

General-Purpose AC Servo

MELSERVO

With Reduction Gear For Precision Application Compliant
(G5/G7)

MODEL

HC-MFS □ G5/G7

HC-KFS □ G5/G7

HC-SFS □ G5/G7

HC-RFS □ G5/G7

SERVO MOTOR

INSTRUCTION MANUAL

● Safety Instructions ●

(Always read these instructions before using the equipment.)

Do not attempt to install, operate, maintain or inspect the servo amplifier and servo motor until you have read through this Instruction Manual, MELSERVO Servo Amplifier Instruction Manual and appended documents carefully and can use the equipment correctly. Do not use the servo amplifier and servo motor until you have a full knowledge of the equipment, safety information and instructions.

In this Instruction Manual, the safety instruction levels are classified into "WARNING" and "CAUTION".



Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.





Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight injury to personnel or may cause physical damage.

Note that the CAUTION level may lead to a serious consequence according to conditions. Please follow the instructions of both levels because they are important to personnel safety.

What must not be done and what must be done are indicated by the following diagrammatic symbols:

 : Indicates what must not be done. For example, "No Fire" is indicated by .

 : Indicates what must be done. For example, grounding is indicated by .

In this Instruction Manual, instructions at a lower level than the above, instructions for other functions, and so on are classified into "POINT".

After reading this installation guide, always keep it accessible to the operator.

1. To prevent electric shock, note the following:

WARNING

- Before wiring or inspection, switch power off and wait for more than 15 minutes. Then, confirm the voltage is safe with voltage tester. Otherwise, you may get an electric shock.
- Connect the servo amplifier and servo motor to ground.
- Any person who is involved in wiring and inspection should be fully competent to do the work.
- Do not attempt to wire the servo amplifier and servo motor until they have been installed. Otherwise, you may get an electric shock.
- Operate the switches with dry hand to prevent an electric shock.
- The cables should not be damaged, stressed loaded, or pinched. Otherwise, you may get an electric shock.
- During power-on or operation, do not open the front cover of the servo amplifier. You may get an electric shock.
- Do not operate the servo amplifier with the front cover removed. High-voltage terminals and charging area are exposed and you may get an electric shock.
- Except for wiring or periodic inspection, do not remove the front cover of the servo amplifier even if the power is off. The servo amplifier is charged and you may get an electric shock.

2. To prevent fire, note the following:

CAUTION

- Do not install the servo amplifier, servo motor and regenerative brake resistor on or near combustibles. Otherwise a fire may cause.
- When the servo amplifier has become faulty, switch off the main servo amplifier power side. Continuous flow of a large current may cause a fire.
- When a regenerative brake resistor is used, use an alarm signal to switch main power off. Otherwise, a regenerative brake transistor fault or the like may overheat the regenerative brake resistor, causing a fire.

3. To prevent injury, note the follow

CAUTION

- Only the voltage specified in the Instruction Manual should be applied to each terminal, Otherwise, a burst, damage, etc. may occur.
- Connect the terminals correctly to prevent a burst, damage, etc.
- Ensure that polarity (+, -) is correct. Otherwise, a burst, damage, etc. may occur.
- Take safety measures, e.g. provide covers, to prevent accidental contact of hands and parts (cables, etc.) with the servo amplifier heat sink, regenerative brake resistor, servo motor, etc. since they may be hot while power is on or for some time after power-off. Their temperatures may be high and you may get burnt or a parts may damaged.
- During operation, never touch the rotating parts of the servo motor. Doing so can cause injury.

4. Additional instructions

The following instructions should also be fully noted. Incorrect handling may cause a fault, injury, electric shock, etc.

(1) Transportation and installation

CAUTION

- Transport the products correctly according to their weights.
- Use the eye-bolt of the servo motor to only transport the servo motor and do not use it to transport in the condition to have installed a servo motor on the machine.
- Stacking in excess of the specified number of products is not allowed.
- Do not carry the servo motor by the cables, shaft or encoder.
- Do not hold the front cover to transport the servo amplifier. The servo amplifier may drop.
- Install the servo amplifier in a load-bearing place in accordance with the Instruction Manual.
- Do not climb or stand on servo equipment. Do not put heavy objects on equipment.
- The servo motor must be installed in the specified direction.
- Leave specified clearances between the servo amplifier and control enclosure walls or other equipment.
- Do not install or operate the servo motor which has been damaged or has any parts missing.
- Do not block the intake/exhaust port of the servo motor which has a cooling fan.
- Provide adequate protection to prevent screws and other conductive matter, oil and other combustible matter from entering the servo amplifier and servo motor.
- Do not drop or strike servo motor. Isolate from all impact loads.
- When you keep or use it, please fulfill the following environmental conditions.

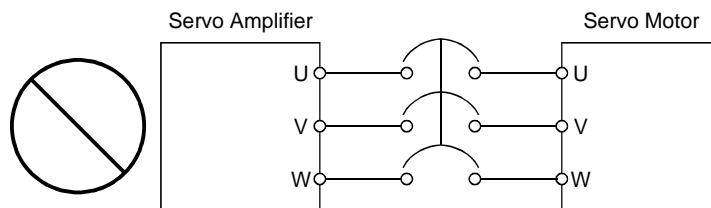
Environment		Conditions	
Ambient temperature	During operation	[°C]	0 to +40 (non-freezing)
		[°F]	32 to 104 (non-freezing)
	In storage	[°C]	-15 to 70 (non-freezing)
		[°F]	5 to 158 (non-freezing)
Ambient humidity	During operation	80%RH or less (non-condensing)	
	In storage	90%RH or less (non-condensing)	
Ambience		Indoors (no direct sunlight) Free from corrosive gas, flammable gas, oil mist, dust and dirt	
Altitude		Max. 1000m (3280 ft) above sea level	

- Securely attach the servo motor to the machine. If attach insecurely, the servo motor may come off during operation.
- The servo motor with reduction gear must be installed in the specified direction to prevent oil leakage.
- Take safety measures, e.g. provide covers, to prevent accidental access to the rotating parts of the servo motor during operation.
- Never hit the servo motor or shaft, especially when coupling the servo motor to the machine. The encoder may become faulty.
- Do not subject the servo motor shaft to more than the permissible load. Otherwise, the shaft may break.

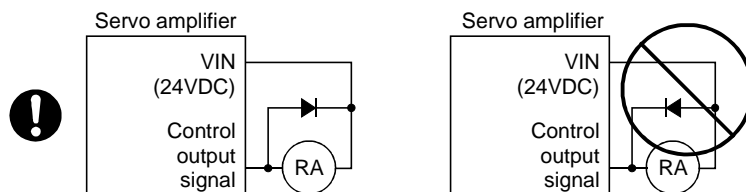
(2) Wiring

CAUTION

- Wire the equipment correctly and securely. Otherwise, the servo motor may misoperate.
- Do not install a power capacitor, surge absorber or radio noise filter (FR-BIF option) between the servo motor and servo amplifier.
- Connect the output terminals (U, V, W) correctly. Otherwise, the servo motor will operate improperly.
- Connect the servo motor power terminal (U, V, W) to the servo motor power input terminal (U, V, W) directly. Do not let a magnetic contactor, etc. intervene.



- Do not connect AC power directly to the servo motor. Otherwise, a fault may occur.
- The surge absorbing diode installed on the DC output signal of the servo amplifier relay must be wired in the specified direction. Otherwise, the forced stop and other protective circuits may not operate.



(3) Test run adjustment

CAUTION

- Before operation, check the parameter settings. Improper settings may cause some machines to perform unexpected operation.
- The parameter settings must not be changed excessively. Operation will be instable.

(4) Usage

⚠ CAUTION

- Provide an external emergency stop circuit to ensure that operation can be stopped and power switched off immediately.
- Any person who is involved in disassembly and repair should be fully competent to do the work.
- Before resetting an alarm, make sure that the run signal into the servo amplifier is off to prevent an accident. A sudden restart is made if an alarm is reset with the run signal on.
- Do not modify the equipment.
- Use a noise filter, etc. to minimize the influence of electromagnetic interference, which may be caused by electronic equipment used near the servo amplifier.
- Burning or breaking a servo amplifier may cause a toxic gas. Do not burn or break a servo amplifier.
- Use the servo amplifier with the specified servo motor.
- The electromagnetic brake on the servo motor is designed to hold the servo motor shaft and should not be used for ordinary braking.
- For such reasons as service life and mechanical structure (e.g. where a ballscrew and the servo motor are coupled via a timing belt), the electromagnetic brake may not hold the servo motor shaft. To ensure safety, install a stopper on the machine side.

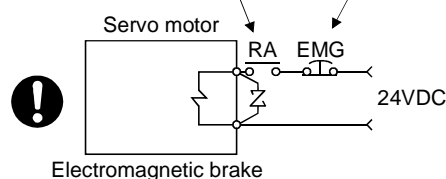
(5) Corrective actions

⚠ CAUTION

- When it is assumed that a hazardous condition may take place at the occur due to a power failure or a product fault, use a servo motor with electromagnetic brake or an external brake mechanism for the purpose of prevention.
- Configure the electromagnetic brake circuit so that it is activated not only by the servo amplifier signals but also by an external emergency (forced) stop signal.

Contacts must be open when servo-on signal is off, when an alarm (trouble) is present and when an electromagnetic brake signal.

Circuit must be opened during emergency (force) stop.



- When any alarm has occurred, eliminate its cause, ensure safety, and deactivate the alarm before restarting operation.
- When power is restored after an instantaneous power failure, keep away from the machine because the machine may be restarted suddenly (design the machine so that it is secured against hazard if restarted).

(6) Maintenance, inspection and parts replacement

⚠ CAUTION

- With age, the electrolytic capacitor of the servo amplifier will deteriorate. To prevent a secondary accident due to a fault, it is recommended to replace the electrolytic capacitor every 10 years when used in general environment.
Please consult our sales representative.

(7) Storage

CAUTION

Note the following points when storing the servo motor for an extended period of time (guideline: three or more months).

- Always store the servo motor indoors in a clean and dry place.
- If it is stored in a dusty or damp place, make adequate provision, e.g. cover the whole product.
- If the insulation resistance of the winding decreases, reexamine the storage method.
- Though the servo motor is rust-proofed before shipment using paint or rust prevention oil, rust may be produced depending on the storage conditions or storage period.

If the servo motor is to be stored for longer than six months, apply rust prevention oil again especially to the machined surfaces of the shaft, etc.

- Before using the product after storage for an extended period of time, hand-turn the motor output shaft to confirm that nothing is wrong with the servo motor. (When the servo motor is equipped with a brake, make the above check after releasing the brake with the brake power supply.)
- When the equipment has been stored for an extended period of time, consult Mitsubishi.

(8) General instruction

CAUTION

- To illustrate details, the equipment in the diagrams of this Instruction Manual may have been drawn without covers and safety guards. When the equipment is operated, the covers and safety guards must be installed as specified. Operation must be performed in accordance with this Instruction Manual.

● About processing of waste ●

When you discard servo amplifier, a battery (primary battery), and other option articles, please follow the law of each country (area).

FOR MAXIMUM SAFETY

- These products have been manufactured as a general-purpose part for general industries, and have not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the products for special purposes such as nuclear power, electric power, aerospace, medicine, passenger movement vehicles or underwater relays, contact Mitsubishi.
- These products have been manufactured under strict quality control. However, when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

PRECAUTIONS FOR CHOOSING THE PRODUCTS

Mitsubishi will not be held liable for damage caused by factors found not to be the cause of Mitsubishi; machine damage or lost profits caused by faults in the Mitsubishi products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mitsubishi; damages to products other than Mitsubishi products; and to other duties.

COMPLIANCE WITH EC DIRECTIVES

1. WHAT ARE EC DIRECTIVES?

The EC Directives were issued to standardize the regulations of the EU countries and ensure smooth distribution of safety-guaranteed products. In the EU countries, the Machinery Directive (effective in January, 1995), EMC Directive (effective in January, 1996) and Low Voltage Directive (effective in January, 1997) of the EC Directives require that products to be sold should meet their fundamental safety requirements and carry the CE marks (CE marking). CE marking applies to machines and equipment into which servo amplifiers have been installed.

The servo amplifiers do not function independently but are designed for use with machines and equipment. Therefore, the CE marking does not apply to the servo amplifiers but applies to the machines and equipment into which the servo amplifiers are installed.

This servo amplifier conforms to the standards related to the Low Voltage Directive to facilitate CE marking on machines and equipment into which the servo amplifiers will be installed. To ensure ease of compliance with the EMC Directive, Mitsubishi Electric prepared the "EMC INSTALLATION GUIDELINES" (IB(NA)67310) which provides servo amplifier installation, control box making and other procedures. Please contact your sales representative.

2. PRECAUTIONS FOR COMPLIANCE

Use the servo motor compatible with the EN Standard.

Unless otherwise specified, the handling, performance, specifications and others of the EN Standard-compatible models are the same as those of the standard models.

(1) Wiring

Use the power connector which complies with the EN Standard for wiring.

Power connector Set Model	Servo Motor Model
MR-PWCNS1	HC-SFS52 (B) to 152 (B) HC-SFS524 (B) to 1524 (B) HC-RFS103 (B) to 203 (B)
MR-PWCNS2	HC-SFS202 (B) to 502 (B) HC-SFS2024 (B) to 5024 (B) HC-RFS353 (B) • 503 (B)
MR-PWCNS3	HC-SFS702 (B) HC-SFS7024 (B)

(2) Installation

The flange of the machine mounted with the HC-MFS/HC-KFS must be connected to the earth.

CONFORMANCE WITH UL/C-UL STANDARD (Under application)

Use the UL/C-UL Standard-compliant model of servo motor.

Unless otherwise specified, the handling, performance, specifications, etc. of the UL/C-UL Standard-compliant models are the same as those of the standard models.

The servo motor is compliant with the UL/C-UL standard when it is mounted on the flanges made of aluminum whose sizes are indicated in the following table.

The rated torque of the servo motor under the UL/C-UL standard indicates the continuous permissible torque value that can be generated when it is mounted on the flange specified in this table and used in the environment of 0°C to 40°C ambient temperature. Therefore, to conform to the UL/C-UL standard, mount the servo motor on a flange with a heat radiating effect equivalent to that of this flange.

Flange Size [mm]	Servo Motor			
	HC-KFS	HC-MFS	HC-SFS	HC-RFS
150 × 150 × 3				
150 × 150 × 6	053 · 13	053 · 13		
250 × 250 × 6	23	23		
250 × 250 × 12	43	43	52 to 521 524 to 1524	103 to 203
300 × 300 × 12	73	73		
300 × 300 × 20			202 · 352 2024 · 3524	
550 × 550 × 30				353 · 503
650 × 650 × 35			502 · 702 5024 · 7024	

<<About the manuals>>

This Instruction Manual describes the characteristics and outline drawing of the servo motor equipped with high accuracy compatible decelerator (G5/G7). For wiring and using, see the MELSERVO Servo Motor Instruction Manual in addition.

Relevant manuals

Manual name	Manual No.
MELSERVO Servo Moter Instruction Manual	SH(NA)3181

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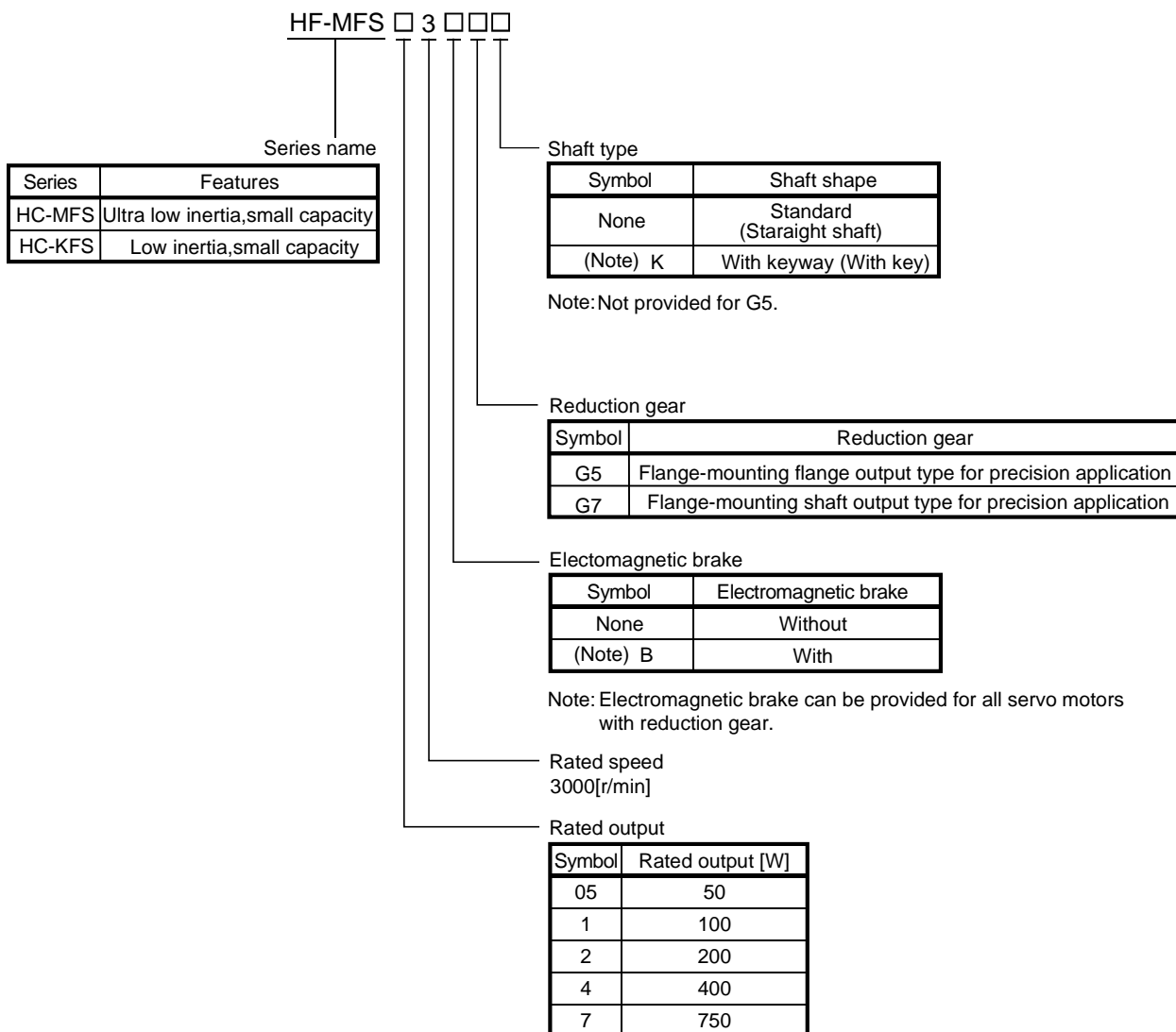
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1. HC-MFS SERIES/HC-KFS SERIES

1. HC-MFS SERIES/HC-KFS SERIES

1.1 Model name



1. HC-MFS SERIES/HC-KFS SERIES

1.2 Manufacturing range

The symbols (14A, 20A, 32A) in the following table indicate the model numbers of the reduction gears assembled to the servo motors.

Servo motors with reduction gears having the indicated reduction gear model numbers are available.

The reduction gear model number indicates □□□ of the reduction number model name HPG-□□□-05...

Servo motor		Reduction ratio				
		1/5	1/11	1/21	1/33	1/45
HC-MFS053G5	HC-KFS053G5					
HC-MFS053G7	HC-KFS053G7					
HC-MFS13G5	HC-KFS13G5		14A			
HC-MFS13G7	HC-KFS13G7					
HC-MFS23G5	HC-KFS23G5			20A		
HC-MFS23G7	HC-KFS23G7					
HC-MFS43G5	HC-KFS43G5					
HC-MFS43G7	HC-KFS43G7					
HC-MFS73G5	HC-KFS73G5				32A	
HC-MFS73G7	HC-KFS73G7					

1.3 Specifications

Item		Description
Servo motor		HC-MFS□G5 HC-KFS□G5 HC-MFS□G7 HC-KFS□G7
Mounting method		Flange mounting
Mounting direction		In any directions
		Grease lubrication (Already packed) (Note 1)
Lubrication method	Packed with	Harmonic grease SK-2 (Harmonic Drive Systems)
Output shaft rotating direction		Same as the servo motor output shaft direction.
With electromagnetic brake		Available
Backlash		3 minutes or less at reduction gear output shaft
Permissible load inertia moment ratio (when converting into the servo motor shaft) (Note 2)		25 times or less 50, 100 or 750W : 10 times or less of inertia moment J for servo motor 200 or 400W : 14 times or less of inertia moment J for servo motor
Permissible speed (at servo motor shaft)		4500 r/min
Protective structure (reduction gear area)		IP44 equivalent
Reduction gear efficiency (Note 3)		58 to 87% (Note 4)

Note 1. Already packed with grease.

2. If the above indicated value is exceeded, please consult us.

3. The reduction gear efficiency differs depending on the reduction ratio.

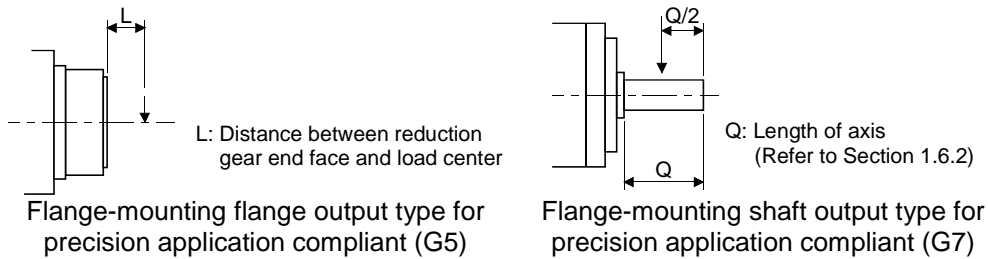
Also, it changes depending on the use conditions such as the output torque, speed and rotation, temperature, etc. The numerical value in the table is a typical value in the rated torque, rated speed and rotation and typical temperature, and not a guaranteed value.

4. The reduction gear efficiency of the HC-MFS053 and HC-KFS053 are 22 to 41%.

1. HC-MFS SERIES/HC-KFS SERIES

1.4 Permissible loads of servo motor shaft

The radial load point of a precision reduction gear is as shown below.



Servo motor	Reduction ratio	Radial load point L (mm)		Permissible load (Note)			
		[mm]	[in]	Permissible radial load		Permissible thrust load	
				[N]	[lb]	[N]	[lb]
HC-MFS053G5 HC-KFS053G5 HC-MFS053G7 HC-KFS053G7	1/5	23	0.906	177	39.8	706	159
	1/11	23	0.906	224	50.4	895	201
	1/21	23	0.906	272	61.1	1087	224
	1/33	23	0.906	311	69.9	1244	280
	1/45	23	0.906	342	76.9	1366	307.1
HC-MFS13G5 HC-KFS13G5 HC-MFS13G7 HC-KFS13G7	1/5	23	0.906	177	39.8	706	159
	1/11	23	0.906	224	50.4	895	201
	1/21	23	0.906	272	61.1	1087	224
	1/33	32	1.26	733	165	2581	570.2
	1/45	32	1.26	804	181	2833	636.9
HC-MFS23G5 HC-KFS23G5 HC-MFS23G7 HC-KFS23G7	1/5	23	0.906	177	39.8	706	159
	1/11	23	0.906	224	50.4	895	201
	1/21	32	1.26	640	144	2254	507
	1/33	32	1.26	733	165	2581	570.2
	1/45	32	1.26	804	181	2833	637
HC-MFS43G5 HC-KFS43G5 HC-MFS43G7 HC-KFS43G7	1/5	23	0.906	177	39.8	706	159
	1/11	32	1.26	527	118	1856	4170
	1/21	32	1.26	1374	309	5478	1230
	1/33	57	2.24	1252	281	4992	1120
	1/45	57	2.24	1374	309	5478	1230
HC-MFS73G5 HC-KFS73G5 HC-MFS73G7 HC-KFS73G7	1/5	32	1.26	416	93.5	1465	3290
	1/11	32	1.26	527	118	1856	4170
	1/21	57	2.24	1094	246	4359	9800
	1/33	57	2.24	1252	281	4992	1120
	1/45	57	2.24	1374	309	5478	1230

Note. The load above this value should not be applied to the shaft.
The value in the table assumes that the load is applied independently.

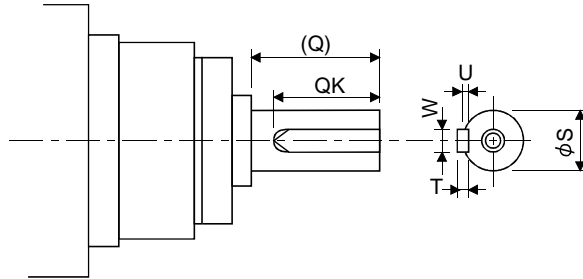
1. HC-MFS SERIES/HC-KFS SERIES

1.5 Special shaft servo motors

Servo motors with special shafts having keyway (with single pointed keys) are available for the flange-mounting shaft output type for precision applications compliant (G7).

[Unit: mm](Unit:in)

Servo motor	Reduction gear model number	Q	ϕS	W	T	QK	U
HC-MFS□G7K HC-KFS□G7K	14A	28(1.10)	16(0.63)	5(0.197)	5(0.197)	25(0.984)	3(0.118)
	20A	42(1.65)	25(0.984)	8(0.315)	7(0.276)	36(1.42)	4(0.157)
	32A	82(3.23)	40(1.58)	12(0.472)	8(0.315)	70(2.76)	5(0.197)



1. HC-MFS SERIES/HC-KFS SERIES

1.6 Outline dimension drawings

The outer frame of the reduction gear is a material surface such as casting. Its actual dimensions may be 1 to 3mm larger than the drawing dimensions. Design the machine side with allowances.

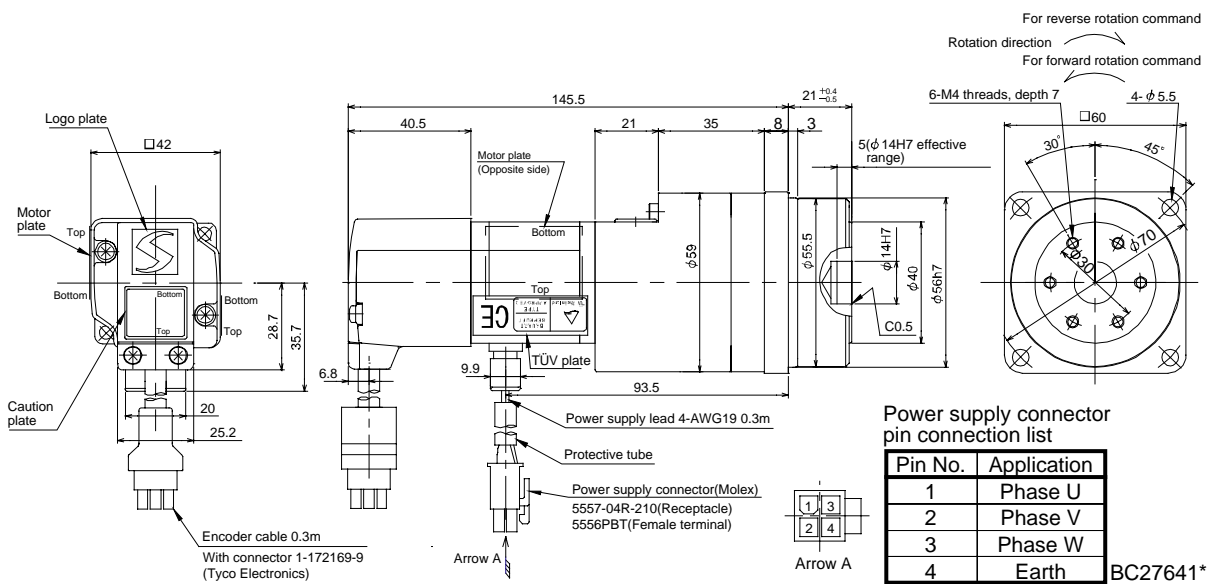
Inertia moment on the table is the value calculated by converting the total value of inertia moment for servo motor, electromagnetic brake and decelerator with servo motor shaft.

1.6.1 Flange-mounting flange output type for precision application compliant (G5)

(1) Without electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS053G5	0.05	HPG-14A-05-F0CBJS-S	1/5	0.087	1.2
		HPG-14A-11-F0CBKS-S	1/11	0.079	
		HPG-14A-21-F0CBKS-S	1/21	0.070	
		HPG-14A-33-F0CBLS-S	1/33	0.064	
		HPG-14A-45-F0CBLS-S	1/45	0.064	
HC-KFS053G5	0.05	HPG-14A-05-F0CBJS-S	1/5	0.121	1.1
		HPG-14A-11-F0CBKS-S	1/11	0.113	1.2
		HPG-14A-21-F0CBKS-S	1/21	0.104	
		HPG-14A-33-F0CBLS-S	1/33	0.098	
		HPG-14A-45-F0CBLS-S	1/45	0.098	

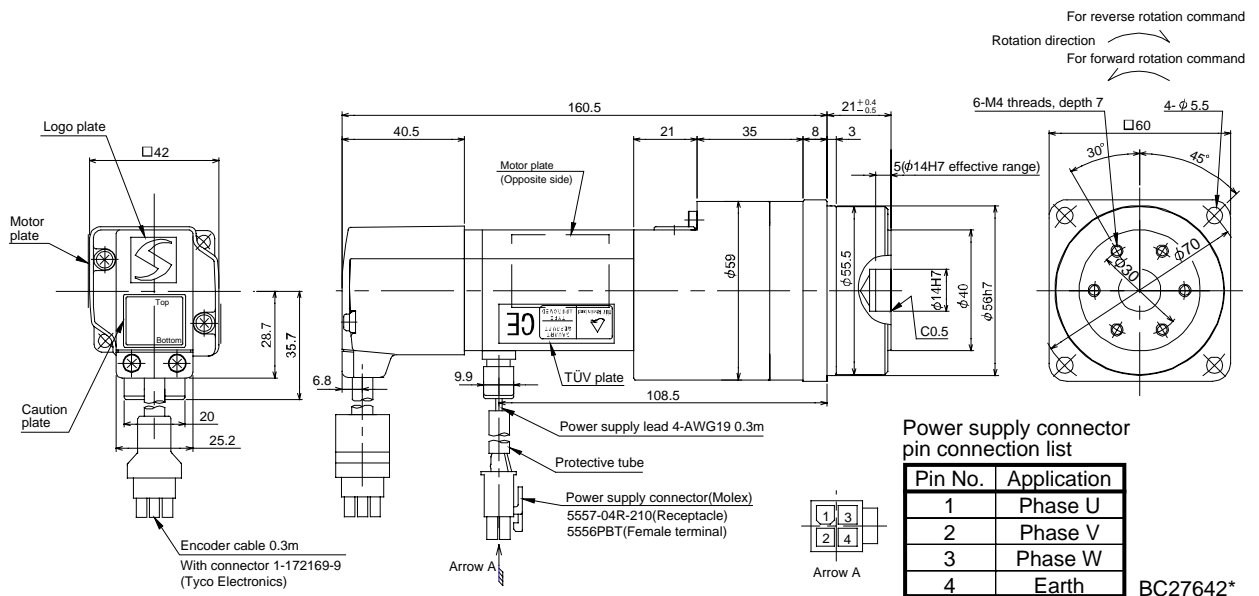
[Unit: mm]



1. HC-MFS SERIES/HC-KFS SERIES

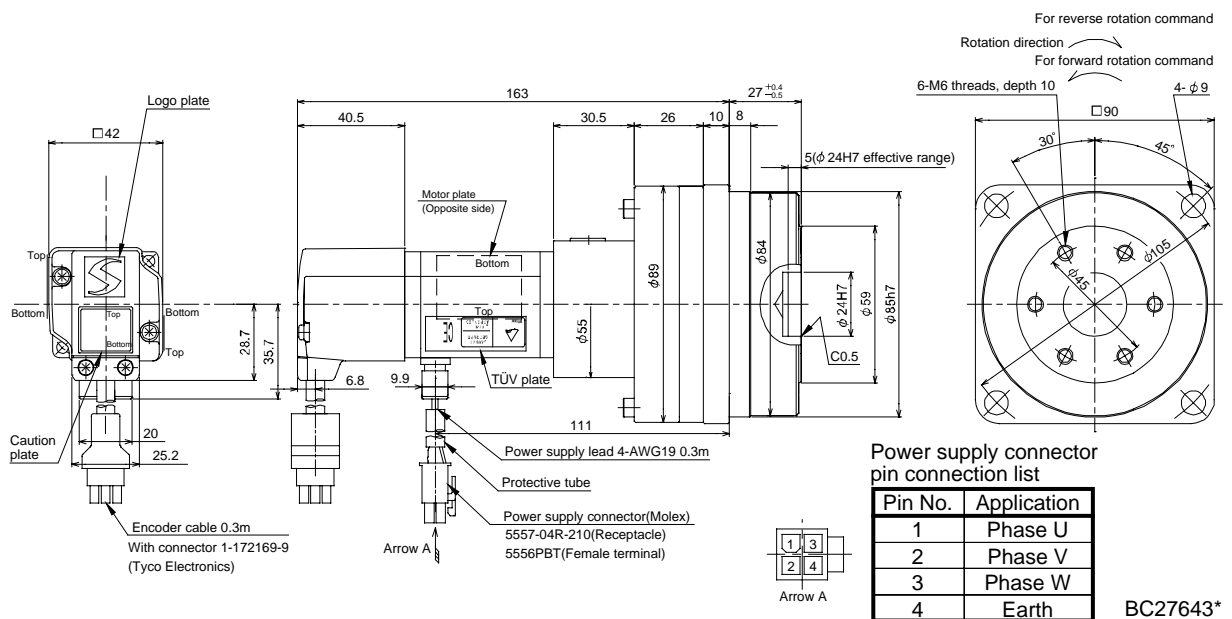
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS13G5	0.1	HPG-14A-05-F0CBJS-S	1/5	0.098	1.3
		HPG-14A-11-F0CBKS-S	1/11	0.090	
		HPG-14A-21-F0CBKS-S	1/21	0.081	
HC-KFS13G5	0.1	HPG-14A-05-F0CBJS-S	1/5	0.152	1.3
		HPG-14A-11-F0CBKS-S	1/11	0.144	
		HPG-14A-21-F0CBKS-S	1/21	0.135	

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS13G5	0.1	HPG-20A-33-F0JMLAS-S	1/33	0.092	2.5
		HPG-20A-45-F0JMLAS-S	1/45	0.091	
HC-KFS13G5	0.1	HPG-20A-33-F0JMLAS-S	1/33	0.146	2.5
		HPG-20A-45-F0JMLAS-S	1/45	0.145	

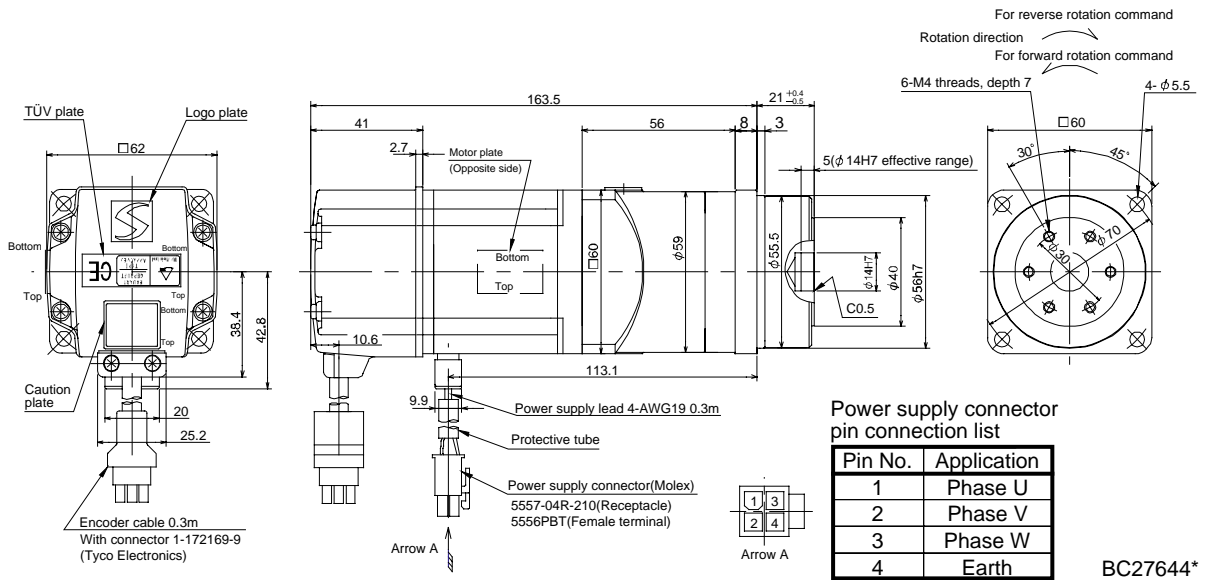
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1. HC-MFS SERIES/HC-KFS SERIES

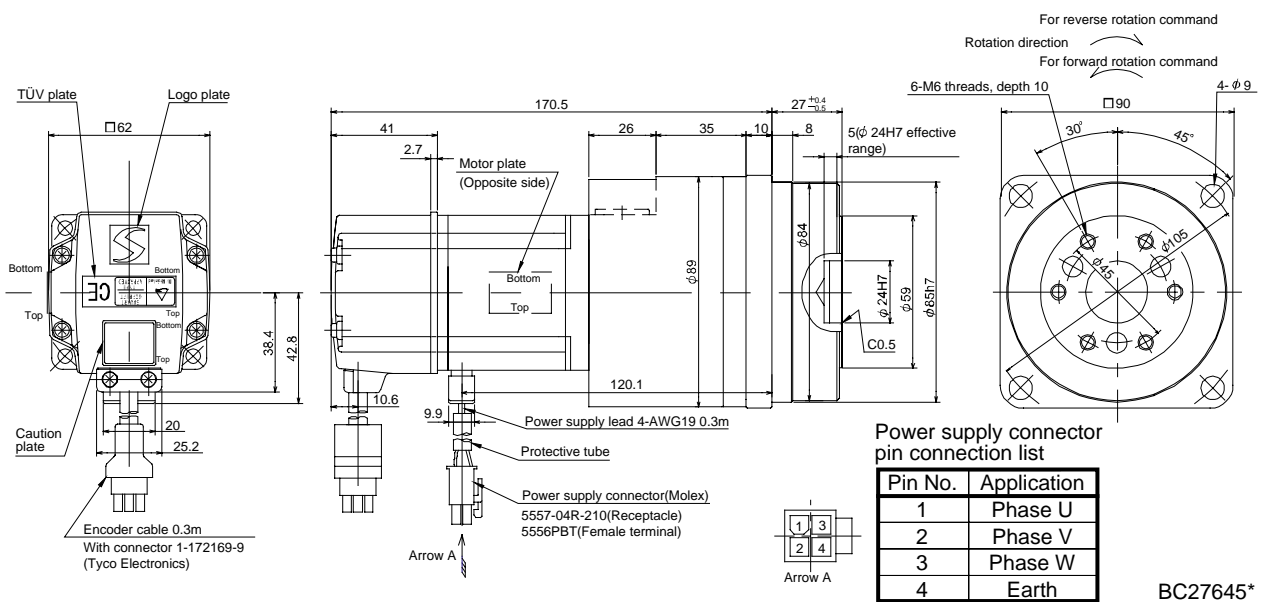
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS23G5	0.2	HPG-14A-05-F0AZW-S	1/5	0.289	1.8
		HPG-14A-11-F0AZX-S	1/11	0.291	1.9
HC-KFS23G5	0.2	HPG-14A-05-F0AZW-S	1/5	0.461	1.8
		HPG-14A-11-F0AZX-S	1/11	0.463	1.9

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS23G5	0.2	HPG-20A-21-F0EKS-S	1/21	0.586	3.5
		HPG-20A-33-F0ELS-S	1/33	0.540	
		HPG-20A-45-F0ELS-S	1/45	0.539	
HC-KFS23G5	0.2	HPG-20A-21-F0EKS-S	1/21	0.758	3.5
		HPG-20A-33-F0ELS-S	1/33	0.712	
		HPG-20A-45-F0ELS-S	1/45	0.711	

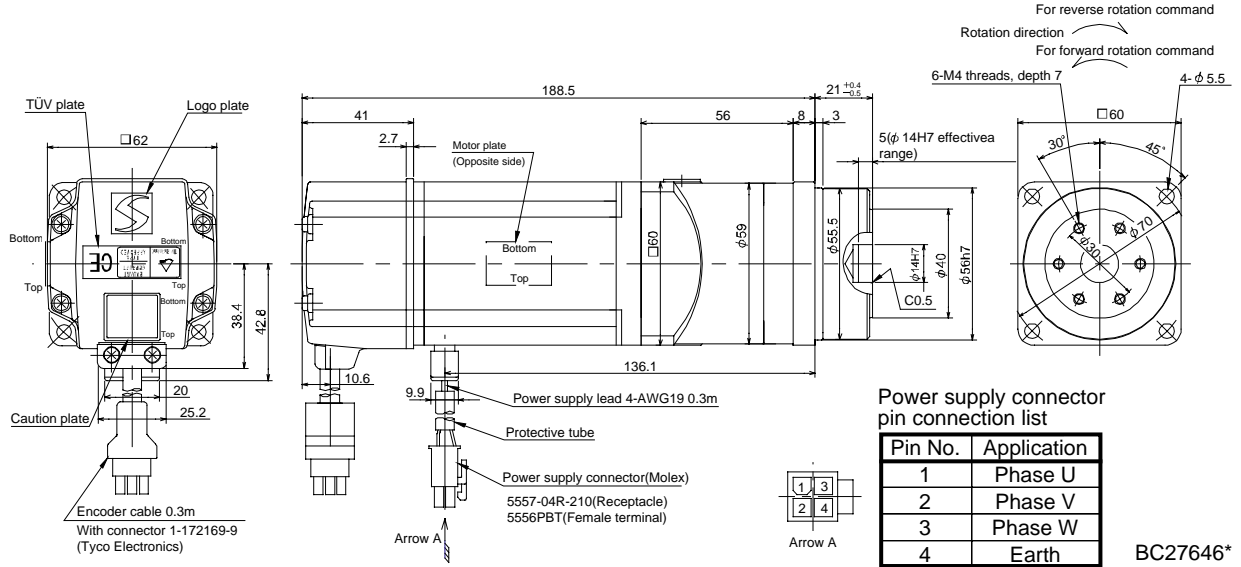
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1. HC-MFS SERIES/HC-KFS SERIES

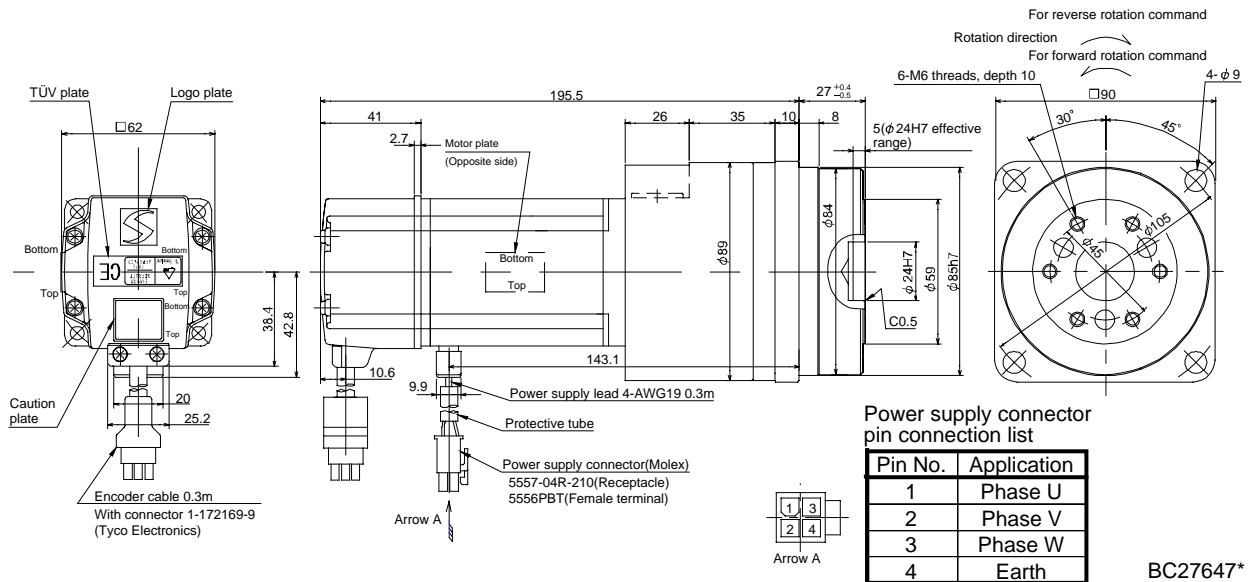
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS43G5	0.4	HPG-14A-05-F0AZW-S	1/5	0.344	2.3
HC-KFS43G5	0.4	HPG-14A-05-F0AZW-S	1/5	0.661	2.3

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS43G5	0.4	HPG-20A-11-F0EKS-S	1/11	0.719	4.0
		HPG-20A-21-F0EKS-S	1/21	0.641	
HC-KFS43G5	0.4	HPG-20A-11-F0EKS-S	1/11	1.04	4.0
		HPG-20A-21-F0EKS-S	1/21	0.960	

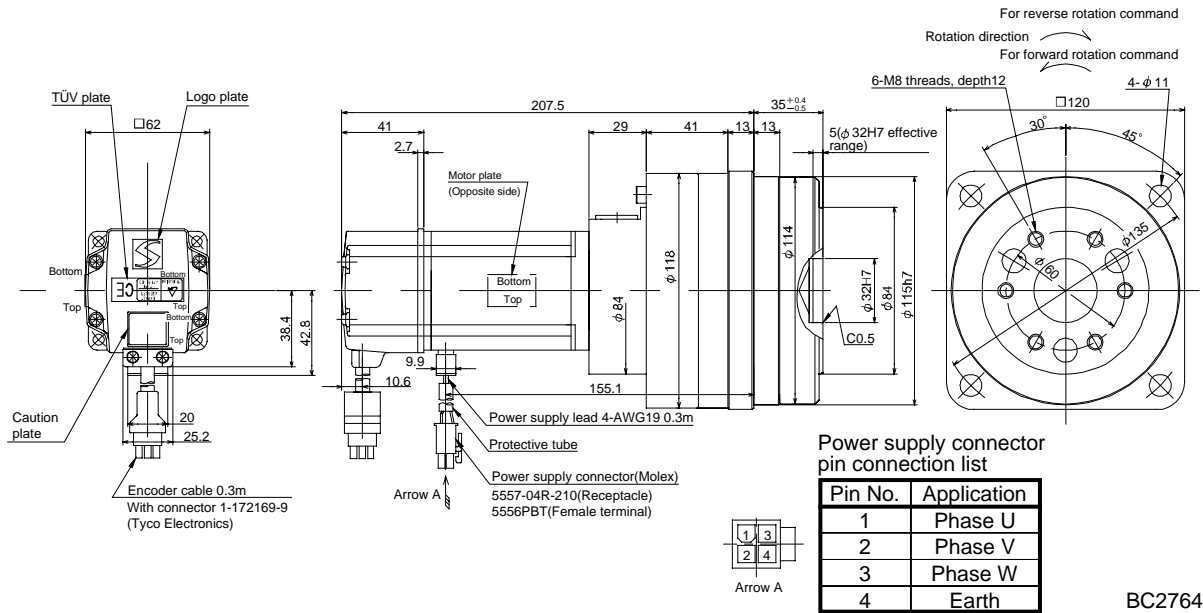
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1. HC-MFS SERIES/HC-KFS SERIES

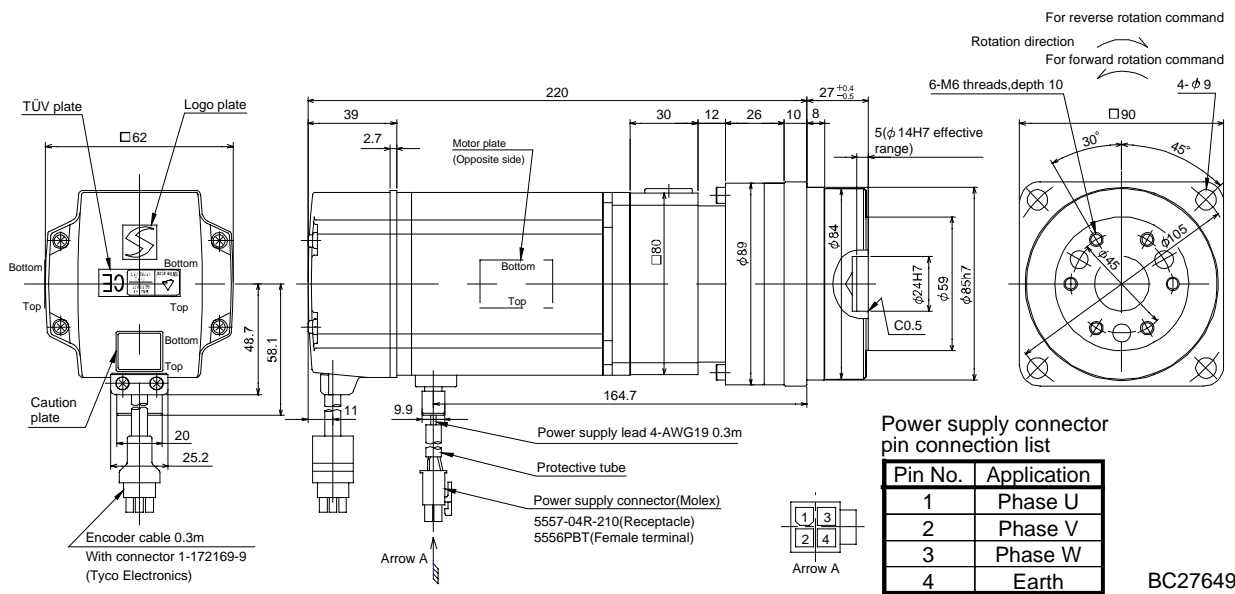
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS43G5	0.4	HPG-32A-33-F0RLAS-S	1/33	0.693	6.1
		HPG-32A-45-F0RLAS-S	1/45	0.687	
HC-KFS43G5	0.4	HPG-32A-33-F0RLAS-S	1/33	1.01	6.1
		HPG-32A-45-F0RLAS-S	1/45	1.00	

