

GROOVING

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GROOVING Grade table

ISO 513	CARBIDE			PCBN	DIAMOND
	CVD COATED	PVD COATED	UNCOATED	UNCOATED	PCD
P Steel	P01				
	P10	JC8025	JP5120		
	P20		JP5125		
	P30		JP5130		
	P40				
M Stainless steel	M01				
	M10		JP5120		
	M20		JP5125		
	M30		JP5130		
	M40				
K Cast iron	K01			MBH450U	
	K10	JC7010	JP5120		
	K20		JP5125		
	K30				
N Non-ferrous materials	N01				
	N10			JUG015	
	N20				
	N30				ND120
H Hardened steel	H01				
	H10				
	H20			MBH450U	
	H30			MB350	

GRADE	SUBSTRATE	HARDNESS HV	COATING		APPLICATION	FEATURES
			TECHNOLOGY	COMPOSITION		
JC7010	carbide	1.830	CVD	TiCN+Al ₂ O ₃	K K05 K25	High wear resistance. First choice for grey cast iron general machining.
JC8025	carbide	1.700	CVD	TiCN+Al ₂ O ₃ +TiN	P P20 P30	All around grade suitable for a wide range of applications. Excellent reliability even on medium interrupted cut.
JP5120	micrograin carbide	1.830	PVD	TiAlN	P P10 P20	Special coating technology balances wear resistance and toughness. The post-coating surface treatment effectively prevents built-up edge.
					M M10 M20	
					K K10 K20	
JP5125	micrograin carbide	1.830	PVD	TiAlN	P P20 P30	High Co micrograin carbide substrate with high toughness and latest coating technology. Universal use with great reliability and long tool life.
					M M20 M30	
					K K20 K30	
JP5130	micrograin carbide	1.830	PVD	TiAlN	P P20 P35	High toughness substrate combined with super-smooth coating designed for precision applications.
					M M20 M35	
JU6015	micrograin carbide	1.950	-	-	N N10 N20	Uncoated carbide for universal use, from finishing to roughing, on non-ferrous materials.
NB350	Low volume CBN 75%	3.400	-	-	H H20 H35	Hardened steel machining with a perfect combination between toughness and wear resistance. Available only for BGF system.
NBH450U	High volume CBN 95%	4.400	-	-	K K01 K20	Gray cast iron machining at very high cutting condition and with great wear resistance. Available only for BGF system.
ND120	diamond 95%	6.000	-	-	N N10 N30	High productivity grooving of non-ferrous materials. Available only for BGF system.

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

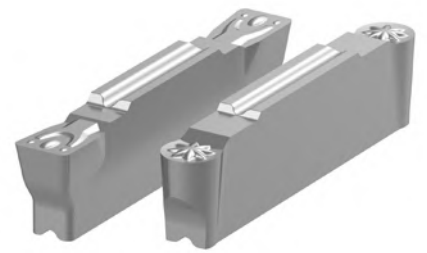
E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

- A - TURNING
- B - THREADING
- C - GROOVING**
- D - MILLING
- E - DRILLING
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	NDB	NCG	BGF
	<input type="checkbox"/> C5	<input type="checkbox"/> C13	<input type="checkbox"/> C15
	 EXTERNAL  INTERNAL	 EXTERNAL  INTERNAL	 EXTERNAL
Pressed type inserts	✓	✗	✗
Ground type inserts	✓	✓	✓
Available sizes (CW)	2.00 / 3.00 / 4.00 / 5.00 / 6.00 / 8.00 mm	1.10 ÷ 2.15 mm	1.00 ÷ 4.00 mm
Maximum depth (CDX)	14 / 20 / 25 / 25 / 30 / 30 mm	1.30 ÷ 1.85 mm	1.80 ÷ 4.50 mm
Coolant holes	✓	✗	✗
Workpiece material	P M K N	P M	K N H
No. of cutting edges	2	3	1
No. of geometries	6	1	2
Special features	All-around system	Can be installed on threading tool holders	Easy tailor-made
Grooving 	✓	✓	✓
Turning 	✓	✗	✗
Profiling 	✓	✗	✗
Cut-off 	✓	✗	✗
Versatility	■ ■ ■ ■ ■	■ ■ ■ ■ ■	■ ■ ■ ■ □
Strength	■ ■ ■ ■ □	■ ■ ■ □ □	■ ■ ■ ■ ■
Precision	■ ■ ■ □ □	■ ■ ■ ■ ■	■ ■ ■ ■ □
Finishing	■ ■ ■ ■ □	■ ■ ■ ■ □	■ ■ ■ ■ □
Range	■ ■ ■ ■ □	■ ■ ■ □ □	■ ■ ■ □ □



