

General Information Lift-off

BREU series are modular type Cam Clutches with lift-off style special cams delivered as BREU-K series with option parts (E1, E2, E5, E7 flanges, E3 Torque arm and E4 cover) which are required as separate parts.

The operational temperature range is -40°C to $+40^{\circ}\text{C}$.

All models are pre-greased at assembly. Injection of an excessive quantity of grease to the bearings during maintenance will cause problems to the function of the cam clutch. It's springs cannot function properly any longer.

Tsubaki recommends a shaft tolerance of h7 with a standard key. The keyways of all Tsubaki Cam Clutches are standardized according to DIN6885.1 Tsubaki recommends an H7 or H8 tolerance for dimensions B and E to rework sprockets, gears, pulleys or other parts to be fitted.

1. Before assembly clean both surfaces of the outer race as well as the surface of the flange, cover, torque arm or other fitted part.
2. Verify the direction of rotation indicated with an arrow before fitting the optional parts.
3. When installing a sprocket, gear or other part, fix them with a hexagonal socket cap bolt.
4. When assembling optional parts in opposite position, the direction of rotation of the Cam Clutch can be changed.
5. Fix grease nipple and set screw to each operational part.
6. When mounting the clutch onto the shaft, apply pressure to the inner race but never to the outer race. Tap the inner race lightly with a soft hammer moving around the race circumference so the Cam Clutch moves slowly and uniformly onto the end of the shaft.
7. Do not use grease that contains EP additives.

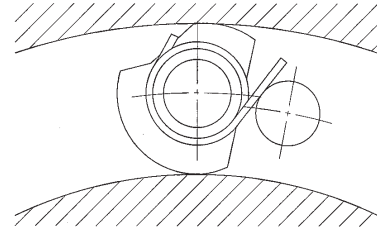
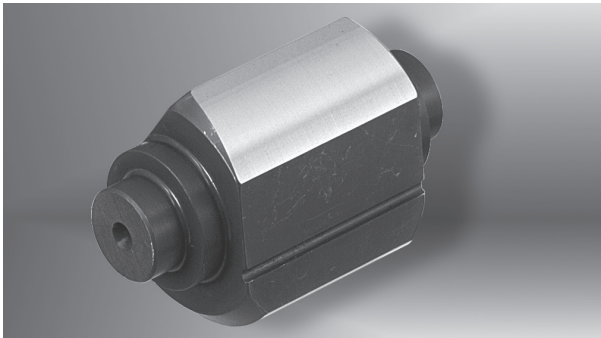


Figure 1: Entire Cam Clutch is stationary

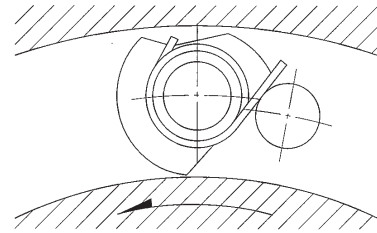


Figure 2: Inner race only turning

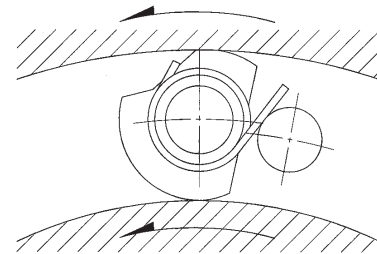
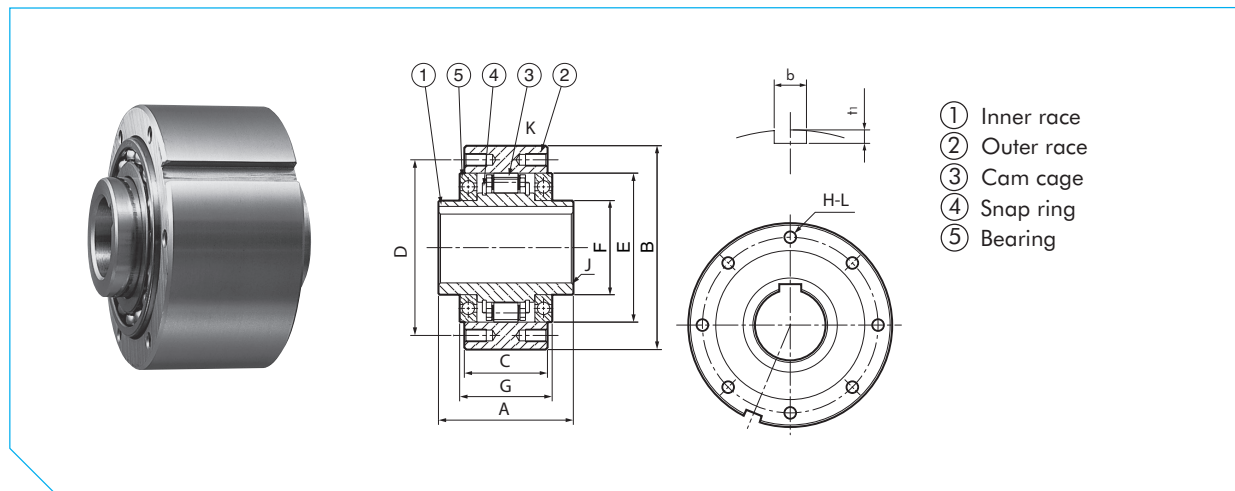


