

GROOVING INSERTS



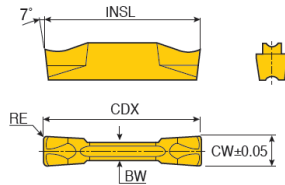
Grooving Grade

Parting and grooving grades

Grades	ISO	Characteristics & applications
UK325 PVD coated	K05 — K25 H05 — H25	- General machining of gray and ductile cast iron for grooving and turning - Finish and medium machining of hardened steel
UT 927 PVD coated	P20 — P40 M20 — M40 S20 — S40	- General machining of steel, stainless steel and heat-resistant super alloy for parting, grooving and turning - Continuous cut and medium cutting speed
UT 921 PVD coated	P20 — P40 M20 — M40 S20 — S40	- General machining of steel, stainless steel and heat-resistant super alloy for small parts - Grooving, turning and parting
UT925 PVD coated	P25 — P45 M25 — M45	Rough machining of steel and stainless steel for parting, grooving and turning
UT 923 PVD coated	P30 — P50 M30 — M50 S30 — S50	Low speed or rough and interrupted machining of steel, stainless steel and heat-resistant super alloy for parting, grooving and turning
UK01 Carbide	K05 — K15 N05 — N15 S05 — S15	General machining of cast iron, aluminum alloys, non-ferrous materials and titanium alloys

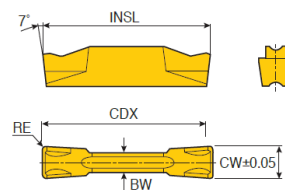
★ New launch UH744 - FOR INCONAL AND SS MACHINING

GRDJ



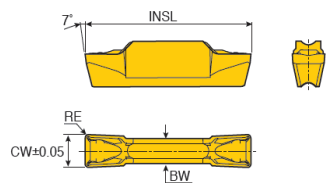
Designation	SSC	CW	RE	BW	INSL	CDX	FG (min)	FG (min)	
GRDJ 2	2	2	0.2	1.7	20	19	0.04	0.12	
GRDJ 3	3	3	0.2	2.4	20	19	0.04	0.16	
GRDJ4	4	4	0.3	3	20	19	0.05	0.18	

GRDC



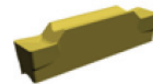
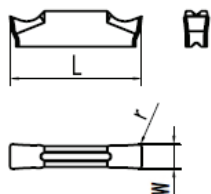
Designation	SSC	CW	RE	BW	INSL	CDX	FG (min)	FG (min)	
GRDC 2	2	2	0.2	1.7	20	19	0.04	0.12	
GRDC 3	3	3	0.2	2.4	20	19	0.04	0.16	
GRDC4	4	4	0.3	3	20	19	0.05	0.18	
GRDC5	5	5	0.3	4	25	24	0.05	0.2	

GRXU



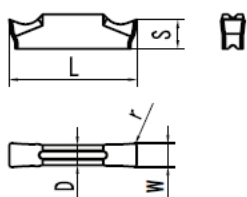
Designation	SSC	CW	RE	BW	INSL	FT (min)	FT (max)	AP (min)	AP (max)	FG (min)	FG (max)	
GRXU 5E-0.4	5	5.00	0.40	4.0	25.00	0.20	0.30	0.50	3.00	0.10	0.30	
GRXU 5E-0.8	5	5.00	0.80	4.0	25.00	0.23	0.35	1.00	3.00	0.10	0.30	
GRXU 6E-0.4	6	6.00	0.40	5.0	25.00	0.22	0.36	0.50	3.60	0.13	0.40	
GRXU 6E-0.8	6	6.00	0.80	5.0	25.00	0.24	0.42	1.00	3.60	0.13	0.40	

GRDT/GRDJ



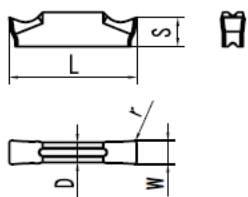
Designation	W	R	L	S	D	
GRDT3	3	0.2	20	4	2.4	
GRDT4	4	0.3	20	4.05	3	
GRDJ3	3	0.2	20	4	2.4	
GRDJ4	4	0.3	20	4.05	3	
GRDJ5	5	0.3	25	4.89	4	

