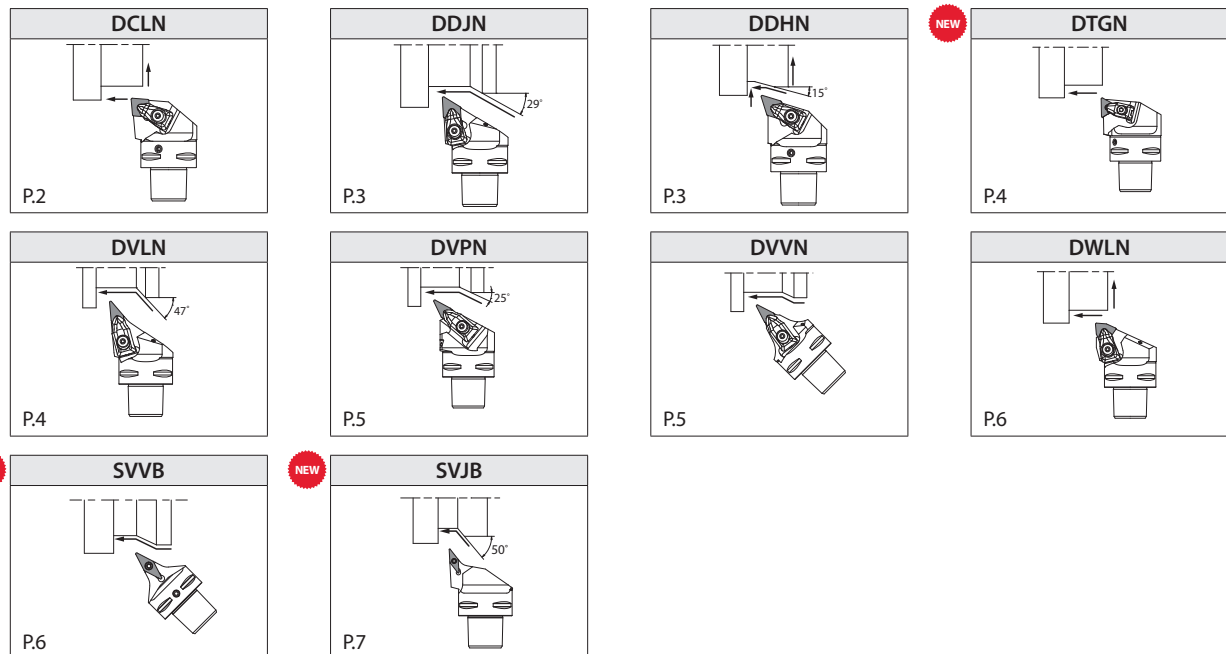
Locational accuracy within  $\pm 2\mu\text{m}$

Distributes cutting forces evenly between 3 faces for enhanced rigidity and centering accuracy

