

Brushless DC Motor

High Torque Gearheads

120W, 200W, Gear Ratio 5 - 1200

Right-Angle Hollow Shaft Hypoid **JH** Gearhead

Foot Mount Type **JB** Gearhead

Parallel Shaft **JV** Gearhead



Right-Angle Hollow Shaft Hypoid Gearhead

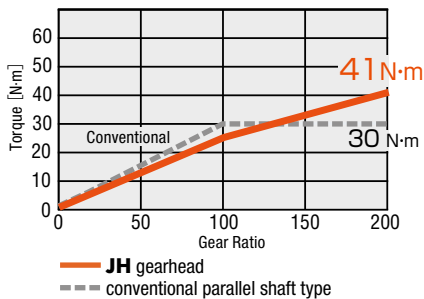


These gearheads are designed for our compact motors of **BMU** and **BLE2** series. They are specified with high torque and big axial and radial loads.

Right-Angle Hollow Shaft Hypoid JH Gearhead

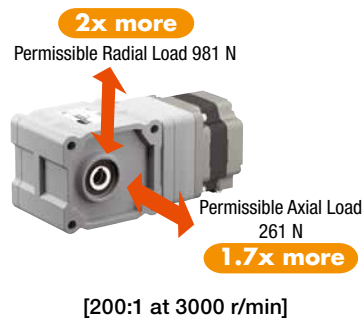
Permissible Torque

No torque saturation over the entire speed range.



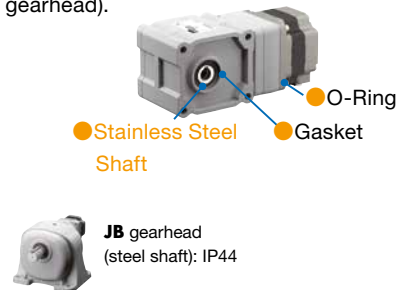
High Strength

Compared to conventional gearheads



Degree of Protection IP66

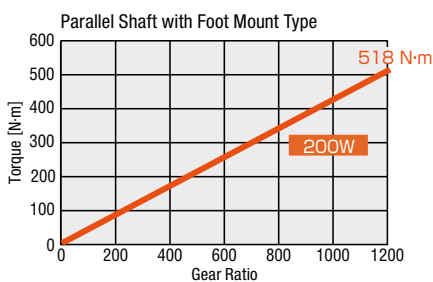
The degree of protection is IP66 which is realized by the stainless steel shaft (JH and JV gearhead).



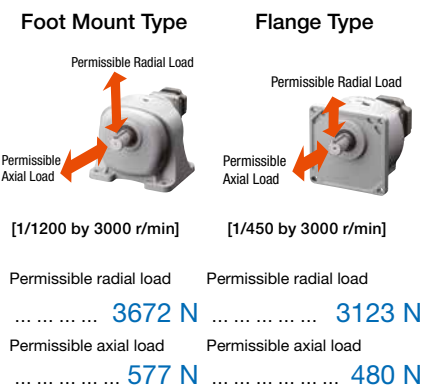
Foot Mount Type JB Gearhead • Parallel Shaft JV Gearhead

High Permissible Torque

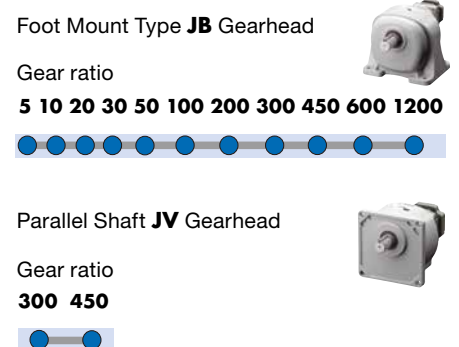
Up to 518 N·m



High Strength



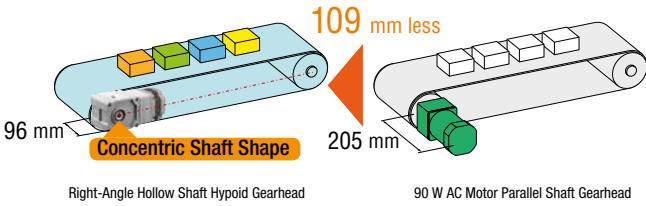
High Gear Ratio



Features of Right-Angle Hollow Shaft Hypoid Gearhead

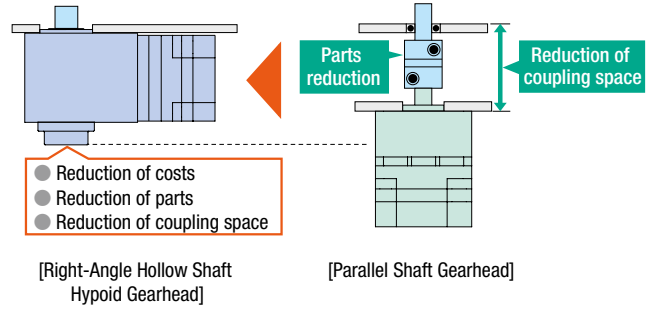
Downsizing

Downsizes the construction by direct mounting to the conveyor. Furthermore, the concentric shaft offers more flexibility for the mounting direction.



Lower Cost

Reduction of costs and parts thanks to direct connection.



Features of Foot Mount Gearhead

No Need for Mounting Bracket








Can be mounted directly to the application.

High Rigidity, One-Piece Construction

One-piece construction for easy shaft centering.




Line up

Type	Motor				Driver		Connection Cable
	Output Power [W]	Permissible Torque [N·m]	Gear Ratio	Degree of Protection	Image	Power Supply Voltage [V]	
Right-Angle Hollow Shaft Hypoid JH Geared 	120	41	10, 15, 20, 30, 50, 100, 200	IP66	 BLE2 Series	 BMU Series	0.5~20 m Cable drawn by the output shaft side / the opposite side of the output shaft 
	200	82.8	5, 10, 15, 20, 30, 50, 100, 200				
Foot Mount Type JB Geared 	200	518	5, 10, 20, 30, 50, 100, 200, 300, 450, 600, 1200	IP44		 BMU Series	
Parallel Shaft JV Geared* 	200	198	300, 450	IP66			

*For low gear ratios of 5~200 of the parallel shaft gearhead the **GFV** gearhead is also available.

For details please refer to the **BMU** Series or **BLE2** Series catalogue or the website: www.orientalmotor.eu

«Specifications»

- Rated Speed: 3000 r/min
- Speed Control Range: 80~3600 r/min (speed ratio 1:45)
- Speed regulation: $\pm 0.2\%$
- Safety Standards: 

For the following information please refer to the **BMU** or **BLE2** Series catalogue or the website: www.orientalmotor.eu

- Motor Features
- Details of the **GFV** Parallel Shaft Gearhead
- Driver Dimensions
- Connection and Operation