GRMN



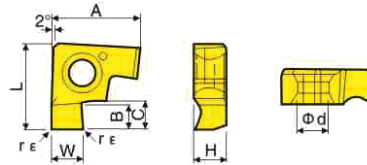
Designation	W	R	L	S	D	
GRMN150-G	1.5	0.15	16	3.5	1.2	
GRMN200-G	2.0	0.2	16	3.5	1.6	
GRMN250-G	2.5	0.2	18.5	3.85	2	
GRMN300-G	4.0	0.4	21	4.8	2.35	
GRMN400-G	4.0	0.4	21	4.8	3.3	
GRMN200-M	2.0	0.2	16	3.5	1.6	
GRMN250-M	2.5	0.2	18.5	3.85	2	
GRMN300-M	3.0	0.4	21	4.8	2.35	
GRMN400-M	4.0	0.4	21	4.8	3.3	
GRMN500-M	5.0	0.8	26	5.8	4.12	
GRMN600-M	6.0	0.8	26	5.8	-	

GRMR



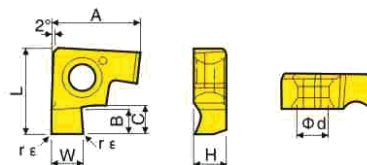
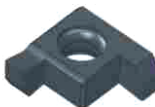
Designation	W	R	L	S	D	
GRMR200-M	2.0	1.0	16	3.5	1.6	
GRMR300-M	3.0	1.5	21	4.8	2.35	
GRMR400-M	4.0	2.0	21	4.8	3.3	
GRMR500-M	5.0	2.5	26	5.8	4.12	
GRMR600-M						

GER-A



		(mm)							
		W	B	C	rε	A	L	H	Φd
GER	100-A	1.00	1.5	1.8	0.05	6.69	6.5	2.58	2.5
	125-A	1.25	1.5	1.8	0.05	6.69	6.5	2.58	2.5
	150-A	1.50	1.5	1.8	0.1	6.69	6.5	2.58	2.5
	200-A	2.00	1.5	1.8	0.1	6.69	6.5	2.58	2.5

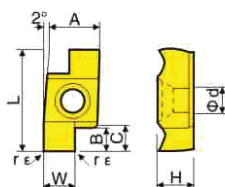
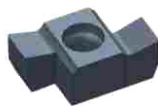
GER-B



		(mm)							
		W	B	C	rε	A	L	H	Φd
GER	100-B	1.00	2.2	2.6	0.05	8.46	8.2	3.18	2.7
	125-B	1.25	2.2	2.6	0.05	8.46	8.2	3.18	2.7
	150-B	1.50	2.2	2.6	0.1	8.46	8.2	3.18	2.7
	200-B	2.00	2.2	2.6	0.1	8.46	8.2	3.18	2.7
	250-B	2.50	2.2	2.6	0.2	8.46	8.2	3.18	2.7
	300-B	3.00	2.2	2.6	0.2	8.46	8.2	3.18	2.7

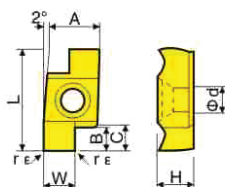
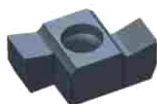


GER-C



		(mm)							
		W	B	C	rε	A	L	H	Φd
GER	100-C	1.00	2.5	2.7	0.05	5.8	11.48	4.05	2.8
	125-C	1.25	2.5	2.7	0.05	5.8	11.48	4.05	2.8
	150-C	1.50	2.5	2.7	0.1	5.8	11.48	4.05	2.8
	175-C	1.75	2.5	2.7	0.1	5.8	11.48	4.05	2.8
	200-C	2.00	2.5	2.7	0.1	5.8	11.48	4.05	2.8
	250-C	2.50	2.5	2.7	0.2	5.8	11.48	4.05	2.8
	300-C	3.00	2.5	2.7	0.2	5.8	11.48	4.05	2.8

GER-D

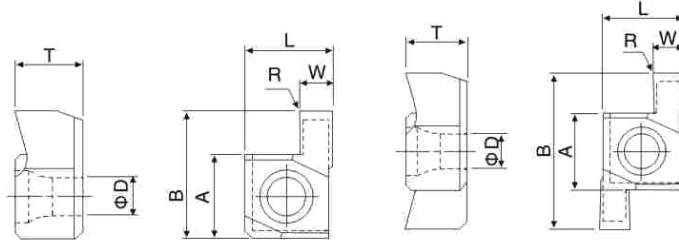


		(mm)							
		W	B	C	rε	A	L	H	Φd
GER	100-D	1.00	2.5	4.8	0.05	6.8	16.44	5.05	3.4
	150-D	1.50	3.0	4.8	0.10	6.8	16.44	5.05	3.4
	170-D	1.70	3.0	4.8	0.10	6.8	16.44	5.05	3.4
	200-D	2.00	3.2	4.8	0.10	6.8	16.44	5.05	3.4
	250-D	2.50	3.2	4.8	0.10	6.8	16.44	5.05	3.4
	300-D	3.00	4.5	4.8	0.20	6.8	16.44	5.05	3.4
	350-D	3.50	4.5	4.8	0.20	6.8	16.44	5.05	3.4



