

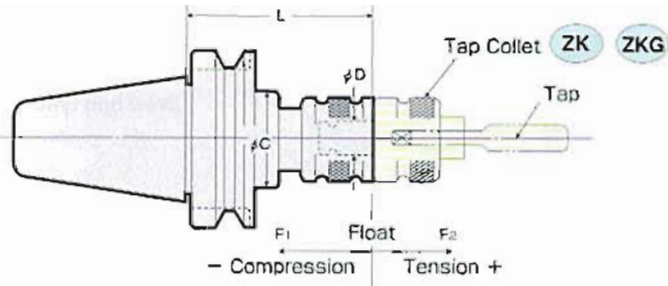
AUTO. DEPTH CONTROL TAPPER CHUCK

NIKKEN

ZL

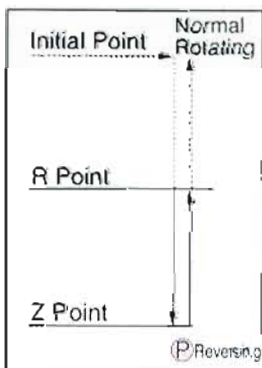


- Most suitable for tapping gas threads, blind-end threads and light alloys.
- When normal rotation of machine is stopped at specified position, the Tapper Chuck runs idle after progressing by its elongation (4mm for ZL12 type). Simply rotate the machine in the reverse direction, and the tap depth will be made uniform within a high-precision.



TAPER	Code No.	Tapping Capability			D	L	C	Float		Tap Collet	Weight (kg)
		M	U	P				F ₁	F ₂		
No.30	BT30-ZL 8-110* ¹	M 2~8	1/8~1/4	—	13	110	34	3	3	ZK 8* ¹	1.5
	-ZL12-130	M 2~12	1/8~1/2	P1/16~1/4	19	130	58	5	4	ZKG12	1.9
No.40	BT40-ZL 8-120* ¹ (IT40)	M 2~8	1/8~1/4	—	13	120	34	3	3	ZK 8* ¹	1.6
	-ZL12-100	M 2~12	1/8~1/2	P1/16~1/4	19	100	58	5	4	ZKG12	1.9
	-ZL12-130					130					2.3
	-ZL16-150	M 3~20	1/8~3/4	P1/8~3/8	25	150	60			ZKG16	2.9
	-ZL24-160	M 8~24	1/2~1	P1/4~5/8	30	160	73	6	7	ZKG24	3.3
	-ZL38-190	M18~38	3/4~13/8	P3/8~1	45	190	92	8	10	ZK 38	6.0
No.50	BT50-ZL 8-130* ¹ (IT50)	M 2~8	1/8~1/4	—	13	130	34	3	3	ZK 8* ¹	4.2
	-ZL12- 85	M 2~12	1/8~1/2	P1/16~1/4	19	85	58	5	4	ZKG12	3.4
	-ZL12-130					130					4.3
	-ZL16-135	M 3~20	1/8~3/4	P1/8~3/8	25	135	60			ZKG16	4.6
	-ZL24-100	M 8~24	1/2~1	P1/4~5/8	30	100	73	6	7	ZKG24	4.5
	-ZL24-142					142					5.8
	-ZL38-150	M18~38	3/4~13/8	P3/8~1	45	150	92	8	10	ZK 38	6.9

★ In Case of IT40, IT40-ZL16-160 and IT40-ZL24-175 are standard.
 ★ In Case of IT50, IT50-ZL12-130, IT50-ZL24-142 and IT50-ZL38-180 are standard.
 ★ Marked *1 ZLB Tapper Chuck and ZK8 Tap Collet are available as semi-standard.
 ★ Please refer P.51 for ZKG Tap Collet, P.52 for ZK Tap Collet, and P.53 for Long Size Tap Collet.
 ★ Centre Coolant type Tapper Chuck is also available. Please contact with us.
 ★ Flange through type Tapper Chuck is also available. Please contact with us.



Program of Auto-Depth Control Tapper Chuck (ZL)

- NO. 1 M03 S : Spindle Rotating
- NO. 2 G00 X Y : Initial Point
- NO. 3 G00 Z : R Point
- NO. 4 G01 Z F : Z Point
- NO. 5 G04 P : Dwell
- NO. 6 M05 : Spindle Stop
- NO. 7 M04 : Spindle Reversing
- NO. 8 G01 Z : R Point
- NO. 9 M05 : Spindle Stop
- NO.10 G00 Z M03 : Initial Point, Spindle Normal Rotating

⚠ When using ZL Tapper Chuck, please make sure of the following program.

G04 P — ; — Threads are made only by Spindle Rotation during Dwell. Thus, exact depth is controlled.

M05 ; — Spindle stop.

M04 ; — First command Spindle Reversing. Then, upward movement of Z. If upward movement of Z is commanded earlier than Spindle Reversing, down movement of tap and up movement of Z may cause breakage of tap.

G01 Z — ; —

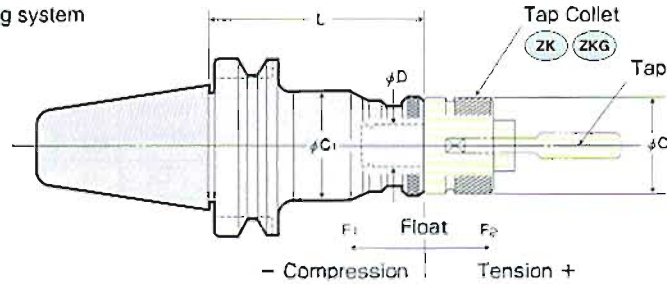
FLOATING TAPPER CHUCK

NIKKEN

Z

Suitable Tapper Chuck for Conversational M/C

- More convenient in tapping, thanks to stable torque and slim body
- Good Run-out, No Pull-out and No Tap Breakage with NIKKEN Tapper Chuck
Ideal for Unmanned System
- With the axial floating system



