

BXW Models

Specifications

I BXW-□ - □ L (Braking use)

Model	Size	Static friction torque T_s [N·m]	Coil (at 20°C)				Heat resistance class	Max. rotation speed [min ⁻¹]	Rotating part moment of inertia J [kg·m ²]	Allowable braking energy rate $P_{ba\ \#}$ [W]	Total braking energy E_t [J]	Armature pull-in time t_a [s]	Armature release time t_r [s]	Mass [kg]
			Voltage [V]	Wattage [W]	Current [A]	Resistance [Ω]								
BXW-01-10L	01	0.12	12	5.0	0.417	28.8	F	5000	0.6×10^{-6}	2.5	1.5×10^6	0.008	0.015	0.2
			24	5.0	0.208	115	F							
			45	5.0	0.111	405	F							
			90	5.0	0.056	1622	F							
			180	5.0	0.028	6486	F							
BXW-02-10L BXW-02-12L	02	0.25	12	6.6	0.550	21.8	F	5000	1.9×10^{-6}	5.0	3.0×10^6	0.008	0.015	0.3
			24	6.6	0.275	87.3	F							
			45	6.6	0.147	307	F							
			90	6.6	0.073	1228	F							
			180	6.6	0.037	4912	F							
BXW-03-10L BXW-03-12L	03	0.50	12	9.0	0.750	16.0	F	5000	3.8×10^{-6}	10.0	4.5×10^6	0.025	0.025	0.4
			24	9.0	0.375	64.0	F							
			45	8.2	0.182	247	F							
			90	8.2	0.091	988	F							
			180	8.2	0.046	3954	F							
BXW-04-10L BXW-04-12L	04	1.00	12	11.5	0.958	12.5	F	5000	12.0×10^{-6}	20.0	7.0×10^6	0.030	0.030	0.6
			24	11.5	0.479	50.1	F							
			45	10.0	0.222	203	F							
			90	10.0	0.111	810	F							
			180	10.0	0.056	3241	F							
BXW-05-10L BXW-05-12L	05	2.00	12	13.0	1.083	11.1	F	5000	23.0×10^{-6}	30.0	12.0×10^6	0.035	0.035	0.8
			24	13.0	0.542	44.3	F							
			45	13.0	0.289	156	F							
			90	13.0	0.144	623	F							
			180	13.0	0.072	2492	F							

I BXW-□ - □ H (Holding and braking use)