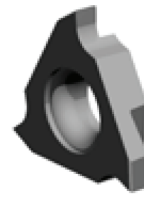
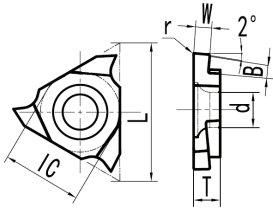
GRMN/GRMR

GRMN/GRMR



			W	A	B	T	ΦD	L	R	WP030	
6GR/L	100	1.5	1	4.76	6.44	2.34	2.3	5.56	0.2	◆	
	150		1.5							◆	
	200		2							◆	
7GR/L	100		1	5.56	7.36	3.08	2.58	5.56		◆	
	150		1.5							◆	
	200		2							◆	
8GR/L	100		1	5.56	10.16	3.87	2.58	6.15		◆	
	150		2							1.5	◆
	200									2	◆
	250	2.5							◆		
	300	3							◆		
	350	3.5							◆		
9GR/L	100	1.5	6.35	12.95	4.66	2.86	7.74	◆			
	150	2						1.5	◆		
	200	3						2	◆		
	250							2.5	◆		
	300							3	◆		
	350							3.5	◆		

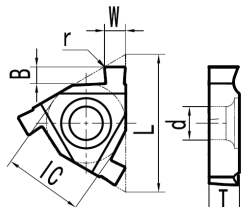
GRFR3 | GRFL3



Right Hand	Left Hand	W	B	R	
GRFR3030	GRFL3030	0.30	0.8	0.03	
GRFR3033	GRFL3033	0.33	0.8	0.03	
GRFR3045	GRFL3045	0.45	0.8	0.03	
GRFR3050	GRFL3050	0.50	1.0	0.05	
GRFR3060	GRFL3060	0.60	1.0	0.05	
GRFR3065	GRFL3065	0.65	1.4	0.05	
GRFR3070	GRFL3070	0.70	1.4	0.05	
GRFR3075	GRFL3075	0.75	2.2	0.10	
GRFR3080	GRFL3080	0.80	2.2	0.10	
GRFR3085	GRFL3085	0.85	2.2	0.10	
GRFR3090	GRFL3090	0.90	2.2	0.10	
GRFR3095	GRFL3095	0.95	2.2	0.10	
GRFR3100	GRFL3100	1.00	2.2	0.10	
GRFR3110	GRFL3110	1.10	2.2	0.10	
GRFR3115	GRFL3115	1.15	2.2	0.10	
GRFR3120	GRFL3120	1.20	2.2	0.10	
GRFR3125	GRFL3125	1.25	2.2	0.10	
GRFR3130	GRFL3130	1.30	2.2	0.10	
GRFR3135	GRFL3135	1.35	2.2	0.10	
GRFR3140	GRFL3140	1.40	2.2	0.10	
GRFR3145	GRFL3145	1.45	2.2	0.10	
GRFR3150	GRFL3150	1.50	2.4	0.10	
GRFR3155	GRFL3155	1.55	2.4	0.10	
GRFR3160	GRFL3160	1.60	2.4	0.10	
GRFR3165	GRFL3165	1.65	2.4	0.10	
GRFR3170	GRFL3170	1.70	2.4	0.10	
GRFR3175	GRFL3175	1.75	2.4	0.10	
GRFR3180	GRFL3180	1.80	2.4	0.10	
GRFR3185	GRFL3185	1.85	2.4	0.10	
GRFR3190	GRFL3190	1.90	2.4	0.10	

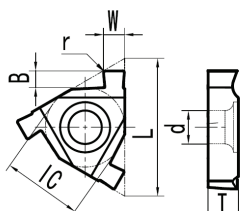
Right Hand	Left Hand	W	B	R	
GRFR3200	GRFL3200	2.00	3.0	0.15	
GRFR3210	GRFL3210	2.10	3.0	0.15	
GRFR3215	GRFL3215	2.15	3.0	0.15	
GRFR3220	GRFL3220	2.20	3.0	0.15	
GRFR3225	GRFL3225	2.25	3.0	0.15	
GRFR3230	GRFL3230	2.30	3.0	0.15	
GRFR3240	GRFL3240	2.40	3.0	0.15	
GRFR3250	GRFL3250	2.50	3.0	0.15	
GRFR3260	GRFL3260	2.60	3.0	0.15	
GRFR3265	GRFL3265	2.65	3.0	0.15	
GRFR3270	GRFL3270	2.70	3.0	0.15	
GRFR3275	GRFL3275	2.75	3.0	0.15	
GRFR3280	GRFL3280	2.80	3.0	0.15	
GRFR3300	GRFL3300	3.00	3.0	0.20	
GRFR3320	GRFL3320	3.20	3.0	0.20	