GROOVING NDB

Inserts .C6

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Parameters .C10

A - TURNING

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D - MILLING

E - DRILLING

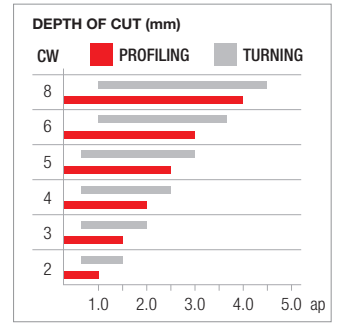
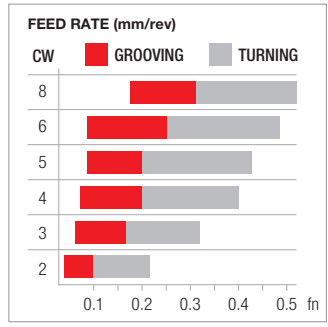
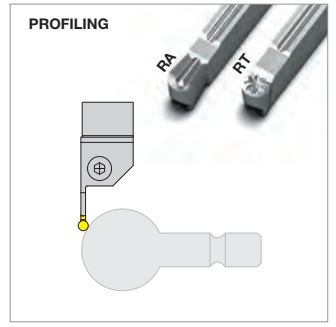
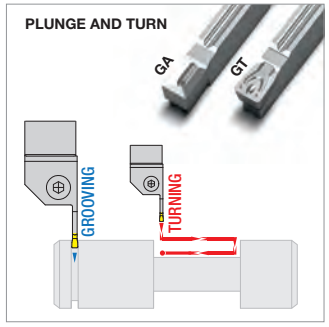
F - ACCESSORIES

G - SPARE PARTS

<h1>NDBD</h1>	HC: Coated carbide HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition					HC	HC	HF	HF	HF						
	CVD PVD HF					JG7010	JG8025	JP5120	JP5125	JG6015						
<h2>NDB system</h2>																
<ul style="list-style-type: none"> • Double sided grooving insert • Available for PMKN materials • Max. grooving depth depends on INSL value and holder specifications • Improved holding system, automatically positioned, reliable and efficient 																
Stable machining, light cut ● 1 st choice ○ suitable General machining, medium cut ● 1 st choice ○ suitable Unstable machining, heavy cut ⚡ 1 st choice ⚡ suitable																
Dimensions					ISO						Vc(m/min) - suggested cutting speed range (bold: 1st choice)					
					P		140	90	70							
							330	200	180							
					M				60	50						
									150	140						
					K		130	90	60							
		380	190	180												
N						200										
						1000										
S																
H																

Designation	CW	CWTOL	RE	INSL	S	Stock									
						●	●	●	●	●	●	●	●	●	●
PLUNGE AND TURN GT P M K straight edge pressed type	NDBD20R02M-GT	2	±0.050	0.2	16	3.5	●	●		●					
	NDBD30R04M-GT	3	±0.050	0.4	21	4.8	●	●		●					
	NDBD40R04M-GT	4	±0.050	0.4	21	4.8	●	●		●					
	NDBD50R04M-GT	5	±0.050	0.4	26	5.8	●	●		●					
	NDBD60R08M-GT	6	±0.050	0.8	26	5.8	●	●		●					
	NDBD80R08M-GT	8	±0.050	0.8	31	6.5	●	●							
PLUNGE AND TURN GA N ALU straight edge ground and polished	NDBD20R02G-GA	2	±0.025	0.2	16	3.5						●			
	NDBD30R04G-GA	3	±0.025	0.4	21	4.8						●			
	NDBD40R04G-GA	4	±0.025	0.4	21	4.8						●			
PROFILING RT P M K full radius edge pressed type	NDBD20R10M-RT	2	±0.050	1	16	3.5						●			
	NDBD30R15M-RT	3	±0.050	1.5	21	4.8						●			
	NDBD40R20M-RT	4	±0.050	2	21	4.8	●				●				
	NDBD50R25M-RT	5	±0.050	2.5	26	5.8	●				●				
	NDBD60R30M-RT	6	±0.050	3	26	5.8	●				●				
	NDBD80R40M-RT	8	±0.050	4	31	6.5					●				
PROFILING RA N ALU full radius edge ground and polished	NDBD20R10G-RA	2	±0.025	1	16	3.5						●			
	NDBD30R15G-RA	3	±0.025	1.5	21	4.8						●			
	NDBD40R20G-RA	4	±0.025	2	21	4.8						●			

