

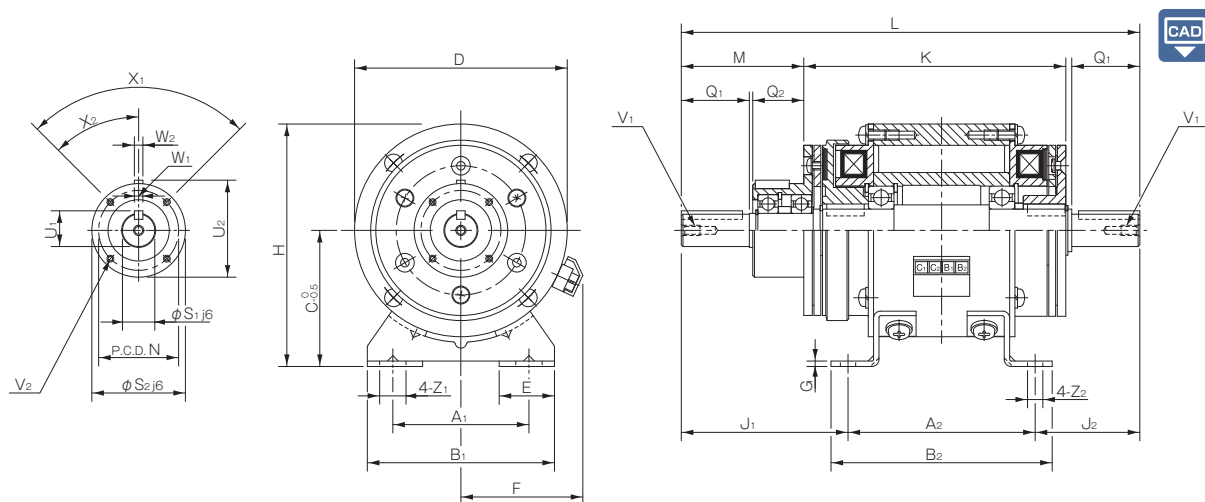
# 121(20G) Types Clutch/Brake Units

## Specifications

Model	Size	Dynamic friction torque T <sub>d</sub> [N·m]	Static friction torque T <sub>s</sub> [N·m]	Coil (at 20°C)				Heat resistance class	Max. rotation speed [min <sup>-1</sup> ]	Rotating part moment of inertia J [kg·m <sup>2</sup> ]	Total work performed until readjustment of the air gap E <sub>r</sub> [J]	Armature pull-in time t <sub>a</sub> [s]	Torque build-up time t <sub>p</sub> [s]	Torque decaying time t <sub>d</sub> [s]	Mass [kg]
				Voltage [V]	Wattage [W]	Current [A]	Resistance [Ω]								
121-06-20G	06	5	5.5	DC24	11	0.46	52	B	3000	1.43 × 10 <sup>-4</sup>	36 × 10 <sup>6</sup>	C:0.020 B:0.015	C:0.041 B:0.033	C:0.020 B:0.015	1.5
121-08-20G	08	10	11	DC24	15	0.63	38	B	3000	4.23 × 10 <sup>-4</sup>	60 × 10 <sup>6</sup>	C:0.023 B:0.016	C:0.051 B:0.042	C:0.030 B:0.025	2.7
121-10-20G	10	20	22	DC24	20	0.83	29	B	3000	1.42 × 10 <sup>-3</sup>	130 × 10 <sup>6</sup>	C:0.025 B:0.018	C:0.063 B:0.056	C:0.050 B:0.030	5.5
121-12-20G	12	40	45	DC24	25	1.04	23	B	3000	4.18 × 10 <sup>-3</sup>	250 × 10 <sup>6</sup>	C:0.040 B:0.027	C:0.115 B:0.090	C:0.065 B:0.050	9.6
121-16-20G	16	80	90	DC24	35	1.46	16	B	3000	1.34 × 10 <sup>-2</sup>	470 × 10 <sup>6</sup>	C:0.050 B:0.035	C:0.160 B:0.127	C:0.085 B:0.055	18.5
121-20-20G	20	160	175	DC24	45	1.88	13	B	2500	4.13 × 10 <sup>-2</sup>	10 × 10 <sup>8</sup>	C:0.090 B:0.065	C:0.250 B:0.200	C:0.130 B:0.070	35
121-25-20G	25	320	350	DC24	60	2.50	9.6	B	2000	1.02 × 10 <sup>-1</sup>	20 × 10 <sup>8</sup>	C:0.115 B:0.085	C:0.335 B:0.275	C:0.210 B:0.125	64