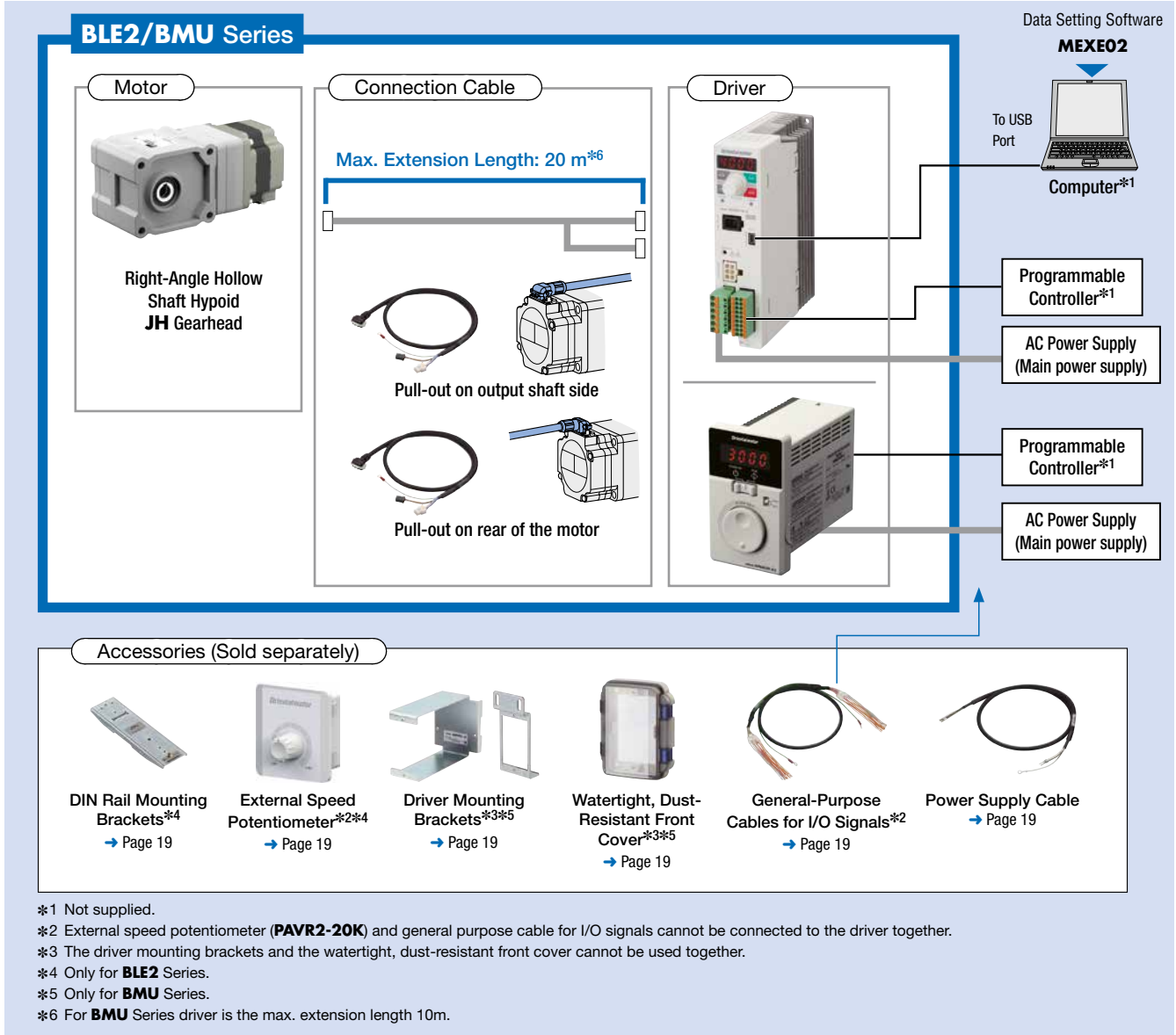
BMU Series Catalogue



BLE2 Series Catalogue

System Configuration

Motors, drivers and connection cables are sold separately.



Example of System Configuration

BLE2 Series		
Right-Angle Hollow Shaft Hypoid JH Gearhead	Driver	Connection Cable (3 m)
BLM5120HPK-5H10S	BLE2D120-C	CC030HBLF
€418.00	€188.00	€46.00

BMU Series		
Right-Angle Hollow Shaft Hypoid JH Gearhead	Driver	Connection Cable (3 m)
BLM5120HPK-5H10S	BMUD120-C2	CC030HBLF
€418.00	€140.00	€46.00

Sold Separately	
Din Rail Mounting Bracket	External Speed Potentiometer
MADPO2	PAVR2-20K
€19.00	€17.00

Sold Separately	
Driver Mounting Bracket	Watertight, Dust-Resistant Front Cover
MAFP05V	PCF12-B
€10.00	€21.00

The system configuration shown above is an example. Other combinations are also available.

Product Number

● Motor (Combination Type/Round Shaft Type)

◇ Right-Angle Hollow Shaft Hypoid **JH** Geared /
Foot Mount Type **JB** Geared / Parallel Shaft **JV** Geared

BLM 5 200 H P K - 5 C B 50 B - L

① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫

Motor Product Code

Gearhead Product Code

Motor	①	Motor Type	BLM : Brushless Motor
	②	Frame Size	5 : 90 mm
	③	Output Power	120 : 120 W 200 : 200 W
	④	Motor Connection Method	H : Connector Type
	⑤	Motor Degree of Protection	P : IP66
	⑥	Combined Motor	K : Round Shaft Type (Key included)
Gearhead	⑦	Combined Motor Frame Size	5 : 90 mm
	⑧	Gearhead Size	Symbol For the gearhead size symbol please refer to Specifications on → pages 7-8.
	⑨	Gearhead Type	H : JH Gear B : JB Gear V : JV Gear
	⑩	Gear Ratio	Number : Reduction Ratio of Gearhead
	⑪	Output Shaft Material	S : Stainless B : Iron
	⑫	Connector Position	None: Bottom -L : Left

● Driver

BLE2D 120 - C

① ② ③

BMUD 120 - C 2

① ② ③ ④

①	Driver Type	BLE2D : Driver for BLE2 Series BMUD : Driver for BMU Series
②	Output Power	120 : 120 W 200 : 200 W
③	Power Supply Voltage	C : Single-Phase, Three-Phase 200-240 VAC
④	Reference Number	

● Connection Cable

CC 010 H BL F

① ② ③ ④ ⑤

①	Cable Type	CC : Connection Cable
②	Length	005 : 0.5 m 010 : 1 m 015 : 1.5 m
		020 : 2 m 025 : 2.5 m 030 : 3 m
		040 : 4 m 050 : 5 m 070 : 7 m
		100 : 10 m 150 : 15 m 200 : 20 m
③	Motor Connection Method	H : Connector
④	Applicable Motor	BL : Brushless Motor
⑤	Direction of Cable Outlet	F : Output Shaft Side B : Counter-Output Shaft Side

Product Line

The motor, the driver and the connection cables are purchased individually.

For the single-phase 100-120 VAC models, please contact the nearest Oriental Motor sales office.

Motors

Right-Angle Hollow Shaft Hypoid **JH** Gear



Output Power	Product Name	Gear Ratio	List Price
120 W	BLM5120HPK-5H□S	10, 15, 20	€418.00
		30, 50, 100	€427.00
		200	€436.00
200 W	BLM5200HPK-5XH□S	5, 10, 15, 20	€620.00
		30	€631.00
		50	€662.00
	BLM5200HPK-5YH□S	100	€819.00
		200	€976.00

Foot Mount Type **JB** Geared



Output Power	Product Name	Gear Ratio	List Price
200 W	BLM5200HPK-5AB□B-L	5, 10, 20	€410.00
	BLM5200HPK-5CB□B-L	30, 50	€448.00
	BLM5200HPK-5EB□B-L	100, 200	€601.00
	BLM5200HPK-5KB□B-L	300, 450	€754.00
	BLM5200HPK-5SB□B-L	600, 1200	€815.00

Parallel Shaft **JV** Geared



Output Power	Product Name	Gear Ratio	List Price
200 W	BLM5200HPK-5KV□S	300, 450	€730.00

Other Lineup

Connector Position Selection of 4 Directions.

For details please contact the nearest Oriental Motor sales office.

Included

Motor

Type	Parallel Key	Safety Cover	Installation Screw	Operating Manual
JH Gearhead	1 Piece	1 Piece	1 Set	1 Copy
JB Gearhead	—	—	—	
JV Gearhead	—	—	—	

Drivers

BLE2 Series



Output Power	Power Supply Voltage	Product Name	List Price
120 W	Single-Phase, Three-Phase 200-240 VAC	BLE2D120-C	€188.00
200 W	Single-Phase, Three-Phase 200-240 VAC	BLE2D200-C	€210.00

BMU Series



Output Power	Power Supply Voltage	Product Name	List Price
120 W	Single-Phase, Three-Phase 200-240 VAC	BMUD120-C2	€140.00
200 W	Single-Phase, Three-Phase 200-240 VAC	BMUD200-C	€157.00

Connection Cables



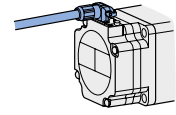
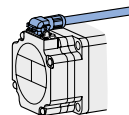
Length	Product Name	List Price	Length	Product Name	List Price
0.5 m	CC005HBL□	€26.00	4 m	CC040HBL□	€54.00
1 m	CC010HBL□	€26.00	5 m	CC050HBL□	€62.00
1.5 m	CC015HBL□	€30.00	7 m	CC070HBL□	€77.00
2 m	CC020HBL□	€33.00	10 m	CC100HBL□	€97.00
2.5 m	CC025HBL□	€39.00	15 m	CC150HBL□	€135.00
3 m	CC030HBL□	€46.00	20 m	CC200HBL□	€171.00

● **F** or **B** indicating the direction of cable outlet is entered where the box □ is located within the product name.