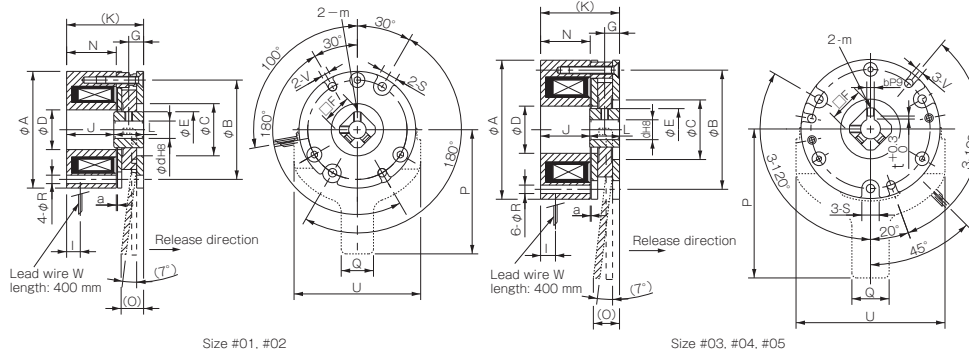
Model	Size	Static friction torque T_s [N·m]	Coil (at 20°C)				Heat resistance class	Max. rotation speed [min ⁻¹]	Rotating part moment of inertia J [kg·m ²]	Allowable braking energy rate $P_{ba\ \#}$ [W]	Total braking energy E_t [J]	Armature pull-in time t_a [s]	Armature release time t_r [s]	Mass [kg]
			Voltage [V]	Wattage [W]	Current [A]	Resistance [Ω]								
BXW-01-10H	01	0.24	12	5.0	0.417	28.8	F	5000	0.6×10^{-6}	0.5	0.2×10^6	0.010	0.010	0.2
			24	5.0	0.208	115	F							
			45	5.0	0.111	405	F							
			90	5.0	0.056	1622	F							
			180	5.0	0.028	6486	F							
BXW-02-10H BXW-02-12H	02	0.50	12	6.6	0.550	21.8	F	5000	1.9×10^{-6}	1.0	0.3×10^6	0.010	0.010	0.3
			24	6.6	0.275	87.3	F							
			45	6.6	0.147	307	F							
			90	6.6	0.073	1228	F							
			180	6.6	0.037	4912	F							
BXW-03-10H BXW-03-12H	03	1.00	12	9.0	0.750	16.0	F	5000	3.8×10^{-6}	2.0	0.5×10^6	0.035	0.020	0.4
			24	9.0	0.375	64.0	F							
			45	8.2	0.182	247	F							
			90	8.2	0.091	988	F							
			180	8.2	0.046	3954	F							
BXW-04-10H BXW-04-12H	04	2.00	12	11.5	0.958	12.5	F	5000	12.0×10^{-6}	4.0	1.0×10^6	0.040	0.025	0.6
			24	11.5	0.479	50.1	F							
			45	10.0	0.222	203	F							
			90	10.0	0.111	810	F							
			180	10.0	0.056	3241	F							
BXW-05-10H BXW-05-12H	05	4.00	12	13.0	1.083	11.1	F	5000	23.0×10^{-6}	6.0	2.0×10^6	0.045	0.030	0.8
			24	13.0	0.542	44.3	F							
			45	13.0	0.289	156	F							
			90	13.0	0.144	623	F							
			180	13.0	0.072	2492	F							

I BXW-□ - □ S (Holding use)

Model	Size	Static friction torque T_s [N·m]	Coil (at 20°C)				Heat resistance class	Max. rotation speed [min ⁻¹]	Rotating part moment of inertia J [kg·m ²]	Allowable braking energy rate $P_{ba\ \#}$ [W]	Total braking energy E_t [J]	Armature pull-in time t_a [s]	Armature release time t_r [s]	Mass [kg]
			Voltage [V]	Wattage [W]	Current [A]	Resistance [Ω]								
BXW-01-10S	01	0.36	24	5.0	0.208	115	F	5000	0.6×10^{-6}	—	—	0.025	0.010	0.2
BXW-02-10S BXW-02-12S	02	0.75	24	6.6	0.275	87.3	F	5000	1.9×10^{-6}	—	—	0.030	0.010	0.3
BXW-03-10S BXW-03-12S	03	1.50	24	9.0	0.375	64.0	F	5000	3.8×10^{-6}	—	—	0.035	0.020	0.4
BXW-04-10S BXW-04-12S	04	2.60	24	11.5	0.479	50.1	F	5000	12.0×10^{-6}	—	—	0.040	0.025	0.6
BXW-05-10S BXW-05-12S	05	5.20	24	13.0	0.542	44.3	F	5000	23.0×10^{-6}	—	—	0.045	0.030	0.8

* The armature pull-in time and armature release time are taken during DC switching.

Dimensions



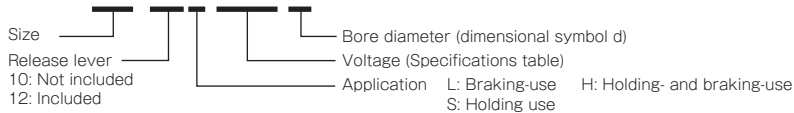
Unit [mm]

Size	Radial direction dimensions											Axial direction dimensions										Bore dimensions			
	A	B	C	D	E	S	V	R	F	W	m	O	P	Q	U	G	I	J	K	L	N	a	d	b	t
01	37	32	18	13.5	12.0	6	3	3	10	AWG26	M3	-	-	-	-	4.5	5.0	22.5	32	9	22.5	0.10	5	-	-
02	47	40	21	16.0	14.5	7	3.4	3.4	12	AWG26	M3	9	50	13	51	6.0	5.5	19.2	32	12	20.0	0.10	6	-	-
03	56	48	24	19.0	17.0	7	3.4	3.4	14	AWG26	M3	11	60	15	60	6.0	6.0	19.9	32	12	20.0	0.15	8	-	-
04	65	58	35	24.0	22.0	7	3.4	3.4	18	AWG22	M4	12	70	15	70	7.0	7.0	19.9	34	14	21.0	0.15	10	3	1.2
05	75	66	36	28.0	26.5	9	4.5	4.5	22	AWG22	M4	14	80	20	80	7.0	7.0	22.1	36	14	21.5	0.15	12	4	1.5

* There is no release lever option for size #01.