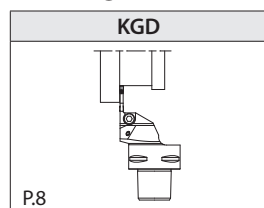


Even distribution of force between 3 faces enhances rigidity and centering

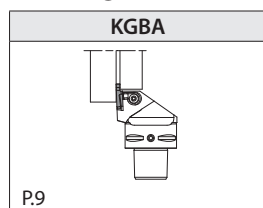
#### Turning



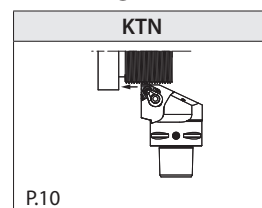
#### Grooving / Cut-Off



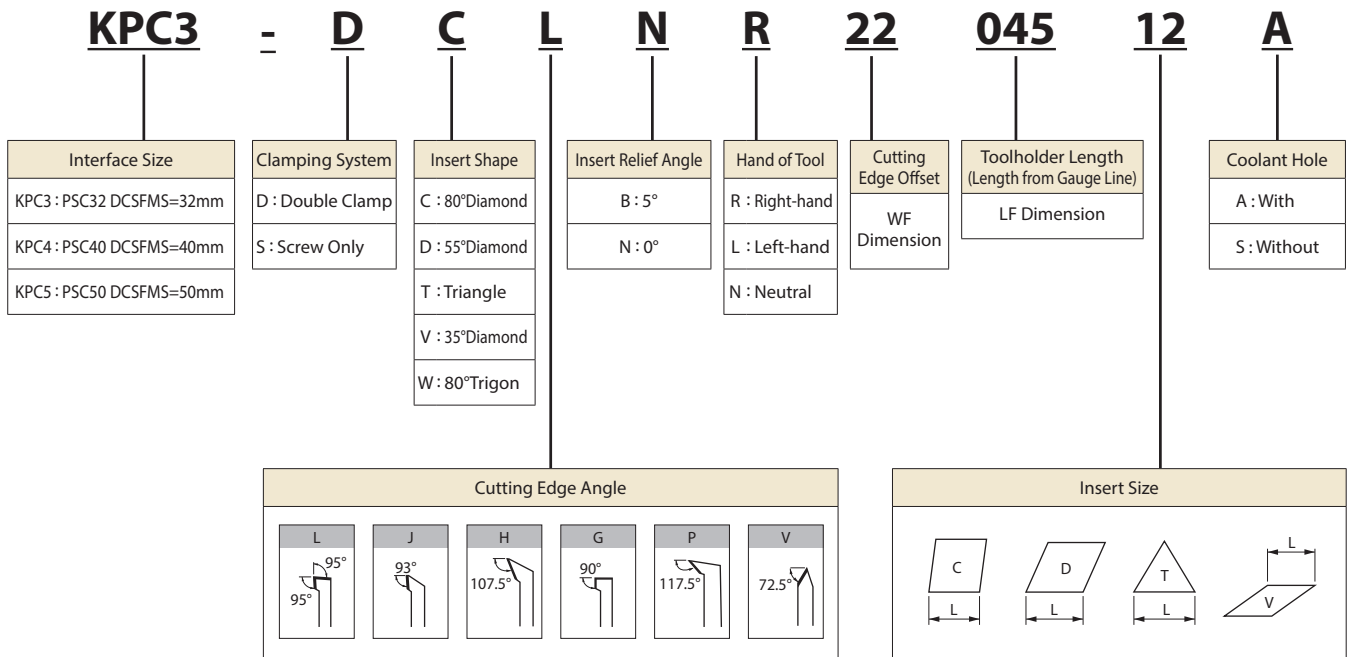
#### Grooving



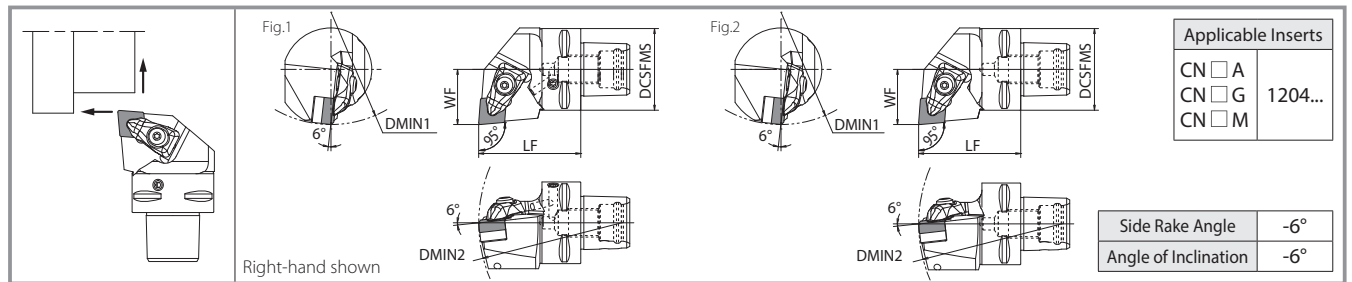
#### Threading



## Identification System (for External)



## DCLN (External / Facing)



## Toolholder Dimensions

Description	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Shape	Spare Parts					
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2			Clamp	Screw	Spring	Shim	Shim Screw	Wrench
	KPC3-DCLN <sup>R</sup> / <sub>L</sub> 22045-12A	●		●	With	32	45	22			60	121	0.8	Fig.1	CP-3D-S	CS-3D-TR
KPC4-DCLN <sup>R</sup> / <sub>L</sub> 27050-12A	●	●	40	50		27	110	140	DC-44 *1(DC-44-C)	SB-4085TR						
KPC5-DCLN <sup>R</sup> / <sub>L</sub> 35060-12A	●	●	50	60		35	110	165								
KPC3-DCLN <sup>R</sup> / <sub>L</sub> 22045-12S	●	●	Without	32	45	22	60	121	0.8	Fig.2	CP-3D-S	CS-3D-TR	SP-3D	SP-441P *1(SP-441P-C)	M3X8	FT-15
KPC4-DCLN <sup>R</sup> / <sub>L</sub> 27050-12S	●	●		40	50	27	110	140						DC-44 *1(DC-44-C)	SB-4085TR	
KPC5-DCLN <sup>R</sup> / <sub>L</sub> 35060-12S	●	●		50	60	35	110	165								

• Pressure Resistance : Up to 7 MPa

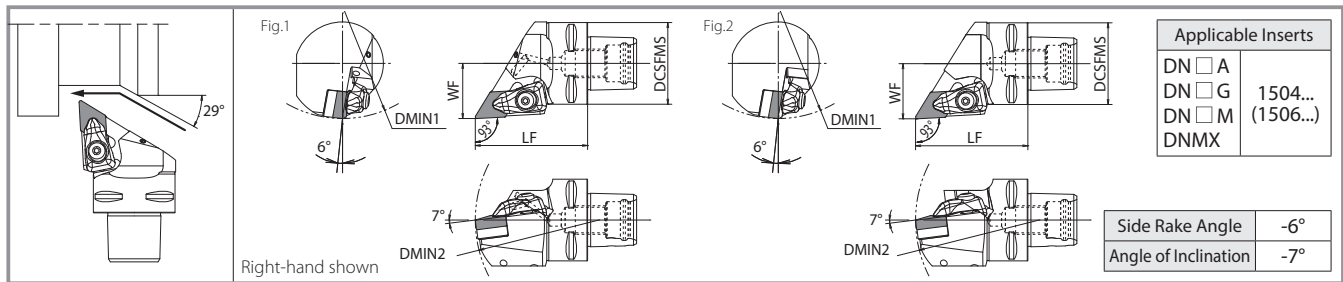
• When using inserts whose corner-R (RE) is greater than 1.2mm, additional modifications to the toolholder or shim may be necessary to prevent interfere with workpiece

• Recommended Tightening Torque 3.9 N·m

\* 1 SX chipbreaker inserts require a different shim (optional)

● : Standard Stock

## DDJN (External / Copying)



### Toolholder Dimensions

Description	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Shape	Spare Parts					
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2			Clamp	Screw	Spring	Shim	Shim Screw	Wrench
KPC3-DDJN <sup>R/L</sup> 22050-15A	●	●	With	32	50	22	110	121	0.8	Fig.1	CP-3D-S	CS-3D-TR	SP-3D	DD-44 *1(DD-43)	SB-4085TR	FT-15
KPC4-DDJN <sup>R/L</sup> 27055-15A	●	●		40	55	27	110	145								
KPC5-DDJN <sup>R/L</sup> 35060-15A	●	●		50	60	35	110	165								
KPC3-DDJN <sup>R/L</sup> 22050-15S	●	●	Without	32	50	22	110	121	0.8	Fig.2	CP-3D-S	CS-3D-TR	SP-3D	DD-44 *1(DD-43)	SB-4085TR	FT-15
KPC4-DDJN <sup>R/L</sup> 27055-15S	●	●		40	55	27	110	145								
KPC5-DDJN <sup>R/L</sup> 35060-15S	●	●		50	60	35	110	165								

