

Chatter Resistant Boring Bars

Dimple Bar Series

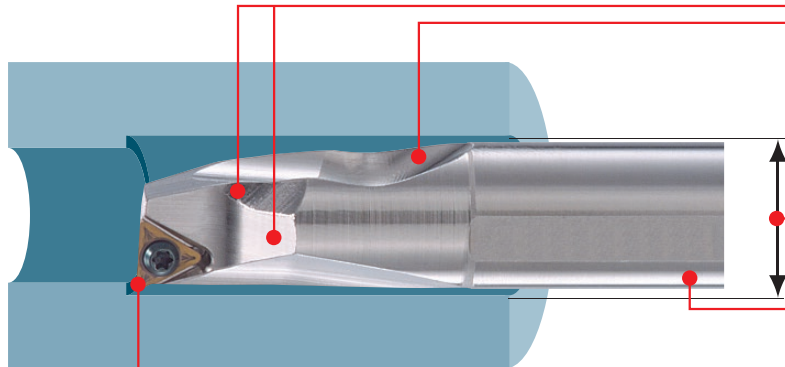
Series
Expansion

**Highly rigid and lightweight
head prevents vibration for
better surface finishes**



Features of Dimple Bar

Highly rigid steel shank and a lightweight head configuration, designed by computer simulation analysis reduces chatter and improves the vibration damping properties.



Chip disposal is improved by having two channels for chip evacuation.

The lightweight head with its large dimple reduces chatter.

Available in sizes smaller than the ISO standard. Therefore the boring of small diameter holes is possible.

The boring bar has a laser printed scale on the shank to facilitate easy installation.

"F and FS" breakers improves the quality of the surface finish, "MV" breaker offers excellent chip disposal. High wear resistant CBN inserts are also available for the machining of hardened materials.

Vibration Resistance

● DIMPLE BAR

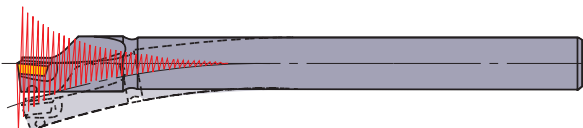
Weight of the Head	Damping Time
49.7g	15.8ms



By reducing the weight of the head, the damping properties are increased.

● Conventional Product

Weight of the Head	Damping Time
70.1g	20ms



* The simulation data stated above was conducted with a FSCLP1816R-09S holder, under the following conditions; $l/d=5$, depth of cut=0.5mm, and feed=0.05mm/rev.

Direction for the use of CCG/MT • CPG/MT • CPMX • TPG/MX type inserts

By changing the clamp screw, it is possible to use the inserts listed in the table below.

Holder : FSCLC/P • FSCLC/P...E

Insert Number	Clamp Screw
CCG/MT0602 (φ6.35)	Can be used as it is.
CPG/MT0802 (φ7.94)	Change to TS3
CPG/MT0903 (φ9.525)	Change to TS4
CPMX0802 (φ7.94)	Can be used as it is.
CPMX0903 (φ9.525)	Can be used as it is.

Holder : FSTUP • FSTUP...E

Insert Number	Clamp Screw
TPG/MX0802 (φ4.76)	Change to CS200T
TPG/MX0902 (φ5.56)	Change to CS250T
TPG/MX1103 (φ9.525)	Change to CS300890T

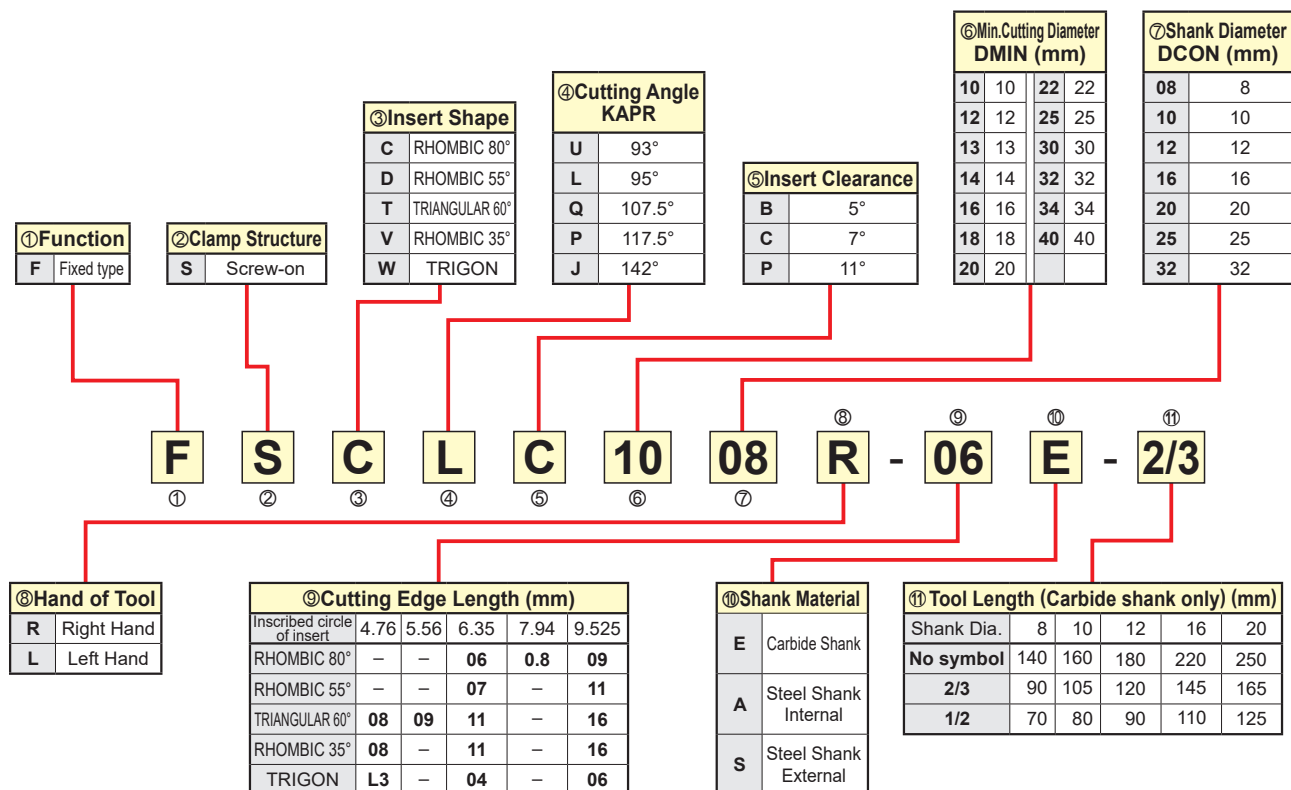
* If the screw is too long the please shorten as necessary.

Note 1) TPMT/W09, W11 types cannot be used due to a different clamp screw size.

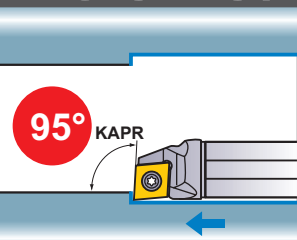
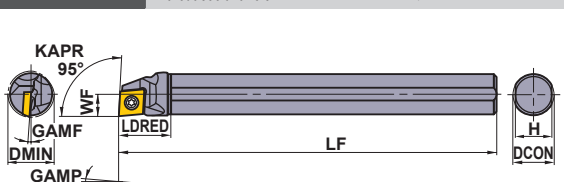
Selection Standard

Insert Shape	Page Reference	Holder Type	Tool Cutting Edge Angle KAPR	Shank Material	Economical	Cutting Edge Strength	Copying	Profile Turning and Inner End Facing	Internal Coolant	Deep Boring (l/d≥6)
RHOMBIC 80°	3, 4	FSCLC/P○○○S	95°	Steel		◎				
		FSCLC/P○○○A	95°	Steel		◎			◎	
		FSCLC/P○○○E	95°	Carbide		◎			◎	◎
TRIANGULAR 60°	5, 6	FSTUP○○○S	93°	Steel	◎					
		FSTUP○○○A	93°	Steel	◎				◎	
		FSTUP○○○E	93°	Carbide	◎				◎	◎
RHOMBIC 55°	7, 8	FSDUC○○○S	93°	Steel			◎			
		FSDUC○○○A	93°	Steel			◎		◎	
		FSDUC○○○E	93°	Carbide			◎		◎	◎
	9, 10	FSDQC○○○S	107.5°	Steel			◎			
		FSDQC○○○A	107.5°	Steel			◎		◎	
		FSDQC○○○E	107.5°	Carbide			◎		◎	◎
TRIGON	11, 12	FSWUB/P○○○S	93°	Steel	◎	◎				
		FSWUB/P○○○A	93°	Steel	◎	◎			◎	
		FSWUB/P○○○E	93°	Carbide	◎	◎			◎	◎
RHOMBIC 35°	13, 14, 15	FSVUB/C○○○S	93°	Steel			◎			
		FSVUB/C○○○A	93°	Steel			◎		◎	
		FSVPB/C○○○S	117.5°	Steel			◎			
		FSVPB/C○○○A	117.5°	Steel			◎		◎	
		FSVJB/C○○○S	142°	Steel				◎		

Identification



DIMPLE BAR

FSCLC/P				Steel shank without coolant hole							CC ^o inserts, CP ^o inserts		Finish		Finish		Finish		Light		
														FP		FV		FM		SV	
																					
				(06)		(06,08,09)		(06)		(06,08,09)											
				Light		Medium		Medium		CBN/PCD											
				FSCLC1008R/L-06S=1° Right hand tool holder shown.										LP		MV		MP			
																					