TAPER	Code No.	Tapping Capability			D	L	C	C ₁	Float		Tap Collet	Weight (kg)
		M	U	P					F ₁	F ₂		
No.30	BT30-Z 8- 90*1	M 2~ 8	1/8~1/4	—	13	90	23	33	5	15	ZK 8*1	1.2
	-Z12-105	M 2~ 12	1/8~1/2	P1/16~1/4	19	105	38.5	45	5	15	ZKG12	1.2
No.40	BT40-Z 8- 90*1 (IT40)	M 2~ 8	1/8~1/4	—	13	90	23	33	5	15	ZK 8*1	1.4
	-Z12- 90	M 2~ 12	1/8~1/2	P1/16~1/4	19	90	38.5	45	5	15	ZKG12	1.5
	-Z12-130	M 2~ 12	1/8~1/2	P1/16~1/4	19	130	38.5	45	15	15	ZKG12	1.6
	-Z16-109	M 3~ 20	1/8~3/4	P1/8~3/8	25	109	48	55	8	20	ZKG16	2.0
	-Z24-100	M 8~ 24	1/2~ 1	P1/4~5/8	30	100	56	68	10	20	ZKG24	2.1
	-Z24-187	M 8~ 24	1/2~ 1	P1/4~5/8	30	187	56	63	20	20	ZKG24	3.5
	-Z38-140	M18~ 38	3/4~13/8	P3/8~ 1	45	140	78	85	8	22	ZK 38	6.7
No.50	BT50-Z 8-105*1 (IT50)	M 2~ 8	1/8~1/4	—	13	105	23	33	5	15	ZK 8*1	4.2
	-Z12-130					130						4.3
	-Z12-175	M 2~ 12	1/8~1/2	P1/16~1/4	19	175	38.5	45	15	15	ZKG12	4.8
	-Z12-220					220						5.0
	-Z16-135	M 3~ 20	1/8~3/4	P1/8~3/8	25	135	48	55	8	20	ZKG16	5.2
	-Z24-142	M 8~ 24	1/2~ 1	P1/4~5/8	30	142	56	63	20	20	ZKG24	5.8
	-Z24-187	M 8~ 24	1/2~ 1	P1/4~5/8	30	187	56	63	20	20	ZKG24	6.2
	-Z38-175	M18~ 38	3/4~13/8	P3/8~ 1	45	175	78	98	10	25	ZK 38	8.3
-Z65-160	M36~100	1~33/8	P1~31/4	68	160	110*2 (125)	110	10	25	ZK 65	9.0	

★ In Case of IT40, IT40-Z8-95*1 and IT40-Z24-125 are standard.

★ In Case of IT50, IT50-Z8-105*1, IT50-Z38-187 and IT50-Z65-165 are standard.

★ Marked *1 ZB Tapper Chuck and ZK8 Tap Collet are available as semi-standard.

★ Please refer P.51 for ZKG Tap Collet, P.52 for ZK Tap Collet, and P.53 for Long Size Tap Collet.

★ Marked *2 () dimension is for M65 or more size of ZK Tap Collet.



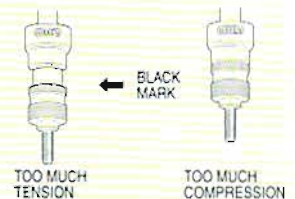
① Caution for Floating Mechanism

(1). Too Much Tension

When tension movement exceeds the limitation, the black line will appear. In this case increase machine feed.

(2). Too Much Compression

When machine feed is too fast for the tap thread pitch, the compression floating mechanism will work. The machine program should be modified to slow feed rate down.



② When the drilled hole diameter is too small (this is often caused by the drilling of the tough materials, extended drilling diameter is not large enough.), the tap will slip before the breakage due to torque limiter mechanism. In this case enlarge the drilled hole and do not adjust the torque setting.

③ For a blind hole tapping, the tap might hit the bottom of the hole and the floating shaft will not extend any further, if the Z point is too close to the component. And the point of reversing the floating shaft could compress further than the extension, it may cause damage to the tapped hole. In this case, make the drilled hole deeper or restrict Z point at the higher position.

④ When the R point is too close to the component, the spindle will moves upwards with the fully extended float mechanism at reversing operation, and it might cause damage to the tapped hole as the tap may be still in the hole when the spindle try to return to the initial point at the rapid feed. In this case, give further distance between the R point and the component.

⑤ In case of the tapping with Z type tapper chuck, since the Z Axis stroke will move upwards after reversing operation starts at the Z point due to the machine tapping cycle features, it may cause damage to the tapped hole. In this case, input the dwell command at the Z point on the program in order to make the upward movement of Z Axis with the tapper chuck as its extended float mechanism.

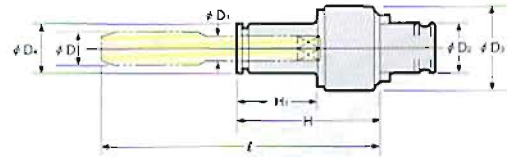
ONE TOUCH TAP COLLET

NIKKEN

ZKG

- Can be used with all NIKKEN Floating Tapper Chucks.
- Setting and Removal of Tap can be done in ONE TOUCH.
- Torque Limiter Mechanism built-in.

Reversing Torque is 1.4 times of Normal Rotation in order to prevent the troubles caused by swarf.



Tapping Capacity	ZKG12		ZKG16			ZKG24		
	M2~5	M6~12	M3~5	M6~12	M14~20	M8~12	M14~20	M22~24
D ₂	19		25			30		
D ₃	32		39			46		
D ₄	13	19	13	19	26	19	26	32
H	54.5	55	64.5	65	66	73	74	
H ₁	30.5	31	37.5	38	42	45	48	

