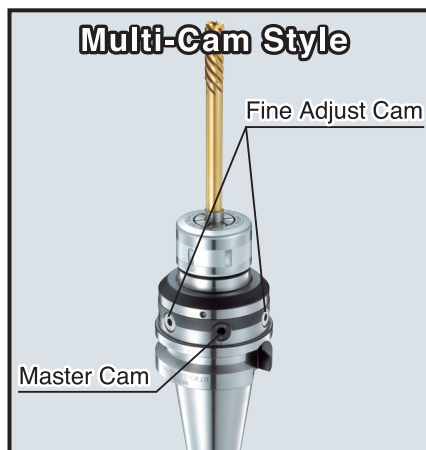


When the machine has been used for 2~3 years, the run-out accuracy of the spindle will be declining with accuracy of 0.01mm~0.04mm at 100mm from the gauge line, the Zero Fit Holder allows correction of this error back to the run-out of 0.001~0.002mm.



## Multi-Cam Style

The minute run-out after adjusting by a master cam can be adjusted by fine adjust cams at the same position.

e.g. BT40-SZF16-90-C3 (3 Cams)

The multi-cam style can not be made for all zero fit holders.

**NEW**



**F-CZF**  
P.125

## FLANGE STYLE ZERO FIT TYPE MILLING SHUCK

■ Ideal for adjusting cutter run-out on an NC grinding machine or universal grinding machine

■ 3-point cam as a standard feature makes it easy to adjust run-out on a grinding machine!

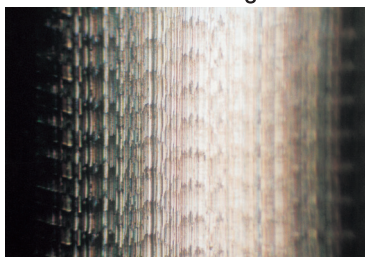
## At Machine Spindle

With **"0" Fitting** the Tool Run-out Accuracy;

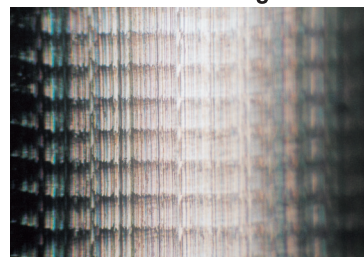
■ The milling surface finish and quality can be improved.

Materials : Pre-Hardened Steel NAK55 (HRC39)  
End Mill : 10mm, 2 teeth Carbide Ball End Mill  
Cutting Speed :  $V=200\text{m/min}$   
Spindle Rotation :  $S=6,366\text{min}^{-1}$   
Feed per tooth :  $f=0.15\text{mm/min}$   
Feed :  $F=1,910\text{mm/min}$   
Dry Cutting with Air blow

Before Zero Fitting :  
Run-out at cutter front edge = 20 microns



After Zero Fitting :  
Run-out at cutter front edge = 1 micron



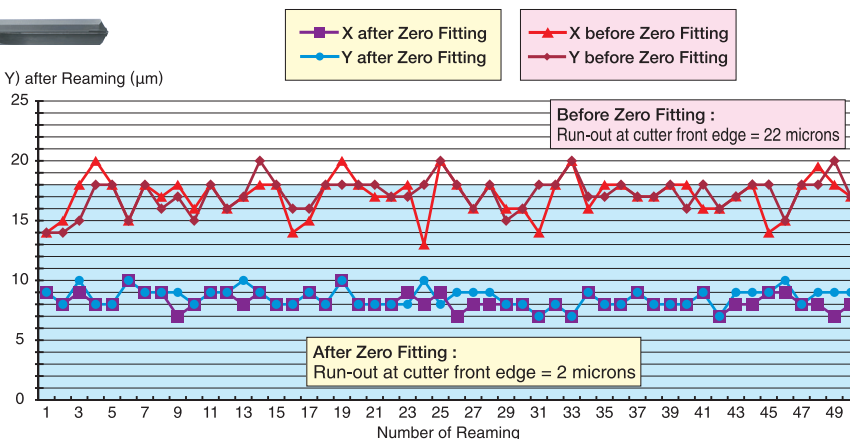
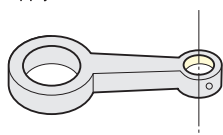
■ For better and stable finish tolerance for machining holes

...The variation at finish tolerance can be minimized, thus the finish size tolerance can be reduced.