														(06)		(06,08,09)		(06)		(06,08,09)	
Order Number	Stock		Insert Number	Dimensions(mm)							Maximum Recommendation l/d Ratio	 *1 Clamp Screw	 Wrench								
	R	L		DCON	LF	LDRED	WF	H	GAMF	DMIN											
FSCLC1008R/L-06S	●	●	CC ^o B/H/T/W	0602 ^o	8	125	18	5	7.2	12°	10	3	TS253	TKY08F							
FSCLP1210R/L-08S	●	●	CPMB CPMH CPMT *2 CPMX *2 CPGB CPGT *2	0802 ^o	10	150	22.5	6	9	5°	12	3.5	TS3D	TKY10F							
FSCLP1412R/L-08S	●	●		0802 ^o	12	150	27	7	11	4°	14	4	TS3D	TKY10F							
FSCLP1612R/L-09S	●	●		0903 ^o	12	150	30	8	11	4°	16	4	TS4D	TKY15F							
FSCLP1816R/L-09S	●	●		0903 ^o	16	180	36	9	15	3.5°	18	5	TS4D	TKY15F							
FSCLP2220R/L-09S	●	●		0903 ^o	20	220	45	11	19	2°	22	5	TS4D	TKY15F							
FSCLP3025R/L-09S	●	●		0903 ^o	25	250	56.3	15	23.4	0°	30	5	TS4D	TKY15F							

* Clamp Torque (N · m) : TS253=1.0, TS3D=2.5, TS4D=3.5

FSCLC/P				NEW	Steel shank with coolant hole	CC ^o inserts, CP ^o inserts					Finish		Finish	Finish	Light
				FP		FV		FM		SV					
				(06)		(06,08,09)		(06)		(06,08,09)					
				Light		Medium		Medium		CBN/PCD					
LP				MV		MP				(06)		(06,08,09)			
												(06)		(06,08,09)	
				(06)		(06,08,09)		(06)				(06,08,09)			

Order Number	Stock		Insert Number		Dimensions(mm)						Maximum Recommendation l/d Ratio	*1 Clamp Screw	 Wrench	
	R	L			DCON	LF	LDRED	WF	H	GAMF				DMIN
FSCLC1008R/L-06A	●	●	CC ^o B/H/T/W	0602 ^o	8	125	18	5	7.2	12°	10	3	TS253	TKY08F
FSCLP1210R/L-08A	●	●	CPMB CPMH CPMT *2 CPMX *2 CPGB CPGT *2	0802 ^o	10	150	22.5	6	9	5°	12	3.5	TS3D	TKY10F
FSCLP1412R/L-08A	●	●		0802 ^o	12	150	27	7	11	4°	14	4	TS3D	TKY10F
FSCLP1816R/L-09A	●	●		0903 ^o	16	180	36	9	15	3.5°	18	5	TS4D	TKY15F
FSCLP2220R/L-09A	●	●		0903 ^o	20	220	45	11	19	2°	22	5	TS4D	TKY15F
FSCLP3025R/L-09A	●	●		0903 ^o	25	250	56.3	15	23.4	0°	30	5	TS4D	TKY15F

* Clamp Torque (N · m) : TS253=1.0, TS3D=2.5, TS4D=3.5

● = NEW

Note 1) The insert photos are only examples. The letters refer to the chip breaker and the dimension refers to the inscribed circle.

Note 2) Dimensions shown are with insert corner radius RE 0.4. (Types marked ☆ are with RE 0.8)

Note 3) When using inserts with a right or left handed chipbreaker, please use left handed inserts for right handed holders and right handed inserts for left handed holders.

FSCLC/P_E				Carbide shank with coolant hole CC $\circ$ inserts, CP $\circ$ inserts							Finish		Finish		Finish		Light	
											FP		FV		FM		SV	
											(06)		(06,08,09)		(06)		(06,08,09)	
											Light		Medium		Medium		CBN/PCD	
				FSCLC1008R/L-06E (-2/3, -1/2)=1°							LP		MV		MP		(06,08,09)	
				Right hand tool holder shown.														
											(06)		(06,08,09)		(06)		(06,08,09)	
Order Number	Stock		Insert Number		Dimensions(mm)							Maximum Recommendation l/d Ratio	*1 Clamp Screw	*2 Wrench				
	R	L			DCON	LF	LDRED	WF	H	GAMF	DMIN							
FSCLC1008R/L-06E	●	●	CC $\circ$ B CC $\circ$ H CC $\circ$ T CC $\circ$ W	0602 $\circ$	8	140	13.8	5	7.2	12°	10	7	TS253	TKY08F				
FSCLC1008R-06E-2/3	●			0602 $\circ$	8	90	13.8	5	7.2	12°	10	5	TS253	TKY08F				
FSCLC1008R-06E-1/2	●			0602 $\circ$	8	70	13.8	5	7.2	12°	10	3	TS253	TKY08F				
FSCLP1210R/L-08E	●	●	CPMB CPMH CPMT *2 CPMX *2 CPGB CPGT *2	0802 $\circ$	10	160	16.0	6	9	5°	12	7.5	TS3D	TKY10F				
FSCLP1210R-08E-2/3	●			0802 $\circ$	10	105	16.0	6	9	5°	12	5	TS3D	TKY10F				
FSCLP1210R-08E-1/2	●			0802 $\circ$	10	80	16.0	6	9	5°	12	3	TS3D	TKY10F				
FSCLP1412R/L-08E	●	●		0802 $\circ$	12	180	17.8	7	11	4°	14	8	TS3D	TKY10F				
FSCLP1412R-08E-2/3	●			0802 $\circ$	12	120	17.8	7	11	4°	14	5	TS3D	TKY10F				
FSCLP1412R-08E-1/2	●			0802 $\circ$	12	90	17.8	7	11	4°	14	3	TS3D	TKY10F				
FSCLP1816R/L-09E	●	●		0903 $\circ$	16	220	21.8	9	15	3.5°	18	8	TS4D	TKY15F				
FSCLP1816R-09E-2/3	●			0903 $\circ$	16	145	21.8	9	15	3.5°	18	5	TS4D	TKY15F				
FSCLP1816R-09E-1/2	●			0903 $\circ$	16	110	21.8	9	15	3.5°	18	3	TS4D	TKY15F				
FSCLP2220R/L-09E	●	●		0903 $\circ$	20	250	24.0	11	19	2°	22	8	TS4D	TKY15F				
FSCLP2220R-09E-2/3	●			0903 $\circ$	20	165	24.0	11	19	2°	22	5	TS4D	TKY15F				
FSCLP2220R-09E-1/2	●			0903 $\circ$	20	125	24.0	11	19	2°	22	3	TS4D	TKY15F				

*1 Clamp Torque (N • m) : TS253=1.0, TS3D=2.5, TS4D=3.5

*2 By changing the clamp screw, it is possible to use a different insert. Please refer to page 1.

DIMPLE BAR

FSTUP		Steel shank without coolant hole		TP [○] inserts		Finish		Light		Medium				
						 (08,09,11,16)		 (08,09,11,16)		 (08,09,11,16)				
						PCD		CBN						
						R/L-F (08,09,11,16)		 (08,09,11,16)						
						Right hand tool holder shown.								
Order Number	Stock		Insert Number	Dimensions(mm)							Maximum Recommendation l/d Ratio	 *1		
	R	L		DCON	LF	LDRED	WF	H	GAMF	DMIN				Clamp Screw
FSTUP1008R/L-08S	●	●	TPMB TPMH TPMX*2 TPGB TPGH TPGX*2	0802 [○]	8	125	18	5	7.2	10°	10	3	TS2D	TKY06F
FSTUP1210R/L-09S	●	●		0902 [○]	10	150	22.5	6	9	8°	12	3.5	TS25D	TKY08F
FSTUP1412R/L-09S	●	●		0902 [○]	12	150	27	7	11	7°	14	4	TS25D	TKY08F
FSTUP1210R/L-11S	●	●		1103 [○]	10	150	22.5	6	9	8°	12	3.5	TS31D	TKY10F
FSTUP1412R/L-11S	●	●		1103 [○]	12	150	27	7	11	7°	14	4	TS31D	TKY10F
FSTUP1816R/L-11S	●	●		1103 [○]	16	180	36	9	15	4°	18	5	TS31D	TKY10F
FSTUP2220R/L-11S	●	●		1103 [○]	20	220	45	11	19	0°	22	5	TS31D	TKY10F
FSTUP3225R/L-16S ☆	●	●		1603 [○]	25	270	56.3	16	23.4	0°	32	5	TS4D	TKY15F

★ Clamp Torque (N · m) : TS2D=0.6, TS25D=1.0, TS31D=2.5, TS4D=3.5

FSTUP		NEW		Steel shank with coolant hole		TP [○] inserts					Finish		Light		Medium		
											FV (08,09,11,16)		SV (08,09,11,16)		MV (08,09,11,16)		
											PCD		CBN				
											R/L-F (08,09,11,16)		 (08,09,11,16)				
Right hand tool holder shown.																	
Order Number	Stock		Insert Number	Dimensions(mm)								Maximum Recommendation l/d Ratio	 *1				
	R	L		DCON	LF	LDRED	WF	H	GAMF	DMIN	Clamp Screw				Wrench		
FSTUP1008R/L-08A	●	●	TPMB TPMH TPMX*2 TPGB TPGH TPGX*2	0802 [○]	8	125	18	5	7.2	10°	10	3	TS2D	TKY06F			
FSTUP1210R/L-09A	●	●		0902 [○]	10	150	22.5	6	9	8°	12	3.5	TS25D	TKY08F			
FSTUP1412R/L-09A	●	●		0902 [○]	12	150	27	7	11	7°	14	4	TS25D	TKY08F			
FSTUP1816R/L-11A	●	●		1103 [○]	16	180	36	9	15	4°	18	5	TS31D	TKY10F			
FSTUP2220R/L-11A	●	●		1103 [○]	20	220	45	11	19	0°	22	5	TS31D	TKY10F			
FSTUP3225R/L-16A ☆	●	●		1603 [○]	25	270	56.3	16	23.4	0°	32	5	TS4D	TKY15F			

★ Clamp Torque (N · m) : TS2D=0.6, TS25D=1.0, TS31D=2.5, TS4D=3.5

● = NEW

Note 1) The insert photos are only examples. The letters refer to the chip breaker and the dimension refers to the inscribed circle.