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS73G5	0.75	HPG-20A-05-F0FEOS-S	1/5	1.25	5.0
		HPG-20A-11-F0FEPS-S	1/11	1.16	
HC-KFS73G5	0.75	HPG-20A-05-F0FEOS-S	1/5	2.16	5.0
		HPG-20A-11-F0FEPS-S	1/11	2.07	

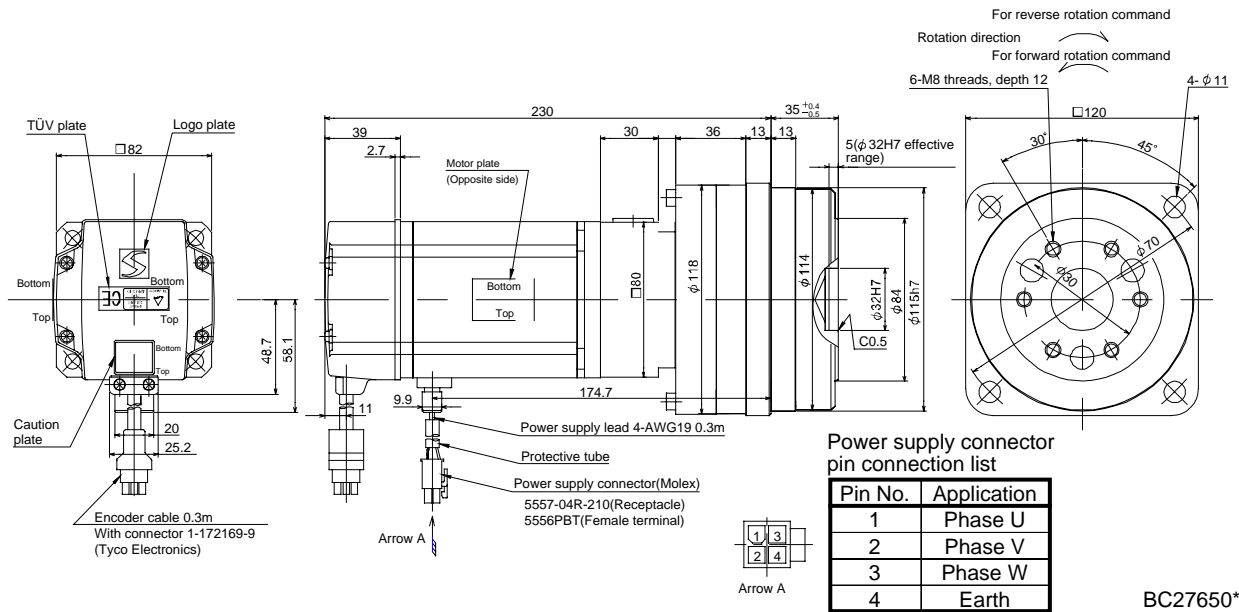
[Unit: mm]



1. HC-MFS SERIES/HC-KFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment J [$\times 10^{-4}$ kg \cdot m ²]	Mass [kg]
HC-MFS73G5	0.75	HPG-32A-21-F0SEIS-S	1/21	1.35	7.4
		HPG-32A-33-F0SEJS-S	1/33	1.13	
		HPG-32A-45-F0SEJS-S	1/45	1.13	
HC-KFS73G5	0.75	HPG-32A-21-F0SEIS-S	1/21	2.26	7.4
		HPG-32A-33-F0SEJS-S	1/33	2.04	
		HPG-32A-45-F0SEJS-S	1/45	2.04	

[Unit: mm]

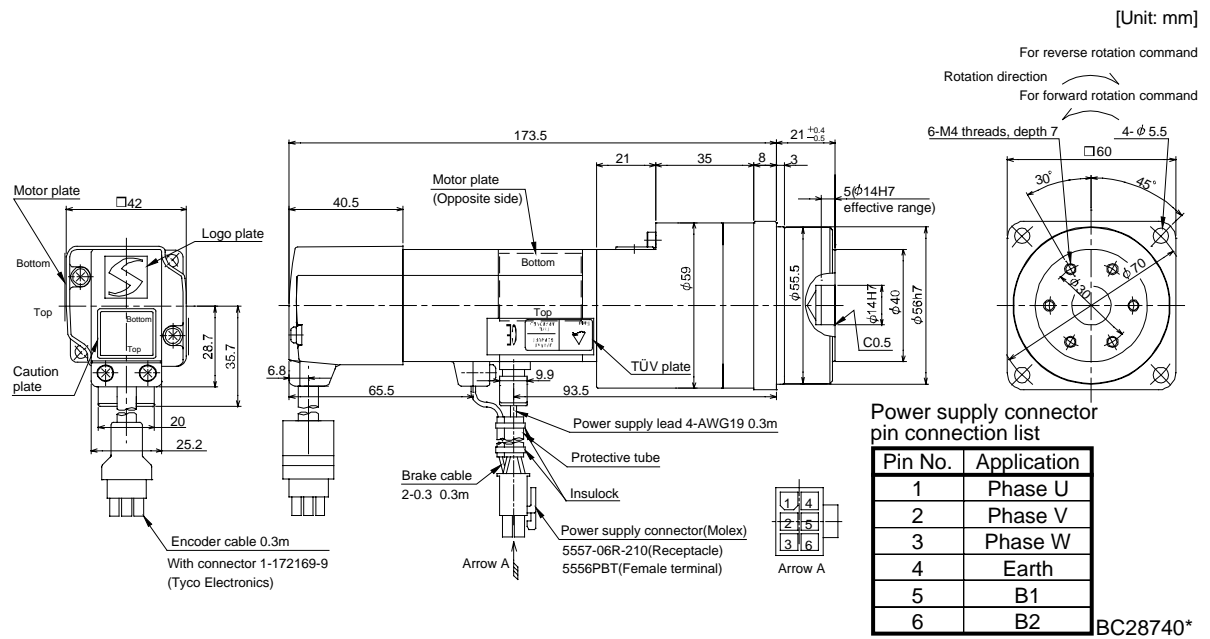


BC27650*

1. HC-MFS SERIES/HC-KFS SERIES

(2) With electromagnetic brake

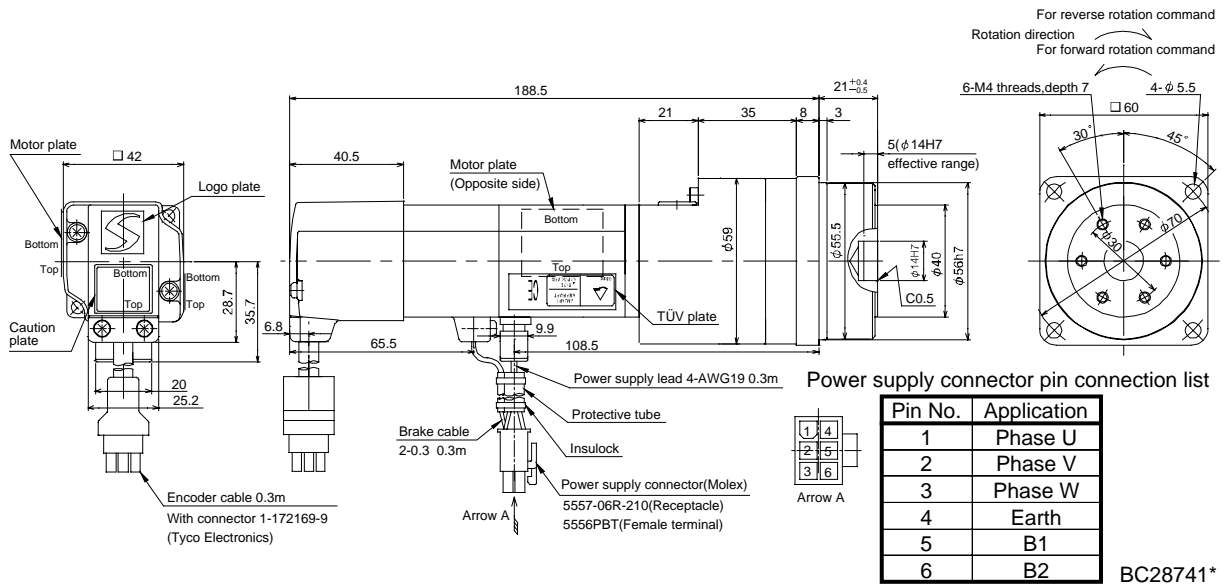
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS053BG5	0.05	HPG-14A-05-F0CBJS-S	1/5	0.32	0.090	1.5
		HPG-14A-11-F0CBKS-S	1/11		0.082	
		HPG-14A-21-F0CBKS-S	1/21		0.073	
		HPG-14A-33-F0CBLS-S	1/33		0.067	
		HPG-14A-45-F0CBLS-S	1/45		0.067	
HC-KFS053BG5	0.05	HPG-14A-05-F0CBJS-S	1/5	0.32	0.124	1.5
		HPG-14A-11-F0CBKS-S	1/11		0.116	
		HPG-14A-21-F0CBKS-S	1/21		0.107	
		HPG-14A-33-F0CBLS-S	1/33		0.101	
		HPG-14A-45-F0CBLS-S	1/45		0.101	



1. HC-MFS SERIES/HC-KFS SERIES

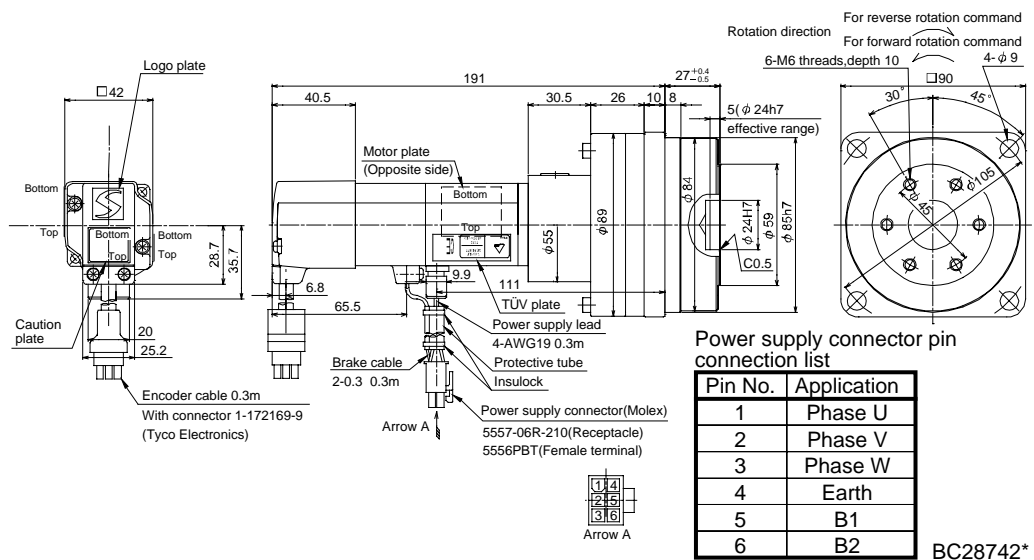
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J[×10 ⁻⁴ kg · m ²]	Mass [kg]
HC-MFS13BG5	0.1	HPG-14A-05-F0CBJS-S	1/5	0.32	0.100	1.6
		HPG-14A-11-F0CBKS-S	1/11		0.092	
		HPG-14A-21-F0CBKS-S	1/21		0.083	1.7
HC-KFS13BG5	0.1	HPG-14A-05-F0CBJS-S	1/5	0.32	0.155	1.6
		HPG-14A-11-F0CBKS-S	1/11		0.147	
		HPG-14A-21-F0CBKS-S	1/21		0.138	1.7

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J[×10 ⁻⁴ kg · m ²]	Mass [kg]
HC-MFS13BG5	1.0	HPG-20A-33-F0JMLAS-S	1/33	0.32	0.094	2.9
		HPG-20A-45-F0JMLAS-S	1/45		0.093	
HC-KFS13BG5	1.0	HPG-20A-33-F0JMLAS-S	1/33	0.32	0.149	2.9
		HPG-20A-45-F0JMLAS-S	1/45		0.148	

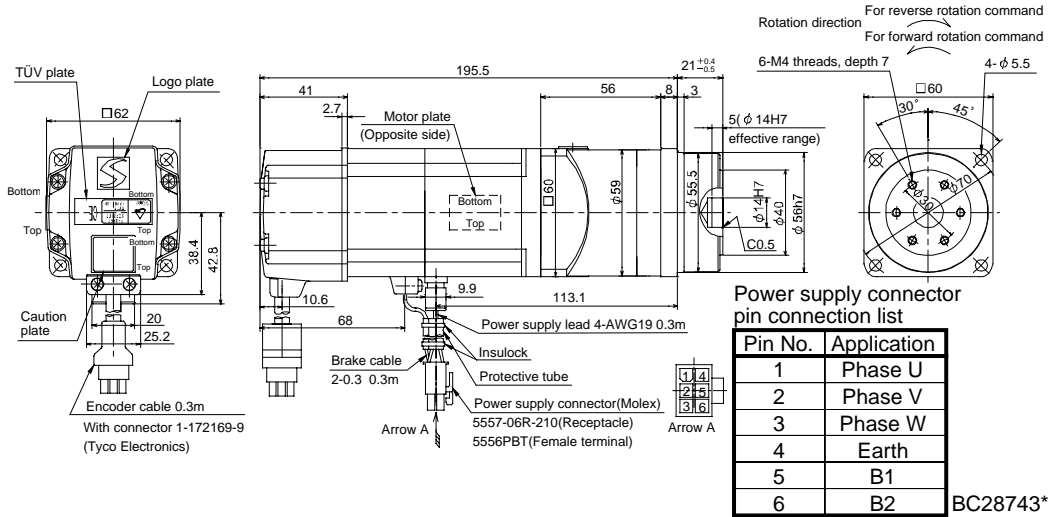
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1. HC-MFS SERIES/HC-KFS SERIES

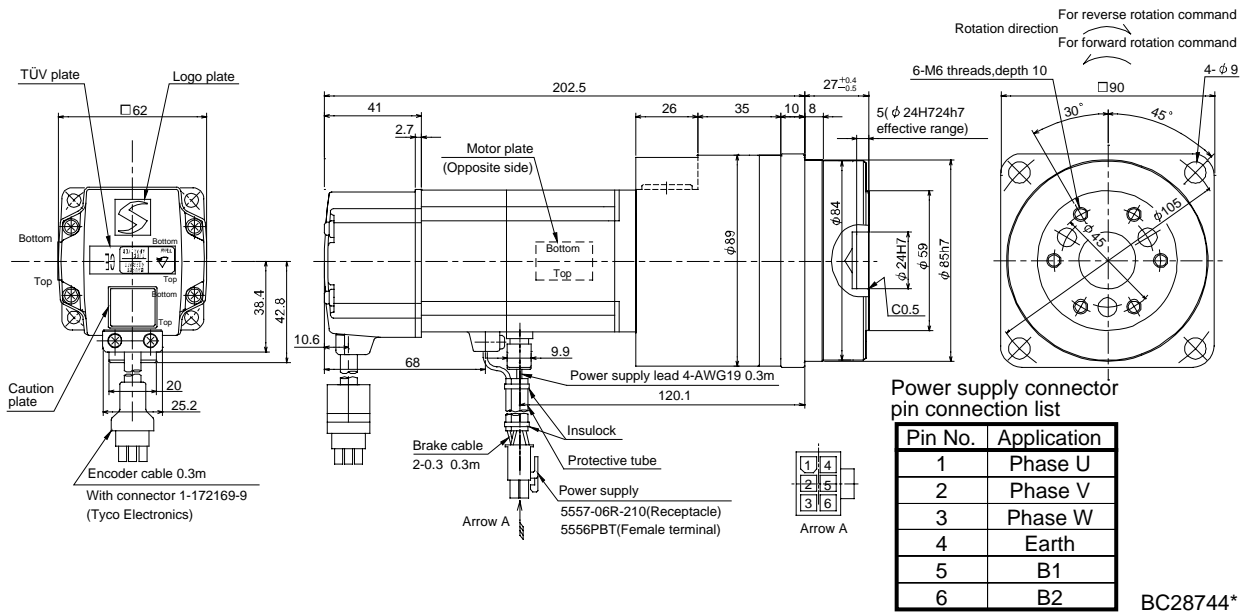
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS23BG5	0.2	HPG-14A-05-F0AZW-S	1/5	1.3	0.337	2.4
		HPG-14A-11-F0AZX-S	1/11		0.339	2.5
HC-KFS23BG5	0.2	HPG-14A-05-F0AZW-S	1/5	1.3	0.511	2.4
		HPG-14A-11-F0AZX-S	1/11		0.513	2.5

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS23BG5	0.2	HPG-20A-21-F0EKS-S	1/21	1.3	0.634	4.1
		HPG-20A-33-F0ELS-S	1/33		0.588	
		HPG-20A-45-F0ELS-S	1/45		0.587	
HC-KFS23BG5	0.2	HPG-20A-21-F0EKS-S	1/21	1.3	0.808	4.1
		HPG-20A-33-F0ELS-S	1/33		0.762	
		HPG-20A-45-F0ELS-S	1/45		0.761	

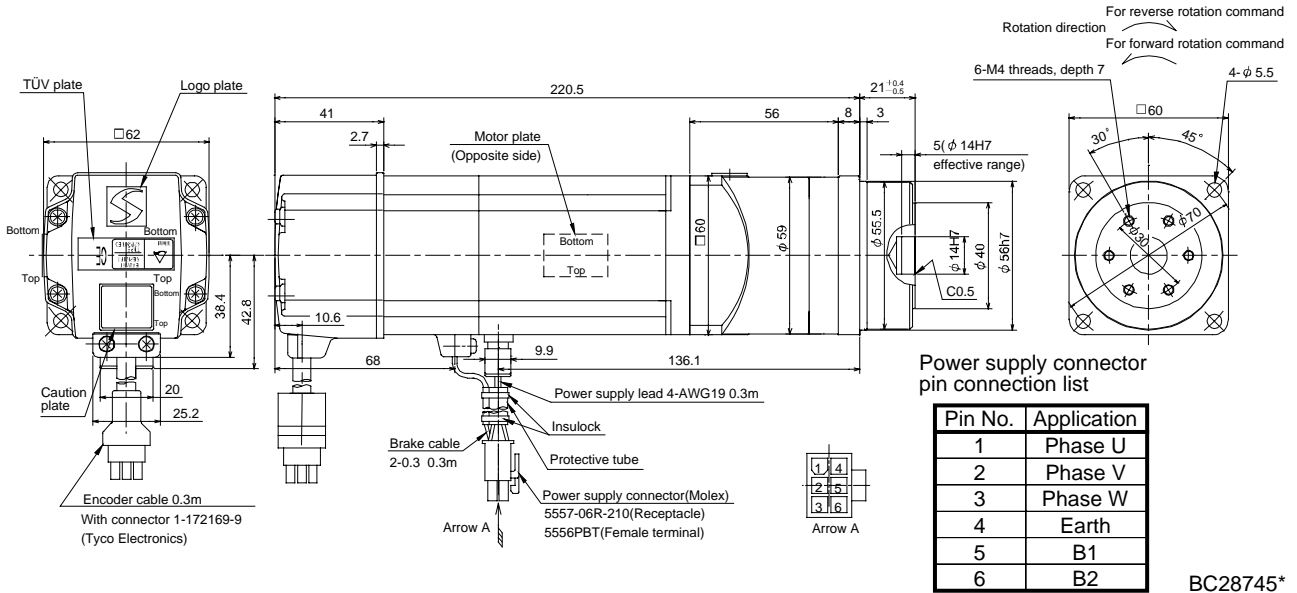
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1. HC-MFS SERIES/HC-KFS SERIES

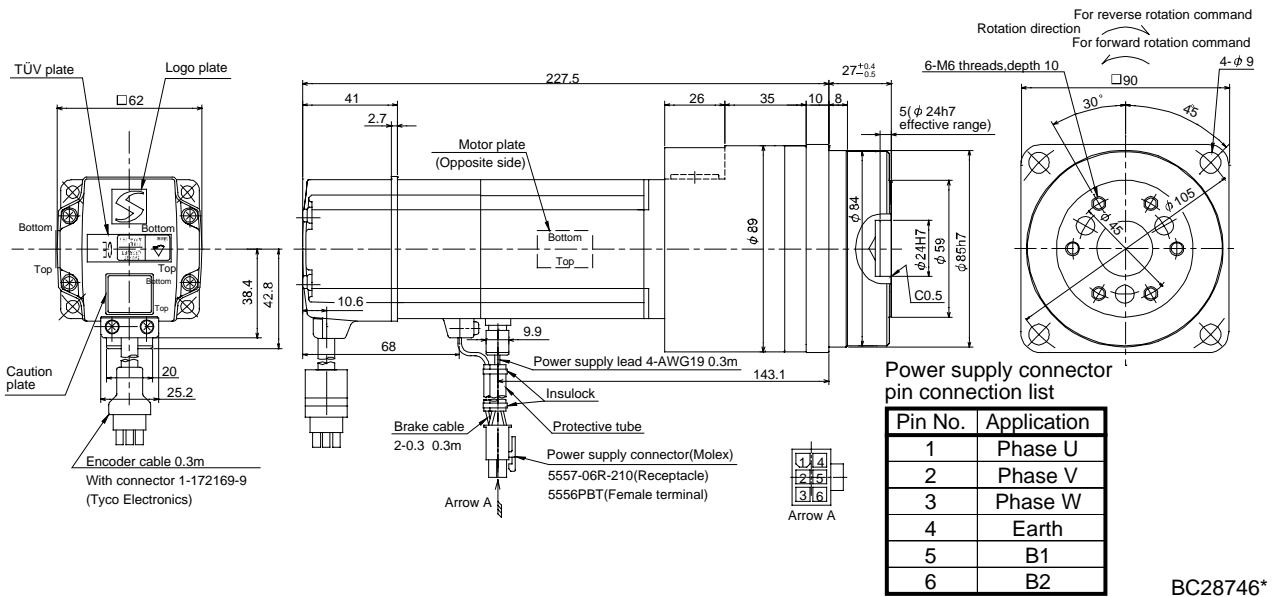
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS43BG5	0.4	HPG-14A-05-F0AZW-S	1/5	1.3	0.392	2.9
HC-KFS43BG5	0.4	HPG-14A-05-F0AZW-S	1/5	1.3	0.711	2.9

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS43BG5	0.4	HPG-20A-11-F0EKS-S	1/11	1.3	0.767	4.6
		HPG-20A-21-F0EKS-S	1/21		0.689	
HC-KFS43BG5	0.4	HPG-20A-11-F0EKS-S	1/11	1.3	1.09	4.6
		HPG-20A-21-F0EKS-S	1/21		1.01	

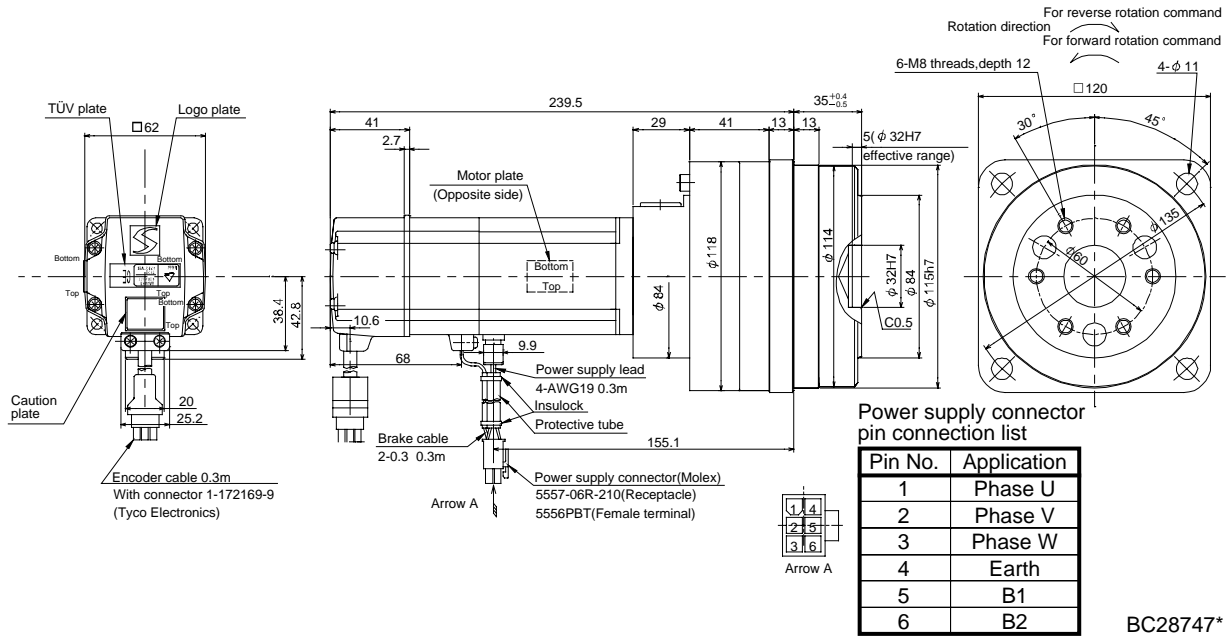
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1. HC-MFS SERIES/HC-KFS SERIES

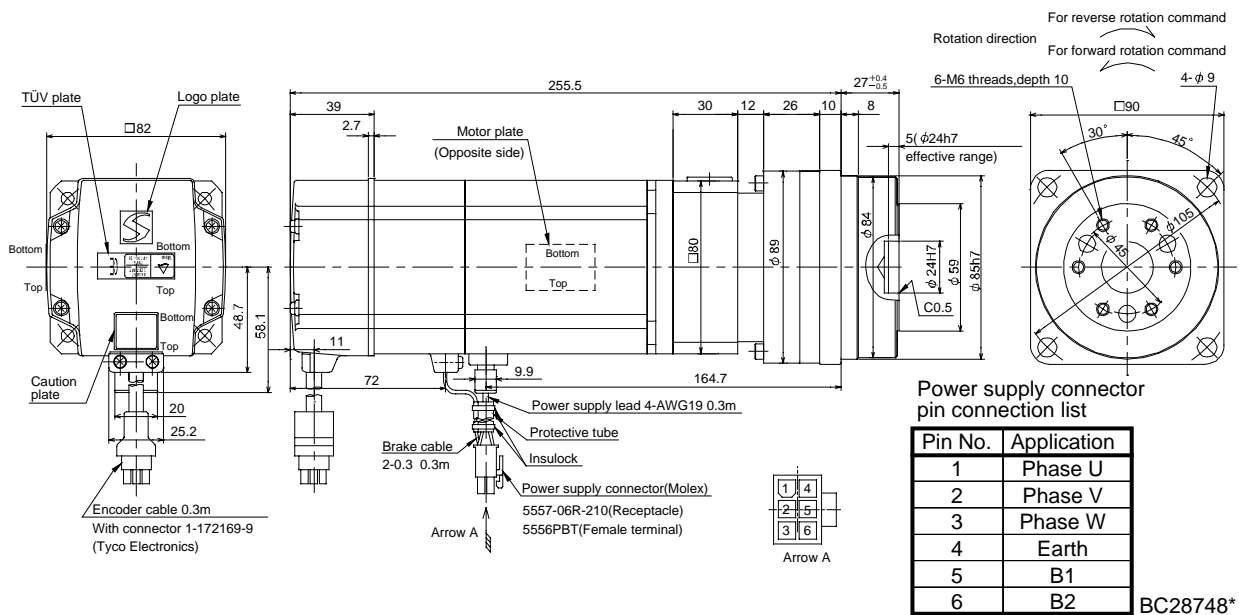
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J[×10 ⁻⁴ kg · m ²]	Mass [kg]
HC-MFS43BG5	0.4	HPG-32A-33-F0RLAS-S	1/33	1.3	0.741	6.7
		HPG-32A-45-F0RLAS-S	1/45		0.735	
HC-KFS43BG5	0.4	HPG-32A-33-F0RLAS-S	1/33	1.3	1.06	6.7
		HPG-32A-45-F0RLAS-S	1/45		1.05	

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J[×10 ⁻⁴ kg · m ²]	Mass [kg]
HC-MFS73BG5	0.75	HPG-20A-05-F0FEOS-S	1/5	2.4	1.37	6.0
		HPG-20A-11-F0FEPS-S	1/11		1.28	
HC-KFS73BG5	0.75	HPG-20A-05-F0FEOS-S	1/5	2.4	2.28	6.0
		HPG-20A-11-F0FEPS-S	1/11		2.19	

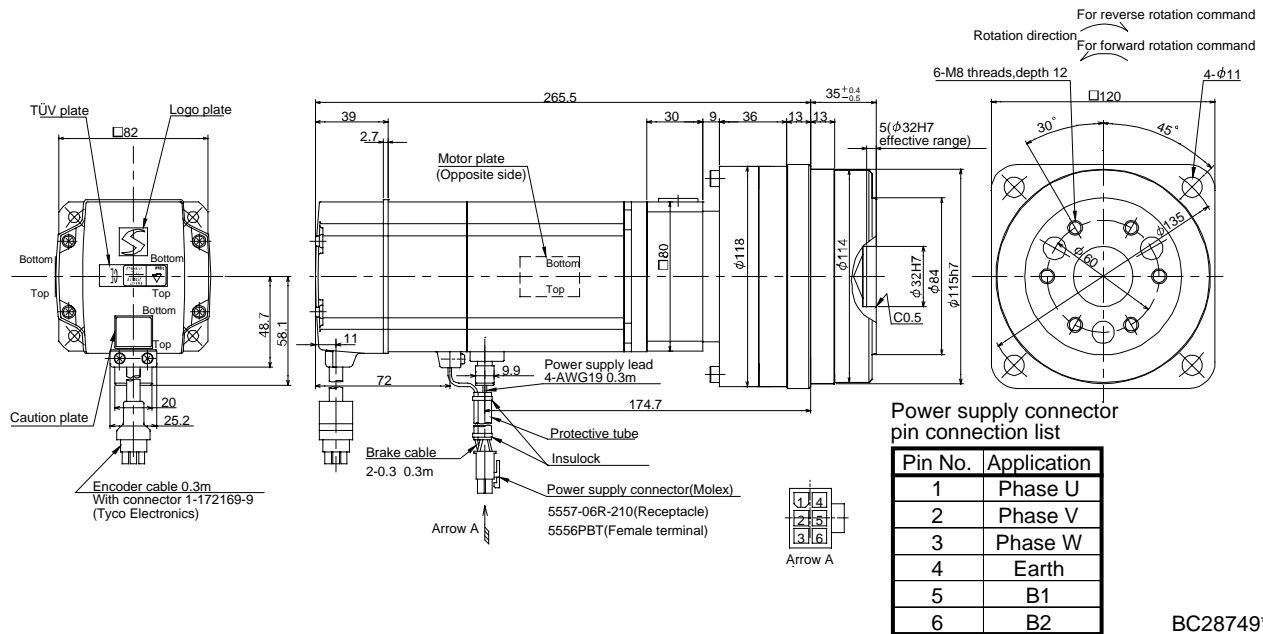
[Unit: mm]



1. HC-MFS SERIES/HC-KFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS73BG5	0.75	HPG-32A-21-F0SEIS-S	1/21	2.4	1.48	8.4
		HPG-32A-33-F0SEJS-S	1/33		1.26	
		HPG-32A-45-F0SEJS-S	1/45		1.25	
HC-KFS73BG5	0.75	HPG-32A-21-F0SEIS-S	1/21	2.4	2.39	8.4
		HPG-32A-33-F0SEJS-S	1/33		2.17	
		HPG-32A-45-F0SEJS-S	1/45		2.16	

[Unit: mm]



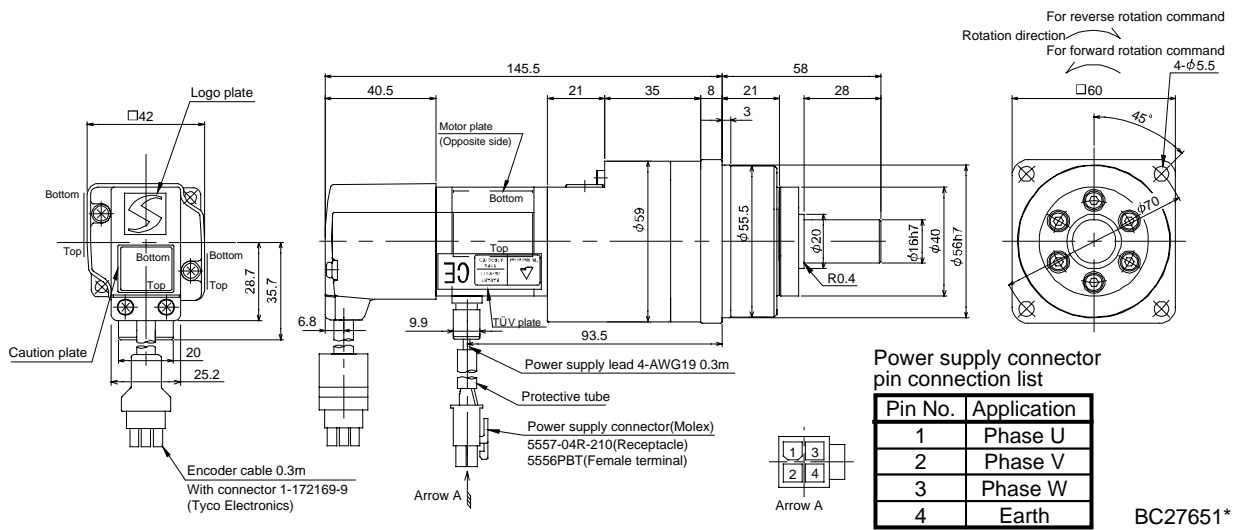
1. HC-MFS SERIES/HC-KFS SERIES

1.6.2 Flange-mounting shaft output type for precision application compliant (G7)

(1) Without electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS053G7	0.05	HPG-14A-05-J2CBJS-S	1/5	0.093	1.2
		HPG-14A-11-J2CBKS-S	1/11	0.080	
		HPG-14A-21-J2CBKS-S	1/21	0.070	
		HPG-14A-33-J2CBLS-S	1/33	0.064	
		HPG-14A-45-J2CBLS-S	1/45	0.064	
HC-KFS053G7	0.05	HPG-14A-05-J2CBJS-S	1/5	0.127	1.2
		HPG-14A-11-J2CBKS-S	1/11	0.114	
		HPG-14A-21-J2CBKS-S	1/21	0.104	
		HPG-14A-33-J2CBLS-S	1/33	0.098	
		HPG-14A-45-J2CBLS-S	1/45	0.098	

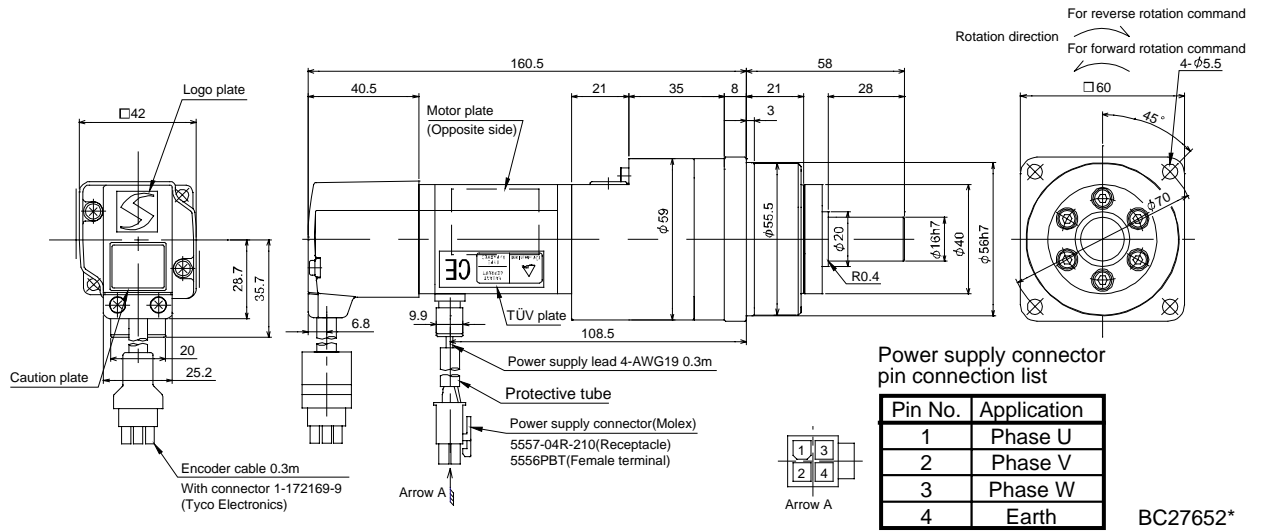
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1. HC-MFS SERIES/HC-KFS SERIES

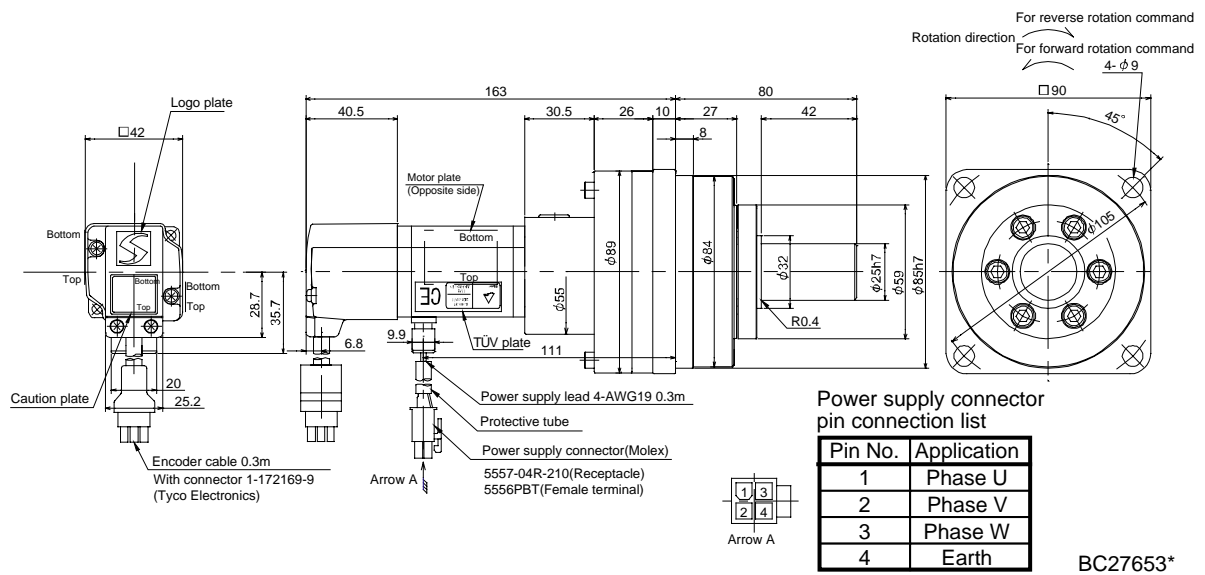
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS13G7	0.1	HPG-14A-05-J2CBJS-S	1/5	0.104	1.4
		HPG-14A-11-J2CBKS-S	1/11	0.091	
		HPG-14A-21-J2CBKS-S	1/21	0.081	
HC-KFS13G7	0.1	HPG-14A-05-J2CBJS-S	1/5	0.158	1.4
		HPG-14A-11-J2CBKS-S	1/11	0.145	
		HPG-14A-21-J2CBKS-S	1/21	0.135	

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS13G7	0.1	HPG-20A-33-J2JMLAS-S	1/33	0.093	2.9
		HPG-20A-45-J2JMLAS-S	1/45	0.091	
HC-KFS13G7	0.1	HPG-20A-33-J2JMLAS-S	1/33	0.147	2.9
		HPG-20A-45-J2JMLAS-S	1/45	0.145	

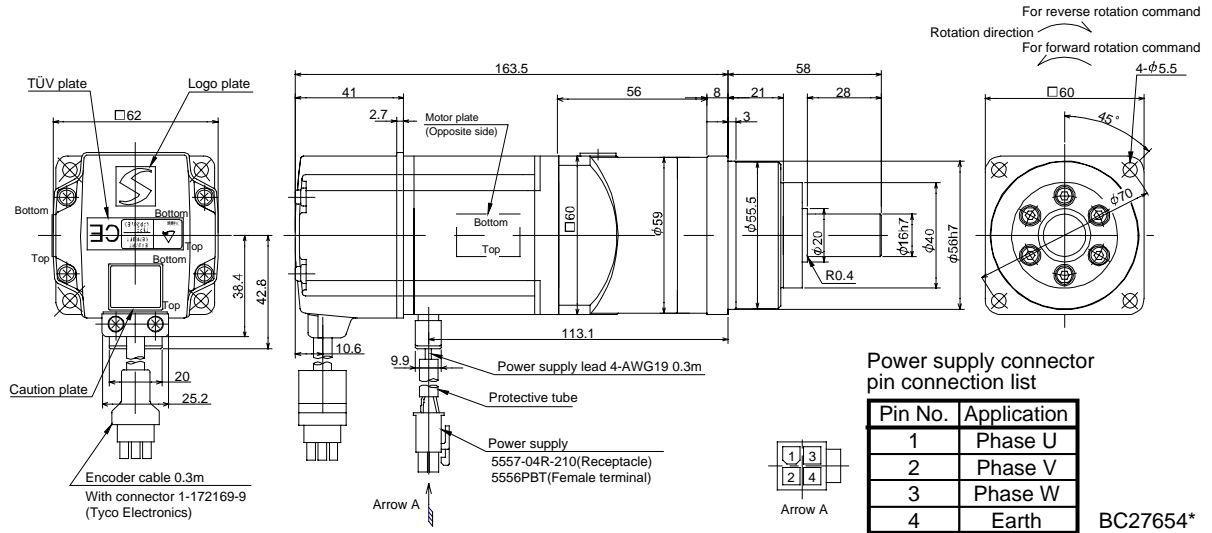
[Unit: mm]



1. HC-MFS SERIES/HC-KFS SERIES

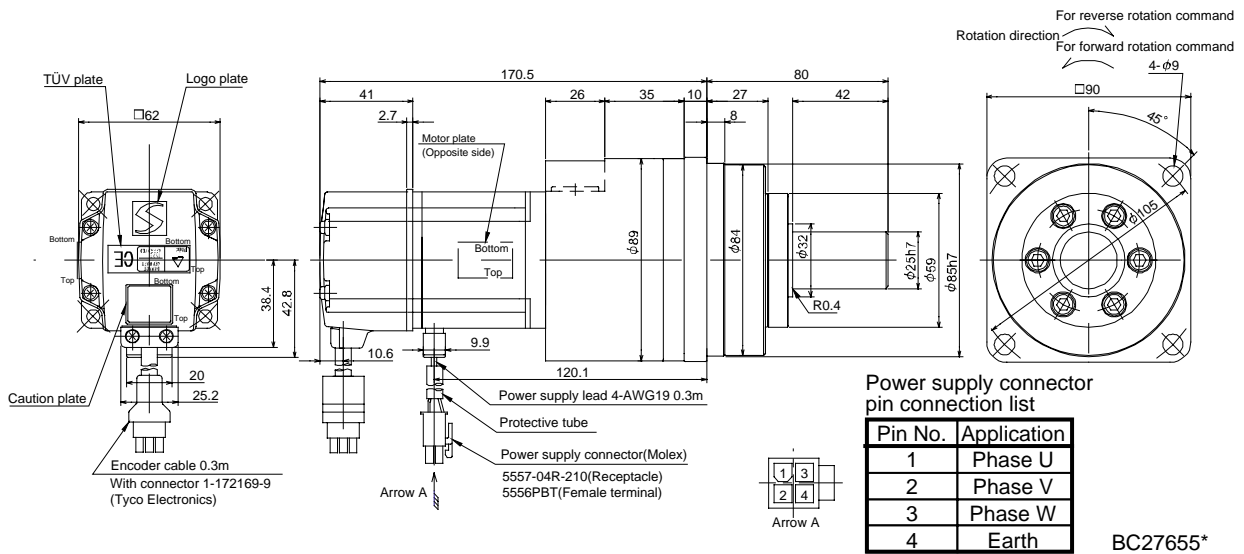
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS23G7	0.2	HPG-14A-05-J2AZW-S	1/5	0.295	1.9
		HPG-14A-11-J2AZX-S	1/11	0.291	2.0
HC-KFS23G7	0.2	HPG-14A-05-J2AZW-S	1/5	0.467	1.9
		HPG-14A-11-J2AZX-S	1/11	0.463	2.0

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS23G7	0.2	HPG-20A-21-J2EKS-S	1/21	0.588	3.9
		HPG-20A-33-J2ELS-S	1/33	0.541	
		HPG-20A-45-J2ELS-S	1/45	0.539	
HC-KFS23G7	0.2	HPG-20A-21-J2EKS-S	1/21	0.760	3.9
		HPG-20A-33-J2ELS-S	1/33	0.713	
		HPG-20A-45-J2ELS-S	1/45	0.711	

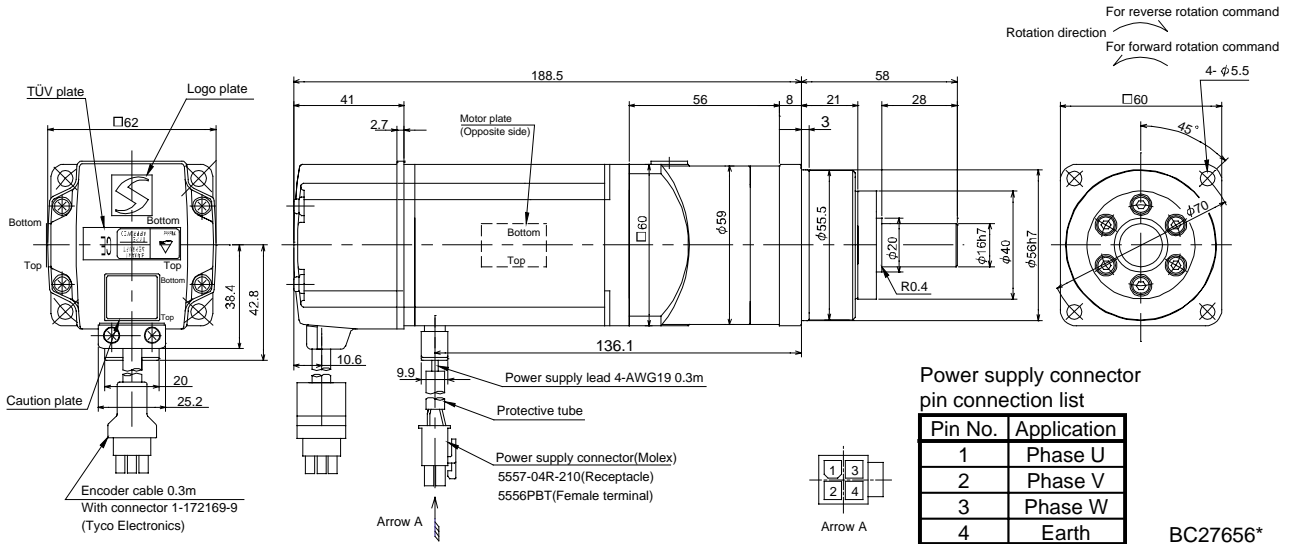
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1. HC-MFS SERIES/HC-KFS SERIES

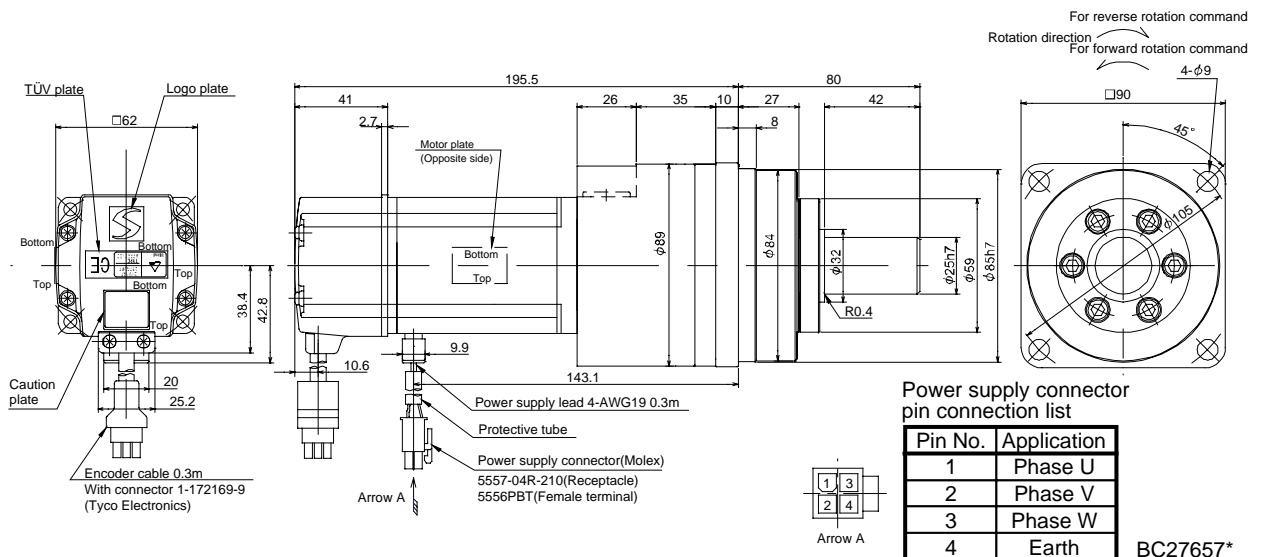
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS43G7	0.4	HPG-14A-05-J2AZW-S	1/5	0.350	2.4
HC-KFS43G7	0.4	HPG-14A-05-J2AZW-S	1/5	0.667	2.4

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS43G7	0.4	HPG-20A-11-J2EKS-S	1/11	0.727	4.4
		HPG-20A-21-J2EKS-S	1/21	0.643	
HC-KFS43G7	0.4	HPG-20A-11-J2EKS-S	1/11	1.04	4.4
		HPG-20A-21-J2EKS-S	1/21	0.960	