Figure 3: Inner and outerrace locked and turning

BREU-K SERIES CAM CLUTCH



BREU-K

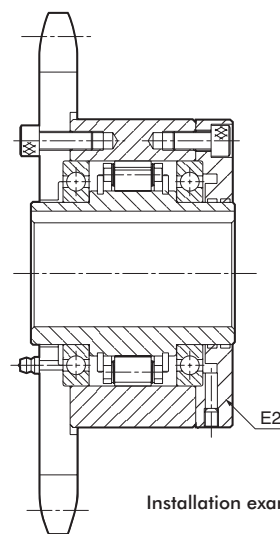
Dimensions in mm

Model	Torque Capacity Nm	Inner Race Overrunning Speed		Max. Engagement Speed r/min	Bore Size H7	Inner Race Keyway	A	B h7	C	D	E	F	G	H-L	K	J	Outer Race Keyway		Approx. Mass kg/pc
		Min. r/min	Max. r/min														b	t1	
BREU30-K	607	880	3600	350	30	8 x 3.3	76	100	51	87	75	45	56	6-M6	10	1.0	8 x 4.0		2.7
BREU35-K	686	780	3600	300	35	10 x 3.3	79	110	50	96	80	50	56	6-M6	12	1.0	10 x 5.0		3.2
BREU40-K	980	720	3600	300	40	12 x 3.3	86	125	53	108	90	55	59	6-M8	14	1.3	12 x 5.0		4.4
BREU45-K	1078	670	3600	280	45	14 x 3.8	86	130	53	112	95	60	59	8-M8	14	1.3	14 x 5.5		4.7
BREU50-K	1715	610	3600	240	50	14 x 3.8	94	150	64	132	110	70	72	8-M8	14	1.3	14 x 5.5		7.6
BREU55-K	1960	580	3600	220	55	16 x 4.3	104	160	66	138	115	75	72	8-M10	16	1.5	16 x 6.0		8.9
BREU60-K	3479	490	3600	200	60	18 x 4.4	120	170	84	150	125	80	95	10-M10	16	1.5	18 x 7.0		12.5
BREU70-K*	4735	480	3600	200	70	20 x 4.9	134	190	95	165	140	90	108	10-M10	16	1.8	20 x 7.5		17.2
BREU80-K*	6517	450	3600	190	80	22 x 5.4	144	210	100	185	160	105	108	10-M10	16	1.8	22 x 9.0		22.4
BREU90-K*	8526	420	3000	180	90	25 x 5.4	158	230	115	206	180	120	125	10-M12	20	2.0	25 x 9.0		30.3
BREU100-K*	14210	460	2500	180	100	28 x 6.4	186	270	124	240	210	140	135	10-M16	24	2.0	28 x 10.0		45.5
BREU130-K*	20384	420	2200	180	130	32 x 7.4	212	310	152	278	240	160	168	12-M16	24	2.5	32 x 11.0		67.0
BREU150-K*	33908	370	1300	180	150	36 x 8.4	246	400	180	360	310	200	194	12-M20	32	2.5	36 x 12.0		145.0

* = Non-stock item

Installation and Usage

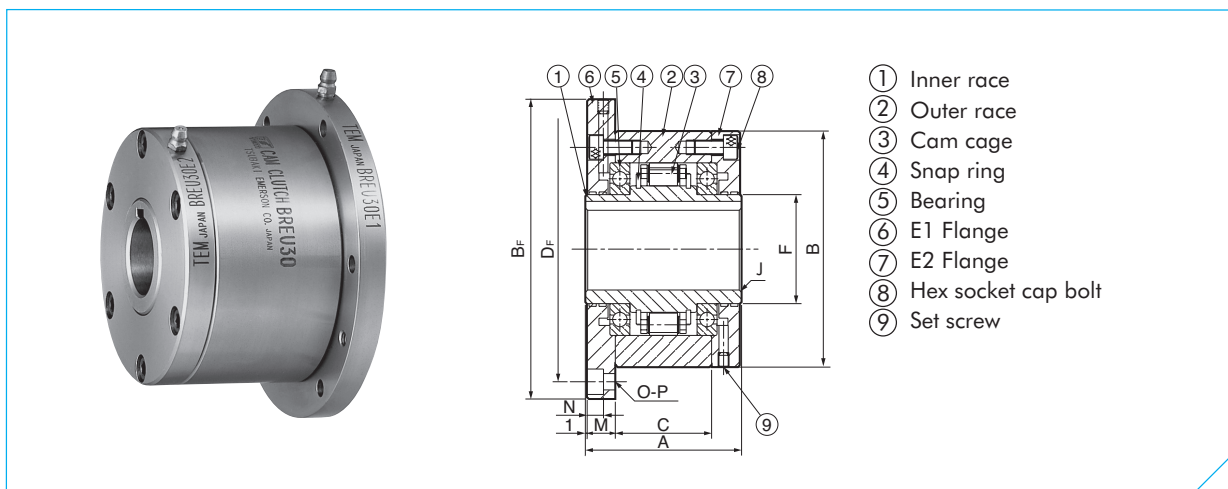
1. By installing both parts on the opposite side, the direction of rotation can be changed.
2. When mounting the clutch onto the shaft, apply pressure to the inner race but never to the outer race. Tap the inner race lightly with a soft hammer moving around the race circumference so the Cam Clutch moves slowly and uniformly onto the end of the shaft.
3. All models are pre-greased. The ambient temperature range is -40°C to +40°C. Too much additional grease to both bearing inhibits the basic Cam Clutch function.