Two types of the connection cables with different drawing directions are available

F : Cable drawn by the output shaft side

B : Cable drawn in the opposite side of the output shaft



Driver

Connector	Startup Guide	Operating Manual
Connector for CN1 (1 Piece) Connector for CN4 (1 Piece)	1 Copy	1 Copy

Right-Angle Hollow Shaft Hypoid JH Geared 120 W



Specifications

Product Name	Right-Angle Hollow Shaft Hypoid JH Geared		BLM5120HPK-5H□S	
	Driver		BMUD120-C2	BLE2D120-C
Rated Output Power (Continuous)	W	120		
Power Supply Voltage	Rated Voltage	V	Single-Phase 200-240 / Three-Phase 200-240	
	Permissible Voltage Range		-15~+10%	
	Frequency	Hz	50/60	
	Permissible Frequency Range		±5%	
	Rated Input Current	A	Single-Phase 2.0/Three-Phase 1.1	Single-Phase 1.7/Three-Phase 1.02
	Maximum Input Current	A	Single-Phase 4.1/Three-Phase 2.0	Single-Phase 4.8/Three-Phase 3.3
Rated Speed	r/min	3000		
Rated Torque	r/min	80~3600 r/min (Speed ratio 1:45)		
Speed Regulation*1	Load	±0.2% (±0.5%) or less: Conditions 0~rated torque, rated speed, rated voltage, normal ambient temperature		
	Voltage	±0.2% (±0.5%) or less: Conditions Rated voltage -15~+10%, rated speed, no load, normal ambient temperature		
	Temperature	±0.2% (±0.5%) or less: Conditions Operating ambient temperature 0~+50°C*2, rated speed, no load, rated voltage		

*1 Only for **BLE2** series driver: The brackets () indicate specification for analog setting.

*2 For **BMU** series, the Conditions Operating ambient temperature is 0~+40°C

● The values correspond to each specification and characteristic of a stand-alone motor.

Gear Ratio		10	15	20	30	50	100	200	
(Actual Gear Ratio)		(10.25)	(15.38)	(20.50)	(30.75)	(51.25)	(102.5)	(205.0)	
Direction of rotation*1		Direction of the motor						Opposite direction of the motor	
Output Shaft Speed [r/min]*2	80 r/min	8	5.3	4	2.7	1.6	0.8	0.4	
	3600 r/min	360	240	180	120	72	36	18	
Permissible Torque [N·m]	At 80~1500 r/min	3.2	4.8	6.5	9.7	16.0	32.3	53.9	
	At 3000 r/min	2.5	3.8	5.1	7.6	12.7	25.5	41.0	
	At 3600 r/min	1.8	2.6	3.5	5.3	8.8	17.7	30.2	
Permissible Radial Load [N]*3	10 mm from the mounting surface	At 80~1500 r/min	415	554	692	923	1112	1196	1291
		At 3000 r/min	315	421	526	701	845	909	981
		At 3600 r/min	232	310	388	517	623	670	723
	20 mm from the mounting surface	At 80~1500 r/min	363	484	605	806	971	1045	1127
		At 3000 r/min	276	368	460	613	738	794	857
		At 3600 r/min	203	271	339	451	544	585	631
Permissible Axial Load [N]	At 80~1500 r/min	108	147	186	245	294	324	343	
	At 3000 r/min	82	112	141	186	223	246	261	
	At 3600 r/min	60	82	104	137	165	181	192	
Permissible Load Inertia J [$\times 10^{-4}$ kg·m ²]	At 80~1500 r/min	200	450	800	1800	5000	20000	80000	
	At 3000 r/min	72	162	288	648	1800	7200	28800	
	At 3600 r/min	40.5	91.1	162	365	1013	4050	16200	
	When instantaneous stop or instantaneous bi-directional operation is performed*4	At 80~1500 r/min	66.7	150	267	600	1667	6667	26667
		At 3000 r/min	24	54	96	216	600	2400	9600
		At 3600 r/min	13.5	30.4	54	122	338	1350	5400
Mass [kg]	4.1								

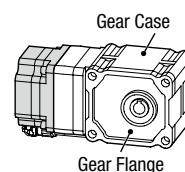
*1 The rotation direction is viewed from the gear flange side (see illustration on the right).

*2 The speed of the output shaft is the value of the speed divided by the gear ratio.

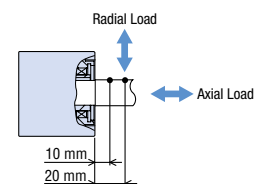
*3 The permissible radial load can also be calculated with a formula. → Page 18

*4 It is also applicable when digitally setting the deceleration time to below 0.1 seconds.

◇ Gear Flange Position



◇ Load Position

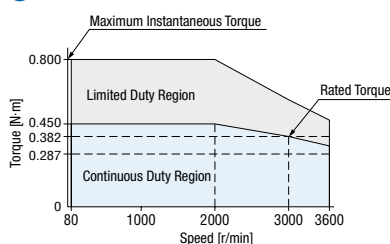


Speed – Torque Characteristics

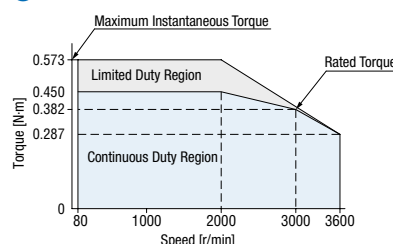
Continuous Duty Region: Continuous operation is possible in this region.

Limited Duty Region: This region is used primarily when accelerating.

● BLE2 Series



● BMU Series



● The values correspond to each specification and characteristic of a motor without gearhead. The speed-torque characteristics show the values when rated voltage is applied.

● A number indicating the gear ratio is entered where the box □ is located within the product name.

Right-Angle Hollow Shaft Hypoid JH Geared 200 W



Specifications

Product Name	Right-Angle Hollow Shaft Hypoid JH Geared		BLM5200HPK-5 <input type="checkbox"/> H <input type="checkbox"/> S	
	Driver		BMUD200-C	BLE2D200-C
Rated Output Power (Continuous)	W	200		
Power Supply Voltage	Rated Voltage	V	Single-Phase 200-240 / Three-Phase 200-240	
	Permissible Voltage Range		-15~+10%	
	Frequency	Hz	50/60	
	Permissible Frequency Range		±5%	
	Rated Input Current	A	Single-Phase 2.7/Three-Phase 1.5	Single-Phase 2.4/Three-Phase 1.4
	Maximum Input Current	A	Single-Phase 4.9/Three-Phase 3.4	Single-Phase 6.5/Three-Phase 4.3
Rated Speed	r/min	3000		
Rated Torque	r/min	80~3600 r/min (Speed ratio 1:45)		
Speed Regulation*1	Load	±0.2% (±0.5%) or less: Conditions 0~rated torque, rated speed, rated voltage, normal ambient temperature		
	Voltage	±0.2% (±0.5%) or less: Conditions Rated voltage -15~+10%, rated speed, no load, normal ambient temperature		
	Temperature	±0.2% (±0.5%) or less: Conditions Operating ambient temperature 0~+50°C*2, rated speed, no load, rated voltage		

*1 Only for **BLE2** series driver: The brackets () indicate specification for analog setting.

*2 For **BMU** series, the Conditions Operating ambient temperature is 0~+40°C

● The values correspond to each specification and characteristic of a stand-alone motor.