• Pressure Resistance: Up to 7 MPa

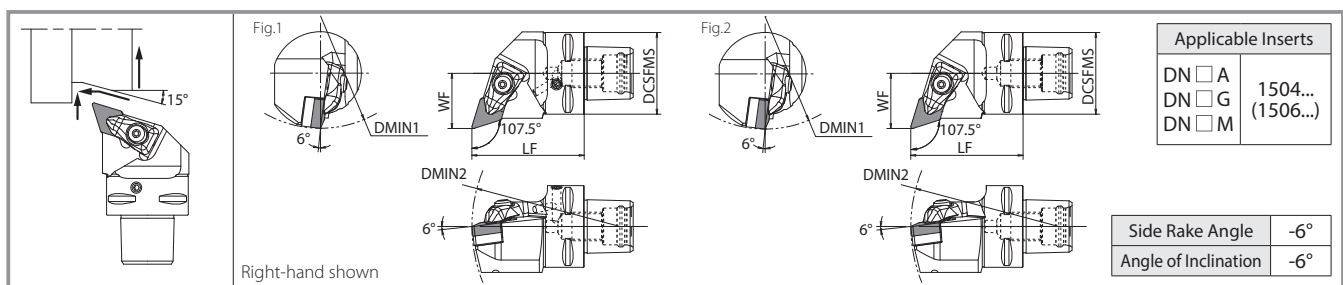
• When using inserts whose corner-R (RE) is greater than 1.2mm, additional modifications to the toolholder or shim may be necessary to prevent interfere with workpiece

• Recommended Tightening Torque 3.9 N·m

\* 1 Shims indicated within ( ) are not included with the toolholder. To change insert thickness, please purchase it separately

● : Standard Stock

## DDHN (External / Facing/ Copying)



### Toolholder Dimensions

Description	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Shape	Spare Parts					
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2			Clamp	Screw	Spring	Shim	Shim Screw	Wrench
KPC3-DDHN <sup>R/L</sup> 22050-15A	●	●	With	32	50	22	110	121	0.8	Fig.1	CP-3D-S	CS-3D-TR	SP-3D	DD-44 *1(DD-43)	SB-4085TR	FT-15
KPC4-DDHN <sup>R/L</sup> 27055-15A	●	●		40	55	27	110	145								
KPC5-DDHN <sup>R/L</sup> 35060-15A	●	●		50	60	35	110	165								
KPC3-DDHN <sup>R/L</sup> 22050-15S	●	●	Without	32	50	22	110	121	0.8	Fig.2	CP-3D-S	CS-3D-TR	SP-3D	DD-44 *1(DD-43)	SB-4085TR	FT-15
KPC4-DDHN <sup>R/L</sup> 27055-15S	●	●		40	55	27	110	145								
KPC5-DDHN <sup>R/L</sup> 35060-15S	●	●		50	60	35	110	165								

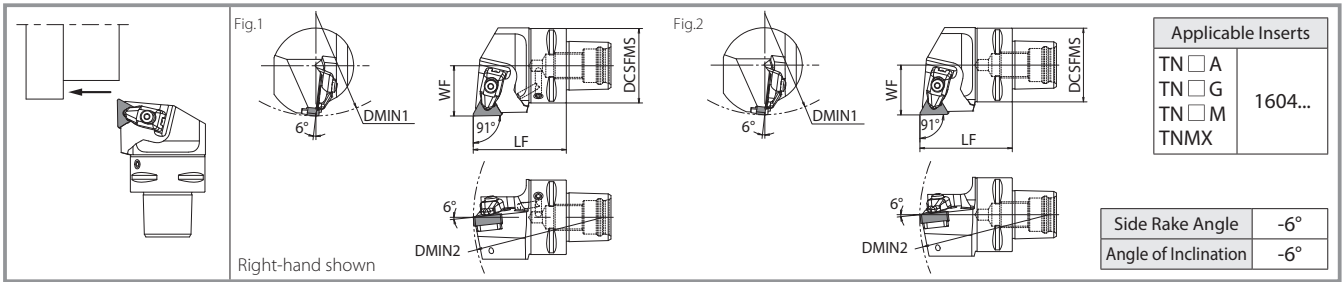
• Pressure Resistance: Up to 7 MPa

• When using inserts whose corner-R (RE) is greater than 1.2mm, additional modifications to the toolholder or shim may be necessary to prevent interfere with workpiece

• Recommended Tightening Torque 3.9 N·m

\* 1 Shims indicated within ( ) are not included with the toolholder. To change insert thickness, please purchase it separately

