

High precision end mill
for profiling and super
finishing

1/2026

NPI



SORMA | IT
INDEXABLE TOOLS - NIKKO

FINISHPRO indexable ball nose & corner radius end mill for high precision finishing

Applications



Application range - ISO 513

H



Advantages and Features

- High-precision insert seating and high-rigidity clamping to achieve maximum system accuracy (OD set up tolerance 0/-0.02 mm)
- Specific edge design for excellent surface finish also in complex profile contouring; extremely light cutting action minimizes chatter even in corners
- Premium substrate and advanced coating technology enable extremely long tool life
- High compatibility and flexibility as ball nose type and corner radius type inserts can share the same shanks

Cutter bodies

- Carbide cylindrical shank with reduced neck
- Screw-in type
- Extension arbors (carbide/steel)

Inserts

- The inserts, insert hole, and the screw are ground to guarantee high precision
- NBN with S-shape cutting edge for excellent surface finish
- NCR with optimized GP geometry for super finishing of profiles
- JP1515 grade for hardened steel of medium hardness (40÷54 HRC)
- JP1505 grade for hardened steel of higher hardness (55÷62 HRC)
- Available in sizes 10/12/16/20

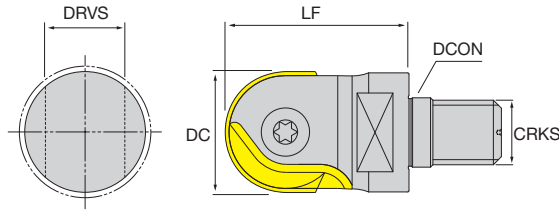


NT-NBN/NCR

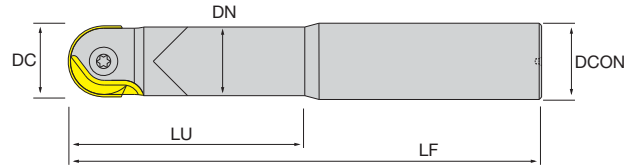
FinishPro

- High accuracy coupling with the inserts and high rigidity clamping to reach ultimate system precision
- High compatibility and flexibility as the same shank/ modular head can hold both ball nose type and corner radius type inserts

Screw-in



Cylindrical



Designation	DC	CIC2	DCON	DN	LF	LU	DRVS	CRKS	MIID	Stock
SCREW-IN										
NT-NBN/NCR D016-M08-Z02	16	2	8.5	-	28	-	8	M8	NBN/NCR160	●
NT-NBN/NCR D020-M10-Z02	20	2	10.5	-	33	-	10	M10	NBN/NCR200	●
CYLINDRICAL SHANK - REDUCED SHANK										
NT-NBN/NCR D10-8.8-35-120	10	2	10	8.8	120	35	-	-	NBN/NCR100	●
NT-NBN/NCR D12-10.5-35-120	12	2	12	10.5	120	35	-	-	NBN/NCR120	●
NT-NBN/NCR D16-14-40-140	16	2	16	14	140	40	-	-	NBN/NCR160	●
NT-NBN/NCR D20-18-50-140	20	2	20	18	140	50	-	-	NBN/NCR200	●

★ 1st choice, ☆ suitable, ● stock standard, ◎ non-stock standard (no MOQ), ○ non-stock standard (MOQ), ▲ upcoming product, ▽ stock exhaustion

Spare parts	Insert screw	T wrench	Flag wrench	Torque (N·m)
NT-NBN/NCR 10	NT-ST40081T10		NT-FTB10	2.2
NT-NBN/NCR 12	NT-ST50100T20	NT-TT20		4.9
NT-NBN/NCR 16	NT-ST50135T20	NT-TT20		4.9
NT-NBN/NCR 20	NT-ST60170T25	NT-TT25		6.9

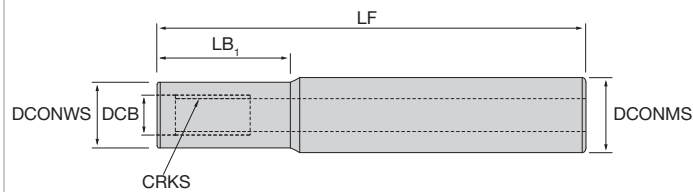
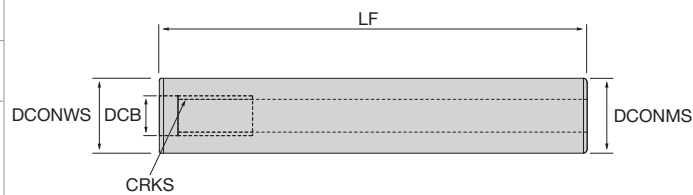