Gear Ratio		5	10	15	20	30	50	100	200		
(Actual Gear Ratio)		(5)	(10)	(15)	(20)	(30)	(50)	(98.95)	(200)		
Gearhead Size		X						Y			
Direction of rotation*1		Direction of the motor						Opposite direction of the motor			
Output Shaft Speed [r/min]*2	80 r/min	16	8	5.3	4	2.7	1.6	0.8	0.4		
	3600 r/min	720	360	240	180	120	72	36	18		
Permissible Torque [N·m]	At 80~3000 r/min	2.1	4.1	6.2	8.3	13.4	22.3	41.0	82.8		
	At 3600 r/min	1.3	2.6	4.0	5.3	9.4	15.6	28.5	57.6		
Permissible Radial Load [N]*3	20 mm from the mounting surface	At 80~1500 r/min	1346	1663	1882	2035	2309	2681	3436		
		At 3000 r/min	942	1164	1317	1425	1616	1877	2405		
		At 3600 r/min	673	832	941	1018	1155	1341	1718		
Permissible Axial Load [N]		At 80~1500 r/min	307	380	429	466	527	613	785		
		At 3000 r/min	215	266	300	326	369	429	550		
		At 3600 r/min	154	190	215	233	264	307	393		
Permissible Load Inertia J [$\times 10^{-4}$ kg·m ²]		At 80~1500 r/min	250	1000	2250	4000	9000	25000	100000	400000	
		At 3000 r/min	90	360	810	1440	3240	9000	36000	144000	
		At 3600 r/min	50.6	203	456	810	1823	5063	20250	81000	
		When instantaneous stop or instantaneous bi-directional operation is performed*4	At 80~1500 r/min	83.3	333	750	1333	3000	8333	33333	133333
			At 3000 r/min	30	120	270	480	1080	3000	12000	48000
At 3600 r/min	16.9	67.5	152	270	608	1688	6750	27000			
Mass [kg]		6.6						8.1			

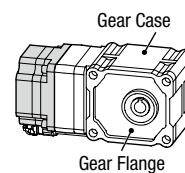
*1 The rotation direction is viewed from the gear flange side (see illustration on the right).

*2 The speed of the output shaft is the value of the speed divided by the gear ratio.

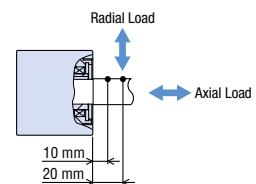
*3 The permissible radial load can also be calculated with a formula. → Page 18

*4 It is also applicable when digitally setting the deceleration time to below 0.1 seconds.

◇ Gear Flange Position



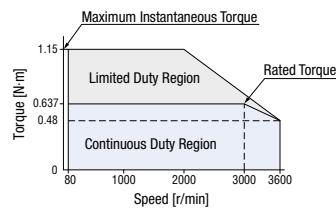
◇ Load Position



Speed – Torque Characteristics

Continuous Duty Region: Continuous operation is possible in this region.

Limited Duty Region: This region is used primarily when accelerating.



● The values correspond to each specification and characteristic of a motor without gearhead. The speed-torque characteristics show the values when rated voltage is applied.

● **X** or **Y** indicating the gearhead size is entered where the box is located within the product name.

A number indicating the gear ratio is entered where the box is located within the product name.

Foot Mount Type JB Geared 200 W



Specifications



Product Name	Foot Mount Type JB Geared Driver	BLM5200HPK-5 <input type="checkbox"/> B <input type="checkbox"/> B-L		
		BMUD200-C	BLE2D200-C	
Rated Output Power (Continuous)	W	200		
Power Supply Voltage	Rated Voltage	V Single-Phase 200-240 / Three-Phase 200-240		
	Permissible Voltage Range	-15~+10%		
	Frequency	Hz	50/60	
	Permissible Frequency Range	±5%		
	Rated Input Current	A	Single-Phase 2.4/ Three-Phase 1.4	Single-Phase 2.4/ Three-Phase 1.4
Maximum Input Current	A	Single-Phase 6.5/ Three-Phase 4.3	Single-Phase 6.5/ Three-Phase 4.3	
Rated Speed	r/min	3000		
Rated Torque	r/min	80~3600 r/min (Speed ratio 1:45)		
Speed Regulation*1	Load	±0.2% (±0.5%) or less: Conditions 0~rated torque, rated speed, rated voltage, normal ambient temperature		
	Voltage	±0.2% (±0.5%) or less: Conditions Rated voltage -15~+10%, rated speed, no load, normal ambient temperature		
	Temperature	±0.2% (±0.5%) or less: Conditions Operating ambient temperature 0~+50°C*2, rated speed, no load, rated voltage		

*1 Only for **BLE2** series driver: The brackets () indicate specification for analog setting.

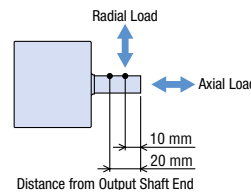
*2 For **BMU** series, the Conditions Operating ambient temperature is 0~+40°C

● The values correspond to each specification and characteristic of a stand-alone motor.

Gear Ratio		5	10	20	30	50	100	200	300	450	600	1200	
		(4.97)	(10.12)	(20.08)	(30.86)	(49.09)	(104.1)	(196.4)	(300.5)	(450.8)	(588.9)	(1178)	
(Actual Gear Ratio)		(4.97)	(10.12)	(20.08)	(30.86)	(49.09)	(104.1)	(196.4)	(300.5)	(450.8)	(588.9)	(1178)	
Gearhead Size		A			C			E			K		S
Rotation Direction		Direction of Motor				Opposite Direction of Motor				Direction of Motor			
Output Shaft Speed [r/min]*1	80 r/min	16	8	4	2.7	1.6	0.8	0.4	0.27	0.18	0.13	0.07	
	3600 r/min	720	360	180	120	72	36	18	12	8	6	3	
Permissible Torque [N·m]	At 80~3000 r/min	2.4	4.9	9.7	13.0	22.5	48.4	91.3	132	198	259	518	
	At 3600 r/min	1.7	3.4	6.8	8.2	15.6	32.0	60.3	92.3	138	181	362	
Permissible Radial Load [N]	10 mm from the mounting surface	At 80~1500 r/min	521	977	1243	1824	2032	2888	3483	4461	5245		
		At 3000 r/min	365	684	870	1277	1422	2022	2438	3123	3672		
		At 3600 r/min	261	489	622	912	1016	1444	1742	2231	2623		
	20 mm from the mounting surface	At 80~1500 r/min	663	1244	1582	2280	2540	3496	4216	5174	5921		
		At 3000 r/min	464	871	1107	1596	1778	2447	2951	3622	4145		
		At 3600 r/min	332	622	791	1140	1270	1748	2108	2587	2961		
Permissible Axial Load [N]	At 80~1500 r/min	39	88	177	255	275	422	461	686	824			
	At 3000 r/min	27.3	61.6	124	179	193	295	323	480	577			
	At 3600 r/min	19.5	44	88.5	128	138	211	231	343	412			
Permissible Load Inertia J [$\times 10^{-4}$ kg·m ²]	When instantaneous stop or instantaneous bi-directional operation is performed*2	At 80~1500 r/min	250	1000	4000	9000	25000	100000	400000	900000	2025000	3600000	14400000
		At 3000 r/min	90	360	1440	3240	9000	36000	144000	324000	729000	1296000	5184000
		At 3600 r/min	50.6	203	810	1823	5063	20250	81000	182250	410063	729000	2916000
		At 80~1500 r/min	83.3	333	1333	3000	8333	33333	133333	300000	675000	1200000	4800000
		At 3000 r/min	30	120	480	1080	3000	12000	48000	108000	243000	432000	1728000
		At 3600 r/min	16.9	67.5	270	608	1688	6750	27000	60750	136688	243000	972000
Mass [kg]		4.6			5.6			7.6			11.6		18.1

*1 The speed of the output shaft is the value of the speed divided by the gear ratio.

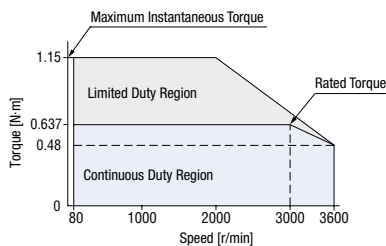
*2 It is also applicable when digitally setting the deceleration time to below 0.1 seconds. ◇ Load Position



Speed - Torque Characteristics

Continuous Duty Region: Continuous operation is possible in this region.