Note 2) Dimensions shown are with insert corner radius RE 0.4. (Types marked ☆ are with RE 0.8)

Note 3) When using inserts with a right or left handed chipbreaker, please use left handed inserts for right handed holders and right handed inserts for left handed holders.

FSTUP_E				Carbide shank with coolant hole		TP $\circ\circ$ inserts					Finish		Light	Medium
											FV		SV	MV
											(08,09,11)		(08,09,11)	(08,09,11)
											PCD		CBN	
											R/L-F			
											(08,09,11)		(08,09,11)	
Order Number	Stock		Insert Number	Dimensions(mm)							Maximum Recommendation l/d Ratio	*1		
	R	L		DCON	LF	LDRED	WF	H	GAMF	DMIN		Clamp Screw	Wrench	
FSTUP1008R/L-08E	●	●	TPMB TPMH TPMX*2 TPGB TPGH TPGX*2	0802 $\circ\circ$	8	140	13.8	5	7.2	10°	10	7	TS2D	TKY06F
FSTUP1008R-08E-2/3	●			0802 $\circ\circ$	8	90	13.8	5	7.2	10°	10	5	TS2D	TKY06F
FSTUP1008R-08E-1/2	●			0802 $\circ\circ$	8	70	13.8	5	7.2	10°	10	3	TS2D	TKY06F
FSTUP1210R/L-09E	●	●		0902 $\circ\circ$	10	160	16.0	6	9	8°	12	7.5	TS25D	TKY08F
FSTUP1210R-09E-2/3	●			0902 $\circ\circ$	10	105	16.0	6	9	8°	12	5	TS25D	TKY08F
FSTUP1210R-09E-1/2	●			0902 $\circ\circ$	10	80	16.0	6	9	8°	12	3	TS25D	TKY08F
FSTUP1412R/L-09E	●	●		0902 $\circ\circ$	12	180	17.8	7	11	7°	14	8	TS25D	TKY08F
FSTUP1412R-09E-2/3	●			0902 $\circ\circ$	12	120	17.8	7	11	7°	14	5	TS25D	TKY08F
FSTUP1412R-09E-1/2	●			0902 $\circ\circ$	12	90	17.8	7	11	7°	14	3	TS25D	TKY08F
FSTUP1816R/L-11E	●	●		1103 $\circ\circ$	16	220	21.8	9	15	4°	18	8	TS31D	TKY10F
FSTUP1816R-11E-2/3	●			1103 $\circ\circ$	16	145	21.8	9	15	4°	18	5	TS31D	TKY10F
FSTUP1816R-11E-1/2	●			1103 $\circ\circ$	16	110	21.8	9	15	4°	18	3	TS31D	TKY10F
FSTUP2220R/L-11E	●	●		1103 $\circ\circ$	20	250	24.0	11	19	0°	22	8	TS31D	TKY10F
FSTUP2220R-11E-2/3	●			1103 $\circ\circ$	20	165	24.0	11	19	0°	22	5	TS31D	TKY10F
FSTUP2220R-11E-1/2	●			1103 $\circ\circ$	20	125	24.0	11	19	0°	22	3	TS31D	TKY10F

*1 Clamp Torque (N • m) : TS2D=0.6, TS25D=1.0, TS31D=2.5

*2 By changing the clamp screw, it is possible to use a different insert. Please refer to page 1.

DIMPLE BAR

FSDUC			Steel shank without coolant hole		DC $\circ$ inserts						Finish		Finish		Light		Light	
											FP		FM		LP		LM	
											(07,11)		(07,11)		(07,11)		(07,11)	
											Medium		Medium		PCD		CBN	
											MP		MM		R/L-F			
											(07,11)		(07,11)		(07,11)		(07,11)	
Order Number	Stock		Insert Number	Dimensions(mm)								Maximum Recommendation I/d Ratio	*					
	R	L		DCON	LF	LDRED	WF	WF2	H	GAMF	DMIN				Clamp Screw	Wrench		
FSDUC1410R/L-07S	●	●	DCMT DCMW DCGT DCGW	0702 $\circ$	10	150	18	8.3	3.3	9	7.5°	14	3.5	TS25	TKY08F			
FSDUC1612R/L-07S	●	●		0702 $\circ$	12	150	20	9.3	3.3	11	6°	16	4	TS25	TKY08F			
FSDUC2016R/L-07S	●	●		0702 $\circ$	16	180	20	11.3	3.3	15	5°	20	5	TS25	TKY08F			
FSDUC3220R/L-11S [☆]	●	●		11T3 $\circ$	20	180	22.5	16.1	6.1	19	5°	32	5	TS43	TKY15F			

★ Clamp Torque (N • m) : TS25=1.0, TS43=3.5

FSDUC		NEW	Steel shank with coolant hole	DC $\circ$ inserts							Finish	Finish	Light	Light	
 93° KAPR				 KAPR 93° WF DMIN GAMF LDRED LF H DCON GAMF 0° Right hand tool holder shown.							FP	FM	LP	LM	
											(07,11)	(07,11)	(07,11)	(07,11)	
											Medium	Medium	PCD	CBN	
											MP	MM	R/L-F		
											(07,11)	(07,11)	(07,11)	(07,11)	
Order Number	Stock		Insert Number	Dimensions(mm)								Maximum Recommendation I/d Ratio	* 		
	R	L		DCON	LF	LDRED	WF	WF2	H	GAMF	DMIN				
FSDUC1410R/L-07A	●	●	DCMT DCMW DCGT DCGW	0702 $\circ$	10	150	18	8.3	3.3	9	7.5°	14	3.5	TS25	TKY08F
FSDUC1612R/L-07A	●	●		0702 $\circ$	12	150	20	9.3	3.3	11	6°	16	4	TS25	TKY08F
FSDUC2016R/L-07A	●	●		0702 $\circ$	16	180	20	11.3	3.3	15	5°	20	5	TS25	TKY08F
FSDUC3220R/L-11A☆	●	●		11T3 $\circ$	20	180	22.5	16.1	6.1	19	5°	32	5	TS43	TKY15F

★ Clamp Torque (N • m) : TS25=1.0, TS43=3.5

● = NEW

Note 1) The insert photos are only examples. The letters refer to the chip breaker and the dimension refers to the inscribed circle.

Note 2) Dimensions shown are with insert corner radius RE 0.4. (Types marked ☆ are with RE 0.8)

Note 3) When using inserts with a right or left handed chipbreaker, please use left handed inserts for right handed holders and right handed inserts for left handed holders.

● : Inventory maintained in Japan.

FSDUC_E			Carbide shank with coolant hole		DC $\odot$ inserts							Finish		Finish		Light		Light	
													FP	FM	LP	LM			
													(07,11)	(07,11)	(07,11)	(07,11)			
													Medium	Medium	PCD	CBN			
													MP	MM	R/L-F				
													(07,11)	(07,11)	(07,11)	(07,11)			
Order Number	Stock		Insert Number	Dimensions(mm)								Maximum Recommendation I/d Ratio	*						
	R	L		DCON	LF	LDRED	WF	WF2	H	GAMF	DMIN		Clamp Screw	Wrench					
FSDUC1410R/L-07E	●	●	DCMT DCMW DCGT DCGW	0702 $\odot$	10	160	16.0	8.3	3.3	9	7.5°	14	7.5	TS25	TKY08F				
FSDUC1612R/L-07E	●	●		0702 $\odot$	12	180	17.8	9.3	3.3	11	6.0°	16	8	TS25	TKY08F				
FSDUC2016R/L-07E	●	●		0702 $\odot$	16	220	21.8	11.3	3.3	15	5.0°	20	8	TS25	TKY08F				
FSDUC3220R/L-11E [☆]	●	●		11T3 $\odot$	20	250	24.0	16.1	6.1	19	5.0°	32	8	TS43	TKY15F				

☆ Clamp Torque (N • m) : TS25=1.0, TS43=3.5

DIMPLE BAR

FSDQC			Steel shank without coolant hole		DC $\circ$ inserts							Finish		Finish		Light		Light	
												FP		FM		LP		LM	
												(07,11)		(07,11)		(07,11)		(07,11)	
												Medium		Medium		PCD		CBN	
												MP		MM		R/L-F			
												(07,11)		(07,11)		(07,11)		(07,11)	
Order Number	Stock		Insert Number		Dimensions(mm)								Maximum Recommendation l/d Ratio	*					
	R	L			DCON	LF	LDRED	WF	WF2	H	GAMP	DMIN				Clamp Screw	Wrench		
FSDQC1310R/L-07S	●	●	DCMT DCMW DCGT DCGW	0702 $\circ$	10	150	20.5	7.6	2.6	9	8°	13	3.5	TS25	TKY08F				
FSDQC1612R/L-07S	●	●		0702 $\circ$	12	150	22.5	8.6	2.6	11	6°	16	4	TS25	TKY08F				
FSDQC2016R/L-07S	●	●		0702 $\circ$	16	180	22.5	10.6	2.6	15	5°	20	5	TS25	TKY08F				
FSDQC2520R/L-11S [☆]	●	●		11T3 $\circ$	20	180	26	13.7	3.7	19	7°	25	5	TS43	TKY15F				

★ Clamp Torque (N · m) : TS25=1.0, TS43=3.5

FSDQC		NEW	Steel shank with coolant hole	DC $\circ$ inserts							Finish		Finish	Light	Light
											FP		FM	LP	LM
											(07,11)		(07,11)	(07,11)	(07,11)
											Medium		Medium	PCD	CBN
											MP		MM	R/L-F	
											(07,11)		(07,11)	(07,11)	(07,11)
Order Number	Stock		Insert Number	Dimensions(mm)								Maximum Recommendation l/d Ratio	*		
	R	L		DCON	LF	LDRED	WF	WF2	H	GAMP	DMIN				Clamp Screw
FSDQC1310R/L-07A	●	●	DCMT DCMW DCGT DCGW	0702 $\circ$	10	150	20.5	7.6	2.6	9	8°	13	3.5	TS25	TKY08F
FSDQC1612R/L-07A	●	●		0702 $\circ$	12	150	22.5	8.6	2.6	11	6°	16	4	TS25	TKY08F
FSDQC2016R/L-07A	●	●		0702 $\circ$	16	180	22.5	10.6	2.6	15	5°	20	5	TS25	TKY08F
FSDQC2520R/L-11A☆	●	●		11T3 $\circ$	20	180	26	13.7	3.7	19	7°	25	5	TS43	TKY15F

★ Clamp Torque (N · m) : TS25=1.0, TS43=3.5

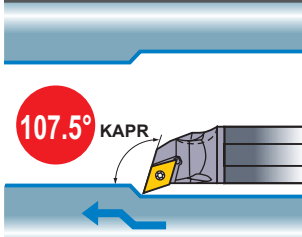
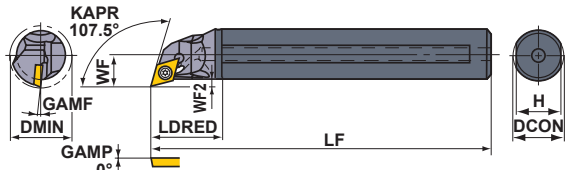
● = NEW

Note 1) The insert photos are only examples. The letters refer to the chip breaker and the dimension refers to the inscribed circle.

