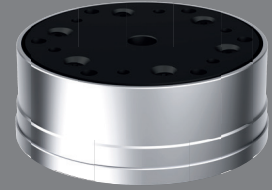


Compliance Device for torque pressure operation without flange - TS SERIES

Center Master® compensates for errors (position) 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 (1)	Allowable maximum force	Compliance center length P	Payload (2)	Compensation range		Elasticity coefficient (3)				Angle Tolerance in Distortion Direction	Weight
				Position error	Torsional angle	Axial direction		Horizontal direction	Torsional direction		
						Compressional	Tensile				
CCR-TS6-040-048	6.0 kN 610 kgf	40 mm 1.57 in	14.7 N 1.5 kgf	±2 mm ±0.08 in	0°	625.2 N/mm 63.8 kgf/mm	143.1 N/mm 14.6 kgf/mm	9.5 N/mm 1.0 kgf/mm	58.8 Nm/rad 6.0 kgf.cm/rad	±0.3°	0.5 kg 1.10 lb
CCR-TS6-050-054	7.5 kN 770 kgf	50 mm 1.97 in	19.6 N 2.0 kgf	±2 mm ±0.08 in	0°	1180.9 N/mm 120.5 kgf/mm	143.1 N/mm 14.6 kgf/mm	11.8 N/mm 1.2 kgf/mm	70.6 Nm/rad 7.2 kgf.cm/rad	±0.3°	0.7 kg 1.54 lb
CCR-TS6-060-060	8.5 kN 870 kgf	60 mm 2.36 in	19.6 N 2.0 kgf	±2 mm ±0.08 in	0°	1180.9 N/mm 120.5 kgf/mm	143.1 N/mm 14.6 kgf/mm	11.8 N/mm 1.2 kgf/mm	78.5 Nm/rad 8.0 kgf.cm/rad	±0.2°	0.9 kg 1.98 lb
CCR-TS6-070-065	15.0 kN 1530 kgf	70 mm 2.76 in	26.5 N 2.7 kgf	±2 mm ±0.08 in	0°	1573.9 N/mm 160.6 kgf/mm	191.1 N/mm 19.5 kgf/mm	11.8 N/mm 1.2 kgf/mm	117.7 Nm/rad 12.0 kgf.cm/rad	±0.2°	1.0 kg 2.20 lb
CCR-TS6-080-070	25.0 kN 2550 kgf	80 mm 3.15 in	26.5 N 2.7 kgf	±2 mm ±0.08 in	0°	1573.9 N/mm 160.6 kgf/mm	191.1 N/mm 19.5 kgf/mm	11.8 N/mm 1.2 kgf/mm	126.5 Nm/rad 12.9 kgf.cm/rad	±0.2°	1.1 kg 2.42 lb
CCR-TS6-090-078	25.0 kN 2550 kgf	90 mm 3.54 in	37.3 N 3.8 kgf	±2 mm ±0.08 in	0°	1217.2 N/mm 124.2 kgf/mm	225.4 N/mm 23.0 kgf/mm	12.4 N/mm 1.3 kgf/mm	201.0 Nm/rad 20.5 kgf.cm/rad	±0.2°	1.6 kg 3.52 lb
CCR-TS6-100-084	40.0 kN 4080 kgf	100 mm 3.94 in	37.3 N 3.8 kgf	±2 mm ±0.08 in	0°	1217.2 N/mm 124.2 kgf/mm	225.4 N/mm 23.0 kgf/mm	12.4 N/mm 1.3 kgf/mm	216.7 Nm/rad 22.1 kgf.cm/rad	±0.15°	1.9 kg 4.18 lb
CCR-TS6-110-088	40.0 kN 4080 kgf	110 mm 4.33 in	37.8 N 3.9 kgf	±2 mm ±0.08 in	0°	1217.2 N/mm 124.2 kgf/mm	225.4 N/mm 23.0 kgf/mm	12.4 N/mm 1.3 kgf/mm	231.4 Nm/rad 23.6 kgf.cm/rad	±0.15°	2.0 kg 4.40 lb
CCR-TS6-120-095	45.0 kN 4590 kgf	120 mm 4.72 in	37.8 N 3.9 kgf	±2 mm ±0.08 in	0°	1217.2 N/mm 124.2 kgf/mm	225.4 N/mm 23.0 kgf/mm	12.4 N/mm 1.3 kgf/mm	247.1 Nm/rad 25.2 kgf.cm/rad	±0.1°	2.1 kg 4.62 lb
CCR-TS6-130-099	50.0 kN 5100 kgf	130 mm 5.12 in	37.8 N 3.9 kgf	±2 mm ±0.08 in	0°	1217.2 N/mm 124.2 kgf/mm	225.4 N/mm 23.0 kgf/mm	12.4 N/mm 1.3 kgf/mm	265.8 Nm/rad 27.1 kgf.cm/rad	±0.1°	2.3 kg 5.06 lb
CCR-TS6-140-108	55.0 kN 5610 kgf	140 mm 5.51 in	78.0 N 8.0 kgf	±2 mm ±0.08 in	0°	1840.4 N/mm 187.8 kgf/mm	407.7 N/mm 41.6 kgf/mm	15.1 N/mm 1.5 kgf/mm	495.2 Nm/rad 50.5 kgf.cm/rad	±0.1°	3.3 kg 7.26 lb
CCR-TS6-150-130	60.0 kN 6120 kgf	150 mm 5.91 in	78.0 N 8.0 kgf	±2 mm ±0.08 in	0°	1840.4 N/mm 187.8 kgf/mm	407.7 N/mm 41.6 kgf/mm	15.1 N/mm 1.5 kgf/mm	962.0 Nm/rad 98.1 kgf.cm/rad	±0.1°	4.7 kg 10.3 lb