● : Standard Stock

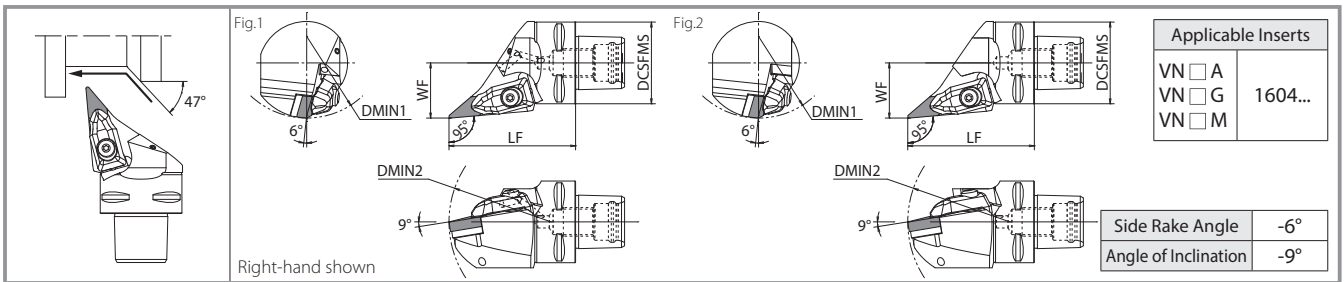


**Toolholder Dimensions**

Description	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Shape	Spare Parts						
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2			Clamp	Screw	Spring	Shim	Shim Screw	Wrench	Wrench (sold separately)
KPC3-DTGN R/L 22040-16A	●	●	With	32	40	22	110	116	0.8	Fig.1	CP-2D	CS-2D	SP-2D	DT-32	SB-3080TR	LW-2.5	FT-10
KPC4-DTGN R/L 27050-16A	●	●		40	50	27	110	140									
KPC5-DTGN R/L 35060-16A	●	●		50	60	35	110	165									
KPC3-DTGN R/L 22040-16S	●	●	Without	32	40	22	110	116	0.8	Fig.2	CP-2D	CS-2D	SP-2D	DT-32	SB-3080TR	LW-2.5	FT-10
KPC4-DTGN R/L 27050-16S	●	●		40	50	27	110	140									
KPC5-DTGN R/L 35060-16S	●	●		50	60	35	110	165									

- Pressure Resistance: Up to 7 MPa ● Standard Stock
- When using inserts whose corner-R (RE) is greater than 1.6mm, additional modifications to the toolholder or shim may be necessary to prevent interfere with workpiece
- Recommended tightening torque 1.7 N·m

**DVLN** (External / Copying)

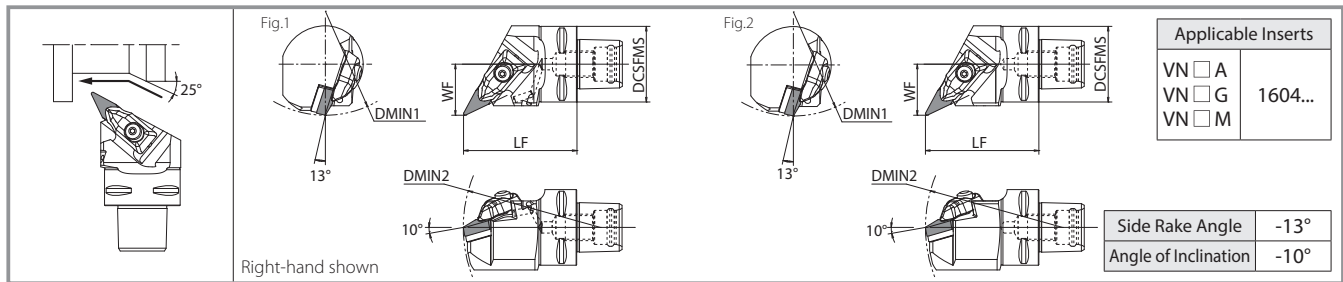


**Toolholder Dimensions**

Description	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Shape	Spare Parts					
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2			Clamp	Screw	Spring	Shim	Shim Screw	Wrench
KPC3-DVLN R/L 22058-16A	●	●	With	32	58	22	80	100	0.8	Fig.1	CP-5D-S	CS-3D-TR	SP-3D	DV-33	SB-4085TR	FT-15
KPC4-DVLN R/L 27062-16A	●	●		40	62	27	80	100								
KPC5-DVLN R/L 35065-16A	●	●		50	65	35	80	100								
KPC3-DVLN R/L 22058-16S	●	●	Without	32	58	22	80	100	0.8	Fig.2	CP-5D-S	CS-3D-TR	SP-3D	DV-33	SB-4085TR	FT-15
KPC4-DVLN R/L 27062-16S	●	●		40	62	27	80	100								
KPC5-DVLN R/L 35065-16S	●	●		50	65	35	80	100								

- Pressure Resistance: Up to 7 MPa ● Standard Stock
- When using inserts whose corner-R (RE) is greater than 1.2mm, additional modifications to the toolholder or shim may be necessary to prevent interfere with workpiece
- Recommended tightening torque 3.9 N·m

## DVPN (External / Facing/ Copying/ Undercutting)



### Toolholder Dimensions

Description	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Shape	Spare Parts					
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2			Clamp	Screw	Spring	Shim	Shim Screw	Wrench
KPC3-DVPN <sup>R</sup> / <sub>L</sub> 22055-16A	●	●	With	32	55	22	110	130	0.8	Fig.1	CP-5D-S	CS-3D-TR	SP-3D	DV-33	SB-4085TR	FT-15
KPC4-DVPN <sup>R</sup> / <sub>L</sub> 27060-16A	●	●		40	60	27	110	145								
KPC5-DVPN <sup>R</sup> / <sub>L</sub> 35065-16A	●	●		50	65	35	110	165								
KPC3-DVPN <sup>R</sup> / <sub>L</sub> 22055-16S	●	●	Without	32	55	22	110	130	0.8	Fig.2	CP-5D-S	CS-3D-TR	SP-3D	DV-33	SB-4085TR	FT-15
KPC4-DVPN <sup>R</sup> / <sub>L</sub> 27060-16S	●	●		40	60	27	110	145								
KPC5-DVPN <sup>R</sup> / <sub>L</sub> 35065-16S	●	●		50	65	35	110	165								

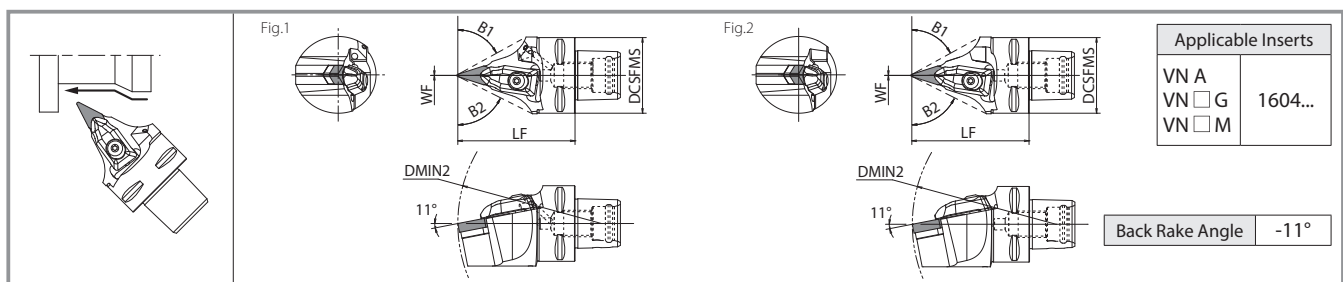
• Pressure Resistance: Up to 7 MPa

• When using inserts whose corner-R (RE) is greater than 1.2mm, it could be necessary additional modifications on the toolholder or the shim in order to prevent interfere with workpiece