Note:

Current stock items are basic BREU type clutches without keyway on outer race. Please note that Basic BREU type clutches will gradually be replaced by BREU-K type clutches.

BREU-K SERIES CAM CLUTCH



E1 Flange + E2 Flange

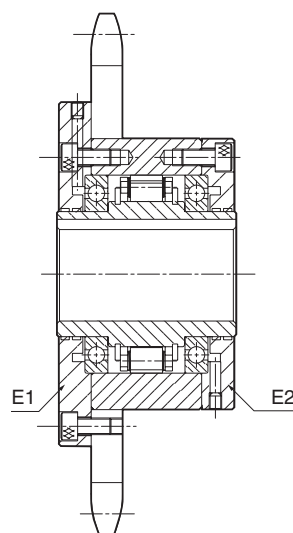
Dimensions in mm

Model	Bore Size H7	Inner Race Keyway	A	B h7	B _F	C	D _F	F	J	M	N	O-P	Approx. Mass kg/pc
BREU30-K E1+E2	30	8 x 3.3	76	100	128	51	114	45	1.0	11.5	6.8	6-ø 6.6	4.1
BREU35-K E1+E2	35	10 x 3.3	79	110	140	50	124	50	1.0	13.5	6.8	6-ø 6.6	5.2
BREU40-K E1+E2	40	12 x 3.3	86	125	160	53	142	55	1.3	15.5	9.0	6-ø 9.0	7.5
BREU45-K E1+E2	45	14 x 3.8	86	130	165	53	146	60	1.3	15.5	9.0	8-ø 9.0	7.9
BREU50-K E1+E2	50	14 x 3.8	94	150	185	64	166	70	1.3	14.0	9.0	8-ø 9.0	11.1
BREU55-K E1+E2	55	16 x 4.3	104	160	204	66	182	75	1.5	18.0	11.0	8-ø 11.0	14.7
BREU60-K E1+E2	60	18 x 4.4	120	170	214	84	192	80	1.5	17.0	11.0	10-ø 11.0	17.9
BREU70-K E1+E2*	70	20 x 4.9	134	190	234	95	212	90	1.8	18.5	11.0	10-ø 11.0	24.5
BREU80-K E1+E2*	80	22 x 5.4	144	210	254	100	232	105	1.8	21.0	11.0	10-ø 11.0	32.5
BREU90-K E1+E2*	90	25 x 5.4	158	230	278	115	254	120	2.0	20.5	13.0	10-ø 14.0	40.5
BREU100-K E1+E2*	100	28 x 6.4	186	270	335	124	305	140	2.0	30.0	17.5	10-ø 18.0	68.0
BREU130-K E1+E2*	130	32 x 7.4	212	310	380	152	345	160	2.5	29.0	17.5	12-ø 18.0	95.0
BREU150-K E1+E2*	150	36 x 8.4	246	400	485	180	445	200	2.5	32.0	21.5	12-ø 22.0	197.0