(1) Model: customized order is available

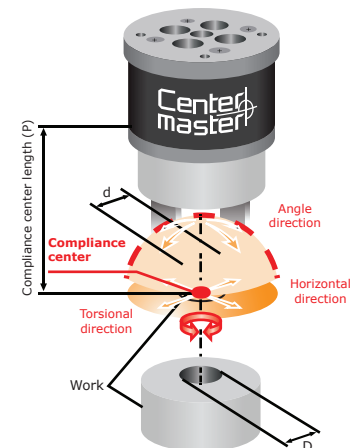
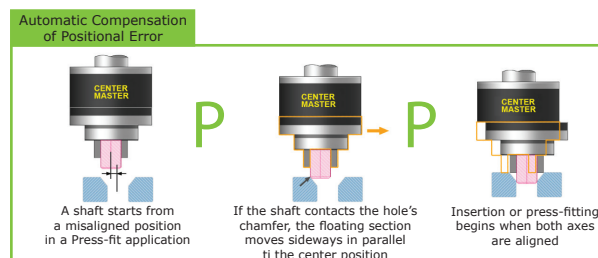
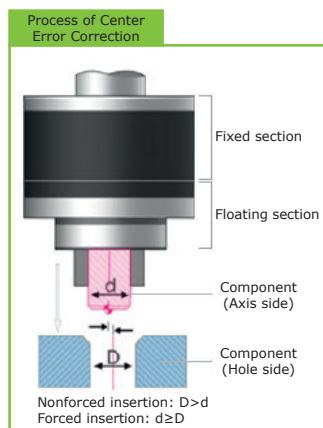
(2) This value can be doubled when Center Master is installed in the vertical direction upside down (reverse vertical).

(3) 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



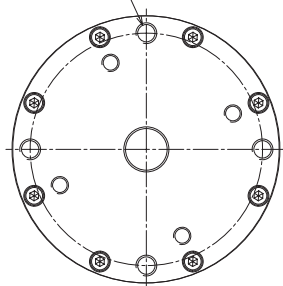
- **Compliance center length (P)**
The allowable tolerance of the P value is within ±5mm. If the P value exceeds the tolerable limit, the compensation function to correct misalignment may not work properly.
- **Payload**
Payload means the total weight of an assembly tool and a workpiece. Improper payload may affect to the device performance or life time.

PRODUCT INFORMATION

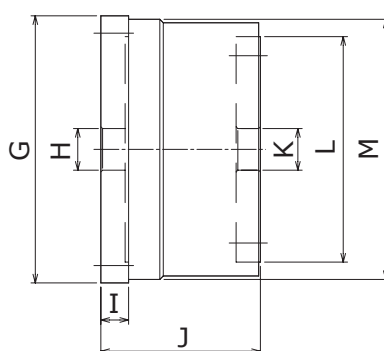


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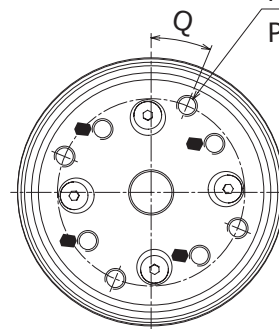
4-A(through)
P.C.D.B