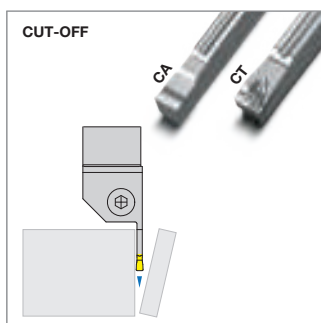
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



<h1>NDBD</h1>	HC: Coated carbide HF: Micrograin carbide CVD: Chemical vapour deposition PVD: Physical vapour deposition					HC	HC	HF	HF	HF				
						CVD	CVD	PVD	PVD					
NDB system						JC7010	JC8025	JP5120	JP5125	JU6015				
<ul style="list-style-type: none"> • Double sided grooving insert • Available for PMKN materials • Max. grooving depth depends on INSL value and holder specifications • Improved holding system, automatically positioned, reliable and efficient 	Stable machining, light cut ● 1 st choice ○ suitable					●	○	●	○	●				
	General machining, medium cut ● 1 st choice ○ suitable					●	●	●	●	●				
	Unstable machining, heavy cut ⚠ 1 st choice ⚠ suitable					⚠	⚠		⚠	⚠				
Dimensions					ISO					Vc(m/min) - suggested cutting speed range (bold: 1st choice)				
					P	140 330	90 200	70 180						
					M		60 150	50 140						
					K	130 380	90 190	60 180						
					N				200 1000					
					S									
					H									

	Designation	CW	CWTOL	RE	INSL	S	Stock				
CUT-OFF	 NDBD20R02M-CT concave edge medium feed rate	2	±0.050	0.2	16	3.5			●	●	
		NDBD30R02M-CT	3	±0.050	0.2	21	4.8			●	●
CUT-OFF	 NDBD20R02M-CA concave edge ground and polished	2	±0.025	0.2	16	3.5				●	
		NDBD30R02G-CA	3	±0.025	0.2	21	4.8				●

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



CW	P	Steel	M	Stainless Steel	N	Aluminium
3	CA	0.06 ÷ 0.10				
	CT	0.08 ÷ 0.12				
	CT	0.10 ÷ 0.18				
2	CA	0.04 ÷ 0.08				
	CT	0.06 ÷ 0.10				
	CT	0.08 ÷ 0.14				
0.05 0.10 0.15 0.20 fn						

A - TURNING

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F - ACCESSORIES

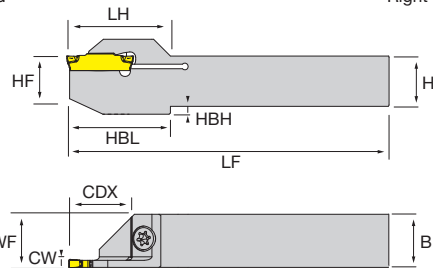
G - SPARE PARTS

NDB E

NDB system

- External holders for NDB double sided grooving insert
- Different grooving depth (CDX) available for different groove width
- Clamp fastened and loosened by screw
- Improved holding system, automatically positioned, reliable and efficient