Target setup tolerance (on assembly):
OD: 0/-0.02 mm

NT-ARB-HM

Arbors for screw-in cutters

- Carbide extension arbors
- Axial coolant hole
- Available in cylindrical or reduced neck type
- High rigidity for high precision machining under stable conditions



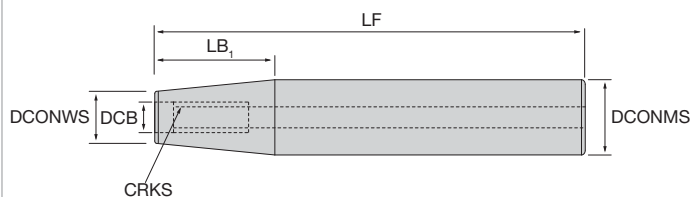
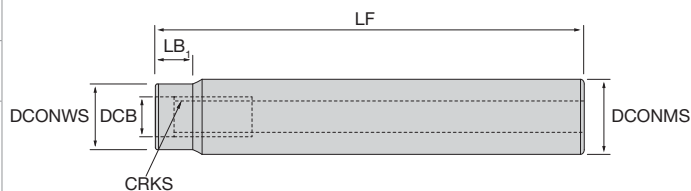
Designation	DCONMS	CRKS	DCONWS	DCB	LF	LB1						Stock
STRAIGHT SHANK ARBOR												
NT-ARB-HM D11-M06-150	11	M6	11	6.5	150	-						▽
NT-ARB-HM D12-M06-100	12	M6	12	6.5	100	-						●
NT-ARB-HM D12-M06-150	12	M6	12	6.5	150	-						●
NT-ARB-HM D12-M06-200	12	M6	12	6.5	200	-						●
NT-ARB-HM D16-M08-100	16	M8	16	8.5	100	-						●
NT-ARB-HM D16-M08-150	16	M8	16	8.5	150	-						●
NT-ARB-HM D16-M08-200	16	M8	16	8.5	200	-						●
NT-ARB-HM D20-M10-100	20	M10	20	10.5	100	-						●
NT-ARB-HM D20-M10-150	20	M10	20	10.5	150	-						●
NT-ARB-HM D20-M10-200	20	M10	20	10.5	200	-						●
NT-ARB-HM D20-M10-300	20	M10	20	10.5	300	-						●
NT-ARB-HM D25-M12-100	25	M12	25	12.5	100	-						●
NT-ARB-HM D25-M12-150	25	M12	25	12.5	150	-						○
NT-ARB-HM D25-M12-200	25	M12	25	12.5	200	-						●
NT-ARB-HM D25-M12-300	25	M12	25	12.5	300	-						○
ARBOR WITH REDUCED NECK												
NT-ARB-HM D12-11-M06-100	12	M6	11	6.5	100	37						●
NT-ARB-HM D12-11-M06-150	12	M6	11	6.5	150	52						●
NT-ARB-HM D16-13.8-M08-150	16	M8	13.8	8.5	150	42						●
NT-ARB-HM D16-13.8-M08-200	16	M8	13.8	8.5	200	57						●
NT-ARB-HM D20-18.2-M10-150	20	M10	18.2	10.5	150	54						●
NT-ARB-HM D20-18.2-M10-200	20	M10	18.2	10.5	200	78						●

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NT-ARB

Arbors for screw-in cutters

- Steel extension arbors
- Axial coolant hole
- Available in taper or reduced neck type
- Steel arbors can help absorb vibrations in case of rough surfaces or unstable conditions



Designation	DCONMS	CRKS	DCONWS	DCB	LF	LB1					Stock
TAPERED ARBOR											
NT-ARB D16-M06-150T	16	M6	11	6.5	150	40					●
NT-ARB D16-M06-200T	16	M6	11	6.5	200	40					◎
NT-ARB D20-M08-200T	20	M8	14	8.5	200	50					◎
NT-ARB D20-M08-250T	20	M8	14	8.5	250	50					◎
NT-ARB D25-M10-200T	25	M10	18	10.5	200	60					●
NT-ARB D25-M10-250T	25	M10	18	10.5	250	60					●
NT-ARB D32-M12-250T	32	M12	23	12.5	250	70					◎
NT-ARB D32-M12-350T	32	M12	23	12.5	350	70					●
ARBOR WITH REDUCED NECK											
NT-ARB D12-M06-120	12	M6	11	6.5	120	10					●
NT-ARB D16-M08-150	16	M8	14	8.5	150	10					●
NT-ARB D16-M08-200	16	M8	14	8.5	200	10					●
NT-ARB D20-M10-150	20	M10	18	10.5	150	12					●
NT-ARB D20-M10-250	20	M10	18	10.5	250	12					●
NT-ARB D25-M12-200	25	M12	23	12.5	200	15					●
NT-ARB D25-M12-300	25	M12	23	12.5	300	15					●
NT-ARB D32-M16-200	32	M16	29	17	200	18					●
NT-ARB D32-M16-350	32	M16	29	17	350	18					●