*= Non-stock item

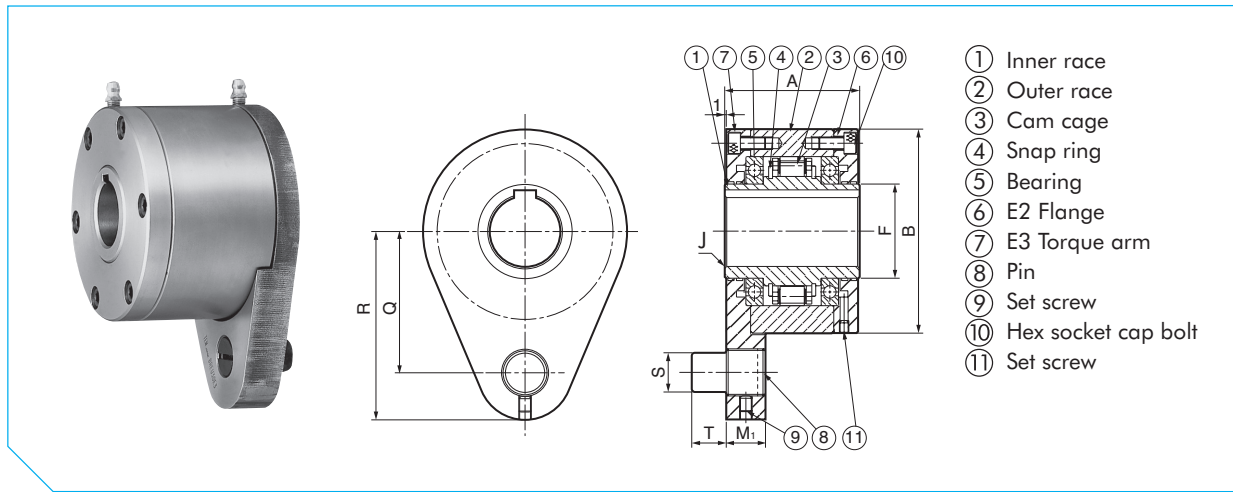
Installation and Usage

1. By installing E1 flange and E2 flange on the opposite side, the direction of rotation can be changed.
2. When mounting the clutch onto the shaft, apply pressure to the inner race but never to the outer race. Tap the inner race lightly with a soft hammer moving around the race circumference so the Cam Clutch moves slowly and uniformly onto the end of the shaft.
3. All models are pre-greased. The ambient temperature range is -40°C to +40°C.
4. Too much additional greasing of the bearings will cause malfunction of the Cam Clutch mechanism.



Installation example 2

BREU-K SERIES CAM CLUTCH



E2 Flange + E3 Flange

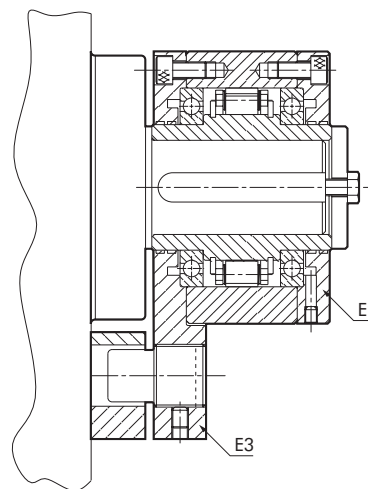
Dimensions are in mm

Model	Bore Size H7	Inner Race Keyway	A	B h7	F	J	M _i	Q	R	S	T	Approx. Mass kg/pc
BREU30-K E2+E3	30	8 x 3.3	76	100	45	1.0	19	68	92	16	14	4.2
BREU35-K E2+E3	35	10 x 3.3	79	110	50	1.0	22	76	102	20	18	5.0
BREU40-K E2+E3	40	12 x 3.3	86	125	55	1.3	22	85	112	20	18	7.0
BREU45-K E2+E3	45	14 x 3.8	86	130	60	1.3	25	90	120	25	22	7.7
BREU50-K E2+E3	50	14 x 3.8	94	150	70	1.3	25	102	135	25	22	11.0
BREU55-K E2+E3	55	16 x 4.3	104	160	75	1.5	30	108	142	32	25	14.0
BREU60-K E2+E3	60	18 x 4.4	120	170	80	1.5	30	112	145	32	25	17.2
BREU70-K E2+E3*	70	20 x 4.9	134	190	90	1.8	35	135	175	38	30	24.5
BREU80-K E2+E3*	80	22 x 5.4	144	210	105	1.8	35	145	185	38	30	31.9
BREU90-K E2+E3*	90	25 x 5.4	158	230	120	2.0	45	155	205	50	40	41.1
BREU100-K E2+E3*	100	28 x 6.4	186	270	140	2.0	45	180	230	50	40	65.0
BREU130-K E2+E3*	130	32 x 7.4	212	310	160	2.5	60	205	268	68	55	94.0
BREU150-K E2+E3*	150	36 x 8.4	246	400	200	2.5	60	255	325	68	55	190.0