How to Place an Order

BXW-01-10L-24V-5



* Models equipped with the release lever and models with 12-V and 180-V voltage specifications are made to order.
* Contact Miki Pulley for assistance with bore diameters, d, not listed in the Dimensions tables and voltages not listed in the Specifications table.

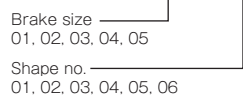
Options: Dust Cover

Dust covers are available as options. These enable use in challenging environments by keeping out foreign matter. Dust covers come in two types: full covers that have no hole for the shaft, and shaft-hole covers, which can be used on brakes mounted with the shaft passing through. You can also choose the locations of the lead exit holes for brakes mounted on plates or mounted on stators.



How to Place an Order

BXW-01-C02

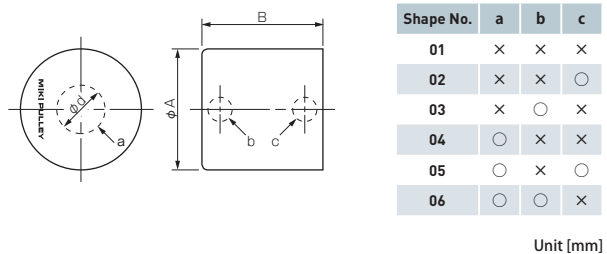


Specifications

Material	Ethylene propylene diene monomer (EPDM) rubber
Temperature range	-40°C to 140°C
Exterior color	Black
Applicable brake models	L type, H type, S type BXW models
Applicable brake sizes	#01, #02, #03, #04, #05
Applicable specification voltages	12 V DC, 24 V DC, 45 V DC, 90 V DC, 180 V DC

* This temperature range is for dust cover materials. The operating temperature for BXW models is -10°C to 40°C.
* Cannot be mounted on BXW models with release levers or R-type BXW models.

Dimensions



Model	φ A	B	φ d
BXW-01-C □	41	33	16
BXW-02-C □	51	33	21
BXW-03-C □	60	33.5	24
BXW-04-C □	69	35.5	30
BXW-05-C □	79	37.5	30

* Symbol a indicates a hole made for shafts passing through; symbol b indicates a hole made for lead exit when mounted on a plate; symbol c indicates a hole made for lead exit when mounted on a stator.
* Shapes #01 and #04 require that a hole be made separately for leads to exit.

BXW Models

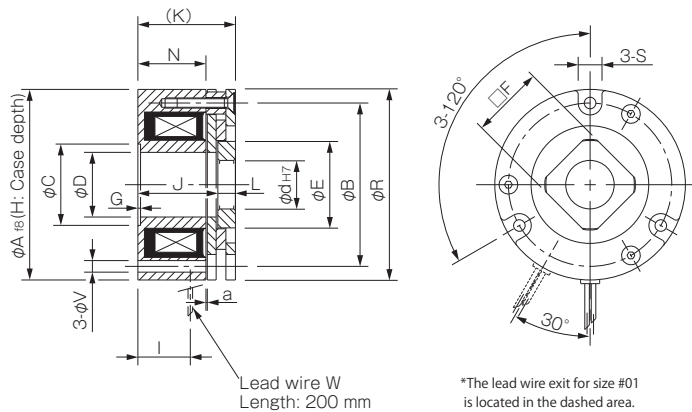
Specifications (BXW-□ - □ R)

(For servo motors)