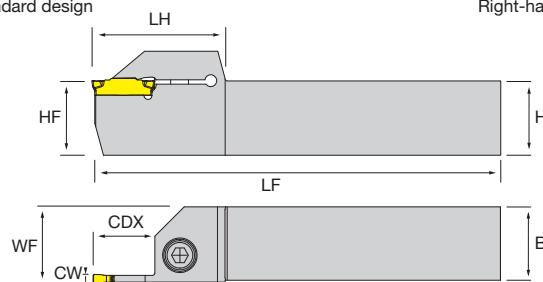
Radial reinforced



Right-hand shown



Standard design



Right-hand shown



Designation	Stock		CW	CDX	H	B	WF	LF	LH	HF	HBL	HBH
	L	R										
WITH RADIAL REINFORCEMENT												
NDB E ^{1/2} 1212-2-CDX14	●	●	2	14	12	12	12.2	120	25	12	24	2
NDB E ^{1/2} 1616-2-CDX14	●	●	2	14	16	16	16.2	120	25	16	24	2
NDB E ^{1/2} 1616-3-CDX20	●	●	3	20	16	16	16.3	120	31	16	30	2
STANDARD DESIGN												
NDB E ^{1/2} 2020-2-CDX14	●	●	2	14	20	20	21	125	38	20	-	-
NDB E ^{1/2} 1616-3-CDX10	●	●	3	10	16	16	16.2	120	35	16	-	-
NDB E ^{1/2} 2020-3-CDX10	●	●	3	10	20	20	21	125	38	20	-	-
NDB E ^{1/2} 2020-3-CDX20	●	●	3	20	20	20	21	125	40	20	-	-
NDB E ^{1/2} 2525-3-CDX10	●	●	3	10	25	25	26	150	40	25	-	-
NDB E ^{1/2} 2525-3-CDX20	●	●	3	20	25	25	26	150	45	25	-	-
NDB E ^{1/2} 2020-4-CDX10	●	●	4	10	20	20	21	125	35	20	-	-
NDB E ^{1/2} 2020-4-CDX25	●	●	4	25	20	20	21	125	50	20	-	-
NDB E ^{1/2} 2525-4-CDX10	●	●	4	10	25	25	26	150	40	25	-	-
NDB E ^{1/2} 2525-4-CDX25	●	●	4	25	25	25	26	150	50	25	-	-
NDB E ^{1/2} 2525-5-CDX10	●	●	5	10	25	25	26	150	40	25	-	-
NDB E ^{1/2} 2525-5-CDX25	●	●	5	25	25	25	26	150	50	25	-	-
NDB E ^{1/2} 2525-6-CDX15	●	●	6	15	25	25	26	150	45	25	-	-
NDB E ^{1/2} 2525-6-CDX30	●	●	6	30	25	25	26	150	56	25	-	-
NDB E ^{1/2} 2525-8-CDX15	●	●	8	15	25	25	26.5	150	43	25	-	-
NDB E ^{1/2} 2525-8-CDX30	●	●	8	30	25	25	27	150	55	25	-	-

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Locking screws	Flag wrenches	Locking screws	L wrench
NDB E ^{1/2} 1212-2-CDX14	NT-ST076	NT-FT15	-	-
NDB E ^{1/2} 1616-2-CDX14	NT-ST077	NT-FT15	-	-
NDB E ^{1/2} 1616-3-CDX10	-	-	NT-SC001	NT-WR040
NDB E ^{1/2} 1616-3-CDX20	NT-ST077	NT-FT15	-	-
NDB E ^{1/2} 2020-○-CDX∞	-	-	NT-SC001	NT-WR040
NDB E ^{1/2} 2525-○-CDX∞	-	-	NT-SC002	NT-WR040

<h1>NDB I</h1>	Right-hand shown	
<p>NDB system</p> <ul style="list-style-type: none"> • Internal holders for NDB double-headed grooving insert • Vortex boring bar (high quality steel) with coolant through • Special chip evacuation path • Clamp tightened by screw 		

Designation	Stock		CW	CDX	DMIN	DCON	WF	LF	OHN	GAMO		
	L	R										
NDB I/1620V-2-CDX04	●	●	2	4	20	16	11.5	150	25	15°		
NDB I/2025V-2-CDX06	●	●	2	6	25	20	14.5	180	30	15°		
NDB I/2025V-3-CDX06	●	●	3	6	25	20	14.5	180	30	15°		
NDB I/2532V-3-CDX08	●	●	3	8	32	25	19	200	40	15°		
NDB I/3240V-3-CDX10	●	●	3	10	40	32	23.5	200	50	15°		
NDB I/2532V-4-CDX08	●	●	4	8	32	25	19	220	40	15°		
NDB I/3240V-4-CDX10	●	●	4	10	40	32	23.5	220	50	15°		

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	L wrench
NDB I/1620V-2-CDX04	NT-ST40115T15	NT-TX15
NDB I/16000V-0-CDX00	NT-ST051	NT-TX20

A - TURNING

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E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

