For safe and reliable operation, it is essential to read the user's manual carefully before using this equipment.

We have a new slogan in Japan; "ECOing" a combination of "eco" and "ing" . This is to promote eco-friendly technological development and manufacturing.
Our ecological activities are of course not limited to Japan and practiced in many countries around the world.

SINFONIA TECHNOLOGY CO., LTD. continually upgrades and improves its products.
Actual features and specifications may therefore differ slightly from those described in this catalog.

Formerly SHINKO ELECTRIC CO., LTD.

SINFONIA TECHNOLOGY CO., LTD.
Shiba NBF Tower, 1-30, Shiba-daimon 1-chome, Minato-ku, Tokyo, 105-8564, Japan
TEL +81-3-5473-1826 FAX +81-3-5473-1845

SINFONIA TECHNOLOGY (SINGAPORE) PTE. LTD.
96 Robinson Road, #13-02 SIF Building, Singapore 068899
TEL +65-6223-6122 FAX +65-6225-2729

PT. SINFONIA TECHNOLOGY INDONESIA
Graha Paramita 8th Floor Suite E Jl. Denpasar Raya Block D2 KAV. 8 Kuningan, Jakarta 12940, Indonesia
TEL: 021-252-3606 (hunting) FAX: 021-252-3608

SINFONIA TECHNOLOGY (SHANGHAI) CO., LTD.
Room3006, Building B Far East International Plaza, No 317, Xian Xia Road, Changning District, Shanghai, China
Zip Code:200051
TEL +86-21-6275-0606 FAX +86-21-3209-8975

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Printed in Japan 2006 9AⅡⓈ

PAN-CAKE
DRY, SINGLE-PLATE CLUTCHES/BRAKES

Our clutches and brakes used in various equipment including industrial equipment, information equipment and recreation facilities play an important part in automation or motion control systems in terms of power transmission and control.

SINFONIA
SINFONIA TECHNOLOGY CO., LTD.
Formerly SHINKO ELECTRIC CO., LTD.

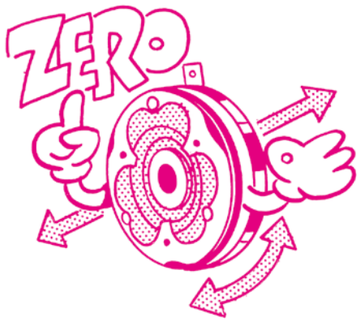
Pancake Type Electromagnetic Clutches/Brakes
Pancake type Series

Due to their unique structure, our pancake-type electromagnetic clutches/brakes provide such helpful features as easy installation and space-saving design. Of course, they offer superior characteristics and reliability as electromagnetic clutches and brakes, and the uniquely shaped, highly reliable leaf spring ensures operating characteristics of high precision and outstanding response. This series is characterized by major features thin and compact design, high performance and easy to install. The pancake type series clutch/brake system is ideally suited for controlling the motion of various machines.

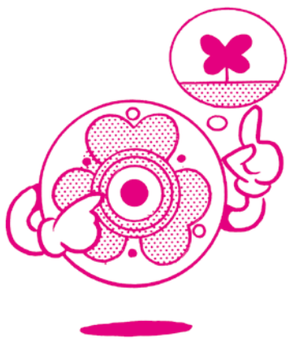
Features

1. Thin and Compact
This product features a low profile and can be installed in a limited space.

2. No Backlash
The orighal leaf-spring drive system ensures no backlash in the direction of rotation.



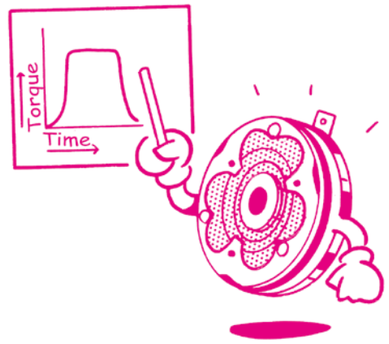
3. Highly Durable, Clover-Shaped Leaf Spring
The system is equipped with a unique clover-shaped leaf spring featuring balanced stress set by the "limited factor method."



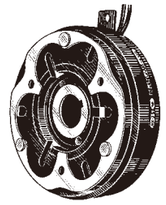
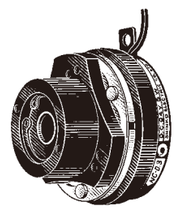
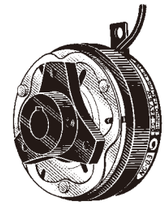
4. Asbestos-Free Facing
Due to the use of non-asbestos material and safety facing, this product can be emptoyed in food and packaging machines.

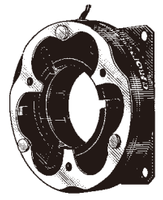
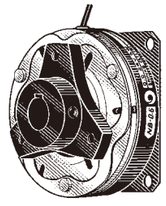
5. Easy Installation and Mountable in Any Position
The system can be installed in any direction (i.e., vertical, horizontal or diagonal).

6. Superb Response and High precision
The leaf-spring drive system ensures accurate response and is perfect for high-precision control use.



List of Models

Type	Clutch		
	NC-T No hub type	NC-H Through shaft type	NC-C Sprit shaft type
Appearance			