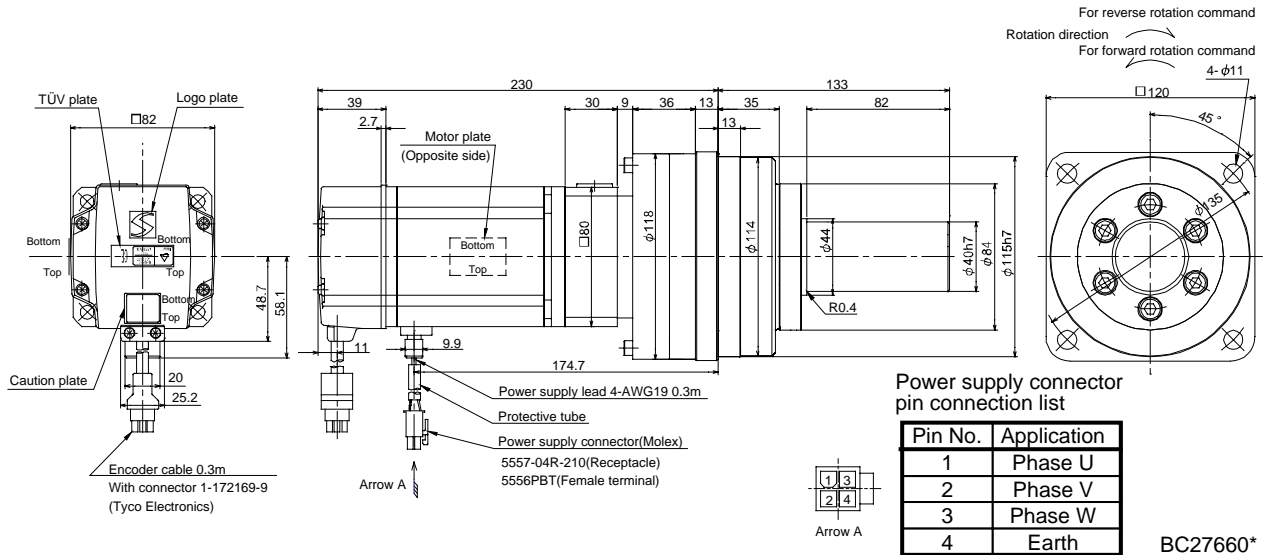
[Unit: mm]



1. HC-MFS SERIES/HC-KFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-MFS73G7	0.75	HPG-32A-21-F0SEIS-S	1/21	1.37	8.8
		HPG-32A-33-F0SEJS-S	1/33	1.14	
		HPG-32A-45-F0SEJS-S	1/45	1.13	
HC-KFS73G7	0.75	HPG-32A-21-F0SEIS-S	1/21	2.28	8.8
		HPG-32A-33-F0SEJS-S	1/33	2.05	
		HPG-32A-45-F0SEJS-S	1/45	2.04	

[Unit: mm]

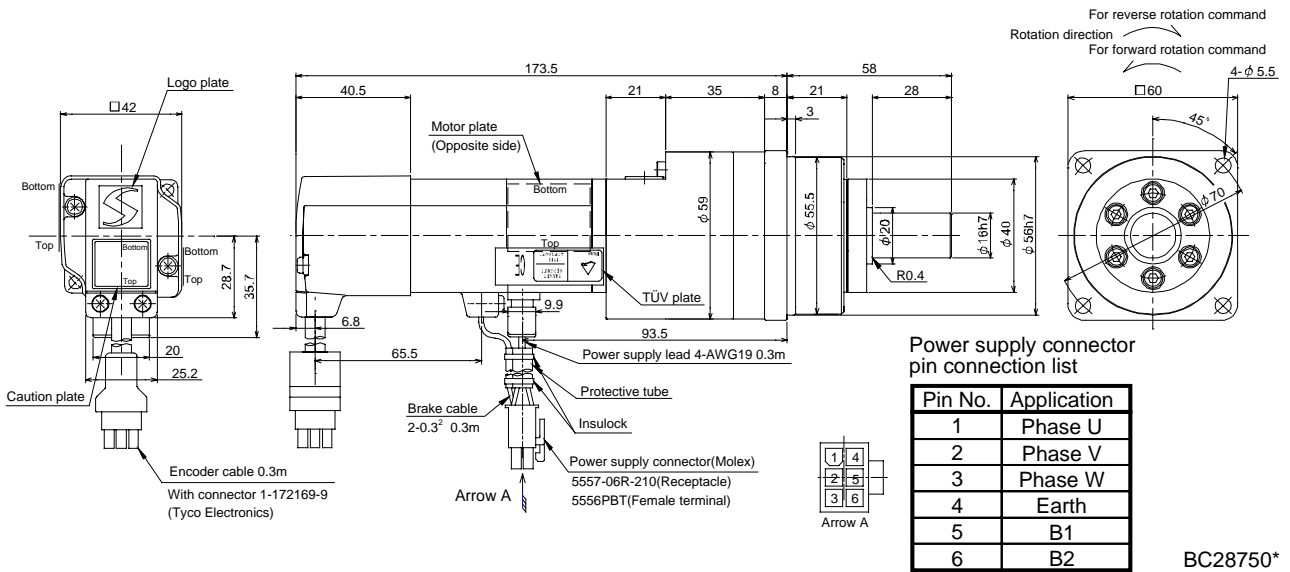


1. HC-MFS SERIES/HC-KFS SERIES

(2) With electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS053BG7	0.05	HPG-14A-05-J2CBJS-S	1/5	0.32	0.096	1.6
		HPG-14A-11-J2CBKS-S	1/11		0.083	
		HPG-14A-21-J2CBKS-S	1/21		0.073	
		HPG-14A-33-J2CBLS-S	1/33		0.067	
		HPG-14A-45-J2CBLS-S	1/45		0.067	
HC-KFS053BG7	0.05	HPG-14A-05-J2CBJS-S	1/5	0.32	0.130	1.6
		HPG-14A-11-J2CBKS-S	1/11		0.117	
		HPG-14A-21-J2CBKS-S	1/21		0.107	
		HPG-14A-33-J2CBLS-S	1/33		0.101	
		HPG-14A-45-J2CBLS-S	1/45		0.101	

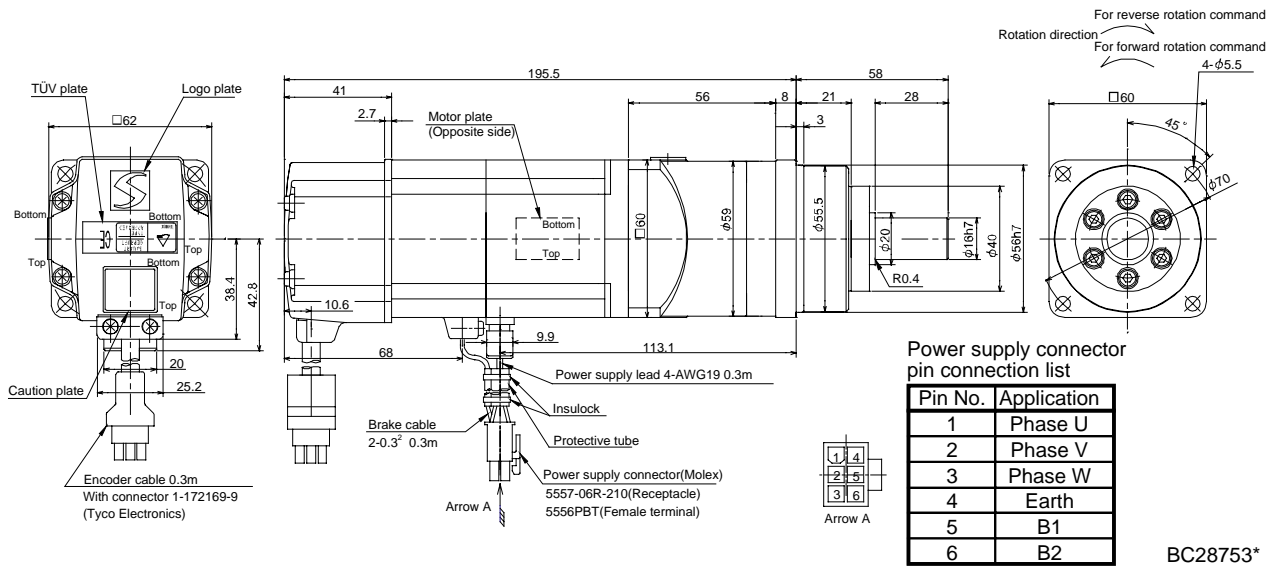
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1. HC-MFS SERIES/HC-KFS SERIES

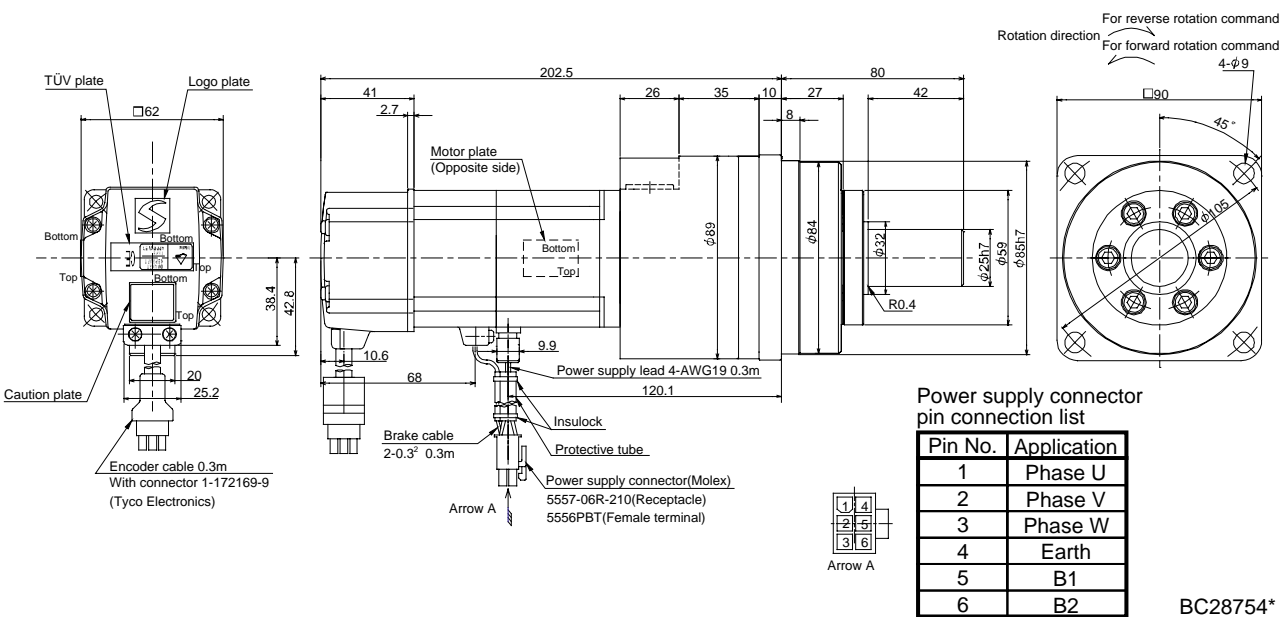
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS23BG7	0.2	HPG-14A-05-J2AZW-S	1/5	1.3	0.343	2.5
		HPG-14A-11-J2AZX-S	1/11		0.339	
HC-KFS23BG7	0.2	HPG-14A-05-J2AZW-S	1/5	1.3	0.517	2.5
		HPG-14A-11-J2AZX-S	1/11		0.513	

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS23BG7	0.2	HPG-20A-21-J2EKS-S	1/21	1.3	0.636	4.5
		HPG-20A-33-J2ELS-S	1/33		0.589	
		HPG-20A-45-J2ELS-S	1/45		0.587	
HC-KFS23BG7	0.2	HPG-20A-21-J2EKS-S	1/21	1.3	0.810	4.5
		HPG-20A-33-J2ELS-S	1/33		0.763	
		HPG-20A-45-J2ELS-S	1/45		0.761	

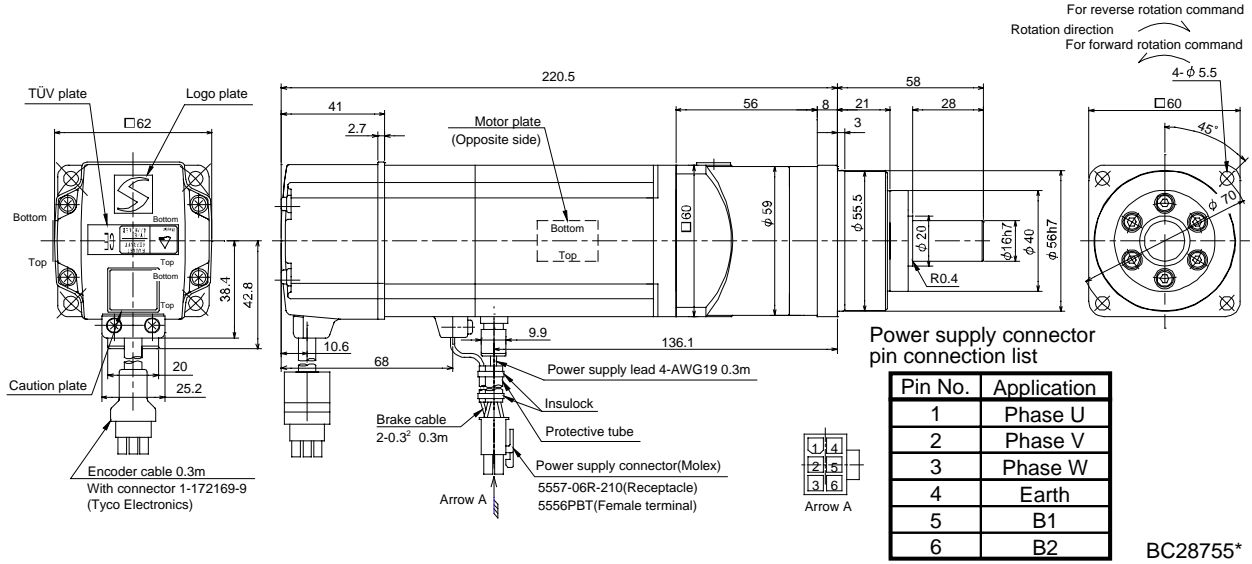
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1. HC-MFS SERIES/HC-KFS SERIES

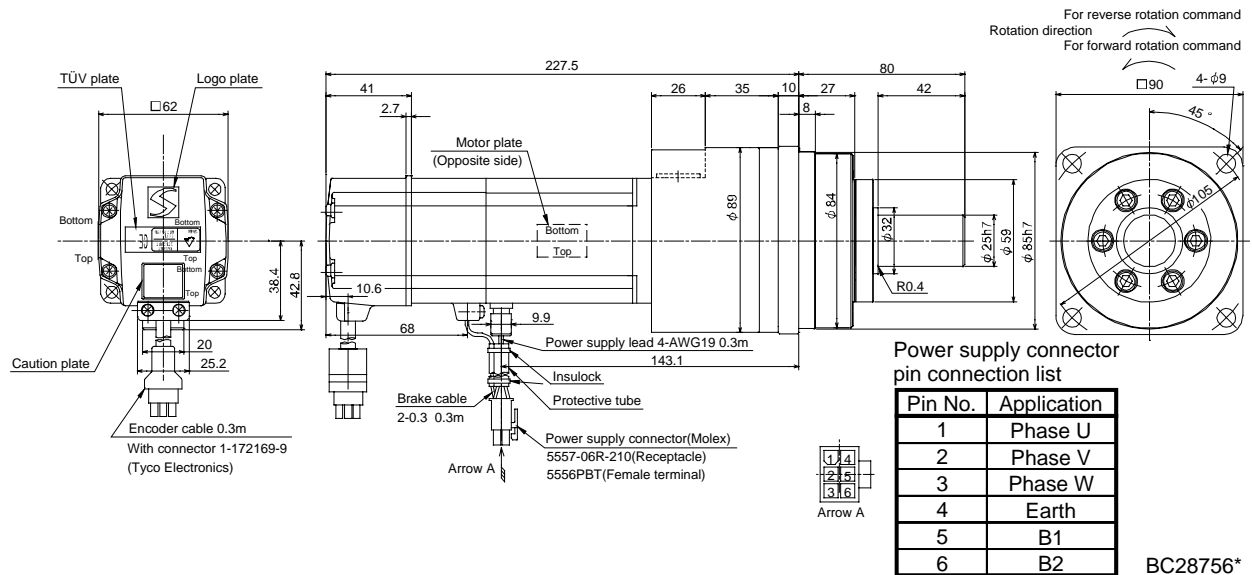
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J[×10 ⁻⁴ kg · m ²]	Mass [kg]
HC-MFS43BG7	0.4	HPG-14A-05-J2AZW-S	1/5	1.3	0.398	3.0
HC-KFS43BG7	0.4	HPG-14A-05-J2AZW-S	1/5	1.3	0.717	3.0

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J[×10 ⁻⁴ kg · m ²]	Mass [kg]
HC-MFS43BG7	0.4	HPG-20A-11-J2EKS-S	1/11	1.3	0.767	4.6
		HPG-20A-21-J2EKS-S	1/21		0.689	
HC-KFS43BG7	0.4	HPG-20A-11-J2EKS-S	1/11	1.3	1.09	4.6
		HPG-20A-21-J2EKS-S	1/21		1.01	

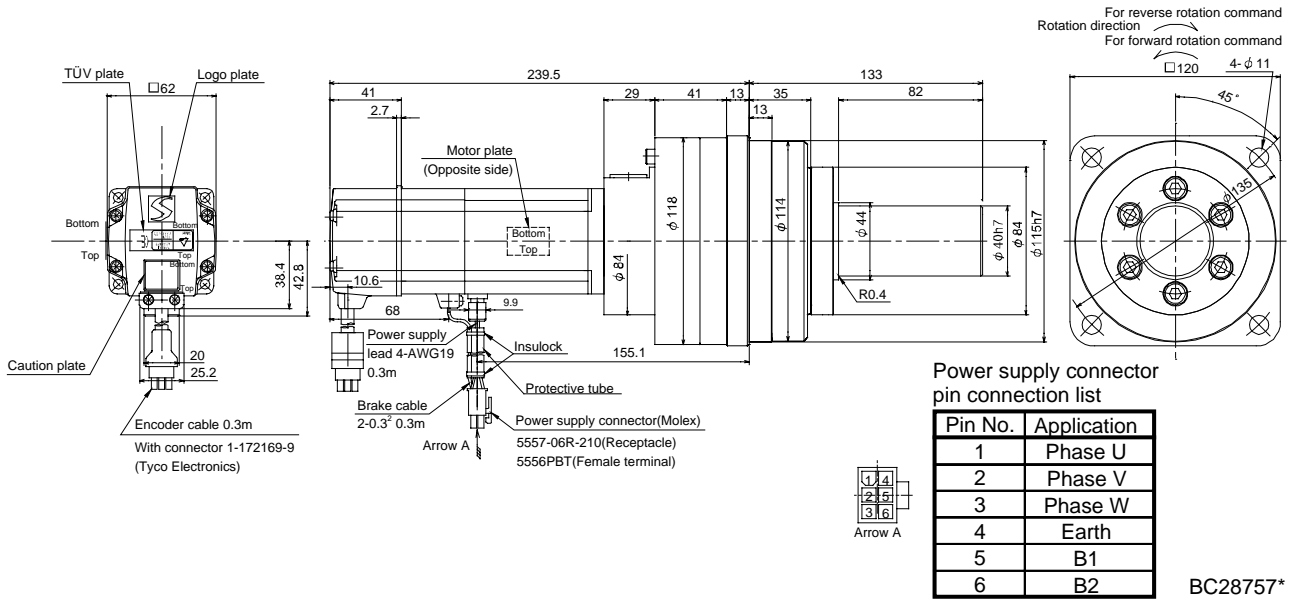
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1. HC-MFS SERIES/HC-KFS SERIES

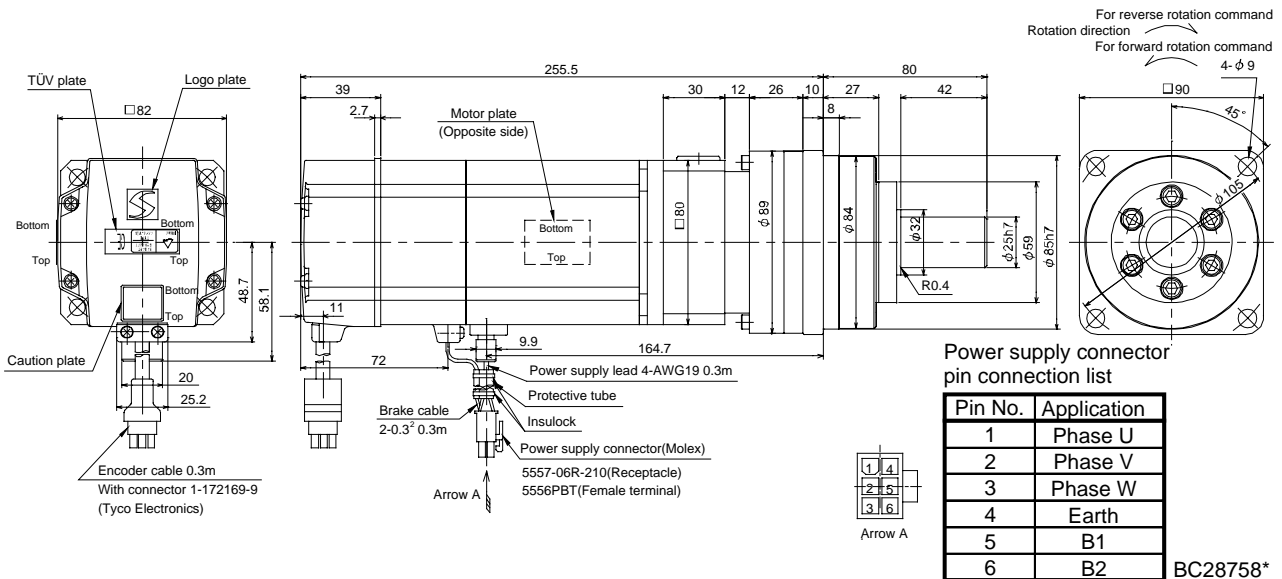
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS43BG7	0.4	HPG-32A-33-J2RLAS-S	1/33	1.3	0.747	8.1
		HPG-32A-45-J2RLAS-S	1/45		0.738	
HC-KFS43BG7	0.4	HPG-32A-33-J2RLAS-S	1/33	1.3	1.07	8.1
		HPG-32A-45-J2RLAS-S	1/45		1.06	

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS73BG7	0.75	HPG-20A-05-J2FEOS-S	1/5	2.4	1.41	6.4
		HPG-20A-11-J2FEPS-S	1/11		1.29	
HC-KFS73BG7	0.75	HPG-20A-05-J2FEOS-S	1/5	2.4	2.32	6.4
		HPG-20A-11-J2FEPS-S	1/11		2.20	

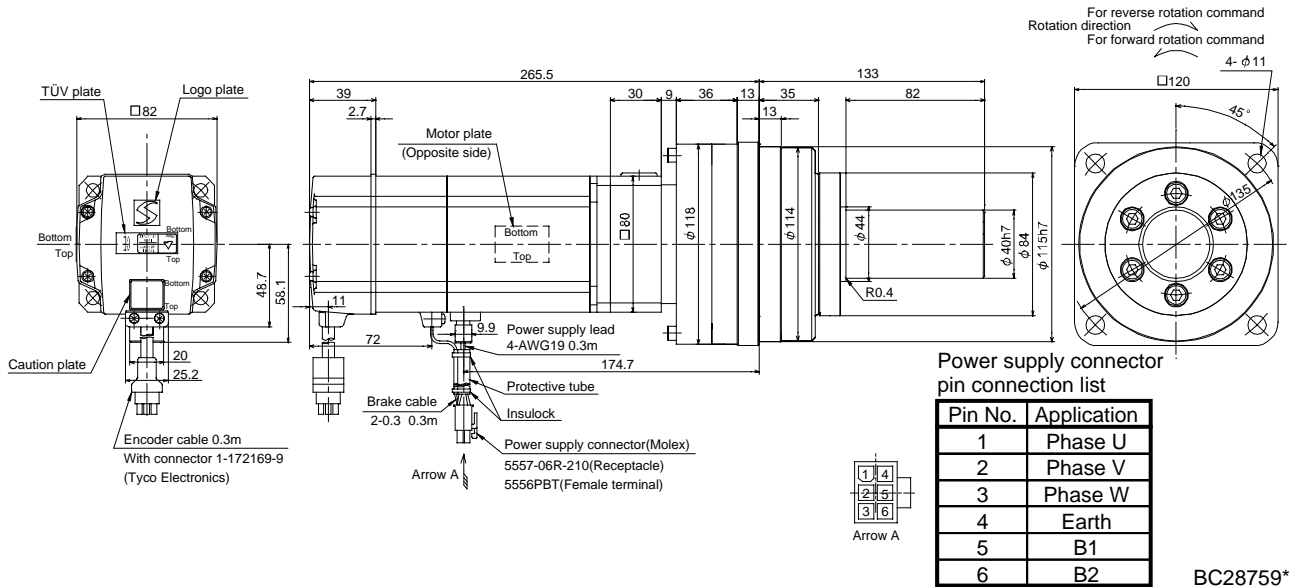
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1. HC-MFS SERIES/HC-KFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-MFS73BG7	0.75	HPG-32A-21-J2SEIS-S	1/21	2.4	1.49	9.8
		HPG-32A-33-J2SEJS-S	1/33		1.26	
		HPG-32A-45-J2SEJS-S	1/45		1.26	
HC-KFS73BG7	0.75	HPG-32A-21-J2SEIS-S	1/21	2.4	2.40	9.8
		HPG-32A-33-J2SEJS-S	1/33		2.17	
		HPG-32A-45-J2SEJS-S	1/45		2.17	

[Unit: mm]



1. HC-MFS SERIES/HC-KFS SERIES

1.7 Outline dimension drawings (in inches)

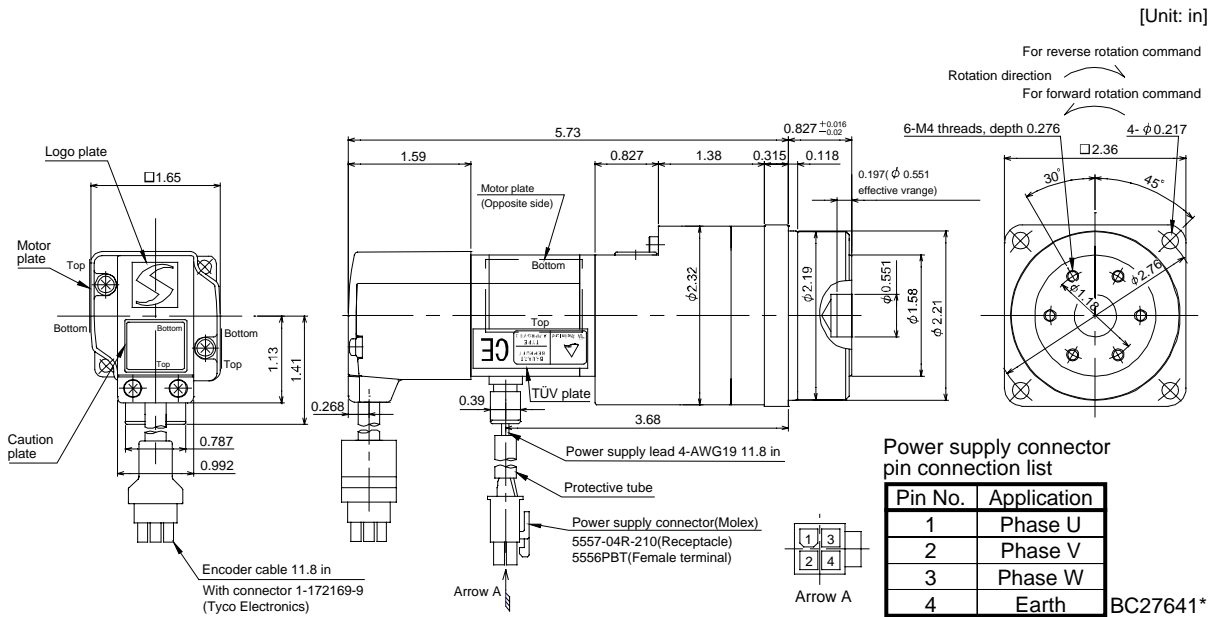
POINT
The values in yards/pounds are reference values.

The outer frame of the reduction gear is a material surface such as casting. Its actual dimensions may be 0.039 to 0.118 in larger than the drawing dimensions. Design the machine side with allowances.
 Inertia moment on the table is the value calculated by converting the total value of inertia moment for servo motor, electromagnetic brake and decelerator with servo motor shaft.

1.7.1 Flange-mounting flange output type for precision application compliant (G5)

(1) Without electromagnetic brake

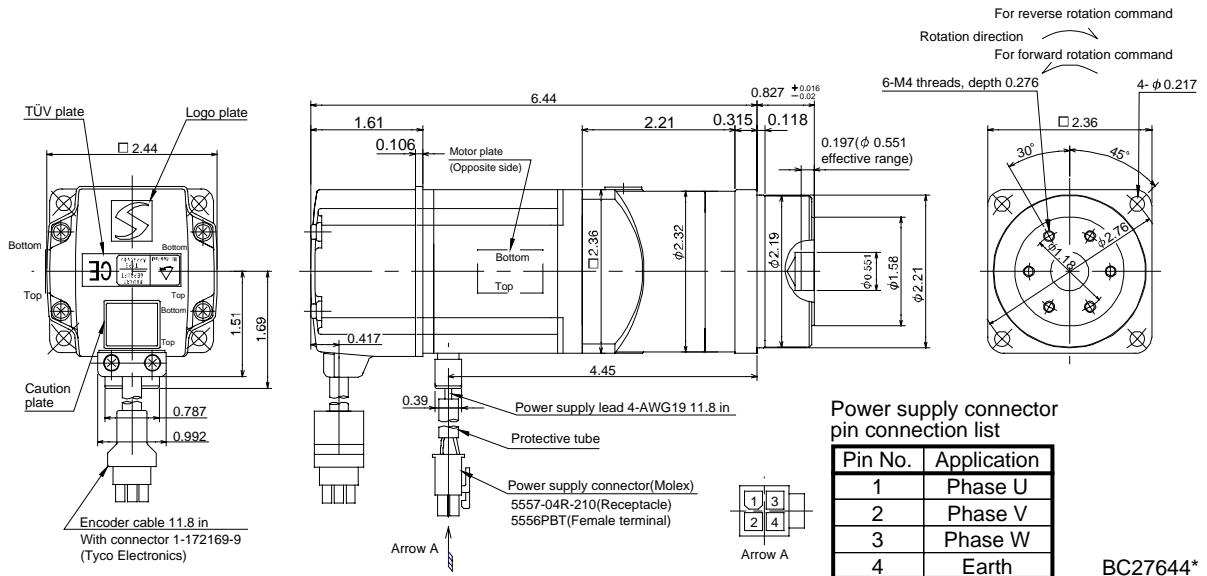
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS053G5	0.05	HPG-14A-05-F0CBJS-S	1/5	0.476	2.65
		HPG-14A-11-F0CBKS-S	1/11	0.432	
		HPG-14A-21-F0CBKS-S	1/21	0.383	
		HPG-14A-33-F0CBLS-S	1/33	0.35	
		HPG-14A-45-F0CBLS-S	1/45	0.35	
HC-KFS053G5	0.05	HPG-14A-05-F0CBJS-S	1/5	0.662	2.65
		HPG-14A-11-F0CBKS-S	1/11	0.618	
		HPG-14A-21-F0CBKS-S	1/21	0.569	
		HPG-14A-33-F0CBLS-S	1/33	0.536	
		HPG-14A-45-F0CBLS-S	1/45	0.536	



1. HC-MFS SERIES/HC-KFS SERIES

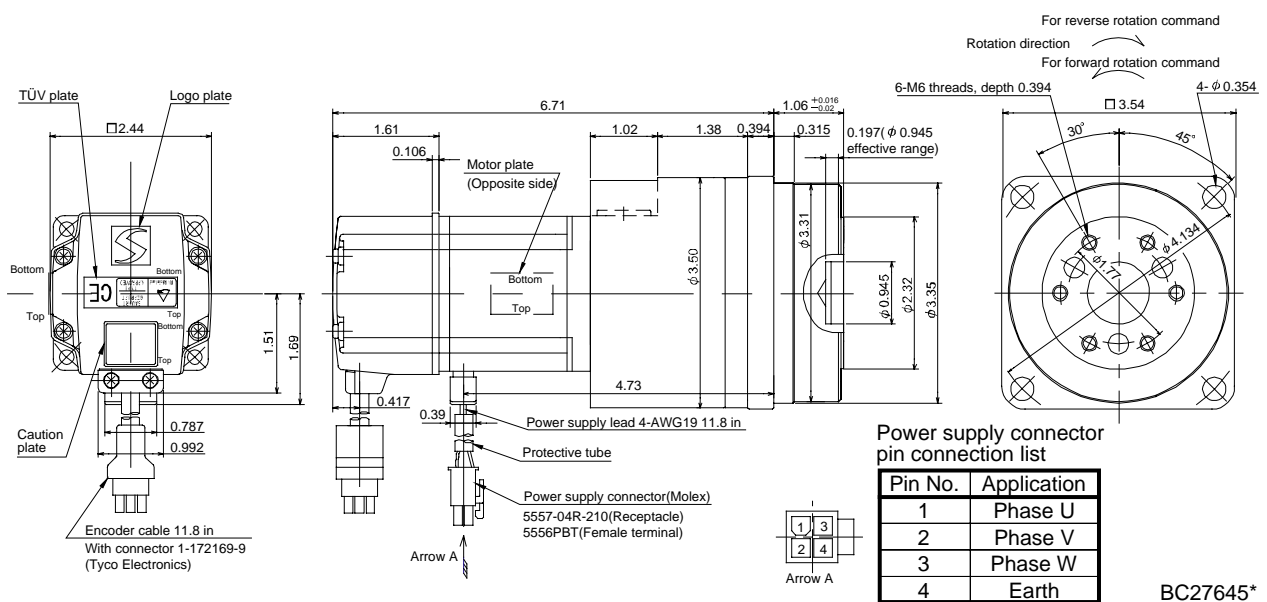
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS23G5	0.2	HPG-14A-05-F0AZW-S	1/5	1.58	3.97
		HPG-14A-11-F0AZX-S	1/11	1.59	4.19
HC-KFS23G5	0.2	HPG-14A-05-F0AZW-S	1/5	2.52	3.97
		HPG-14A-11-F0AZX-S	1/11	2.53	4.19

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS23G5	0.2	HPG-20A-21-F0EKS-S	1/21	3.20	7.72
		HPG-20A-33-F0ELS-S	1/33	2.95	
		HPG-20A-45-F0ELS-S	1/45	2.95	
HC-KFS23G5	0.2	HPG-20A-21-F0EKS-S	1/21	4.14	7.72
		HPG-20A-33-F0ELS-S	1/33	3.89	
		HPG-20A-45-F0ELS-S	1/45	3.89	

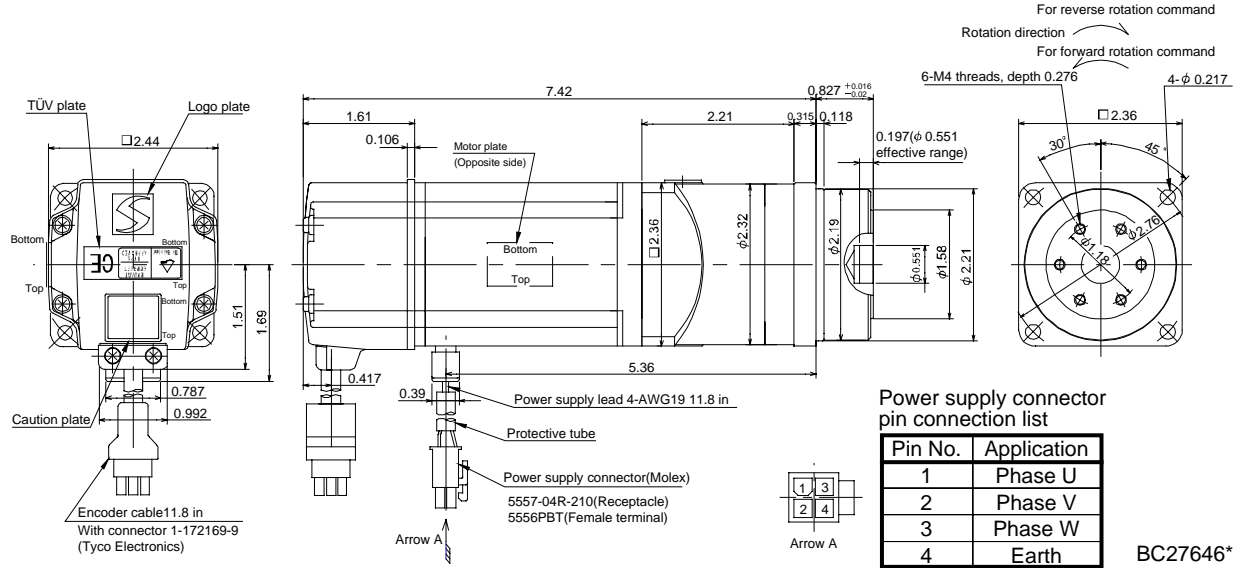
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1. HC-MFS SERIES/HC-KFS SERIES

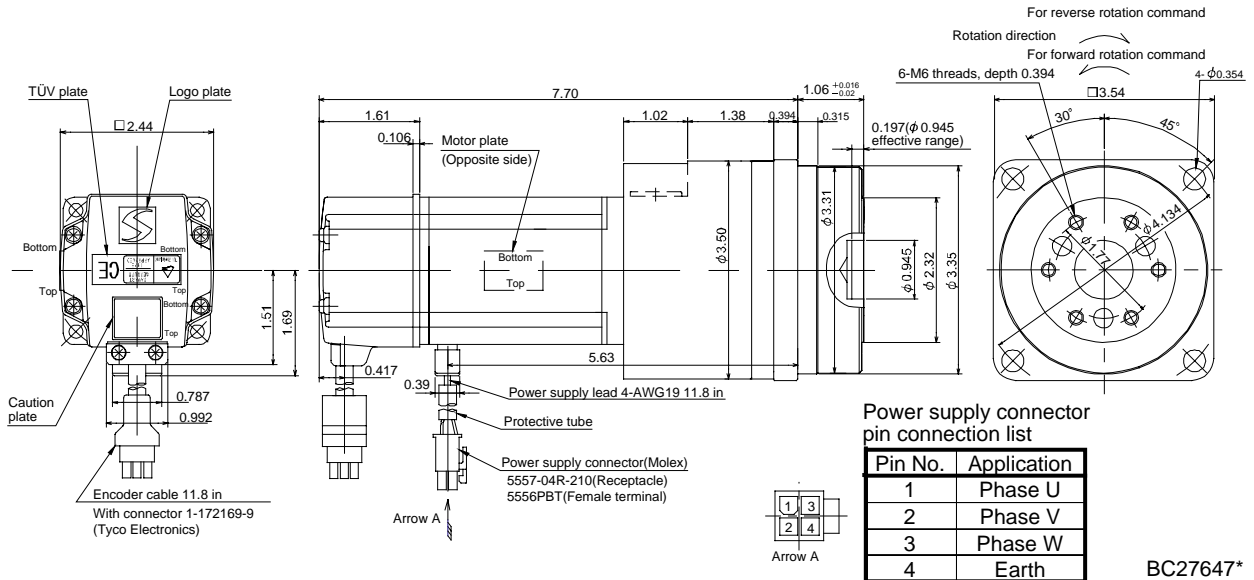
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS43G5	0.4	HPG-14A-05-F0AZW-S	1/5	1.88	5.07
HC-KFS43G5	0.4	HPG-14A-05-F0AZW-S	1/5	3.61	5.07

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS43G5	0.4	HPG-20A-11-F0EKS-S	1/11	3.93	8.82
		HPG-20A-21-F0EKS-S	1/21	3.51	
HC-KFS43G5	0.4	HPG-20A-11-F0EKS-S	1/11	5.69	8.82
		HPG-20A-21-F0EKS-S	1/21	5.25	

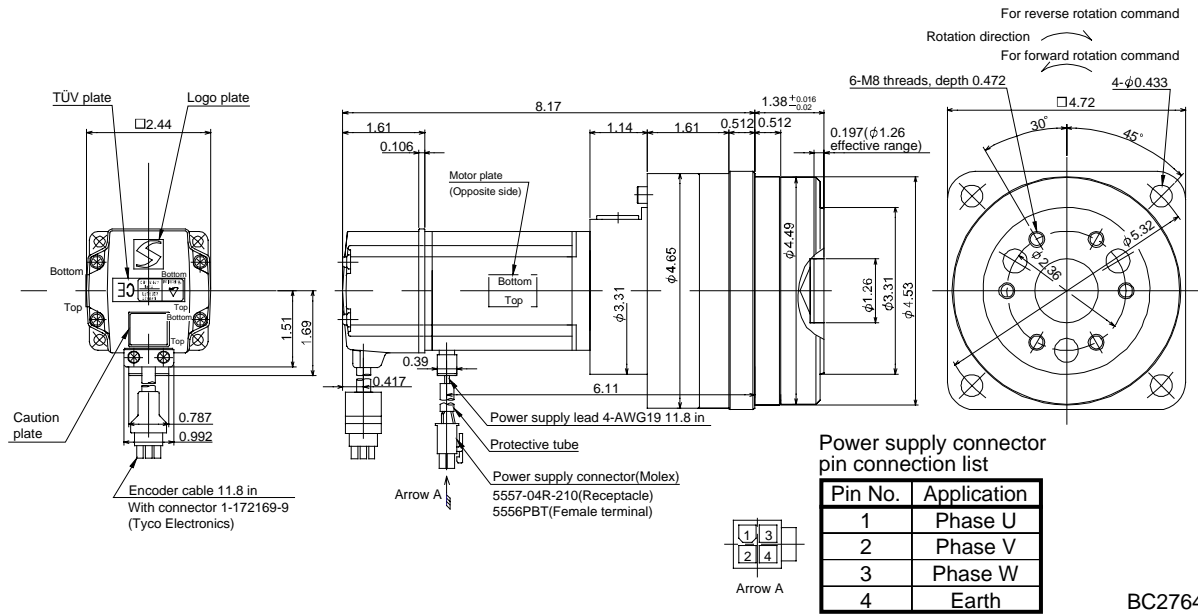
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1. HC-MFS SERIES/HC-KFS SERIES

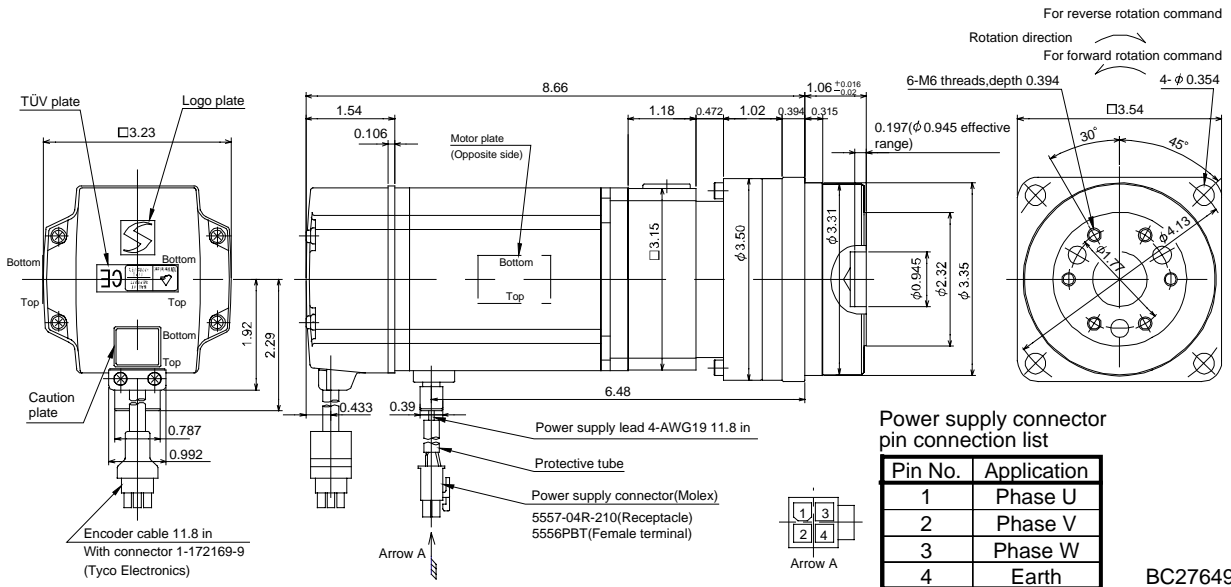
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS43G5	0.4	HPG-32A-33-F0RLAS-S	1/33	3.80	13.4
		HPG-32A-45-F0RLAS-S	1/45	3.76	
HC-KFS43G5	0.4	HPG-32A-33-F0RLAS-S	1/33	5.52	13.4
		HPG-32A-45-F0RLAS-S	1/45	5.47	

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS73G5	0.75	HPG-20A-05-F0FEOS-S	1/5	6.83	11.0
		HPG-20A-11-F0FEPS-S	1/11	6.34	11.7
HC-KFS73G5	0.75	HPG-20A-05-F0FEOS-S	1/5	11.8	11.0
		HPG-20A-11-F0FEPS-S	1/11	11.3	11.7

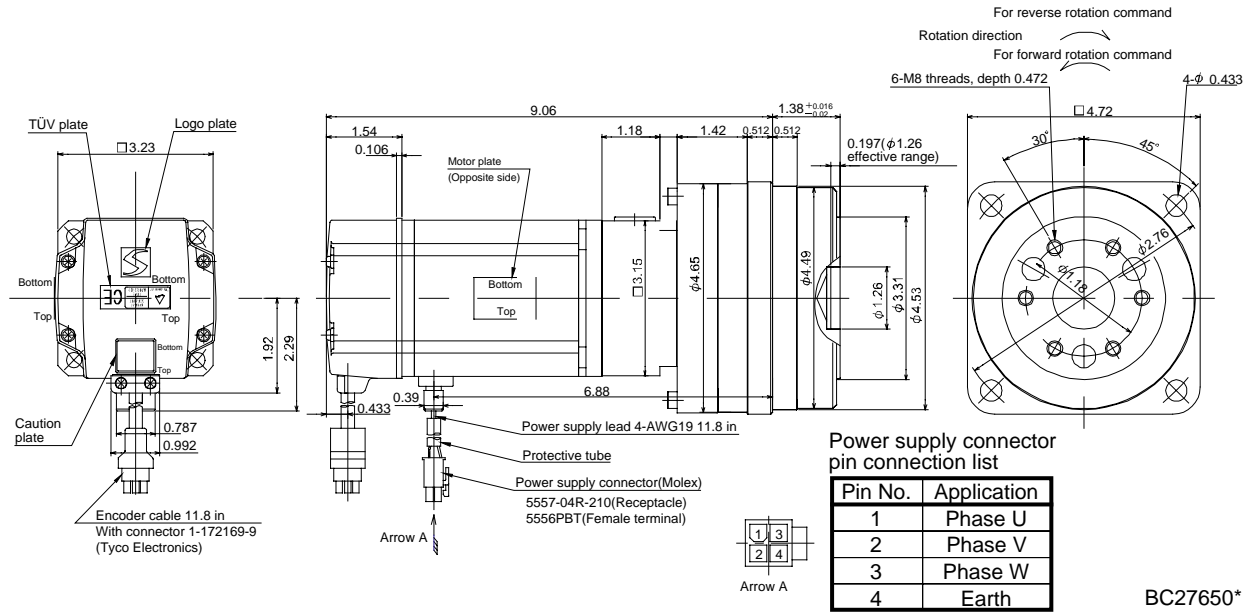
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1. HC-MFS SERIES/HC-KFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK^2 [oz · in ²]	Mass [lb]
HC-MFS73G5	0.75	HPG-32A-21-F0SEIS-S	1/21	7.38	16.3
		HPG-32A-33-F0SEJS-S	1/33	6.18	
		HPG-32A-45-F0SEJS-S	1/45	6.18	
HC-KFS73G5	0.75	HPG-32A-21-F0SEIS-S	1/21	12.4	16.3
		HPG-32A-33-F0SEJS-S	1/33	11.2	
		HPG-32A-45-F0SEJS-S	1/45	11.2	

[Unit: in]



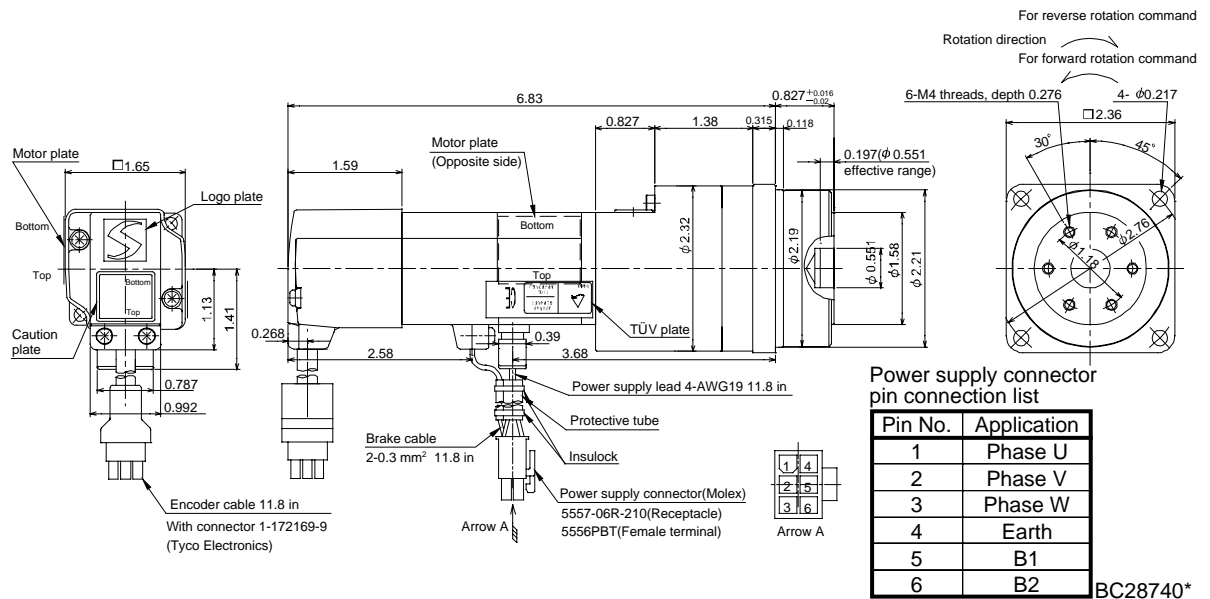
BC27650*

1. HC-MFS SERIES/HC-KFS SERIES

(2) With electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK^2 [oz · in ²]	Mass [lb]
HC-MFS053BG5	0.05	HPG-14A-05-F0CBJS-S	1/5	2.83	0.492	3.31
		HPG-14A-11-F0CBKS-S	1/11		0.448	
		HPG-14A-21-F0CBKS-S	1/21		0.399	
		HPG-14A-33-F0CBLS-S	1/33		0.366	
		HPG-14A-45-F0CBLS-S	1/45		0.366	
HC-KFS053BG5	0.05	HPG-14A-05-F0CBJS-S	1/5	2.83	0.678	3.31
		HPG-14A-11-F0CBKS-S	1/11		0.634	
		HPG-14A-21-F0CBKS-S	1/21		0.585	
		HPG-14A-33-F0CBLS-S	1/33		0.552	
		HPG-14A-45-F0CBLS-S	1/45		0.552	