ZKG12					
Code No.		D	D ₁	W	l
ISO Metric	ZKG12-2S	2	2.5	2	74
	ZKG12-3S	3	3.15	2.5	79
	ZKG12-4S	4	4	3.15	83
	ZKG12-5S	5	5	4	87
	ZKG12-6S	6	6.3	5	92
	ZKG12-8S	8	8	6.3	96
	ZKG12-10S	10	10	8	103
	ZKG12-12S	12	9	7.1	111
ISO Pipe	ZKG12-1/8PS	9.728	8	6.3	87
IMPERIAL BSW BSF	ZKG12-1/8S(No.5S)	3.175	3.15	2.5	78
	ZKG12-No.6S	3.505	3.55	2.8	80
	ZKG12-No.8S	4.166	4.5	3.55	82
	ZKG12-3/16S(No.10S)	4.762	5	4	86
	ZKG12-No.12S	5.48	5.6	4.5	90
	ZKG12-1/4S	6.35	6.3	5	90
	ZKG12-5/16S	7.937	8	6.3	95
	ZKG12-3/8S	9.525	10	8	101
	ZKG12-7/16S	11.112	8	6.3	108
	ZKG12-1/2S	12.7	9	7.1	111
IMPERIAL Pipe	ZKG12-1/8PB	9.728	8.08	6	83.037
DIN Metric	ZKG12-2D(DIN352)	2	2.8	2.1	72
	ZKG12-3D(DIN371)	3	3.5	2.7	85
	ZKG12-4D(DIN371)	4	4.5	3.4	92
	ZKG12-5D(DIN371)	5	6	4.9	97
	ZKG12-6D(DIN371)	6	6	4.9	107
	ZKG12-8D(DIN376)	8	6	4.9	117
	ZKG12-8D7(DIN371)	8	8	6.2	113
	ZKG12-10D(DIN376)	10	7	5.5	124
	ZKG12-10D7(DIN371)	10	10	8	121
	ZKG12-12D(DIN376)	12	9	7	132
DIN Pipe	ZKG12-1/8R(DIN353)	9.728	7	5.5	92

ZKG16					
Code No.		D	D ₁	W	l
ISO Metric	ZKG16-4S	4	4	3.15	93
	ZKG16-5S	5	5	4	97
	ZKG16-6S	6	6.3	5	102
	ZKG16-8S	8	8	6.3	106
	ZKG16-10S	10	10	8	113
	ZKG16-12S	12	9	7.1	121
	ZKG16-14S	14	11.2	9	122
	ZKG16-16S	16	12.5	10	128
	ZKG16-1/8PS	9.728	8	6.3	97.5
	ZKG16-1/4PS	13.157	10	8	103.5
	ZKG16-3/8PS	16.662	12.5	10	109.5
	IMPERIAL BSW BSF	ZKG16-1/8S(No.5S)	3.175	3.15	2.5
ZKG16-No.6S		3.505	3.55	2.8	90
ZKG16-No.8S		4.166	4.5	3.55	92
ZKG16-3/16S(No.10S)		4.762	5	4	96
ZKG16-No.12S		5.48	5.6	4.5	100
ZKG16-1/4S		6.35	6.3	5	100
ZKG16-5/16S		7.937	8	6.3	105
ZKG16-3/8S		9.525	10	8	111
ZKG16-7/16S		11.112	8	6.3	118
ZKG16-1/2S		12.7	9	7.1	121
ZKG16-9/16S		14.288	11.2	9	122
ZKG16-5/8S		15.875	12.5	10	128
IMPERIAL Pipe		ZKG16-1/8PB	9.728	8.08	6
	ZKG16-1/4PB	13.157	10.9	8.18	98.3
	ZKG16-3/8PB	16.662	13.77	10.31	99.888
DIN Metric	ZKG16-4D(DIN371)	4	4.5	3.4	102
	ZKG16-5D(DIN371)	5	6	4.9	107
	ZKG16-6D(DIN371)	6	6	4.9	117
	ZKG16-8D(DIN376)	8	6	4.9	127
	ZKG16-8D7(DIN371)	8	8	6.2	123
	ZKG16-10D(DIN376)	10	7	5.5	134
	ZKG16-10D7(DIN371)	10	10	8	131
	ZKG16-12D(DIN376)	12	9	7	142
	ZKG16-14D(DIN376)	14	11	9	137
	ZKG16-16D(DIN376)	16	12	9	137
	ZKG16-1/8R(DIN353)	9.728	7	5.5	102.5
	ZKG16-1/4R(DIN353)	13.157	11	9	98.5
	ZKG16-3/8R(DIN353)	16.662	12	9	105.5

ZKG24					
Code No.		D	D ₁	W	l
ISO Metric	ZKG24-12S	12	9	7.1	129
	ZKG24-14S	14	11.2	9	130
	ZKG24-16S	16	12.5	10	136
	ZKG24-18S	18	14	11.2	145
	ZKG24-20S	20	14	11.2	145
	ZKG24-22S	22	16	12.5	145
	ZKG24-24S	24	18	14	155
ISO Pipe	ZKG24-1/4PS	13.157	10	8	110
	ZKG24-3/8PS	16.662	12.5	10	116
	ZKG24-1/2PS	20.955	16	12.5	122
	ZKG24-5/8PS	22.911	18	14	124
IMPERIAL BSW BSF	ZKG24-1/2S	12.7	9	7.1	129
	ZKG24-9/16S	14.288	11.2	9	130
	ZKG24-5/8S	15.875	12.5	10	136
	ZKG24-3/4S	19.05	14	11.2	145
	ZKG24-7/8S	22.225	16	12.5	145
	ZKG24-1S	25.4	18	14	155
	IMPERIAL Pipe	ZKG24-1/4PB	13.157	10.9	8.18
ZKG24-3/8PB		16.662	13.77	10.31	106.388
ZKG24-1/2PB		20.955	17.45	13.08	114.5
ZKG24-5/8PB		22.911	20.32	15.3	114.5
DIN Metric	ZKG24-12D(DIN376)	12	9	7	150
	ZKG24-14D(DIN376)	14	11	9	145
	ZKG24-16D(DIN376)	16	12	9	145
	ZKG24-18D(DIN376)	18	14	11	158
	ZKG24-20D(DIN376)	20	16	12	168
	ZKG24-22D(DIN376)	22	18	14.5	166
	ZKG24-24D(DIN376)	24	18	14.5	186
DIN Pipe	ZKG24-1/4R(DIN353)	13.157	11	9	105
	ZKG24-3/8R(DIN353)	16.662	12	9	112
	ZKG24-1/2R(DIN353)	20.955	16	12	116

★ Long size TAP Collet is available. e.g. P.53 e.g. ZKG12-4S-50L

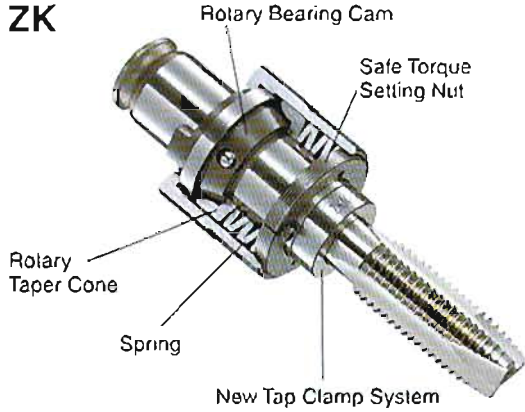
★ TAP Clamp Mechanism for PIPE TAP is Side Lock System.