Bore Dia.(X, Y) after Reaming ( $\mu\text{m}$ )

Materials : Tempered Steel (HRC25~30)  
Tool :  $\phi 13\text{mm}$  CBN Reamer  
Cutting Speed :  $V=80\text{m/min}$   
Spindle Rotation :  $S=2,000\text{min}^{-1}$   
Feed per tooth :  $f=0.1\text{mm/min}$   
Feed :  $F=200\text{mm/min}$   
External coolant supply : Water soluble



TOOL LIFE  
(Relative Comparison)

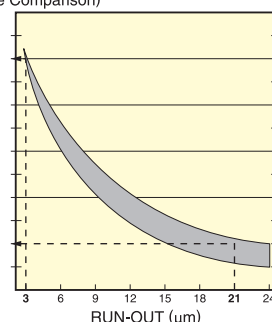


Fig.1

■ The tool life can be extended.

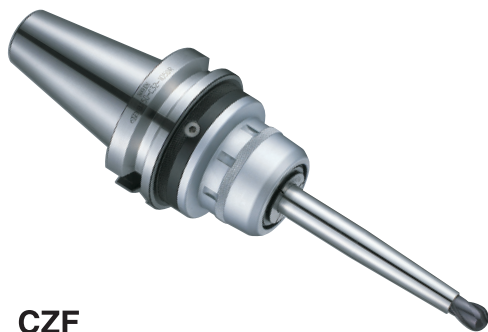
Fig.1 shows the relation between run-out accuracy and tool life, and when the run-out accuracy of 21 microns is reduced to 3 microns, the tool life can be improved by approximately 5 times.

■ Zero Fit Holder has wide adjustment range compared with competitors equivalent, and its mechanism performs simple, quick and secured operation.

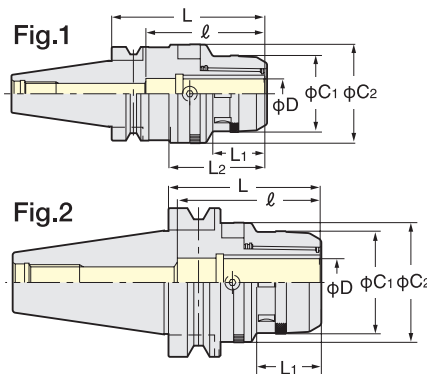
■ The choice of the Slim Chuck style "SZF" & the Anniversary type Milling Chuck style "CZF" can be selected depending on your cutter.

# ZERO FIT TYPE MILLING CHUCK

**NIKKEN**



CZF



Explanation of the Code No.

**BT40 CZF32-120**

- Nominal Gauge Length
- Chucking Capacity
- Zero Fit Type Milling Chuck
- Shank No.

MAX. run-out at 100mm	
CZF20	0.050mm/dia.
CZF25	0.050mm/dia.
CZF32	0.030mm/dia.

PAT.

TAPER	Code No.	C1	C2	L	L1	L2	ℓ	Weight (Kg)	Fig.	Collet
No.30	BT30-CZF20-100	51.5	66.5	100	35	68	80	1.5	1	<div>KM20</div> <div>CCK20</div>
	-CZF25-100	59.5	74.5					1.6		<div>KM25</div> <div>CCK25</div>
	No.40	BT40-CZF20-105	51.5	66.5	105	35	64.5	80		2.1
-120		120			2.5					<div>KM20</div> <div>CCK20</div>
-CZF25-105		59.5	74.5	105	68		2.4			<div>KM25</div> <div>CCK25</div>
-120				120			2.9			<div>KM25</div> <div>CCK25</div>
-CZF32-120		69	80.5	120	42	78	105	2.8		<div>KM32</div> <div>CCK32</div>
No.50		BT50-CZF20-105	51.5	66.5	105	35		80	4.6	2
	-165	165			6.0				<div>KM20</div> <div>CCK20</div>	
	-CZF25-105	59.5	74.5	105	5.0				<div>KM25</div> <div>CCK25</div>	
	-165			165	6.8				<div>KM25</div> <div>CCK25</div>	
	-CZF32-105	69	80.5	105	42	105	5.3	<div>KM32</div> <div>CCK32</div>		
	-165			165			7.4	<div>KM32</div> <div>CCK32</div>		

★Spanner is available as an option. CZF20 type : 9HC22, CZF25 type : 9HC25, CZF32 type : 9HC32

★Wrench to adjust run-out (9ZFL) is available as an option.

★Please refer P.31, P.32 for KM, CCK collet.

★When direct chucking of centre through tool coolant, please use CKFN-D nut.

When using collet, please use CCK collet and CKFN nut. P.32

★Please note the acceptable shank tolerance is h7.

★For How to Adjust the Run-Out, please refer P.162.

★Multi-Cam style is available. e.g. BT40-CZF32-120-C3. (3 Cams) Please contact us for more detail.



