Super Drill >>>

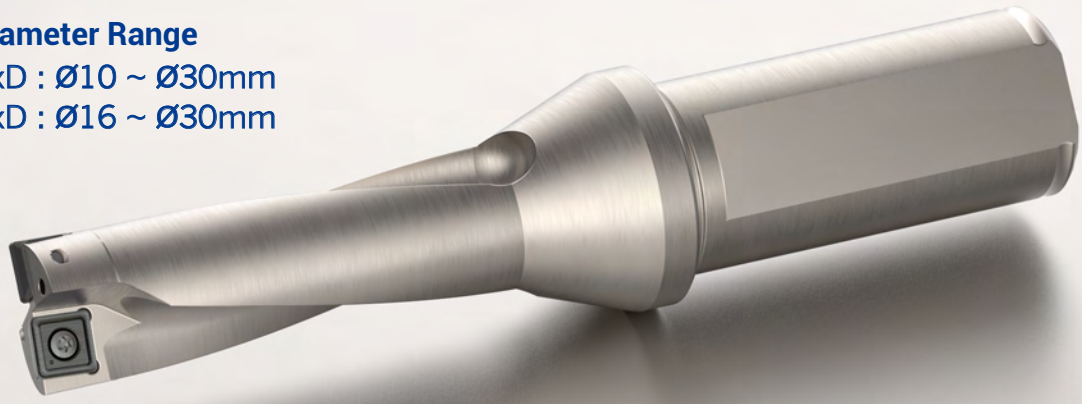
3xD & 4xD

Ø10mm ~ Ø30mm

P M K N

Diameter Range

3xD : Ø10 ~ Ø30mm
4xD : Ø16 ~ Ø30mm



Features >>>

Smaller Cutting Chip

- The center and peripheral inserts are positioned in order to divide the cutting chips into smaller spiral shape.
  It helps the cutting chip to be removed faster and easier.
- Designed for high productivity, high speed cutting.
- With internal coolant.

Better Surface Finish And Better Diameter Accuracy

- Special insert positioning to balance the cutting forces, better surface finish and diameter accuracy are achievable.

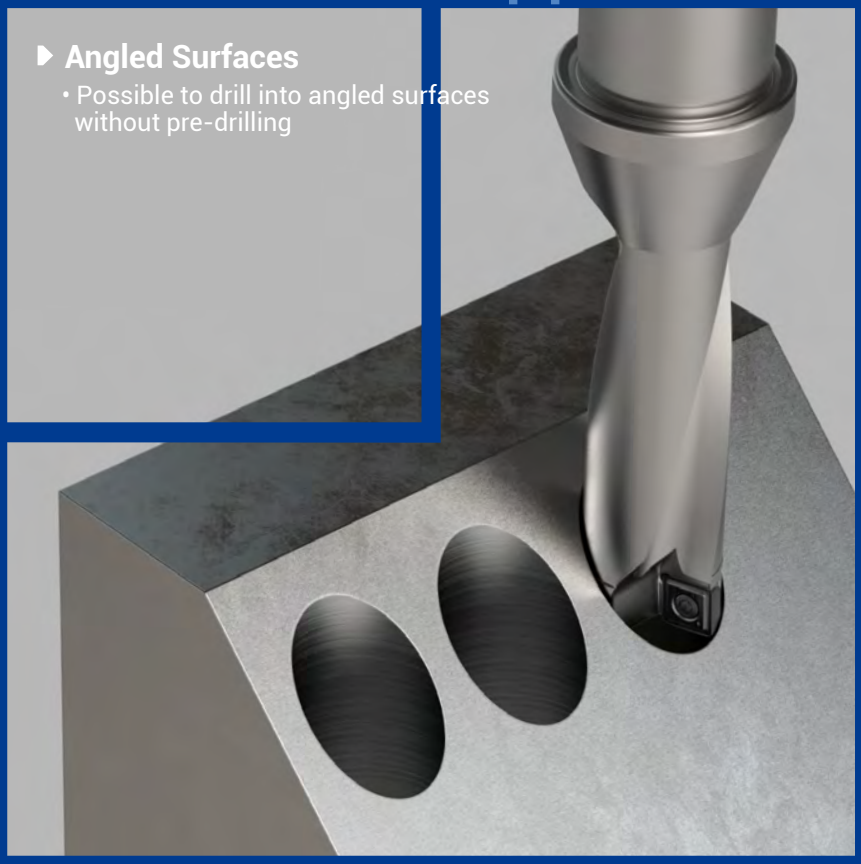
4 Cutting Edges Insert, AlTiN Coated

- Chip breaker of SD insert provides excellent chip control property due to its engineered design.
- Easy and simple change of cutting edge without inconvenience.