★ High Torque Setting type example for stainless steel is available. Please add "HT" at the end of Code No. e.g. ZKG12-3SHT

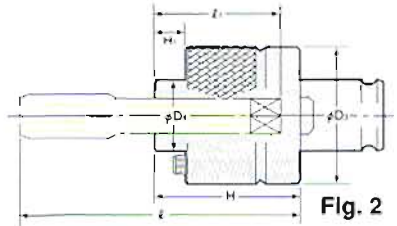
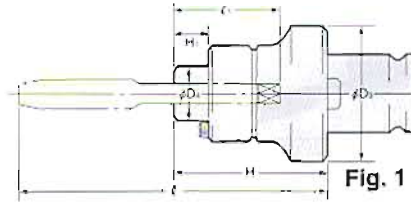
ZK TAP COLLET



ZK



- Can be used with all NIKKEN Floating Tapper Chucks.
- Torque Limiter Mechanism built-in.



Total length "l" is calculated as ;
 $l = \text{Tap length} - l_1 + H$

	ZK8	ZK38	ZK65
D ₁	13	45	68
D ₂	23	78	110
H ₁	6.5	12	13
H	29.5	64	89

ZK8 type is semi-standard.

TAP SPEC.	ZK8				
	Code No.	D	D ₁	W	l ₁
ISO Metric	ZK8-2S	2	2.5	2.0	22.5
	-3S	3	3.15	2.5	23.5
	-4S	4	4.0	3.15	24.5
	-5S	5	5.0	4.0	25.5
	-6S	6	6.3	5.0	26.5
IMPERIAL BSW BSF	ZK8-No.2S	2.18	2.8	2.24	23.5
	-No.3S	2.515	3.15	2.5	23.5
	-No.4S	2.845			
	-No.5S (1/8S)	3.175	3.55	2.8	24.5
	-No.6S	3.505			
	-No.8S	4.166			
	-No.10S (3/16S)	4.826	5.0	4.0	25.5
	-No.12S	5.480	5.6	4.5	26.5
	-1/4S	6.350	6.3	5.0	26.5
DIN Metric	ZK8-2D	2(Din 371)	2.8	2.1	23.5
	-3D	3(Din 371)	3.5	2.7	24.5
	-4D	4(Din 371)	4.5	3.4	26.5
	-5D	5(Din 371)	6.0	4.9	
	-6D	6(Din 371)			
	-8D	8(Din 376)			
DIN Pipe	ZK8-3/8R	16.662	12.5	10	34
	-1/2R	20.955	16	12.5	38
	-5/8R	22.911	18	14	40
	-3/4R	26.441	20	16	46
	-7/8R	30.201	22.4	18	48
	-1R	33.249	25	20	50
	ZK8-3/4S	19.050	14	11.2	44
	-7/8S	22.225	16	12.5	46
	-1S	25.400	18	14	48
	-1 1/8S	28.575	20	16	54
	-1 1/4S	31.750	22.4	18	56
	-1 3/8S	34.925	25	20	58
ZK8-3/8PB	16.662	13.77	10.31	33.7	
-1/2PB	20.955	17.45	13.08	39.9	
-5/8PB	22.911	20.32	15.3	39.5	
-3/4PB	26.441	23.01	17.3	43.5	
-7/8PB	30.201	27.76	20.6	45.1	
-1PB	33.249	28.57	21.4	46.6	
ZK8-18D	18(Din 376)	14	11	44	
-20D	20(Din 376)	16	12	45	
-22D	22(Din 376)	18	14.5	47	
-24D	24(Din 376)				
-27D	27(Din 376)	20	16	53	
-30D	30(Din 376)	22	18	55	
-33D	33(Din 376)	25	20	57	
-36D	36(Din 376)	28	22	59	
ZK8-3/8R	16.662	12	9	33	
-1/2R	20.955	16	12	37	
-5/8R	22.911	18	14.5	39	
-3/4R	26.441	20	16	45	
-7/8R	30.201	22	18	47	
-1R	33.249	25	20	49	

TAP SPEC.	ZK38					
	Code No.	D	D ₁	W	l ₁	
ISO Metric	ZK38-18S	18	14	11.2	44	
	-20S	20	16	12.5	46	
	-22S	22				
	-24S	24	18	14	48	
	-27S	27	20	16	54	
	-30S	30				
	-33S	33	22.4	18	56	
	-36S	36	25	20	58	
	IMPERIAL BSW BSF	ZK38-3/8PS	16.662	12.5	10	34
		-1/2PS	20.955	16	12.5	38
-5/8PS		22.911	18	14	40	
-3/4PS		26.441	20	16	46	
-7/8PS		30.201	22.4	18	48	
-1PS		33.249	25	20	50	
ZK38-3/4S		19.050	14	11.2	44	
-7/8S		22.225	16	12.5	46	
-1S		25.400	18	14	48	
-1 1/8S		28.575	20	16	54	
-1 1/4S		31.750	22.4	18	56	
-1 3/8S		34.925	25	20	58	
ZK38-3/8PB	16.662	13.77	10.31	33.7		
-1/2PB	20.955	17.45	13.08	39.9		
-5/8PB	22.911	20.32	15.3	39.5		
-3/4PB	26.441	23.01	17.3	43.5		
-7/8PB	30.201	27.76	20.6	45.1		
-1PB	33.249	28.57	21.4	46.6		
ZK38-18D	18(Din 376)	14	11	44		
-20D	20(Din 376)	16	12	45		
-22D	22(Din 376)	18	14.5	47		
-24D	24(Din 376)					
-27D	27(Din 376)	20	16	53		
-30D	30(Din 376)	22	18	55		
-33D	33(Din 376)	25	20	57		
-36D	36(Din 376)	28	22	59		
ZK38-3/8R	16.662	12	9	33		
-1/2R	20.955	16	12	37		
-5/8R	22.911	18	14.5	39		
-3/4R	26.441	20	16	45		
-7/8R	30.201	22	18	47		
-1R	33.249	25	20	49		