A - TURNING	ISO 513	MATERIAL	HARDNESS HB	JG8025			JP5120			JP5125					
				min	start	max	min	start	max	min	start	max			
	P1 - P2	Free cutting steel and low carbon (ex. 1.0715/9 smn 28/avp, 1.0503/c45)	≤ 200	○	170	250	330	●	100	150	200	○	100	140	180
				●	160	225	290	●	90	130	170	●	80	120	160
⊕				140	195	250					⊕	70	100	130	
P3 - P4	Medium and high alloy steel (ex. 1.7225/42 CrMo 4, 1.3505/100 Cr 6)	200 ÷ 300	○	150	220	290	●	90	130	170	○	80	120	160	
			●	140	205	270	●	80	110	140	●	70	100	120	
			⊕	130	190	250					⊕	60	80	100	
P5 - P6	High tensile strength and tool steel (ex. 1.2344/X 40 CrMoV 5 1/ORVAR, Hardox400®)	300 ÷ 400	○	140	205	270	●	80	115	150	○	70	100	130	
			●	130	190	250	●	70	100	130	●	60	90	120	
			⊕	120	170	220					⊕	60	80	100	
B - THREADING	ISO 513	MATERIAL	HARDNESS HB	JP5120			JP5125								
				min	start	max	min	start	max						
	P7	Ferritic and martensitic stainless steel (ex. 1.4021/X 20 Cr 13/AISI420)	≤ 200	●	100	150	200	○	100	140	180				
				●	90	130	170	●	80	120	160				
							⊕	70	100	130					
P8	Precipitation hardening stainless steel (ex. 1.4548/X 5 CrNiCuNb 17 4/17-4-PH)	≤ 450	●	70	90	110	○	60	80	100					
			●	60	80	100	●	50	70	90					
							⊕	50	60	70					
M1	Austenitic stainless steel (ex. 1.4305/X 10 CrNiS 18 9/AISI303)	> 200	●	70	110	150	○	60	100	140					
			●	60	100	140	●	50	90	130					
							⊕	50	80	110					
M2 - M3	Austenitic and Duplex stainless steel (ex. 1.4401/X 5 CrNiMo 17 12 2/AISI316)		●	70	100	130	○	60	90	120					
			●	60	90	120	●	60	80	100					
							⊕	50	70	90					
C - GROOVING	ISO 513	MATERIAL	HARDNESS HB	JG7010			JP5120			JP5125					
				min	start	max	min	start	max	min	start	max			
	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	●	180	280	380	●	110	150	190	○	100	140	180
				●	150	225	300	●	90	130	170	●	80	115	150
⊕				130	195	260					⊕	60	90	120	
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	●	150	200	250	●	90	130	170	○	80	120	160	
			●	130	175	220	●	80	110	140	●	70	95	120	
			⊕	120	160	200					⊕	60	80	100	
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	●	140	190	240	●	80	110	140	○	70	105	140	
			●	120	165	210	●	70	100	130	●	60	90	120	
			⊕	110	155	200					⊕	50	75	100	
D - MILLING	ISO 513	MATERIAL	HARDNESS HB	JU6015											
				min	start	max									
	N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA)		●	400	700	1000								
				●	300	500	700								
⊕				200	400	600									
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		●	200	300	400									
			●	200	250	300									
			⊕	100	150	200									
E - DRILLING	ISO 513	MATERIAL	HARDNESS HB	JG7010			JP5120			JP5125					
				min	start	max	min	start	max	min	start	max			
	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	●	180	280	380	●	110	150	190	○	100	140	180
				●	150	225	300	●	90	130	170	●	80	115	150
⊕				130	195	260					⊕	60	90	120	
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	●	150	200	250	●	90	130	170	○	80	120	160	
			●	130	175	220	●	80	110	140	●	70	95	120	
			⊕	120	160	200					⊕	60	80	100	
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	●	140	190	240	●	80	110	140	○	70	105	140	
			●	120	165	210	●	70	100	130	●	60	90	120	
			⊕	110	155	200					⊕	50	75	100	
F - ACCESSORIES	ISO 513	MATERIAL	HARDNESS HB	JU6015											
				min	start	max									
	N1	Aluminium alloys ≤ Si 12% (ex. 3.4365/AlZn5.5MgCu/ERGA)		●	400	700	1000								
				●	300	500	700								
⊕				200	400	600									
N2	Aluminium alloys Si > 12% (ex. 3.2382/G-AlSi12)		●	200	300	400									
			●	200	250	300									
			⊕	100	150	200									
G - SPARE PARTS	ISO 513	MATERIAL	HARDNESS HB	JG7010			JP5120			JP5125					
				min	start	max	min	start	max	min	start	max			
	K1	Grey cast iron (ex. 0.6025/GG 25/EN-GJL-250)	150 ÷ 250	●	180	280	380	●	110	150	190	○	100	140	180
				●	150	225	300	●	90	130	170	●	80	115	150
⊕				130	195	260					⊕	60	90	120	
K2	Nodular cast iron (ex. 0.7050/GGG 50/EN-GJS-500-7)	150 ÷ 350	●	150	200	250	●	90	130	170	○	80	120	160	
			●	130	175	220	●	80	110	140	●	70	95	120	
			⊕	120	160	200					⊕	60	80	100	
K3 - K4	Austenitic and ADI cast iron (ex. 0.6660/GGL-NiCr 20 2/Ni-Resist 2, GJS-1000-5/ADI1000)	250 ÷ 500	●	140	190	240	●	80	110	140	○	70	105	140	
			●	120	165	210	●	70	100	130	●	60	90	120	
			⊕	110	155	200					⊕	50	75	100	

Complete workpiece materials p. H1.

