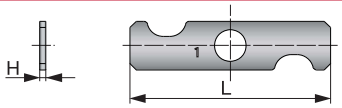
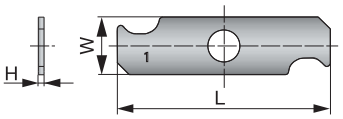
SHIM

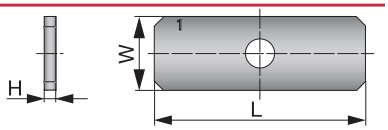
SHIMSET-GP04



SHIMSET-GP05



SHIMSET-GP06



Designation	DC	W	L	H
SHIMSET-GP04	12 - 13.99	4	16	2
SHIMSET-GP05	14 - 15.99	5	18	2.5
SHIMSET-GP06	16 - 18	5	18	2.5

(Unit: mm)

Shim thickness: 0.01 / 0.02 / 0.03 / 0.04 / 0.05 mm
Shim sheets are sold as set.
Package quantity = 5 pcs. (1pc per each thickness)

Shim sheet combinations by adjusting diameter

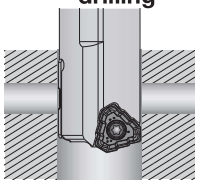
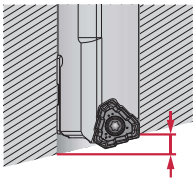
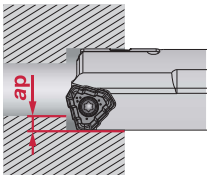
Adjustment diameter	Shim thickness in guide pad of diameter side.	Shim thickness in guide pad of bearing side.	Required number of shim set
+0.0004	0.0004	-	1
+0.0008	0.0008	0.0004	1
+0.0012	0.0012	0.0004 + 0.0008	1
+0.0016	0.0016	0.0004 + 0.0012	1
+0.0020	0.0020	0.0008 + 0.0012	1
+0.0024	0.0004 + 0.0020	0.0008 + 0.0016	1
+0.0028	0.0008 + 0.0020	0.0012 + 0.0016	1
+0.0031	0.0012 + 0.0020	0.0016 + 0.0016	2
+0.0035	0.0016 + 0.0020	0.0016 + 0.0020	2
+0.0039	0.0020 + 0.0020	0.0016 + 0.0016 + 0.0008	2

(Unit: in)

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Priority	Chip-breaker	Cutting speed *Vc* (sfm)	*f* (ipr) ø0.472 - ø0.551	ø0.551 - ø0.709	ø0.709 - ø1.102	ø1.103 - ø1.575
P	Low carbon steel (C < 0.3) 70 ,1025, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.004	0.0012 - 0.004	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0039	0.0020 - 0.004	0.0020 - 0.004	0.004 - 0.008
	Carbon steel (C > 0.3) 1045c,1055, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.004	0.0012 - 0.005	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0063	0.0020 - 0.006	0.0020 - 0.008	0.004 - 0.008
	Low alloy steel (C < 0.3) 5120, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.004	0.0012 - 0.004	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0039	0.0020 - 0.004	0.0020 -0.004	0.004 - 0.008
	Alloy steel (C > 0.3) 4140, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.004	0.0012 - 0.005	-
		First choice	NDJ/G	262 - 394	0.0020 - 0.0063	0.0020 - 0.006	0.0020 - 0.008	0.004 - 0.008
M	Stainless steel (Austenitic) 304,316, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.002	0.0012 - 0.002	-
		First choice	NDJ/G	197 - 328	0.0020 - 0.0039	0.0020 - 0.004	0.0020 - 0.004	0.004 - 0.006
	Stainless steel (Martensitic, Ferritic) 430,416, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.002	0.0012 - 0.002	-
		First choice	NDJ/G	197 - 328	0.0020 - 0.0039	0.0020 - 0.004	0.0020 - 0.004	0.004 - 0.006
	Stainless steel (Precipitation hardening) S17400, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.002	0.0012 - 0.002	-
		First choice	NDJ/G	197 - 328	0.0020 - 0.0039	0.0020 - 0.004	0.0020 - 0.004	0.004 - 0.006
K	Gray cast iron No.250B, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.006	0.0020 - 0.007	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0098	0.0020 - 0.010	0.0020 - 0.012	0.004 - 0.012
	Ductile cast iron 700, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.006	0.0020 - 0.007	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0098	0.0020 - 0.010	0.0020 - 0.012	0.004 - 0.012
N	Aluminum alloys	For low feed machines	NDL	262 - 525	-	0.0012 - 0.006	0.0012 - 0.006	-
		First choice	NDJ/G	328 - 656	0.0020 - 0.0079	0.0020 - 0.008	0.0020 - 0.008	0.004 - 0.010
S	Heat-resistant alloys Inconel 718, etc.	For low feed machines	NDL	65.6 - 164	-	0.0012 - 0.002	0.0012 - 0.003	-
		First choice	NDJ/G	65.6 - 164	0.0016 - 0.0031	0.0016 - 0.003	0.0016 - 0.004	0.002 - 0.005
	Titanium alloys Ti-6Al-4V, etc.	For low feed machines	NDL	98.4 - 197	-	0.0012 - 0.004	0.0012 - 0.005	-
		First choice	NDJ/G	98.4 - 197	0.0020 - 0.0051	0.0020 - 0.005	0.0020 - 0.006	0.004 - 0.007
H	Hardened steel ≥ 40HRC	For low feed machines	NDL	131 - 328	-	0.0012 - 0.003	0.0012 - 0.003	-
		First choice	NDJ/G	164 - 328	0.0016 - 0.0031	0.0016 - 0.003	0.0016 - 0.004	0.002 - 0.005