Type	Brake	
	NB-T No hub type	NB-C Hub exterior installetion type
Appearance		

Indication of Type

NC-0.6-T

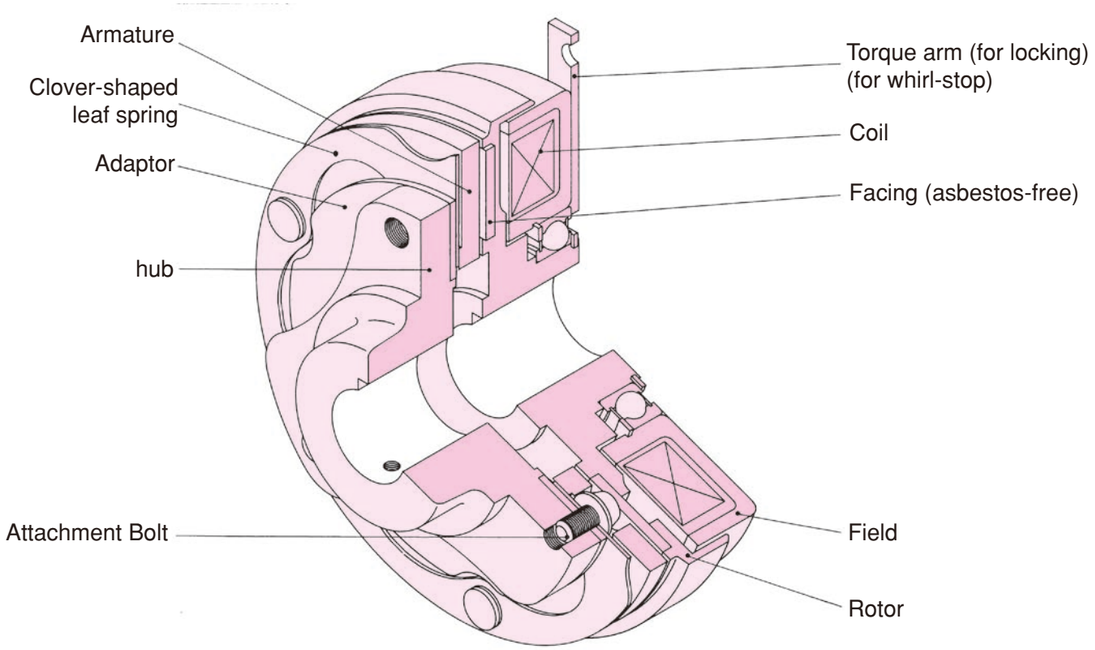
Attachment type
T: No hub tpye
H: Through shaft type
C: Sprit shsft type

Nominal number

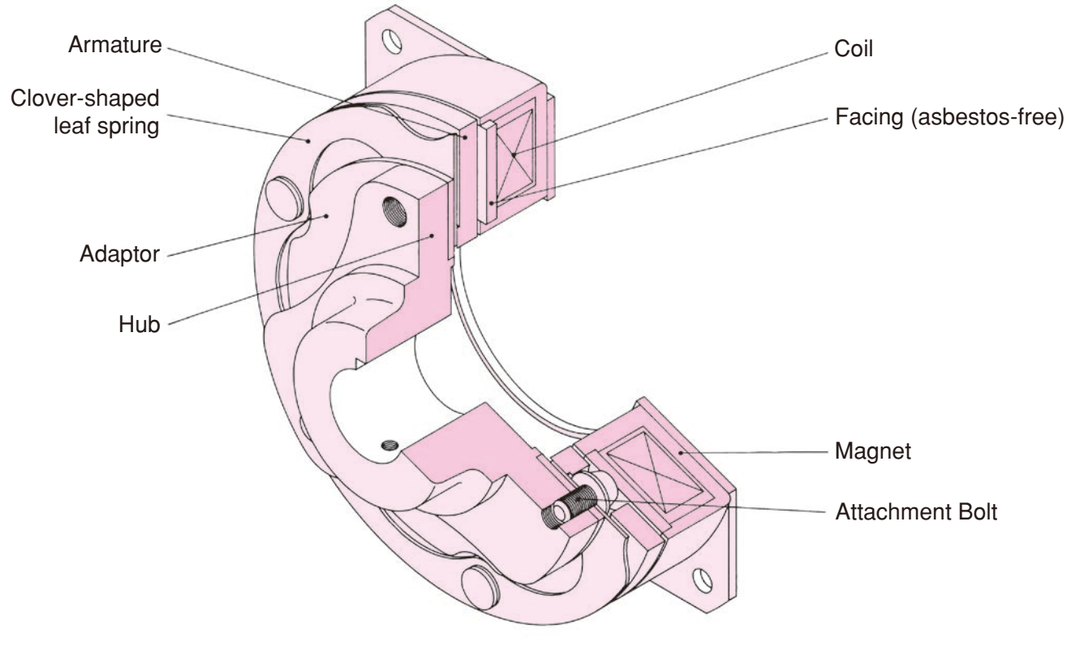
Type
NC: Clutch
NB: Brake

Structure

Clutch



Brake



Clutch or Brake Selection Guide

Clutch operating modes may be divided into two types: The maximum torque is applied to the system after it has been started fully (for example, in a lathe, on which the work begins to be ground after its rotation has reached the normal speed). The maximum torque is applied when the clutch is actuated (for example, in a conveyor system, in which case the load-is already on the system when the clutch closed).

By referring to Table I or II, it is easy to select the right clutch model for a paticular application from the motor capacity and the clutch shaft speed involved. If you are not sure which type of clutch operating mode is expected, use Table I. If you have a brake in mind, use Table I.

Selection Table I Maximum torque is applied after sysem has fully been started

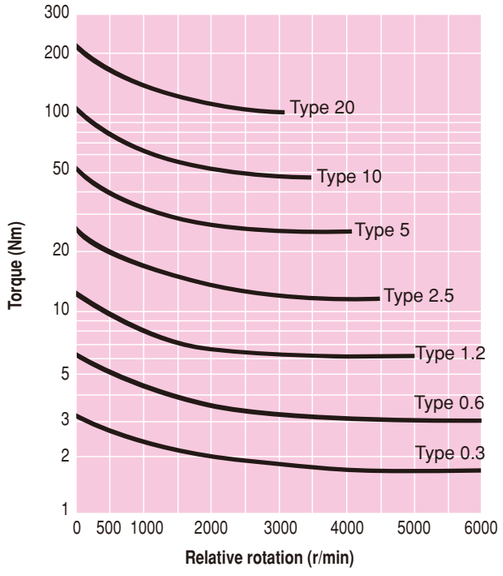
Motor power \ r/min		100	200	300	400	500	600	700	800	900	1000	1100	1200	1500	1800	2000	2400	3000	3600
kW	HP																		
0.015	1/50	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.035	1/20	1.2	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.065	1/12	2.5	1.2	0.6	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.1	1/8	2.5	1.2	1.2	0.6	0.6	0.6	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.125	1/5	5	2.5	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.6	0.3
0.2	1/4	5	2.5	2.5	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.3	0.3	0.3	0.3	0.3
0.25	1/3	10	5	2.5	2.5	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.3	0.3	0.3	0.3
0.4	1/2	10	5	5	2.5	2.5	2.5	2.5	1.2	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.3
0.55	3/4	20	10	5	5	5	2.5	2.5	2.5	2.5	2.5	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6
0.75	1	20	10	10	5	5	5	5	2.5	2.5	2.5	2.5	2.5	1.2	1.2	1.2	1.2	0.6	0.6
1.1	1 1/2		20	10	10	10	5	5	5	5	5	2.5	2.5	2.5	2.5	2.5	1.2	1.2	1.2
1.5	2		20	20	10	10	10	10	5	5	5	5	5	2.5	2.5	2.5	2.5	1.2	1.2
2.2	3			20	20	20	10	10	10	10	10	5	5	5	5	5	2.5	2.5	2.5
3.7	5					20	20	20	20	10	10	10	10	10	5	5	5	5	2.5
5.5	7 1/2							20	20	20	20	20	20	10	10	10	10	5	5
7.5	10									20	20	20	20	20	10	10	10	10	5
11	15													20	20	20	20	10	10
15	20														20	20	20	20	10
19	25																20	20	
22	30																	20	