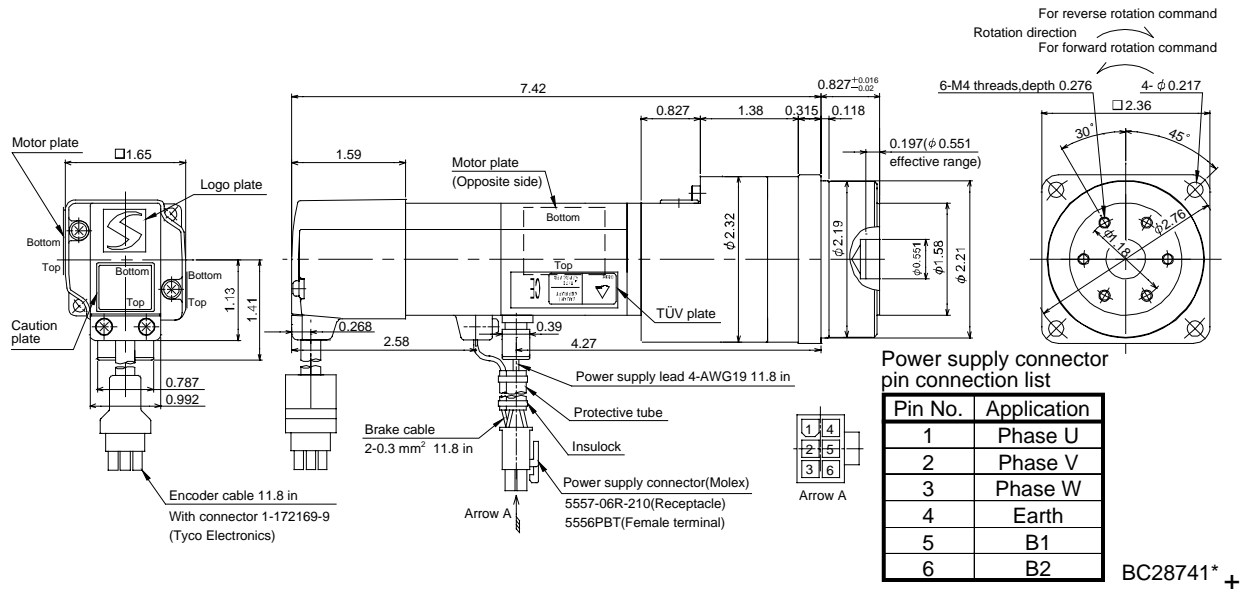
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1. HC-MFS SERIES/HC-KFS SERIES

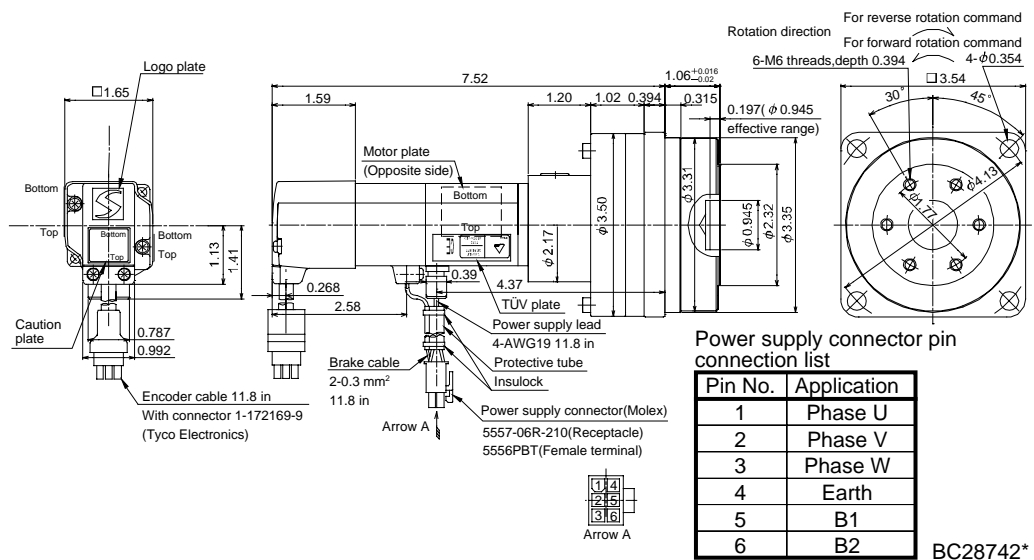
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS13BG5	0.1	HPG-14A-05-F0CBJS-S	1/5	2.83	0.547	3.53
		HPG-14A-11-F0CBKS-S	1/11		0.503	
		HPG-14A-21-F0CBKS-S	1/21		0.454	
HC-KFS13BG5	0.1	HPG-14A-05-F0CBJS-S	1/5	2.83	0.847	3.53
		HPG-14A-11-F0CBKS-S	1/11		0.804	
		HPG-14A-21-F0CBKS-S	1/21		0.755	

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS13BG5	1.0	HPG-20A-33-F0JMLAS-S	1/33	2.83	0.514	6.39
		HPG-20A-45-F0JMLAS-S	1/45		0.508	
HC-KFS13BG5	1.0	HPG-20A-33-F0JMLAS-S	1/33	2.83	0.815	6.39
		HPG-20A-45-F0JMLAS-S	1/45		0.809	

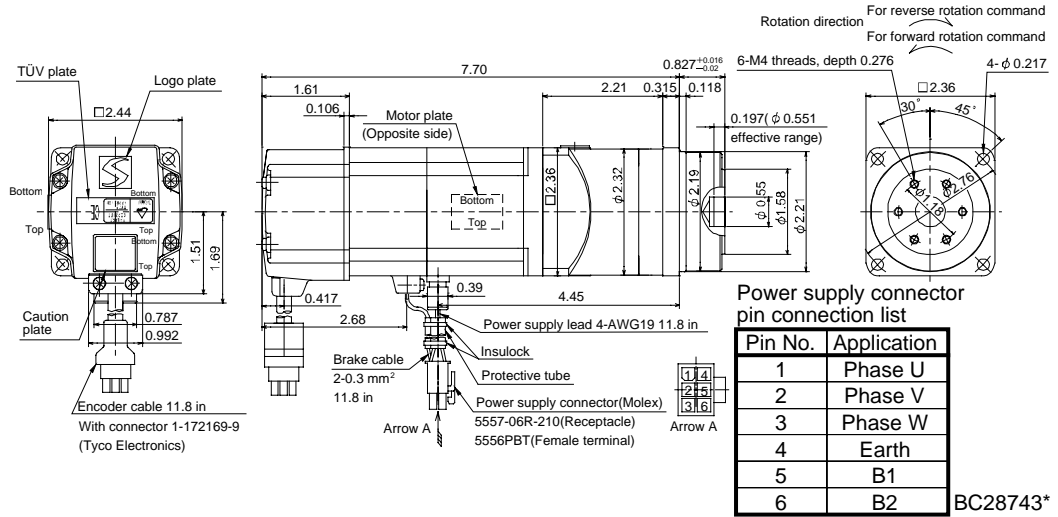
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1. HC-MFS SERIES/HC-KFS SERIES

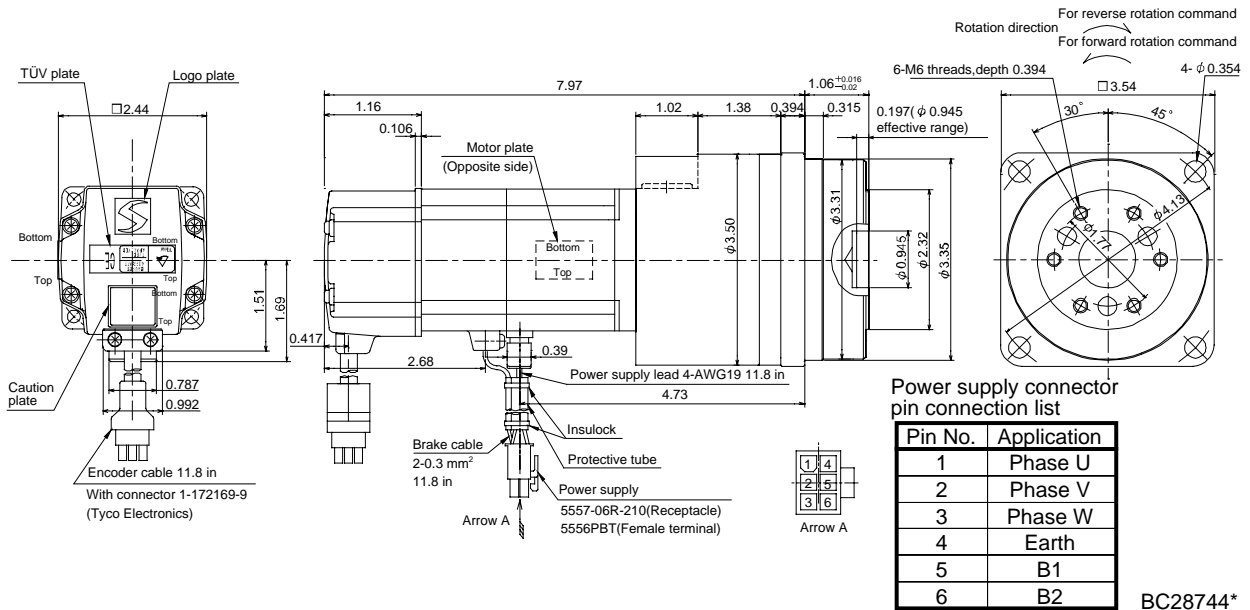
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS23BG5	0.2	HPG-14A-05-F0AZW-S	1/5	184	1.84	5.29
		HPG-14A-11-F0AZX-S	1/11		1.85	
HC-KFS23BG5	0.2	HPG-14A-05-F0AZW-S	1/5	184	2.79	5.29
		HPG-14A-11-F0AZX-S	1/11		2.81	

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS23BG5	0.2	HPG-20A-21-F0EKS-S	1/21	184	3.47	9.34
		HPG-20A-33-F0ELS-S	1/33		3.22	
		HPG-20A-45-F0ELS-S	1/45		3.21	
HC-KFS23BG5	0.2	HPG-20A-21-F0EKS-S	1/21	184	4.42	9.34
		HPG-20A-33-F0ELS-S	1/33		4.17	
		HPG-20A-45-F0ELS-S	1/45		4.16	

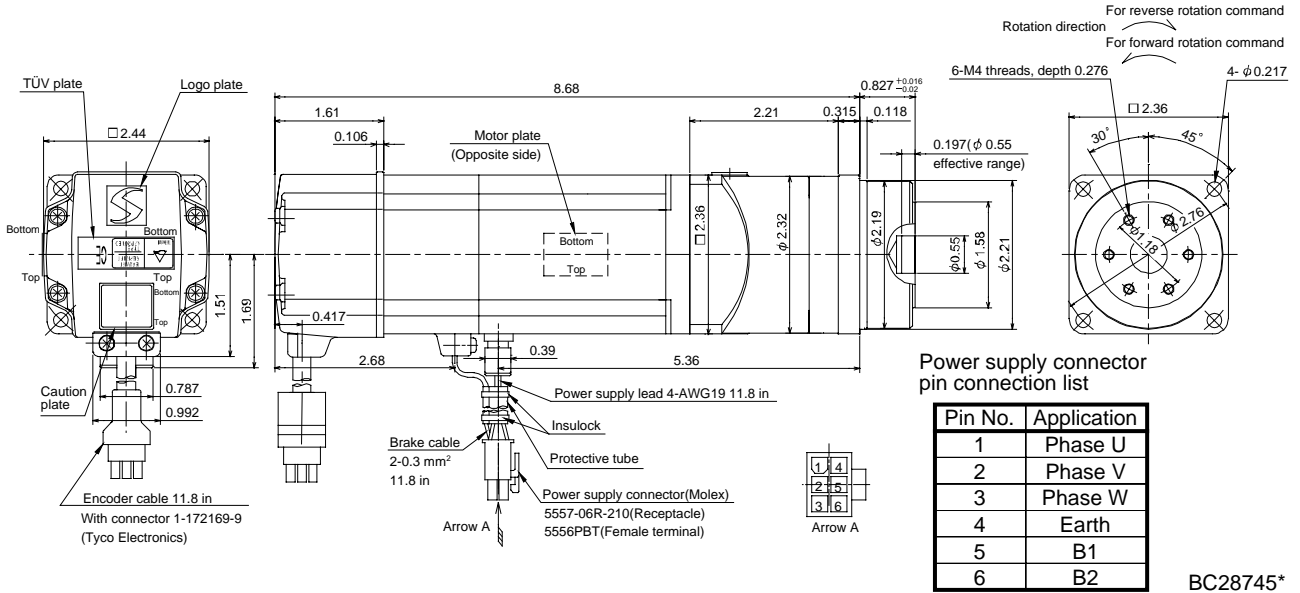
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1. HC-MFS SERIES/HC-KFS SERIES

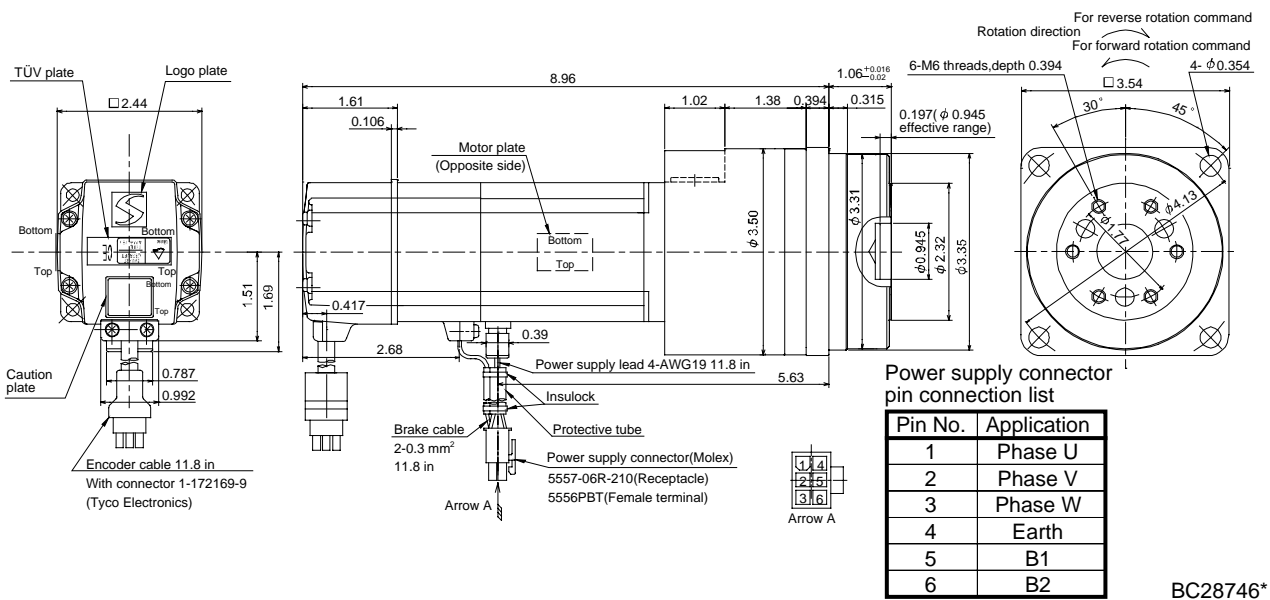
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS43BG5	0.4	HPG-14A-05-F0AZW-S	1/5	184	2.14	6.39
HC-KFS43BG5	0.4	HPG-14A-05-F0AZW-S	1/5	184	3.89	6.39

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS43BG5	0.4	HPG-20A-11-F0EKS-S	1/11	184	4.19	10.1
		HPG-20A-21-F0EKS-S	1/21		3.77	
HC-KFS43BG5	0.4	HPG-20A-11-F0EKS-S	1/11	184	5.96	10.1
		HPG-20A-21-F0EKS-S	1/21		5.52	

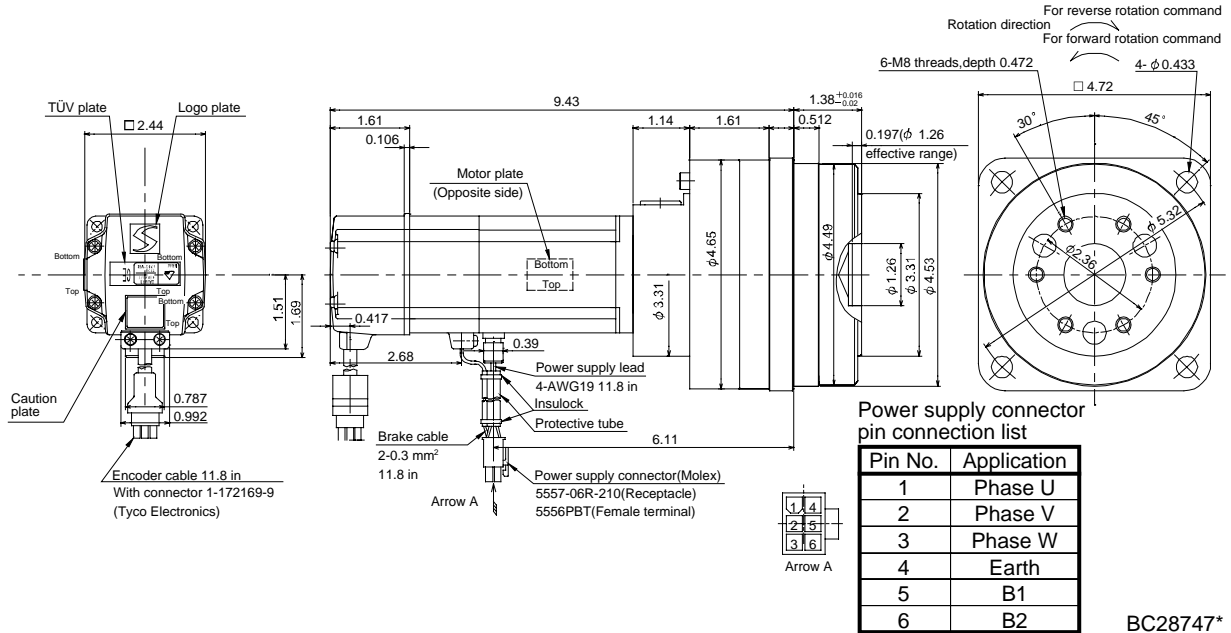
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1. HC-MFS SERIES/HC-KFS SERIES

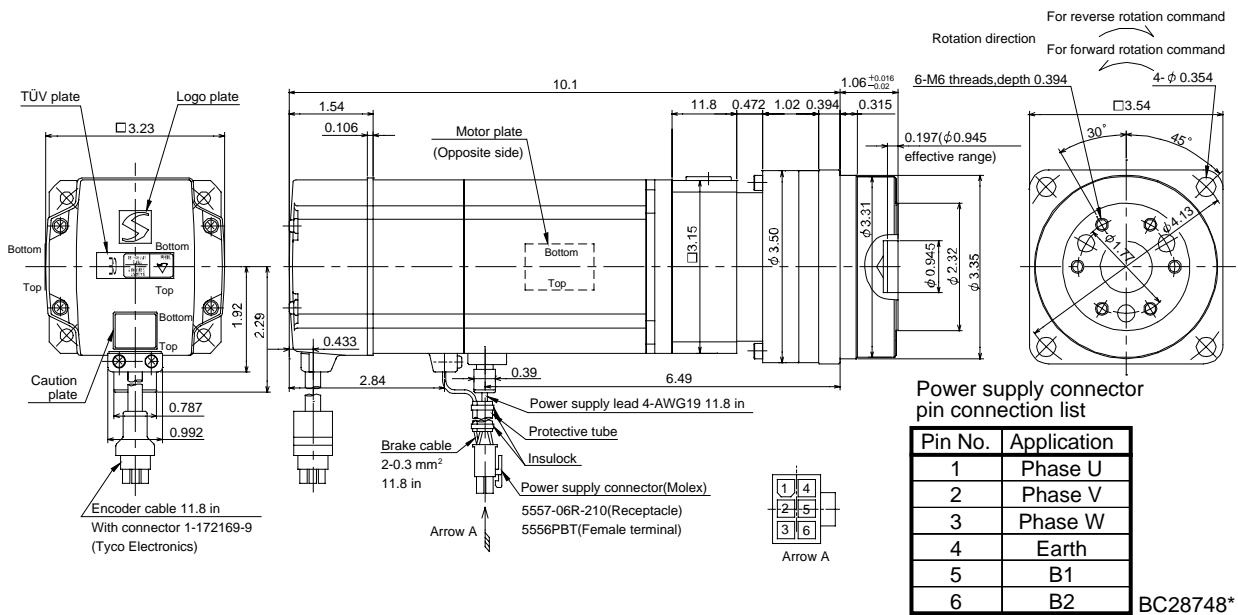
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS43BG5	0.4	HPG-32A-33-FORLAS-S	1/33	184	4.05	14.8
		HPG-32A-45-FORLAS-S	1/45		4.02	
HC-KFS43BG5	0.4	HPG-32A-33-FORLAS-S	1/33	184	5.80	14.8
		HPG-32A-45-FORLAS-S	1/45		5.74	

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS73BG5	0.75	HPG-20A-05-F0FEOS-S	1/5	340	7.49	13.2
		HPG-20A-11-F0FEPS-S	1/11		7.00	
HC-KFS73BG5	0.75	HPG-20A-05-F0FEOS-S	1/5	340	12.5	13.2
		HPG-20A-11-F0FEPS-S	1/11		12.0	

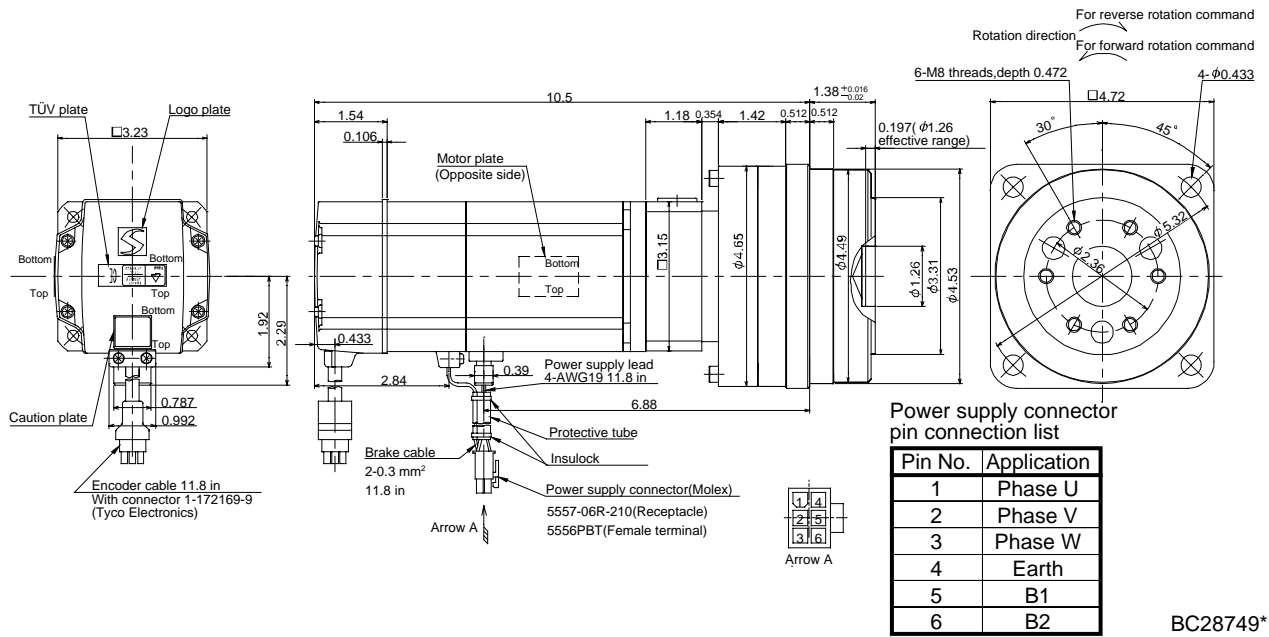
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1. HC-MFS SERIES/HC-KFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK^2 [oz · in ²]	Mass [lb]
HC-MFS73BG5	0.75	HPG-32A-21-F0SEIS-S	1/21	340	8.09	18.5
		HPG-32A-33-F0SEJS-S	1/33		6.89	
		HPG-32A-45-F0SEJS-S	1/45		6.83	
HC-KFS73BG5	0.75	HPG-32A-21-F0SEIS-S	1/21	340	13.1	18.5
		HPG-32A-33-F0SEJS-S	1/33		11.9	
		HPG-32A-45-F0SEJS-S	1/45		11.8	

[Unit: in]



BC28749*

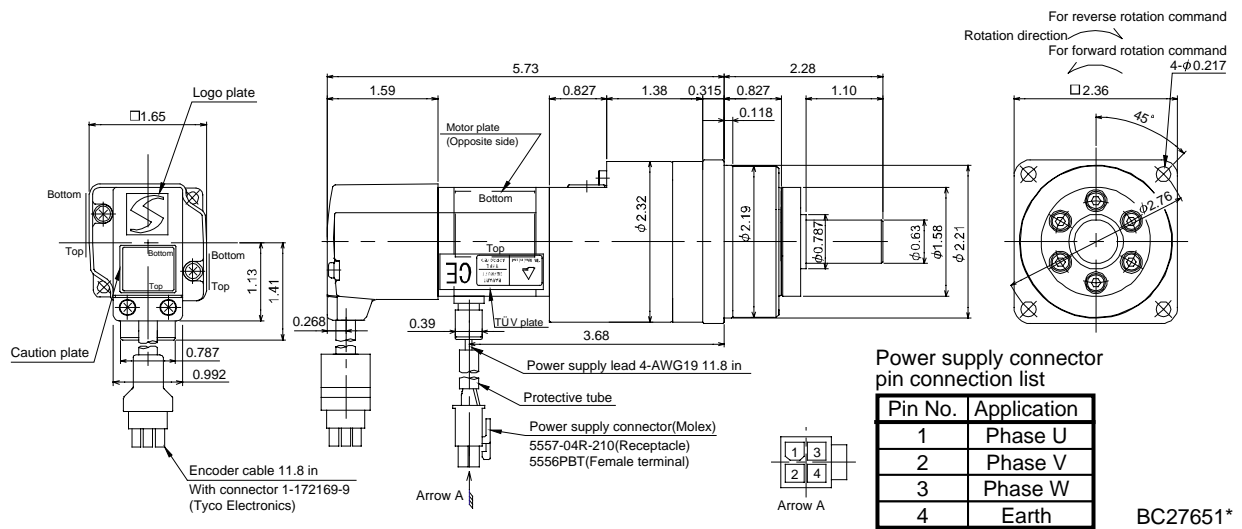
1. HC-MFS SERIES/HC-KFS SERIES

1.7.2 Flange-mounting shaft output type for precision application compliant (G7)

(1) Without electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS053G7	0.05	HPG-14A-05-J2CBJS-S	1/5	0.508	2.87
		HPG-14A-11-J2CBKS-S	1/11	0.437	
		HPG-14A-21-J2CBKS-S	1/21	0.383	
		HPG-14A-33-J2CBLS-S	1/33	0.35	
		HPG-14A-45-J2CBLS-S	1/45	0.35	
HC-KFS053G7	0.05	HPG-14A-05-J2CBJS-S	1/5	0.694	2.87
		HPG-14A-11-J2CBKS-S	1/11	0.623	
		HPG-14A-21-J2CBKS-S	1/21	0.569	
		HPG-14A-33-J2CBLS-S	1/33	0.536	
		HPG-14A-45-J2CBLS-S	1/45	0.536	

[Unit: in]

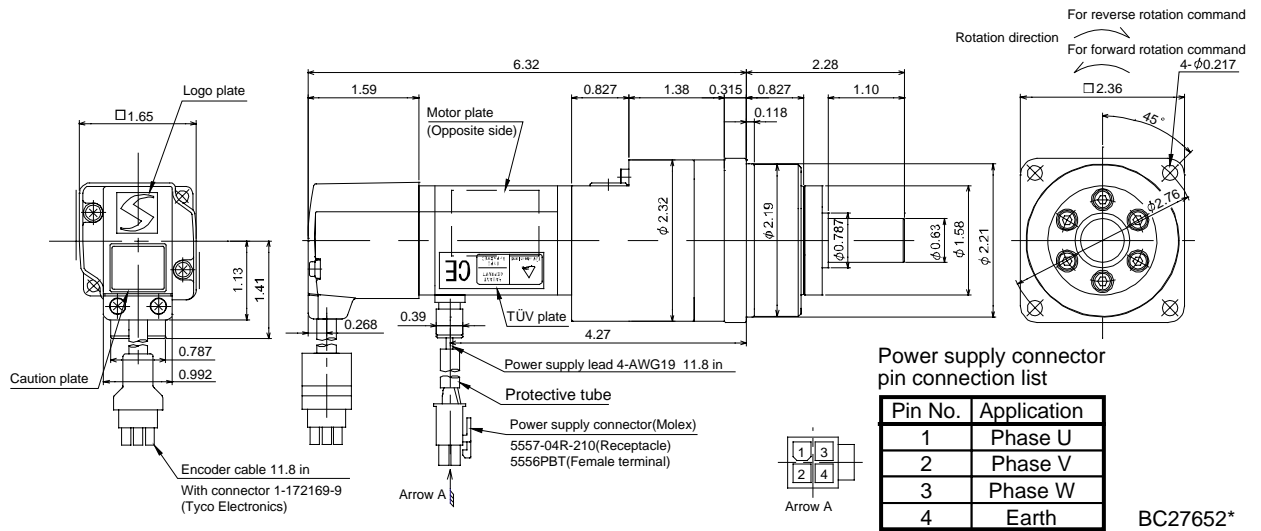


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1. HC-MFS SERIES/HC-KFS SERIES

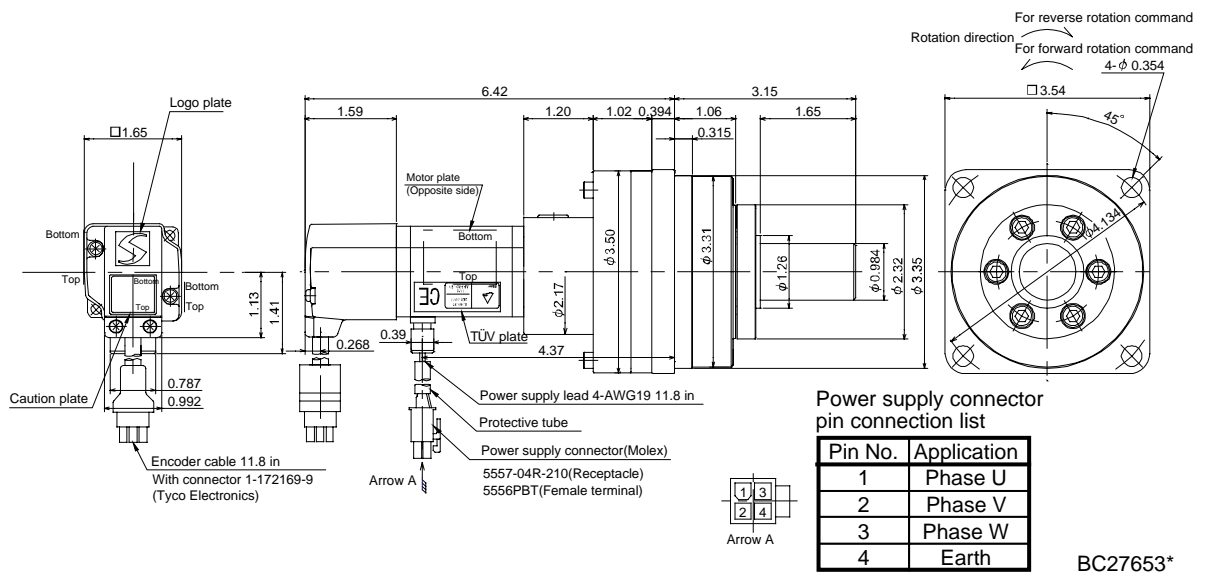
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS13G7	0.1	HPG-14A-05-J2CBJS-S	1/5	0.569	3.09
		HPG-14A-11-J2CBKS-S	1/11	0.498	
		HPG-14A-21-J2CBKS-S	1/21	0.443	
HC-KFS13G7	0.1	HPG-14A-05-J2CBJS-S	1/5	0.864	3.09
		HPG-14A-11-J2CBKS-S	1/11	0.793	
		HPG-14A-21-J2CBKS-S	1/21	0.738	

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS13G7	0.1	HPG-20A-33-J2JMLAS-S	1/33	0.508	6.39
		HPG-20A-45-J2JMLAS-S	1/45	0.498	
HC-KFS13G7	0.1	HPG-20A-33-J2JMLAS-S	1/33	0.804	6.39
		HPG-20A-45-J2JMLAS-S	1/45	0.793	

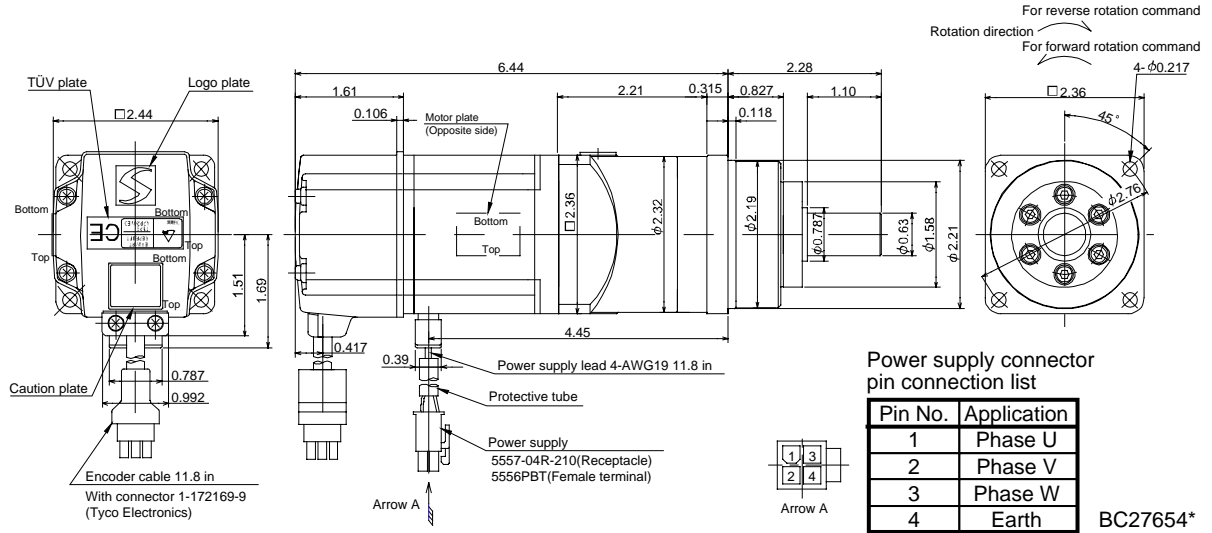
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1. HC-MFS SERIES/HC-KFS SERIES

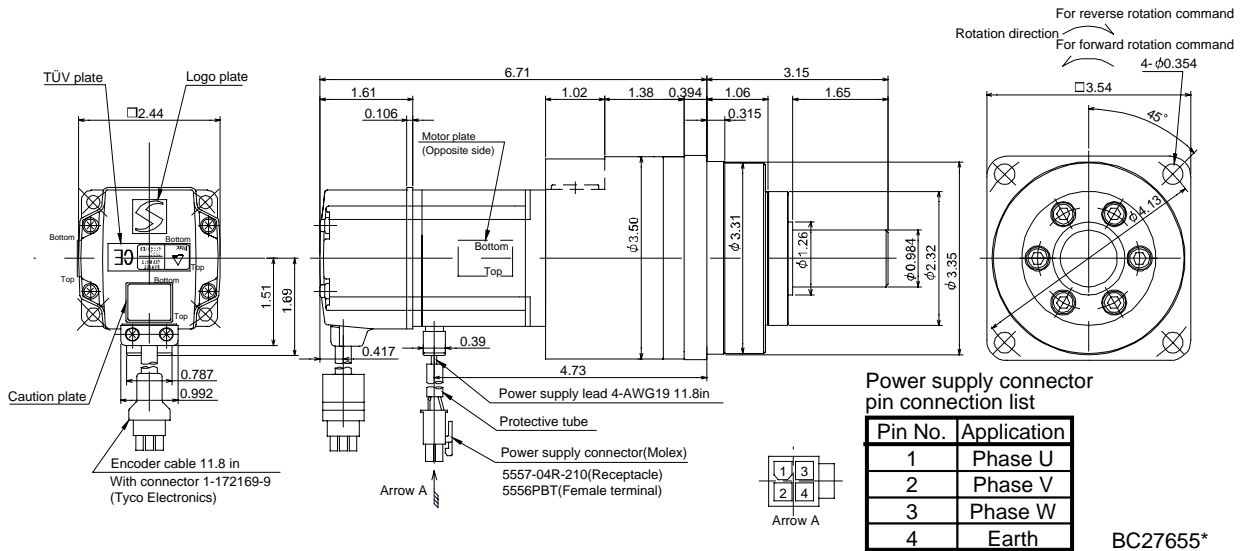
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS23G7	0.2	HPG-14A-05-J2AZW-S	1/5	1.61	4.29
		HPG-14A-11-J2AZX-S	1/11	1.59	4.41
HC-KFS23G7	0.2	HPG-14A-05-J2AZW-S	1/5	2.55	4.29
		HPG-14A-11-J2AZX-S	1/11	2.53	4.41

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS23G7	0.2	HPG-20A-21-J2EKS-S	1/21	3.22	8.60
		HPG-20A-33-J2ELS-S	1/33	2.96	
		HPG-20A-45-J2ELS-S	1/45	2.95	
HC-KFS23G7	0.2	HPG-20A-21-J2EKS-S	1/21	4.16	8.60
		HPG-20A-33-J2ELS-S	1/33	3.90	
		HPG-20A-45-J2ELS-S	1/45	3.89	

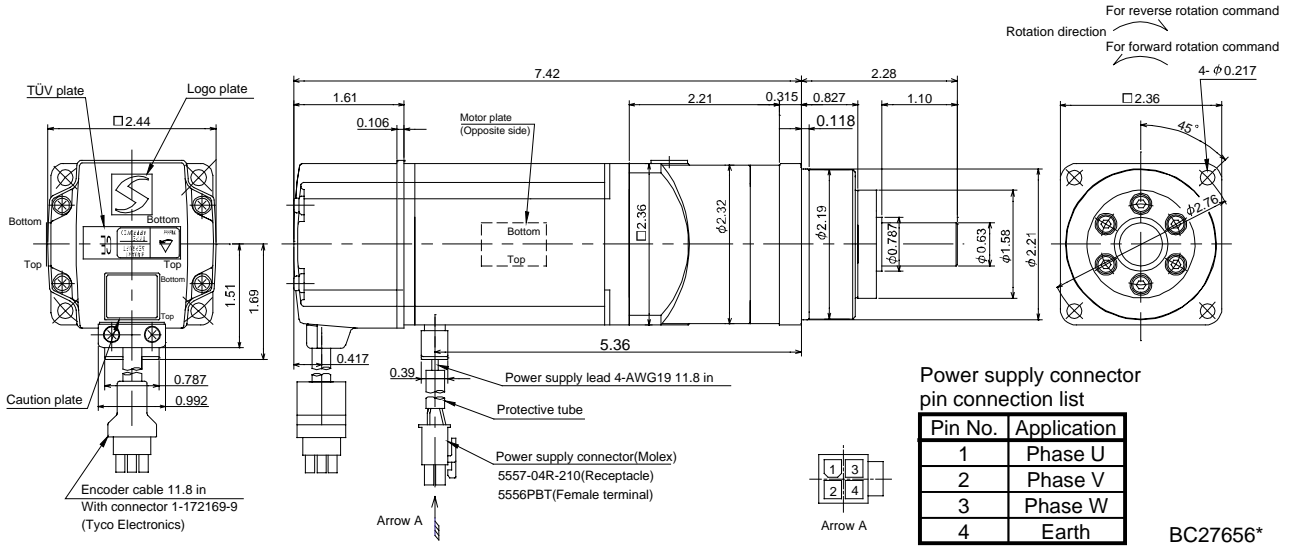
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1. HC-MFS SERIES/HC-KFS SERIES

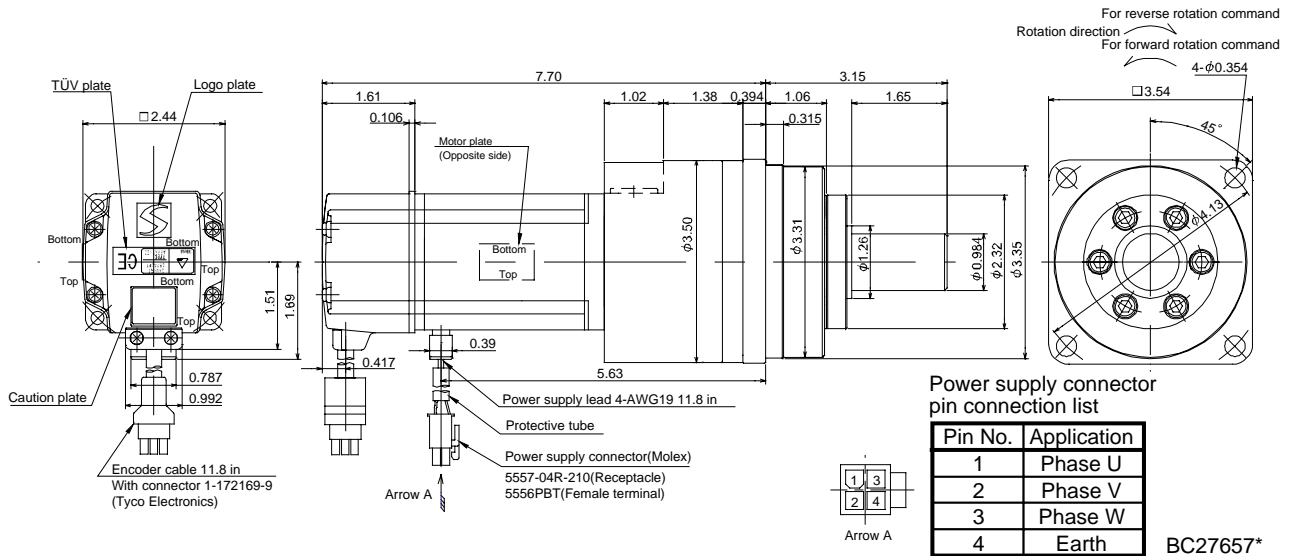
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS43G7	0.4	HPG-14A-05-J2AZW-S	1/5	1.91	5.29
HC-KFS43G7	0.4	HPG-14A-05-J2AZW-S	1/5	3.65	5.29

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS43G7	0.4	HPG-20A-11-J2EKS-S	1/11	3.98	9.7
		HPG-20A-21-J2EKS-S	1/21	3.52	
HC-KFS43G7	0.4	HPG-20A-11-J2EKS-S	1/11	5.69	9.7
		HPG-20A-21-J2EKS-S	1/21	5.25	

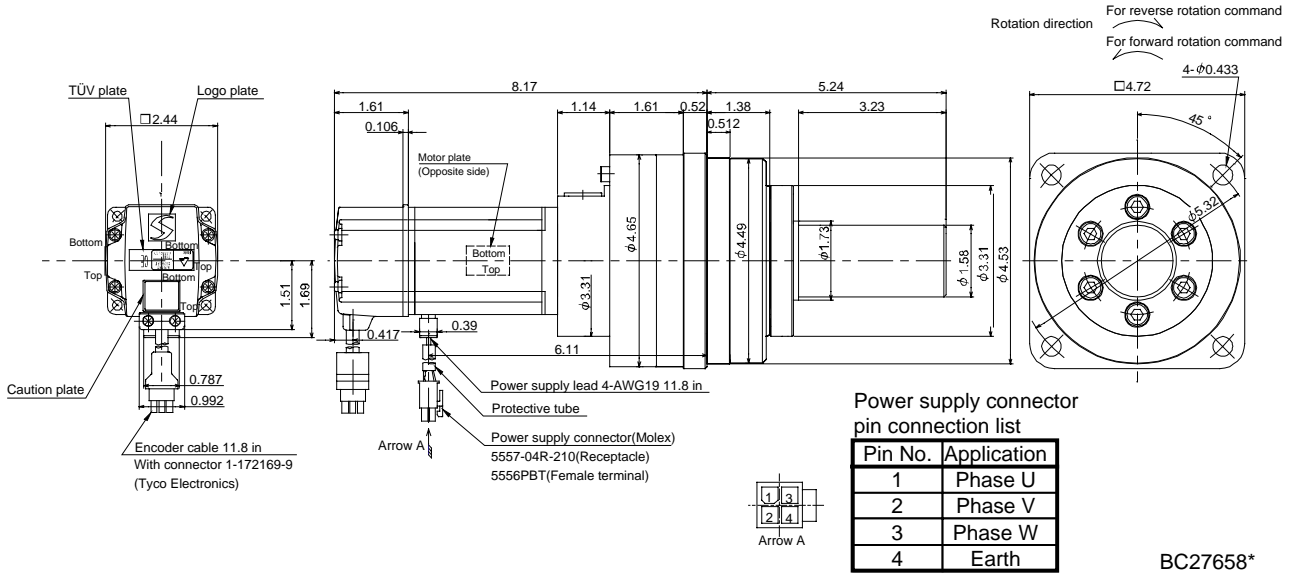
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1. HC-MFS SERIES/HC-KFS SERIES

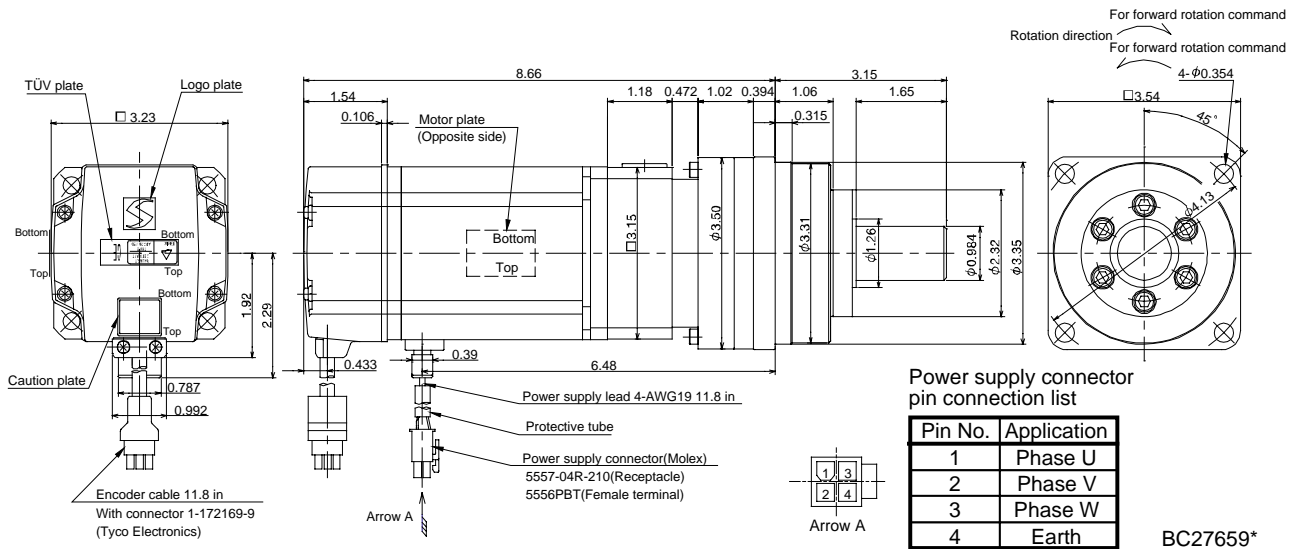
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK^2 [oz · in ²]	Mass [lb]
HC-MFS43G7	0.4	HPG-32A-33-J2RLAS-S	1/33	3.82	16.5
		HPG-32A-45-J2RLAS-S	1/45	3.77	
HC-KFS43G7	0.4	HPG-32A-33-J2RLAS-S	1/33	5.58	16.5
		HPG-32A-45-J2RLAS-S	1/45	5.52	

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK^2 [oz · in ²]	Mass [lb]
HC-MFS73G7	0.75	HPG-20A-05-J2FEOS-S	1/5	7.05	11.9
		HPG-20A-11-J2FEPS-S	1/11	6.40	12.6
HC-KFS73G7	0.75	HPG-20A-05-J2FEOS-S	1/5	12.0	11.9
		HPG-20A-11-J2FEPS-S	1/11	11.4	12.6

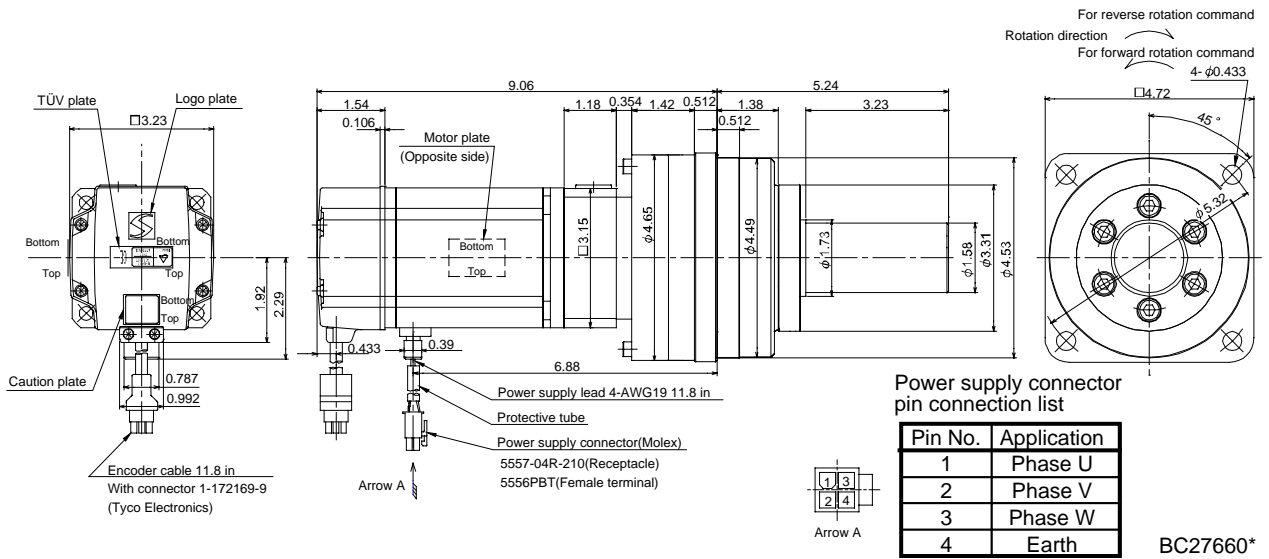
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1. HC-MFS SERIES/HC-KFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK^2 [oz · in ²]	Mass [lb]
HC-MFS73G7	0.75	HPG-32A-21-F0SEIS-S	1/21	7.49	19.4
		HPG-32A-33-F0SEJS-S	1/33	6.23	
		HPG-32A-45-F0SEJS-S	1/45	6.18	
HC-KFS73G7	0.75	HPG-32A-21-F0SEIS-S	1/21	12.5	19.4
		HPG-32A-33-F0SEJS-S	1/33	11.2	
		HPG-32A-45-F0SEJS-S	1/45	11.2	