APPLICATION RANGE

Feed *f* (ipr)	0.001 - 0.002	0.001 - 0.05	0.004 - 0.012
Application	OK Cross hole drilling 	OK Inclined exit  0.630" or less (for standard drill)	OK Boring 

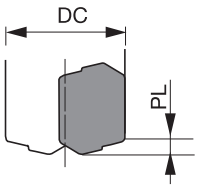
Note 1) When drilling cross holes or exiting the inclined surface, make sure the guide-pads are suitable.
Note 2) A pilot hole is needed prior to a boring operation. ap ≥ 0.040" is recommended for boring operations.

SHAPES OF THE HOLE BOTTOM

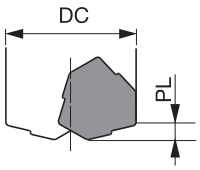
DC	Insert	Maximum difference PL
0.472 - 0.551	LOGT06	0.071
0.551 - 0.630	TOHT07	0.079
0.630 - 0.709	TOHT08	0.087
0.709 - 0.787	TOHT09	0.118
0.788 - 0.866	TOHT10	0.126
0.866 - 0.984	TOHT11	0.134
0.985 - 1.102	TOHT12	0.146

(Unit: Inch)

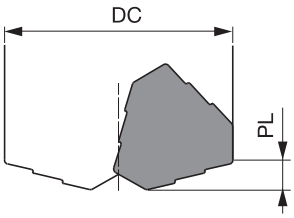
LOGT06...



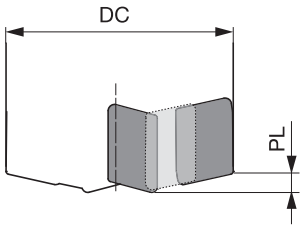
TOHT07..., 08...



TOHT09... - TOHT12...



DC	Insert Central	Insert Intermediate	Insert Peripheral	Maximum difference PL
1.103 - 1.142	FBM070408L-G-C	FBM060304R-G-I	FBH060304R-G-P	0.102
1.142 - 1.181	FBM070408L-G-C	FBM060304R-G-I	FBH060304R-G-P	0.102
1.181 - 1.220	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.114
1.221 - 1.260	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.118
1.260 - 1.299	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.122
1.300 - 1.339	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.118
1.339 - 1.378	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.122
1.378 - 1.417	FBM080408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.122
1.418 - 1.457	FBM080408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.118
1.457 - 1.496	FBM080408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.122
1.496 - 1.535	FBM080408L-G-C	FBM070404R-G-I	FBH090404R-G-P	0.134
1.536 - 1.575	FBM080408L-G-C	FBM070404R-G-I	FBH090404R-G-P	0.13

(Unit: Inch)

FBM...