Selection Table II Maximum torque is applied when sysem is started

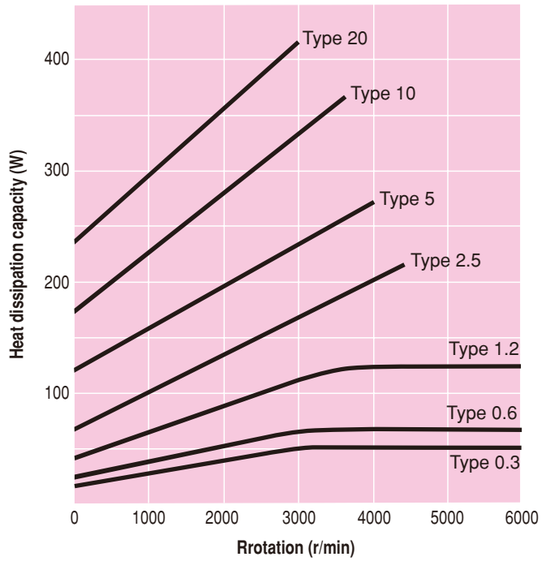
Motor power \ r/min		100	200	300	400	500	600	700	800	900	1000	1100	1200	1500	1800	2000	2400	3000	3600
kW	HP																		
0.015	1/50	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.035	1/20	1.2	0.6	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.065	1/12	2.5	1.2	1.2	0.6	0.6	0.6	0.6	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
0.1	1/8	2.5	2.5	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.3	0.3	0.3	0.3	0.3	0.3
0.125	1/5	5	2.5	2.5	1.2	1.2	1..2	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.3	0.3	0.3	0.3
0.2	1/4	5	5	2.5	2.5	2.5	1.2	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6	0.6	0.3
0.25	1/3	10	5	5	2.5	2.5	2.5	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.6	0.6	0.6	0.6	0.6
0.4	1/2	10	10	5	5	5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.2	1.2	1.2	1.2	0.6	0.6
0.55	3/4	20	10	10	5	5	5	5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.2	1.2	1.2	1.2
0.75	1	20	20	10	10	10	5	5	5	5	5	5	2.5	2.5	2.5	2.5	2.5	1.2	1.2
1.1	1 1/2		20	20	10	10	10	10	10	5	5	5	5	5	5	2.5	2.5	2.5	2.5
1.5	2			20	20	10	10	10	10	10	10	10	5	5	5	5	5	2.5	2.5
2.2	3				20	20	20	20	10	10	10	10	10	10	10	5	5	5	5
3.7	5							20	20	20	20	20	20	20	10	10	10	10	5
5.5	7 1/2													20	20	20	20	10	10
7.5	10															20	20	20	

Characteristeics

Relative Speed vs. Torque



Heat Dissipation Capacity



Operating Characeristics

Discription	0.3		0.6		1.2		2.5		5		10		20	
	NC	NB	NC	NB	NC	NB	NC	NB	NC	NB	NC	NB	NC	NB
Armature pull-in time ta (ms)	15	15	20	20	25	25	40	30	50	50	55	50	80	70
Torque build-up time tp (ms)	35	35	45	45	55	55	85	75	110	110	145	120	180	170
Armature release time tar (ms)	20	20	20	20	25	30	40	60	60	60	85	70	110	100
Coil time constant t (ms)	30	25	35	30	55	45	90	50	135	85	170	120	200	160

Note:
1. Refer to the above table for calculating the clutch engagement time and braking time.
2. The torque rise time includes the armature suction time.
3. The above table is based on the rated excitation.

Total life/Max speed/Inertia

NC-T Non-hub clutch

Type	Total workload before adjustment (J)	Total workload before wear limit (J)	Max speed of rotation (r/min)		Inertia J (kgm^2)	
			when idling	when rotating	Armature	Rotor
NC-0.3	1.50×10^7	7.50×10^7	9500	8000	2.50×10^{-5}	4.00×10^{-5}
NC-0.6-T	4.40×10^7	13.2×10^7	9500	8000	6.20×10^{-5}	1.10×10^{-4}
NC-1.2-T	7.00×10^7	21.0×10^7	7500	6000	1.97×10^{-4}	2.75×10^{-4}
NC-2.5-T	13.0×10^7	46.0×10^7	6000	4500	5.80×10^{-4}	8.68×10^{-4}
NC-5-T	29.0×10^7	87.0×10^7	5000	4000	1.43×10^{-3}	1.98×10^{-3}
NC-10-T	52.0×10^7	156×10^7	4000	3500	4.75×10^{-3}	6.00×10^{-3}
NC-20-T	100×10^7	300×10^7	3500	3000	1.60×10^{-2}	1.88×10^{-2}

NC-H Through shaft clutch

Type	Total workload before adjustment (J)	Total workload before wear limit (J)	Max speed of rotation (r/min)		Inertia J (kgm^2)	
			when idling	when rotating	Armature	Rotor
NC-0.6-H	4.40×10^7	13.2×10^7	9500	8000	1.29×10^{-5}	1.10×10^{-4}
NC-1.2-H	7.00×10^7	21.0×10^7	7500	6000	3.60×10^{-4}	2.75×10^{-4}
NC-2.5-H	13.0×10^7	46.0×10^7	6000	4500	1.11×10^{-4}	8.68×10^{-4}
NC-5-H	29.0×10^7	87.0×10^7	5000	4000	3.03×10^{-3}	1.98×10^{-3}
NC-10-H	52.0×10^7	156×10^7	4000	3500	9.75×10^{-3}	6.00×10^{-3}
NC-20-H	100×10^7	300×10^7	3500	3000	3.28×10^{-2}	1.88×10^{-2}