• Recommended Tightening Torque 3.9 N·m

● : Standard Stock

## DVNN (External / Copying)



### Toolholder Dimensions

Description	Stock			Coolant Hole	Dimensions (mm)							Standard Corner-R (RE)	Shape	Spare Parts					
	R	N	L		DCSFMS	LF	WF	*1 B1 (°)	*1 B2 (°)	DMIN1	DMIN2			Clamp	Screw	Spring	Shim	Shim Screw	Wrench
KPC4-DVVNN00062-16A	●			With	40	62	0	61	63	-	152	0.8	Fig.1	CP-5D-S	CS-3D-TR	SP-3D	DV-33	SB-4085TR	FT-15
KPC5-DVVNN00065-16A	●				50	65	0	59	59	-	170								
KPC3-DVVNN00058-16S	●				32	58	0	68	68	-	140								
KPC4-DVVNN00062-16S	●			Without	40	62	0	61	63	-	152	0.8	Fig.2	CP-5D-S	CS-3D-TR	SP-3D	DV-33	SB-4085TR	FT-15
KPC5-DVVNN00065-16S	●				50	65	0	59	59	-	170								

• Pressure Resistance: Up to 7 MPa

• When using inserts whose corner-R (RE) is greater than 1.2mm, it could be necessary additional modifications on the toolholder or the shim in order to prevent interfere with workpiece

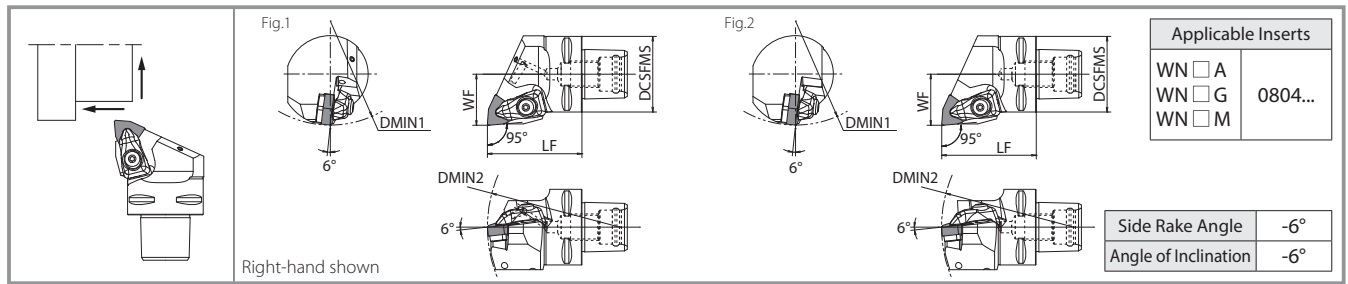
• Recommended Tightening Torque 3.9 N·m

\*1 Angle B1 and B2 show the area of interference between the holder and the cutting edge

● : Standard Stock



## DWLN (External / Facing)



### Toolholder Dimensions

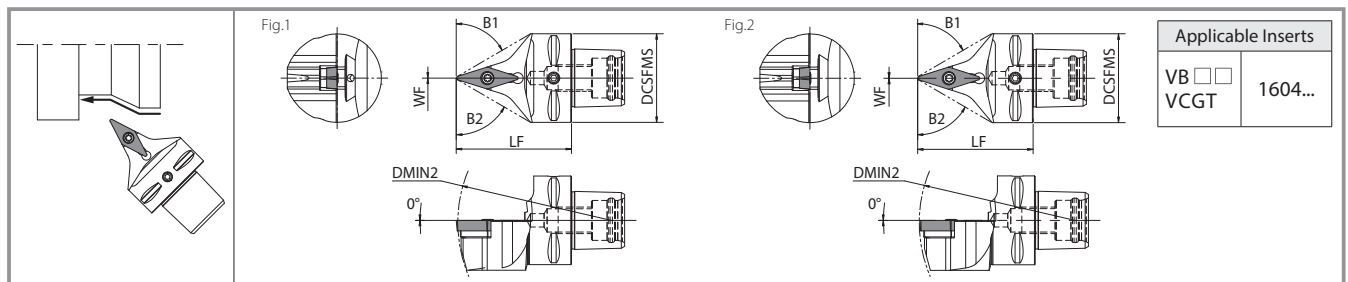
Description	Stock			Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Shape	Spare Parts					
	R	L	With		DCSFMS	LF	WF	DMIN1	DMIN2			Clamp	Screw	Spring	Shim	Shim Screw	Wrench
												Without					
KPC3-DWLN <sup>R/L</sup> 22047-08A	●	●	With	32	47	22	110	121	0.8	Fig.1							
KPC4-DWLN <sup>R/L</sup> 27050-08A	●	●		40	50	27	110	140									
KPC5-DWLN <sup>R/L</sup> 35060-08A	●	●		50	60	35	110	165									
KPC3-DWLN <sup>R/L</sup> 22047-08S	●	●	Without	32	47	22	110	121	0.8	Fig.2							
KPC4-DWLN <sup>R/L</sup> 27050-08S	●	●		40	50	27	110	140									
KPC5-DWLN <sup>R/L</sup> 35060-08S	●	●		50	60	35	110	165									