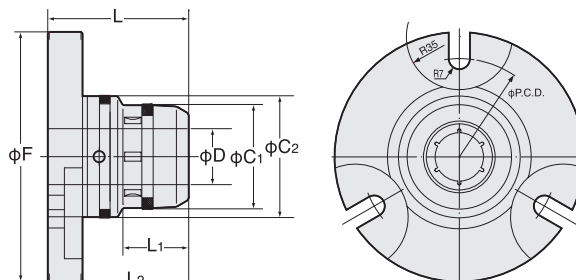
Wrench to adjust  
9ZFL

# FLANGE STYLE ZERO FIT TYPE MILLING CHUCK

**NIKKEN**



F-CZF



Explanation of the Code No.

**F - CZF32**

- Chucking Capacity
- Zero Fit Type Milling Chuck
- Symbol of Flange Style

A holder for gripping the cutter on a tool-grinding machine and adjusting run-out.

Style	Code No.	φF	φD	φC1	φC2	L	L1	L2	Width of groove for fixing bolts	φP,C,D
32	F-CZF32	165	32	69	80.5	93.2	43.5	70.2	14mm	130
42	F-CZF42	175	42	86	98.2	95	46	72	( three places )	140

★Spanner is available as an option. CZF20 type : 9HC22, CZF25 type : 9HC25, CZF32 type : 9HC32

★Wrench to adjust run-out (9ZFL) is available as an option.

★Please refer P.31, P.32 for KM, CCK collet.

★When direct chucking of centre through tool coolant, please use CKFN-D nut.

When using collet, please use CCK collet and CKFN nut. P.32

★Please note the acceptable shank tolerance is h7.

★For How to Adjust the Run-Out, please refer P.162.



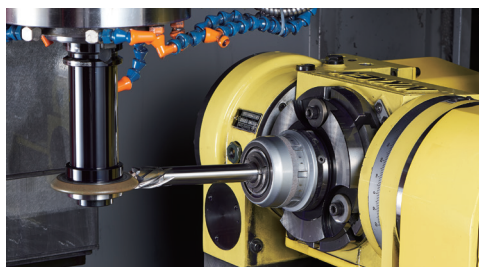
Wrench to adjust  
9ZFL

■ Ideal for adjusting cutter run-out on an NC grinding machine or universal grinding machine.

■ 3-point cam as a standard feature makes it easy to adjust run-out on a grinding machine.

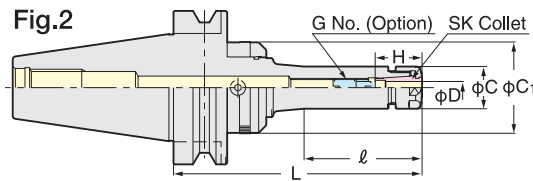
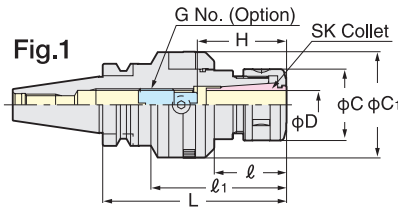
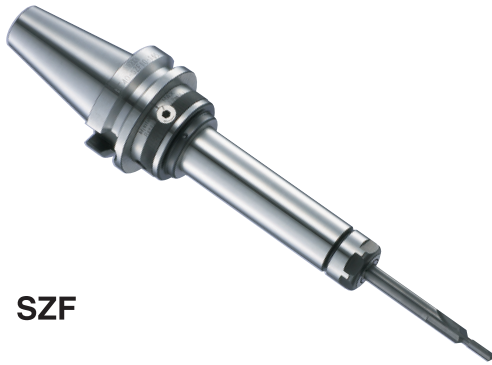


- In case of CZF (Milling Chuck) style, please rotate the Adjust Cam to the free position. Then, tighten the nose ring until face contact.
- If the face contact is not completed, the Adjust Cam can not function. (Free run)
- If the Adjust Cam is not at the free position before tightening, you can not tighten the nose ring until face contact correctly.
- For the safety reason, the Cam Ring Lock Screws can not be loosen to remove to the outside. Please loose the Cam Ring Lock Screws slightly to rotate the Cam Ring.



# ZERO FIT TYPE SLIM CHUCK

**NIKKEN**



Explanation of the Code No.

**BT40** **SZF10** **-90**

- Nominal Gauge Length
- Chucking Capacity
- Zero Fit Type Slim Chuck
- Shank No.

MAX. run-out at 100mm		
SZF 6	L<150	0.050mm / dia.
	L≥150	0.040mm / dia.
SZF10		0.050mm / dia.
SZF16		0.040mm / dia.
SZF25		0.025mm / dia.