NC-C Sprit shaft clutch

Type	Total workload before adjustment (J)	Total workload before wear limit (J)	Max speed of rotation (r/min)		Inertia J (kgm^2)	
			when idling	when rotating	Armature	Rotor
NC-0.6-C	4.40×10^7	13.2×10^7	9500	8000	8.98×10^{-5}	1.10×10^{-4}
NC-1.2-C	7.00×10^7	21.0×10^7	7500	6000	2.78×10^{-4}	2.75×10^{-4}
NC-2.5-C	13.0×10^7	46.0×10^7	6000	4500	8.08×10^{-4}	8.68×10^{-4}
NC-5-C	29.0×10^7	87.0×10^7	5000	4000	2.23×10^{-3}	1.98×10^{-3}
NC-10-C	52.0×10^7	156×10^7	4000	3500	8.75×10^{-3}	6.00×10^{-3}
NC-20-C	100×10^7	300×10^7	3500	3000	2.43×10^{-2}	1.88×10^{-2}

NB-T Non-hub brake

Type	Total workload before adjustment (J)	Total workload before wear limit (J)	Max speed of rotation (r/min)		Inertia J (kgm^2)
			when idling	when rotating	Armature
NB-0.3	1.50×10^7	7.50×10^7	9500	8000	2.50×10^{-5}
NB-0.6-T	4.40×10^7	13.2×10^7	9500	8000	6.20×10^{-5}
NB-1.2-T	7.00×10^7	21.0×10^7	7500	6000	1.97×10^{-4}
NB-2.5-T	13.0×10^7	46.0×10^7	6000	4500	5.80×10^{-4}
NB-5-T	29.0×10^7	87.0×10^7	5000	4000	1.43×10^{-3}
NB-10-T	52.0×10^7	156×10^7	4000	3500	4.75×10^{-3}
NB-20-T	100×10^7	300×10^7	3500	3000	1.60×10^{-2}

NB-C Hub exterior attachment brake

Type	Total workload before adjustment (J)	Total workload before wear limit (J)	Max speed of rotation (r/min)		Inertia J (kgm^2)
			when idling	when rotating	Armature
NB-0.6-C	4.40×10^7	13.2×10^7	9500	8000	8.98×10^{-5}
NB-1.2-C	7.00×10^7	21.0×10^7	7500	6000	2.78×10^{-4}
NB-2.5-C	13.0×10^7	46.0×10^7	6000	4500	8.08×10^{-4}
NB-5-C	29.0×10^7	87.0×10^7	5000	4000	2.23×10^{-3}
NB-10-C	52.0×10^7	156×10^7	4000	3500	8.75×10^{-3}
NB-20-C	100×10^7	300×10^7	3500	3000	2.43×10^{-2}

Operating Instructions

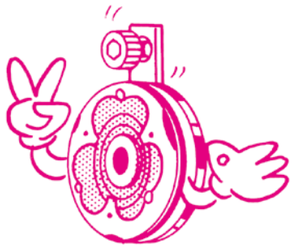
Pre-installation instructions

The friction faces of the Clutch/brake are coated with a rust inhibitive, which need not be wiped off. Mount the components with out further processng, taking care not to contaminate the faces with oil or other foreign matters. They need not be wiped with thinner or trichloroethylene.

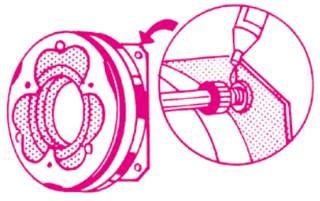
Installation instructions

1. The degree of fitting between the Clutch/brake and the shaft should be H7. h6 or H7. js6 as defined in JIS B0401, and they should be fixed with no play in the axial direction. Where shock loads are expected, the shaft diameter tolerance should be k6 or m6. Also, minimize the end play of the mounting shaft.

2. Do not tighten the field detent. Leave it as loose as a common detent is.



3. The mounting screws should be fixed with an adhesive to keep them from loosening.



4. After adjusting the gap (dimension g) between the frictional faces with the attached shim, install the system. Refer to Table 1.

Table 1 List of Gaps

Unit:mm

Bearing No.	Specified Gap (g) at Installation	Allowable Maximum Gap (g) by wear
0.3	$0.2^{+0.1}_{0}$	0.45
0.6	$0.2^{+0.1}_{0}$	0.6
1.2	$0.2^{+0.1}_{0}$	0.6
2.5	$0.2^{+0.1}_{0}$	0.7
5	$0.2^{+0.15}_{0}$	0.9
10	$0.3^{+0.15}_{0}$	1.2
20	$0.4^{+0.2}_{0}$	1.4

5. For installation accuracy, refer to Table 2.

Table 2 Installation Accuracy

Bearing No.	Concentricity (T.I.R.) (Shaft and shaft or flange and shaft)	Perpendicularity (T.I.R.) (Flange mounting surface and shaft, and armature mounting surface and shaft)
0.3~2.5	0.1	0.1
5~20	0.15	0.15

(Note) T.I.R. stands for total dial indicator reading. Accordingly, do not allow misalignment to exceed one-half the values above.

6. For type NC-T clutches, use two bearings on the armature side (pulley side). The deviation of the armature outside diameter must be within 0.1 T.I.R. for type 0.3 to 2.5 or within 0.15 T.I.R. for type 5 to 20.

7. For NC-H type clutches, use hexagon socket head cap screws (JIS B1176-1974) to install pulley and sprockets.

- Wire Connection Precautions

The supplied electric discharge elements (varistors) are absolutely necessary when the power unit of type DMP is used. When the controller of type TMP, EMP, CSM, or CMPH is used, never install the supplied varistors since electric discharge elements are incorporated.

- Installation Posture

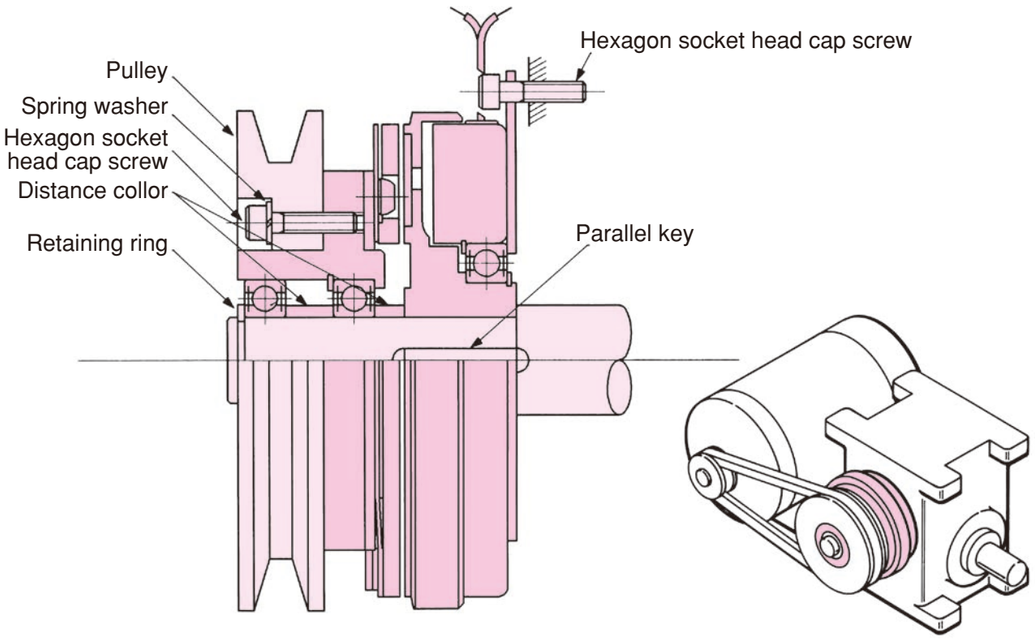
The installation posture is free in any direction (vertical, diagonal, etc.) as well as horizontal installation.