[Unit: in]

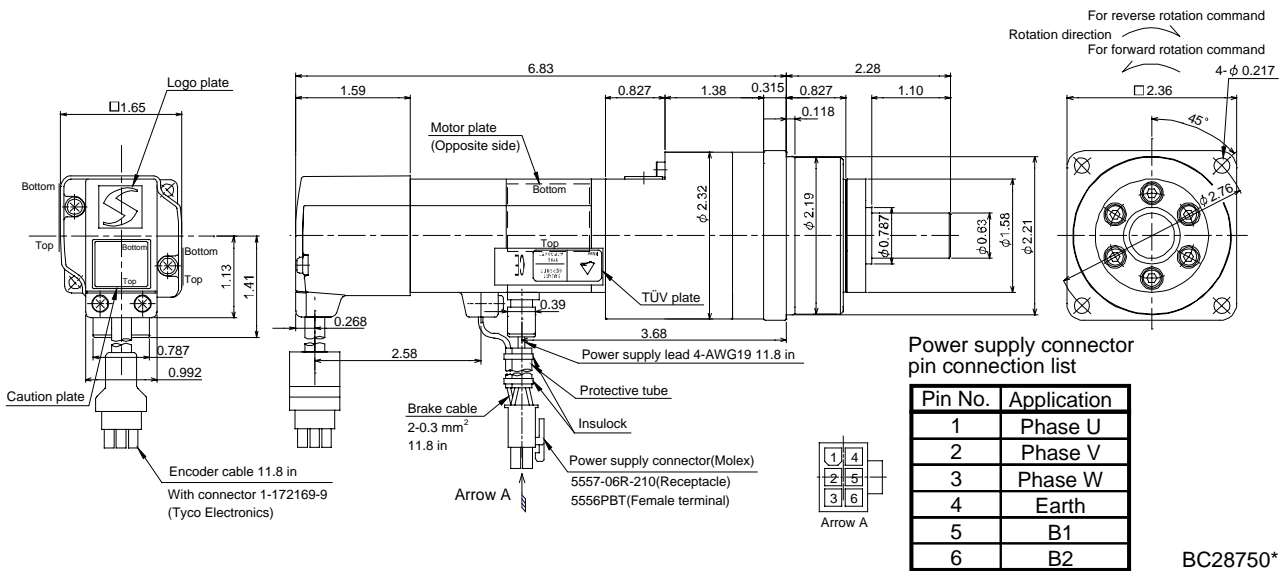


1. HC-MFS SERIES/HC-KFS SERIES

(2) With electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK^2 [oz · in ²]	Mass [lb]
HC-MFS053BG7	0.05	HPG-14A-05-J2CBJS-S	1/5	2.83	0.525	3.53
		HPG-14A-11-J2CBKS-S	1/11		0.454	
		HPG-14A-21-J2CBKS-S	1/21		0.399	
		HPG-14A-33-J2CBLS-S	1/33		0.366	
		HPG-14A-45-J2CBLS-S	1/45		0.366	
HC-KFS053BG7	0.05	HPG-14A-05-J2CBJS-S	1/5	2.83	0.711	3.53
		HPG-14A-11-J2CBKS-S	1/11		0.64	
		HPG-14A-21-J2CBKS-S	1/21		0.585	
		HPG-14A-33-J2CBLS-S	1/33		0.552	
		HPG-14A-45-J2CBLS-S	1/45		0.552	

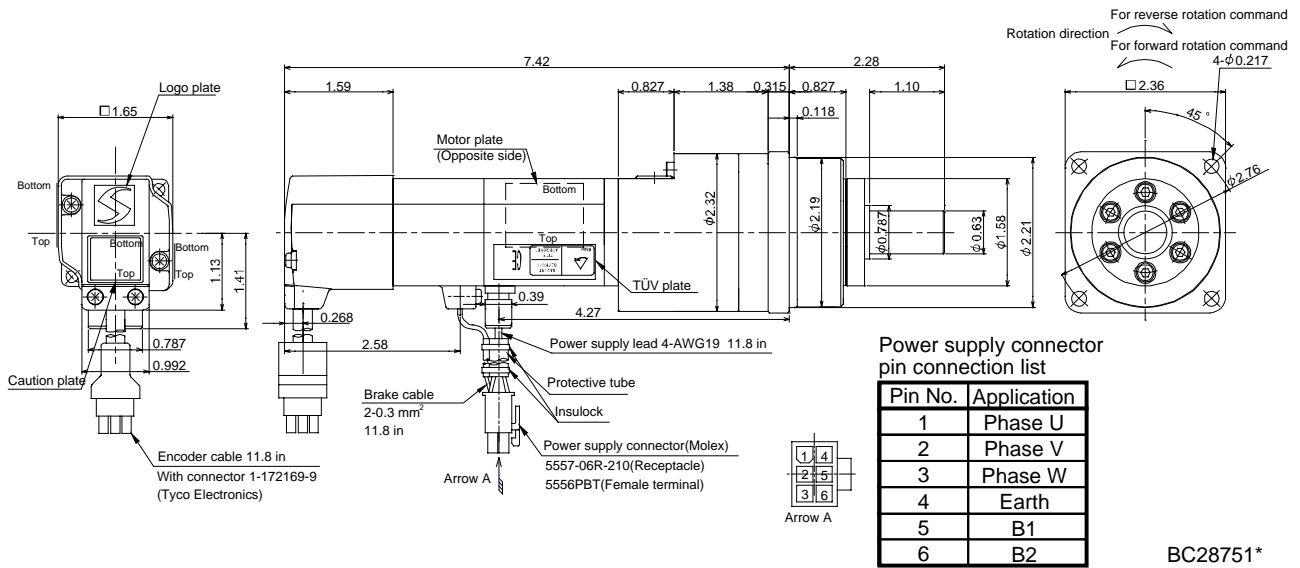
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1. HC-MFS SERIES/HC-KFS SERIES

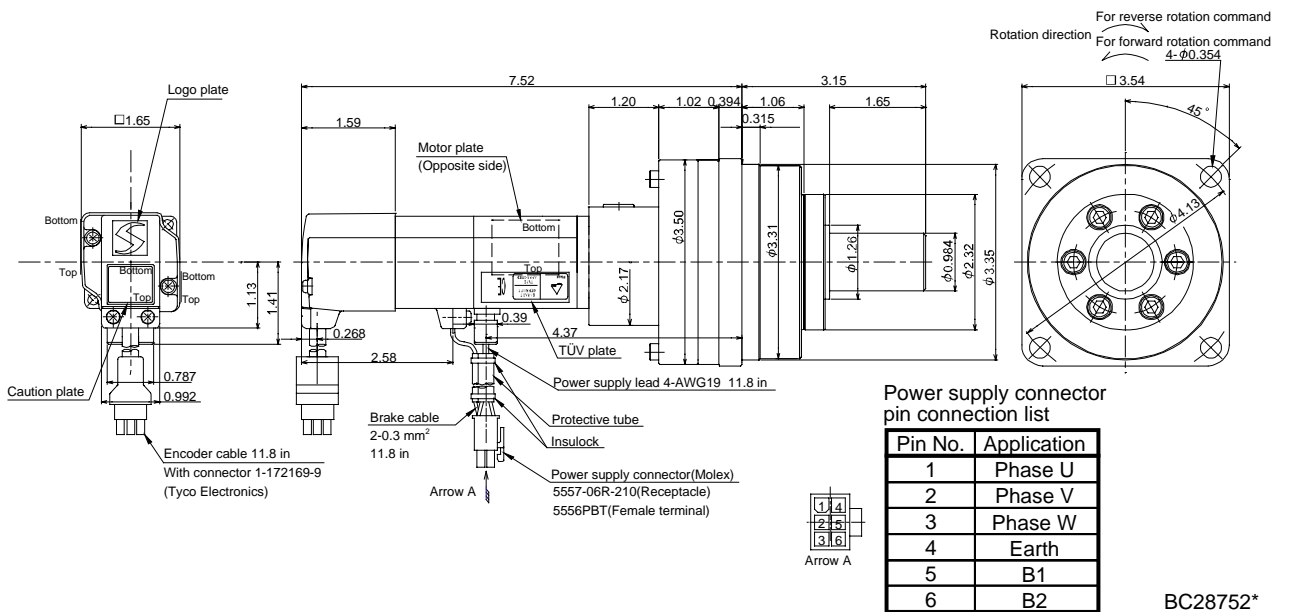
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS13BG7	0.1	HPG-14A-05-J2CBJS-S	1/5	2.83	0.58	3.75
		HPG-14A-11-J2CBKS-S	1/11		0.508	
		HPG-14A-21-J2CBKS-S	1/21		0.454	
HC-KFS13BG7	0.1	HPG-14A-05-J2CBJS-S	1/5	2.83	0.88	3.75
		HPG-14A-11-J2CBKS-S	1/11		0.809	
		HPG-14A-21-J2CBKS-S	1/21		0.755	

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS13BG7	0.1	HPG-20A-33-J2JMLAS-S	1/33	2.83	0.519	7.28
		HPG-20A-45-J2JMLAS-S	1/45		0.508	
HC-KFS13BG7	0.1	HPG-20A-33-J2JMLAS-S	1/33	2.83	0.82	7.28
		HPG-20A-45-J2JMLAS-S	1/45		0.809	

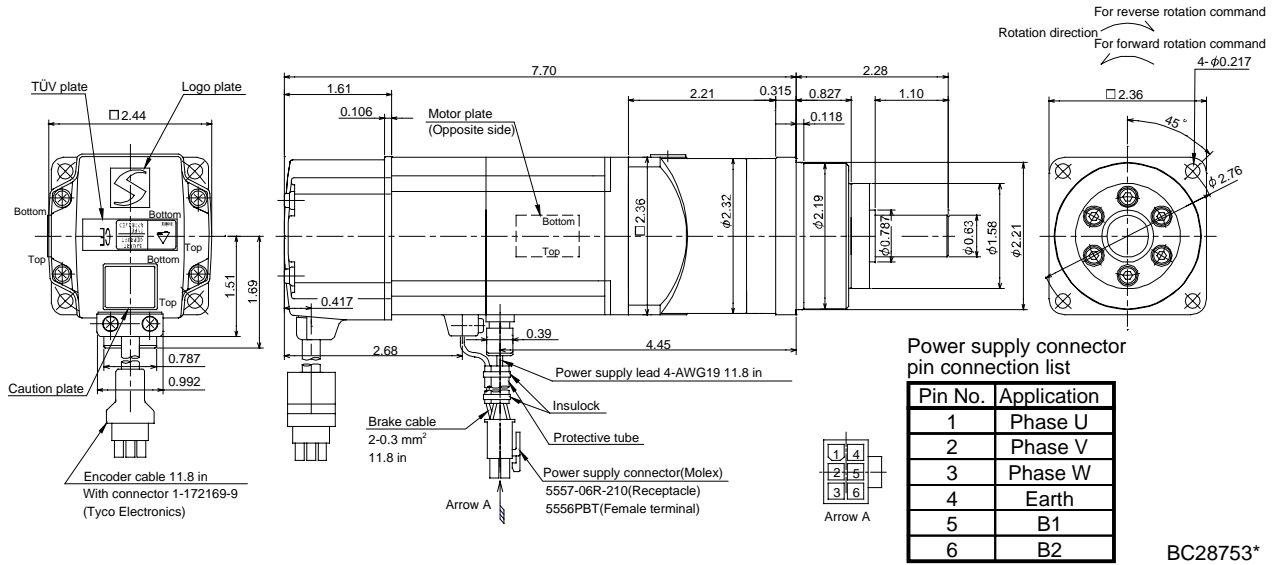
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1. HC-MFS SERIES/HC-KFS SERIES

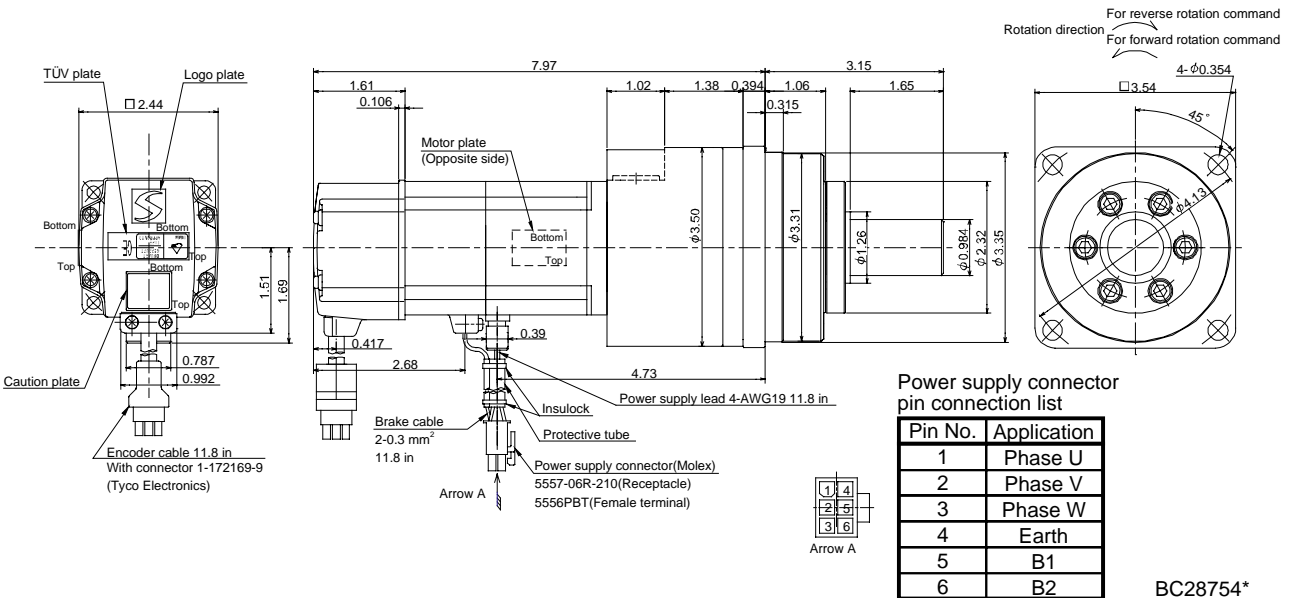
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS23BG7	0.2	HPG-14A-05-J2AZW-S	1/5	184	1.88	5.51
		HPG-14A-11-J2AZX-S	1/11		1.85	
HC-KFS23BG7	0.2	HPG-14A-05-J2AZW-S	1/5	184	2.83	5.51
		HPG-14A-11-J2AZX-S	1/11		2.81	

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS23BG7	0.2	HPG-20A-21-J2EKS-S	1/21	184	3.48	9.92
		HPG-20A-33-J2ELS-S	1/33		3.22	
		HPG-20A-45-J2ELS-S	1/45		3.21	
HC-KFS23BG7	0.2	HPG-20A-21-J2EKS-S	1/21	184	4.43	9.92
		HPG-20A-33-J2ELS-S	1/33		4.17	
		HPG-20A-45-J2ELS-S	1/45		4.16	

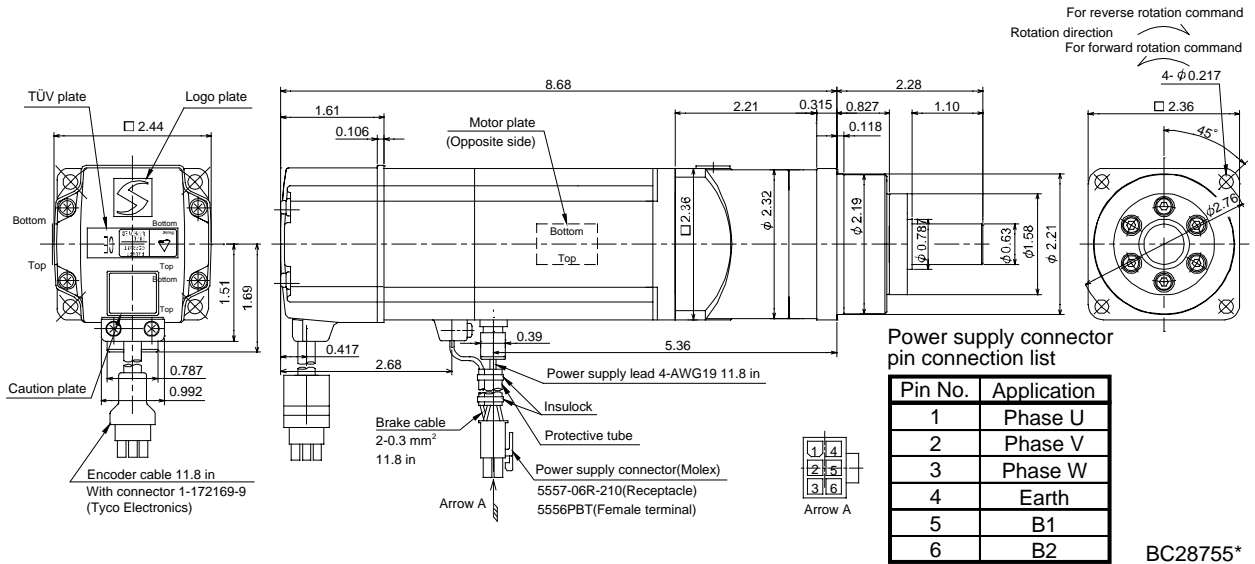
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1. HC-MFS SERIES/HC-KFS SERIES

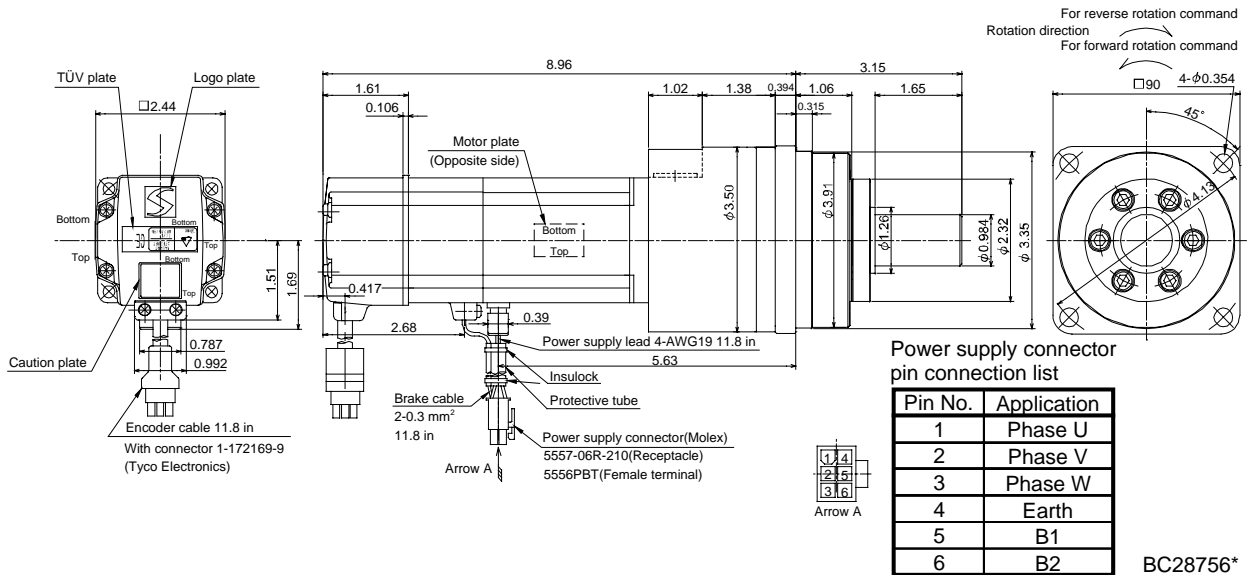
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS43BG7	0.4	HPG-14A-05-J2AZW-S	1/5	184	2.18	6.61
HC-KFS43BG7	0.4	HPG-14A-05-J2AZW-S	1/5	184	3.92	6.61

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS43BG7	0.4	HPG-20A-11-J2EKS-S	1/11	184	4.19	10.1
		HPG-20A-21-J2EKS-S	1/21		3.77	
HC-KFS43BG7	0.4	HPG-20A-11-J2EKS-S	1/11	184	5.96	10.1
		HPG-20A-21-J2EKS-S	1/21		5.52	

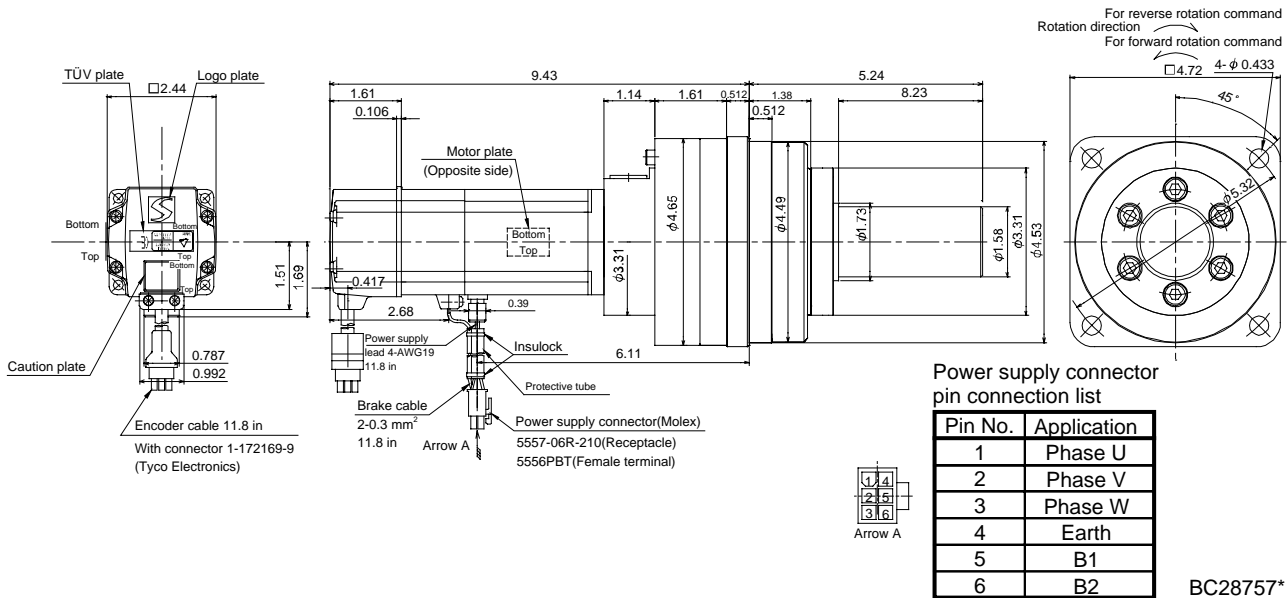
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1. HC-MFS SERIES/HC-KFS SERIES

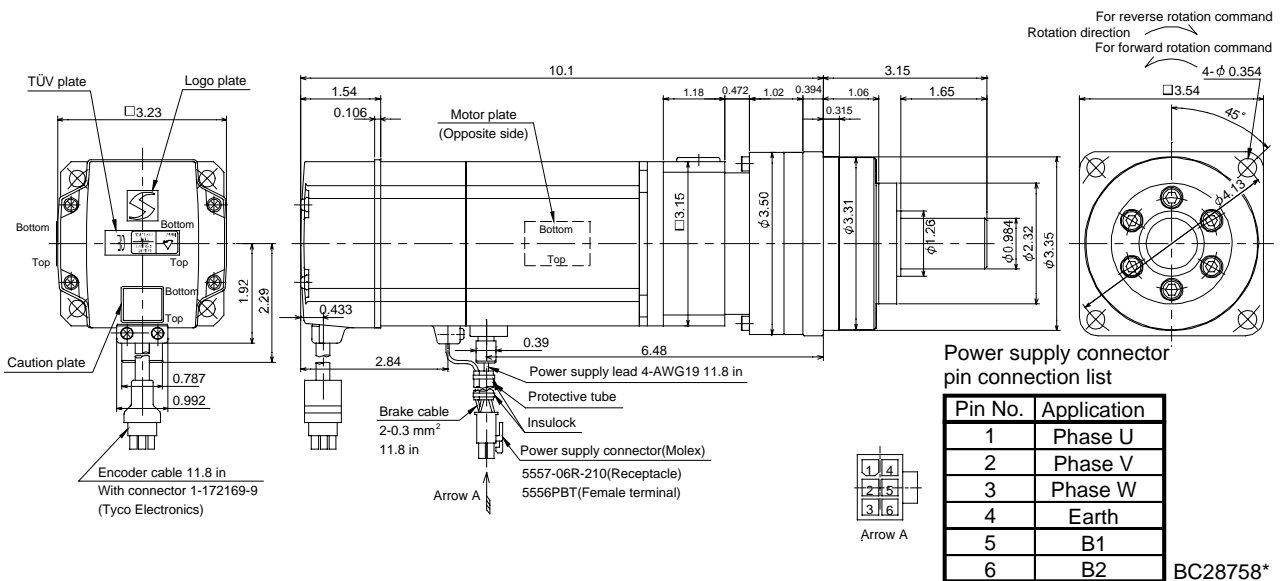
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS43BG7	0.4	HPG-32A-33-J2RLAS-S	1/33	184	4.08	17.9
		HPG-32A-45-J2RLAS-S	1/45		4.04	
HC-KFS43BG7	0.4	HPG-32A-33-J2RLAS-S	1/33	184	5.85	17.9
		HPG-32A-45-J2RLAS-S	1/45		5.80	

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-MFS73BG7	0.75	HPG-20A-05-J2FEOS-S	1/5	340	7.71	14.1
		HPG-20A-11-J2FEPS-S	1/11		7.05	
HC-KFS73BG7	0.75	HPG-20A-05-J2FEOS-S	1/5	340	12.7	14.1
		HPG-20A-11-J2FEPS-S	1/11		12.0	

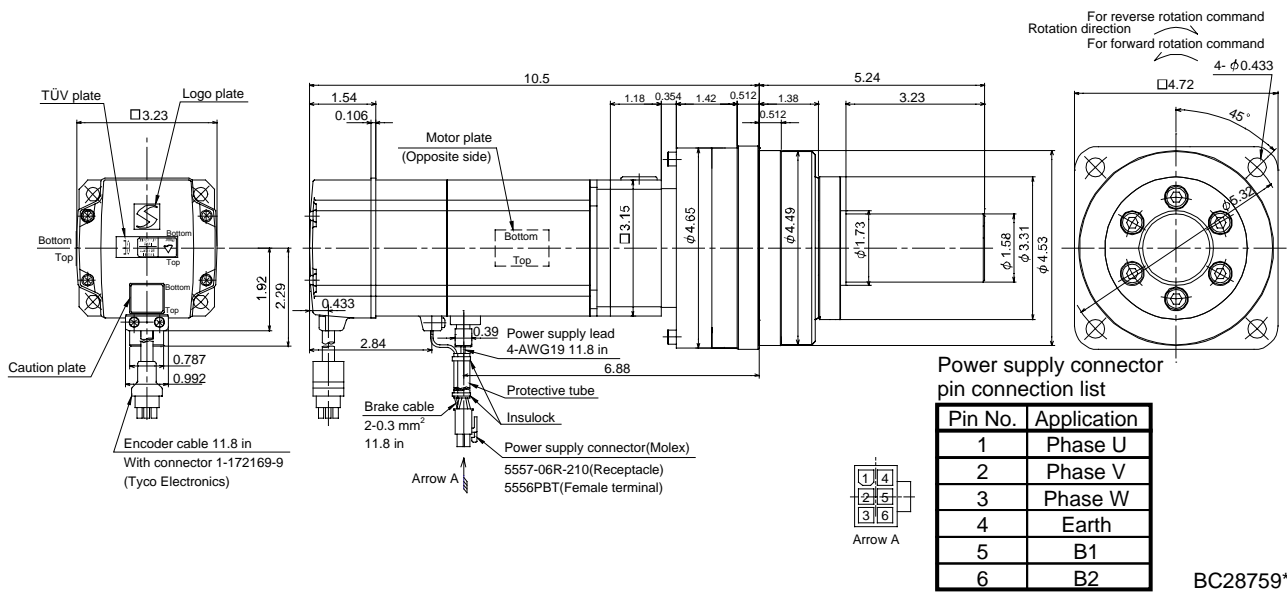
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1. HC-MFS SERIES/HC-KFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK^2 [oz · in ²]	Mass [lb]
HC-MFS73BG7	0.75	HPG-32A-21-J2SEIS-S	1/21	340	8.15	21.6
		HPG-32A-33-J2SEJS-S	1/33		6.89	
		HPG-32A-45-J2SEJS-S	1/45		6.89	
HC-KFS73BG7	0.75	HPG-32A-21-J2SEIS-S	1/21	340	13.1	21.6
		HPG-32A-33-J2SEJS-S	1/33		11.9	
		HPG-32A-45-J2SEJS-S	1/45		11.9	

[Unit: in]



BC28759*

2. HC-SFS SERIES

2. HC-SFS SERIES

2.1 Model name

HC-SFS □ 2 □ □ □

Series name

Shaft type

Symbol	Shaft shape
None	Standard (Staraight shaft)
(Note) K	With keyway (With key)

Note: Not provided for G5.

Reduction gear

Symbol	Reduction gear
G5	Flange-mounting flange output type for precision application
G7	Flange-mounting shaft output type for precision application

Electromagnetic brake

Symbol	Electromagnetic brake
None	Without
B	With

Power supply voltage

Symbol	Power supply voltage
None	Three-phase 200 to 230VAC
4	Three-phase 380 to 480VAC

Rated speed
2000[r/min]

Rated output

Symbol	Rated output [W]
5	500
10	1000
15	1500
20	2000
35	3500
50	5000
70	7000

2. HC-SFS SERIES

2.2 Manufacturing range

The symbols (20A, 32A, 50A) in the following table indicate the model numbers of the reduction gears assembled to the servo motors.

Servo motors with reduction gears having the indicated reduction gear model numbers are available.

The reduction gear model number indicates □□□ of the reduction number model name HPG-□□□-05...

Servo motor		Reduction ratio				
		1/5	1/11	1/21	1/33	1/45
HC-SFS52G5	HC-SFS524G5					
HC-SFS52G7	HC-SFS524G7					
HC-SFS102G5	HC-SFS1024G5	20A				
HC-SFS102G7	HC-SFS1024G7			32A		
HC-SFS152G5	HC-SFS1524G5					
HC-SFS152G7	HC-SFS1524G7					
HC-SFS202G5	HC-SFS2024G5					
HC-SFS202G7	HC-SFS2024G7			50A		
HC-SFS352G5	HC-SFS3524G5					
HC-SFS352G7	HC-SFS3524G7					
HC-SFS502G5	HC-SFS5024G5					
HC-SFS502G7	HC-SFS5024G7					
HC-SFS702G5	HC-SFS7024G5					
HC-SFS702G7	HC-SFS7024G7					

2.3 Specifications

Item		Description
Mounting method		Flange mounting
Mounting direction		In any directions
		Grease lubrication (Already packed) (Note 1)
Lubrication method	Packed with	Reduction gear model number 20A, 32A : Harmonic grease SK-2 (Harmonic Drive Systems) Reduction gear model number 50A: EPNOC grease AP(N)2 (NIPPON OIL CORPORATION)
Output shaft rotating direction		Same as the servo motor output shaft direction.
With electromagnetic brake		Available
Backlash		3 minutes or less at reduction gear output shaft
Permissible load inertia moment ratio (when converting into the servo motor shaft) (Note 2)		10 times or less
Permissible speed (at servo motor shaft)		0.5 to 1.5kw: 3000 r/min 2.0 to 3.5kw: 2500 r/min 5.0 to 7.0kw: 2000 r/min
Protective structure (reduction gear area)		IP44 equivalent
Reduction gear efficiency (Note 3)		77 to 92%

Note 1. Already packed with grease.

2. If the above indicated value is exceeded, please consult us.

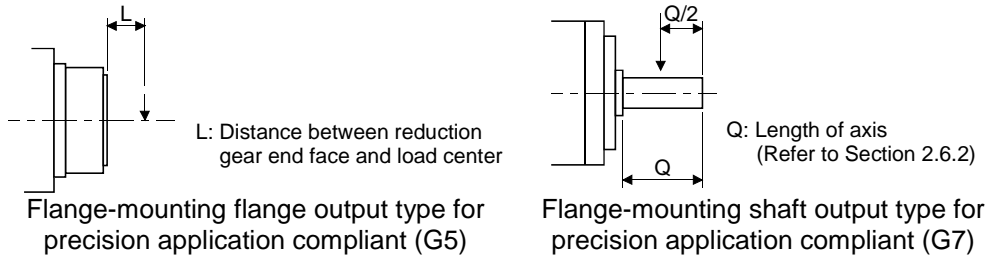
3. The reduction gear efficiency differs depending on the reduction ratio.

Also, it changes depending on the use conditions such as the output torque, speed and rotation, temperature, etc. The numerical value in the table is a typical value in the rated torque, rated speed and rotation and typical temperature, and not a guaranteed value.

2. HC-SFS SERIES

2.4 Permissible loads of servo motor shaft

The radial load point of a precision reduction gear is as shown below.



Servo motor	Reduction ratio	Radial load point L (mm)		Permissible load (Note)			
				Permissible radial load		Permissible thrust load	
		[mm]	[in]	[N]	[lb]	[N]	[lb]
HC-SFS52G5 HC-SFS524G5 HC-SFS52G7 HC-SFS524G7	1/5	32	1.26	416	93.5	1465	329.3
	1/11	32	1.26	527	118	1856	417
	1/21	57	2.24	1094	246	4359	980
	1/33	57	2.24	1252	282	4992	1120
	1/45	57	2.24	1374	309	5478	1230
HC-SFS102G5 HC-SFS1024G5 HC-SFS102G7 HC-SFS1024G7	1/5	32	1.26	416	93.5	1465	329
	1/11	57	2.24	901	203	3590	807
	1/21	57	2.24	1094	246	4359	980
	1/33	62	2.44	2929	659	10130	2280
	1/45	62	2.44	3215	723	11117	2500
HC-SFS152G5 HC-SFS1524G5 HC-SFS152G7 HC-SFS1524G7	1/5	32	1.26	416	93.5	1465	329
	1/11	57	2.24	901	203	3590	807
	1/21	62	2.44	2558	575	8845	1990
	1/33	62	2.44	2929	658	10130	2280
	1/45	62	2.44	3215	723	11117	2500
HC-SFS202G5 HC-SFS2024G5 HC-SFS202G7 HC-SFS2024G7	1/5	57	2.24	711	160	2834	637
	1/11	57	2.24	901	203	3590	807
	1/21	62	2.44	2558	575	8845	1990
	1/33	62	2.44	2929	658	10130	2280
	1/45	62	2.44	3215	723	11117	2500
HC-SFS352G5 HC-SFS3524G5 HC-SFS352G7 HC-SFS3524G7	1/5	57	2.24	711	160	2834	637
	1/11	62	2.44	2107	474	7285	1640
	1/21	62	2.44	2558	575	8845	1990
HC-SFS502G5 HC-SFS5024G5 HC-SFS502G7 HC-SFS5024G7	1/5	62	2.44	1663	374	5751	1290
	1/11	62	2.44	2107	474	7285	1640
HC-SFS702G5 HC-SFS7024G5 HC-SFS702G7 HC-SFS7024G7	1/5	62	2.44	1663	374	5751	1290

Note. The load above this value should not be applied to the shaft.
The value in the table assumes that the load is applied independently.

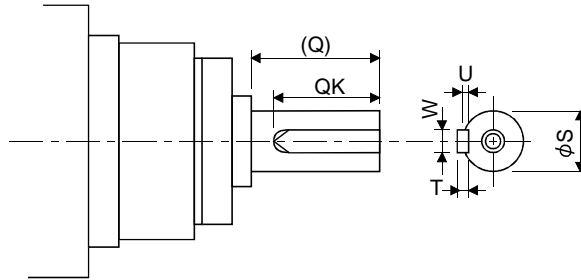
2. HC-SFS SERIES

2.5 Special shaft servo motors

Servo motors with special shafts having keyway (with single pointed keys) are available for the flange-mounting shaft output type for precision applications compliant (G7).

[Unit: mm](Unit:in)

Servo motor	Reduction gear model number	Q	ϕS	W	T	QK	U
HC-SFS□G7K	20A	42(1.65)	25(0.984)	8(0.315)	7(0.276)	36(1.42)	4(0.157)
	32A	82(3.23)	40(1.58)	12(0.472)	8(0.315)	70(2.76)	5(0.197)
	50A	82(3.23)	40(1.58)	14(0.551)	9(0.354)	70(2.756)	5.5(0.217)



2. HC-SFS SERIES

2.6 Outline dimension drawings

The outer frame of the reduction gear is a material surface such as casting. Its actual dimensions may be 1 to 3mm larger than the drawing dimensions. Design the machine side with allowances.

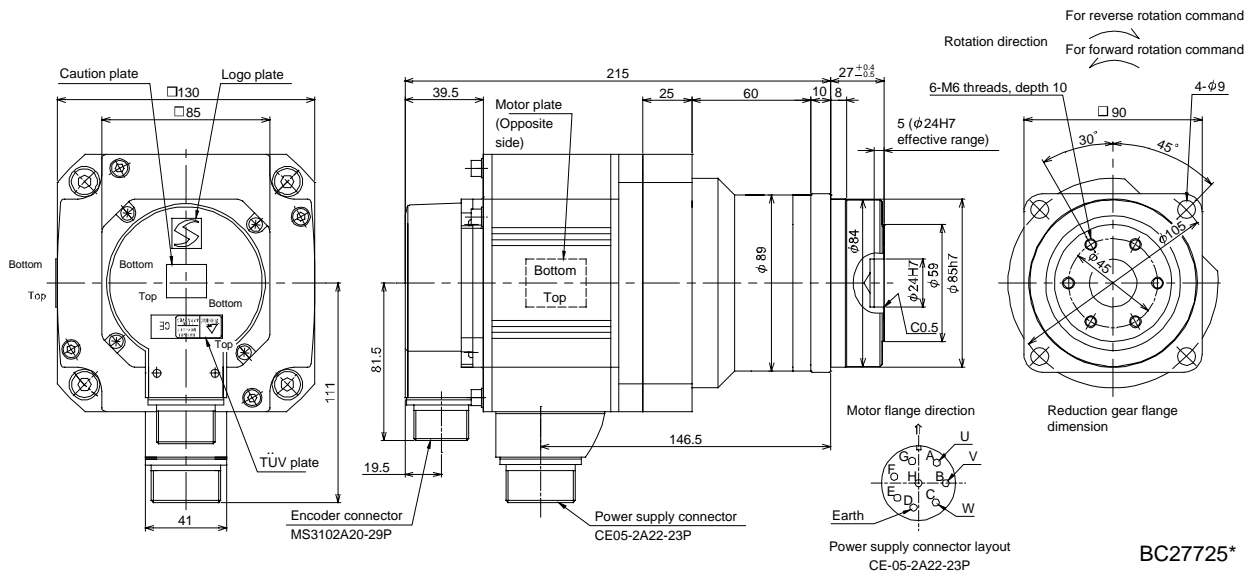
Inertia moment on the table is the value calculated by converting the total value of inertia moment for servo motor, electromagnetic brake and decelerator with servo motor shaft.

2.6.1 Flange-mounting flange output type for precision application compliant (G5)

(1) Without electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment J [$\times 10^{-4}$ kg \cdot m ²]	Mass [kg]
HC-SFS52G5 * HC-SFS524G5	0.5	HPG-20A-05-F0KSAWS-S	1/5	7.25	7.8
		HPG-20A-11-F0KSAXS-S	1/11	7.16	8.0

[Unit: mm]

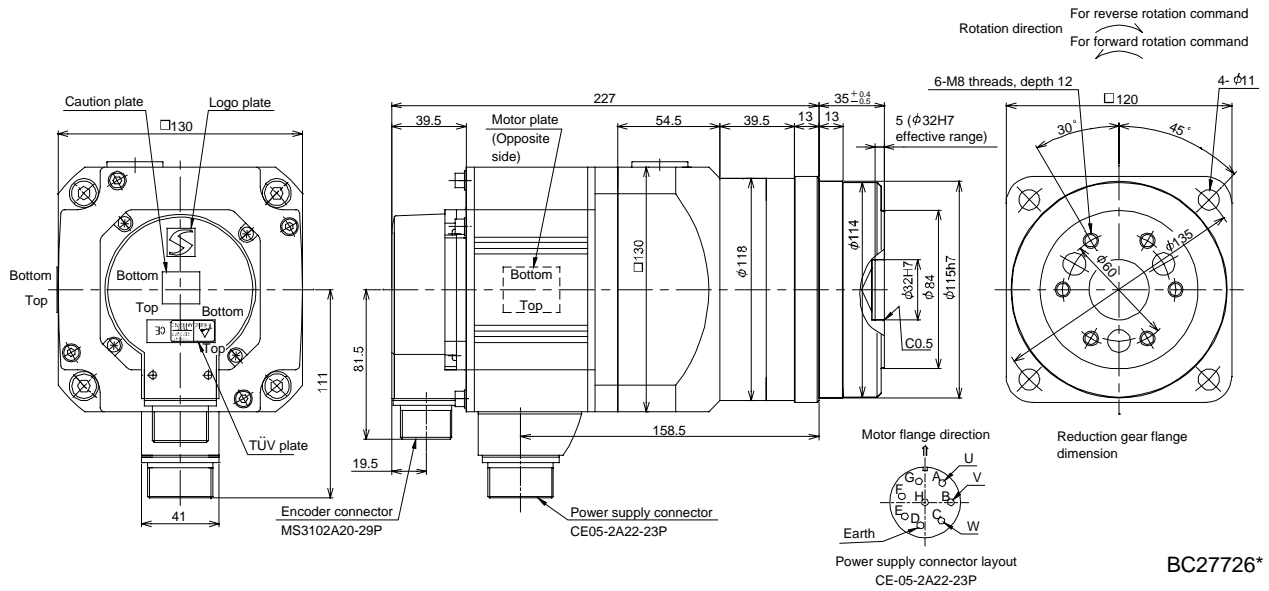


BC27725*

2. HC-SFS SERIES

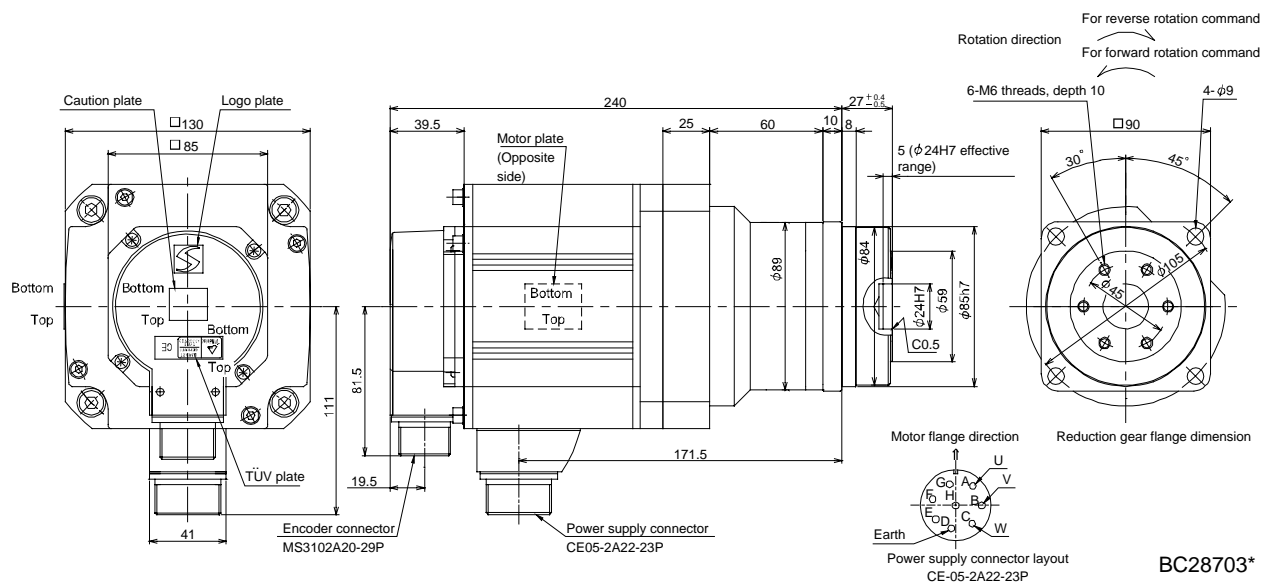
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS52G5 * HC-SFS524G5	0.5	HPG-32A-21-FOMCSYS-S	1/21	9.50	11.5
		HPG-32A-33-FOMCSZS-S	1/33	9.30	
		HPG-32A-45-FOMCSZS-S	1/45	9.30	

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS102G5 * HC-SFS1024G5	1.0	HPG-20A-05-F0KSAWS-S	1/5	14.4	9.8

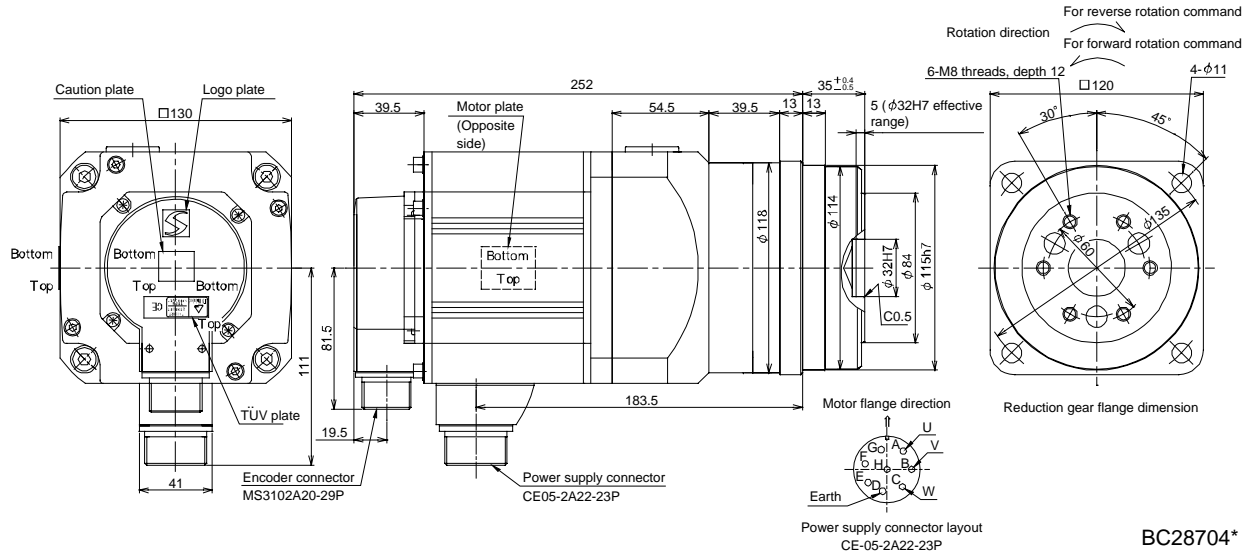
[Unit: mm]



2. HC-SFS SERIES

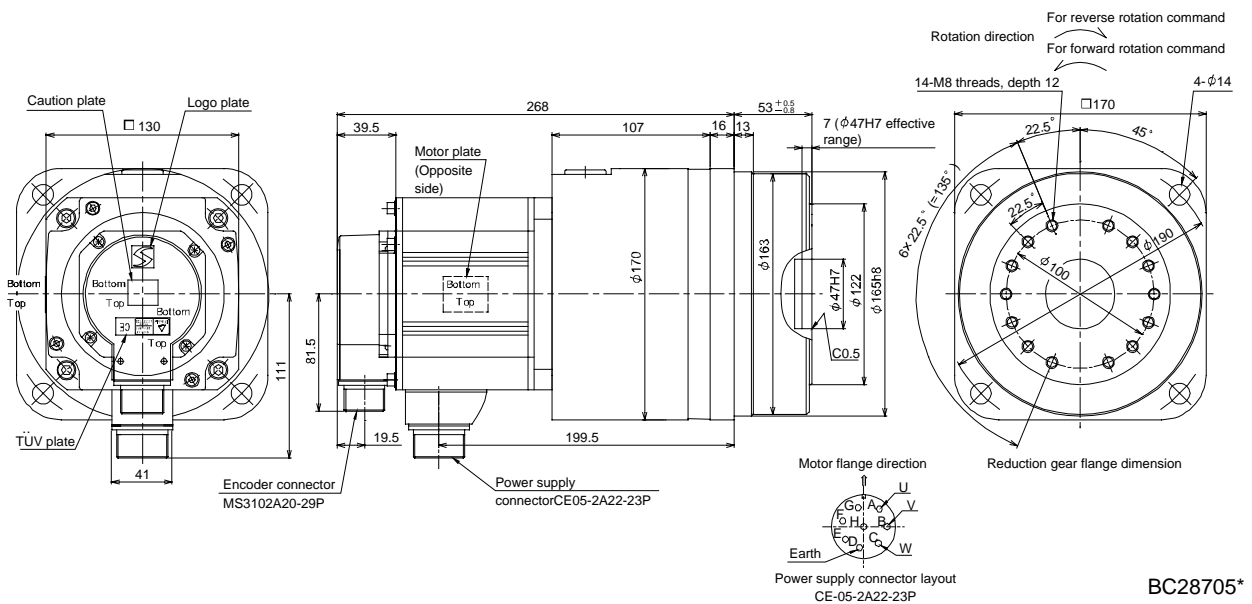
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS102G5 * HC-SFS1024G5	1.0	HPG-32A-11-F0MCSPS-S	1/11	17.0	13.5
		HPG-32A-21-F0MCSYS-S	1/21	16.6	