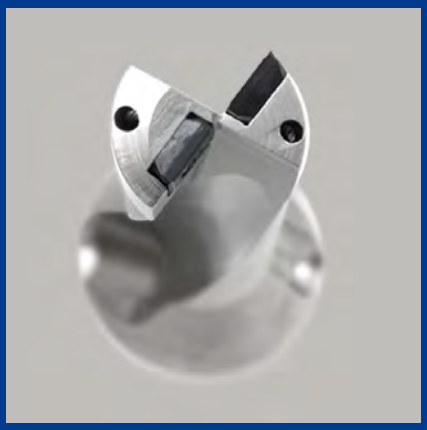
Applications

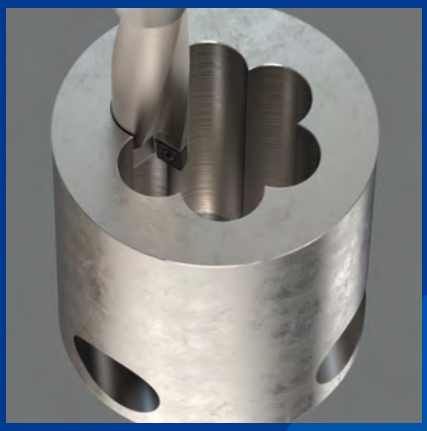
Angled Surfaces

- Possible to drill into angled surfaces without pre-drilling

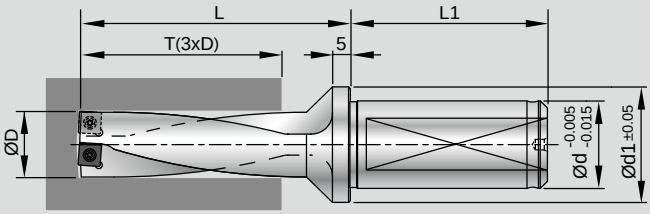


"
- Smallest indexable drill from 10mm.
- 4 cutting edges per insert,
- Same insert for outer and inner insert.
"





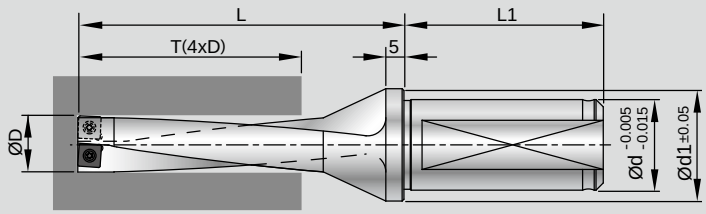
Holder 3xD 10mm~30mm



Parts No.	ØD	T	L	L1	Ød	Ød1	Insert Screw / Key	Radial Adjustment	D max
00-99313-10	10.0	30.0	49					0.25	10.5
00-99313-10.3	10.3	30.9	52					0.25	10.8
00-99313-10.5	10.5	31.5	52					0.25	11.0
00-99313-11	11.0	33.0	52	49	20	27	N9GX04T002	0.20	11.4
00-99313-11.5	11.5	34.5	55				*NS-18037 / 0.6Nm NK-T6	0.20	11.9
00-99313-12	12.0	36.0	55					0.15	12.3
00-99313-12.5	12.5	37.5	58					0.15	12.8
00-99313-13	13.0	39.0	58					0.30	13.6
00-99313-13.5	13.5	40.5	61					0.30	14.1
00-99313-14	14.0	42.0	61				N9GX05T103	0.25	14.5
00-99313-14.5	14.5	43.5	64	49	20	27	*NS-20045 / 0.6Nm NK-T6	0.25	15.0
00-99313-15	15.0	45.0	64					0.20	15.4
00-99313-15.5	15.5	46.5	67					0.20	15.9
00-99313-16	16.0	48.0	74					0.40	16.8
00-99313-16.5	16.5	49.5	76					0.40	17.3
00-99313-17	17.0	51.0	76					0.35	17.7
00-99313-17.5	17.5	52.5	78				N9GX060204	0.35	18.2
00-99313-18	18.0	54.0	78	55	25	31	*NS-22055 / 0.9Nm NK-T7	0.30	18.6
00-99313-18.5	18.5	55.5	80					0.30	19.1
00-99313-19	19.0	57.0	80					0.25	19.5
00-99313-19.5	19.5	58.5	85					0.25	20.0
00-99313-20	20.0	60.0	85					0.50	21.0
00-99313-20.5	20.5	61.5	87					0.50	21.5
00-99313-21	21.0	63.0	87					0.45	21.9
00-99313-21.5	21.5	64.5	88				N9GX070304	0.45	22.4
00-99313-22	22.0	66.0	88	55	25	31	*NS-25060 / 0.9Nm NK-T7	0.40	22.8
00-99313-22.5	22.5	67.5	90					0.40	23.3
00-99313-23	23.0	69.0	90					0.35	23.7
00-99313-23.5	23.5	70.5	92					0.35	24.2
00-99313-24	24.0	72.0	92					0.30	24.6
00-99313-25	25.0	75.0	114					0.50	26.0
00-99313-26	26.0	78.0	115					0.50	27.0
00-99313-27	27.0	81.0	117				N9GX090308	0.40	27.8
00-99313-28	28.0	84.0	126	58	32	43	NS-30072 / 2.0Nm NK-T9	0.40	28.8
00-99313-29	29.0	87.0	127					0.30	29.6
00-99313-30	30.0	90.0	130					0.30	30.6