GRUIR3 | GRUER3



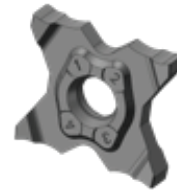
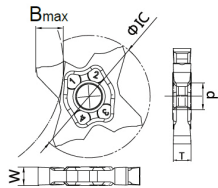
Internal	External	W	B	R	
GRUIR2040	GRUER2040	0.4	1.0	0.05	
GRUIR2050	GRUER2050	0.5	1.0	0.05	
GRUIR2060	GRUER2060	0.6	1.0	0.05	
GRUIR2070	GRUER2070	0.7	1.2	0.05	
GRUIR2080	GRUER2080	0.8	1.2	0.05	
GRUIR2090	GRUER2090	0.9	1.2	0.05	
GRUIR2100	GRUER2100	1.0	1.5	0.05	
GRUIR2110	GRUER2110	1.1	1.5	0.1	
GRUIR2120	GRUER2120	1.2	1.5	0.1	
GRUIR2130	GRUER2130	1.3	1.5	0.1	
GRUIR2140	GRUER2140	1.4	1.5	0.1	
GRUIR2150	GRUER215	0.15	1.5	0.1	
GRUIR2160	GRUER2160	1.6	1.4	0.1	

GRUIR3 | GRUER3



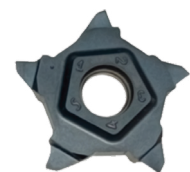
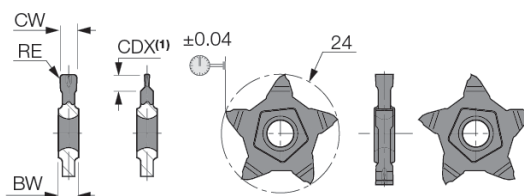
Internal	External	W	B	R	
GRUIR2170	GRUER2170	1.7	1.4	0.1	
GRUIR2180	GRUER2180	1.8	1.3	0.1	
GRUIR2200	GRUER2200	2.0	1.2	0.1	
GRUIR3033	GRUER3033	0.33	1.6	0.05	
GRUIR3040	GRUER3040	0.4	1.6	0.05	
GRUIR3050	GRUER3050	0.5	1.6	0.05	
GRUIR3060	GRUER3060	0.6	1.6	0.05	
GRUIR3070	GRUER3070	0.7	1.6	0.05	
GRUIR3075	GRUER3075	0.75	1.6	0.05	
GRUIR3080	GRUER3080	0.8	1.6	0.05	
GRUIR3095	GRUER3095	0.95	1.6	0.05	
GRUIR3100	GRUER3100	1.0	1.8	0.1	
GRUIR3110	GRUER3110	1.1	1.8	0.1	
GRUIR3115	GRUER3115	1.15	1.8	0.1	
GRUIR3120	GRUER3120	1.2	1.8	0.1	
GRUIR3130	GRUER3130	1.3	1.8	0.1	
GRUIR3140	GRUER3140	1.4	1.8	0.1	
GRUIR3145	GRUER3145	1.45	1.8	0.1	
GRUIR3150	GRUER3150	1.5	1.8	0.1	
GRUIR3160	GRUER3160	1.6	1.8	0.1	
GRUIR3175	GRUER3175	1.75	1.8	0.1	
GRUIR3180	GRUER3180	1.8	1.8	0.1	
GRUIR3200	GRUER3200	2.0	1.8	0.1	
GRUIR3215	GRUER3215	2.15	2.0	0.2	
GRUIR3225	GRUER3225	2.25	2.0	0.2	
GRUIR3230	GRUER3230	2.3	2.0	0.2	
GRUIR3250	GRUER3250	2.5	2.0	0.2	
GRUIR3265	GRUER3265	2.65	2.2	0.2	
GRUIR3300	GRUER3300	3.0	2.0	0.2	