- Break-in

This series of clutches/brakes are designed to produce the rated torque from the initial stage. However, the specified torque (80% of the rated torque) may not be produced since the frictional faces do not conform sufficiently in the initial installation condition. In this case, perform light break-in operation.

Installation Example

NC



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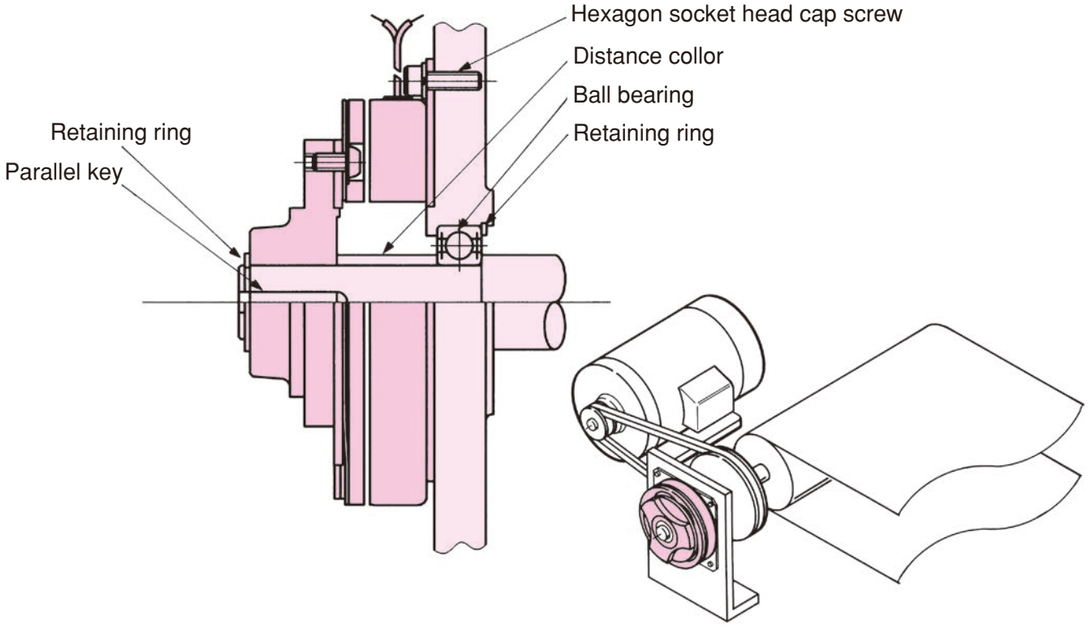
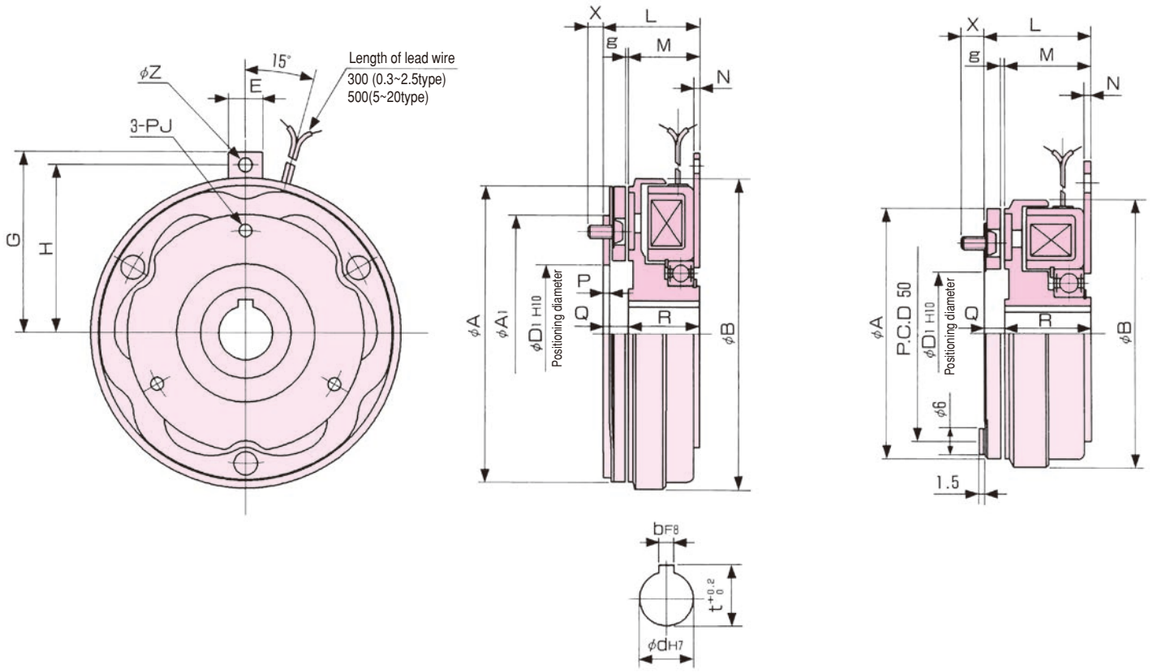


NC-0.3, 0.6-T, 1.2-T, 2.5-T, 5-T, 10-T, 20-T Non-hub Clutch

Model	Static friction torque(Nm)	Rated voltage(DC-V)	Power consumption at75C(W)	Mass(kg)
NC-0.3	3	24	5	0.22
NC-0.6-T	6	24	8	0.56
NC-1.2-T	12	24	11	1.0
NC-2.5-T	25	24	17	1.8
NC-5-T	50	24	25	3.0
NC-10-T	100	24	33	5.6
NC-20-T	200	24	42	11.0