Model	Size	Static friction torque T_s [N·m]	Coil (at 20°C)				Heat resistance class	Max. rotation speed [min ⁻¹]	Rotating part moment of inertia J [kg·m ²]	Allowable braking energy rate $E_{ba} \ell$ [J]	Total braking energy E_r [J]	Armature pull-in time t_a [s]	Armature release time t_r [s]	Mass [kg]
			Voltage [V]	Wattage [W]	Current [A]	Resistance [Ω]								
BXW-01-10R	01	0.3	24	6.1	0.254	94.4	F	6000	1.36×10^{-7}	15	3000	0.035	0.020	0.1
BXW-03-10R	03	1.3	24	7.2	0.300	80.0	F	6000	1.17×10^{-6}	87	17000	0.050	0.020	0.3
BXW-05-10R	05	2.5	24	8.0	0.333	72.0	F	6000	3.68×10^{-6}	200	40000	0.060	0.020	0.5

* The armature pull-in time and armature release time are taken during DC switching.

Dimensions



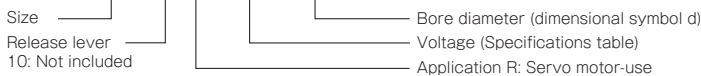
Unit [mm]

Size	Radial direction dimensions										Axial direction dimensions							Bore dimensions		
	A	B	C	D	E	S	V	R	F	W	G	H	I	J	K	L	N	a	d	d max
01	33	26.5	16	9	14	7	3.4	32.5	12	AWG26	0.2	4	19	26	30	4	22.8	0.1	8.5	8.5
03	48	42	26	14	23	8	3.4	47.5	19	AWG22	0.2	4	18	26	30	4	22.6	0.1	11	15
05	64	56	28	22	31	8	4.5	63.5	25	AWG22	0.2	4	16	25.5	30	4.5	21.3	0.1	16	20

* Bore diameters other than the standard bore diameters given above are also possible. d max indicates the maximum bore diameter with a round shaft.
 * In addition to round bores, key processing can also be handled. Consult Miki Pulley for details.
 * Dimensions, mounting and the like are not interchangeable with other BXW models.

How to Place an Order

BXW-01-10R-24V-8.5



*Contact Miki Pulley for assistance with bore diameters, d, not listed in the Dimensions tables and voltages not listed in the Specifications table.

ELECTROMAGNETIC-ACTUATED CLUTCHES AND BRAKES	ELECTROMAGNETIC-ACTUATED MICRO CLUTCHES & BRAKES
	ELECTROMAGNETIC-ACTUATED CLUTCHES & BRAKES
	ELECTROMAGNETIC CLUTCH & BRAKE UNITS

Items Checked for Design Purposes

Precautions for Handling

Brakes

Most electromagnetic braking systems are made using flexible materials. Be careful when handling such parts and materials as striking or dropping them or applying excessive force could cause them to become damaged or deformed.

Lead Wires

Be careful not to pull excessively on the brake lead wires, bend them at sharp angles, or allow them to hang too low.

Frictional Surface

Since these are dry brakes, they must be used with the frictional surface dry. Keep water and oil off of the frictional surfaces when handling the brakes.

Precautions for Use

Environment

These brake units are dry braking systems, meaning that the torque will drop if oil residue, moisture, or other liquids get onto friction surfaces. Attach the protective cover when working in areas with oil, moisture, dust, and other particles that could affect the braking system.

Operating Temperature

The operating temperature range is -10° C to 40° C. If you will use the product at other temperatures, consult Miki Pulley.

Power Supplies

BXW models use commercial AC 100 V or 200 V single phase, full-wave rectified or half-wave rectified. Select as appropriate for your application. See the table below, "Recommended power supplies and circuit protectors," for the power supply devices we recommend.

Power Supply Voltage Fluctuations

Full braking performance may not be guaranteed with extreme changes in power supply voltage. Make sure to keep power supply voltage to within ± 10% of the rated voltage value.

Air Gap Adjustment

BXW models do not require air gap adjustment. The brake air gap is adjusted when the braking system is shipped from the factory.

Circuit Protectors

If using a power supply that is not equipped with a circuit protector for DC switching, make sure to connect the recommended circuit protector device in parallel with the brake.