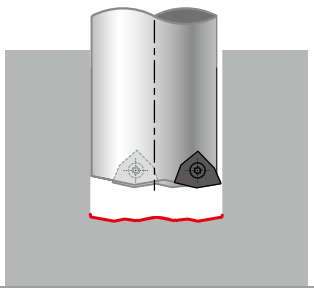
*Torque screwdriver is recommended.

Holder 4xD 16mm~30mm



Parts No.	ØD	T	L	L1	Ød	Ød1	Insert Screw / Key	Radial Adjustment	D max
00-99314-16	16	64	90	55	25	31	N9GX060204 *NS-22055 0.9Nm NK-T7	0.40	16.8
00-99314-17	17	68	93					0.35	17.7
00-99314-18	18	72	96					0.30	18.6
00-99314-19	19	76	99					0.25	19.5
00-99314-20	20	80	105	55	25	31	N9GX070304 *NS-25060 0.9Nm NK-T7	0.50	21.0
00-99314-21	21	84	108					0.45	21.9
00-99314-22	22	88	110					0.40	22.8
00-99314-23	23	92	113					0.35	23.7
00-99314-24	24	96	116					0.30	24.6
00-99314-25	25	100	139	58	32	43	N9GX090308 NS-30072 2.0Nm NK-T9	0.50	26.0
00-99314-26	26	104	141					0.50	27.0
00-99314-27	27	108	144					0.40	27.8
00-99314-28	28	112	154					0.40	28.8
00-99314-29	29	116	156					0.30	29.6
00-99314-30	30	120	160					0.30	30.6

*Torque screwdriver is recommended.

Nine9 SD	Other makers
	

Insert

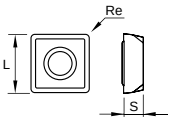
Features >>

- Fully ground dual-relief insert, for improved surface finish and higher feed rate.
- Primary relief angle is to increase the toughness of the insert, secondary relief angle is to strengthen the axial feed rate.

Inserts >>

NC2032: • K20F grade, AlTiN coated, for carbon steel, alloy steel, casting iron, stainless steel and hardened steel up to HRC 50.

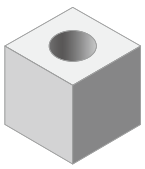
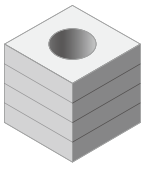
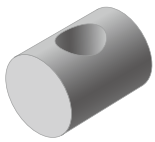
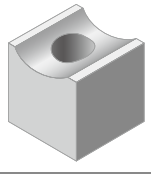
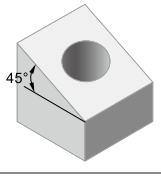
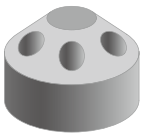
NC2032

Parts No.		Coating	Grade		Dimensions			Screw	Key
					L	S	Re		
N9GX04T002	NC2032	AlTiN	K20F		4.07	1.8	0.2	*NS-18037 0.6Nm	NK-T6
N9GX05T103	NC2032	AlTiN	K20F		5.07	2.0	0.3	*NS-20045 0.6Nm	NK-T6
N9GX060204	NC2032	AlTiN	K20F		6.35	2.38	0.4	*NS-22055 0.9Nm	NK-T7
N9GX070304	NC2032	AlTiN	K20F		7.94	3.18	0.4	*NS-25060 0.9Nm	NK-T7
N9GX090308	NC2032	AlTiN	K20F		9.52	3.18	0.8	NS-30072 2.0Nm	NK-T9

*Torque screwdriver is recommended.