- Pressure Resistance: Up to 7 MPa
- Recommended Tightening Torque 3.9 N·m

● Standard Stock

## SVVB (External / Copying)

NEW

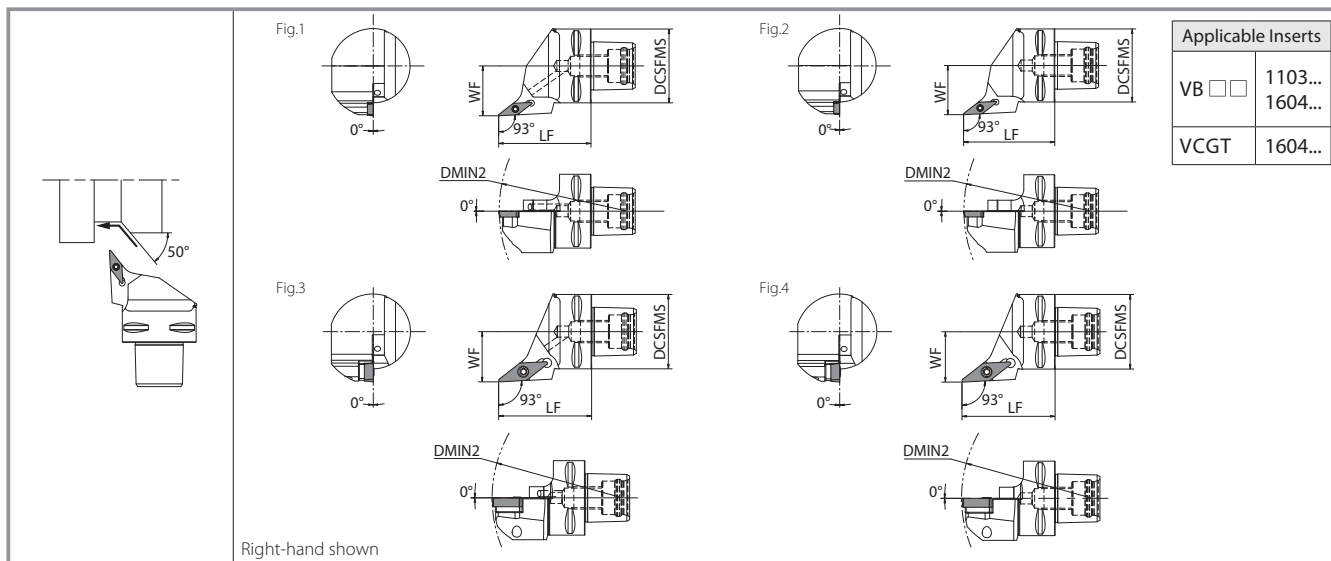


### Toolholder Dimensions

Description	Stock			Coolant Hole	Dimensions (mm)							Standard Corner-R (RE)	Shape	Spare Parts				
	R	N	L		DCSFMS	LF	WF	*2 B1 (°)	*2 B2 (°)	DMIN1	DMIN2			Clamp Screw	Wrench	Shim	Shim Screw	Wrench for Shim Screw
														Without				
KPC3-SVVB00048-16A	●		With	32	48	0	62	62	-	116	0.8	Fig.1						
KPC4-SVVB00052-16A	●			40	52	0	59	59	-	140								
KPC5-SVVB00060-16A	●			50	60	0	56	56	-	165								
KPC3-SVVB00048-16S	●		Without	32	48	0	62	62	-	116	0.8	Fig.2						
KPC4-SVVB00052-16S	●			40	52	0	59	59	-	140								
KPC5-SVVB00060-16S	●			50	60	0	56	56	-	165								

- Pressure Resistance: Up to 7 MPa
- Recommended Tightening Torque 3.5 N·m
- \*1 When using inserts with corner-R (RE) of 0.2mm or 0.4mm, shim in parentheses is recommended (sold separately)
- \*2 Angle B1 and B2 show the area of interference between the holder and the cutting edge

● Standard Stock



Toolholder Dimensions

Description	Stock		Coolant Hole	Dimensions (mm)					Standard Corner-R (RE)	Shape	Spare Parts				
	R	L		DCSFMS	LF	WF	DMIN1	DMIN2			Clamp Screw	Wrench	Shim	Shim Screw	Wrench for Shim Screw
*1 KPC3-SVJB R/L22040-11A	●	●	With	32	40	22	-	116	0.4	Fig.1	SB-2570TR	FT-8	-	-	-
*1 KPC4-SVJB R/L27050-11A	●	●		40	50	27	-	140							
*1 KPC5-SVJB R/L35060-11A	●	●		50	60	35	-	165							
*1 KPC3-SVJB R/L22040-11S	●	●	Without	32	40	22	-	116	0.4	Fig.2	SB-2570TR	FT-8	-	-	-
*1 KPC4-SVJB R/L27050-11S	●	●		40	50	27	-	140							
*1 KPC5-SVJB R/L35060-11S	●	●		50	60	35	-	165							
*2 KPC3-SVJB R/L22047-16A	●	●	With	32	47	22	-	116	0.8	Fig.3	SB-40125TRN	FT-15	SVN-32N *3 (SVN-32S)	SS-4N	LW-4
*2 KPC4-SVJB R/L27050-16A	●	●		40	50	27	-	140							
*2 KPC5-SVJB R/L35060-16A	●	●		50	60	35	-	165							
*2 KPC3-SVJB R/L22047-16S	●	●	Without	32	47	22	-	116	0.8	Fig.4	SB-40125TRN	FT-15	SVN-32N *3 (SVN-32S)	SS-4N	LW-4
*2 KPC4-SVJB R/L27050-16S	●	●		40	50	27	-	140							
*2 KPC5-SVJB R/L35060-16S	●	●		50	60	35	-	165							

\* Pressure Resistance: Up to 7 MPa

\* Recommended tightening torque for clamp screw VB\*\*1103 Type: 1.2N·m VB(C)\*\*1604 Type: 3.5N·m

\* 1 When using inserts whose corner-R (RE) is greater than 0.8mm, it could be necessary additional modifications on the toolholder or the shim in order to prevent interfere with workpiece