Note 2) Dimensions shown are with insert corner radius RE 0.4. (Types marked ☆ are with RE 0.8)

Note 3) When using inserts with a right or left handed chipbreaker, please use left handed inserts for right handed holders and right handed inserts for left handed holders.

● : Inventory maintained in Japan.

FSDQC_E				Carbide shank with coolant hole		DC $\odot$ inserts					Finish		Finish		Light		Light	
										FP		FM		LP		LM		
										(07,11)		(07,11)		(07,11)		(07,11)		
										Medium		Medium		PCD		CBN		
										MP		MM		R/L-F				
				Right hand tool holder shown.						(07,11)		(07,11)		(07,11)		(07,11)		
Order Number	Stock		Insert Number	Dimensions(mm)								Maximum Recommendation l/d Ratio						
	R	L		DCON	LF	LDRED	WF	WF2	H	GAMF	DMIN				Clamp Screw	Wrench		
FSDQC1310R/L-07E	●	●	DCMT DCMW DCGT DCGW	0702 $\odot$	10	162	18.4	7.6	2.6	9	8°	13	7.5	TS25	TKY08F			
FSDQC1612R/L-07E	●	●		0702 $\odot$	12	182	20.2	8.6	2.6	11	6°	16	8	TS25	TKY08F			
FSDQC2016R/L-07E	●	●		0702 $\odot$	16	222	24.2	10.6	2.6	15	5°	20	8	TS25	TKY08F			
FSDQC2520R/L-11E [☆]	●	●		11T3 $\odot$	20	254	28.0	13.7	3.7	19	7°	25	8	TS43	TKY15F			

★ Clamp Torque (N • m) : TS25=1.0, TS43=3.5

DIMPLE BAR

<

* Clamp Torque (N • m) : TS2=0.6, TS253=1.0, TS4=3.5

<

* Clamp Torque (N • m) : TS2=0.6, TS253=1.0, TS4=3.5

● = NEW

Note 1) The insert photos are only examples. The letters refer to the chip breaker and the dimension refers to the inscribed circle.

Note 2) Dimensions shown are with insert corner radius RE 0.4. (Types marked ☆1 are with RE 0.2, types marked with ☆2 are with RE 0.8)

Note 3) When using inserts with a right or left handed chipbreaker, please use left handed inserts for right handed holders and right handed inserts for left handed holders.

● : Inventory maintained in Japan.

FSWUB/P.E

Carbide shank
with coolant hole

WB $\circ\circ$ inserts, WP $\circ\circ$ inserts

Finish

R/L-F-FS



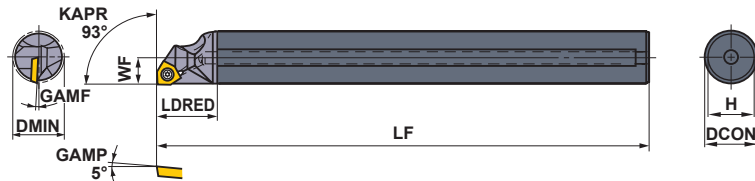
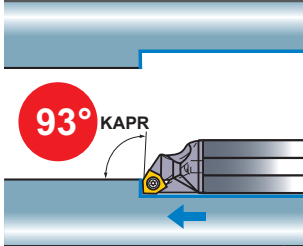
(L3,04,06)

Medium

MV



(L3,04,06)



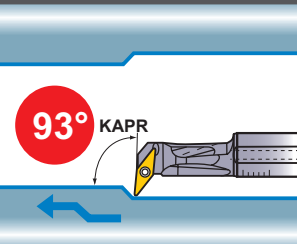
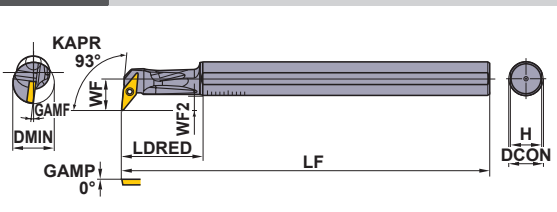
The $\phi 8$ and $\phi 10$ shanks are 0°

Right hand tool holder shown.

Order Number	Stock		Insert Number		Dimensions(mm)						Maximum Recommendation l/d Ratio	 *		
	R	L			DCON	LF	LDRED	WF	H	GAMF				DMIN
FSWUB1008R/L-L3E ☆1	●	●	WBMT WBG T	L302	8	140	13.8	5	7.2	14°	10	7	TS2	TKY06F
FSWUB1008R-L3E-2/3 ☆1	●			L302	8	90	13.8	5	7.2	14°	10	5	TS2	TKY06F
FSWUB1008R-L3E-1/2 ☆1	●			L302	8	70	13.8	5	7.2	14°	10	3	TS2	TKY06F
FSWUB1210R/L-L3E ☆1	●	●		L302	10	160	16.0	6	9	11°	12	7.5	TS2	TKY06F
FSWUB1210R-L3E-2/3 ☆1	●			L302	10	105	16.0	6	9	11°	12	5	TS2	TKY06F
FSWUB1210R-L3E-1/2 ☆1	●			L302	10	80	16.0	6	9	11°	12	3	TS2	TKY06F
FSWUP1412R/L-04E	●	●	WPMT WPG T	0402	12	180	17.8	7	11	4°	14	8	TS253	TKY08F
FSWUP1412R-04E-2/3	●			0402	12	120	17.8	7	11	4°	14	5	TS253	TKY08F
FSWUP1412R-04E-1/2	●			0402	12	90	17.8	7	11	4°	14	3	TS253	TKY08F
FSWUP1816R/L-04E	●	●		0402	16	220	21.8	9	15	1°	18	8	TS253	TKY08F
FSWUP1816R-04E-2/3	●			0402	16	145	21.8	9	15	1°	18	5	TS253	TKY08F
FSWUP1816R-04E-1/2	●			0402	16	110	21.8	9	15	1°	18	3	TS253	TKY08F
FSWUP2220R/L-06E ☆2	●	●		0603	20	250	24.0	11	19	2°	22	8	TS4	TKY15F
FSWUP 2220R-06E-2/3 ☆2	●			0603	20	165	24.0	11	19	2°	22	5	TS4	TKY15F
FSWUP 2220R-06E-1/2 ☆2	●			0603	20	125	24.0	11	19	2°	22	3	TS4	TKY15F

* Clamp Torque (N · m) : TS2=0.6, TS253=1.0, TS4=3.5

DIMPLE BAR

FSVUB/C				Steel shank without coolant hole		VC ⁰⁰ inserts, VB ⁰⁰ inserts								Finish		Finish		Light		Light	
														FP		FM		LP		LM	
																					
														(11,16)		(11,16)		(11,16)		(11,16)	
														Medium		Medium		Medium		CBN	
														MP		MM		Standard			
				Right hand tool holder shown.																	
														(16)		(16)		(16)		(11,16)	
Order Number	Stock		Insert Number	Dimensions(mm)								Maximum Recommendation l/d Ratio									
	R	L		DCON	LF	LDRED	WF	WF2	H	GAMF	DMIN		Shim	Shim Pin	Clamp Screw	Wrench					
FSVUC1612R/L-08S	●	●	VCGT VCMT	0802	12	150	25	11	5.5	11	8°	16	4	—	—	TS202	TKY06F				
FSVUB2016R/L-11S	●	●	VBMT VBMW VBET VBGW	1103	16	180	32.5	15.5	8	15	8°	20	5	—	—	TS255	TKY08F				
FSVUB2520R/L-11S	●	●		1103	20	200	40.5	17.5	8	19	7°	25	5	—	—	TS255	TKY08F				
FSVUB3425R/L-16S ^{☆2}	●	●		1604	25	220	50	20.5	8.5	23.4	13°	34	5	SPSVN32	BCP141	TS35D	TKY15F				
FSVUB4032R/L-16S ^{☆2}	●	●		1604	32	250	84.0	27.5	12	30.4	9°	40	5	SPSVN32	BCP141	TS35D	TKY15F				