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS102G5 * HC-SFS1024G5	1.0	HPG-50A-33-F0AABC-S	1/33	18.4	23.0
		HPG-50A-45-F0AABC-S	1/45	18.3	

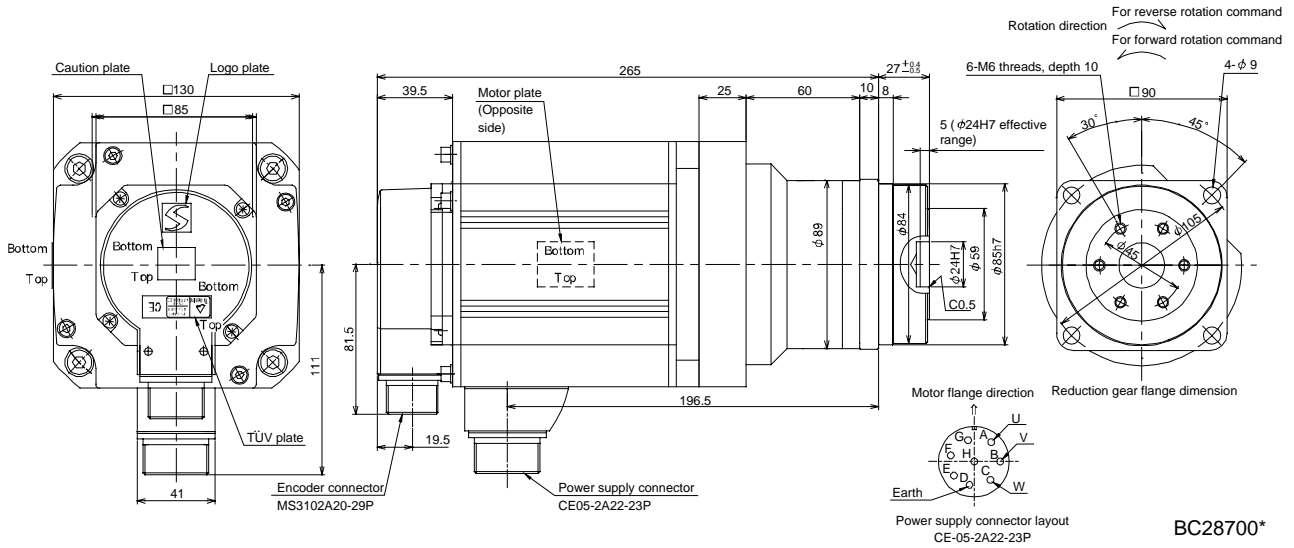
[Unit: mm]



2. HC-SFS SERIES

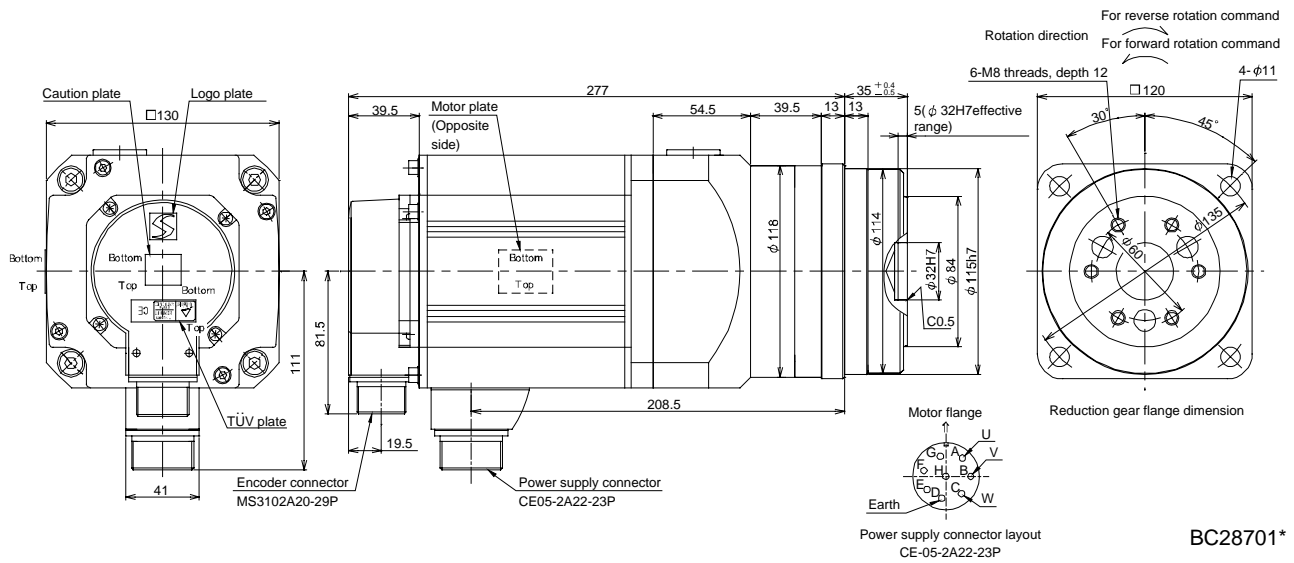
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS152G5 * HC-SFS1524G5	1.5	HPG-20A-05-F0KSAWS-S	1/5	20.7	11.8

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS152G5 * HC-SFS1524G5	1.5	HPG-32A-11-F0MCSPS-S	1/11	23.3	15.5

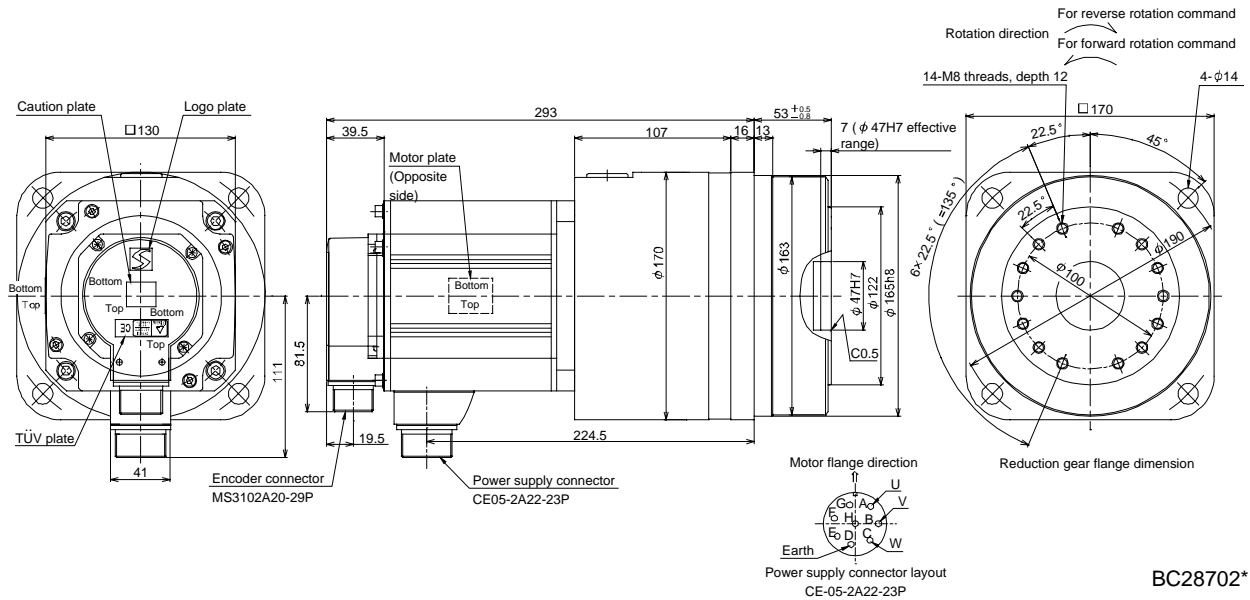
[Unit: mm]



2. HC-SFS SERIES

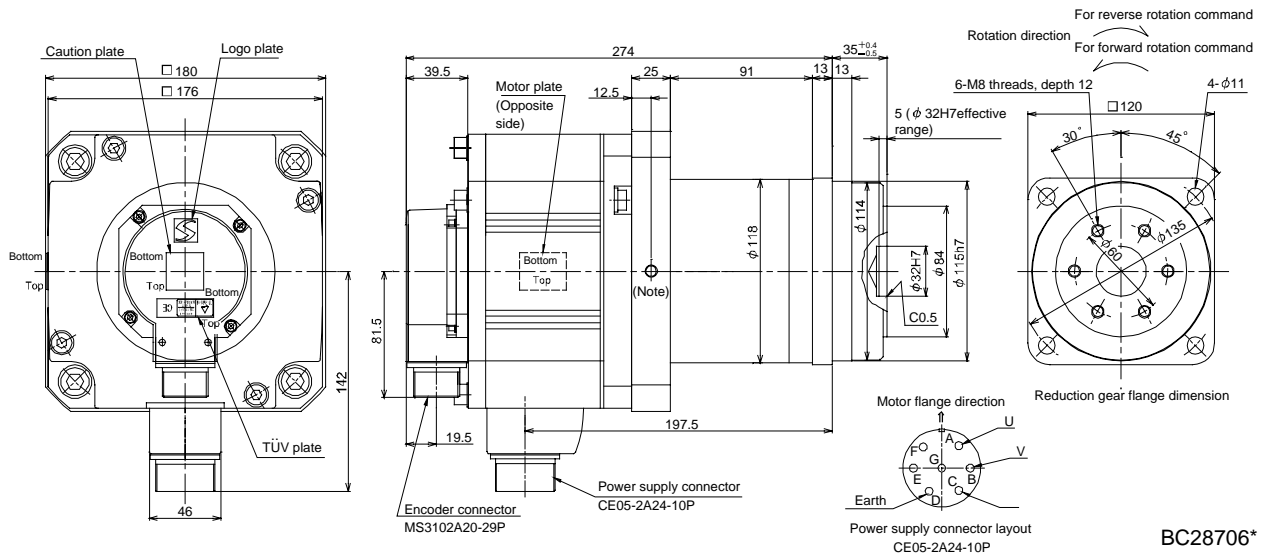
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS152G5 * HC-SFS1524G5	1.5	HPG-50A-21-F0AABC-S	1/21	25.7	25.0
		HPG-50A-33-F0AABC-S	1/33	24.7	
		HPG-50A-45-F0AABC-S	1/45	24.6	

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS202G5 * HC-SFS2024G5	2.0	HPG-32A-05-F0PBZJ-S	1/5	47.1	19.5
		HPG-32A-11-F0PBZJ-S	1/11	46.9	20.0

[Unit: mm]

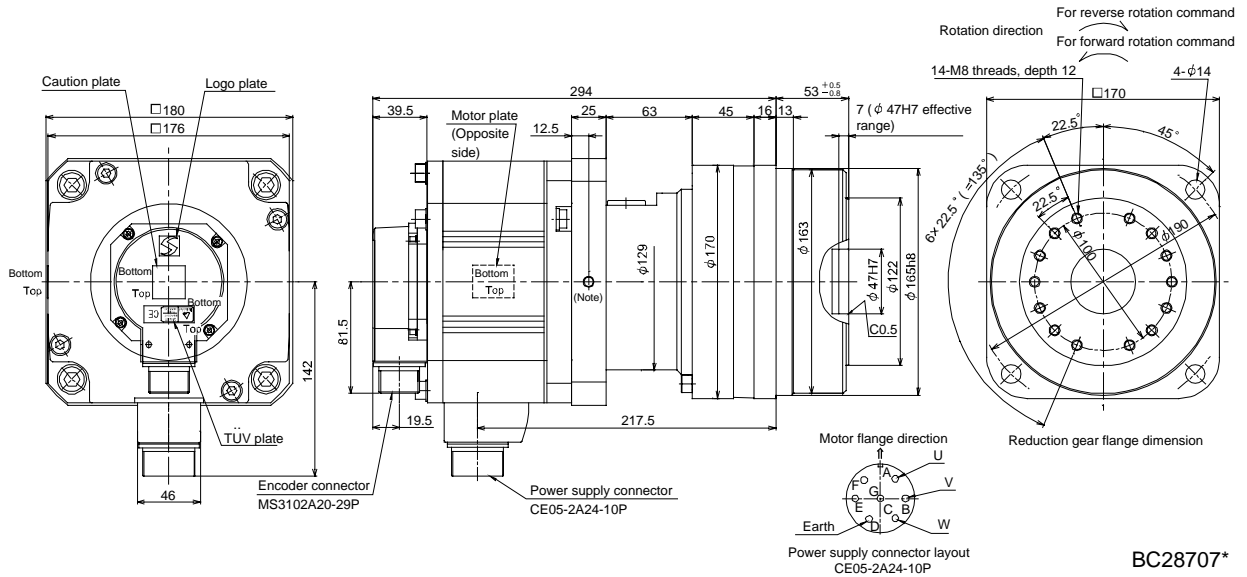


Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS202G5 * HC-SFS2024G5	2.0	HPG-50A-21-F0BBDF-S	1/21	48.9	29.1
		HPG-50A-33-F0BBDF-S	1/33	47.9	
		HPG-50A-45-F0BBDF-S	1/45		

[Unit: mm]

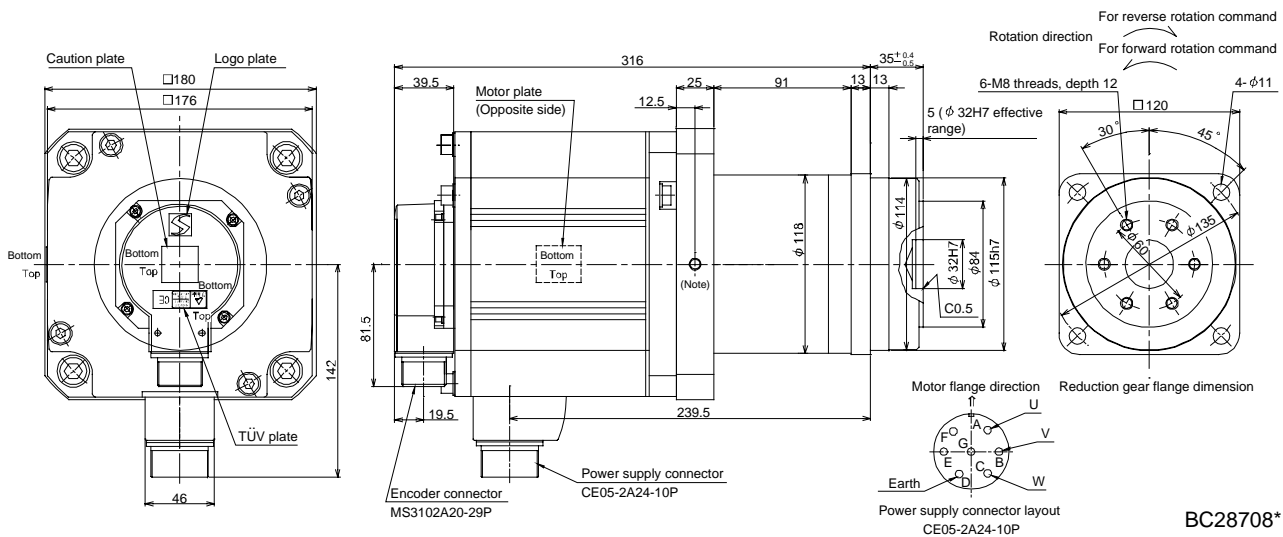


BC28707*

Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS352G5 * HC-SFS3524G5	3.5	HPG-32A-05-F0PBZI-S	1/5	86.6	26.5

[Unit: mm]



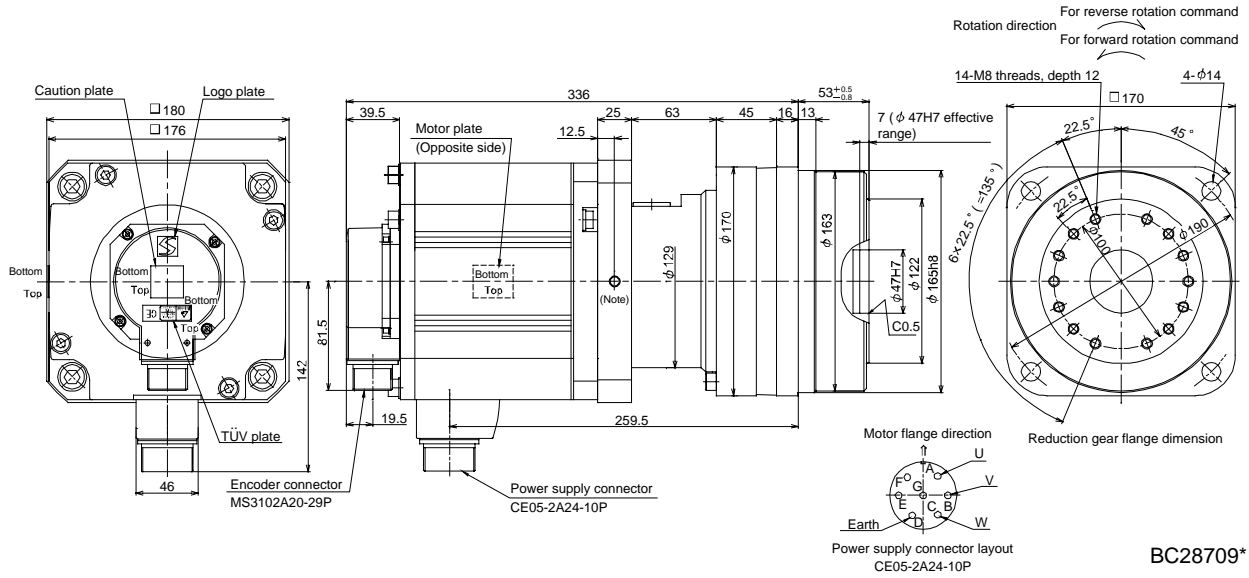
BC28708*

Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS352G5 * HC-SFS3524G5	3.5	HPG-50A-11-F0BBDF-S	1/11	90.1	36.1
		HPG-50A-21-F0BBDF-S	1/21	88.4	

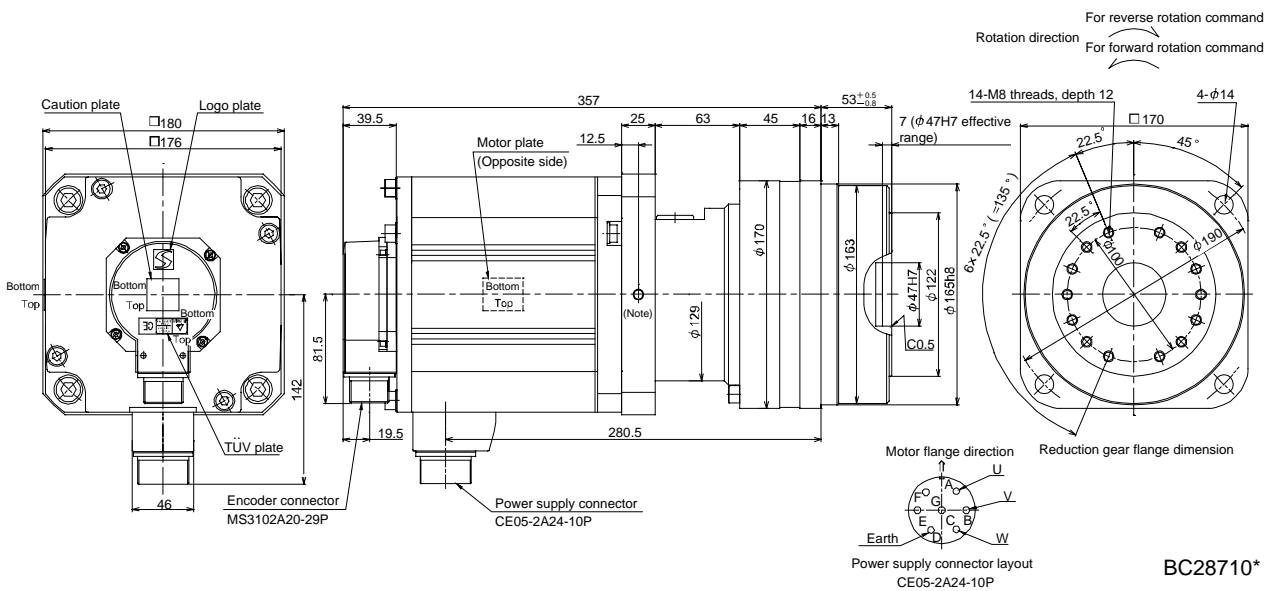
[Unit: mm]



Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS502G5 * HC-SFS5024G5	5.0	HPG-50A-05-F0BBCF-S	1/5	111	38.6
		HPG-50A-11-F0BBDF-S	1/11	109	

[Unit: mm]

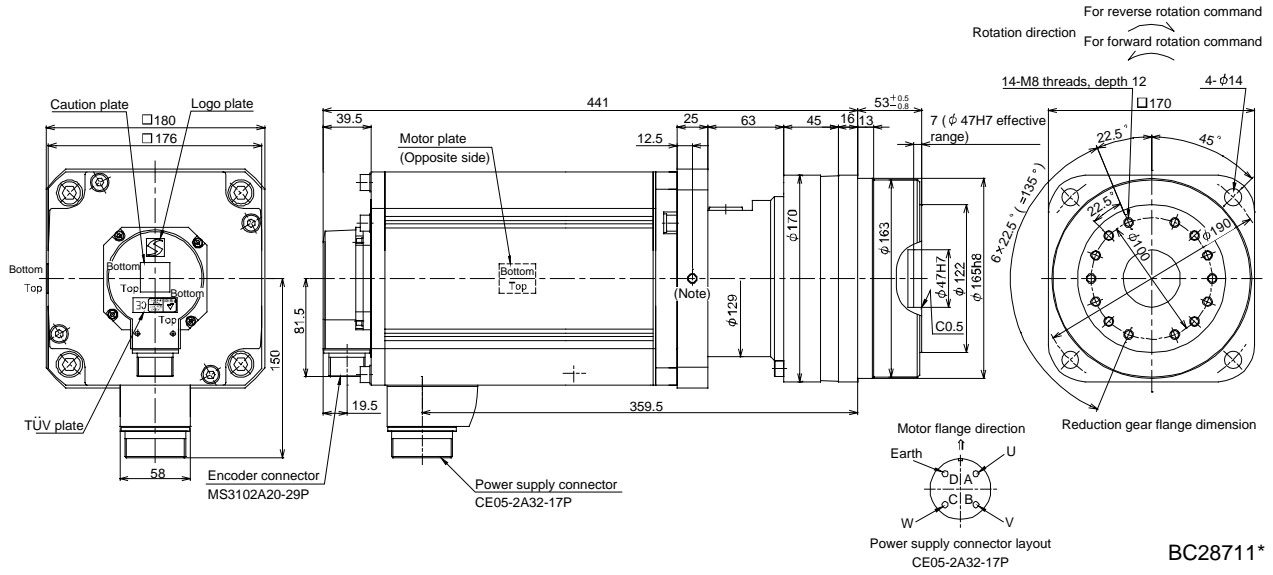


Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS702G5 * HC-SFS7024G5	7.0	HPG-50A-05-F0BBCF-S	1/5	170	47.6

[Unit: mm]



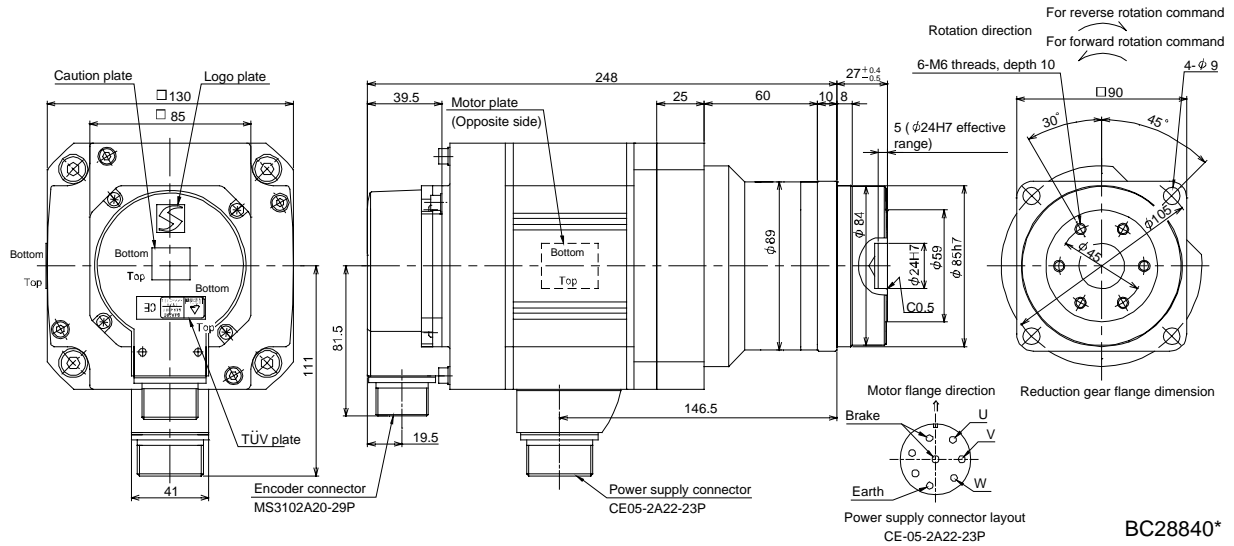
Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

(2) With electromagnetic brake

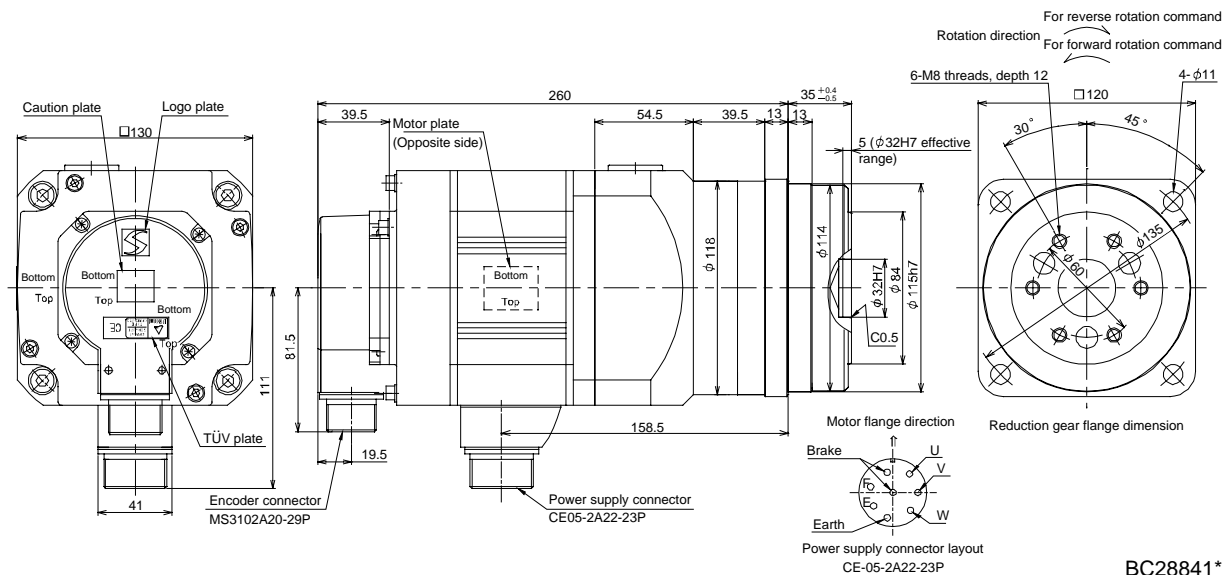
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS52BG5 * HC-SFS524BG5	0.5	HPG-20A-05-FOKSAWS-S	1/5	8.3	9.25	9.8
		HPG-20A-11-FOKSAXS-S	1/11		9.16	10.0

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS52BG5 * HC-SFS524BG5	0.5	HPG-32A-21-FOMCSYS-S	1/21	8.3	11.5	13.5
		HPG-32A-33-FOMCSZS-S	1/33		11.3	
		HPG-32A-45-FOMCSZS-S	1/45			

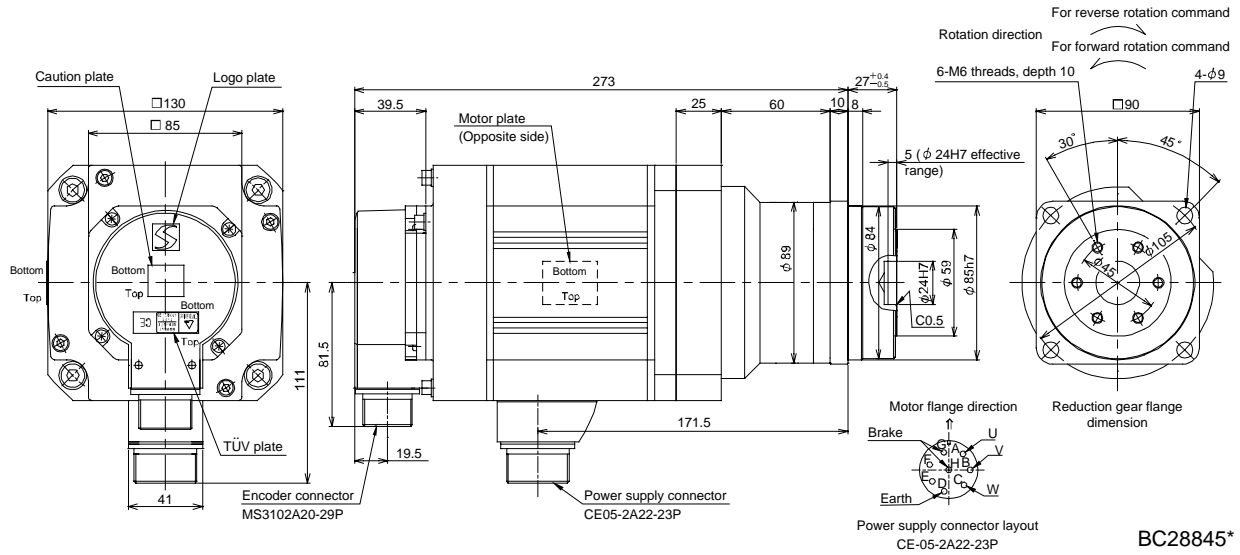
[Unit: mm]



2. HC-SFS SERIES

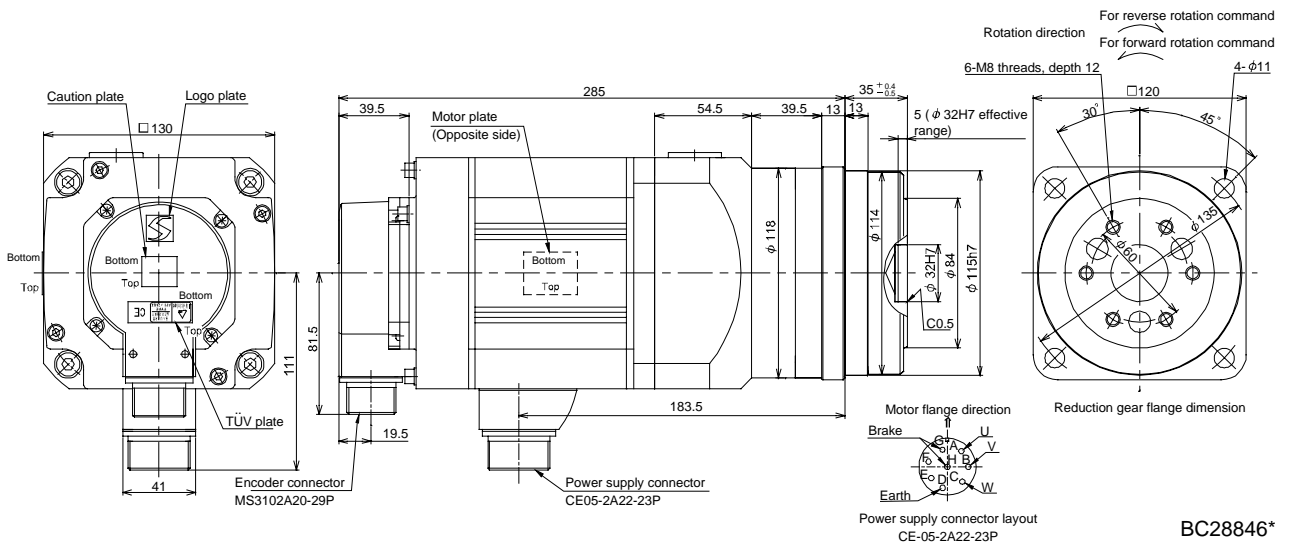
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS102BG5 * HC-SFS1024BG5	1.0	HPG-20A-05-F0KSAWS-S	1/5	8.3	16.4	11.8

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS102BG5 * HC-SFS1024BG5	1.0	HPG-32A-11-F0MCSPS-S	1/11	8.3	19.0	15.5
		HPG-32A-21-F0MCSYS-S	1/21		18.6	

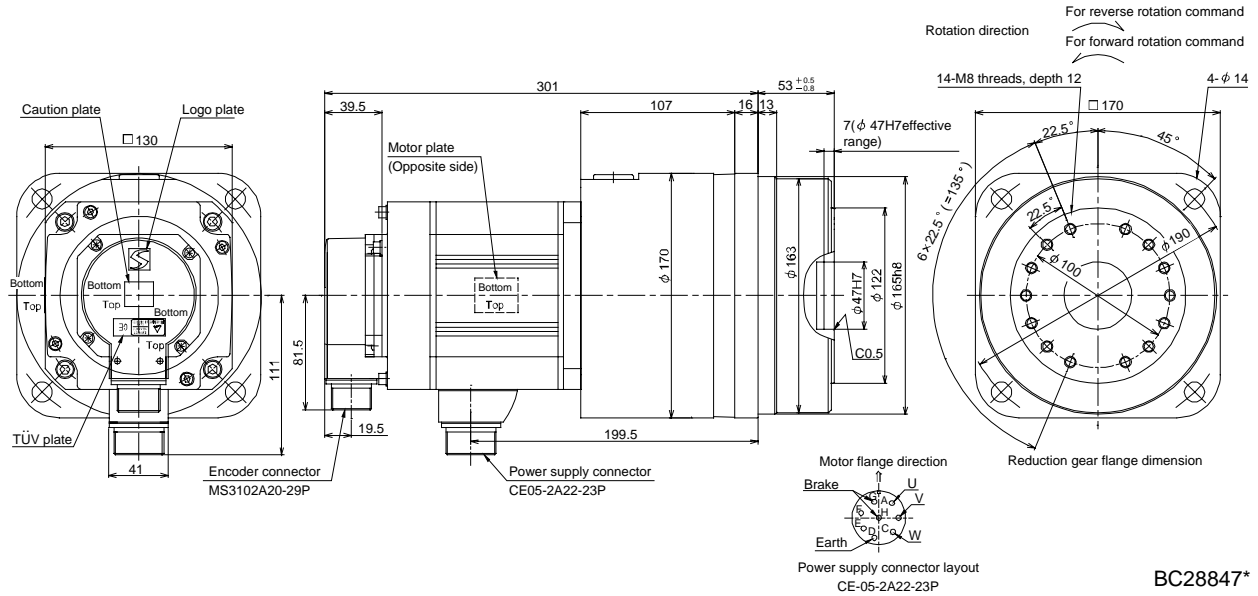
[Unit: mm]



2. HC-SFS SERIES

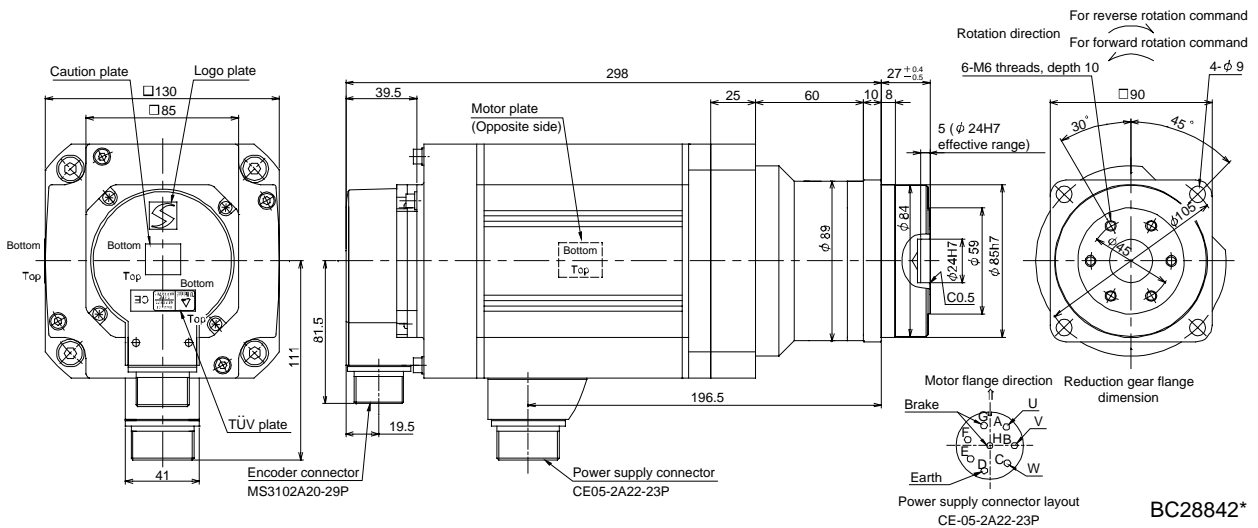
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS102BG * HC-SFS1024BG5	1.0	HPG-50A-33-F0AABC-S	1/33	8.3	20.4	25.0
		HPG-50A-45-F0AABC-S	1/45		20.3	

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS152BG5 * HC-SFS1524BG5	1.5	HPG-20A-05-FOKSAWS-S	1/5	8.3	22.7	13.8

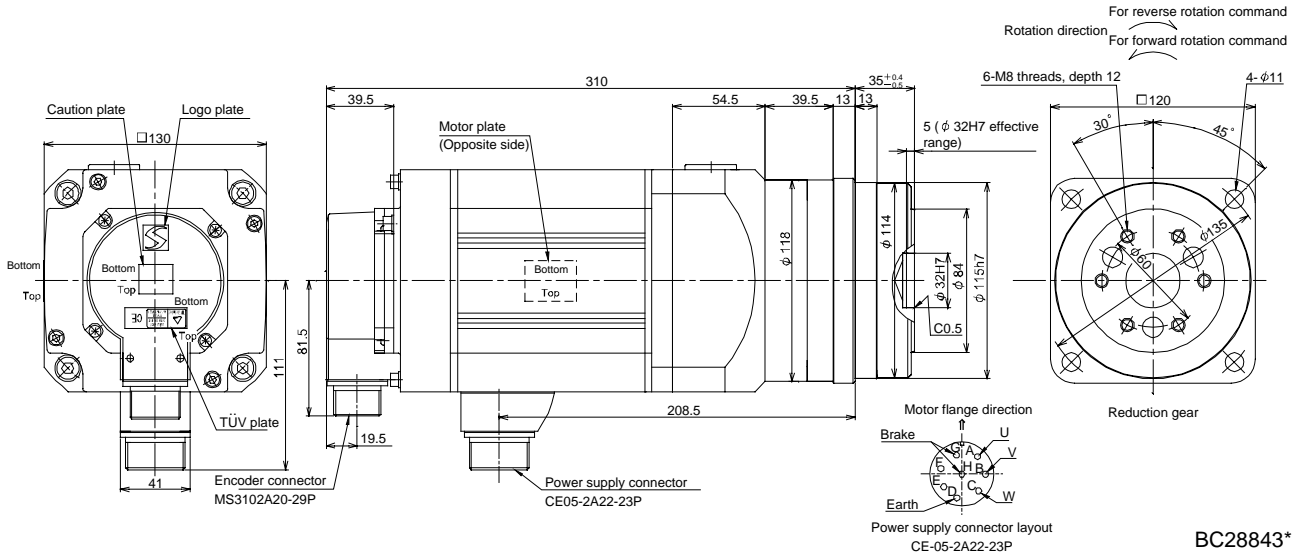
[Unit: mm]



2. HC-SFS SERIES

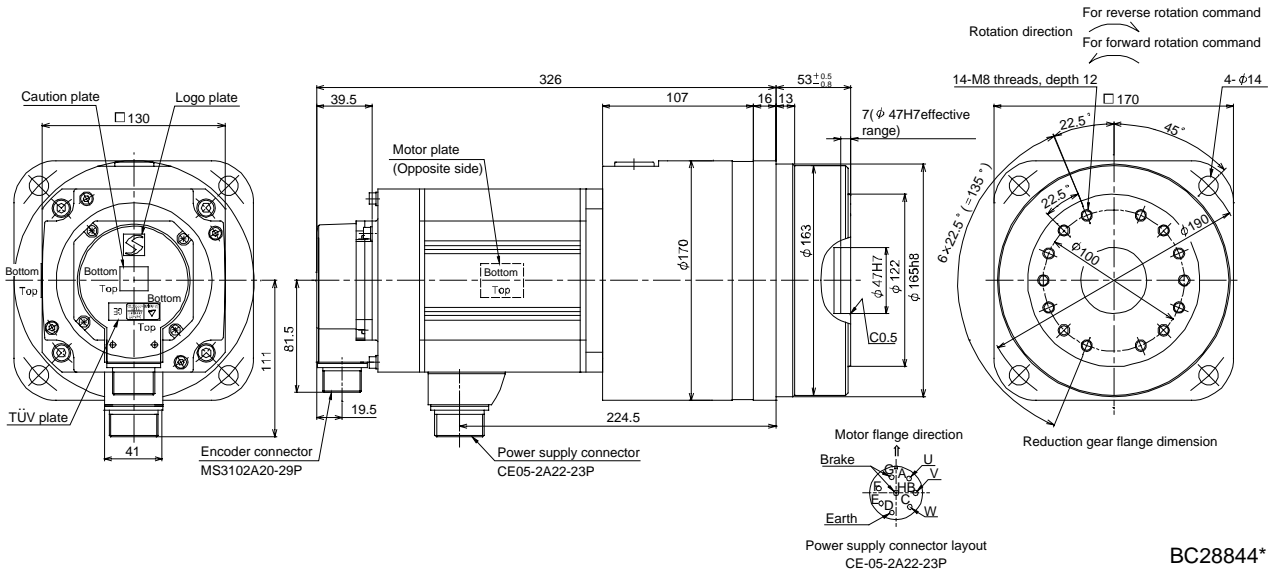
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS152BG5 * HC-SFS1524BG5	1.5	HPG-32A-11-F0MCSPS-S	1/11	8.3	25.3	17.5

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS152BG5 * HC-SFS1524BG5	1.5	HPG-50A-21-F0AABC-S	1/21	8.3	27.7	27.0
		HPG-50A-33-F0AABC-S	1/33		26.7	
		HPG-50A-45-F0AABC-S	1/45		26.6	

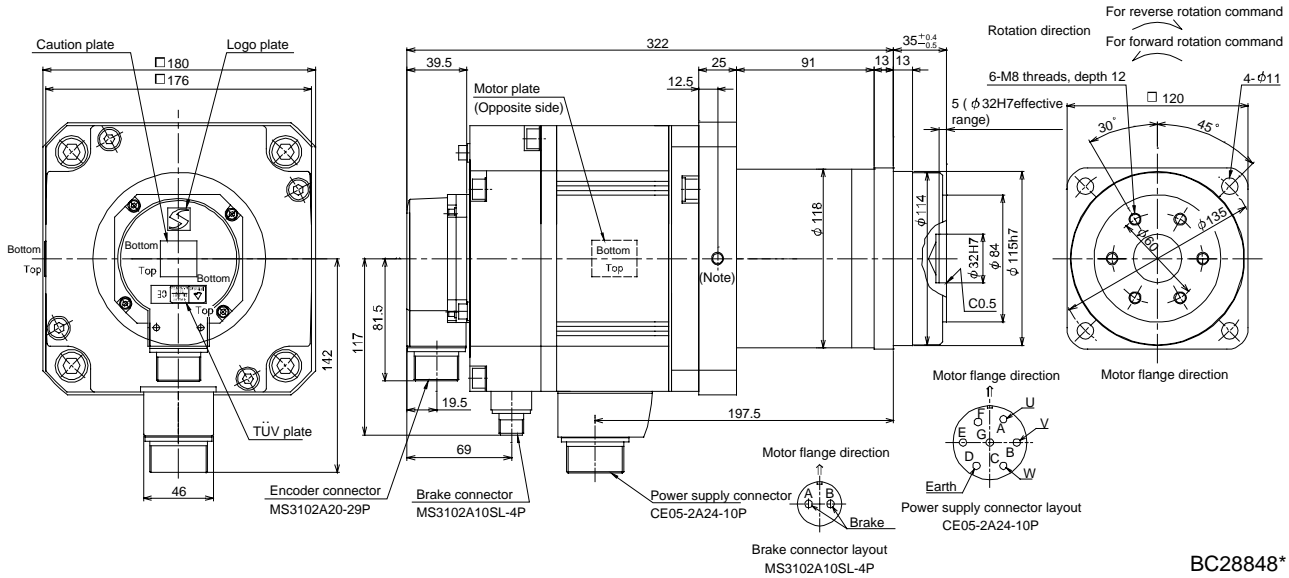
[Unit: mm]



2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS202BG5 · HC-SFS2024BG5	2.0	HPG-32A-05-F0PBZI-S	1/5	43.1	57.1	25.5
		HPG-32A-11-F0PBZJ-S	1/11		56.9	26.0

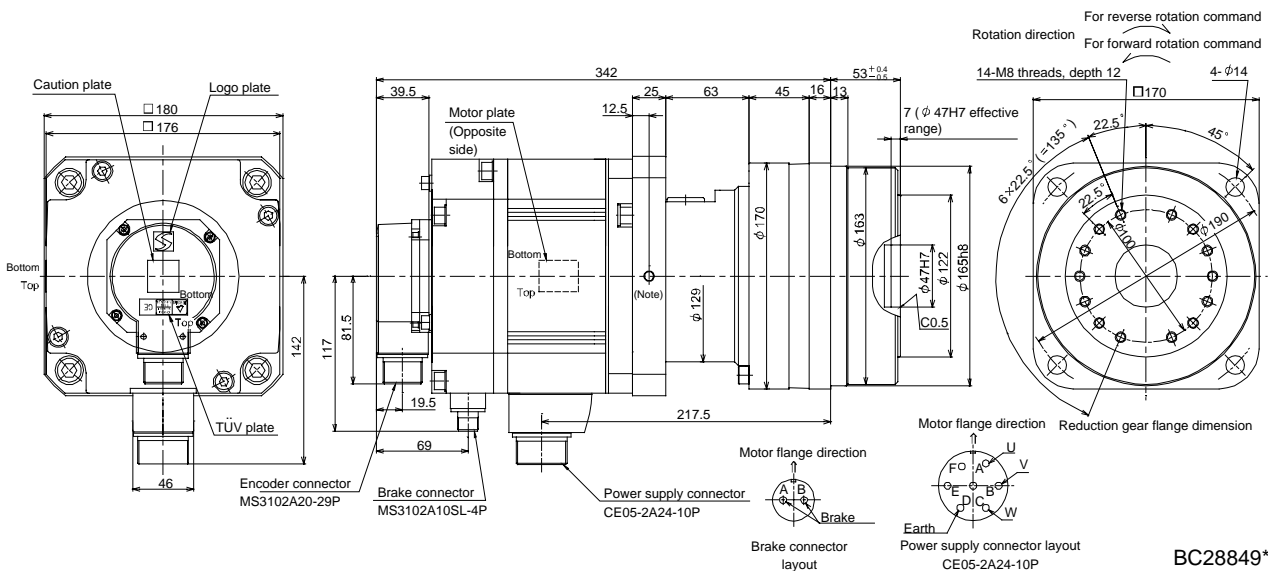
[Unit: mm]



Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS202BG5 · HC-SFS2024BG5	2.0	HPG-50A-21-F0BBDF-S	1/21	43.1	58.9	35.1
		HPG-50A-33-F0BBDF-S	1/33		57.9	
		HPG-50A-45-F0BBDF-S	1/45			

[Unit: mm]

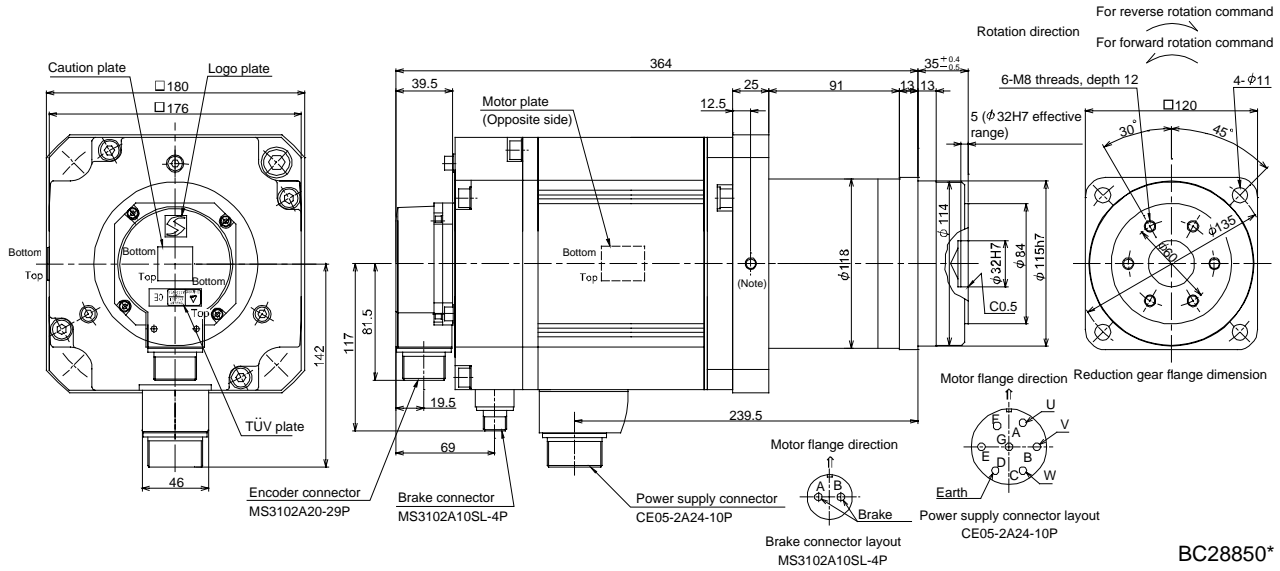


Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS352BG5 * HC-SFS3524BG5	3.5	HPG-32A-05-F0PBZI-S	1/5	43.1	96.6	32.5