Recommended Power Supplies and Circuit Protectors

Recommended power supplies

Input AC power	Brake voltage	Rectification method	Recommended power supply model
AC100V 50/60Hz	DC24V	Single-phase, full-wave	BES-20-71-1
AC100V 50/60Hz	DC45V	Single-phase, half-wave	BEW-1R
AC100V 50/60Hz	DC90V	Single-phase, full-wave	BEW-1R
AC200V 50/60Hz	DC24V	Single-phase, full-wave	BES-20-71
AC200V 50/60Hz	DC90V	Single-phase, half-wave	BEW-2R
AC200V 50/60Hz	DC180V	Single-phase, full-wave	BEW-2R
AC400V 50/60Hz	DC180V	Single-phase, half-wave	BEW-4R

* A DC power supply such as a battery can also be used to supply the 24 V DC required for the brake voltage.

Recommended circuit protectors

Input voltage	Brake voltage	Rectification method	Recommended circuit protector (varistor)
DC24V	DC24V	-	NVD07SCD082 or an equivalent
AC100V 50/60Hz	DC45V	Single-phase, half-wave	NVD07SCD220 or an equivalent
AC100V 50/60Hz	DC90V	Single-phase, full-wave	NVD07SCD220 or an equivalent
AC200V 50/60Hz	DC90V	Single-phase, half-wave	NVD07SCD470 or an equivalent
AC200V 50/60Hz	DC180V	Single-phase, full-wave	NVD07SCD470 or an equivalent
AC400V 50/60Hz	DC180V	Single-phase, half-wave	NVD14SCD820 or an equivalent

* NVD □ SCD □ parts are manufactured by KOA Corporation.

* DC24V indicates a product recommended with a stepdown transformer or the like.

* BXW models do not come with circuit protectors.

Precautions for Mounting

Mounting Orientation

BXW models can be mounted with the stator facing inwards (stator mounted) or outwards (plate mounted). Select your mounting orientation as the application dictates. Be aware, however, that the BXW-R type is only compatible with stator centering-mark mounting. Your understanding is appreciated.

Affixing the Rotor Hub

Affix the rotor hub to the shaft with hex-socket-head set screws such that the rotor hub does not touch the armature or stator. If you are applying adhesive to the hex-socket-head set screws, be careful that the adhesive does not come out onto the rotor hub surface. Note also that since the BXW-R type is constructed so that the rotor hub does not go through the stator, affix it by press-fitting it onto the shaft at a position that does not touch the armature (see dimension J) when they are assembled.

Bolts and Screws

Implement screw-locking measures such as use of an adhesive thread-locking compound to bolts and screws used to install brakes.

Shafts

The shaft tolerance should be h7 class (JIS B 0401). Note that the harder the material used in the shaft, the less effective the hexagon-socket set screw will be. Note also that for the BXW-R type, the shaft is press fitted into the rotor hub. The shaft tolerance should be determined based on the press-fit tolerance.

Accuracy of Brake Attachment Surfaces

Make sure that concentricity (X) and perpendicularity (Y) do not exceed the allowable values of the table below.

Allowable concentricity and perpendicularity values for the BXW

Size	Concentricity (X)	Perpendicularity (Y)
	T.I.R. [mm]	T.I.R. [mm]
01	0.05	0.02
02	0.05	0.02
03	0.10	0.02
04	0.10	0.02
05	0.10	0.02

Stator mounted

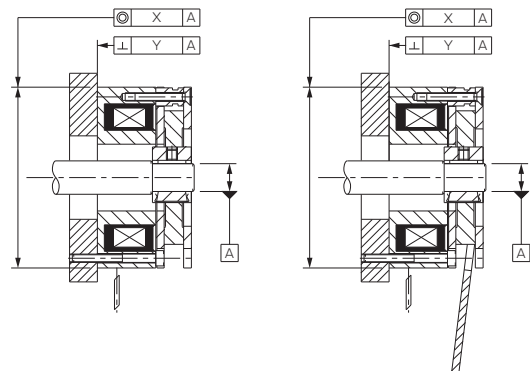


Plate mounted