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Medium hardness steel

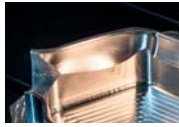


End mill: NT-NBN/NCR D16-14-40-140
Insert: NCR160-010 JP1515

Application Copying on 52 HRC hardness steel
Material 40 CrMnMo7
Cutting conditions Vc 240 m/min, fz 0.14 mm/z,
ap 0.15 mm ae 0.18 mm

Tool life

NIKKO NCR	7 hours
Competitor	5,5 hours



End mill: NT-NBN/NCR D16-14-40-140
Insert: NCR160-010 JP1515

Application Copying on 50÷52 HRC hardness steel
Material X37CrMoV5-1 / 1.2343
Cutting conditions Vc 135 m/min, fz 0.225 mm/z,
ap 0.18 mm, ae 0.30 mm

Tool life

mold - front

NIKKO NCR	16 hours
Competitor	14 hours

mold - back

NIKKO NCR	24 hours
Competitor	16 hours



End mill: NT-NBN/NCR D16-14-40-140
Insert: NBN160-GP JP1515

Application Copying on steel 52÷53 HRC
Material 40CrMnNiMo8-6-4 / 1.2738
Cutting conditions 1st mold
semi-finishing Vc 495 m/min, fz 0.15 mm/z,
ap 0.45 mm, ae 0.24 mm
finishing Vc 495 m/min, fz 0.15 mm/z,
ap 0.36 mm, ae 0.08 mm
2nd mold
semi-finishing Vc 495 m/min, fz 0.15 mm/z,
ap 0.4 mm, ae 0.24 mm
finishing Vc 495 m/min, fz 0.15 mm/z,
ap 0.36 mm, ae 0.08 mm

Tool life

NIKKO NBN	36 hours
Competitor	24 hours

Produced 2 molds, very little wear.



End mill: NT-NBN/NCR D12-10.5-35-120
Insert: NBN120-060-GP JP1515

Application Copying on 46÷48 HRC steel
Material X40CrMoV5-1 / 1.2344
Cutting conditions 46/48 HRC: Vc 98, fz 0.2, ap 0.15,
ae 0.5 mm

Machining Finishing face milling on 40 HRC steel
Material X40CrMoV5-1 / 1.2344
Cutting conditions 40 HRC: Vc 87, fz 0.2, ap 0.05,
ae 8 mm

Exceptional surface finish even in critical areas.

High hardness steel



End mill: NT-NBN/NCR D16-14-40-140
Insert: NCR160-010 JP1515

Application Copying on 58÷60 HRC hardness steel, with interrupted cut
Material X153CrMoV12 / 1.2379
Cutting conditions Vc 140 m/min (interrupted cut)
fz 0.07 mm/z, 40% radial engagement

*Excellent surface finish even with interrupted cutting.
Wear almost not visible.*



End mill: NT-NBN/NCR D20-18-50-140
Insert: NBN200-100-GP JP1505

Application Copying on 58÷60 HRC hardness steel
Material X153CrMoV12 / 1.2379
Cutting conditions Vc 95 m/min,
fz 0.15 mm (6000 giri 1800 F)
ae 0.2 mm

Tool life

NIKKO NBN	4,5 hours
Competitor	2 hours

Excellent surface finish, very little wear.

Difficult-to-machine steel



End mill: NT-NBN/NCR D16-14-40-140
Insert: NCR160-010 JP1505

Application Copying; very quick consumption of the cutting edges

Material Mirrax 54 HRC

Cutting conditions Vc 160 m/min, fz 0.18 mm/z, ap 0.10 mm, ae 0.15 mm

Tool life

NIKKO NCR	21 min
Competitor A	8 min
Competitor B	9 min
Competitor C	7,5 min
Competitor D	8,5 min

Excellent surface finish.