* Clamp Torque (N • m) : TS202=0.6, TS255=1.0, TS35D=3.5

FSVUB/C		NEW	Steel shank with coolant hole	VC ⁰⁰ inserts, VB ⁰⁰ inserts										Finish		Finish		Light		Light		
				FP		FM		LP		LM												
				(11,16)		(11,16)		(11,16)		(11,16)												
				Medium		Medium		Medium		CBN												
				MP		MM		Standard														
				(16)		(16)		(16)		(11,16)												
Order Number	Stock		Insert Number	Dimensions(mm)										Maximum Recommendation l/d Ratio								
	R	L		DCON	LF	LDRED	WF	WF2	H	GAMF	DMIN	Shim	Shim Pin		Clamp Screw	Wrench						
FSVUC1612R/L-08A	●	●	VCGT VCMT	0802	12	150	25	11	5.5	11	8°	16	4	—	—	TS202	TKY06F					
FSVUB2016R/L-11A	●	●	VBMT VBMW VBET VBGW	1103	16	180	32.5	15.5	8	15	8°	20	5	—	—	TS255	TKY08F					
FSVUB2520R/L-11A	●	●		1103	20	200	40.5	17.5	8	19	7°	25	5	—	—	TS255	TKY08F					
FSVUB3425R/L-16A ^{☆2}	●	●		1604	25	220	50	20.5	8.5	23.4	13°	34	5	SPSVN32	BCP141	TS35D	TKY15F					
FSVUB4032R/L-16A ^{☆2}	●	●		1604	32	250	84.0	27.5	12	30.4	9°	40	5	SPSVN32	BCP141	TS35D	TKY15F					

* Clamp Torque (N • m) : TS202=0.6, TS255=1.0, TS35D=3.5

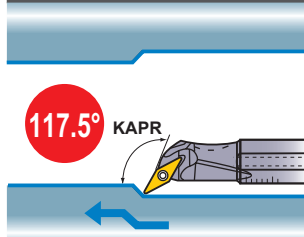
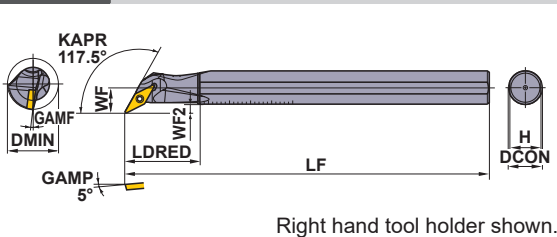
● = NEW

Note 1) The insert photos are only examples. The letters refer to the chip breaker and the dimension refers to the inscribed circle.

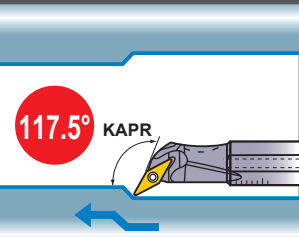
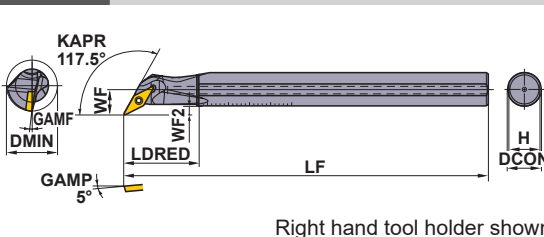
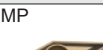
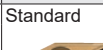
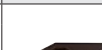
Note 2) Dimensions shown are with insert corner radius RE 0.4. (Types marked ☆1 are with RE 0.2, types marked with ☆2 are with RE 0.8)

Note 3) When using inserts with a right or left handed chipbreaker, please use left handed inserts for right handed holders and right handed inserts for left handed holders.

● : Inventory maintained in Japan.

FSVPB/C				Steel shank without coolant hole		VC ⁰⁰ inserts, VB ⁰⁰ inserts										Finish		Finish		Light		Light	
														FP		FM		LP		LM			
														(11,16)		(11,16)		(11,16)		(11,16)			
														Medium		Medium		Medium		CBN			
														MP		MM		Standard		(11,16)			
				Right hand tool holder shown.										(16)		(16)		(16)		(11,16)			
Order Number		Stock		Insert Number		Dimensions(mm)										Maximum Recommendation I/d Ratio							
						DCON	LF	LDRED	WF	WF2	H	GAMF	DMIN	Shim	Shim Pin		Clamp Screw	Wrench					
FSVPC1610R/L-08S		●	●	VCGT VCMT		0802	10	150	25	8	3	9	8°	16	3.5	—		—		TS202		TKY06F	
FSVPB2012R/L-11S		●	●	VBMT VBMW VBET VBGW		1103	12	150	28	10	4.5	11	8°	20	4	—		—		TS255		TKY08F	
FSVPB2516R/L-11S		●	●			1103	16	180	35	12.5	5	15	5°	25	5	—		—		TS255		TKY08F	
FSVPB3020R/L-11S		●	●			1103	20	200	40	15	5	19	5°	30	5	—		—		TS255		TKY08F	
FSVPB3425R/L-16S ^{☆2}		●	●			1604	25	220	50	17	5	23.4	13°	34	5	SPSVN32		BCP141		TS35D		TKY15F	
FSVPB4032R/L-16S ^{☆2}		●	●			1604	32	250	55	22	6.5	30.4	9°	40	5	SPSVN32		BCP141		TS35D		TKY15F	

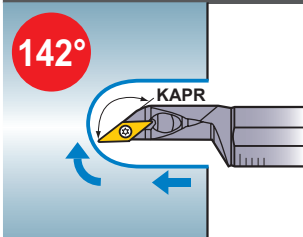
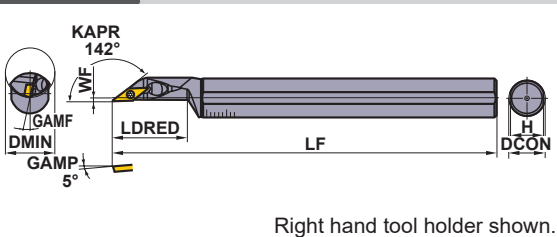
☆ Clamp Torque (N • m) : TS202=0.6, TS255=1.0, TS35D=3.5

FSVPB/C			NEW	Steel shank with coolant hole	VC ⁰⁰ inserts, VB ⁰⁰ inserts										Finish		Finish		Light		Light	
117.5° KAPR  KAPR 117.5° WF LDRED LF H DCON GAMF DMIN GAMP 5° WF2 					FP		FM		LP		LM											
																						
					(11,16)		(11,16)		(11,16)		(11,16)											
					Medium		Medium		Medium		CBN											
					MP		MM		Standard													
																						
					(16)		(16)		(16)		(11,16)											
Order Number		Stock		Insert Number		Dimensions(mm)								Maximum Recommendation I/d Ratio					 *			
		R	L			DCON	LF	LDRED	WF	WF2	H	GAMF	DMIN		Shim	Shim Pin	Clamp Screw	Wrench				
FSVPC1610R/L-08A		●	●	VCGT VCMT		0802	10	150	25	8	3	9	8°	16	3.5	—	—	TS202	TKY06F			
FSVPB2012R/L-11A		●	●	VBMT VBMW VBET VBGW		1103	12	150	28	10	4.5	11	8°	20	4	—	—	TS255	TKY08F			
FSVPB2516R/L-11A		●	●			1103	16	180	35	12.5	5	15	5°	25	5	—	—	TS255	TKY08F			
FSVPB3425R/L-16A ^{☆2}		●	●			1604	25	220	50	17	5	23.4	13°	34	5	SPSVN32	BCP141	TS35D	TKY15F			
FSVPB4032R/L-16A ^{☆2}		●	●			1604	32	250	55	22	6.5	30.4	9°	40	5	SPSVN32	BCP141	TS35D	TKY15F			

☆ Clamp Torque (N • m) : TS202=0.6, TS255=1.0, TS35D=3.5

● = NEW

DIMPLE BAR

FSVJB/C				VC $\circ\circ$ inserts, VB $\circ\circ$ inserts								Finish		Finish		Light		Light	
142° 												FP	FM	LP	LM				
												(11)	(11)	(11)	(11)				
												Medium							
												MV							
												(08,11)							
Order Number				Stock		Insert Number		Dimensions(mm)						Maximum Recommendation I/d Ratio	* 				
								DCON	LF	LDRED	WF	H	GAMF		DMIN	Clamp Screw		Wrench	
FSVJC1612R/L-08S ☆				●	●	VC GT VCMT	0802 $\circ\circ$	12	150	26	2	11	5°	16	4	TS202	TKY06F		
FSVJC2016R/L-08S ☆				●	●		0802 $\circ\circ$	16	180	36	2	15	5°	20	5	TS202	TKY06F		
FSVJB2520R/L-11S ☆				●	●	VBMT VB MW VB ET VB GW	1103 $\circ\circ$	20	200	37.5	2	19	5°	25	5	TS255	TKY08F		
FSVJB3025R/L-11S ☆				●	●		1103 $\circ\circ$	25	250	45	3.5	23.4	5°	30	5	TS255	TKY08F		

* Clamp Torque (N • m) : TS202=0.6, TS255=1.0

Note 1) The insert photos are only examples. The letters refer to the chip breaker and the dimension refers to the inscribed circle.

Note 2) Dimensions shown are with insert corner radius RE 0.4. (Types marked ☆ are with RE 0.8)

Note 3) When using inserts with a right or left handed chipbreaker, please use left handed inserts for right handed holders and right handed inserts for left handed holders.

● : Inventory maintained in Japan.