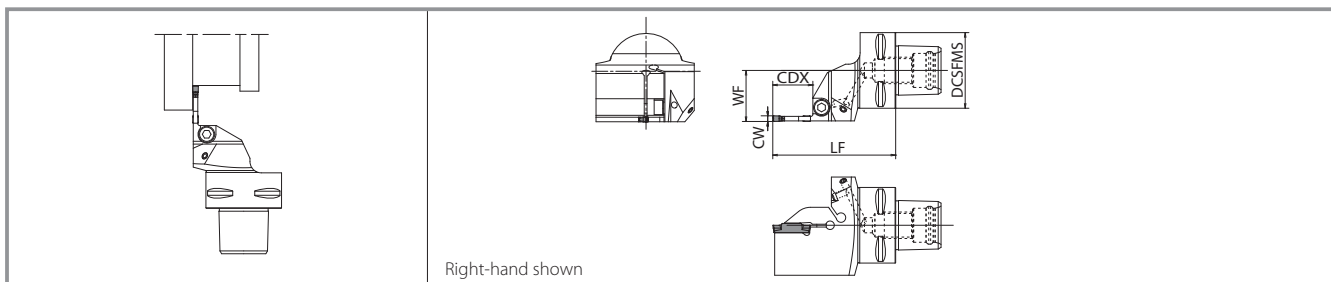
\* 2 When using inserts whose corner-R (RE) is greater than 1.2mm, it could be necessary additional modifications on the toolholder or the shim in order to prevent interfere with workpiece

\* 3 When using inserts with corner-R (RE) of 0.2mm or 0.4mm, shim in parentheses is recommended (sold separately)

● : Standard Stock



## KGD (Grooving/Cut-off Toolholder)



### Toolholder Dimensions

Groove Width CW (mm)	Available Grooving Depth CDX (mm)	Description	Stock		Coolant Hole	Dimensions (mm)				Width W (mm)		Spare Parts		Applicable Inserts
			R	L		DCSFMS	LF	WF	CDX	MIN	MAX	Clamp Bolt	Wrench	
2	10	KPC3-KGD $R_{/L}22050-2T10$	●	●	With	32	50	22	10	2.0	3.0	HH5X16	LW-4	GDM Type GDG Type
		KPC4-KGD $R_{/L}27055-2T10$	●	●		40	55	27						
		KPC5-KGD $R_{/L}35060-2T10$	●	●		50	60	35						
	17	KPC3-KGD $R_{/L}22055-2T17$	●	●	With	32	55	22	17					
		KPC4-KGD $R_{/L}27060-2T17$	●	●		40	60	27						
		KPC5-KGD $R_{/L}35060-2T17$	●	●		50	60	35						
3	10	KPC3-KGD $R_{/L}22050-3T10$	●	●	With	32	50	22	10					
		KPC4-KGD $R_{/L}27055-3T10$	●	●		40	55	27						
		KPC5-KGD $R_{/L}35060-3T10$	●	●		50	60	35						
	20	KPC3-KGD $R_{/L}22060-3T20$	●	●	With	32	60	22	20	3.0	4.0			
		KPC4-KGD $R_{/L}27065-3T20$	●	●		40	65	27						
		KPC5-KGD $R_{/L}35065-3T20$	●	●		50	65	35						
4	10	KPC3-KGD $R_{/L}22050-4T10$	●	●	With	32	50	22	10					
		KPC4-KGD $R_{/L}27055-4T10$	●	●		40	55	27						
		KPC5-KGD $R_{/L}35060-4T10$	●	●		50	60	35						
	20	KPC4-KGD $R_{/L}27065-4T20$	●	●	With	40	65	27	20	4.0	5.0			
		KPC5-KGD $R_{/L}35065-4T20$	●	●		50	65	35						
	25	KPC4-KGD $R_{/L}27070-4T25$	●	●	With	40	70	27	25					
KPC5-KGD $R_{/L}35070-4T25$		●	●	50		70	35							
5	10	KPC4-KGD $R_{/L}27055-5T10$	●	●	With	40	55	27	10					
		KPC5-KGD $R_{/L}35060-5T10$	●	●		50	60	35						
	17	KPC4-KGD $R_{/L}27060-5T17$	●	●	With	40	60	27	17	5.0	6.0			
		KPC5-KGD $R_{/L}35060-5T17$	●	●		50	60	35						

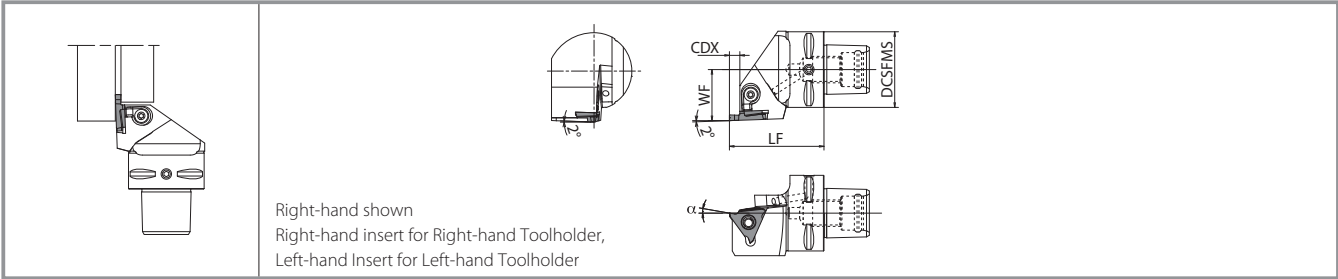
• Pressure Resistance: Up to 7 MPa

• Recommended Tightening Torque 6.5N·m

• CDX dimension shows available grooving depth (When CDX dimension is 20mm or more, maximum grooving depth with 2 corners is 18mm)