Limited Duty Region: This region is used primarily when accelerating.



● The values correspond to each specification and characteristic of a motor without gearhead. The speed-torque characteristics show the values when rated voltage is applied.

● **A, C, E, K** or **S** indicating the gearhead size is entered where the box is located within the product name.

A number indicating the gear ratio is entered where the box is located within the product name.

Parallel Shaft **JV** Geared 200 W



Specifications

Product Name	Parallel Shaft JV Geared Driver	BLM5200HPK-5KV□S		
		BMUD200-C	BLE2D200-C	
Rated Output Power (Continuous)	W	200		
Power Supply Voltage	Rated Voltage	Single-Phase 200-240 / Three-Phase 200-240		
	Permissible Voltage Range	-15~+10%		
	Frequency	50/60		
	Permissible Frequency Range	±5%		
	Rated Input Current	A	Single-Phase 2.7/Three-Phase 1.5	Single-Phase 2.4/Three-Phase 1.4
	Maximum Input Current	A	Single-Phase 4.9/Three-Phase 3.4	Single-Phase 6.5/Three-Phase 4.3
Rated Speed	r/min	3000		
Rated Torque	r/min	80~3600 r/min (Speed ratio 1:45)		
Speed Regulation*1	Load	±0.2% (±0.5%) or less: Conditions 0~rated torque, rated speed, rated voltage, normal ambient temperature		
	Voltage	±0.2% (±0.5%) or less: Conditions Rated voltage -15~+10%, rated speed, no load, normal ambient temperature		
	Temperature	±0.2% (±0.5%) or less: Conditions Operating ambient temperature 0~+50°C*2, rated speed, no load, rated voltage		

*1 Only for **BLE2** series driver: The brackets () indicate specification for analog setting.

*2 For **BMU** series, the Conditions Operating ambient temperature is 0~+40°C

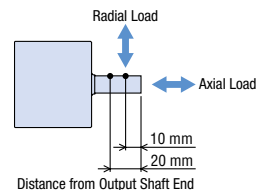
● The values correspond to each specification and characteristic of a stand-alone motor.

Gear Ratio		300	450
(Actual Gear Ratio)		(300.5)	(450.8)
Direction of rotation		Direction of Motor	
Output Shaft Speed [r/min]*1	80 r/min	0.27	0.18
	3600 r/min	12	8
Permissible Torque [N·m]	At 80~3000 r/min	132	198
	At 3600 r/min	92.3	138
Permissible Radial Load [N]	10 mm from the mounting surface	At 80~1500 r/min	4461
		At 3000 r/min	3123
		At 3600 r/min	2231
	20 mm from the mounting surface	At 80~1500 r/min	5174
		At 3000 r/min	3622
		At 3600 r/min	2587
Permissible Axial Load [N]	At 80~1500 r/min	686	
	At 3000 r/min	480	
	At 3600 r/min	343	
Permissible Load Inertia J [$\times 10^{-4}$ kg·m ²]	When instantaneous stop or instantaneous bi-directional operation is performed*2	At 80~1500 r/min	900000
		At 3000 r/min	324000
		At 3600 r/min	182250
		At 80~1500 r/min	300000
		At 3000 r/min	108000
		At 3600 r/min	60750
Mass [kg]		12.1	

*1 The speed of the output shaft is the value of the speed divided by the gear ratio.

*2 It is also applicable when digitally setting the deceleration time to below 0.1 seconds.

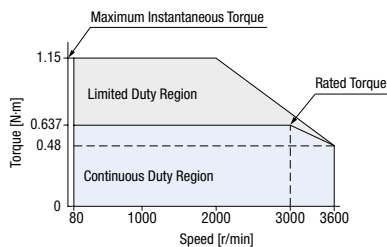
Load Position



Speed – Torque Characteristics

Continuous Duty Region: Continuous operation is possible in this region.

Limited Duty Region: This region is used primarily when accelerating.



● The values correspond to each specification and characteristic of a motor without gearhead. The speed-torque characteristics show the values when rated voltage is applied.

● A number indicating the gear ratio is entered where the box □ is located within the product name.

BLE2 Series - Common Specifications

Item	Specifications
Speed Setting Methods	Digital Setting · Control Panel · Data Setting Software MEXE02
	Analog Setting · Set using an external speed potentiometer PAVR2-20K (sold separately): 0~20 kΩ, 0.05 W min. · Set using external DC voltage: 0~10 VDC, 1 mA min. (Initial setting: 0~5 VDC)
Acceleration/ Deceleration Time	Setting Range 0.0~15.0 s (Initial setting: 0.5 s)
	Setting Method · Control Panel · Data Setting Software MEXE02
Torque Limit*1	Setting Range 0~300%(Initial setting: 300%)
	Digital Setting · Control Panel · Data Setting Software MEXE02
	Analog Setting · Set using an external speed potentiometer PAVR2-20K (sold separately): 0~20 kΩ, 0.05 W min. · Set using external DC voltage: 0~10 VDC, 1 mA min. (Initial setting: 0~5 VDC)
Number of Operation Data Setting	16 Points max. (Initial setting: 4 points)
Input Signals	Photocoupler input Input resistance: 6.6 kΩ Connectable external DC power supply: 24 VDC -15~+20% 100 mA min Source input/sink input Supplied through external wiring
	Arbitrary signal assignment to IN0~IN6 input (7 points) is possible []: Initial setting [FWD], [REV], [STOP-MODE], [M0], [M1], [ALARM-RESET], M2, M3, H-FREE, TL, HMI, EXT-ERROR, START/STOP*2, RUN/BRAKE*2, CW/CCW*2
Output Signals	Photocoupler and Open-Collector Output (ON Power: 1.6 V max.) External power supply: 4.5~30 VDC 100 mA max. (5 mA min. for SPEED-OUT output) Source output/sink output Supplied through external wiring
	Arbitrary signal assignment to OUT0, OUT1 (2 points) is possible []: Initial setting [SPEED-OUT], [ALARM-OUT], MOVE, INFO, TLC, VA, DIR
Protective Functions	When the following protective functions are activated, ALARM-OUT output turns OFF and the motor will coast to a stop. The alarm code will be displayed and ALARM LED will blink at the same time. Overcurrent, main circuit overheat, overvoltage, undervoltage, sensor error, main circuit output error, overload, over-speed, EEPROM error, initial sensor error, initial operation prohibited, external stop
Information	When the information occurs, INFO output turns ON. The motor operation continues. Overvoltage, undervoltage, overload, starting limit mode, I/O test mode, requiring CONFIG, requiring power ON again, operation prohibit
Max. Extension Distance	Motor and driver distance: 20.5 m (when an accessory connection cable is used)
Time Rating	Continuous

*1 An error up to a maximum of approximately ±10% (at rated torque and rated speed) may occur between the setting value and generated torque due to the setting speed, power supply voltage and motor cable extension length.

*2 Operable when 3-wire input mode is selected.