Recommended Cutting Conditions

Work Material	Properties	Cutting Mode	Chip Breaker		Recommendation	Cutting Speed (m/min)	L/D ≤ 3 (Steel shank)		L/D ≤ 4–5 (Steel shank)		
							Feed (mm/rev)	Depth of Cut (mm)	Feed (mm/rev)	Depth of Cut (mm)	
P	Mild Steel	Finish	FP	FV	NX2525	170 (120–220)	0.10 (0.05–0.15)	–0.5	0.10 (0.05–0.15)	–0.5	
			LP	SV	MP3025	150 (100–200)	0.20 (0.10–0.25)	–1.0	0.15 (0.05–0.20)	–1.0	
		Light	LP	SV	NX2525	160 (110–210)	0.20 (0.10–0.25)	–1.0	0.15 (0.05–0.20)	–1.0	
			SV	—	NX3035	150 (100–200)	0.20 (0.10–0.25)	–1.0	0.15 (0.05–0.20)	–1.0	
		Medium	MP	MV	MP3025	140 (90–190)	0.25 (0.15–0.35)	–2.0	0.20 (0.15–0.25)	–1.5	
			MP	MV	NX2525	150 (100–200)	0.25 (0.15–0.35)	–2.0	0.20 (0.15–0.25)	–1.5	
			MV	—	NX3035	140 (90–190)	0.25 (0.15–0.35)	–2.0	0.20 (0.15–0.25)	–1.5	
			MV	—	NX3035	140 (90–190)	0.25 (0.15–0.35)	–2.0	0.20 (0.15–0.25)	–1.5	
	Carbon Steel Alloy Steel	Finish	FP	—	MC6015	140 (90–190)	0.10 (0.05–0.15)	–0.5	0.10 (0.05–0.15)	–0.5	
			FV	—	VP15TF	140 (90–190)	0.10 (0.05–0.15)	–0.5	0.10 (0.05–0.15)	–0.5	
			FP	FV	NX2525	130 (80–180)	0.10 (0.05–0.15)	–0.5	0.10 (0.05–0.15)	–0.5	
		Light	LP	SV	MC6025	140 (90–190)	0.20 (0.10–0.25)	–1.0	0.15 (0.05–0.20)	–1.0	
			LP	SV	MP3025	110 (60–160)	0.20 (0.10–0.25)	–1.0	0.15 (0.05–0.20)	–1.0	
			SV	—	NX3035	110 (60–160)	0.20 (0.10–0.25)	–1.0	0.15 (0.05–0.20)	–1.0	
		Medium	MP	MV	MC6025	130 (80–180)	0.25 (0.15–0.35)	–2.0	0.20 (0.15–0.25)	–1.5	
			MP	MV	MP3025	100 (60–150)	0.25 (0.15–0.35)	–2.0	0.20 (0.15–0.25)	–1.5	
			MV	—	NX3035	100 (60–150)	0.25 (0.15–0.35)	–2.0	0.20 (0.15–0.25)	–1.5	
			MV	—	NX3035	100 (60–150)	0.25 (0.15–0.35)	–2.0	0.20 (0.15–0.25)	–1.5	
M	Stainless Steel	Finish	FM	FV	VP15TF	150 (110–190)	0.10 (0.05–0.15)	–0.5	0.10 (0.05–0.15)	–0.5	
			LM	—	MC7025	125 (85–165)	0.20 (0.10–0.25)	–1.0	0.15 (0.05–0.20)	–1.0	
		Light	SV	—	US735	125 (85–165)	0.20 (0.10–0.25)	–1.0	0.15 (0.05–0.20)	–1.0	
			LM	SV	VP15TF	130 (90–170)	0.20 (0.10–0.25)	–1.0	0.15 (0.05–0.20)	–1.0	
		Medium	MM	—	MC7025	105 (70–135)	0.20 (0.10–0.25)	–2.0	0.20 (0.15–0.25)	–1.0	
			MV	—	US735	125 (85–165)	0.20 (0.10–0.25)	–1.0	0.15 (0.05–0.20)	–1.0	
K	Gray Cast Iron	Finish	F	FS	HTi10	130 (90–160)	0.15 (0.10–0.20)	–0.5	0.15 (0.05–0.20)	–0.5	
			MK	—	MC5015	90 (60–120)	0.20 (0.15–0.25)	–2.0	0.20 (0.15–0.25)	–1.5	
		Medium	MV	—	VP15TF	90 (60–120)	0.20 (0.10–0.25)	–2.0	0.20 (0.15–0.25)	–1.5	
			MV	—	VP15TF	90 (60–120)	0.20 (0.10–0.25)	–2.0	0.20 (0.15–0.25)	–1.5	
N	Aluminium Alloy	Finish	Chip	FS	HTi10	300 (200–400)	0.10 (0.05–0.15)	–0.5	0.10 (0.05–0.15)	–0.5	
			Flat Top	—	MD220	200 (150–250)	0.10 (0.05–0.15)	–2.0	0.10 (0.05–0.15)	–1.0	
H	Hardened Steel	35-65HRC	Finish	Flat Top	—	MB8120	100 (80–200)	0.10 (0.05–0.15)	–0.15	0.10 (0.05–0.15)	–0.1

Note 1) When vibrations occur, reduce cutting speed by 30%.

Note 2) The depth of cut needs to be less than the corner diameter when using the FSVJ type.

Note 3) The recommended pressure for the internal coolant is 1MPa.

Chatter Resistant Boring Bars

DOUBLE CLAMP DIMPLE BAR

A [○] ○ [○] -DCLN			With coolant hole		CN [○] ○inserts		Finish		Light		Light		Light	
										FP	SA	LP	LM	
										(12)	(12)	(12)	(12)	
										Medium	Medium	Stainless	CBN/PCD	
			Right hand tool holder shown.							MP	Standard	MM		
										(12)	(12)	(12)	(12)	

Order Number	Stock		Insert Number	Dimensions(mm)												*	
	R	L		DCON	LF	LDRED	WF	H	GAMF	DMIN	Shim	Shim Pin	Clamp Bridge	Spring	Clamp Screw	Wrench	
A25R-DCLNR/L12	●	●	CN [○] A CN [○] G CN [○] M	1204 [○]	25	200	40	17	23	13°	32	LLSCP42	LLP14	DCK2613	DCS1	DC0621T	TKY20F
A32S-DCLNR/L12	●	●		1204 [○]	32	250	50	22	30	13°	40	LLSCN42	LLP14	DCK2613	DCS1	DC0621T	TKY20F
A40T-DCLNR/L12	●	●		1204 [○]	40	300	63	27	37	10°	50	LLSCN42	LLP14	DCK2613	DCS1	DC0621T	TKY20F

* Clamp Torque (N · m) : DC0621T=5.0

A [○] ○ [○] -DDUN			With coolant hole		DN [○] ○inserts		Finish		Light		Medium		Medium																					
 93° KAPR			 KAPR 93° WF GAMF LDRED LF H DCON GAMP 6°		FP		LP		MP		MH																							
					(15)		(15)		(15)		(15)																							
					Medium		Stainless		G class		CBN/PCD																							
							Standard		MM		R/L																							
							(15)		(15)		(15)		(15)																					
Order Number			Stock		Insert Number		Dimensions(mm)													*														
							DCON		LF		LDRED		WF		H		GAMF		DMIN		Shim		Shim Pin		Clamp Bridge		Spring		Clamp Screw		Wrench			
A25R-DDUNR/L15			●●		DN [○] A		1504		25		200		40		17		23		13°		35		LLSDP42		LLP14		DCK2613		DCS1		DC0621T		TKY20F	
A32S-DDUNR/L15			●●		DN [○] G		1504		32		250		50		22		30		13°		40		LLSDN42		LLP14		DCK2613		DCS1		DC0621T		TKY20F	
A40T-DDUNR/L15			●●		DN [○] M		1504		40		300		63		27		37		10°		50		LLSDN42		LLP14		DCK2613		DCS1		DC0621T		TKY20F	

* Clamp Torque (N · m) : DC0621T=5.0

Recommended Cutting Conditions

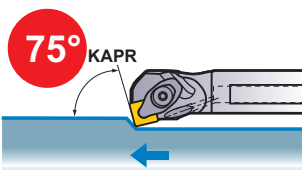
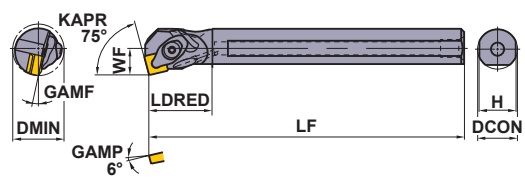
Work Material	Hardness	Cutting Mode	l/d ≤ 3			l/d = 3—4		
			Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
P Carbon Steel Alloy Steel	180—350HB	Medium	110 (80—140)	0.25 (0.1—0.4)	—5.0	110 (80—140)	0.2 (0.1—0.3)	—4.0
M Stainless Steel	≤200HB	Medium	80 (60—100)	0.2 (0.1—0.3)	—4.0	70 (50—100)	0.15 (0.1—0.25)	—3.0
K Gray Cast Iron	Tensile Strength ≤350MPa	Medium	80 (60—100)	0.25 (0.1—0.4)	—5.0	80 (60—100)	0.2 (0.1—0.3)	—4.0

Note 1) The insert photos are only examples. The letters refer to the chip breaker and the dimension refers to the inscribed circle.

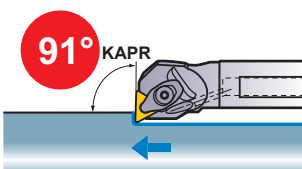
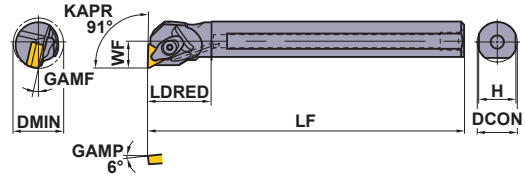
Note 2) Dimensions shown are with insert corner radius RE 0.8.

Note 3) When using inserts with a right or left handed chipbreaker, please use left handed inserts for right handed holders and right handed inserts for left handed holders.

● : Inventory maintained in Japan.