\* The dynamic friction torque, T<sub>d</sub>, is measured at a relative speed of 100 min<sup>-1</sup>. Depending on the initial torque characteristics, break-in to condition the engaging surfaces may also be required.

## Dimensions



Unit [mm]

Size	Dimensions of part														Dimensions of shaft														
	A <sub>1</sub>	A <sub>2</sub>	B <sub>1</sub>	B <sub>2</sub>	C	D	E	F	G	H	J <sub>1</sub>	J <sub>2</sub>	K	L	M	N	Z <sub>1</sub>	Z <sub>2</sub>	Q <sub>1</sub>	Q <sub>2</sub>	S <sub>1</sub>	S <sub>2</sub>	U <sub>1</sub>	U <sub>2</sub>	V <sub>1</sub>	V <sub>2</sub>	X <sub>1</sub>	X <sub>2</sub>	W <sub>1,2</sub>
06	52.5	75	80	90	55	80	27.5	53	2.6	95	65.5	40.5	105.5	181	47	33	13.5	6.5	25	20	11	38	12.5	39.5	M4 × 0.7, length: 8	3-M4 × 0.7, length: 4	3-120°	60°	4
08	65	90	90	105	65	100	27.5	61	2.6	115	78.5	48.5	126.5	217	57	37	13.5	6.5	30	25	14	45	16	47	M4 × 0.7, length: 8	3-M4 × 0.7, length: 6	3-120°	60°	5
10	80	110	110	130	80	125	32.5	72	3.2	142.5	98	62	154	270	72	47	15.5	9	40	30	19	55	21	57	M6 × 1, length: 11	4-M4 × 0.7, length: 8	4-90°	45°	5
12	105	135	140	160	90	150	35	81	3.2	165	121	73.5	184	330	92	52	20	11.5	50	40	24	64	27	67	M6 × 1, length: 11	4-M4 × 0.7, length: 8	4-90°	45°	7
16	135	160	175	185	112	190	43	97	4.5	207	149	90	221	399	113	62	24.5	11.5	60	50	28	75	31	78	M6 × 1, length: 11	6-M5 × 0.8, length: 8	6-60°	30°	7
20	155	200	200	230	132	230	45	109	6	247	187	117	276	504	142	74.5	28	14	80	60	38	90	41.5	93.5	M10 × 1.5, length: 17	4-M6 × 1, length: 12	4-90°	45°	10
25	195	240	240	270	160	290	47.5	124	20	305	238	154	334	632	183	101.5	28	14	110	70	42	115	45.5	118.5	M10 × 1.5, length: 17	8-M6 × 1, length: 12	8-45°	22.5°	12

\* The input/output shaft keyways are old JIS standard class 2 while the key is old JIS standard class 1. Note that the keyway dimensions of the unit hub part do not conform to JIS standards. Check them on the dimensions table above.

\* When inserting pulleys or the like onto input/output shafts, use the supplied insertion set.

\* The 121-25-20G base is a casting.