DESIGNATION		Grooving			Turning and Profiling						Cut-off		
		FEED RATE			DEPTH OF CUT			FEED RATE			FEED RATE		
		fn (mm/rev)			ap (mm)			fn (mm/rev)			fn (mm/rev)		
		min	start	max	min	start	max	min	start	max	min	start	max
STRAIGHT EDGE	NDBD20R020-G0	0.06	0.08	0.10	0.30	0.90	1.50	0.10	0.13	0.16	-	-	-
	NDBD30R040-G0	0.07	0.10	0.13	0.40	1.20	2.00	0.16	0.18	0.20	-	-	-
	NDBD40R040-G0	0.10	0.12	0.14	0.50	1.50	2.50	0.18	0.21	0.24	-	-	-
	NDBD50R040-G0	0.11	0.15	0.19	0.60	1.80	3.00	0.20	0.25	0.30	-	-	-
	NDBD60R080-G0	0.13	0.19	0.25	0.70	2.10	3.50	0.24	0.33	0.42	-	-	-
	NDBD80R080-G0	0.18	0.26	0.34	0.80	2.65	4.50	0.32	0.44	0.56	-	-	-
FULL RADIUS	NDBD20R100-R0	0.06	0.09	0.12	0.00	0.50	1.00	0.14	0.18	0.22	-	-	-
	NDBD30R150-R0	0.08	0.11	0.14	0.00	0.75	1.50	0.18	0.23	0.28	-	-	-
	NDBD40R200-R0	0.10	0.13	0.16	0.00	1.00	2.00	0.20	0.27	0.34	-	-	-
	NDBD50R250-R0	0.12	0.16	0.20	0.00	1.25	2.50	0.24	0.33	0.42	-	-	-
	NDBD60R300-R0	0.13	0.19	0.25	0.00	1.50	3.00	0.24	0.37	0.50	-	-	-
	NDBD80R400-R0	0.18	0.26	0.34	0.00	2.00	4.00	0.32	0.49	0.66	-	-	-
CONCAVE EDGE	NDBD20R02M-CA	-	-	-	-	-	-	-	-	-	0.04	0.06	0.08
	NDBD30R04M-CA	-	-	-	-	-	-	-	-	-	0.06	0.08	0.10
	NDBD20R02M-CT	-	-	-	-	-	-	-	-	-	0.06	0.10	0.14
	NDBD30R04M-CT	-	-	-	-	-	-	-	-	-	0.08	0.13	0.18

- A - TURNING
- B - THREADING
- C - GROOVING
- D - MILLING
- E - DRILLING
- F - ACCESSORIES
- G - SPARE PARTS



GROOVING NCG

Inserts .C14

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

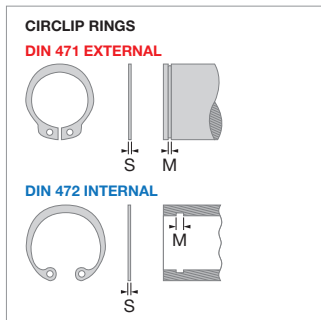
F - ACCESSORIES

G - SPARE PARTS

<h1>NCG</h1>	HF: Micrograin carbide PVD: Physical vapour deposition	HF PVD												
	JP5130													
<h2>Circlip Grooving</h2>	Stable machining, light cut ● 1 st choice ○ suitable General machining, medium cut ● 1 st choice ○ suitable Unstable machining, heavy cut ▲ 1 st choice ▲ suitable													
<ul style="list-style-type: none"> Triple head top mounted grooving insert Available for P/M materials According to DIN 471/472 Can share holders with 16IR/ER threading inserts 	Dimensions 	ISO Vc(m/min) - suggested cutting speed range (bold: 1st choice) <table border="1"> <tr><td>P</td><td>60-180</td></tr> <tr><td>M</td><td>50-110</td></tr> <tr><td>K</td><td></td></tr> <tr><td>N</td><td></td></tr> <tr><td>S</td><td></td></tr> <tr><td>H</td><td></td></tr> </table>	P	60-180	M	50-110	K		N		S		H	
P	60-180													
M	50-110													
K														
N														
S														
H														