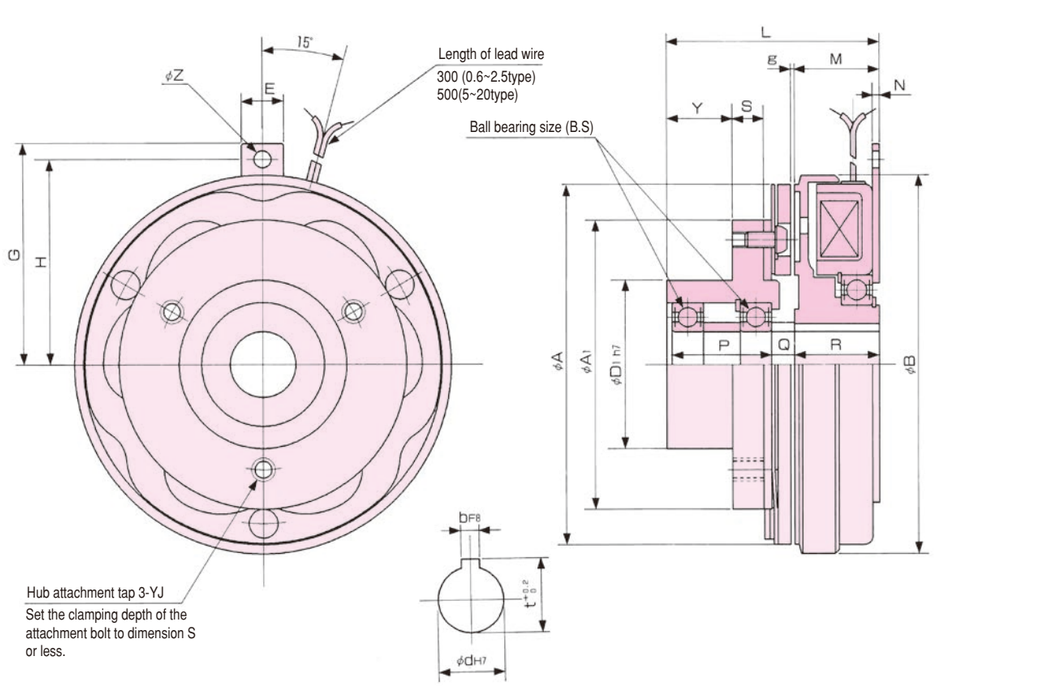


Model	Diameter direction							Shuft direction								Attachment PJ			Shuft hole			
	A	A1	B	D1	E	G	H	L	M	N	P	Q	R	g	X	P.C.D	BOLT	Z	d	b	t	
NC-0.3	58	–	62	29	10	40	35	24	20	1.6	–	4	20	$0.2^{+0.1}_{0}$	5.5	42	M3X6	4.5	10	3	11.5	
NC-0.6-T	70	58	74	34	14	50	45	29	23	1.6	2	6	23	$0.2^{+0.1}_{0}$	3	46	M3X6	4.5	12	4	13.5	
NC-1.2-T	88	72	92.5	42	16	62	56	32.5	25.5	2	2	7	25.5	$0.2^{+0.1}_{0}$	4.5	60	M4X8	5.5	15	5	17	
NC-2.5-T	110	90	116	50	16	71	65	38	29	2	3	9	29	$0.2^{+0.1}_{0}$	5.5	76	M5X10	6.5	20	5	22	
NC-5-T	137	110	144	64	16	84	78	43.5	33	2.6	3	10.5	33	$0.2^{+0.15}_{0}$	7	95	M6X12	6.5	25	7	28	
NC-10-T	172	140	180	80	24	110	100	50.5	37	3.2	4	13.5	37	$0.3^{+0.15}_{0}$	9.5	120	M8X16	8.5	30	7	33	
NC-20-T	218	180	228	100	24	125	125	60.5	43	3.2	5	17.5	43	$0.4^{+0.2}_{0}$	14	158	M10X22	8.5	40	10	43.5	

NC-0.6-H, 1.2-H, 2.5-H, 5-H, 10-H, 20-H Through Shaft Type Clutch

Model	Static friction torque(Nm)	Rated voltage(DC-V)	Power consumption at75C(W)	Mass(kg)
NC-0.6-H	6	24	8	0.72
NC-1.2-H	12	24	11	1.3
NC-2.5-H	25	24	17	2.3
NC-5-H	50	24	25	4.1
NC-10-H	100	24	33	8.0
NC-20-H	200	24	42	16

Note: 1. The exterior ball bearings housed in the through-axis hub should be fixed to the axis with a retaining ring in the axial direction.
2. The ball bearings housed in the through-axis employ non-contact seals on both end.
3. The adapter is not used for the NC-2.5-H type and later models.