**How to Place an Order**

**121-06-20G**

└── Size

### List of Stand-alone Clutches and Brakes Used

Model	Stand-alone clutch system				Stand-alone braking system			Bearing number	
							Main shaft part	Hub part	
121-06-20G	101-06-15G	24V	R15JIS	A12JIS	111-06-12G	24V	15JIS	6202	6001
121-08-20G	101-08-15G	24V	R20JIS	A15JIS	111-08-12G	24V	20JIS	6004	6002
121-10-20G	101-10-15G	24V	R25JIS	A20JIS	111-10-12G	24V	25JIS	6205	6004
121-12-20G	101-12-15G	24V	R30JIS	A25JIS	111-12-12G	24V	30JIS	6206	6005
121-16-20G	101-16-15G	24V	R40JIS	A30JIS	111-16-12G	24V	40JIS	6208	6006
121-20-20G	101-20-15G	24V	R50JIS	A40JIS	111-20-12G	24V	50JIS	6211	6008
121-25-20G	101-25-15G	24V	R60JIS	A50JIS	111-25-12G	24V	60JIS	6214	6010

### Recommended Power Supplies and Accessory Parts

Model	Recommended power supplies	Accessory parts				
		Circuit protector (Varistor), qty. 2	Tightening collar	Screw stock	Presser foot	Hexagonal nut
121-06-20G	BEH-10G	TND07V-820KB00AAA0 or an equivalent	Qty. 1	M4 × 55, qty. 3	Qty. 1	M4, qty. 3
121-08-20G	BEH-10G	TND07V-820KB00AAA0 or an equivalent	Qty. 1	M4 × 55, qty. 3	Qty. 1	M4, qty. 3
121-10-20G	BEH-10G	TND07V-820KB00AAA0 or an equivalent	Qty. 1	M4 × 55, qty. 3	Qty. 1	M4, qty. 3
121-12-20G	BEH-10G	TND07V-820KB00AAA0 or an equivalent	Qty. 1	M4 × 55, qty. 2/M6 × 100, qty. 1	Qty. 1	M4, qty. 2/M6, qty. 1
121-16-20G	BEH-10G	TND07V-820KB00AAA0 or an equivalent	Qty. 1	M5 × 70, qty. 2/M6 × 100, qty. 1	Qty. 1	M5, qty. 2/M6, qty. 1
121-20-20G	BEH-20G	TND07V-820KB00AAA0 or an equivalent	Qty. 1	M6 × 160, qty. 2/M10 × 220, qty. 1	Qty. 1	M6, qty. 4/M10, qty. 2
121-25-20G	BEH-20G	TND07V-820KB00AAA0 or an equivalent	Qty. 1	M6 × 160, qty. 2/M10 × 220, qty. 1	Qty. 1	M6, qty. 4/M10, qty. 2

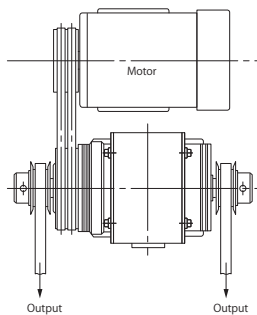
\* The above-model varistors are manufactured by Nippon Chemi-Con Corporation.

\* Varistors need not be used when a BEH model overexcitation electromagnetic power supply is used. For details, refer to the section on power supplies.

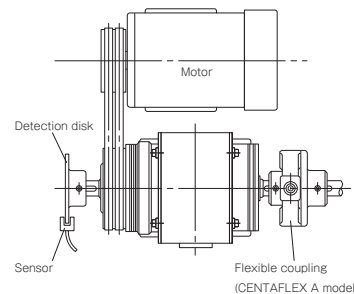
### Mounting Example

This clutch/brake unit allows the output shaft to be used in two locations, so both outputs can be used simultaneously, or one can be connected to a load and a rotation detection disk mounted to the other. A variety of transmission paths can be used in layouts.

#### Example with Two Outputs



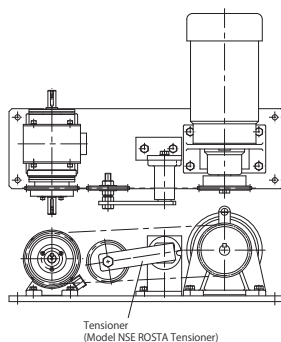
#### Example with Detection Disk on One Side



### Special Types

In addition to the special application examples shown below, drivers can also be set, and units can be provided with pulleys, sprockets, and the like. Contact Miki Pulley for details.

#### One-piece Unit Connected by Geared Motor and Sprocket



#### Clutch/Brake Unit with V Pulley Mounted on Input Side

