

Compliance Device for press fitting with load-cell without flange - SS SERIES

Center Master® compensates for errors (position and/or torsional) occurred during an assembly that various precision parts are press or loose fitted into the holes. Thereby, it reduces assembly failure, enhances product quality, and shortens the cycle time in production line.

Advantages

- Significant reduction of assembly failure due to center position errors
- Uniform press-fitting quality
- Wide range of applications
- Increased binding force between parts
- Saves assembly line construction time, reduces equipment investment cost
- Enhanced operation rate
- Longer life cycle of the assembler
- Simple maintenance



SPECIFICATIONS

Model	Capacity	Compliance center length P	Payload	Compensation range		Elasticity coefficient (1)				Torsional direction	Weight
				Position error	Torsional angle	Axial direction		Horizontal direction			
CCR-SS4D-070-065-02	19.6 kN	70 mm	30 N	±2 mm	±6.6°	1573.9 N/mm	191.1 N/mm	11.8 N/mm	4.2 Nm/rad	1.4 kg	
	1999 kgf	2.76 in	3 kgf	±0.08 in		160.6 kgf/mm	19.5 kgf/mm	1.2 kgf/mm			42.9 kgf.cm/rad
CCR-SS4D-070-065-04	39.2 kN	70 mm	30 N	±2 mm	±6.6°	1573.9 N/mm	191.1 N/mm	11.8 N/mm	4.2 Nm/rad	1.4 kg	
	3997 kgf	2.76 in	3 kgf	±0.08 in		160.6 kgf/mm	19.5 kgf/mm	1.2 kgf/mm			42.9 kgf.cm/rad
CCR-SS4D-070-065-06	58.8 kN	70 mm	30 N	±2 mm	±6.6°	1573.9 N/mm	191.1 N/mm	11.8 N/mm	4.2 Nm/rad	1.4 kg	
	5996 kgf	2.76 in	3 kgf	±0.08 in		160.6 kgf/mm	19.5 kgf/mm	1.2 kgf/mm			42.9 kgf.cm/rad
CCR-SS4D-090-078-02	19.6 kN	90 mm	40 N	±2 mm	±5.5°	1217.2 N/mm	225.4 N/mm	12.4 N/mm	6.1 Nm/rad	2.1 kg	
	1999 kgf	3.54 in	4.1 kgf	±0.08 in		124.2 kgf/mm	23.0 kgf/mm	1.3 kgf/mm			62.2 kgf.cm/rad
CCR-SS4D-090-078-04	39.2 kN	90 mm	40 N	±2 mm	±5.5°	1217.2 N/mm	225.4 N/mm	12.4 N/mm	6.1 Nm/rad	2.1 kg	
	3997 kgf	3.54 in	4.1 kgf	±0.08 in		124.2 kgf/mm	23.0 kgf/mm	1.3 kgf/mm			62.2 kgf.cm/rad
CCR-SS4D-090-078-06	58.8 kN	90 mm	40 N	±2 mm	±5.5°	1217.2 N/mm	225.4 N/mm	12.4 N/mm	6.1 Nm/rad	2.1 kg	
	5996 kgf	3.54 in	4.1 kgf	±0.08 in		124.2 kgf/mm	23.0 kgf/mm	1.3 kgf/mm			62.2 kgf.cm/rad
CCR-SS4D-110-088-03	29.4 kN	110 mm	40 N	±2 mm	±4.6°	1217.2 N/mm	225.4 N/mm	12.4 N/mm	6.1 Nm/rad	2.7 kg	
	2998 kgf	4.33 in	4.1 kgf	±0.08 in		124.2 kgf/mm	23.0 kgf/mm	1.3 kgf/mm			62.2 kgf.cm/rad
CCR-SS4D-110-088-06	58.8 kN	110 mm	40 N	±2 mm	±4.6°	1217.2 N/mm	225.4 N/mm	12.4 N/mm	6.1 Nm/rad	2.7 kg	
	5996 kgf	4.33 in	4.1 kgf	±0.08 in		124.2 kgf/mm	23.0 kgf/mm	1.3 kgf/mm			62.2 kgf.cm/rad
CCR-SS4D-110-088-10	98.1 kN	110 mm	40 N	±2 mm	±4.6°	1217.2 N/mm	225.4 N/mm	12.4 N/mm	6.1 Nm/rad	2.7 kg	
	10003 kgf	4.33 in	4.1 kgf	±0.08 in		124.2 kgf/mm	23.0 kgf/mm	1.3 kgf/mm			62.2 kgf.cm/rad
CCR-SS4D-140-108-03	29.4 kN	140 mm	80 N	±2 mm	±4.8°	1840.4 N/mm	407.7 N/mm	15.1 N/mm	7.7 Nm/rad	4.1 kg	
	2998 kgf	5.51 in	8.2 kgf	±0.08 in		187.8 kgf/mm	41.6 kgf/mm	1.5 kgf/mm			78.6 kgf.cm/rad
CCR-SS4D-140-108-06	58.8 kN	140 mm	80 N	±2 mm	±4.8°	1840.4 N/mm	407.7 N/mm	15.1 N/mm	7.7 Nm/rad	4.1 kg	
	5996 kgf	5.51 in	8.2 kgf	±0.08 in		187.8 kgf/mm	41.6 kgf/mm	1.5 kgf/mm			78.6 kgf.cm/rad
CCR-SS4D-140-108-10	98.1 kN	140 mm	80 N	±2 mm	±4.8°	1840.4 N/mm	407.7 N/mm	15.1 N/mm	7.7 Nm/rad	4.1 kg	
	10003 kgf	5.51 in	8.2 kgf	±0.08 in		187.8 kgf/mm	41.6 kgf/mm	1.5 kgf/mm			78.6 kgf.cm/rad
CCR-SS4D-150-130-04	39.2 kN	150 mm	80 N	±2 mm	±4.2°	1840.4 N/mm	407.7 N/mm	15.1 N/mm	7.7 Nm/rad	6.0 kg	
	3997 kgf	5.91 in	8.2 kgf	±0.08 in		187.8 kgf/mm	41.6 kgf/mm	1.5 kgf/mm			78.6 kgf.cm/rad
CCR-SS4D-150-130-07	68.6 kN	150 mm	80 N	±2 mm	±4.2°	1840.4 N/mm	407.7 N/mm	15.1 N/mm	7.7 Nm/rad	6.0 kg	
	6995 kgf	5.91 in	8.2 kgf	±0.08 in		187.8 kgf/mm	41.6 kgf/mm	1.5 kgf/mm			78.6 kgf.cm/rad
CCR-SS4D-150-130-12	117.7 kN	150 mm	80 N	±2 mm	±4.2°	1840.4 N/mm	407.7 N/mm	15.1 N/mm	7.7 Nm/rad	6.0 kg	
	12002 kgf	5.91 in	8.2 kgf	±0.08 in		187.8 kgf/mm	41.6 kgf/mm	1.5 kgf/mm			78.6 kgf.cm/rad