BMU Series - Common Specifications

Item	Specifications	
	120 W	200 W
Speed Setting Methods	Digital setting with dial 4 speed settings	
Acceleration/ Deceleration Time	Analog Setting: 0.1~15.0 s (set time from stopped state to rated speed) Common setting for acceleration/deceleration time with acceleration/deceleration time potentiometer* Digital Setting: 0.0~15.0 s (set time from current speed to setting speed) Individual acceleration times and deceleration times can be set for each operating data* *Acceleration time/deceleration time varies with the load condition of the motor.	
Input Signals	Photocoupler input Input resistance: 5.7 kΩ Operated by internal power supply: DC5 V Connectable external DC power supply: 24VDC -15~+20% 100 mA min. Source input/sink input Supplied through external wiring	Photocoupler input Input resistance: 6.6 kΩ Operated by internal power supply: DC5 V Connectable external DC power supply: 24VDC -15~+20% 100 mA min. Source input/sink input Supplied through external wiring
	Arbitrary signal assignment to X0~X2 input (3 points) is possible []: Initial setting [FWD], [REV], [M0], M1, ALARM-RESET, EXT-ERROR, H-FREE	Arbitrary signal assignment to IN0~IN4 input (5 points) is possible []: Initial setting [FWD], [REV], [M0], [M1], [ALARM-RESET], EXT-ERROR, H-FREE
Output Signals	Photocoupler and Open-Collector Output External power supply: 4.5~30 VDC 100 mA max. Source output/sink output Supplied through external wiring	Photocoupler and Open-Collector Output External power supply: 4.5~30 VDC 100 mA max. Source output/sink output Supplied through external wiring
	Arbitrary signal assignment to Y0, Y1 (2 points) is possible []: Initial setting [ALARM-OUT1], [SPEED-OUT], ALARM-OUT2, MOVE, VA, WNG	Arbitrary signal assignment to OUT0, OUT1 (2 points) is possible []: Initial setting [ALARM-OUT1], [SPEED-OUT], ALARM-OUT2, MOVE, VA, WNG
Protective Functions	When the following protective functions are activated, ALARM-OUT1 output turns OFF and the motor will coast to a stop. The alarm code will be displayed at the same time. (Instantaneous stop for external stop only) Overcurrent, main circuit overheat, overvoltage, undervoltage, sensor error, overload, over-speed, EEPROM error, initial sensor error, initial operation prohibited, external stop	
Max. Extension Distance	Motor and driver distance: 10.5 m (when a connection cable is used)	
Time Rating	Continuous	

● Overload alarm detection time

The overload alarm is generated if the operation goes beyond the continuous duty region.
The detection time for this overload alarm can be set from 0.1~60.0 seconds. (Initial value: 30.0 Seconds)
However, an alarm is generated for a maximum length of 5 seconds in the following cases.

- If an applied load goes beyond the limited duty region
- If the output shaft is locked

General Specifications

Item	Motor	Driver
Insulation Resistance	100 MΩ or more when 500 VDC megger is applied between the windings and the case after continuous operation under normal ambient temperature and humidity.	100 MΩ or more when 500 VDC megger is applied between the power supply terminal and the protective earth terminal, and between the power supply terminal and the I/O signal terminal after continuous operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5 kVAC at 50 Hz applied between the windings and the case for 1 minute after continuous operation under normal ambient temperature and humidity.	Sufficient to withstand 1.5 kVAC at 50 Hz applied between the power supply terminal and the protective earth terminal for 1 minute, and 1.5 kVAC at 50 Hz applied between the power supply terminal and the I/O signal terminal for 1 minute after continuous operation under normal ambient temperature and humidity.
Temperature Rise	The temperature rise of the windings is 50°C max. and that of the case surface is 40°C max., measured by the thermocouple method after rated continuous operation under normal ambient temperature and humidity.	The temperature rise of the heat sink is 50°C max., measured by the thermocouple method after rated continuous operation under normal ambient temperature and humidity.
Operating Environment*1	Ambient Temperature	0~+40°C (Non-freezing) BLE2 Series: 0~+50°C*2 (Non-freezing)
	Ambient Humidity	85% or less (Non-condensing)
	Altitude	Up to 1000 m above sea level
	Atmosphere	No corrosive gases or dust. Cannot be used in a radioactive area, magnetic field, vacuum, or other special environments.
	Vibration	Not subject to continuous vibration or excessive shock. In conformance with JIS C 60068-2-6, "Sine-wave vibration test method" Frequency Range: 10~55 Hz, Half Amplitude: 0.15 mm, Sweep Direction: 3 directions (X, Y, Z), Number of Sweeps: 20 times
Storage Condition*3	Ambient Temperature	-10~+60°C (Non-freezing) -25~+70°C (Non-freezing)
	Ambient Humidity	85% or less (Non-condensing)
	Altitude	Up to 1000 m above sea level
	Atmosphere	No corrosive gases, dust or oil. Cannot be stored in a radioactive area, magnetic field, vacuum, or other special environments.
Thermal Class	UL/CSA Standards: 105 (A), EN Standards: 120 (E) -	
Degree of Protection*4	JH Gear, JV Gear: IP66 JB Gear: IP44 (When using the connection cable, except the driver connector)	IP20

*1 Attach the **BLE2** series driver to a location that has the same heat radiation capability as an aluminum metal plate.

Single installed 200x200 mm, 2 mm thick

Installed in contact 350x350 mm, 2 mm thick

*2 When using a DIN rail mounting bracket, the ambient temperature is 0~+40°C.

*3 The storage condition applies to a short period such as a period during transportation.

*4 The IP indication that shows the watertight and dust-resistant performance are specified under IEC 60529 and IEC 60034-5.

Note

● Do not measure insulation resistance or perform the dielectric strength test while the motor and driver are connected.

● Materials and Finish of the Motor for **JH** Gear and **JV** Gear (IP66)

Materials Case: Aluminum

Output Shaft: Stainless Steel

Screws: Stainless Steel (except protective earth terminal)

Finish Case: Paint (except installing surface)

Dimensions Unit: mm

- The motor dimensions in this catalogue are illustrated with the separately-sold connection cable (▭ parts in the figure).
The described masses do not include the connection cable mass.
- A number indicating the gear ratio is entered where the box □ is located within the product name.
- A symbol indicating the gearhead size is located in the box ■ within the product name.

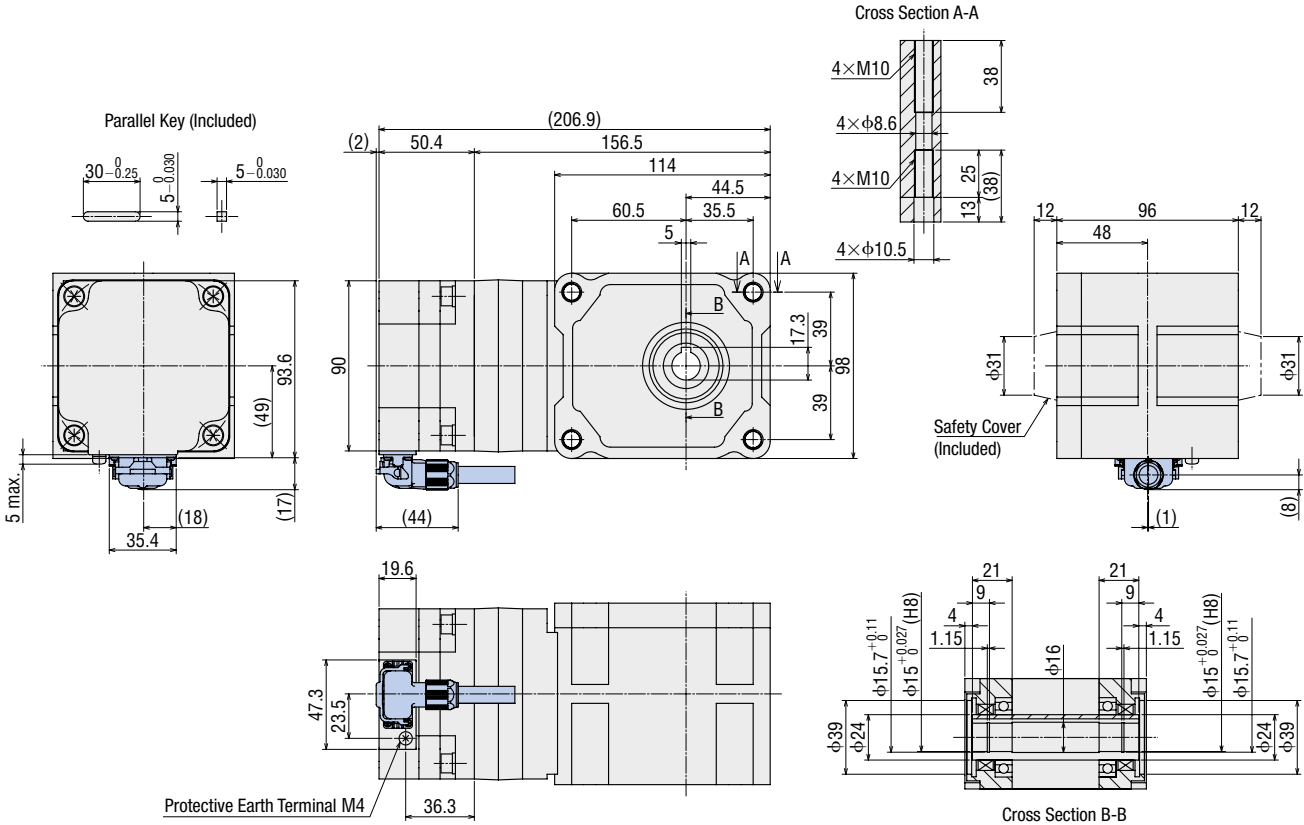
● Motor

◇ Right-Angle Hollow Shaft Hypoid **JH** Geared

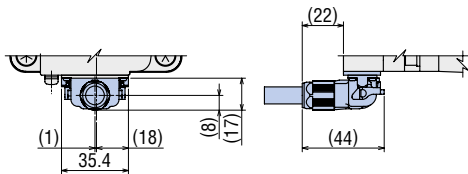
● 120 W

Product Name	Motor Product Name	Gearhead Product Name	Mass kg
BLM5120HPK-5H□S	BLM5120HPK	5H□S	4.1

- When attaching a connection cable drawn by the output shaft side.