**PAT.**

TAPER	Code No.	D	L	ℓ	ℓ <sub>1</sub>	C	C <sub>1</sub>	H	G No. (Option)	Weight (Kg)	Fig.	Collet
<b>No.30</b>	<b>BT30-SZF 6- 90</b>	0.7~6.0	90	42	-	19.5	40.5	21~35	SKG- 8	0.9	2	<b>SK 6</b>
	<b>-SZF10- 90</b>	1.75~10.0		35	61	27.5	48.5	30~50	SKG-12L	1.3	1	<b>SK10</b>
	<b>-SZF16-105</b>	2.75~16.0		40	76	40	59.5	45~65	SKG-18L	1.6		<b>SK16</b>
<b>No.40</b>	<b>BT40-SZF 6- 90</b>	0.7~6.0	90	37	-	19.5	40.5	21~35	SKG- 8	1.3	2	<b>SK 6</b>
	<b>-150</b>		150	60			48.5			1.7		
	<b>BT40-SZF10- 90</b>	1.75~10.0	90	37		27.5	48.5	30~50	SKG-12L	1.5		<b>SK10</b>
	<b>-150</b>		150	97						1.9		
	<b>BT40-SZF16- 90</b>	2.75~16.0	90	37		40	59.5	40~70	SKG-18L	1.8		<b>SK16</b>
	<b>-150</b>		150	97						2.2		
	<b>-SZF25-120</b>	7.5~25.4	120	55	84	55	66.5	55~85	SKG-28	2.4	1	<b>SK25</b>
	<b>-150</b>		150	86	114					2.9		
<b>No.50</b>	<b>BT50-SZF 6-105</b>	0.7~6.0	105	41	-	19.5	40.5	21~35	SKG- 8	4.0	2	<b>SK 6</b>
	<b>-165</b>		165	63			59.5			4.2		
	<b>-SZF10-105</b>	1.75~10.0	105	41		27.5	48.5	30~50	SKG-12L	4.5		<b>SK10</b>
	<b>-165</b>		165	101						4.9		
	<b>-SZF16-105</b>	2.75~16.0	105	41		40	59.5	40~70	SKG-18L	5.0		<b>SK16</b>
	<b>-165</b>		165	101						5.4		
	<b>-SZF25-135</b>	7.5~25.4	135	71		55	66.5	55~85	SKG-28	5.8		<b>SK25</b>
	<b>-165</b>		165	101						6.0		

★Adjust screw (G No.), wrench to adjust run-out (9ZF) and SKL spanner are available as an option. SZF6: SKL-6W, SZF10: SKL-10, SZF16: 9HC16, SZF25: 9HC25

★Please use "P" class or "A" type SK collet. P.39

★For centre through coolant application please use SK J type nut and cap for your preference. Please note that the length of J type nut is 6mm longer than the standard SK nut. P.43

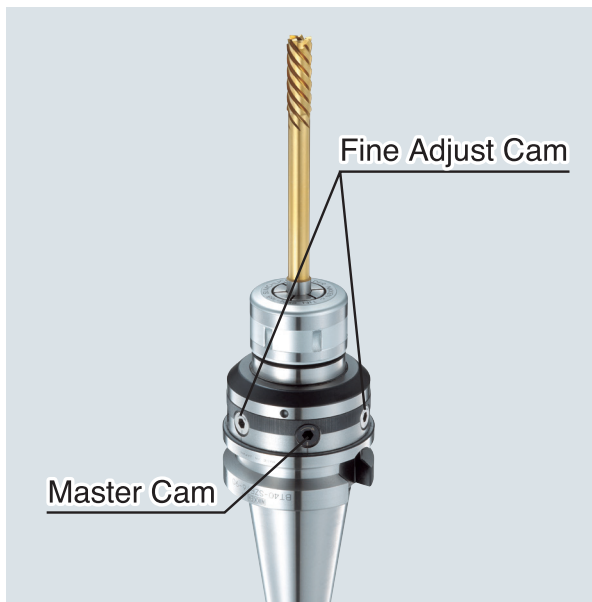
★For High Speed type, Code No. is "SZF-P". e.g. BT40-SZF10-90P GH handle P.30 is necessary for High Speed Milling Chuck.

★For How to Adjust the Run-Out, please refer P.162.

★Multi-Cam style is available. e.g. BT40-SZF16-90-C3. (3 Cams) Please contact us for more detail.



Wrench to adjust  
9ZF



## Multi-Cam Style

The minute run-out after adjusting by a master cam can be adjusted by fine adjust cams at the same position.

**e.g. BT40-SZF16-90-C3 (3 Cams)**

The multi-cam style can not be made for all zero fit holders.