*= Non-stock item

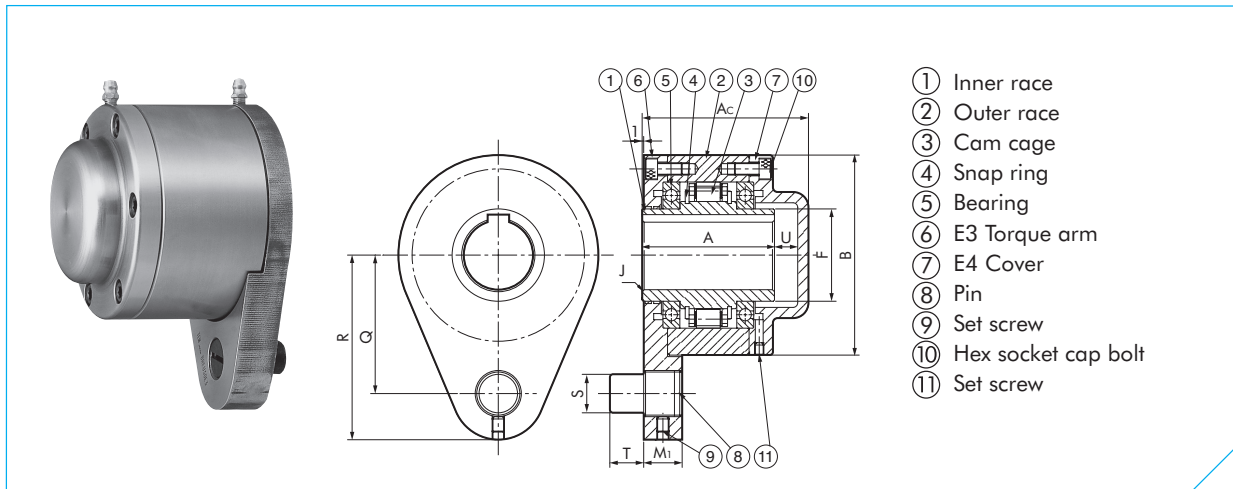
Installation and Usage

1. By installing the E2 flange and E3 torque arm on the opposite side, the direction of rotation can be changed.
2. When mounting the clutch onto the shaft, apply pressure to the inner race but never to the outer race. Tap the inner race lightly with a soft hammer moving around the race circumference so the Cam Clutch moves slowly and uniformly onto the end of the shaft.
3. All models are pre-greased. The ambient temperature range is -40°C to +40°C.
4. Too much additional greasing of the bearings will cause malfunction of the Cam Clutch mechanism.



Installation example 3

BREU-K SERIES CAM CLUTCH



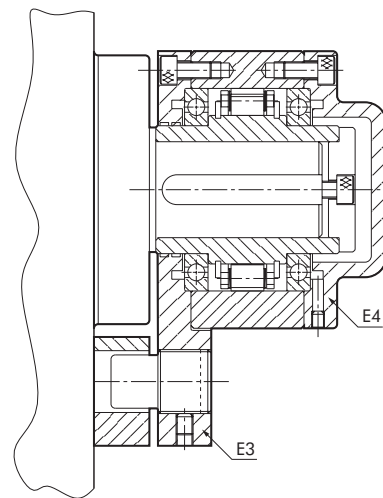
E3 Flange + E4 Flange

Model	Bore Size H7	Inner Race Keyway	A	Ac	B h7	F	J	M1	Q	R	S	T	U	Approx. Mass
														kg/pc
BREU30-K E3+E4	30	8 x 3.3	76	92	100	45	1.0	19	68	92	16	14	10	4.5
BREU35-K E3+E4	35	10 x 3.3	79	97	110	50	1.0	22	76	102	20	18	12	5.3
BREU40-K E3+E4	40	12 x 3.3	86	105	125	55	1.3	22	85	112	20	18	12	7.4
BREU45-K E3+E4	45	14 x 3.8	86	108	130	60	1.3	25	90	120	25	22	15	8.1
BREU50-K E3+E4	50	14 x 3.8	94	113	150	70	1.3	25	102	135	25	22	12	11.5
BREU55-K E3+E4	55	16 x 4.3	104	126	160	75	1.5	30	108	142	32	25	15	15.6
BREU60-K E3+E4	60	18 x 4.4	120	143	170	80	1.5	30	112	145	32	25	15	18.0
BREU70-K E3+E4*	70	20 x 4.9	134	164.5	190	90	1.8	35	135	175	38	30	22.5	25.5
BREU80-K E3+E4*	80	22 x 5.4	144	168	210	105	1.8	35	145	185	38	30	16	32.9
BREU90-K E3+E4*	90	25 x 5.4	158	192	230	120	2.0	45	155	205	50	40	27	43.4
BREU100-K E3+E4*	100	28 x 6.4	186	221	270	140	2.0	45	180	230	50	40	28	67.0
BREU130-K E3+E4*	130	32 x 7.4	212	250	310	160	2.5	60	205	268	68	55	30	97.0
BREU150-K E3+E4*	150	36 x 8.4	246	286	400	200	2.5	60	255	325	68	55	32	193.0