- When attaching a connection cable drawn in the opposite side of the output shaft.



◇ Foot Mount Type **JB** Geared

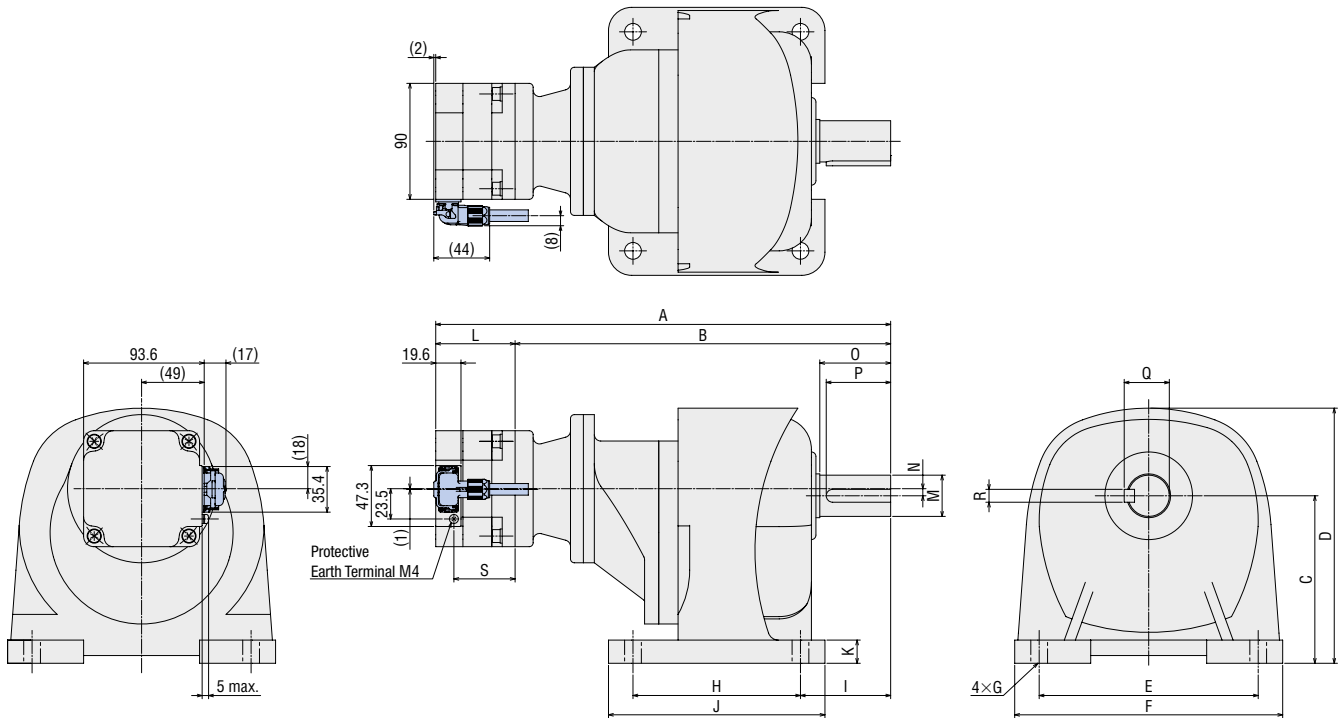
● 200 W

Product Name	Motor Product Name	Gearhead Product Name	L	Dimension Number	Gear Ratio	Mass kg
BLM5200HPK-5 ■B□B-L	BLM5200HPK	5■B□B	61.6	①	5, 10, 20	4.6
				②	30, 50	5.6
				③	100, 200	7.6
				④	300, 450	11.6
				⑤	600, 1200	18.1

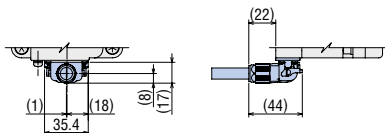
Dimension Number	Total Length	Gearhead Dimensions										Output Shaft Dimensions						S
		A	B	C	D	E	F	G	H	I	J	K	M	N	O	P	Q	
①	(219.1)	157.5	85±0.2	131	110	134	φ9	40	45	64	10	φ18 _{-0.011} (h6)	16.5*	30	27	20.5	6	47.5
②	(245.1)	183.5	90±0.2	139	130	154	φ11	65	55	90	12	φ22 _{-0.013} (h6)	19*	40	35	24.5	6	
③	(258.1)	196.5	110±0.2	167	140	175	φ11	90	65	125	15	φ28 _{-0.013} (h6)	23.5*	45	40	31	8	
④	(353.1)	291.5	130±0.2	198	170	208	φ13	130	70	168	18	φ32 _{-0.016} (h6)	5.5	55	50	35	10	
⑤	(375.1)	313.5	150±0.2	230	210	254	φ15	150	90	196	20	φ40 _{-0.016} (h6)	0	65	60	43	12	

*The center of the gearhead output shaft is offset above the center of the motor.

● When attaching a connection cable drawn by the output shaft side.



● When attaching a connection cable drawn in the opposite side of the output shaft



Mounting the Hollow Shaft Load

Load Shaft Mounting Examples

Installation of the load shaft varies according to the fixing method. Please refer to the illustrations below.

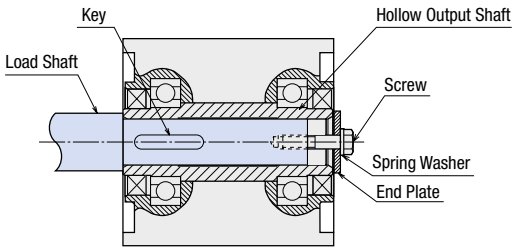
- The hollow output shaft with an inner diameter tolerance of H8 has a key slot. Machine a matching key slot on the load shaft and use the supplied key to affix the two shafts across the slots.
- The recommended tolerance of the load shaft is h7.

Note

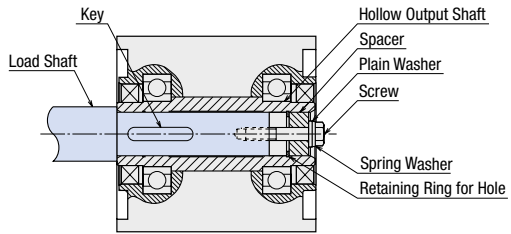
- To prevent sticking, apply grease on the exterior surface of the load shaft and interior surface of the hollow output shaft.