TAP SPEC.	ZK65				
	Code No.	D	D ₁	W	l ₁
ISO Metric	ZK65-36S	36	25.0	20.0	58
	-39S	39	28.0	22.4	60
	-42S	42			
	-45S	45	31.5	25.0	65
	-48S	48			
	-52S	52	35.5	28.0	68
	-56S	56			
	-60S	60	40.0	31.5	71
	-64S	64	40.0	31.5	71
	IMPERIAL BSW BSF	ZK65-1 1/4PS	41.910	31	24
-1 3/8PS		44.325	34	26	55
-1 1/2PS		47.803	37	29	
-1 3/4PS		53.746	40	32	62
-2PS		59.614	50	39	
ZK65-1 1/2S		38.100	28	22.4	60
-1 3/4S		44.450	31.5	25.0	65
-2S		50.800	35.5	28.0	68
-2 1/4S		57.150	40.0	31.5	71
-2 1/2S		63.500			
ZK65-1 1/4PB		41.910	33.32	25.0	51
-1 1/2PB		47.803	38.10	28.57	50
-1 3/4PB	53.746	41.28	30.94	62	
-2PB	59.614	47.63	35.71	56	
ZK65-36D	36(Din 376)	28.0	22.0	59	
-39D	39(Din 376)	32.0	24.0	61	
-42D	42(Din 376)				
-45D	45(Din 376)	36.0	29.0	69	
-48D	48(Din 376)				
-52D	52(Din 376)	40.0	32.0	72	
-56D	56(Din 376)				
-60D	60(Din 376)	45.0	35.0	75	
-64D	64(Din 376)	50.0	39.0	78	
ZK65-1 1/8R	37.899 (Din 353)	28.0	22.0	51	
-1 1/4R	41.910 (Din 353)				
-1 3/8R	44.325 (Din 353)	36.0	29.0	55	
-1 1/2R	47.803 (Din 353)				
-1 3/4R	53.746 (Din 353)	36.0	29.0	55	
-2R	59.614 (Din 353)				

★ Tap collet Code No. "ZK" is for ISO, IMPERIAL and DIN Taps.
 ★ Tap collet Code No. "ZKN" is for JIS Taps.

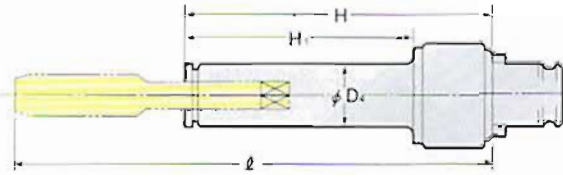
LONG SIZE ONE TOUCH TAP COLLET

NIKKEN



ZKG-L

JAPAN PAT.



	ZKG12L					ZKG16L					ZKG24L					
	Code.No	D ₁	H	H ₁	l	Code.No	D ₁	H	H ₁	l	Code.No	D ₁	H	H ₁	l	
50mm Long	ZKG12- 3S- 50L				129	ZKG16- 3S- 50L				139	ZKG24- 8S- 50L				164	
	- 4S- 50L	13	104.5	80.5	133	- 4S- 50L	13	114.5	87.5	143	-10S- 50L	19	123	95	171	
	- 5S- 50L				137	- 5S- 50L				147	-12S- 50L				179	
	- 6S- 50L				142	- 6S- 50L				152	-14S- 50L				180	
	- 8S- 50L	19	105	81	146	- 8S- 50L	19	115	88	156	-16S- 50L	26			186	
	-10S- 50L				153	-10S- 50L				163	-18S- 50L		124	98	195	
	-12S- 50L				161	-12S- 50L				171	-20S- 50L				195	
						-14S- 50L				172	-22S- 50L				195	
						-16S- 50L	26	116	92	178	-24S- 50L	32				205
						-18S- 50L				187						
						-20S- 50L				187						
	100mm Long	ZKG12- 3S-100L				179	ZKG16- 3S-100L				189	ZKG24- 8S-100L				214
- 4S-100L		13	154.5	130.5	183	- 4S-100L	13	164.5	137.5	193	-10S-100L	19	173	145	221	
- 5S-100L					187	- 5S-100L				197	-12S-100L				229	
- 6S-100L					192	- 6S-100L				202	-14S-100L				230	
- 8S-100L		19	155	131	196	- 8S-100L	19	165	138	206	-16S-100L	26			236	
-10S-100L					203	-10S-100L				213	-18S-100L		174	148	245	
-12S-100L					211	-12S-100L				221	-20S-100L				245	
						-14S-100L				222	-22S-100L				245	
						-16S-100L	26	166	142	228	-24S-100L	32				255
						-18S-100L				237						
						-20S-100L				237						