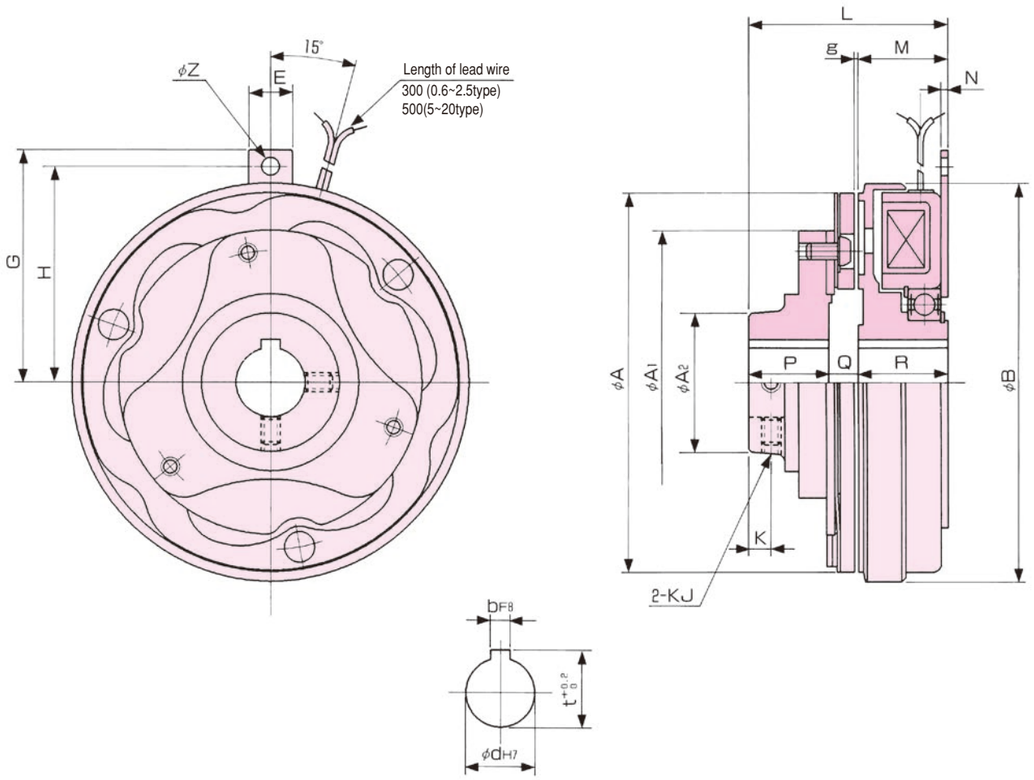


Model	Diameter direction							Shuft direction									Attachment PJ			Shuft hole			
	A	A1	B	D1	E	G	H	L	M	N	P	Q	R	S	Y	g	P.C.D	TAP	Z	d	b	t	B.S
NC-0.6-H	70	58	74	38	14	50	45	48	23	1.6	20.5	3	23	6	13	$0.2^{+0.1}_{0}$	46	M3	4.5	12	4	13.5	6001
NC-1.2-H	88	72	92.5	45	16	62	56	53	25.5	2	22	4.3	25.5	6	14.5	$0.2^{+0.1}_{0}$	60	M4	5.5	15	5	17	6002
NC-2.5-H	110	90	116	55	16	71	65	64	29	2	28	6	29	8	18	$0.2^{+0.1}_{0}$	70	M5	6.5	20	5	22	6004
NC-5-H	137	110	144	64	16	84	78	80.5	33	2.6	38	7.5	33	12	25	$0.2^{+0.15}_{0}$	80	M8	6.5	25	7	28	6005
NC-10-H	172	140	180	75	24	110	100	99.5	37	3.2	52	8.5	37	14	35	$0.3^{+0.15}_{0}$	105	M10	8.5	30	7	33	6006
NC-20-H	218	180	228	100	24	135	125	128.5	43	3.2	70	12.5	43	18	50	$0.4^{+0.2}_{0}$	135	M12	8.5	40	10	43.5	6208

NC-0.6-C, 1.2-C, 2.5-C, 5-C, 10-C, 20-C Sprit Shaft Type Clutch

Model	Static friction torque(Nm)	Rated voltage(DC-V)	Power consumption at75℃(W)	Mass(kg)
NC-0.6-C	6	24	8	0.66
NC-1.2-C	12	24	11	1.2
NC-2.5-C	25	24	17	2.2
NC-5-C	50	24	25	3.8
NC-10-C	100	24	33	7.3
NC-20-C	200	24	42	14.3

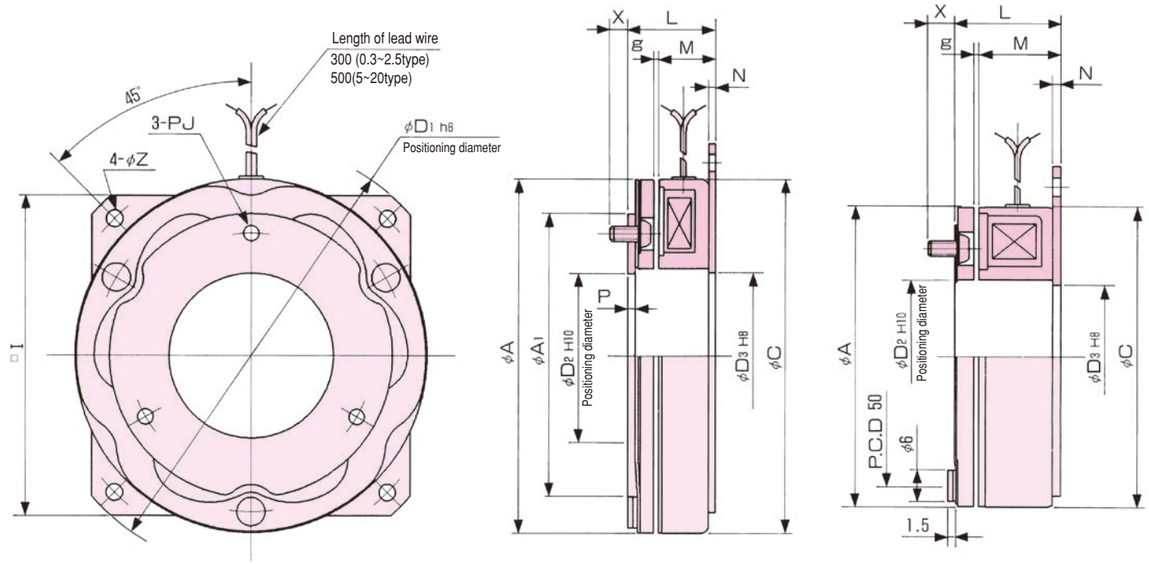
Note: The adapter is not used for the NC-2.5-C type and later models.



Model	Diameter direction							Shuft direction							Attachment			Shuft hole		
	A	A1	A2	B	E	G	H	L	M	N	P	Q	R	g	K	KJ	Z	d	b	t
NC-0.6-C	70	58	28	74	14	50	45	42.8	23	1.6	13	6.8	23	$0.2^{+0.1}_{0}$	5	M4	4.5	12	4	13.5
NC-1.2-C	88	72	31	92.5	16	62	56	51.3	25.5	2	19	6.8	25.5	$0.2^{+0.1}_{0}$	6	M5	5.5	15	5	17
NC-2.5-C	110	90	40	116	16	71	65	61	29	2	24	8	29	$0.2^{+0.1}_{0}$	6	M5	6.5	20	5	22
NC-5-C	137	110	50	144	16	84	78	71.5	33	2.6	29	9.5	33	$0.2^{+0.15}_{0}$	8	M6	6.5	25	7	28
NC-10-C	172	140	65	180	24	110	100	87.5	37	3.2	38	12.5	37	$0.3^{+0.15}_{0}$	10	M8	8.5	30	7	33
NC-20-C	218	180	80	228	24	135	125	107.5	43	3.2	50	14.5	43	$0.4^{+0.2}_{0}$	15	M8	8.5	40	10	43.5

NB-0.3, 0.6-T, 1.2-T, 2.5-T, 5-T, 10-T, 20-T Non-Hub Brake

Model	Static friction torque(Nm)	Rated voltage(DC-V)	Power consumption at75℃(W)	Mass(kg)
NB-0.3	3	24	5	0.16
NB-0.6-T	6	24	8	0.36
NB-1.2-T	12	24	11	0.65
NB-2.5-T	25	24	17	1.1
NB-5-T	50	24	22	1.9
NB-10-T	100	24	27	3.4
NB-20-T	200	24	31	6.8