MACHINE SIDE



N-O (through)
P.C.D.P



TOOL SIDE

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
CCR-TS6-040-048	M6	50 (1.97)	-	-	-	-	60 (2.36)	12 (0.472) ^{+0.02} ₋₀ ^{+0.001} ₋₀	8 (0.31)	37 (1.46)	12 (0.472) ^{+0.02} ₋₀ ^{+0.001} ₋₀	48 (1.89)	58 (2.28)	3 (0.12)	M6	36 (0.42)	0°
CCR-TS6-050-054	M6	58 (2.28)	-	-	-	-	66 (2.60)	12 (0.472) ^{+0.02} ₋₀ ^{+0.001} ₋₀	8 (0.31)	46 (1.81)	12 (0.472) ^{+0.02} ₋₀ ^{+0.001} ₋₀	54 (2.13)	64 (2.52)	3 (0.12)	M6	43 (1.69)	22.5°
CCR-TS6-060-060	M6	62 (2.44)	-	-	-	-	72 (2.83)	12 (0.472) ^{+0.02} ₋₀ ^{+0.001} ₋₀	8 (0.31)	46 (1.81)	12 (0.472) ^{+0.02} ₋₀ ^{+0.001} ₋₀	60 (2.36)	70 (2.76)	4 (0.16)	M6	48 (1.89)	22.5°
CCR-TS6-070-065	M6	67 (2.64)	-	-	-	-	77 (3.03)	12 (0.472) ^{+0.02} ₋₀ ^{+0.001} ₋₀	8 (0.31)	46 (1.81)	12 (0.472) ^{+0.02} ₋₀ ^{+0.001} ₋₀	65 (2.56)	75 (2.95)	4 (0.16)	M6	54 (2.13)	22.5°
CCR-TS6-080-070	M6	72 (2.83)	-	-	-	-	82 (3.28)	12 (0.472) ^{+0.02} ₋₀ ^{+0.001} ₋₀	8 (0.31)	46 (1.81)	12 (0.472) ^{+0.02} ₋₀ ^{+0.001} ₋₀	70 (2.76)	80 (3.15)	4 (0.16)	M6	58 (2.28)	22.5°
CCR-TS6-090-078	M8	78 (3.07)	-	-	-	-	90 (3.54)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	10 (0.39)	52 (2.05)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	78 (3.07)	88 (3.46)	4 (0.16)	M8	65 (2.56)	22.5°
CCR-TS6-100-084	M8	84 (3.31)	-	-	-	-	96 (3.78)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	10 (0.39)	52 (2.05)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	84 (3.31)	94 (3.70)	4 (0.16)	M8	70 (2.76)	22.5°
CCR-TS6-110-088	M8	88 (3.46)	-	-	-	-	100 (3.94)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	10 (0.39)	52 (2.05)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	88 (3.46)	98 (3.86)	4 (0.16)	M8	75 (2.95)	22.5°
CCR-TS6-120-095	M8	95 (3.74)	-	-	-	-	107 (4.21)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	10 (0.39)	52 (2.05)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	95 (3.74)	105 (4.13)	4 (0.16)	M8	80 (3.15)	22.5°
CCR-TS6-130-099	M8	99 (3.90)	-	-	-	-	111 (4.37)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	10 (0.39)	52 (2.05)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	99 (3.90)	109 (4.29)	4 (0.16)	M8	86 (3.39)	22.5°
CCR-TS6-140-108	M8	108 (4.25)	-	-	-	-	120 (4.72)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	10 (0.39)	56 (2.20)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	108 (4.25)	118 (4.65)	4 (0.16)	M10	88 (3.46)	22.5°
CCR-TS6-150-130	M8	130 (5.12)	-	-	-	-	143 (5.63)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	10 (0.39)	56 (2.20)	16 (0.629) ^{+0.02} ₋₀ ^{+0.001} ₋₀	130 (5.12)	141 (5.55)	6 (0.24)	M10	114 (4.49)	-7.5°

* 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



Effecto Group S.p.A.

Via Roma, 141/143
28017 San Maurizio d'Opaglio (NO) - IT
Tel. +39 0322 96142
info@effecto.com

Effecto, Inc.

648 Saratoga Road
Glennville, NY 12302 - US
Tel. +1 518 384 1000
info@us.effecto.com

www.effecto.com

Effecto GmbH

Liegnitzer Str. 6
82194 Gröbenzell - DE
Tel. +49 8142 59397 0
info@de.effecto.com