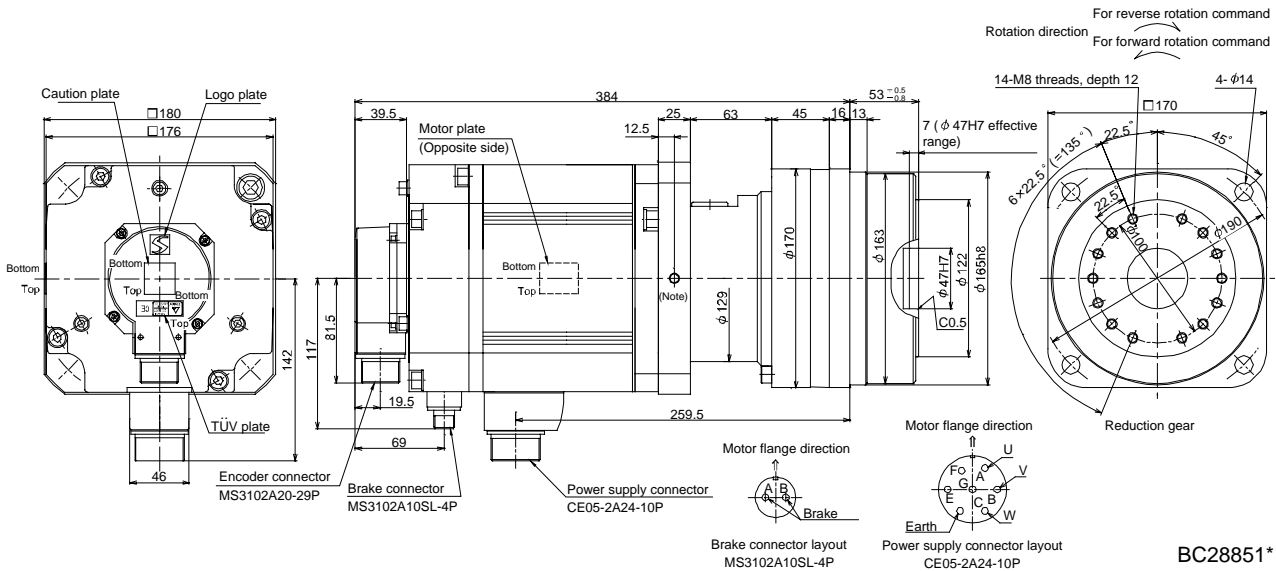
[Unit: mm]



Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS352BG5 * HC-SFS3524BG5	3.5	HPG-50A-11-F0BBDF-S	1/11	43.1	100	42.1
		HPG-50A-21-F0BBDF-S	1/21		98.4	

[Unit: mm]

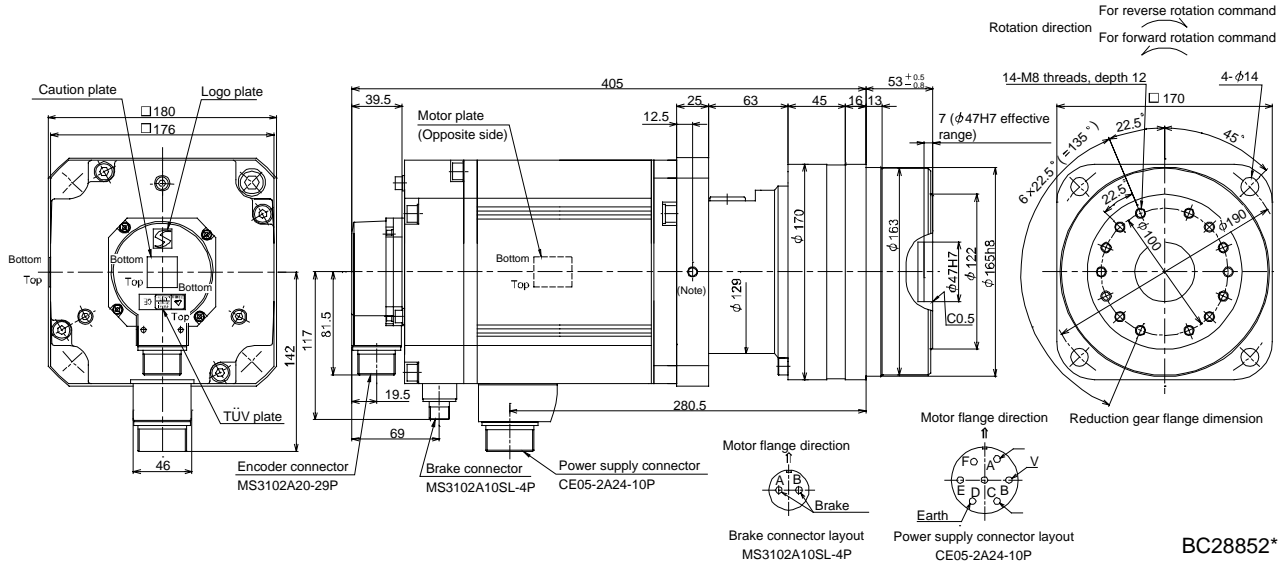


Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS502BG5 * HC-SFS5024BG5	5.0	HPG-50A-05-F0BBCF-S	1/5	43.1	121	44.6
		HPG-50A-11-F0BBDF-S	1/11		119	46.1

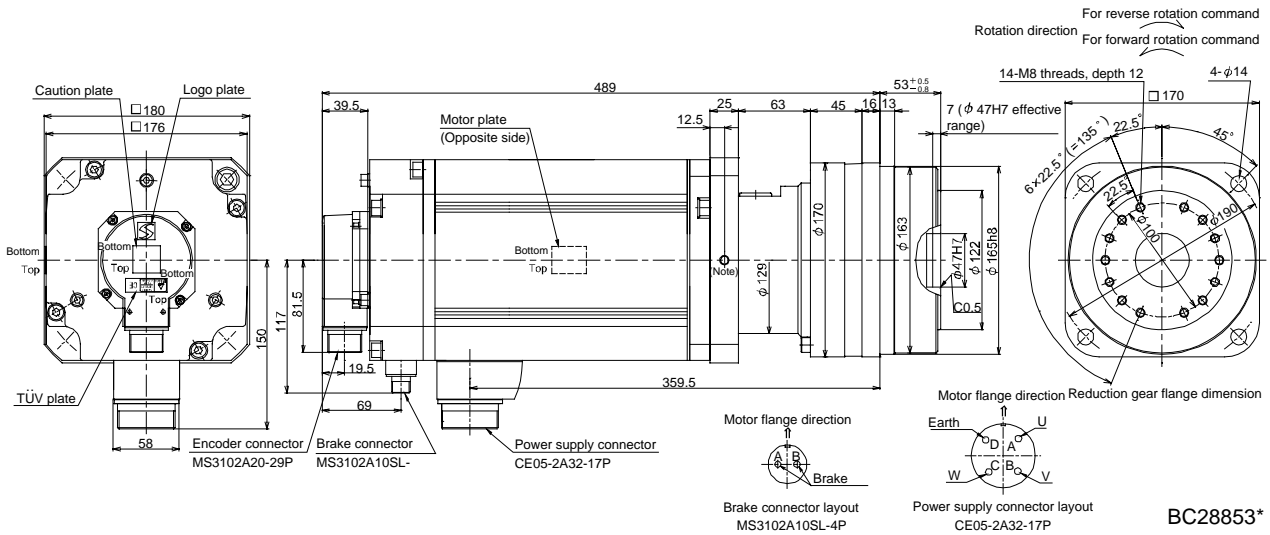
[Unit: mm]



Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS702BG5 * HC-SFS7024BG5	7.0	HPG-50A-05-F0BBCF-S	1/5	43.1	180	53.6

[Unit: mm]



Note: Screw hole for eyebolt (M8).

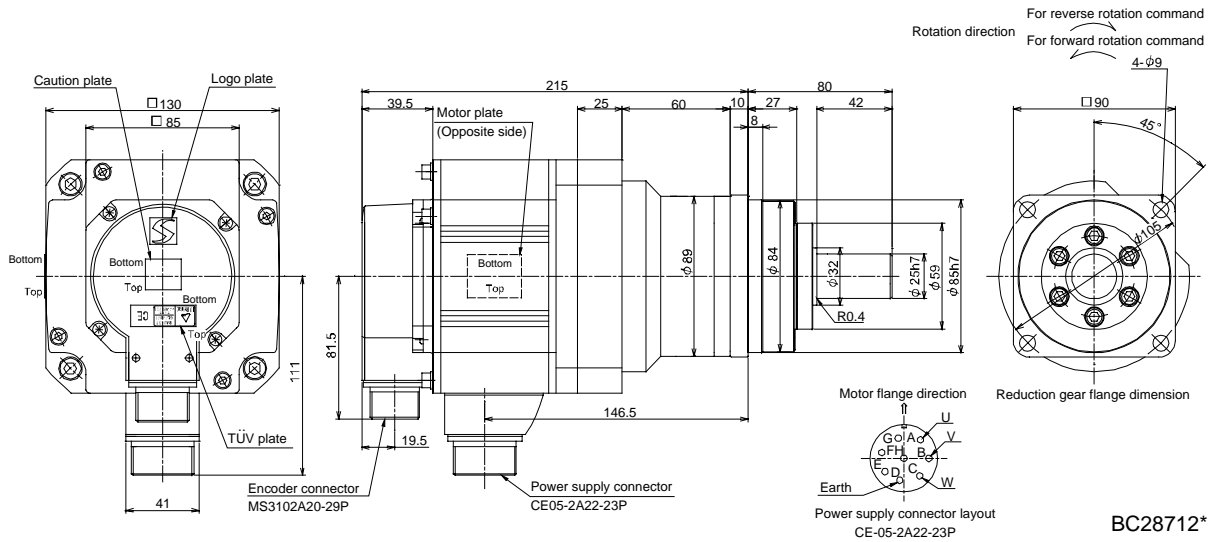
2. HC-SFS SERIES

2.6.2 Flange-mounting shaft output type for precision application compliant (G7)

(1) Without electromagnetic brake

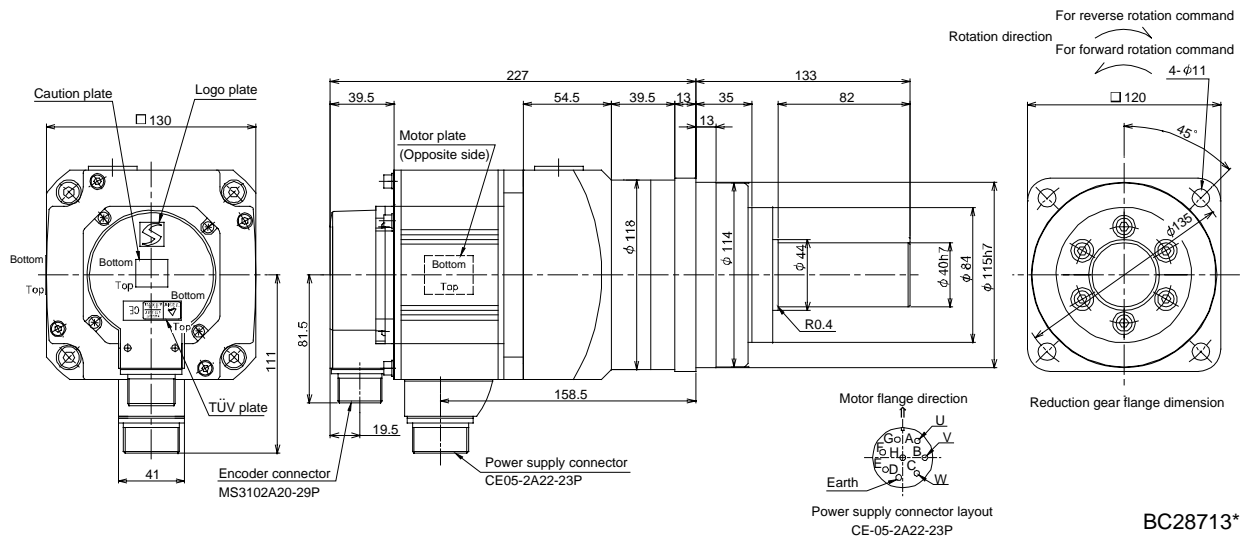
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS52G7 * HC-SFS524G7	0.5	HPG-20A-05-J2KSAWS-S	1/5	7.29	8.2
		HPG-20A-11-J2KSAXS-S	1/11	7.16	8.4

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS52G7 * HC-SFS524G7	0.5	HPG-32A-21-J2MCSYS-S	1/21	9.50	12.9
		HPG-32A-33-J2MCSZS-S	1/33	9.30	
		HPG-32A-45-J2MCSZS-S	1/45		

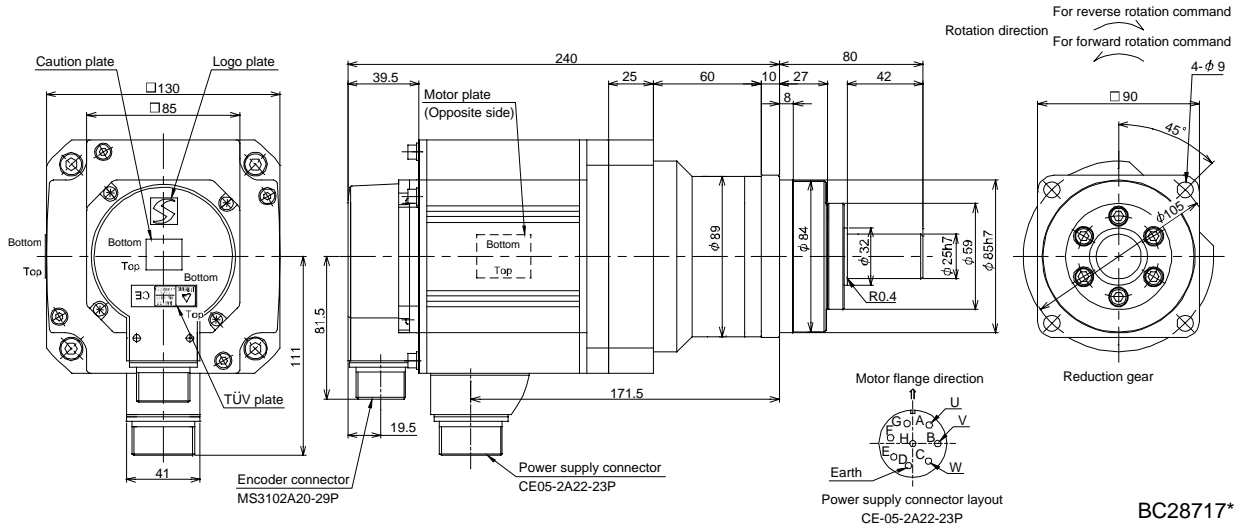
[Unit: mm]



2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS102G7 * HC-SFS1024G7	1.0	HPG-20A-05-J2KSAWS-S	1/5	14.4	10.2

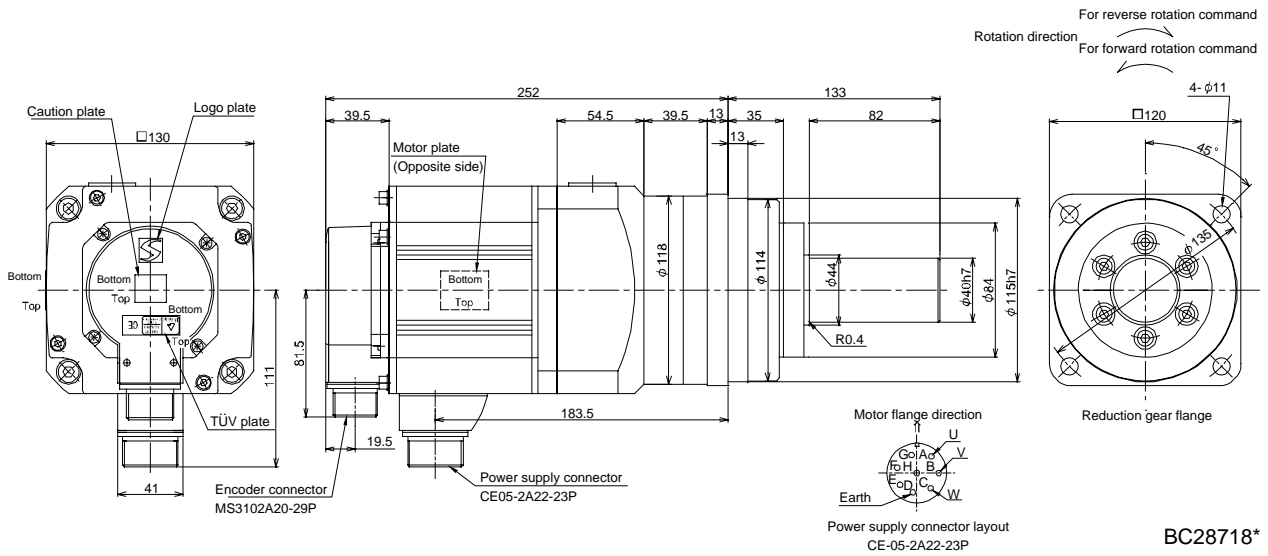
[Unit: mm]



BC28717*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS102G7 * HC-SFS1024G7	1.0	HPG-32A-11-J2MCSPS-S	1/11	17.1	14.9
		HPG-32A-21-J2MCSYS-S	1/21	16.6	

[Unit: mm]

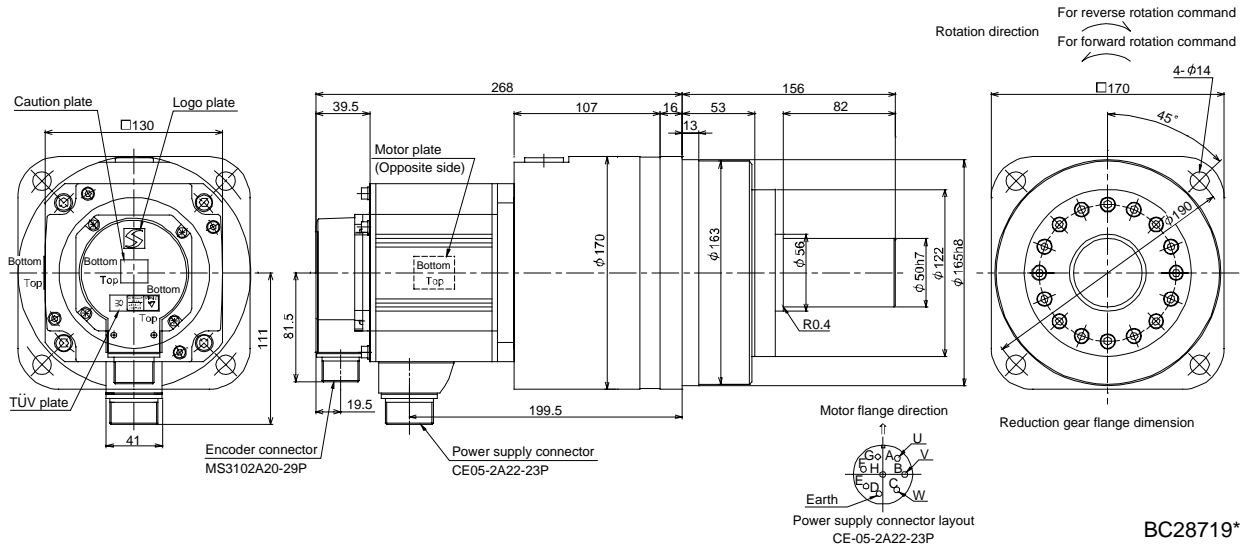


BC28718*

2. HC-SFS SERIES

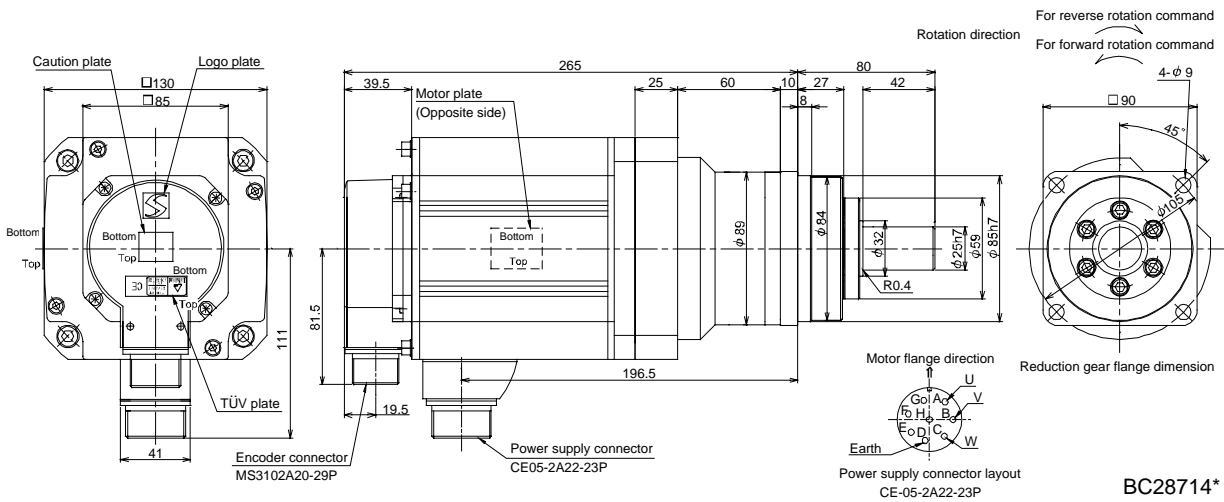
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS102G7 * HC-SFS1024G7	1.0	HPG-50A-33-J2AABC-S	1/33	18.4	26.0
		HPG-50A-45-J2AABC-S	1/45		

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS152G7 * HC-SFS1524G7	1.5	HPG-20A-05-J2KSAWS-S	1/5	20.7	12.2

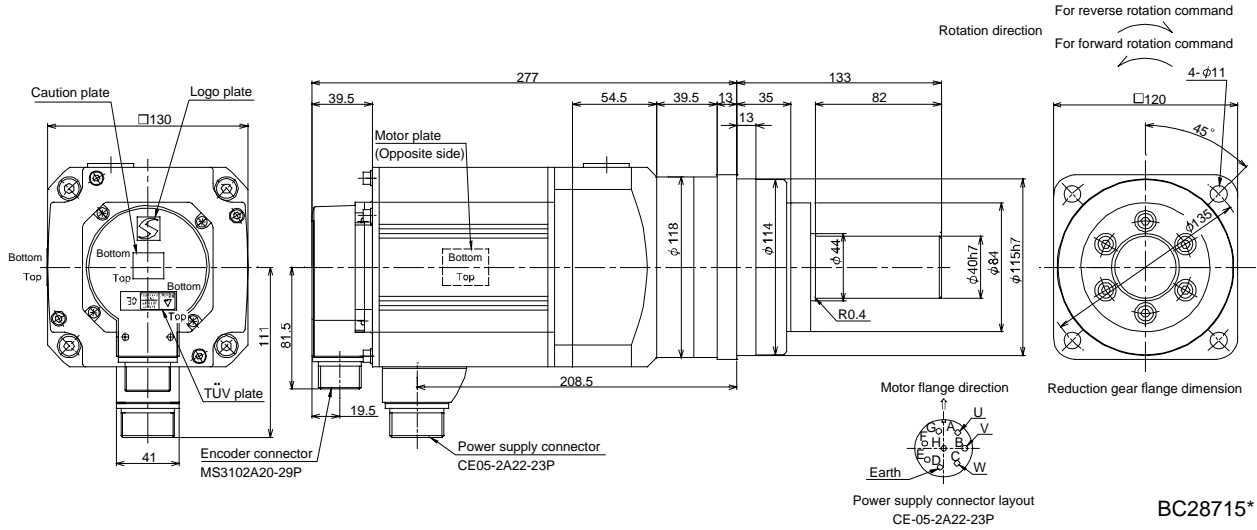
[Unit: mm]



2. HC-SFS SERIES

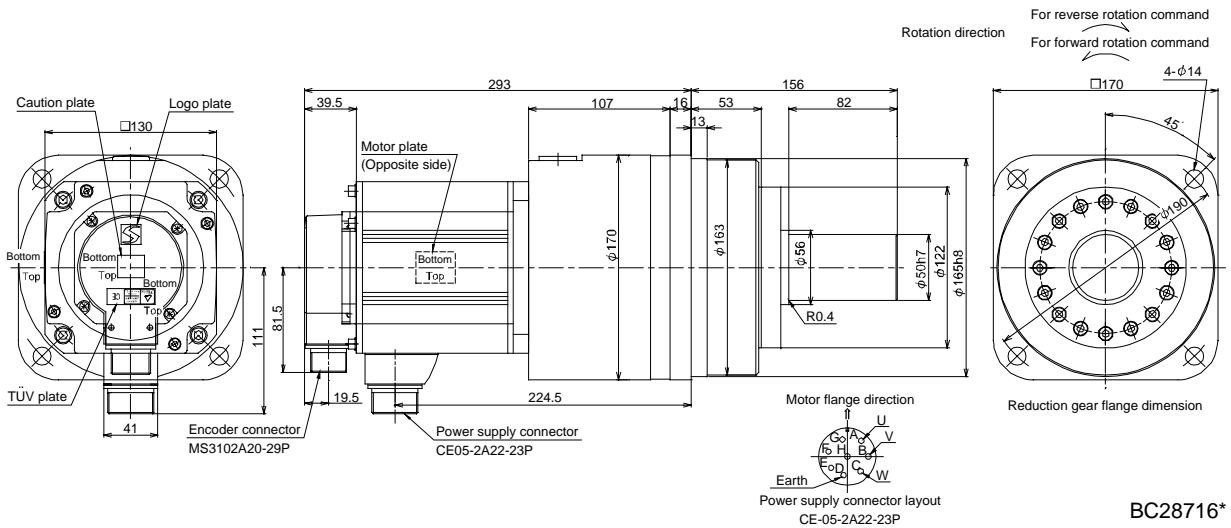
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS152G7 * HC-SFS1524G7	1.5	HPG-32A-11-J2MCSPS-S	1/11	23.4	16.9

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS152G7 * HC-SFS1524G7	1.5	HPG-50A-21-J2AABC-S	1/21	25.7	28.0
		HPG-50A-33-J2AABC-S	1/33	24.7	
		HPG-50A-45-J2AABC-S	1/45		

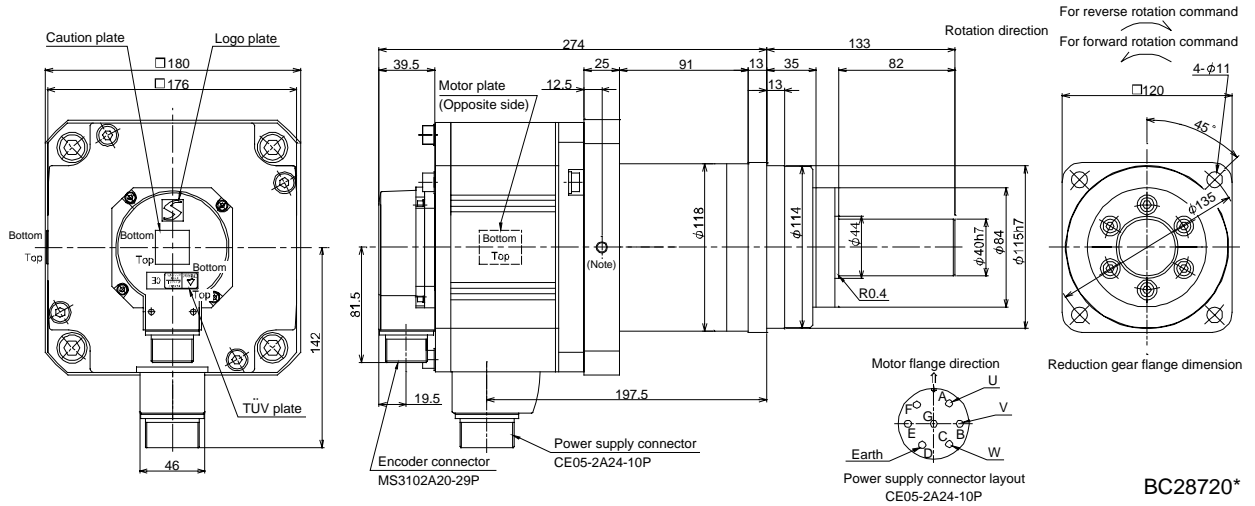
[Unit: mm]



2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS202G7 * HC-SFS2024G7	2.0	HPG-32A-05-J2PBZI-S	1/5	47.4	20.9
		HPG-32A-11-J2PBZJ-S	1/11	47.0	21.4

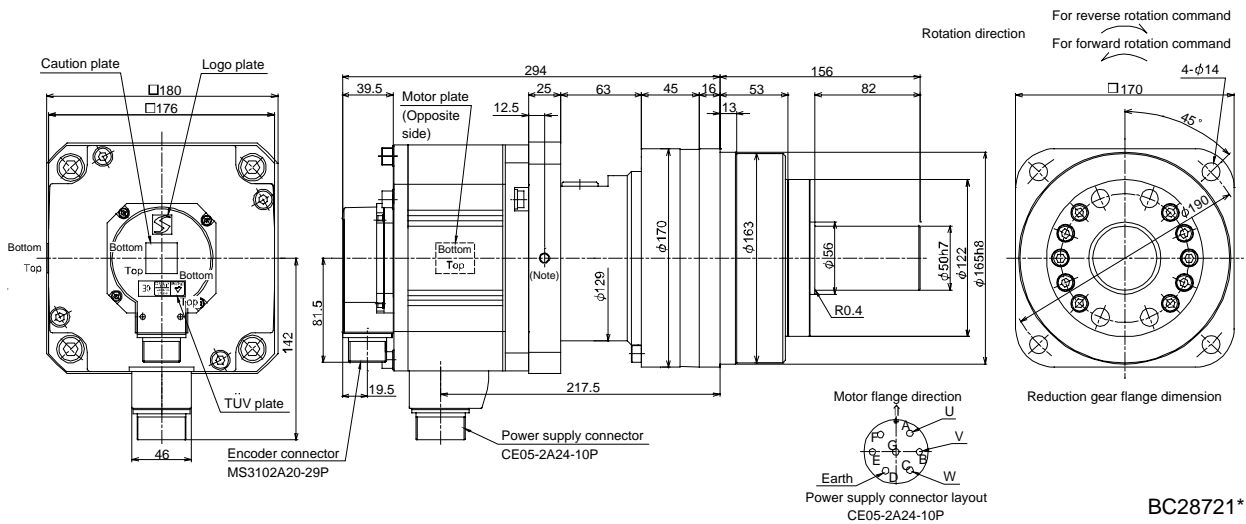
[Unit: mm]



Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS202G7 * HC-SFS2024G7	2.0	HPG-50A-21-J2BBDF-S	1/21	49.0	32.1
		HPG-50A-33-J2BBDF-S	1/33	47.9	
		HPG-50A-45-J2BBDF-S	1/45		

[Unit: mm]

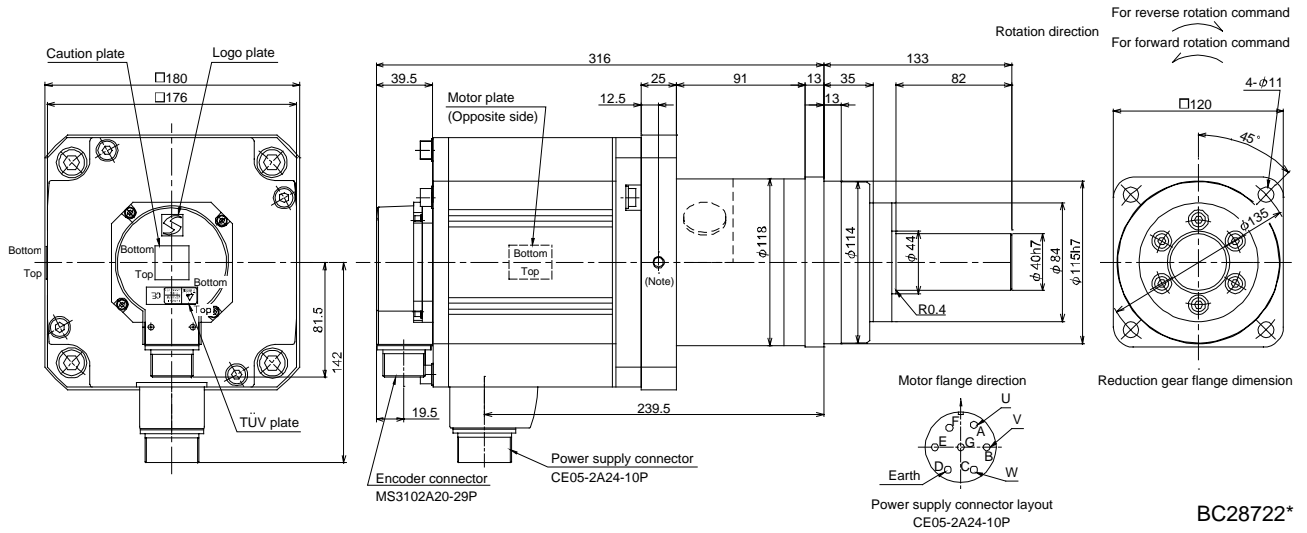


Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS352G7 * HC-SFS3524G7	3.5	HPG-32A-05-J2PBZI-S	1/5	86.9	27.9

[Unit: mm]

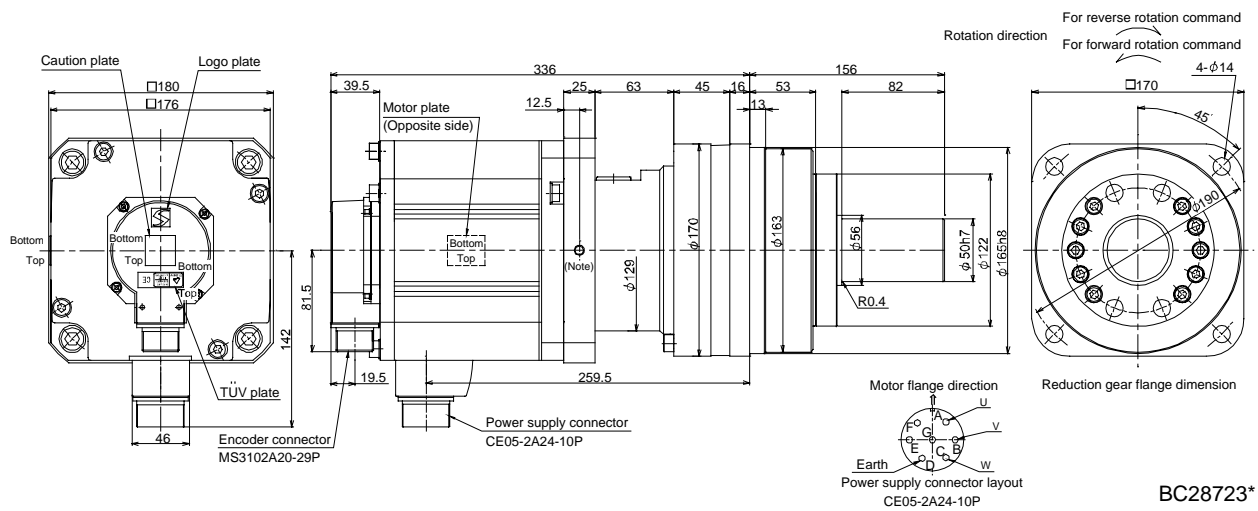


BC28722*

Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS352G7 * HC-SFS3524G7	3.5	HPG-50A-11-J2BBDF-S	1/11	90.4	39.1
		HPG-50A-21-J2BBDF-S	1/21	88.5	

[Unit: mm]



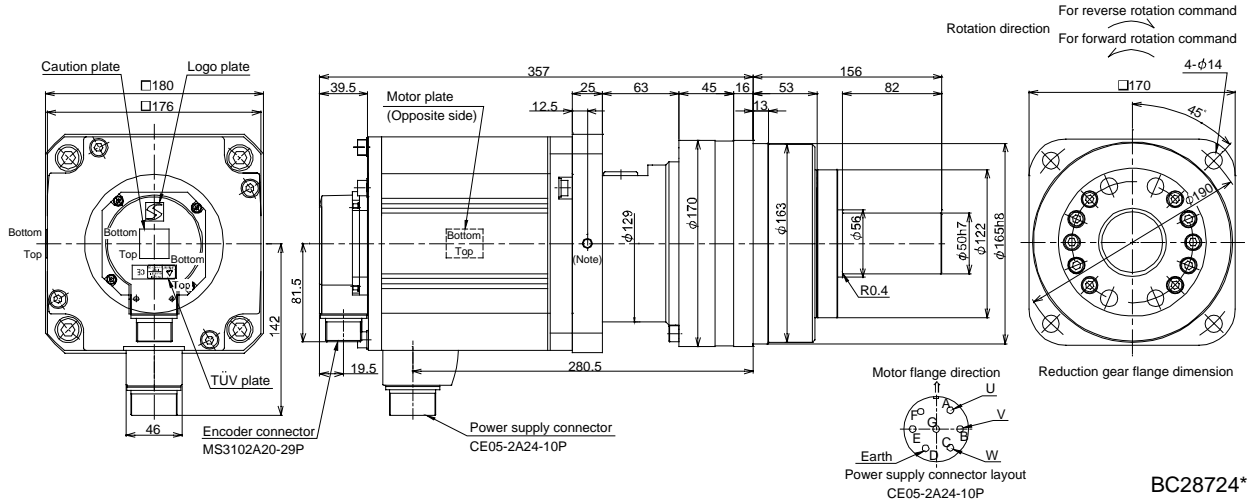
BC28723*

Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS502G7 * HC-SFS5024G7	5.0	HPG-50A-05-J2BBCF-S	1/5	113	41.6
		HPG-50A-11-J2BBDF-S	1/11	109	43.1

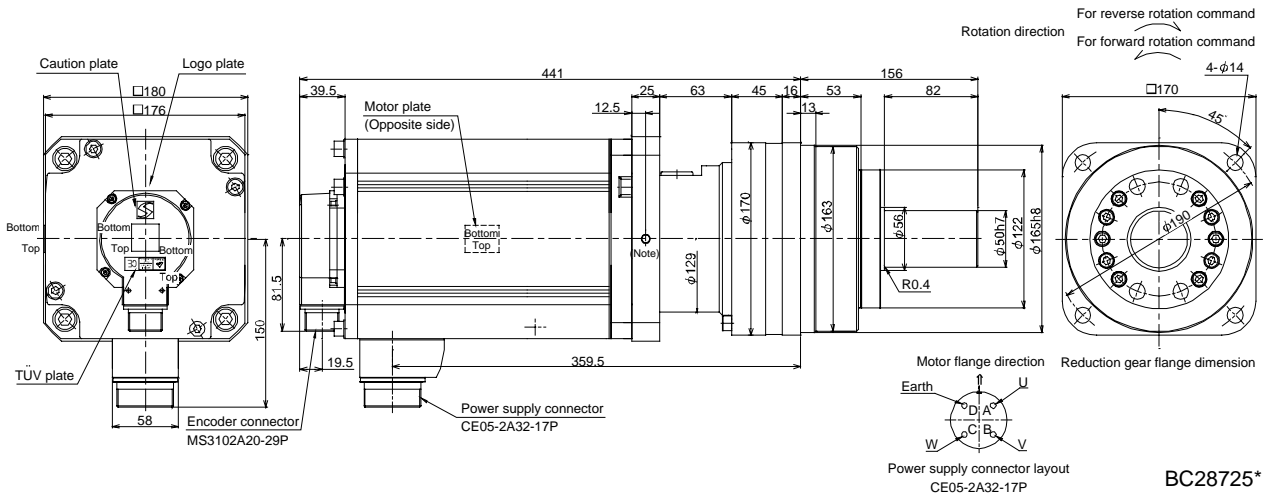
[Unit: mm]



Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS702G7	7.0	HPG-50A-05-J2BBCF-S	1/5	172	50.6

[Unit: mm]



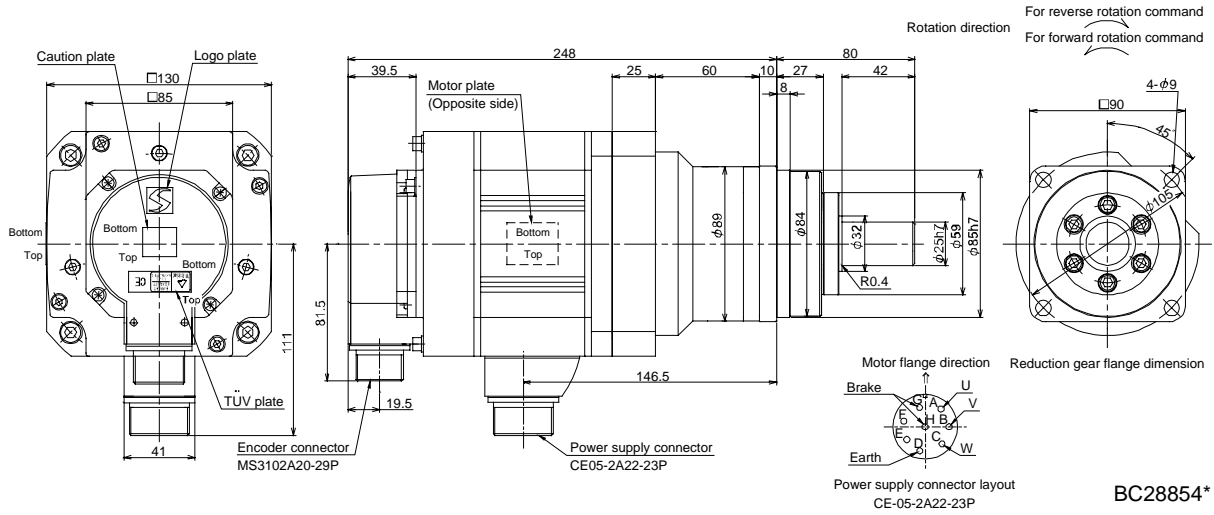
Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

(2) With electromagnetic brake

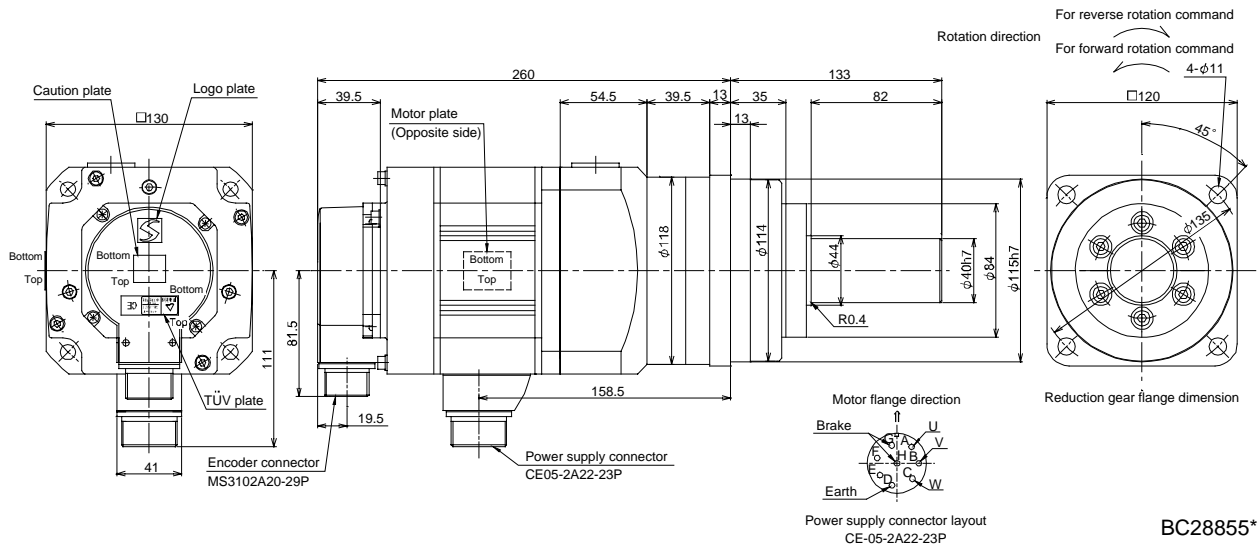
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS52BG7 * HC-SFS524BG7	0.5	HPG-20A-05-J2KSAWS-S	1/5	8.3	9.29	10.2
		HPG-20A-11-J2KSAXS-S	1/11		9.16	10.4

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS52BG7 * HC-SFS524BG7	0.5	HPG-32A-21-J2MCSYS-S	1/21	8.3	11.5	14.9
		HPG-32A-33-J2MCSZS-S	1/33		11.3	
		HPG-32A-45-J2MCSZS-S	1/45			

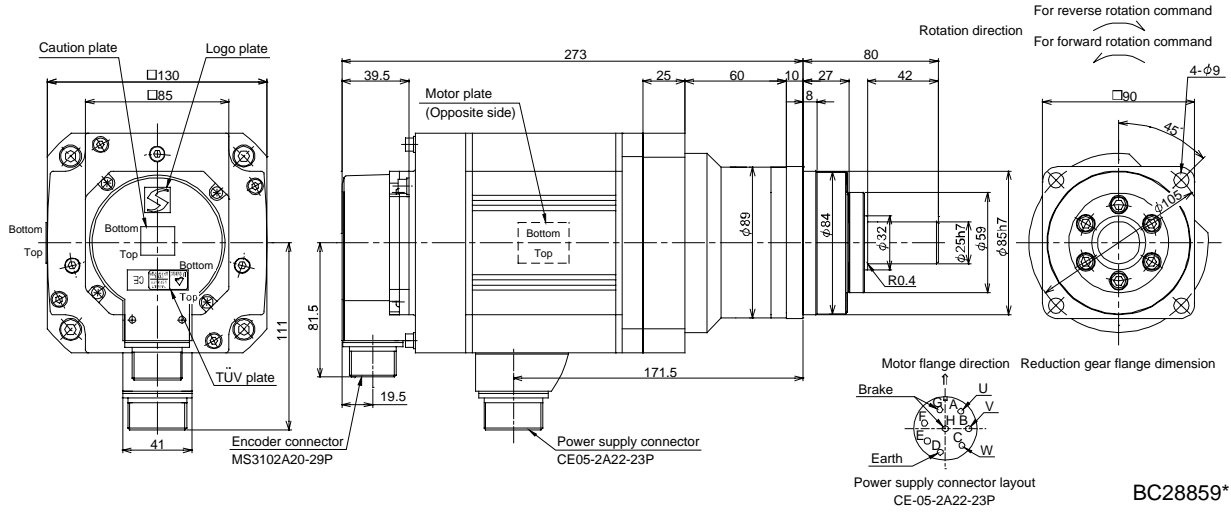
[Unit: mm]



2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS102BG7 * HC-SFS1024BG7	1.0	HPG-20A-05-J2KSAWS-S	1/5	8.3	16.4	12.2

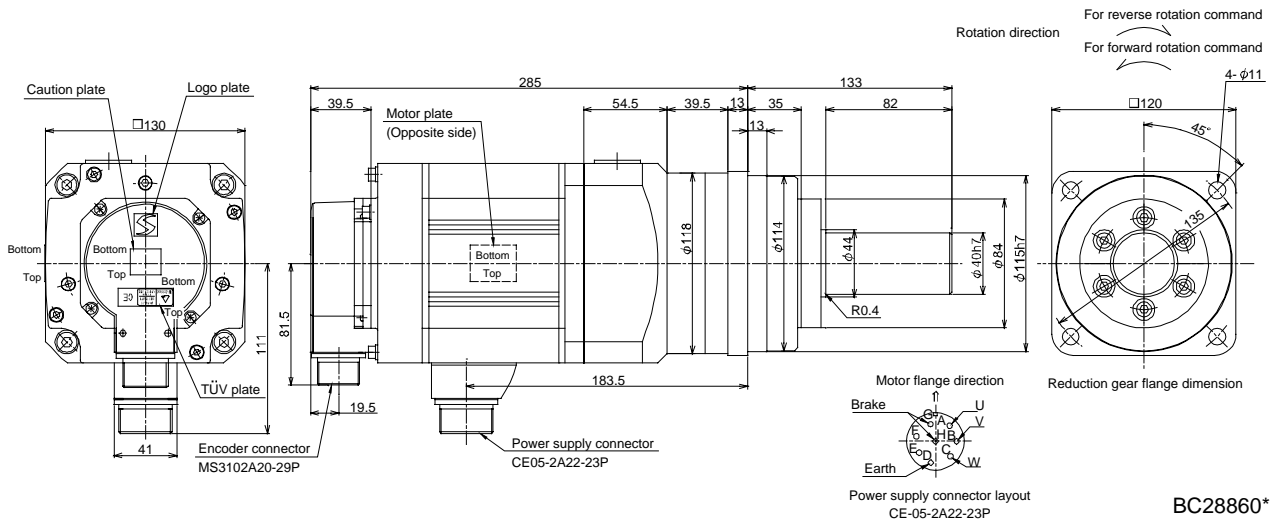
[Unit: mm]



BC28859*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS102BG7 * HC-SFS1024BG7	1.0	HPG-32A-11-J2MCSPS-S	1/11	8.3	19.1	16.9
		HPG-32A-21-J2MCSYS-S	1/21		18.6	

[Unit: mm]