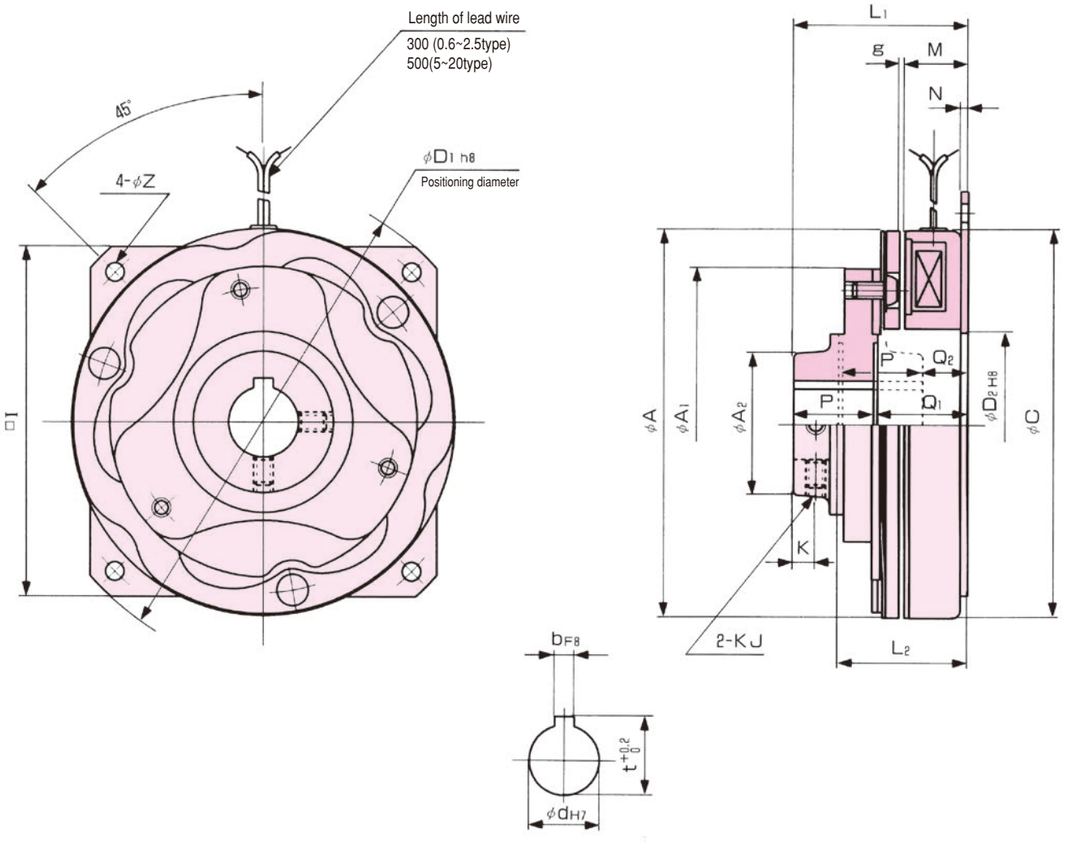


Model	Diameter direction							Shuft direction						Attachment			
														PJ		Z	
	A	A1	C	D1	D2	D3	I	L	M	N	P	g	X	P.C.D	BOLT	P.C.D	Hole diameter
NB-0.3	58	–	58	74	29	28	54	20	16	1.6	–	$0.2^{+0.1}_{0}$	5.5	42	M3×6	66	3.5
NB-0.6-T	70	58	70	90	34	35	66	23	17	1.6	2	$0.2^{+0.1}_{0}$	3	46	M3×6	80	4.5
NB-1.2-T	88	72	88	110	42	45	84	27	20	2	2	$0.2^{+0.1}_{0}$	4.5	60	M4×8	98	5.5
NB-2.5-T	110	90	110	135	50	52	100	30	21	2	3	$0.2^{+0.1}_{0}$	5.5	76	M5×10	122	6.5
NB-5-T	137	110	137	165	64	65	124	33.5	23	2.6	3	$0.2^{+0.15}_{0}$	7	95	M6×12	150	6.5
NB-10-T	172	140	172	210	80	80	160	38.5	25	3	4	$0.3^{+0.15}_{0}$	9.5	120	M8×16	190	8.5
NB-20-T	218	180	218	265	100	100	200	46.5	29	3	5	$0.4^{+0.2}_{0}$	14	158	M10×22	240	11

NB-0.6-C, 1.2-C, 2.5-C, 5-C, 10-C, 20-C Hub Exterior Attachment Brake

Model	Static friction torque(Nm)	Rated voltage(DC-V)	Power consumption at75℃(W)	Mass(kg)
NB-0.6-C	6	24	8	0.46
NB-1.2-C	12	24	11	0.84
NB-2.5-C	25	24	17	1.5
NB-5-C	50	24	22	2.7
NB-10-C	100	24	27	5.1
NB-20-C	200	24	31	10

Note: The adapter is not used for the NC-2.5-C type and later models.



Model	Diameter direction							Shuft direction								Attachment				Shuft hole		
																		Z				
	A	A1	A2	C	D1	D2	I	L1	L2	M	N	P	Q1	Q2	g	K	KJ	P.C.D	Hole diameter	d	b	t
NB-0.6-C	70	58	28	70	90	35	66	36.8	29	17	1.6	13	23.8	13.2	$0.2^{+0.1}_{0}$	5	M4	80	4.5	12	4	13.5
NB-1.2-C	88	72	31	88	110	45	84	45.8	35	20	2	19	26.8	13	$0.2^{+0.1}_{0}$	6	M5	98	5.5	15	5	17
NB-2.5-C	110	90	40	110	135	52	100	53	39.5	21	2	24	29	13	$0.2^{+0.1}_{0}$	6	M5	122	6.5	20	5	22
NB-5-C	137	110	50	137	165	65	124	61.5	45.5	23	2.6	29	32.5	15.5	$0.2^{+0.15}_{0}$	8	M6	150	6.5	25	7	28
NB-10-C	172	140	65	172	210	80	160	75.5	55.5	25	3	38	37.5	15.5	$0.3^{+0.15}_{0}$	10	M8	190	8.5	30	7	33
NB-20-C	218	180	80	218	265	100	200	93.5	67.5	29	3	50	43.5	17.5	$0.4^{+0.2}_{0}$	15	M8	240	11	40	10	43.5