*= Non-stock item

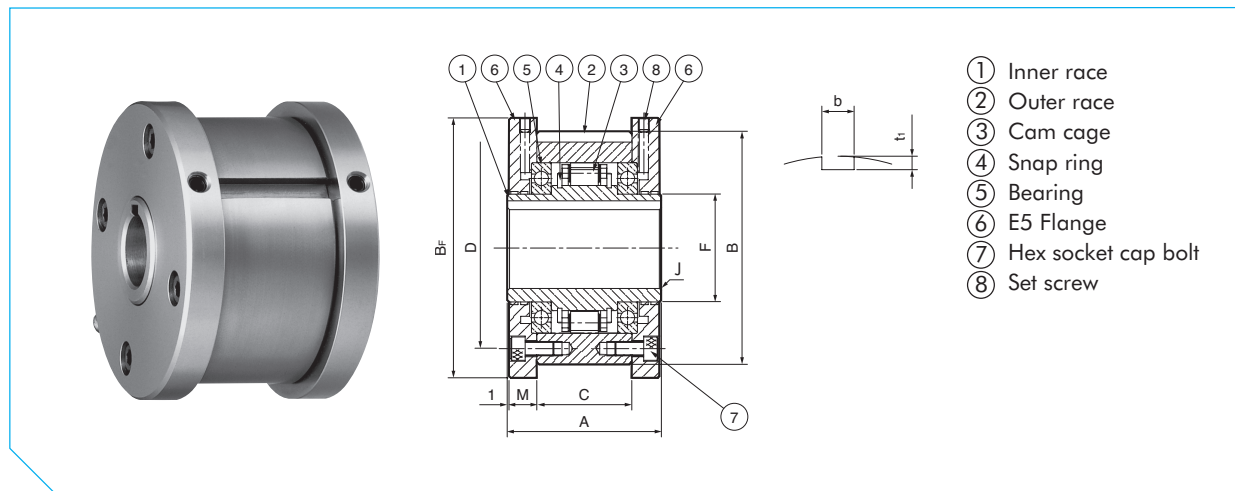
Installation and Usage

1. By installing the E3 torque arm and the E4 cover in the opposite way, the direction of rotation can be changed.
2. When mounting the clutch onto the shaft, apply pressure to the inner race but never to the outer race. Tap the inner race lightly with a soft hammer moving around the race circumference so the Cam Clutch moves slowly and uniformly onto the end of the shaft.
3. All models are pre-greased.
4. Fix grease nipples to optional parts.
5. The ambient temperature range is -40°C to +40°C.
6. Too much additional greasing of the bearings will cause malfunction of the Cam Clutch mechanism.



Installation example 4

BREU-K SERIES CAM CLUTCH



E5 Flange + E5 Flange

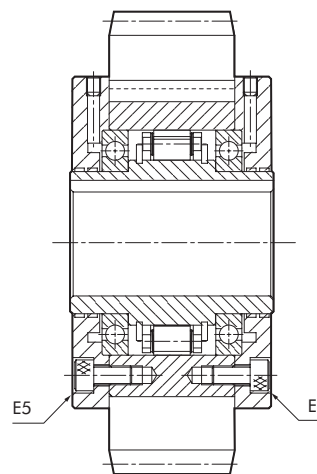
Dimensions in mm

Model	Bore Size H7	Inner Race Keyway	A	B h7	Bf	C	D	F	J	M	Outer Race Keyway		Approx. Mass kg/pc
											b P10	ti	
BREU30-K E5+E5	30	8 x 3.3	76	100	109	51	87	45	1.0	11.5	8 x 4.0		3.9
BREU35-K E5+E5	35	10 x 3.3	79	110	119	50	96	50	1.0	13.5	10 x 5.0		4.9
BREU40-K E5+E5	40	12 x 3.3	86	125	135	53	108	55	1.3	15.5	12 x 5.0		7.0
BREU45-K E5+E5	45	14 x 3.8	86	130	140	53	112	60	1.3	15.5	14 x 5.5		7.4
BREU50-K E5+E5	50	14 x 3.8	94	150	160	64	132	70	1.3	14.0	14 x 5.5		10.7
BREU55-K E5+E5	55	16 x 4.3	104	160	170	66	138	75	1.5	18.0	16 x 6.0		13.6
BREU60-K E5+E5	60	18 x 4.4	120	170	182	84	150	80	1.5	17.0	18 x 7.0		17.3
BREU70-K E5+E5*	70	20 x 4.9	134	190	202	95	165	90	1.8	18.5	20 x 7.5		23.5
BREU80-K E5+E5*	80	22 x 5.4	144	210	222	100	185	105	1.8	21.0	22 x 9.0		31.3
BREU90-K E5+E5*	90	25 x 5.4	158	230	242	115	206	120	2.0	20.5	25 x 9.0		38.4
BREU100-K E5+E5*	100	28 x 6.4	186	270	282	124	240	140	2.0	30.0	28 x 10.0		63.0
BREU130-K E5+E5*	130	32 x 7.4	212	310	322	152	278	160	2.5	29.0	32 x 11.0		88.0
BREU150-K E5+E5*	150	36 x 8.4	246	400	412	180	360	200	2.5	32.0	36 x 12.0		184.0

* = Non-stock item

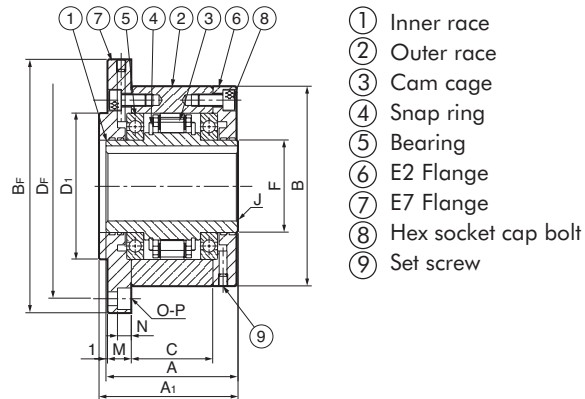
Installation and Usage

1. By turning the Cam Clutch on the opposite side, the direction of rotation can be changed.
2. Fix the grease nipple to the option parts.
3. When mounting the clutch onto the shaft, apply pressure to the inner race but never to the outer race. Tap the inner race lightly with a soft hammer moving around the race circumference so the Cam Clutch moves slowly and uniformly onto the end of the shaft.
4. All models are pre-greased. The ambient temperature range is -40°C to +40°C.
5. Too much additional greasing of the bearings will cause malfunction of the Cam Clutch mechanism.
6. Ensure that the closed side of the spring clip is situated in the same direction as the rotation of the outer race.