A ^{○○○} -DSKN				With coolant hole								SN ^{○○} inserts				Finish		Light		Medium		Medium	
												Right hand tool holder shown.											
														(12)		(12)		(12)		(12)			
														Medium		Stainless		G class		CBN/PCD			
														Standard		MM		R/L					
																							
												(12)		(12)		(12)		(12)					
Order Number	Stock		Insert Number	Dimensions(mm)																			
	R	L		DCON	LF	LDRED	WF	H	GAMF	DMIN	Shim							Shim Pin	Clamp Bridge	Spring	Clamp Screw	Wrench	
A25R-DSKNR/L12	●	●	SNMA SNMG SNMM SNGA SNGG	1204 ^{○○○}	25	200	40	17	23	13°	32	LLSSP42	LLP14	DCK2613	DCS1	DC0621T	TKY20F						
A32S-DSKNR/L12	●	●		1204 ^{○○○}	32	250	50	22	30	13°	40	LLSSN42	LLP14	DCK2613	DCS1	DC0621T	TKY20F						

* Clamp Torque (N • m) : DC0621T=5.0

A ^{○○○} -DTFN				With coolant hole								TN ^{○○} inserts				Finish		Light		Medium		Medium	
												Right hand tool holder shown.		 (16)		 (16)		 (16)		 (16)			
														Medium		Stainless		G class		CBN/PCD			
														Standard		MM		R/L					
														 (16)		 (16)		 (16)		 (16)			
Order Number	Stock		Insert Number	Dimensions(mm)								 Shim	 Shim Pin	 Clamp Bridge	 Spring	 Clamp Screw	 Wrench						
	R	L		DCON	LF	LDRED	WF	H	GAMF	DMIN													
A25R-DTFNR/L16	●	●	TN [○] A TN [○] G TN [○] M	1604 ^{○○○}	25	200	40	17	23	13°	32	LLSTP32	LLP23	DCK2211	DCS2	DC0520T	TKY15F						
A32S-DTFNR/L16	●	●		1604 ^{○○○}	32	250	50	22	30	13°	40	LLSTN32	LLP23	DCK2211	DCS2	DC0520T	TKY15F						

* Clamp Torque (N • m) : DC0520T=3.5

Chatter Resistant Boring Bars

DOUBLE CLAMP DIMPLE BAR

A ₀₀₀ -DVUN			With coolant hole		VN ₀₀ inserts		Finish		Light		Medium		Medium			
							FP		LP		MP		MH			
							(16)		(16)		(16)		(16)			
							Medium		Stainless		G class		CBN/PCD			
							Standard		MM		R/L					
							(16)		(16)		(16)		(16)			
Order Number	Stock		Insert Number	Dimensions(mm)												
	R	L		DCON	LF	LDRED	WF	H	GAMF	DMIN						
A40T-DVUNR/L16	●	●	VN ₀₀ A ₀₀ 1604	40	300	63	27	37	9°	50	DCSVN32	LLP13	DCK3113	DCS2	DC0520T	TKY15F

* Clamp Torque (N · m) : DC0520T=3.5

A○○○-DWLN			With coolant hole		WN○○inserts		Finish		Light		Medium		Medium				
					FP		LP		MP		MK						
					(08)		(06, 08)		(06,08)		(08)						
					Medium		Medium — Rough		Stainless								
					Standard		RP		MM								
						(08)		(08)		(06,08)							
Order Number	Stock		Insert Number	Dimensions(mm)													
	R	L		DCON	LF	LDRED	WF	H	GAMF	DMIN	Shim	Shim Pin	Clamp Bridge	Spring	Clamp Screw	Wrench	
A25R-DWLNRL06	●	●	WNMA WNMG	0604○○	25	200	40	17	23	13°	35	LLSWP32	LLP23	DCK2211	DCS2	DC0520T	TKY15F
A25R-DWLNRL08	●	●	WNMA WNMG	0804○○	25	200	40	17	23	13°	35	LLSWP42	LLP14	DCK2613	DCS1	DC0621T	TKY20F
A32S-DWLNRL08	●	●	WNMA WNMG	0804○○	32	250	50	22	30	13°	40	LLSWN42	LLP14	DCK2613	DCS1	DC0621T	TKY20F
A40T-DWLNRL08	●	●	WNGA	0804○○	40	300	63	27	37	10°	50	LLSWN42	LLP14	DCK2613	DCS1	DC0621T	TKY20F

* Clamp Torque (N · m) : DC0520T=3.5, DC0621T=5.0

Recommended Cutting Conditions

Work Material	Hardness	Cutting Mode	l/d ≤ 3			l/d = 3—4		
			Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)	Cutting Speed (m/min)	Feed (mm/rev)	Depth of Cut (mm)
P Carbon Steel Alloy Steel	180—350HB	Medium	110 (80—140)	0.25 (0.1—0.4)	—5.0	110 (80—140)	0.2 (0.1—0.3)	—4.0
M Stainless Steel	≤200HB	Medium	80 (60—100)	0.2 (0.1—0.3)	—4.0	70 (50—100)	0.15 (0.1—0.25)	—3.0
K Gray Cast Iron	Tensile Strength ≤350MPa	Medium	80 (60—100)	0.25 (0.1—0.4)	—5.0	80 (60—100)	0.2 (0.1—0.3)	—4.0

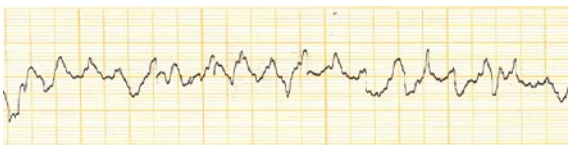
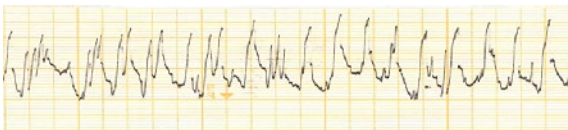
Note 1) The insert photos are only examples. The letters refer to the chip breaker and the dimension refers to the inscribed circle.

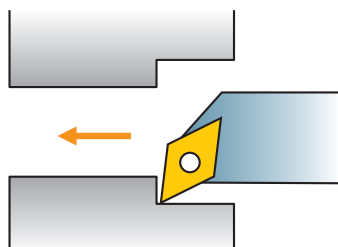
Note 2) Dimensions shown are with insert corner radius RE 0.8.

Note 3) When using inserts with a right or left handed chipbreaker, please use left handed inserts for right handed holders and right handed inserts for left handed holders.

● : Inventory maintained in Japan.

Cutting Performance

	Measured Value	Ra
NEW Steel shank with coolant hole		1.4μm
Steel shank without coolant hole		2.4μm



<Cutting Conditions>
 Work Material : JIS SCM400
 Tool : KAPR 93°
 Inserts : DCMT070204-MV
 Cutting Speed: $v_c = 80 \text{ m/min}$
 Feed per Rev. : $f = 0.1 \text{ mm/rev}$
 Depth of Cut : $a_p = 0.5 \text{ mm}$
 Cutting Mode : Wet Cutting Internal vs External
 (Water-soluble Cutting Fluid)

Insert Grade

Cermet

The optimised alloy structure and special alloy binder improves both wear and fracture resistance.

For Wet Cutting

NX3035



For Dry Cutting

NX2525



For Improved Surface Finishes

MP3025



CBN

CBN-series for Hardened Steel Turning

BC8220 **NEW**



BC/MB8100



Coated CBN Grade for Cast Irons

BC5110 **NEW**



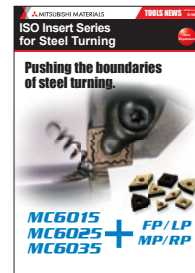
Grade

ISO Insert Series for Steel Turning

MC6000 Series

MC6015 For High Speed Cutting

MC6025 The Standard Choice



PVD Coated Cemented Carbide Grade for Carbon Steels

MS6015

Ideal for carbon and free cutting steels. For superior surface finishes and excellent dimensional accuracy.



ISO Insert Series for Cast Iron Turning

MC5000 Series

Reduced cycle times!

New coating for speeds up to 600 m/min.



ISO Insert Series for Stainless Steel Turning

MC/MP7000 Series

**Excellent resistance to notch wear and provides good burr control.
Long tool life achieved due to high plastic deformation resistance.**



ISO Turning Inserts for Difficult-to-cut Materials

MP/MT9000 Series

The high Al-rich (Al,Ti)N single layer coating significantly reduces edge fracturing.



PVD Coated Grade for High Precision and Small Parts Machining

MS9025 NEW

Improved Cutting Edge Delivers Next Generation Small Parts Machining



Positive Inserts

Cutting Conditions (Guide) : ● : Stable Cutting ● : General Cutting ✖ : Unstable Cutting

P	M	K	N	S															
Steels	Stainless Steels	Cast Irons	Non-ferrous Metals	Heat-resistant Alloys, Titanium Alloys															
Order Number	RE	Cutting Area	Features	Coated															Page
				UE6105	UE6110	MC6015	MC6025	MS6015	MC7025	MC7035	US735	MC5005	MC5015	UC5105	UC5115	MP9005	MP9015	MS9025	
CCGT060202-AZ	0.2	F																	3,4
CCGT060204-AZ	0.4	F																	3,4
CCGH060202MR/L-F	0.18	F	Hand					●											3,4
CCGH060202R/L-F	0.2	F	Hand																3,4
CCGH060204MR/L-F	0.38	F	Hand					●											3,4
CCGH060204R/L-F	0.4	F	Hand																3,4
CCGT0602V5-FJ	0.05	F																	3,4
CCGT060201-FJ	0.1	F																	3,4
CCGT060202-FJ	0.2	F																	3,4
CCGT060201M-FS	0.08	F																	3,4
CCGT060202M-FS	0.18	F																	3,4
CCGT060201M-FS-P	0.08	F	Mirror-surface																3,4
CCGT060202M-FS-P	0.18	F	Mirror-surface																3,4
CCMT060202-FM	0.2	F																	3,4
CCMT060204-FM	0.4	F																	3,4
CCMT060202-FP	0.2	F		●	●	●													3,4
CCMT060204-FP	0.4	F		●	●	●													3,4
CCMT060202-FV	0.2	F																	3,4
CCMT060204-FV	0.4	F																	3,4
CCGT060201M-LS	0.08	L																	3,4
CCGT060202M-LS	0.18	L																	3,4
CCGT060201M-LS-P	0.08	L	Mirror-surface					●											3,4
CCGT060202M-LS-P	0.18	L	Mirror-surface					●											3,4
CCGT0602V3R/L-SS	0.03	L	Hand																3,4
CCGT060201MR/L-SS	0.08	L	Hand					●											3,4
CCGT060201R/L-SS	0.1	L	Hand																3,4
CCGT060202MR/L-SS	0.18	L	Hand					●											3,4
CCGT060202R/L-SS	0.2	L	Hand																3,4
CCMT060204-LM	0.4	L							●	●									3,4
CCMT060208-LM	0.8	L							●	●									3,4
CCMT060204-LP	0.4	L		●	●	●													3,4
CCMT060208-LP	0.8	L		●	●	●													3,4
CCMT060202-LS	0.2	L																	3,4
CCMT060204-LS	0.4	L																	3,4
CCMH060202-SV	0.2	L				●				●									3,4
CCMH060204-SV	0.4	L				●				●									3,4
CCMT060202-SW	0.2	L	W	●	●	●													3,4
CCMT060204-SW	0.4	L	W	●	●	●													3,4
CCET060200R/L-SN	0	M	Hand																3,4
CCET0602V3R/L-SN	0.03	M	Hand																3,4
CCET0602V3R/LW-SN	0.03	M	Hand, W																3,4
CCET060201R/L-SN	0.1	M	Hand																3,4
CCET060202R/L-SN	0.2	M	Hand																3,4
CCET060204R/L-SN	0.4	M	Hand																3,4
CCET0602V3R/L-SR	0.03	M	Hand																3,4
CCET060201R/L-SR	0.1	M	Hand																3,4
CCET060202R/L-SR	0.2	M	Hand																3,4