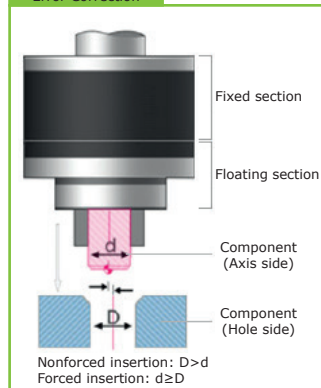
(1) Elasticity coefficient indicates the elasticity at the compliance center (P) - the average value calculated until the plate runs into the stopper.

* Center Master® compensates up to ± 2 mm of positional error, but this value can vary depending on the chamfer size.

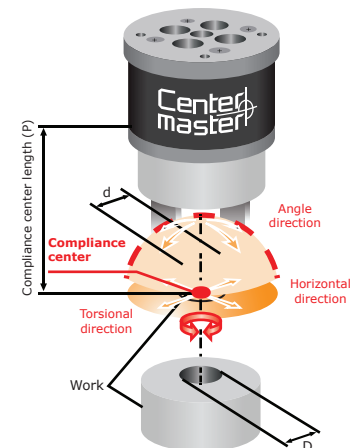
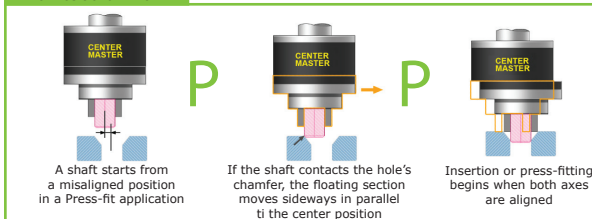
Ambient temperature: 0-55 °C (32-131 °F)

AUTOMATIC CORRECTION OF A POSITION ERROR

Process of Center Error Correction



Automatic Compensation of Positional Error



• Compliance center length (P)

The allowable tolerance of the P value is within ± 5 mm. If the P value exceeds the tolerable limit, the compensation function to correct misalignment may not work properly.

• Payload

Payload means the total weight of an assembly tool and a workpiece. Improper payload may affect to the device performance or life time.

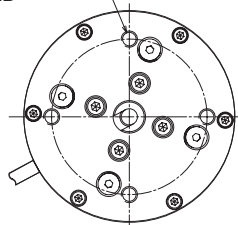
PRODUCT INFORMATION



02.25_Rev.06

4-A (through)

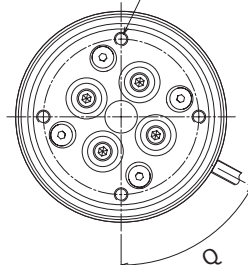
P.C.D.B



MACHINE SIDE

4-O (through)