General Instruction & Caution for NC TOOLING

NIKKEN

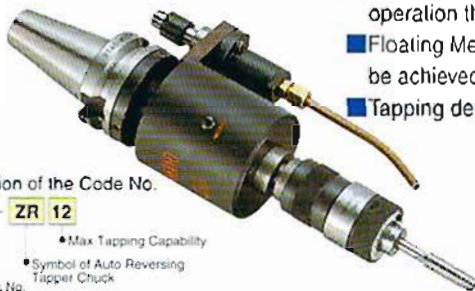
Product	Instruction & Caution																			
General	<ul style="list-style-type: none"> Please use a NIKKEN collet for the NIKKEN chucks. Please use a NIKKEN chuck for the NIKKEN collets. NIKKEN collet can not be performed 100% using on the other makers chucks. Please be careful not to inflict personal injury at your handling of cutting tools. Please clean the contact surface on a holder & cutting tool shank. Please pay attention to prevent from the rust at the storage. We will recommend to use NIKKEN TOOLINGS with RPT process for rust prevention. Due to the optical system to detect the tool existing on the tool magazine of certain machines, NIKKEN's RP treated tooling (black) may not be detected. Please check your machine's specifications very carefully to avoid this problem before you purchase our RP treated tooling. Please do not use the tooling that has scratches, damaged or rusted on its taper. This may cause false accuracy readings and reduce cutting performance. Please pay attention not to inflict personal injury with the broken tools or swarfs. Please do not modify the holders by yourselves. Please do not touch the tool at its rotating. Please do not touch the tool just after machining, it might be very hot. Please check if the cutting tool is held with the holder properly before machining. 	<p>Please add "RP" at the end of product Code No. * 1 NT40-C12-85-RP</p>																		
MTA	<ul style="list-style-type: none"> Please insert the tool shank into the bore of the holder by adjusting the tang location, and hold them with facing tool front end upwards, and hit the bottom end of the holder (pull stud end) by copper hammer hardly. For removal of the tool, insert a bar into tang hole and hit the bar by hammer with special care to prevent the tool from popping out. 																			
MTB	<ul style="list-style-type: none"> Please insert the tool shank into the bore of the holder and tighten the draw bolt for setting. For removal of the tool, loosen the bolt at couple rotation and hit the bolt head by a hammer in order to remove the taper fitness, then remove the bolt. 																			
SCA - SCC	<ul style="list-style-type: none"> When setting of side cutter or metal saw onto the arbor, please adjust the location of the drive key. 																			
JTA	<ul style="list-style-type: none"> When setting drill chuck onto the arbor, please put the chuck onto the arbor with adjusting the locations of male & female tapers and hit the bottom end of the holder (pull stud end) by copper hammer. 																			
NPU	<ul style="list-style-type: none"> Please insert the drill shank into the bottom, and chuck the shank with the total chucking length of NPU. Please check the run-out accuracy before machining especially for the small diameter drill. When setting the drill into the chuck, set the drill into the chuck and tighten the chuck ring by hand. Then tighten the ring by attached spanner to complete. 																			
SL SLA SLB SLS WE	<ul style="list-style-type: none"> When setting the tool into the holder, adjust the locations between notches or flat face of the tool shank and side lock screws, and tighten the screws completely. The dimension of the flat portion of the cutter shank varies, therefore please select a proper holder according to the cutter shank dimension. 	<table border="1"> <thead> <tr> <th>Type</th> <th>Cutter</th> <th>Axial Adjustment</th> </tr> </thead> <tbody> <tr> <td>SL</td> <td>φ 15 ~ φ 16 Drill, Endmill</td> <td>—</td> </tr> <tr> <td>SLA</td> <td>φ 30 ~ φ 42 Endmill</td> <td>○</td> </tr> <tr> <td>SLS*</td> <td>φ 15 ~ φ 50 Endmill</td> <td>—</td> </tr> <tr> <td>WE</td> <td>Inside Size Endmill</td> <td>—</td> </tr> <tr> <td>SLB</td> <td>Drill Used with DSA socket</td> <td>○</td> </tr> </tbody> </table> <p>* SLS is the holder for JIS B 4005 endmill or awdon type endmill.</p>	Type	Cutter	Axial Adjustment	SL	φ 15 ~ φ 16 Drill, Endmill	—	SLA	φ 30 ~ φ 42 Endmill	○	SLS*	φ 15 ~ φ 50 Endmill	—	WE	Inside Size Endmill	—	SLB	Drill Used with DSA socket	○
Type	Cutter	Axial Adjustment																		
SL	φ 15 ~ φ 16 Drill, Endmill	—																		
SLA	φ 30 ~ φ 42 Endmill	○																		
SLS*	φ 15 ~ φ 50 Endmill	—																		
WE	Inside Size Endmill	—																		
SLB	Drill Used with DSA socket	○																		
FMA FMB FMC FMD SMA SMB SMS	<ul style="list-style-type: none"> Please use the bolt specified by the cutter maker. When setting the face milling cutter onto the arbor, insert the spigot of the arbor into the cutter bore and minimize the backlash between the drive key and the slot against the direction of rotation, then tighten the end bolt. For the cutter with coolant through the body, please check the coolant pass in the arbor and the cutter before machining. For high speed application, please perform the balancing operation with the cutter and insert tips fitted. 																			

AUTO. REVERSING TAPPER CHUCK

NIKKEN

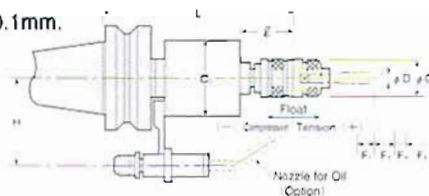
ZR

- As Self-Reversing Mechanism is built in Tapper Chuck body, this tapper is very suitable for the operation that the main spindle rotates and reverses frequently.
- Floating Mechanism: With a built in Floating Mechanism, High Accuracy Tapping Operations can be achieved.
- Tapping depth can be kept within $\pm 0.1\text{mm}$.



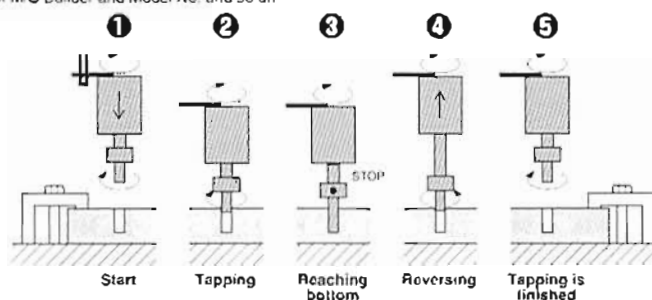
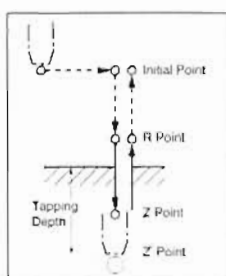
Explanation of the Code No.

- BT40** - **ZR** **12**
- Max Tapping Capability
 - Symbol of Auto Reversing Tapper Chuck
 - Shank No.