Installation example 5

BREU-K SERIES CAM CLUTCH



E2 Flange + E7 Flange

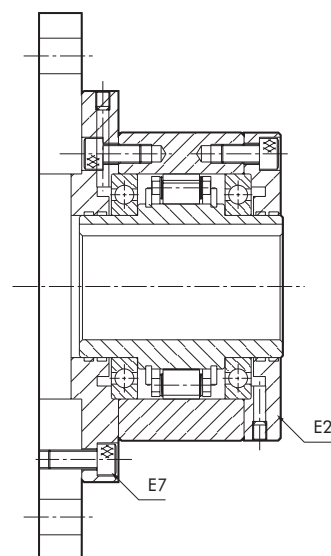
Dimensions in mm

Model	Bore Size H7	Inner Race Keyway	A	A1	B h7	Bf	C	D1 h7	Df	F	J	M	N	O-P	Approx. Mass kg/pc
BREU30-K E2+E7	30	8 x 3.3	76	78	100	128	51	75	114	45	1.0	11.5	6.8	6-ø6.6	4.2
BREU35-K E2+E7	35	10 x 3.3	79	81	110	140	50	80	124	50	1.0	13.0	6.8	6-ø6.6	5.3
BREU40-K E2+E7	40	12 x 3.3	86	88	125	160	53	90	142	55	1.3	15.0	9.0	6-ø9.0	7.6
BREU45-K E2+E7	45	14 x 3.8	86	88	130	165	53	95	146	60	1.3	15.0	9.0	8-ø9.0	8.0
BREU50-K E2+E7	50	14 x 3.8	94	96	150	185	64	110	166	70	1.3	13.0	9.0	8-ø9.0	11.3
BREU55-K E2+E7	55	16 x 4.3	104	106	160	204	66	115	182	75	1.5	17.0	11.0	8-ø11.0	14.8
BREU60-K E2+E7	60	18 x 4.4	120	122	170	214	84	125	192	80	1.5	16.0	11.0	10-ø11.0	18.2
BREU70-K E2+E7*	70	20 x 4.9	134	136	190	234	95	140	212	90	1.8	17.5	11.0	10-ø11.0	24.8
BREU80-K E2+E7*	80	22 x 5.4	144	146	210	254	100	160	232	105	1.8	20.0	11.0	10-ø11.0	32.9
BREU90-K E2+E7*	90	25 x 5.4	158	160	230	278	115	180	254	120	2.0	19.0	13.0	10-ø14.0	40.8
BREU100-K E2+E7*	100	28 x 6.4	186	188	270	335	124	210	305	140	2.0	28.0	17.5	10-ø18.0	69.0
BREU130-K E2+E7*	130	32 x 7.4	212	214	310	380	152	240	345	160	2.5	27.0	17.5	12-ø18.0	96.0
BREU150-K E2+E7*	150	36 x 8.4	246	248	400	485	180	310	445	200	2.5	30.0	21.5	12-ø22.0	198.0