● : Inventory maintained in Japan.
(10 inserts in one case)

Features ★: By changing the clamp screw, it is possible to use. Please refer to P1.  = **NEW**

Hand : Hand of Tool, Flat Top : without a chip breaker, W : with wiper insert, Mirror-surface : Polished (mirror surface) finish specification

Features ★: By changing the clamp screw, it is possible to use. Please refer to P1.  = **NEW**

Hand : Hand of Tool, Flat Top : without a chip breaker, W : with wiper insert, Mirror-surface : Polished (mirror surface) finish specification

● = NEW

28

Features ★: By changing the clamp screw, it is possible to use. Please refer to P1.  = 

Hand : Hand of Tool, Flat Top : without a chip breaker, W : with wiper insert, Mirror-surface : Polished (mirror surface) finish specification

Chatter Resistant Boring Bars

■ Positive Inserts

P	Steels																														
M	Stainless Steels																														
K	Cast Irons																														
N	Non-ferrous Metals																														
S	Heat-resistant Alloys, Titanium Alloys																														
Order Number		RE	Cutting Area	Features	Coated															Cermet	Coated Cermet	Carbide				Page					
					UE6105	UE6110	MC6015	MC6025	MS6015	MC7025	MC7035	US735	MC5005	MC5015	UC5105	UC5115	MP9005	MP9015	MP9025	MS9025	VP10RT	VP15TF	UP20M	NX3035	MP3025		AP25N	VP25N	VP45N	UT10T	HT105T
WPMT040202-MV		0.2	M					●			●								●		●	●	●								11,12
WPMT040204-MV		0.4	M					●			●		●						●		●	●	●		●						11,12
WPGT060304R/L-FS		0.4	F	Hand															●		●										11,12
WPMT060304-MV		0.4	M					●			●		●						●		●	●	●								11,12
WPMT060308-MV		0.8	M					●			●		●						●		●	●	●		●						11,12

● : Inventory maintained in Japan.
(10 inserts in one case)

Chatter Resistant Boring Bars

■ Positive Inserts CBN & PCD

H	Hardened Materials																	
K	Cast Irons																	
S	Heat-resistant Alloys, Titanium Alloys																	
N	Non-ferrous Metals																	
	Sintered Alloys																	
Order Number		RE	Features and Machining Methods	Coated CBN					CBN							PCD		Page
				NEW BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB4120	MB4020	MB710	MB730	MD220	
NP-CPGB090302FS2		0.2	Continuous		●	●						●	●					3,4
NP-CPGB090304FS2		0.4	Continuous		●		●					●	●					3,4
NP-CPGB090308FS2		0.8	Continuous		●		●					●	●					3,4
NP-CPGB090312FS2		1.2	Continuous				●											3,4
NP-CPGB090302GS2		0.2			●	●												3,4
NP-CPGB090304GS2		0.4			●	●												3,4
NP-CPGB090308GS2		0.8			●	●												3,4
NP-CPGB090302GA2		0.2		●			●											3,4
NP-CPGB090304GA2		0.4		●			●	●										3,4
NP-CPGB090308GA2		0.8		●			●	●										3,4
NP-CPGB090312GA2		1.2		●			●	●										3,4
NEW	NP-CPGB090304VA2	0.4	For High Speed and Feed	●														3,4
NEW	NP-CPGB090308VA2	0.8	For High Speed and Feed	●														3,4
NEW	NP-CPGB090312VA2	1.2	For High Speed and Feed	●														3,4
NP-CPGB090304TA2		0.4	Interrupted	●			●	●										3,4
NP-CPGB090308TA2		0.8	Interrupted	●			●	●										3,4
NP-CPGB090312TA2		1.2	Interrupted	●			●	●										3,4
NP-CPGB090302SE2		0.2	For Sintered Alloys									●	●					3,4
NP-CPGB090304SE2		0.4	For Sintered Alloys									●	●					3,4
NP-CPGB090308SE2		0.8	For Sintered Alloys									●	●					3,4
NP-CPMH090302		0.2														●		3,4
NP-CPMH090304		0.4														●		3,4
CPGT090302		0.2														●		3,4
CTGT090304		0.4														●		3,4
NP-DCGW070202GA2		0.2		●			●				●							7,8,9,10
NP-DCGW070204GA2		0.4		●			●	●			●							7,8,9,10
NP-DCGW070208GA2		0.8		●				●										7,8,9,10
NP-DCGW070202GS2		0.2				●	●											7,8,9,10
NP-DCGW070204GS2		0.4				●	●		●			●						7,8,9,10
NP-DCGW070208GS2		0.8				●	●					●						7,8,9,10
NP-DCGW070202FS2		0.2	Continuous			●				●								7,8,9,10
NP-DCGW070204FS2		0.4	Continuous			●	●		●			●	●					

● : Inventory maintained in Japan.
(10 inserts in one case)

Features ★: By changing the clamp screw, it is possible to use. Please refer to P1. = NEW

Hand : Hand of Tool, Full Face : Full face CBN, Br : Insert with Chip breaker

Chatter Resistant Boring Bars

■ Positive Inserts CBN & PCD

H	Hardened Materials																	
K	Cast Irons																	
S	Heat-resistant Alloys, Titanium Alloys																	
N	Non-ferrous Metals																	
	Sintered Alloys																	
Order Number	RE	Features and Machining Methods	Coated CBN						CBN						PCD		Page	
			NEW BC8220	BC8105	BC8110	BC8120	BC8130	NEW BC5110	MB8110	MB8120	MB8130	MB4120	MB4020	MB710	MB730	MD220		
TPGX080204	0.4	*																5,6
TPGX080208	0.8	*																5,6
NP-TPGB090204GA3	0.4																	5,6
NP-TPGB090208GA3	0.8																	5,6
NP-TPGB090202GS3	0.2																	5,6
NP-TPGB090204GS3	0.4																	5,6
NP-TPGB090208GS3	0.8																	5,6
NP-TPGB090202FS3	0.2	Continuous																5,6
NP-TPGB090204FS3	0.4	Continuous																5,6
NP-TPGB090204TA3	0.4	Interrupted																5,6
NP-TPGB090208TA3	0.8	Interrupted																5,6
NP-TPGB090202SF3	0.2	For Sintered Alloys																5,6
NP-TPGB090204SF3	0.4	For Sintered Alloys																5,6
NP-TPGB090202SE3	0.2	For Sintered Alloys																5,6
NP-TPGB090204SE3	0.4	For Sintered Alloys																5,6
NP-TPMH090202R/L-F	0.2	Hand, Br																5,6
NP-TPMH090204R/L-F	0.4	Hand, Br																5,6
NP-TPMX090202R/L-F	0.2	*Hand, Br																5,6
NP-TPMX090204L-F	0.4	*Hand, Br																5,6
NP-TPMX090208L-F	0.8	*Hand, Br																5,6
TPGX090202	0.2	*																5,6
TPGX090204	0.4	*																5,6
TPGX090208	0.8	*																5,6
NP-TPGB110302GA3	0.2																	5,6
NP-TPGB110304GA3	0.4																	5,6
NP-TPGB110308GA3	0.8																	5,6
NP-TPGB110302GS3	0.2																	5,6
NP-TPGB110304GS3	0.4																	5,6
NP-TPGB110308GS3	0.8																	5,6
NP-TPGB110302FS3	0.2	Continuous																5,6
NP-TPGB110304FS3	0.4	Continuous																5,6
NP-TPGB110308FS3	0.8	Continuous																5,6
NEW NP-TPGB110304VA3	0.4	For High Speed and Feed																5,6
NEW NP-TPGB110308VA3	0.8	For High Speed and Feed																

● : Inventory maintained in Japan.
(10 inserts in one case)

Features ★: By changing the clamp screw, it is possible to use. Please refer to P1.  =  NEW

Hand : Hand of Tool, Full Face : Full face CBN, Br : Insert with Chip breaker

Chatter Resistant Boring Bars

■ Positive Inserts CBN & PCD

[illegible]

● = NEW

● : Inventory maintained in Japan.
(10 inserts in one case)

[illegible]



Chatter Resistant Boring Bars

Dimple Bar Series

For Your Safety

●Don't handle inserts and chips without gloves. ●Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage. ●Please use safety covers and wear safety glasses. ●When using compounded cutting oils, please take fire precautions. ●When attaching inserts or spare parts, please use only the correct wrench or driver. ●When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

 **MITSUBISHI MATERIALS CORPORATION**

MITSUBISHI MATERIALS CORPORATION

Overseas Sales Dept, Asian Region

KFC bldg., 8F, 1-6-1 Yokoami, Sumida-ku, Tokyo 130-0015, Japan
TEL +81-3-5819-8771 FAX +81-3-5819-8774

Overseas Sales Dept, European & American Region

KFC bldg., 8F, 1-6-1 Yokoami, Sumida-ku, Tokyo 130-0015, Japan
TEL +81-3-5819-8772 FAX +81-3-5819-8774

<http://www.mitsubishicarbide.com/en/>
(Tools specifications subject to change without notice.)

EXP-20-E009
2020.10.E(-)