GR4N



Designation	W	Bmax	R	IC	T	D	
GR4N27-100S	1.0	3.5	0.1	27	4	5.6	
GR4N27-120S	1.2	3.5	0.1				
GR4N27-125S	1.25	3.5	0.1				
GR4N27-140S	1.4	3.5	0.1				
GR4N27-150S	1.5	5.7	0.2				
GR4N27-175S	1.75	5.7	0.2				
GR4N27-180S	1.8	5.7	0.2				
GR4N27-200S	2.0	6.4	0.2				
GR4N27-230S	2.3	6.4	0.2				
GR4N27-250S	2.5	6.4	0.2				
GR4N27-280S	2.8	6.4	0.2				
GR4N27-300S	3.0	6.4	0.2				
GR4N27-330S	3.3	6.4	0.2				
GR4N27-350S	3.5	6.4	0.2				
GR4N27-400S	4.0	6.4	0.2				

GR5N



Designation	CW	RE	CWTOL	RETOL	BW	CDX	FG (min)	FG (min)	
GR5N 24N050J000	0.5	0	0.02	0.02	4	1	0.02	0.04	
GR5N 24N050J004	0.5	0.04	0.02	0.02	4	2.5	0.02	0.05	
GR5N 24N080J000	0.8	0	0.02	0.02	4	1.6	0.02	0.05	
GR5N 24N100J004	1	0.04	0.02	0.02	4	3.5	0.03	0.07	

GR5N

Designation	CW	RE	CWTOL	RETOL	BW	CDX	FG (min)	FG (min)	
GR5N 24N100J006	1	0.06	0.02	0.02	4	3.5	0.03	0.07	
GR5N 24N104J000	1.04	0	0.02	0.02	4	2	0.02	0.07	
GR5N 24N120J000	1.2	0	0.02	0.02	4	2	0.03	0.07	
GR5N 24N125J010	1.25	0.1	0.02	0.02	4	2	0.03	0.07	
GR5N 24N140J000	1.4	0	0.02	0.02	4	2	0.03	0.08	
GR5N 24N147J000	1.47	0	0.02	0.02	4	2.5	0.03	0.08	
GR5N 24N150J010	1.5	0.1	0	0.02	4	5	0.03	0.1	
GR5N 24N157J015	1.57	0.15	0.02	0.03	4	3	0	0.12	
GR5N 24N170J010	1.7	0.1	0.02	0.03	4	3	0.03	0.12	
GR5N 24N178J018	1.78	0.18	0.02	0.03	4	3	0.04	0.12	
GR5N 24N185J015	1.85	0.15	0.02	0.03	4	3	0.04	0.12	
GR5N 24N196J015	1.96	0.15	0.02	0.03	4	3	0.04	0.12	
GR5N 24N196J040	1.96	0.4	0.02	0.03	4	3	0.03	0.1	
GR5N 24N200J020	2	0.2	0.02	0.03	4	6	0.04	0.12	
GR5N 24N222J015	2.22	0.15	0.02	0.03	4	3.5	0.04	0.16	
GR5N 24N230J020	2.3	0.2	0.02	0.03	4	3.5	0.04	0.16	
GR5N 24N239J015	2.39	0.15	0.02	0.03	4	5	0.04	0.16	
GR5N 24N247J020	2.47	0.2	0.02	0.03	4	5	0.04	0.16	
GR5N 24N250J020	2.5	0.2	0.02	0.03	4	5	0.04	0.16	
GR5N 24N270J010	2.7	0.1	0.02	0.02	4	5	0.04	0.16	
GR5N 24N287J020	2.87	0.2	0.02	0.03	4	6.5	0.04	0.16	
GR5N 24N300J000	3	0	0.02	0.02	4	6.5	0.04	0.1	
GR5N 24N300J020	3	0.2	0.02	0.03	4	6.5	0.04	0.16	
GR5N 24N300J040	3	0.4	0.02	0.03	4	6.5	0.04	0.16	
GR5N 24N315J015	3.15	0.15	0.02	0.03	4	6.5	0.04	0.16	
GR5N 24N318J020	3.18	0.2	0.02	0.03	4	6.5	0.04	0.16	
GR5N 24N330J010	3.3	0.1	0.02	0.03	5	6.4	0.04	0.16	
GR5N 24N348J020	3.48	0.2	0.02	0.03	5	6.4	0.04	0.18	
GR5N 24N356J020	3.56	0.2	0.02	0.03	5	6.4	0.04	0.18	
GR5N 24N374J020	3.74	0.2	0.02	0.03	5	6.4	0.04	0.18	
GR5N 24N398J020	3.98	0.2	0.02	0.03	5	6.2	0.04	0.18	
GR5N 24N400J040	4	0.4	0.02	0.03	5	6.2	0.04	0.18	
GR5N 24N423J010	4.23	0.1	0.02	0.03	5	6.2	0.04	0.18	