TAPER	Code. No.	Tapping Capability D	L	ℓ	C	C ₁	H	Float				MAX.min ⁻¹	Tap Collet
								F ₁	F ₂	F ₃	F ₄		
No.40	BT40-ZR 8 *1 (IT40)	M 2 ~ 8	157	43	23	55	60	4	5	2	9	1500	ZK 8 *1
	-ZR12	M 3 ~ 12	171	51	38	70		4	5	2	9	1000	ZKG12
	-ZR20	M 3 ~ 20	199	66	56	80		6	7	4	14	600	ZKG16
No.50	BT50-ZR 8 *1 (IT50)	M 2 ~ 8	166	43	23	55	82	4	5	2	9	1500	ZK 8 *1
	-ZR12	M 3 ~ 12	180	51	38	70		4	5	2	9	1000	ZKG12
	-ZR20	M 3 ~ 20	208	66	56	80		6	7	4	14	600	ZKG16

- ★ Marked *1 ZR8 Tapper Chuck and ZK8 Tap Collet are available as semi-standard.
- ★ Please refer to P.51 for ZKG Tap Collet, P.52 for ZK Tap Collet and P.53 for Long Size Tap Collet.
- ★ Positioning Block is not included. When ordering, please advise name of M/C Builder and Model No. and so on



Program example of ZR Tapper Chuck

- No. 1 M03 S — : Spindle Rotating
- No. 2 G00 X — Y — : Initial Point
- No. 3 Z — : R Point
- No. 4 G01 Z — F — : Z Point
- No. 5 G04 P — : Dwell: Only tap going to Z' Point
- No. 6 G01 Z — F — : Only tap going to R Point with reversing
- No. 7 G00 Z — :

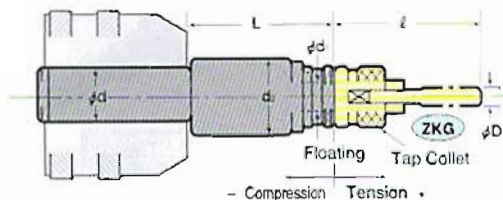
- ★ ZR tapper can be fed one block at a time. Check correct positions at the point No.3-No.5 and input correct values.
- ★ Allow about 15mm for distance between Z-Z' (self-feed of the ZR tapper)
- ★ Value F of No.4 is tapping self-feeding speed X 0.9.
- ★ Value F of No.6 is tapping self-feeding speed X 1.1.

Straight Shank TAPPER CHUCK

NIKKEN

NZ

- For Slim body and Ultra Smooth Tapping Operations with Float Mechanism.



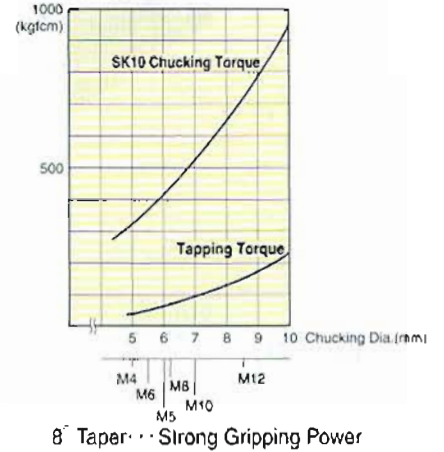
Style	Code. No.	Tapping Capability		L	d ₁	d	d ₂	Float		Weight (kg)	Tap Collet
		M	P					Compression	Tension		
32	NZ32-12-105	M 2~12	P1/8 ~1/4	105~125	19	32	45	5	15	1.3	ZKG12
	-16-125	M 3~20	P1/8 ~3/8	125~145	25		55	8	20	2.2	ZKG16
	-24-140	M 8~24	P1/4 ~5/8	140~160	30		63	8	20	2.8	ZKG24
42	NZ42-12- 90	M 2~12	P1/8 ~1/4	90~125	19	42	45	5	15	2.0	ZKG12
	-16-125	M 3~20	P1/8 ~3/8	125~160	25		55	8	20	3.0	ZKG16
	-24-140	M 8~24	P1/4 ~5/8	140~175	30		63	8	20	3.6	ZKG24

SYNCHRONIZED TAPPING HOLDER (for 100% Synchronized Feed) **NIKKEN**

■ Synchronized (Rigid or Direct) Tapping Feed Function is one of recent machining function to feed 1 pitch of tap per 1 revolution of machine spindle.
Please use High Run-Out Accuracy & Powerful Gripping of SLIM CHUCK or MULTI LOCK Milling Chuck for this application.



Gripping Torque of SK10 & Tapping Torque
At use of SK10 SLIM CHUCK with Standard SK Collet, the following shows this combination creates more than 4 times gripping torque of tapping torque.



■ Tapping holder & Collet for 100% Synchronized Tapping
■ For JIS TAP Shank

Metric Tap	Tap Shank Dia.	SLIM CHUCK	SK COLLET	MILLING CHUCK	KM COLLET
M 2	3.0	SK10	SK10- 3		
M 3	4.0	SK10	SK10- 4		
M 4	5.0	SK10	SK10- 5		
M 5	5.5	SK10	SK10- 5.5	C20	KM20- 5.5
M 6	6.0	SK10	SK10- 6	C20	KM20- 6
M 8	6.2	SK10	SK10- 6.5	C20	KM20- 6.2
M10	7	SK10	SK10- 7	C20	KM20- 7
M12	8.5	SK10	SK10- 8.5	C20	KM20- 8.5
M14	10.5	SK16	SK16-10.5	C20	KM20-10.5
M16	12.5	SK16	SK16-12.5	C20	KM20-12.5
M18	14	SK16	SK16-14	C20	KM20-14
M20	15	SK16	SK16-15	C20	KM20-15
M22	17			C32	KM32-17
M24	19			C32	KM32-19
M27	20			C32	KM32-20
M30	23			C32	KM32-23

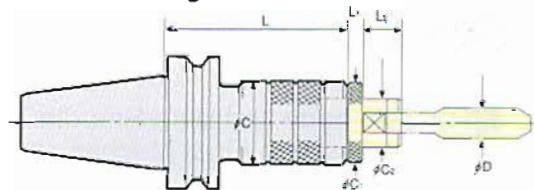
■ For ISO TAP Shank

Metric Tap	Tap Shank Dia.	SLIM CHUCK	SK COLLET	MILLING CHUCK	KM COLLET
M 2	2.5	SK10	SK10- 2.5		
M 3	3.15	SK10	SK10- 3.5		
M 4	4.0	SK10	SK10- 4	C20	KM20- 4
M 5	5.0	SK10	SK10- 5	C20	KM20- 5
M 6	6.3	SK10	SK10- 6.5	C20	KM20- 6.3
M 8	8.0	SK10	SK10- 8	C20	KM20- 8
M10	10.0	SK10	SK10-10	C20	KM20-10
M12	9.0	SK10	SK10- 9	C20	KM20- 9
M14	14.0	SK16	SK16-14	C20	KM20-14
M16	16.0	SK16	SK16-16	C20	KM20-16
M18	18.0			C20	KM20-18
M20	20.0			C20	
M22	22.0			C32	KM32-22
M24	24.0			C32	KM32-24
M27	27.0			C42	KM42-27
M30	30.0			C42	KM42-30

★ Tap Collet for Tap with Oil Hole is also available.
★ At use of MILLING CHUCK, please use tap with shank tolerance h7.