Designation		CW	CWTOL	CDX	RE	IC	Stock
EXTERNAL	P M 						
	NCG16ER 110-010	1.1	0/+0.02	1.3	0.1	9.525	●
	NCG16ER 130-010	1.3	0/+0.02	1.6	0.1	9.525	●
	NCG16ER 160-010	1.6	0/+0.02	1.85	0.1	9.525	●
	NCG16ER 185-010	1.85	0/+0.02	1.85	0.1	9.525	●
NCG16ER 215-010	2.15	0/+0.02	1.85	0.1	9.525	●	
INTERNAL	P M 						
	NCG16IR 110-010	1.1	0/+0.02	1.3	0.1	9.525	●
	NCG16IR 130-010	1.3	0/+0.02	1.6	0.1	9.525	●
	NCG16IR 160-010	1.6	0/+0.02	1.85	0.1	9.525	●
	NCG16IR 185-010	1.85	0/+0.02	1.85	0.1	9.525	●
NCG16IR 215-010	2.15	0/+0.02	1.85	0.1	9.525	●	

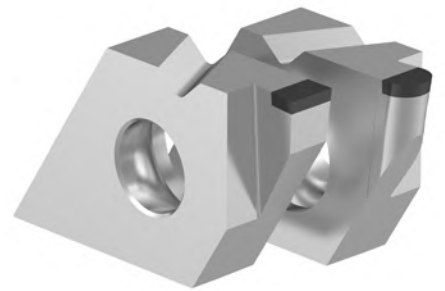
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion



RING (S)	GROOVE (M)	TOLL.	INSERT
1.00	1.10	H13	NCG 16 ^{ER/IR} 110-010
1.20	1.30	H13	NCG 16 ^{ER/IR} 130-010
1.50	1.60	H13	NCG 16 ^{ER/IR} 160-010
1.75	1.85	H13	NCG 16 ^{ER/IR} 185-010
2.00	2.15	H13	NCG 16 ^{ER/IR} 215-010

Code	Material	Speed Range
P1-P2	Low carbon and soft steel	60÷180
P3-P4	Medium and high alloy steel	60÷160
P5-P6	High tensile strength steel	60÷140
P7	Ferritic stainless steel	60÷120
P8	PH stainless steel	40÷70
M1	Austenitic stainless steel	50÷110
M2-M3	Difficult stainless steel	40÷80

	ER	IR
NCG 16 ^{ER/IR} 110-010	0.03÷0.07	0.01÷0.05
NCG 16 ^{ER/IR} 130-010	0.04÷0.08	0.02÷0.06
NCG 16 ^{ER/IR} 160-010	0.04÷0.08	0.02÷0.06
NCG 16 ^{ER/IR} 185-010	0.04÷0.10	0.03÷0.07
NCG 16 ^{ER/IR} 215-010	0.04÷0.10	0.03÷0.07



GROOVING BGF

Inserts .C16
Holders .C17

A - TURNING

B - THREADING

C - GROOVING

D - MILLING

E - DRILLING

F - ACCESSORIES

G - SPARE PARTS

BGF

Advanced Grooving

- Tangentially mounted brazed-tip advance material grooving inserts
- Available with PCD and CBN type for K / H or N materials
- Reliable and quick change clamping system

BL: Low volume CBN
BH: High volume CBN
DP: Polycrystalline diamond

BL BH DP

MB350 **NBH450U** **ND120**

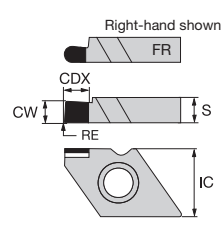
Stable machining, light cut ● 1st choice ○ suitable





General machining, medium cut ● 1st choice ○ suitable

Unstable machining, heavy cut ⚠ 1st choice ○ suitable

Dimensions **ISO** **Vc(m/min) - suggested cutting speed range (bold: 1st choice)**