End mill: NT-NBN/NCR D16-14-40-140
Insert: NCR160-010 JP1505

Application Facing and copying on difficult-to-machine material (significant springback)

Material K340 steel hardened to 58-60 HRC

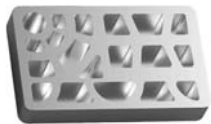
Cutting conditions Vc 220 m/min, fz 0.06 mm/z, ap 0.10 mm, ae 0.30 mm

Tool life

NIKKO NCR	6,5 hours
Competitor	4 hours

High precision on elastic material. Very small signs of wear.

Soft steel, medium-low hardness



End mill: NT-NBN/NCR D16-14-40-140
Insert: NCR160-010 JP1515

Application Creation of pockets of various sizes

Material C40

Cutting conditions Program 1: Vc 290, fz 0.2 mm/z, ap 0.4 mm, ae 13 mm (45 min)
Program 2: Vc 290, fz 0.2 mm/z, ap 0.2 mm, ae 13 mm (2 ore 37 min)
Program 3: Vc 290 fz 0.2 mm/z, ap 0.2 mm ae 0.3 mm (6 ore 10 min)

Number of pockets machined

NIKKO NCR	24
Competitor	19



End mill: NT-NBN/NCR D10-8.8-35-120
Insert: NBN100-GP JP1515

Application Copying 36÷38 HRC

Material 40CrMnMo7 / 1.2311

Cutting conditions Vc 251 m/min, fz 0.09 mm/z, ap 0.15-0.20 mm, ae 0.25-0.30 mm

Tool life

NIKKO NBN	8 hours
Competitor	5,5 hours

Excellent surface finish, respecting geometric tolerance even in the most critical areas.

NCR 45-55 HRC	10			12			16			20		
	Semi-finishing		Finishing	Semi-finishing		Finishing	Semi-finishing		Finishing	Semi-finishing		Finishing
	gen. purpose	high speed		gen. purpose	high speed		gen. purpose	high speed		gen. purpose	high speed	
Vc	100	280	280	100	280	280	100	280	280	100	280	280
fz	0.05	0.1	0.05	0.05	0.1	0.05	0.06	0.12	0.06	0.06	0.12	0.06
ap	0.25	0.25	0.1	0.3	0.3	0.1	0.8	0.8	0.2	1	1	0.2
ae	1	0.25	0.2	1.2	0.3	0.2	1.6	0.8	0.2	2	1	0.2

NCR 55-62 HRC	10			12			16			20		
	Semi-finishing		Finishing	Semi-finishing		Finishing	Semi-finishing		Finishing	Semi-finishing		Finishing
	gen. purpose	high speed		gen. purpose	high speed		gen. purpose	high speed		gen. purpose	high speed	
Vc	80	220	220	80	220	220	80	220	220	80	220	230
fz	0.05	0.1	0.05	0.05	0.1	0.05	0.06	0.12	0.06	0.06	0.12	0.06
ap	0.25	0.25	0.1	0.3	0.3	0.1	0.8	0.8	0.2	1	1	0.2
ae	1	0.25	0.2	1.2	0.3	0.2	1.6	0.8	0.2	2	1	0.2

NBN 45-55 HRC	10			12			16			20		
	Semi-finishing		Finishing	Semi-finishing		Finishing	Semi-finishing		Finishing	Semi-finishing		Finishing
	gen. purpose	high speed		gen. purpose	high speed		gen. purpose	high speed		gen. purpose	high speed	
Vc	100	210	260	100	200	290	100	150	350	100	150	400
fz	0.1	0.2	0.2	0.1	0.2	0.2	0.12	0.24	0.3	0.12	0.24	0.4
ap	0.25	0.15	0.1	0.3	0.2	0.1	0.8	0.6	0.1	1	0.7	0.1
ae	1	0.8	0.25	1.2	0.9	0.3	1.6	1.1	0.3	2	1.5	0.4

NBN 55-62 HRC	10			12			16			20		
	Semi-finishing		Finishing	Semi-finishing		Finishing	Semi-finishing		Finishing	Semi-finishing		Finishing
	gen. purpose	high speed		gen. purpose	high speed		gen. purpose	high speed		gen. purpose	high speed	
Vc	80	170	200	80	160	230	80	120	280	80	120	320
fz	0.1	0.2	0.2	0.1	0.2	0.2	0.12	0.24	0.3	0.12	0.24	0.4
ap	0.25	0.15	0.1	0.3	0.2	0.1	0.8	0.6	0.1	1	0.7	0.1
ae	1	0.8	0.25	1.2	0.9	0.3	1.6	1.1	0.3	2	1.5	0.4



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