Functions in various conditions >>

Material classifiction for calculation of cutting speed &feed rate

Application	* Regular Surface	Cross Holes	Stack Drilling	Round Work Piece Offset Drilling
Work Piece Shape				
Cutting Speed Vc (m/min.)	100%	80%	80%~70%	80%~60%
Feed Rate (mm/rev.)	100%	80%	80%~70%	80%~60%
Application	**Plunge Drilling**	**Concave Surfaces**	**Angled Surfaces**	**Cone Work Piece Offset Drilling**
Work Piece Shape				
Cutting Speed Vc (m/min.)	80%	80%	80%~70%	80%~70%
Feed Rate (mm/rev.)	80%	80%	80%~70%	80%~70%

* SPD, SD both are suitable.

Cutting Data

	Work piece material	T= Length/ Dia.	Vc (m/min.)	f (mm/rev.) N9GX 04T002 Dia. 10~12.5	N9GX 05T103 Dia. 13~15.5	N9GX 060204 Dia. 16~19.5	N9GX 070304 Dia. 20~24	N9GX 090308 Dia. 25~30	Grade of Insert
P	Carbon steel C<0.3% Ex.:S25C, SS41	T=3D	80~250	0.03~0.06	0.04~0.08	0.06~0.10	0.06~0.10	0.08~0.12	NC2032
		T=4D	60~180	—	—	0.06~0.10	0.06~0.10	0.08~0.12	
	Carbon steel C>0.3% Ex.:S50C, P5	T=3D	80~300	0.04~0.08	0.06~0.10	0.06~0.12	0.08~0.12	0.08~0.15	NC2032
		T=4D	60~150	—	—	0.06~0.12	0.08~0.12	0.08~0.15	
	Low alloy steel C<0.3% Ex.:SCM415	T=3D	80~250	0.04~0.08	0.04~0.08	0.06~0.10	0.06~0.10	0.08~0.12	NC2032
		T=4D	60~150	—	—	0.06~0.10	0.06~0.10	0.08~0.12	
	Low alloy steel C>0.3% Ex.:SCM440	T=3D	80~250	0.04~0.08	0.04~0.10	0.06~0.12	0.06~0.12	0.08~0.15	NC2032
		T=4D	60~150	—	—	0.06~0.12	0.06~0.12	0.08~0.15	
	High alloy steel Ex.:SKD11	T=3D	60~150	0.03~0.06	0.04~0.08	0.06~0.10	0.06~0.10	0.08~0.12	NC2032
		T=4D	50~100	—	—	0.06~0.10	0.06~0.10	0.08~0.12	
	Casting steel	T=3D	80~180	0.03~0.06	0.04~0.08	0.06~0.10	0.06~0.10	0.08~0.12	NC2032
		T=4D	60~120	—	—	0.06~0.10	0.06~0.10	0.08~0.12	
M	Stainless steel Ex.:SUS304	T=3D	60~150	0.03~0.06	0.04~0.08	0.04~0.10	0.06~0.10	0.06~0.12	NC2032
		T=4D	50~100	—	—	0.04~0.10	0.06~0.10	0.06~0.12	
K	Casting Iron Ex.:FC25	T=3D	80~120	0.04~0.08	0.06~0.08	0.06~0.08	0.06~0.10	0.08~0.12	NC2032
		T=4D	60~100	—	—	0.06~0.08	0.06~0.10	0.08~0.12	
H	Hardened steel <HRC 50° Ex.:SKD61	T=3D	60~100	0.03~0.06	0.04~0.08	0.05~0.08	0.06~0.08	0.06~0.10	NC2032
		T=4D	40~80	—	—	0.05~0.08	0.06~0.08	0.06~0.10	

*** The maximum misalignment of the drill center is +0.2 mm/-0.5 mm on the CNC lathe.**

Metric		Inch	
$S = \frac{Vc \times 1000}{\pi \times d}$	d = diameter -mm	$S = \frac{(3.82 \times SFM)}{d}$	d = diameter-inch
	S = Spindle Speed -r.p.m.		S = Spindle Speed-r.p.m.
	Vc = Cutting Speed -m/min.	SFM = Vc (m/min.) x 3.28	SFM = Surface Speed-ft./min.
F = S x f	f = mm/rev.	F = f x S	f = IPR = inch/rev.
	F = mm/min.		F = IPM=RPM x f / 25.4