P									
M									
K			340 1000						
N			450 2400						
S									
H		60 150							



Designation		CW	CWTOL	CDX	RE	IC	Stock			
LEFT-HAND  straight edge carbide backed	N H BGFL 100-010	1	±0.050	1.8	0.1	12.7		○		
	BGFL 150-010	1.5	±0.050	2.6	0.1	12.7		○		
	BGFL 200-020	2	±0.050	3	0.2	12.7		○		
	BGFL 250-020	2.5	±0.050	3.5	0.2	12.7	▽	○		
	BGFL 300-020	3	±0.050	4.5	0.2	12.7		○		
	BGFL 350-020	3.5	±0.050	4.5	0.2	12.7	▽	○		
	BGFL 400-020	4	±0.050	4.5	0.2	12.7		○		
LEFT-HAND  full radius edge carbide backed	FR N H BGFL 100-050FR	1	±0.050	1.8	0.5	12.7		○		
	BGFL 150-075FR	1.5	±0.050	2.6	0.75	12.7		○		
	BGFL 200-100FR	2	±0.050	3	1	12.7		○		
	BGFL 250-125FR	2.5	±0.050	3.5	1.25	12.7		○		
	BGFL 300-150FR	3	±0.050	4.5	1.5	12.7		○		
	BGFL 350-175FR	3.5	±0.050	4.5	1.75	12.7		○		
	BGFL 400-200FR	4	±0.050	4.5	2	12.7		○		
RIGHT-HAND  straight edge carbide backed	N H BGFR 100-010	1	±0.050	1.8	0.1	12.7	▽	○	○	
	BGFR 150-010	1.5	±0.050	2.6	0.1	12.7		○	○	
	BGFR 200-020	2	±0.050	3	0.2	12.7		○	○	
	BGFR 250-020	2.5	±0.050	3.5	0.2	12.7	▽	○	○	
	BGFR 300-020	3	±0.050	4.5	0.2	12.7		○	○	
	BGFR 350-020	3.5	±0.050	4.5	0.2	12.7		○	○	
	BGFR 400-020	4	±0.050	4.5	0.2	12.7		○	○	
RIGHT-HAND  full radius edge carbide backed	FR N H BGFR 100-050FR	1	±0.050	1.8	0.5	12.7		○	○	
	BGFR 150-075FR	1.5	±0.050	2.6	0.75	12.7		○	○	
	BGFR 200-100FR	2	±0.050	3	1	12.7		○	○	
	BGFR 250-125FR	2.5	±0.050	3.5	1.25	12.7		○	○	
	BGFR 300-150FR	3	±0.050	4.5	1.5	12.7	▽	○	○	
	BGFR 350-175FR	3.5	±0.050	4.5	1.75	12.7		○	○	
	BGFR 400-200FR	4	±0.050	4.5	2	12.7		○	○	


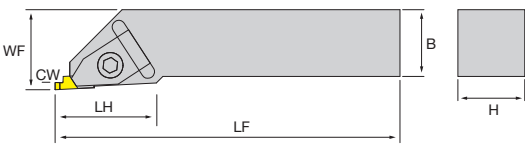
● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

BGF cutting speed (m/min)

N1	Alluminium alloy Si ≤ 12%	450÷2400
N2	Alluminium alloy Si > 12%	250÷700
N3	Copper alloy	350÷1400
H1	Case-hardened steel	60÷150
H2	Bearing steel	60÷130
H3	Hardened tool steel	50÷100






BGF feed rate (mm/rev)

	N	K H
BGF ^{FR} / _R 100	0.04±0.12	0.04±0.06
BGF ^{FR} / _R 150	0.04±0.12	0.04±0.06
BGF ^{FR} / _R 200	0.06±0.14	0.04±0.08
BGF ^{FR} / _R 250	0.06±0.14	0.04±0.08
BGF ^{FR} / _R 300	0.06±0.14	0.04±0.08
BGF ^{FR} / _R 350	0.08±0.16	0.06±0.10
BGF ^{FR} / _R 400	0.08±0.16	0.06±0.10


<h1>BGF-HLD</h1>	Right-hand shown	
<h2>Advanced Grooving</h2>		
<ul style="list-style-type: none"> External holders for tangential mounted advanced grooving insert Clamp tightened by screw 		

Designation	Stock		H	B	WF	LF	LH				
	L	R									
BGF-HLD 1616 /R		▽	16	16	30	150	45				
BGF-HLD 2020 /R	●	●	20	20	30	150	45				
BGF-HLD 2525 /R	●	●	25	25	30	150	45				

● stock standard, ○ non-standard stock, ▲ upcoming introduction, ▽ stock exhaustion

Spare parts	Insert screws	Flag wrenches	Clamp	Clamp screws	L wrench
BGF-HLD 0000R					
BGF-HLD 0000L	NT-ST50110T20	NT-FT15	NT-CS300R	NT-SC300	NT-WR040
	NT-ST50110T20	NT-FT15	NT-CS300L	NT-SC300	NT-WR040

RELIABLE CLAMPING



1. Install the insert and screw lightly
2. Firmly fix the clamp
3. Screw tight the insert

! HOLDER AND INSERT COUPLING

Holder R → Insert R
 Holder L → Insert L

- A - TURNING
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- E - DRILLING
- F - ACCESSORIES
- G - SPARE PARTS