● : Standard Stock

# KGBA (External Shallow Grooving Toolholders)



## Toolholder Dimensions

Description	Stock		Coolant Hole	Dimensions (mm)				Spare Parts		Applicable Inserts			
	R	L		DCSFMS	LF	WF	CDX	Clamp Set	Wrench				
KPC3-KGBA <sup>R/L</sup> 22040-16	●	●	With	32	40	22	2.5	LGBA-16 <sup>R/L</sup> S	FT-15	GBA32 <sup>R/L</sup> Type			
KPC4-KGBA <sup>R/L</sup> 27050-16	●	●		40	50	27							
KPC5-KGBA <sup>R/L</sup> 35060-16	●	●		50	60	35							
KPC3-KGBA <sup>R/L</sup> 22040-2215	●	●	With	32	40	22	4.0	LGBA-22 <sup>R/L</sup> S		GBA43 <sup>R/L</sup> Type			
KPC4-KGBA <sup>R/L</sup> 27050-2215	●	●		40	50	27							
KPC5-KGBA <sup>R/L</sup> 35060-2215	●	●		50	60	35							
KPC3-KGBA <sup>R/L</sup> 22040-2225	●	●	With	32	40	22	5.5				LGBA-22 <sup>R/L</sup> S	GBA43 <sup>R/L</sup> Type	
KPC4-KGBA <sup>R/L</sup> 27050-2225	●	●		40	50	27							
KPC5-KGBA <sup>R/L</sup> 35060-2225	●	●		50	60	35							
KPC3-KGBA <sup>R/L</sup> 22040-2235	●	●	With	32	40	22	5.5			LGBA-22 <sup>R/L</sup> S			GBA43 <sup>R/L</sup> Type
KPC4-KGBA <sup>R/L</sup> 27050-2235	●	●		40	50	27							
KPC5-KGBA <sup>R/L</sup> 35060-2235	●	●		50	60	35							

- Pressure Resistance : Up to 7 MPa
  - Dimension CDX shows the distance from the toolholder to the cutting edge. Available Groove Depth : "CDX" of Insert
  - Clamp Set : KGBA <sup>R/L</sup> ...LGBA-○○RS for Right-hand Toolholder, and LGBA-○○LS for Left-hand Toolholder
  - Rake angle (α) after mounting the insert (see below)
- : Standard Stock

### Rake Angle (α) after Installment of GBA-GM

α	Insert Part Number
10°	GBA43 <sup>R/L</sup> 150-020GM
15°	GBA43 <sup>R/L</sup> 175-020GM ~ GBA43 <sup>R/L</sup> 265-030GM
12°	GBA43 <sup>R/L</sup> 300-030GM ~ GBA43 <sup>R/L</sup> 400-040GM

α shows the rake angle at the center of the edge width after mounting the insert

### Rake Angle (α) after Installment of GBA-MY

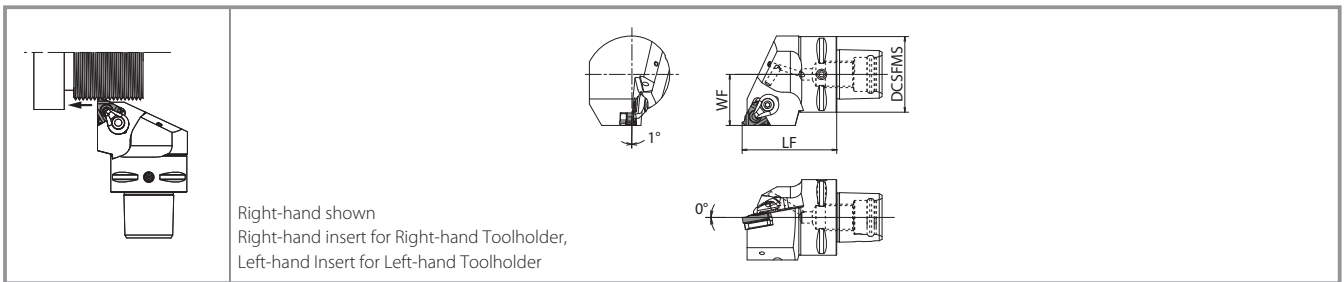
α	Insert Part Number
15°	GBA43 <sup>R/L</sup> 175-020MY ~ GBA43 <sup>R/L</sup> 350-030MY
14°	GBA43 <sup>R/L</sup> 400-040MY

α shows the rake angle at the center of the edge width after mounting the insert





### Rake Angle (α) after Installment of GBA

GBA32 <sup>R/L</sup> ○○○○ - ○○○		GBA43 <sup>R/L</sup> ○○○○ - ○○○		GBA43 <sup>R/L</sup> ○○○○ - ○○○ R (Full-R)		
α	Insert Grade	α	Insert Grade	α	Insert Grade	Full-R
10°	TN620,TN90,PV7040,PR930 PR1115,PR1215,PR1625,PR905 KPD001,KPD010	0°	KBN510,KBN525	10°	TN620,TN90,PV7040,PR930 PR1115,PR1215,PR1625,PR905	050R ~ 150R
		10°	TN620,TC40N,TN90,PV7040 PR930,PR1115,PR1215,PR1625 PR905,KPD001,KPD010		TN620,TN90,PV7040,PR930 PR1115,PR1215,PR1625,PR905	200R
20°	KW10	20°	KW10		KW10	050R ~ 200R

## KTN (External Threading Toolholder)



### Toolholder Dimensions

Description	Stock		Coolant Hole With	Dimensions (mm)			Spare Parts				Applicable Inserts
	R	L		DCSFMS	LF	WF	Clamp Set	Wrench	Shim	Shim Screw	
	●	●									
KPC3-KTN <sup>R/L</sup> 22040-16	●	●	With	32	40	22	CPS-5S	FT-15	TN-32	SP3X8	16E <sup>R/L</sup> Type
KPC4-KTN <sup>R/L</sup> 27050-16	●	●		40	50	27					
KPC5-KTN <sup>R/L</sup> 35060-16	●	●		50	60	35					

• Pressure Resistance: Up to 7 MPa

● : Standard Stock

# ADVANCING PRODUCTIVITY