*= Non-stock item

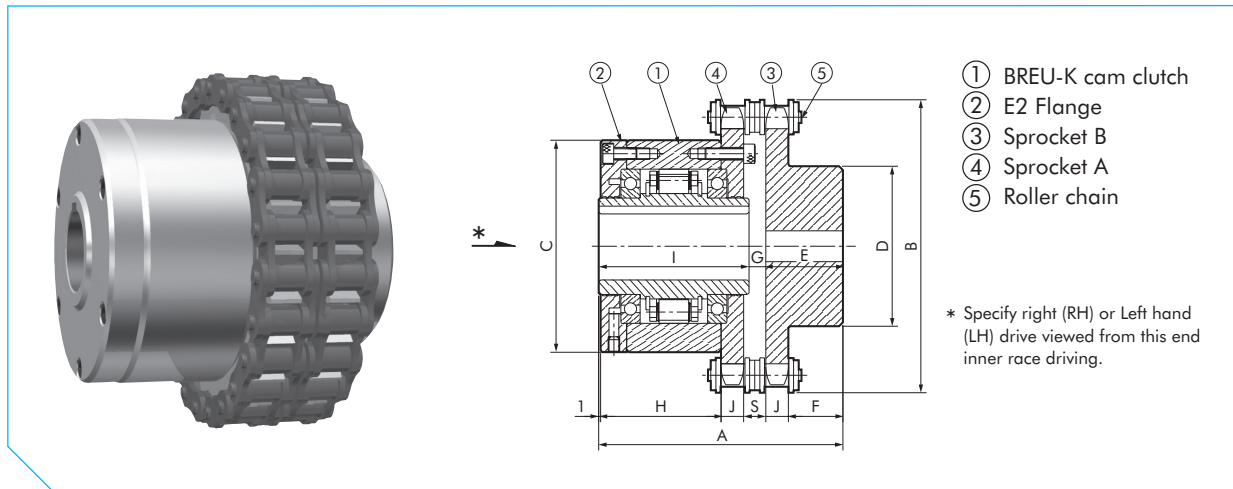
Installation and Usage

1. By installing the E2 flange and E7 flange on the opposite side, the direction of rotation can be changed.
2. Fix the grease nipple to the option parts.
3. When mounting the clutch onto the shaft, apply pressure to the inner race but never to the outer race. Tap the inner race lightly with a soft hammer moving around the race circumference so the Cam Clutch moves slowly and uniformly.
4. All models are pre-greased. The ambient temperature range is -40°C to +40°C.
5. Too much additional greasing of the bearings will cause malfunction of the Cam Clutch mechanism.



Installation example 6

BREU-K SERIES CAM CLUTCH



Coupling

Dimensions in mm

Model	Bore Size H7	Inner Race Keyway	A	B	C h7	D	E	F	G	H	I	J	S	Approx. Mass kg/pc
BREU30-K-C	30	8 x 3.3	109.9	137	100	73	73	19.3	5.9	62.5	76	8.7	9.7	5.9
BREU35-K-C	35	10 x 3.3	127.7	152	110	83	83	28.3	8.7	63.5	79	11.7	11.5	8.5
BREU40-K-C	40	12 x 3.3	132.7	164	125	83	83	28.3	6.7	68.5	86	11.7	11.5	10.5
BREU45-K-C	45	14 x 3.8	132.7	176	130	83	83	28.3	6.7	68.5	86	11.7	11.5	11.2
BREU50-K-C	50	14 x 3.8	142.2	200	150	83	83	28.3	8.2	78.0	94	11.7	11.5	15.6
BREU55-K-C	55	16 x 4.3	159.8	219	160	107	107	30.4	10.8	84.0	104	14.6	15.2	21.8
BREU60-K-C	60	18 x 4.4	176.8	235	170	107	107	30.4	11.8	101.0	120	14.6	15.2	26.4
BREU70-K-C*	70	20 x 4.9	189.3	251	190	107	107	30.4	10.3	113.5	134	14.6	15.2	33.0
BREU80-K-C*	80	22 x 5.4	196.8	267	210	107	107	30.4	7.8	121.0	144	14.6	15.2	41.0

*= Non-stock item

Installation and Usage

1. BREU-K C series Cam Clutch couplings make use of BREU-K series Cam Clutch and CR type couplings without cover.
2. Mount the clutch loosely on the high-speed shaft at first.
3. Accurately align both sprockets by checking with a straight edge on the teeth of both sprockets.
4. Check whether the clearance (S) between the two sprockets is correct, then wrap the chain around the sprockets.
5. Specify right hand (RH) or left hand (LH) as inner race over-running direction from the view of cam clutch side(*) when ordering. See the above drawing.
6. The same lubrication as for Tsubaki roller chain is necessary for the coupling chain.
7. Ensure that the closed side of the spring clip is situated in the same direction as the rotation of the outer race.

BREU-K SERIES CAM CLUTCH

Lubrication and Maintenance of BREU-K Series

BREU-K Series Cam Clutches need periodic maintenance and lubrication to both bearings providing the maximum performance throughout the Cam Clutch' service life.

The Cam Mechanism DOES NOT require any maintenance therefore never use an excessive quantity of grease, yet lack of prescribed maintenance and lubrication will shorten the Service Life of the Cam Clutch and may cause unnecessary mechanical damage.

Recommended grease for Cam Clutches BREU-series

Oil Company	Ambient Temperature	
	-5°C to +40°C	-40°C to +40°C
Esso	-	Beacon 325
Mobil	-	Mobil Temp SHC 100
Shell	Alvania Grease S2	Alvania Grease RA
BP	Energrease LS2	Energrease LT2
Total	Multis 2	Aerogrease 22

Note: Do not use grease containing EP additives when selecting any other brand or make.

Maintenance

BREU-K Series Cam Clutches are pre-greased at the factory and the integrated bearings should be re-greased every three month after installation. Follow the procedures below.

Remove the setscrew at the flange, torque arm, cover or fitted part. Inject equal amounts of grease into both bearings via the

grease nipples. Refer to the grease volume table for the correct amount. Run the Cam Clutch disengaged for 20 to 30 minutes with setscrew removed. Excessive grease in the clutch area will flow out of the tapped holes. Wipe off excessive grease and re-install the set screw.

Model	Each Bearing (g)	Model	Each Bearing (g)
BREU30-K	10	BREU70-K	50
BREU35-K	10	BREU80-K	80
BREU40-K	15	BREU90-K	90
BREU45-K	20	BREU100-K	160
BREU50-K	30	BREU130-K	260
BREU55-K	30	BREU150-K	460
BREU60-K	40		