Stepped Load Shaft

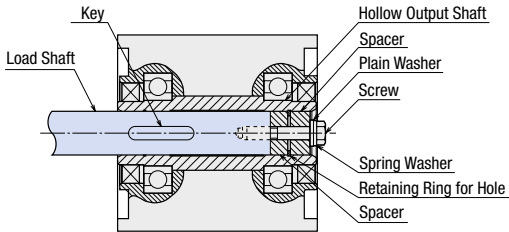
Fixing Method Using an End Plate



Fixing Method Using a Retaining Ring for Hole



Straight Load Shaft

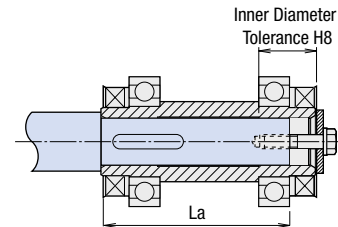


Recommended Load Shaft Installation Dimensions Unit: mm

Output Power	120 W		200 W	
Gear Ratio	10~200		5~50	100, 200
Inner Diameter of Hollow Shaft (H8)	$\phi 15^{+0.027}_0$		$\phi 25^{+0.033}_0$	$\phi 30^{+0.033}_0$
Recommended Load Shaft Dimensions (h7)	$\phi 15^0_{-0.018}$		$\phi 25^0_{-0.021}$	$\phi 30^0_{-0.021}$
Stepped shaft La length	72		96	
Screw Size	M6		M8	
Spacer Dimensions	Outer Diameter	$\phi 14.5$	$\phi 24.5$	$\phi 29.5$
	Inner Diameter	$\phi 7$		$\phi 9$
	Thickness	3	4	5
Nominal Hole Diameter of Retaining Ring	$\phi 15$	$\phi 25$	$\phi 30$	
End Plate Thickness	C type retaining ring	C type retaining ring	C type retaining ring	
	3	4	5	

- Retaining rings for holes, spacers, screws and other parts used to install the load shaft are not included.

Length of Load Shaft

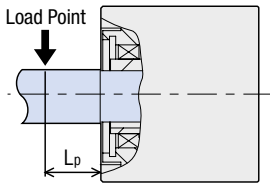


It is recommended that the inner diameter tolerance H8 for the load shaft on the fixing side be 5 mm or more.

● Hollow Shaft Type Permissible Radial Load Calculation

The formula for permissible radial load varies depending on the mechanism.

◇ When End of Shaft being Driven is Not Supported by a Bearing



● 120W

$$\text{Permissible Radial Load } W \text{ [N]} = \frac{79}{59+L_p} \times F_0$$

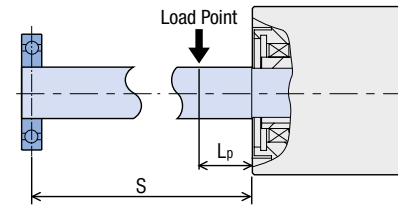
● 200W (Gear Ratio 5~50)

$$\text{Permissible Radial Load } W \text{ [N]} = \frac{95.5}{75.5+L_p} \times F_0$$

● 200W (Gear Ratio 100, 200)

$$\text{Permissible Radial Load } W \text{ [N]} = \frac{102}{82+L_p} \times F_0$$

◇ When End of Shaft being Driven is Supported by a Bearing



● 120W

$$\text{Permissible Radial Load } W \text{ [N]} = \frac{79(S+4)}{75(S-L_p)} \times F_0$$

● 200W (Gear Ratio 5~50)

$$\text{Permissible Radial Load } W \text{ [N]} = \frac{95.5(S+4)}{104.5(S-L_p)} \times F_0$$

● 200W (Gear Ratio 100, 200)

$$\text{Permissible Radial Load } W \text{ [N]} = \frac{102(S+4)}{111(S-L_p)} \times F_0$$

F_0 [N]: Permissible Radial Load 20 mm from Flange-Mounting Surface

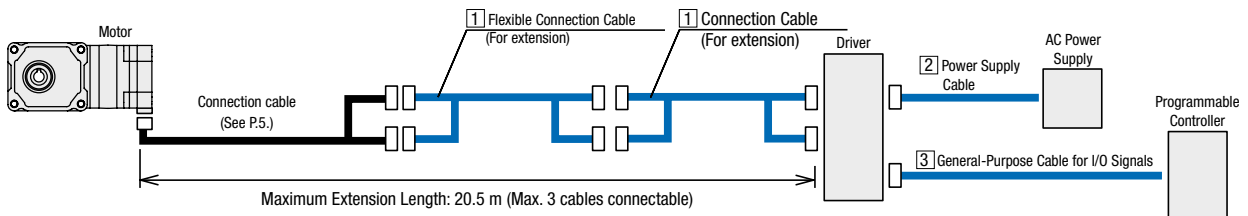
L_p [mm]: Distance from Flange-Mounting Surface to Radial Load Point

S [mm]: Distance from Flange-Mounting Surface to Bearing Unit

● For the permissible radial load 20 mm from the flange-mounting surface please refer to the Specifications. → Page 11

Option (Sold Separately)

● Cable System Configuration



1 Connection Cables (For extension), Flexible Connection Cables (For extension)

These cables are used to connect the motor and the driver. When using after extending the cables included with the product, the overall length of the cables should not exceed 20.5 m (maximum of 3 connected cables). Use the flexible connection cable in applications where the cable is bent and flexed.

● Product Line

◇ Connection Cables

Product Name	Length L (m)	List Price
CC01BL2	1	€27.00
CC02BL2	2	€38.00
CC03BL2	3	€49.00
CC05BL2	5	€71.00
CC07BL2	7	€92.00
CC10BL2	10	€125.00



◇ Flexible Connection Cables

Product Name	Length L (m)	List Price
CC01BL2R	1	€54.00
CC02BL2R	2	€76.00
CC03BL2R	3	€98.00
CC05BL2R	5	€141.00
CC07BL2R	7	€184.00
CC10BL2R	10	€250.00



2 Power Supply Cables

These cables are used to connect the driver and the power supply.



Product Line

Product Name	Power Supply Voltage	Length L (m)	List Price
CC01AC03N	Single-Phase 200-240 VAC	1	€10.00
CC02AC03N		2	€15.00
CC03AC03N		3	€20.00
CC01AC04N	Three-Phase 200-240 VAC	1	€10.00
CC02AC04N		2	€15.00
CC03AC04N		3	€20.00

3 General-Purpose Cables for I/O Signals

Cables for connecting the driver and programmable controller



Product Line

Product Name	Length L (m)	Number of Lead Wire Cores	Outer Diameter D (mm)	AWG	List Price
CC06D005B-1	0.5	6	φ5.4	24	€12.00
CC06D010B-1	1				€14.00
CC06D015B-1	1.5				€15.00
CC06D020B-1	2	€16.00			
CC10D005B-1	0.5	10	φ6.7		€14.00
CC10D010B-1	1				€16.00
CC10D015B-1	1.5				€17.00
CC10D020B-1	2				€19.00
CC12D005B-1	0.5	12	φ7.5		€15.00
CC12D010B-1	1				€17.00
CC12D015B-1	1.5				€20.00
CC12D020B-1	2				€22.00
CC16D005B-1	0.5	16	φ7.5	€16.00	
CC16D010B-1	1			€18.00	
CC16D015B-1	1.5			€21.00	
CC16D020B-1	2	€23.00			

Note

The general-purpose cable for I/O signals cannot be used together with an external speed potentiometer **PAVR2-20K**.

DIN Rail Mounting Plate

Product Line

Product Name	List Price
MADP02	€19.00



External Speed Potentiometers

Product Line

Product Name	List Price
PAVR2-20K	€17.00



Note

External speed potentiometer **PAVR2-20K** cannot be used together with the general-purpose cable for I/O signals.

Driver Mounting Brackets For Wall Mount Installation

Product Line

Material: SPCC Surface treatment: Trivalent chromate

Product Name	Application	List Price	Applicable Products
MADP05-15	DIN rail mounting	€18.00	BMUD120
MAFP04-15	Wall mounting	€18.00	
MAFP05V	Conveyor guide mounting	€10.00	
MAFP05H		€10.00	
MADP05-12B	DIN rail mounting	€23.00	BMUD200
MAFP04-12B	Wall mounting	€23.00	BMUD400

Note

Driver mounting bracket cannot be used together with watertight, dust-resistant front cover.



Watertight, Dust-Resistant Front Cover

Product Line

Product Name	List Price	Applicable Products
PCF12-B	€21.00	BMUD120

Note

The watertight, dust-resistant front cover cannot be used together with driver mounting bracket.



For details please refer to our website or contact the nearest Oriental Motor sales office.

<http://www.orientalmotor.eu>

Orientalmotor

These products are manufactured at plants certified with the international standards **ISO 9001** (for quality assurance) and **ISO 14001** (for systems of environmental management).

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