P.C.D. P



TOOL SIDE

Electrical Specifications

Model Name	Refer to the mechanical specifications table
Rated Capacity(R.C.)	Refer to the mechanical specifications table (rated load)
Rated Output(R.O.)	Refer to each model's detailed specifications
Non-Linearity	<1.0% R.O.
Non-Repeatability	<0.5% R.O.
Zero Balance	<±1% R.O.
Compensated Temp. Range	0~40°C
Operating Temp. Range	0~70°C
Temp. Effect on Rated Output	<±0.1% LOAD/10°C
Temp. Effect Zero Balance	<±0.1% R.O./10°C
Thermal Resistance, Input/Output	700±10ohms/700±10ohms
Insulation Resistance (Min.)	2000M ohms/50V DC
Recommended Excitation Voltage	10V DC
Cable Length (4 Core, Shielded)	5m (standard)
Cable Connection	Brown EXC+ Yellow SIG- White EXC- Green SIG+

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
CCR-SS4D-070-065-02	M6	57.5 (2.26)	-	-	-	-	78 (3.07)	12 (0.472)	8 (0.31)	51 (2.01)	12 (0.472)	65 (2.56)	76 (2.99)	-	M5	57.5 (2.26)	62°
CCR-SS4D-070-065-04	M6	57.5 (2.26)	-	-	-	-	78 (3.07)	12 (0.472)	8 (0.31)	51 (2.01)	12 (0.472)	65 (2.56)	76 (2.99)	-	M5	57.5 (2.26)	62°
CCR-SS4D-070-065-06	M6	57.5 (2.26)	-	-	-	-	78 (3.07)	12 (0.472)	8 (0.31)	51 (2.01)	12 (0.472)	65 (2.56)	76 (2.99)	-	M5	57.5 (2.26)	62°
CCR-SS4D-090-078-02	M8	68 (2.68)	-	-	-	-	91 (3.58)	12 (0.472)	10 (0.39)	53 (2.09)	12 (0.472)	78 (3.07)	89 (3.50)	-	M6	68 (2.68)	-27°
CCR-SS4D-090-078-04	M8	68 (2.68)	-	-	-	-	91 (3.58)	12 (0.472)	10 (0.39)	53 (2.09)	12 (0.472)	78 (3.07)	89 (3.50)	-	M6	68 (2.68)	-27°
CCR-SS4D-090-078-06	M8	68 (2.68)	-	-	-	-	91 (3.58)	12 (0.472)	10 (0.39)	53 (2.09)	12 (0.472)	78 (3.07)	89 (3.50)	-	M6	68 (2.68)	-27°
CCR-SS4D-110-088-03	M8	74 (2.91)	-	-	-	-	101 (3.98)	12 (0.472)	11 (0.43)	54.2 (2.13)	12 (0.472)	88 (3.46)	99 (3.90)	-	M8	74 (2.91)	-27°
CCR-SS4D-110-088-06	M8	74 (2.91)	-	-	-	-	101 (3.98)	12 (0.472)	11 (0.43)	54.2 (2.13)	12 (0.472)	88 (3.46)	99 (3.90)	-	M8	74 (2.91)	-27°
CCR-SS4D-110-088-10	M8	74 (2.91)	-	-	-	-	101 (3.98)	12 (0.472)	11 (0.43)	54.2 (2.13)	12 (0.472)	88 (3.46)	99 (3.90)	-	M8	74 (2.91)	-27°
CCR-SS4D-140-108-03	M8	91 (3.58)	-	-	-	-	121 (4.76)	16 (0.629)	11 (0.43)	57.55 (2.27)	16 (0.629)	108 (4.25)	119 (4.69)	-	M8	91 (3.58)	-27°
CCR-SS4D-140-108-06	M8	91 (3.58)	-	-	-	-	121 (4.76)	16 (0.629)	11 (0.43)	57.55 (2.27)	16 (0.629)	108 (4.25)	119 (4.69)	-	M8	91 (3.58)	-27°
CCR-SS4D-140-108-10	M8	91 (3.58)	-	-	-	-	121 (4.76)	16 (0.629)	11 (0.43)	57.55 (2.27)	16 (0.629)	108 (4.25)	119 (4.69)	-	M8	91 (3.58)	-27°
CCR-SS4D-150-130-04	M8	112 (4.41)	-	-	-	-	143 (5.63)	16 (0.629)	12 (0.47)	59.7 (2.35)	16 (0.629)	130 (5.12)	141 (5.55)	-	M8	112 (4.41)	-22.5°
CCR-SS4D-150-130-07	M8	112 (4.41)	-	-	-	-	143 (5.63)	16 (0.629)	12 (0.47)	59.7 (2.35)	16 (0.629)	130 (5.12)	141 (5.55)	-	M8	112 (4.41)	-22.5°
CCR-SS4D-150-130-12	M8	112 (4.41)	-	-	-	-	143 (5.63)	16 (0.629)	12 (0.47)	59.7 (2.35)	16 (0.629)	130 (5.12)	141 (5.55)	-	M8	112 (4.41)	-22.5°

* Dimensions are in millimeters.

** All dimensions are descriptive and subject to variation for technical upgrading. We reserve the right to make variations without prior notification



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