SYNCHRONIZED TAPPING HOLDER (with fine floating) **NIKKEN**

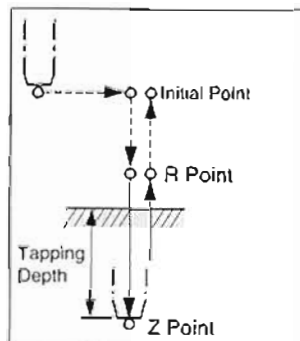
■ This fine floating tapping holder improves tap life remarkably by absorbing fine pitch error completely with the small floating mechanism.



TAPER	Code No.	L	C	Tap Collet
No.40	BT40-ZH 8- 75	75	23	ZMK 8
	(IT40)ZH12- 80	80	36	ZMK12
	ZH16- 95	95	45	ZMK16
	ZH24-105	105	56	ZMK24
No.50	BT50-ZH 8- 90	90	23	ZMK 8
	(IT50)ZH12- 90	90	36	ZMK12
	ZH16-105	105	45	ZMK16
	ZH24-105	105	56	ZMK24

ZH Tapping Holder has fine floating mechanism, but it's not standard floating system (Tension/Compression) like Z or ZL Tap Holder. Therefore, please use this ZH Tap Holder only with synchronized tapping cycle, not with ordinary tapping cycle.

■ Example of RIGID TAP cycle



N1 M03 S... : -Spindle Rotation
N2 G84.2 X... Y... Z... R... F... : -Rigid Tap Cycle
Rigid Tap Cycle | Z point | ★Feed
Initial point | R point

★ F is calculated by Pitch of Tap and Spindle Rotation Speed.
For example, in case of M10×P1.5 and S400min⁻¹ (Cutting Speed 12.6m/min.) then F = 1.5mm×400min⁻¹ = 600 mm/min.

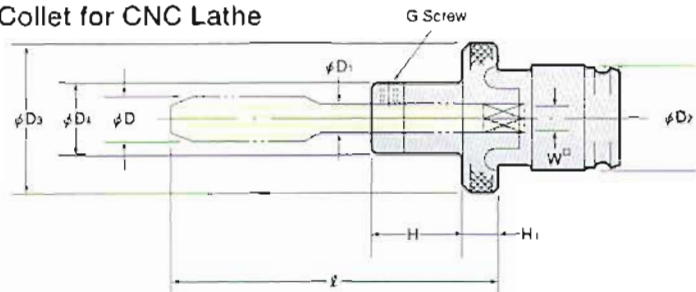
TAP COLLET without TORQUE CONTROL



ZMK



- Tap Collet for ZH Tapping Holder
- Tap Collet for CNC Lathe



For Synchronized Tapping on M/C, use ZMK tap collet with ZH Tapping Holder, Please refer P.55.

⚠ Torque Control is not built-in. Careful attention must be paid to diameter of drilled hole, program and so on.

Dimension List of ZMK Tap Collet

D	ZMK8		ZMK12		ZMK16			ZMK24		
	M3~6	M8	M3~6	M8~12	M4~6	M8~12	M14~16	M12	M14~16	M18~24
D ₂	13		19		25			30		
D ₃	20		28		36			42		
D ₄	13	19	13	19	13	19	26	19	26	32
H	14	24	16	20	21			25		29
H ₁	4		6		6			8		
G	M4-0.5	M6-0.75	M4-0.5	M6-0.75	M4-0.5	M6-0.75		M6-0.75	M8-1.0	

	ZMK8				ZMK12				ZMK16				ZMK24			
	Code No.	D ₁	W	ℓ	Code No.	D ₁	W	ℓ	Code No.	D ₁	W	ℓ	Code No.	D ₁	W	ℓ
ISO Metric (M)	ZMK8-3	4	3.2	43.5	ZMK12-3	4	3.2	47.5	ZMK16-4	5	4.0	53.5	ZMK24-12	8.5	6.5	83
	-4	5	4.0	44.5	-4	5	4.0	48.5	-5	5.5	4.5	61.5	-14	10.5	8.0	84
	-5	5.5	4.5	52.5	-5	5.5	4.5	56.5	-6	6	4.5	63.5	-16	12.5	10.0	89
	-6	6	4.5	54.5	-6	6	4.5	58.5	-8	6.2	5.0	66	-18	14	11.0	93
	-8	6.2	5.0	67	-8	6.2	5.0	65	-10	7	5.5	71	-20	15	12.0	97
IMPERIAL BSW BSF (U) (W)	ZMK8-1/8	4	3.2	43.5	ZMK12-1/8	4	3.2	47.5	ZMK16-1/8	4	3.2	52.5	ZMK24-1/2	9	7.0	85
	-3/16	5	4.5	52.5	-3/16	5.5	4.5	56.5	-3/16	5	4.5	61.5	-9/16	10.5	8.0	86
	-1/4	6	4.5	54.5	-1/4	6	4.5	58.5	-1/4	6	4.5	63.5	-5/8	12	9.0	90
					-5/16	6.1	5.0	65	-5/16	6.1	5.0	66	-3/4	14	11.0	98
					-3/8	7	5.5	70	-3/8	7	5.5	71	-7/8	17	13.0	106
					-7/16	8	6.0	74	-7/16	8	6.0	75	-1	20	15.0	114
IDIN Pipe (PT) (PF)																
					ZMK12-1/8P	8	6.0	51	ZMK16-1/8P	8	6.0	54	ZMK24-3/8P	14	11.0	63
									-1/4P	11	9.0	56	ZMK24-1/2P	18	14.0	76
									-3/8P	14	11.0	57	ZMK24-5/8P	19	15.0	80

★ For long size Tap Collets are also available: 50mm (-50L), 100mm (-100L) longer than standard type e.g. ZMK12-4-50L