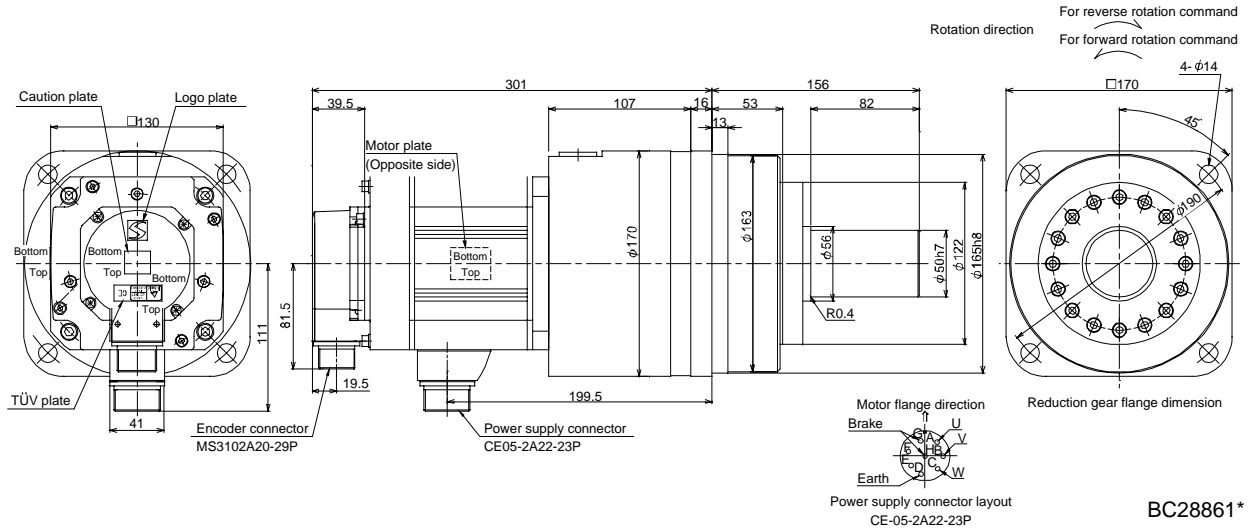


BC28860*

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS102BG7 * HC-SFS1024BG7	1.0	HPG-50A-33-J2AABC-S	1/33	8.3	20.4	28.0
		HPG-50A-45-J2AABC-S	1/45			

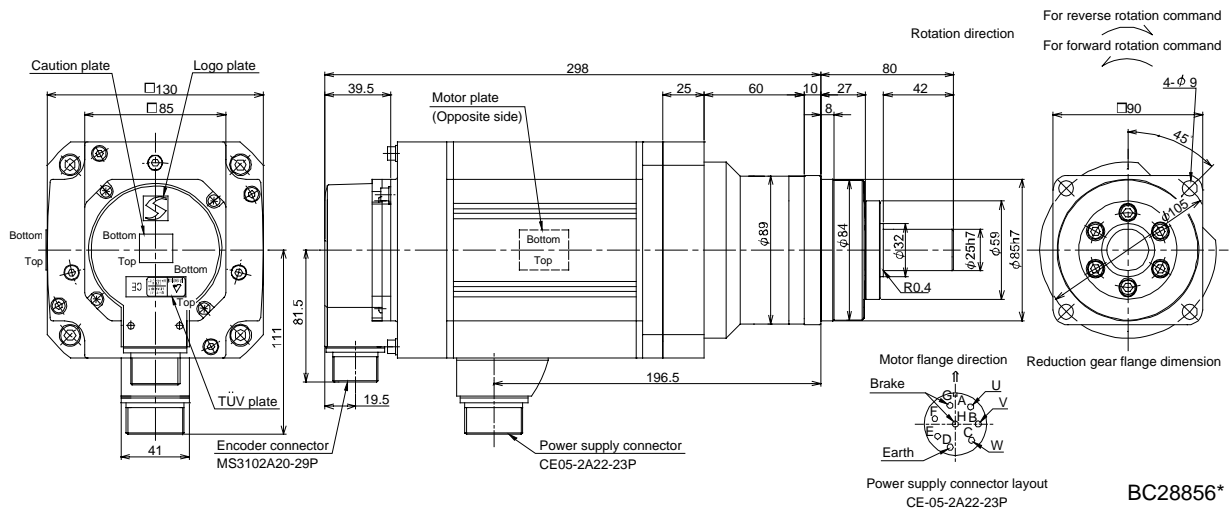
[Unit: mm]



BC28861*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-SFS152BG7 * HC-SFS1524BG7	1.5	HPG-20A-05-J2KSAWS-S	1/5	8.3	22.7	14.2

[Unit: mm]

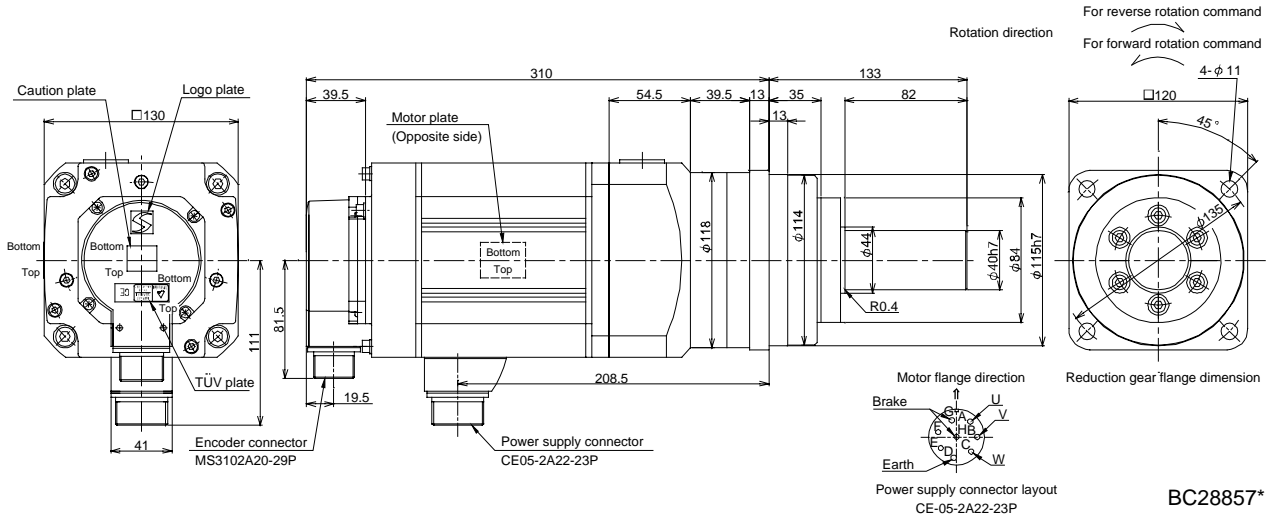


BC28856*

2. HC-SFS SERIES

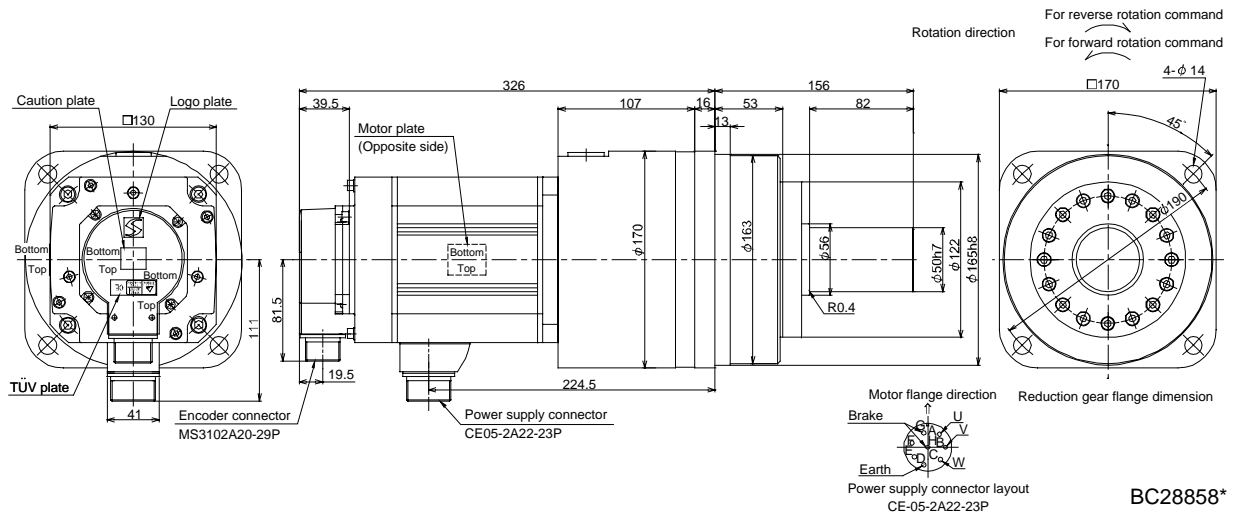
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS152BG7 * HC-SFS1524BG7	1.5	HPG-32A-11-J2MCSPS-S	1/11	8.3	25.4	18.9

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS152BG7 * HC-SFS1524BG7	1.5	HPG-50A-21-J2AABC-S	1/21	8.3	27.7	30.0
		HPG-50A-33-J2AABC-S	1/33		26.7	
		HPG-50A-45-J2AABC-S	1/45			

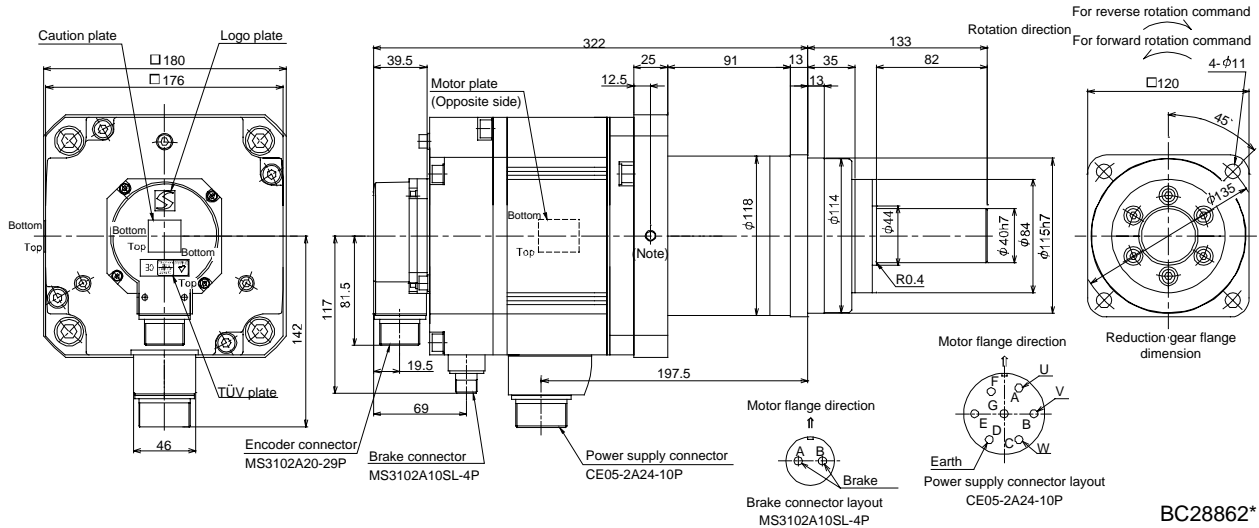
[Unit: mm]



2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS202BG7 * HC-SFS2024BG7	2.0	HPG-32A-05-J2PBZI-S	1/5	43.1	57.4	26.9
		HPG-32A-11-J2PBZJ-S	1/11		57.0	27.4

[Unit: mm]

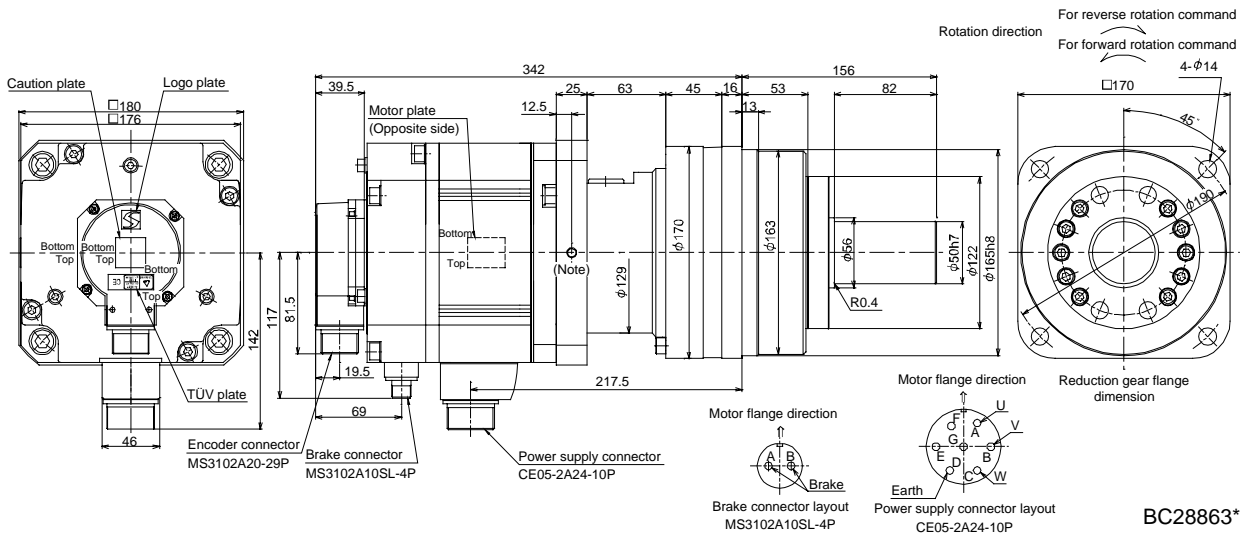


BC28862*

Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS202BG7 * HC-SFS2024BG7	2.0	HPG-50A-21-J2BBDF-S	1/21	43.1	59.0	38.1
		HPG-50A-33-J2BBDF-S	1/33		57.9	
		HPG-50A-45-J2BBDF-S	1/45			

[Unit: mm]



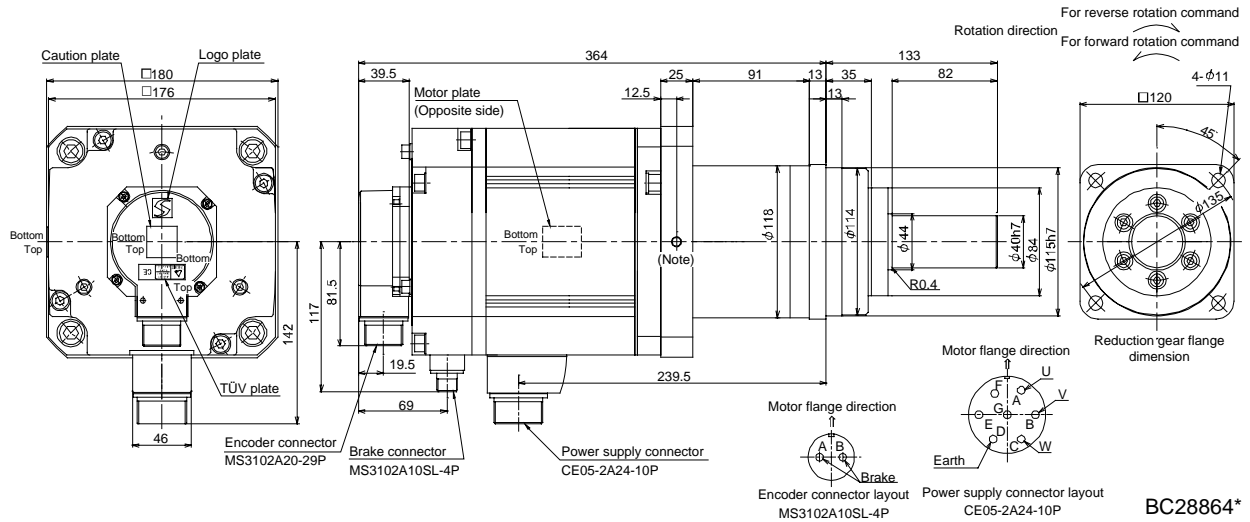
BC28863*

Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS352BG7 * HC-SFS3524BG7	3.5	HPG-32A-05-J2PBZI-S	1/5	43.1	96.9	33.9

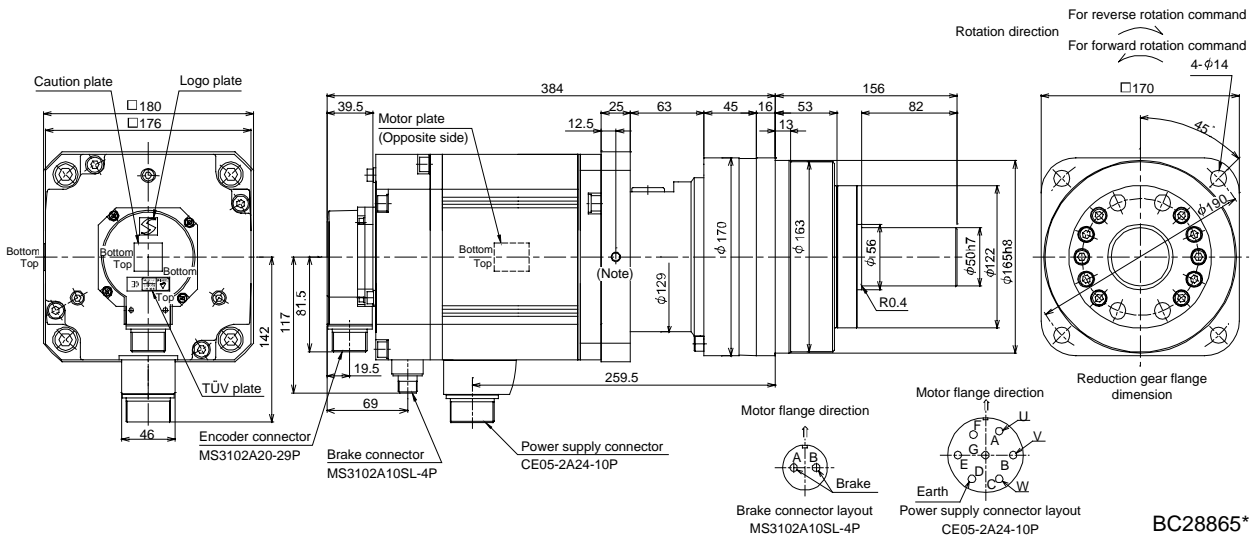
[Unit: mm]



Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-SFS352BG7 * HC-SFS3524BG7	3.5	HPG-50A-11-J2BBDF-S	1/11	43.1	100	45.1
		HPG-50A-21-J2BBDF-S	1/21		98.5	

[Unit: mm]

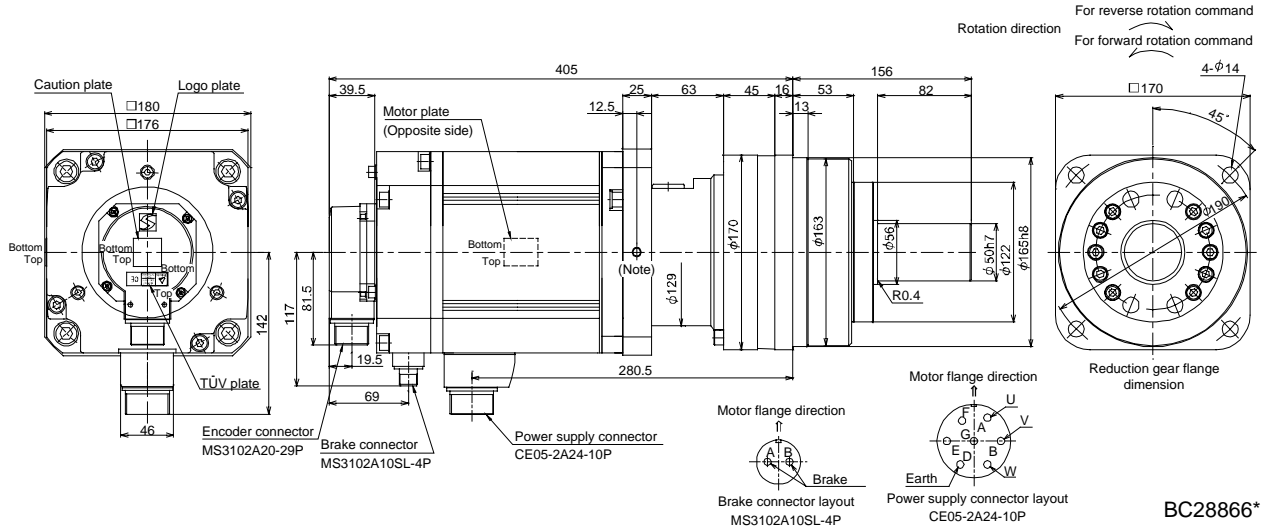


Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [N · m ²]	Mass [kg]
HC-SFS502BG7 * HC-SFS5024BG7	5.0	HPG-50A-05-J2BBCF-S	1/5	43.1	123	47.6
		HPG-50A-11-J2BBDF-S	1/11		119	49.1

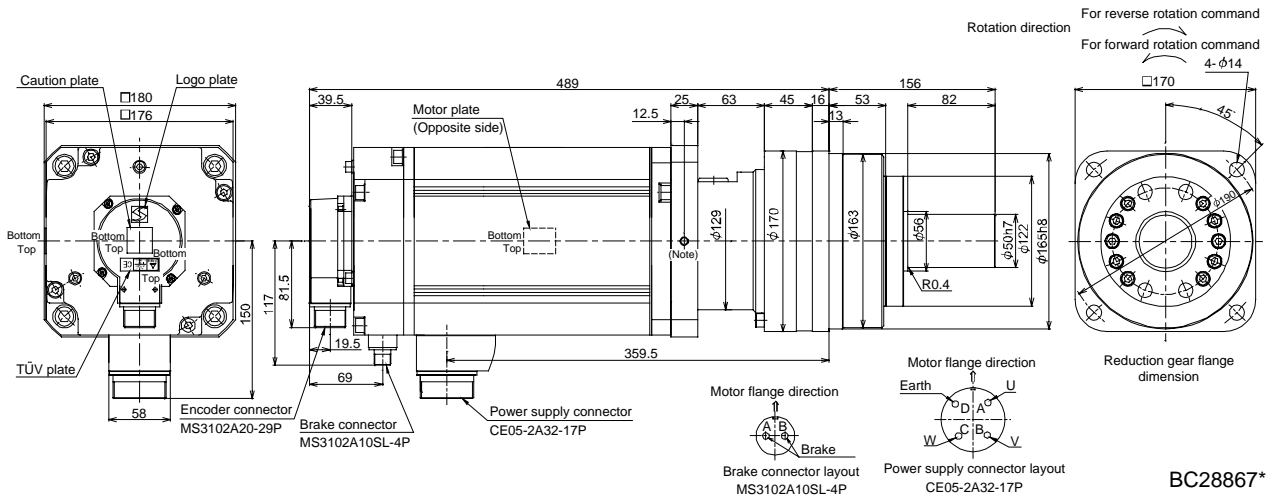
[Unit: in]



Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment J [N · m ²]	Mass [kg]
HC-SFS702BG7 * HC-SFS7024BG7	7.0	HPG-50A-05-J2BBCF-S	1/5	43.1	182	56.6

[Unit: in]



Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

2.7 Outline dimension drawings (in inches)

POINT
The values in yards/pounds are reference values.

The outer frame of the reduction gear is a material surface such as casting. Its actual dimensions may be 0.039 to 0.118 in larger than the drawing dimensions. Design the machine side with allowances.

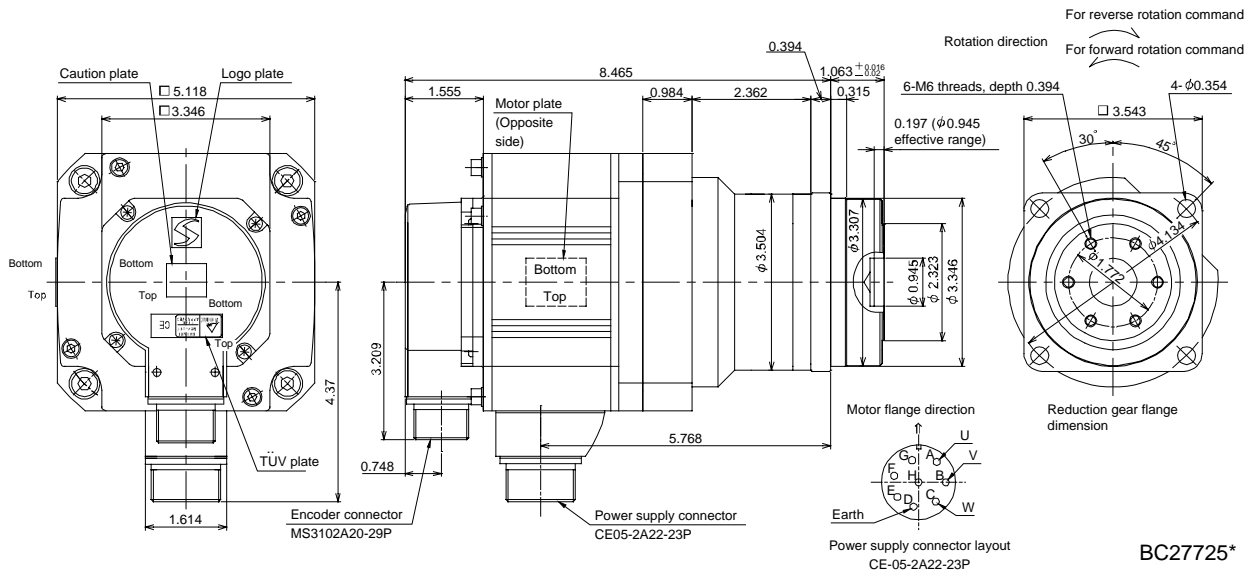
Inertia moment on the table is the value calculated by converting the total value of inertia moment for servo motor, electromagnetic brake and decelerator with servo motor shaft.

2.7.1 Flange-mounting flange output type for precision application compliant (G5)

(1) Without electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS52G5 · HC-SFS524G5	0.5	HPG-20A-05-F0KSAWS-S	1/5	39.64	17.2
		HPG-20A-11-F0KSAXS-S	1/11	39.15	17.6

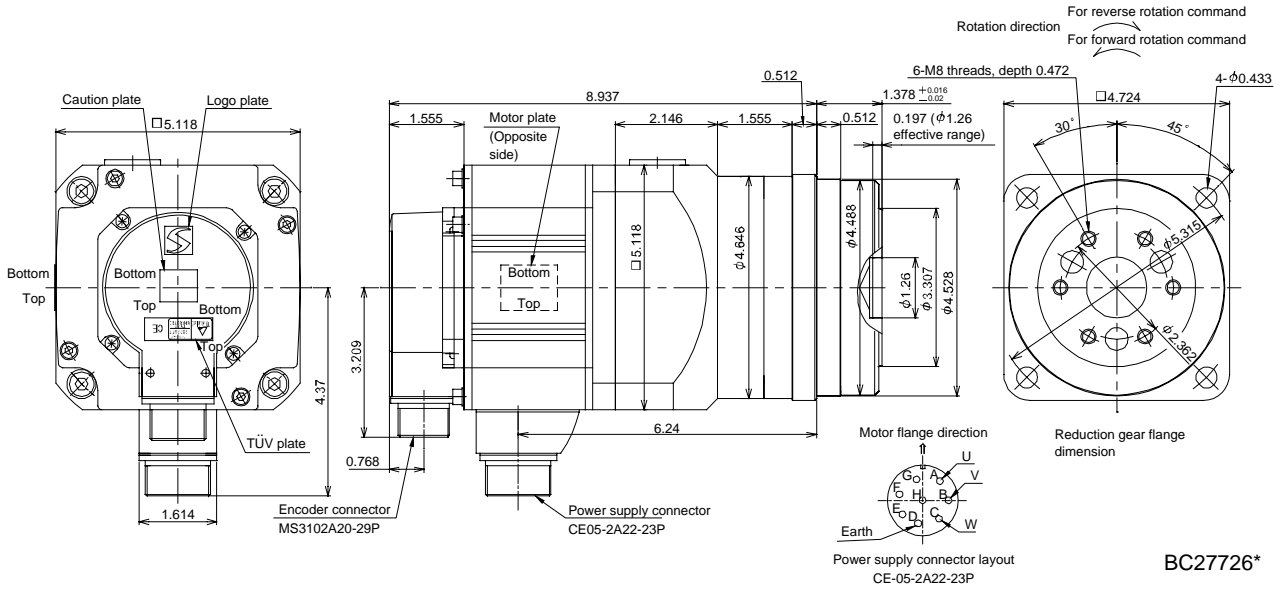
[Unit: in]



2. HC-SFS SERIES

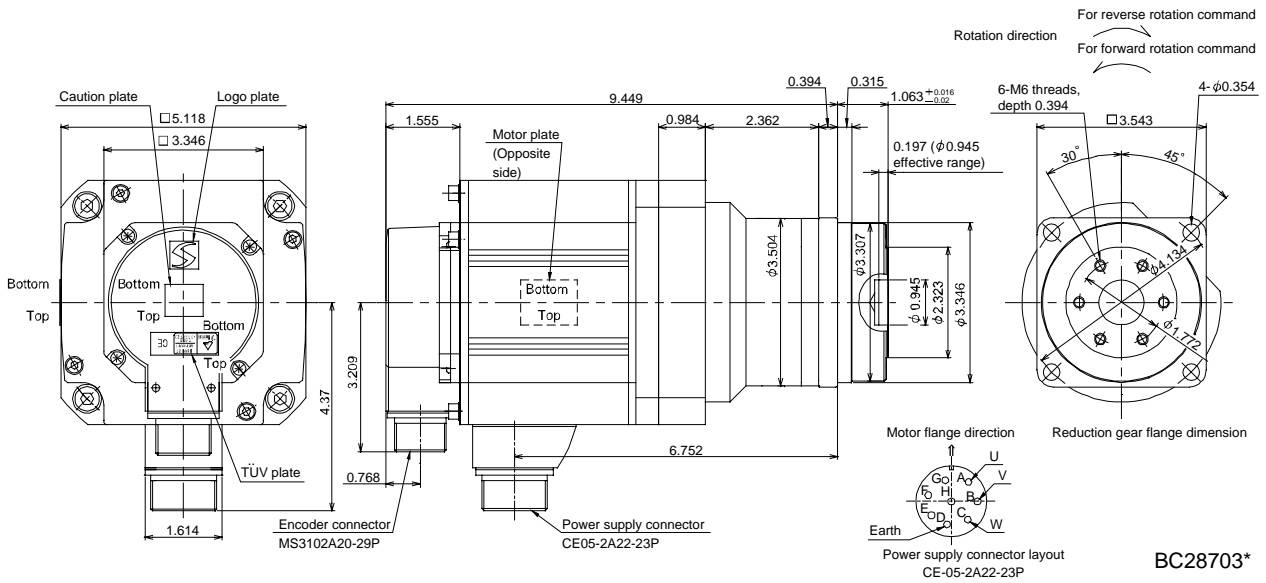
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS52G5 * HC-SFS524G5	0.5	HPG-32A-21-FOMCSYS-S	1/21	51.94	25.4
		HPG-32A-33-FOMCSZS-S	1/33	50.85	
		HPG-32A-45-FOMCSZS-S	1/45		

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS102G5 * HC-SFS1024G5	1.0	HPG-20A-05-F0KSAWS-S	1/5	78.73	21.6

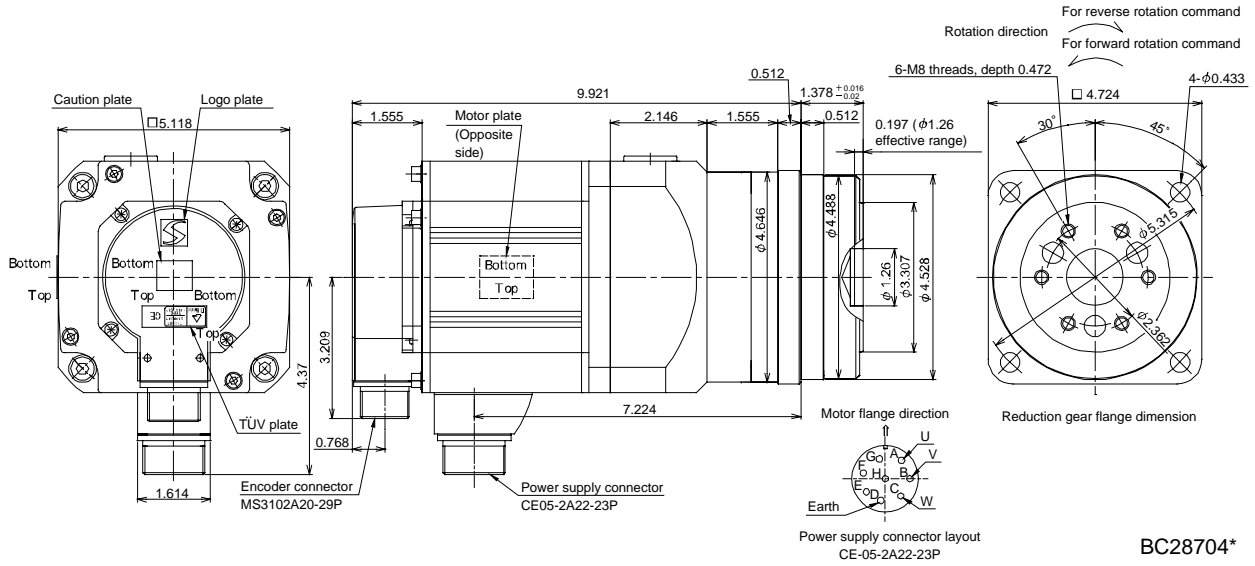
[Unit: in]



2. HC-SFS SERIES

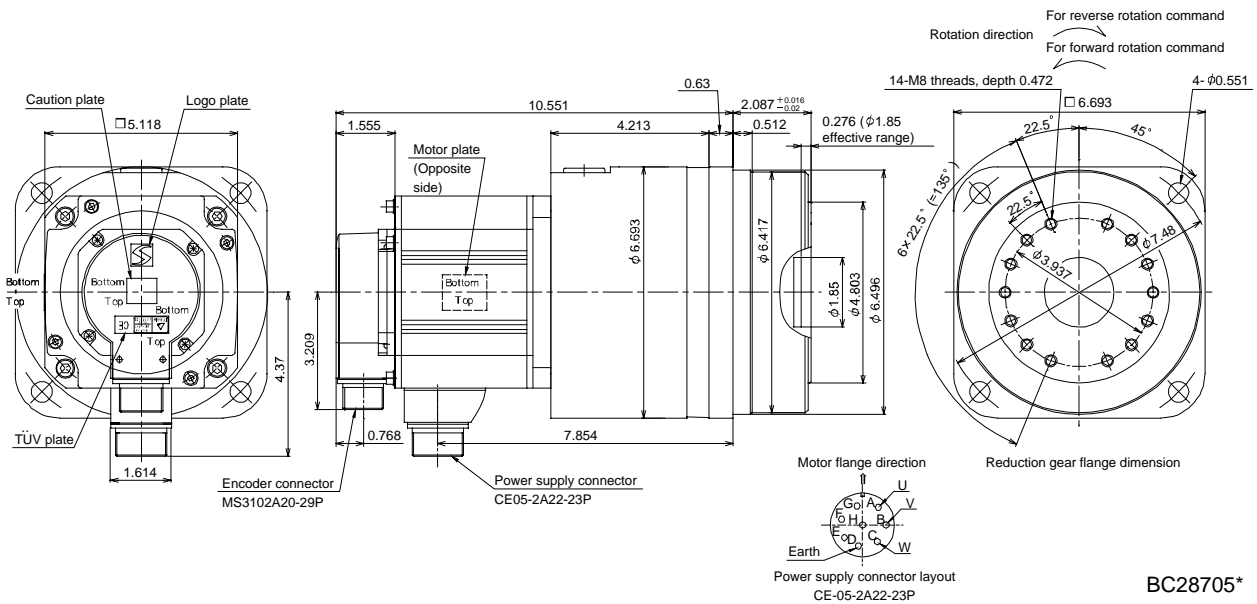
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS102G5 * HC-SFS1024G5	1.0	HPG-32A-11-F0MCSPS-S	1/11	92.95	29.8
		HPG-32A-21-F0MCSYS-S	1/21	90.76	

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS102G5 * HC-SFS1024G5	1.0	HPG-50A-33-F0AABC-S	1/33	100.61	50.7
		HPG-50A-45-F0AABC-S	1/45	100.05	

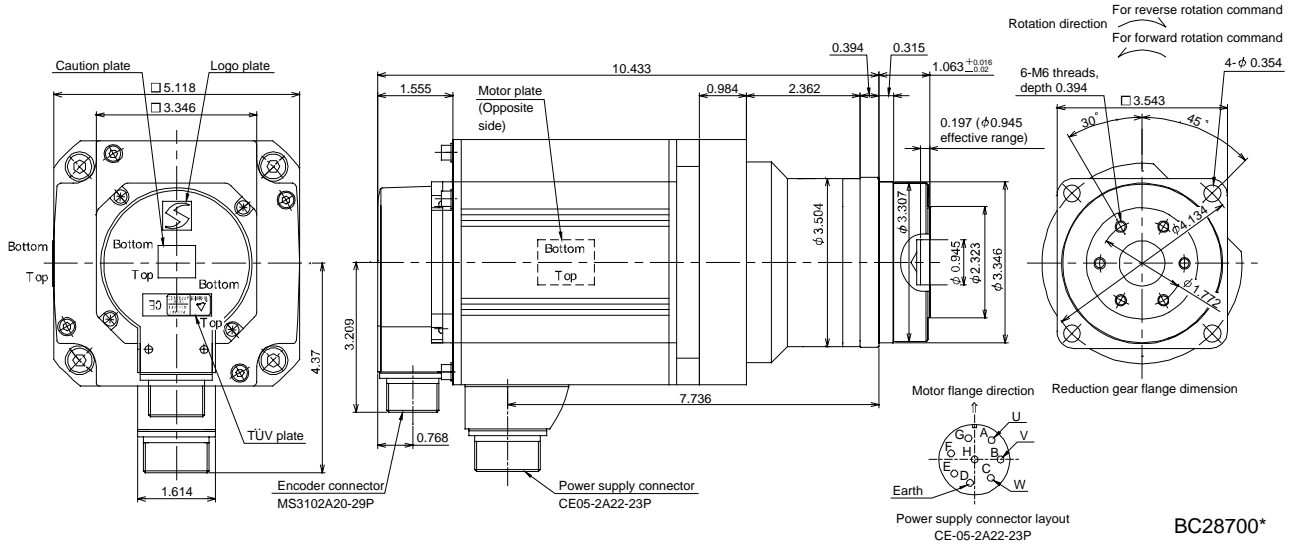
[Unit: in]



2. HC-SFS SERIES

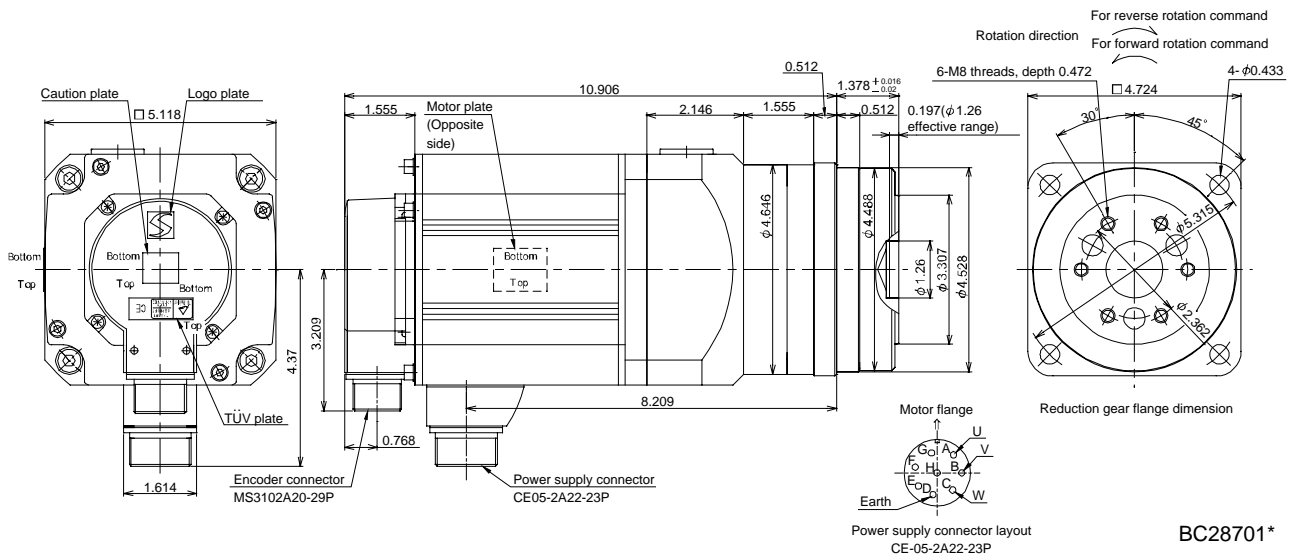
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS152G5 * HC-SFS1524G5	1.5	HPG-20A-05-F0KSAWS-S	1/5	113.18	26.0

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS152G5 * HC-SFS1524G5	1.5	HPG-32A-11-F0MCSPS-S	1/11	127.39	34.2

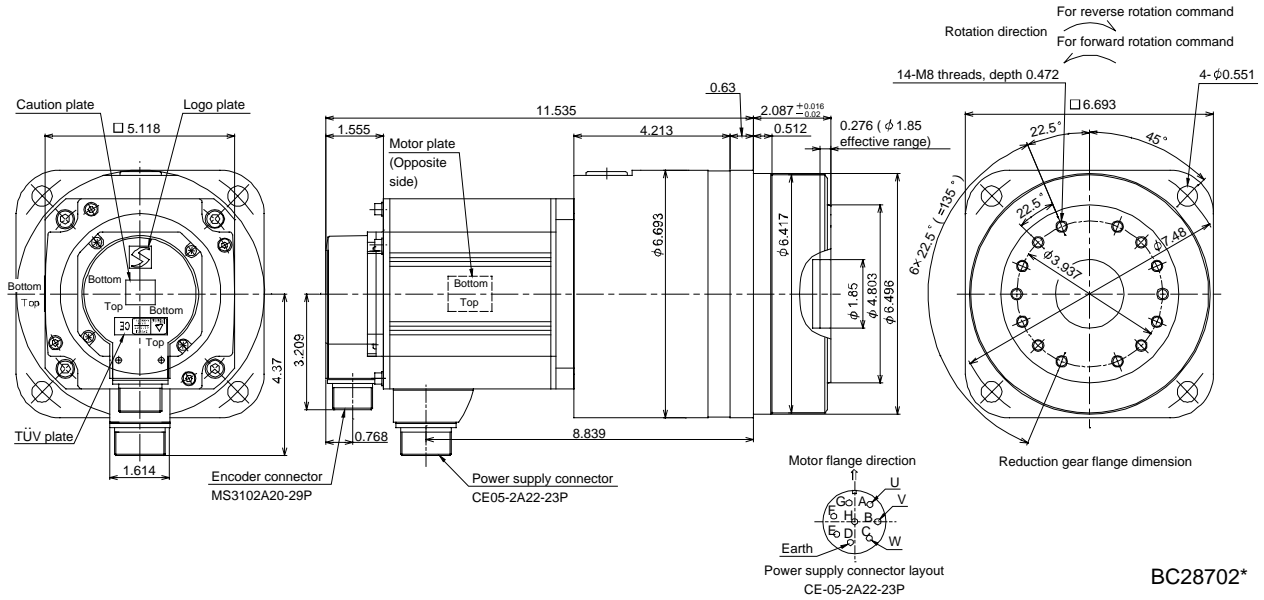
[Unit: in]



2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS152G5 * HC-SFS1524G5	1.5	HPG-50A-21-F0AABC-S	1/21	140.51	55.1
		HPG-50A-33-F0AABC-S	1/33	135.04	
		HPG-50A-45-F0AABC-S	1/45	134.50	

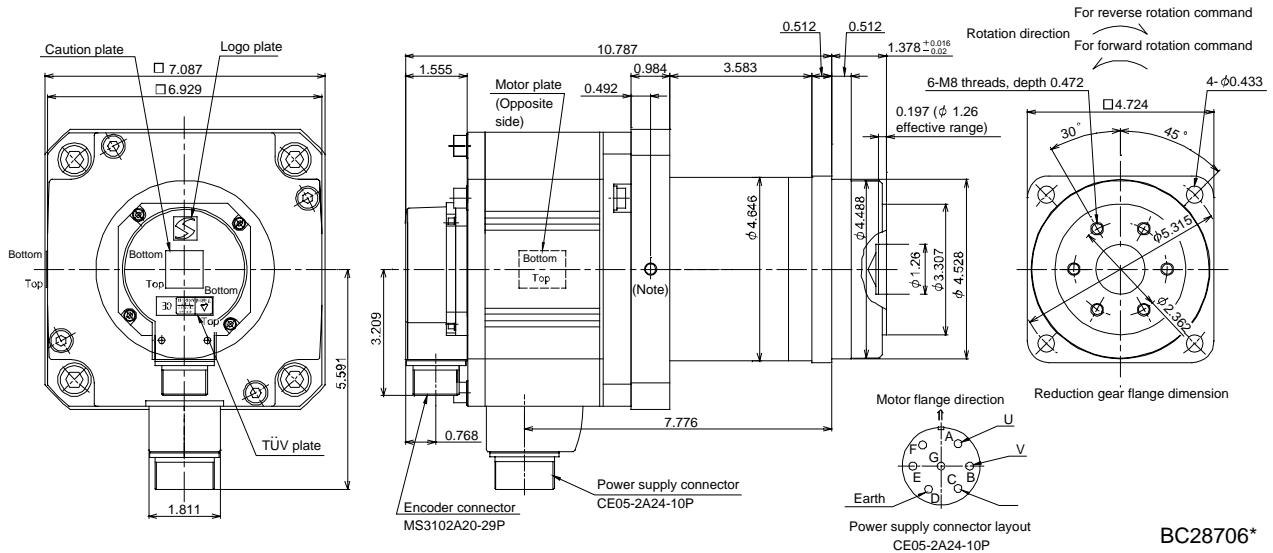
[Unit: in]



BC28702*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS202G5 * HC-SFS2024G5	2.0	HPG-32A-05-F0PBZJ-S	1/5	257.52	43.0
		HPG-32A-11-F0PBZJ-S	1/11	256.42	44.1

[Unit: in]



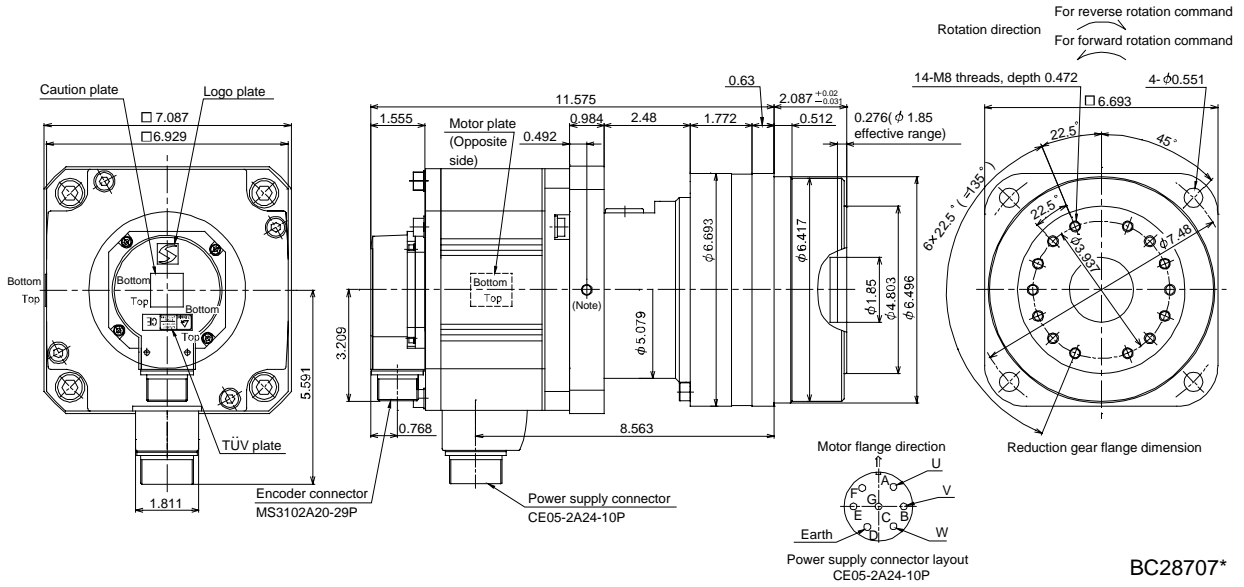
BC28706*

Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS202G5 * HC-SFS2024G5	2.0	HPG-50A-21-F0BBDF-S	1/21	267.36	64.2
		HPG-50A-33-F0BBDF-S	1/33	261.89	
		HPG-50A-45-F0BBDF-S	1/45		

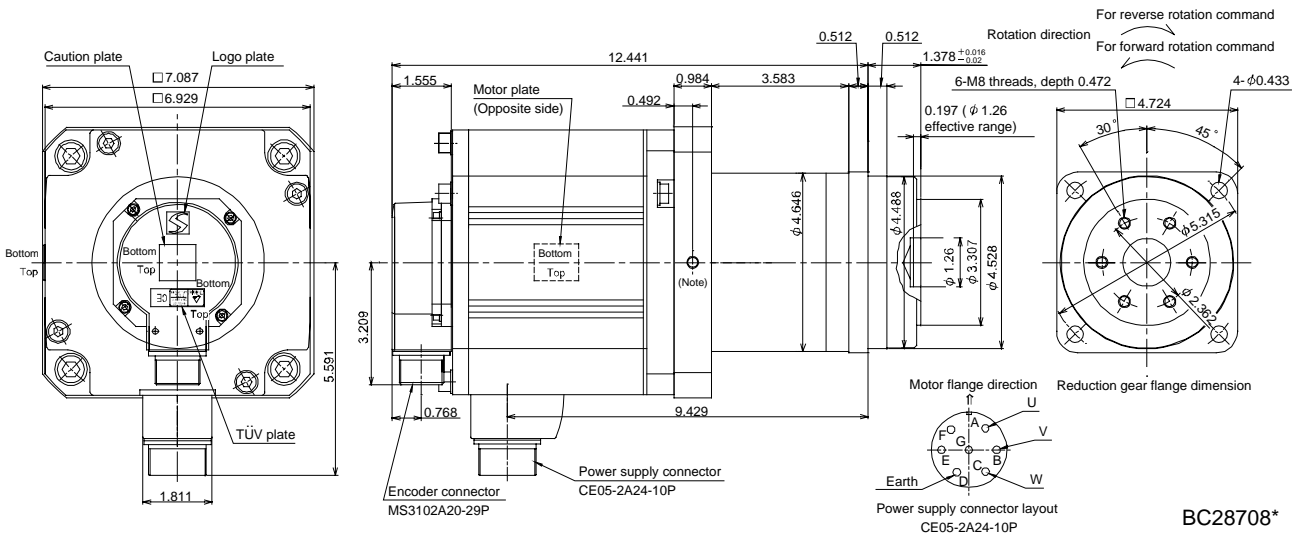
[Unit: in]



Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS352G5 * HC-SFS3524G5	3.5	HPG-32A-05-F0PBZI-S	1/5	473.48	58.4

[Unit: in]

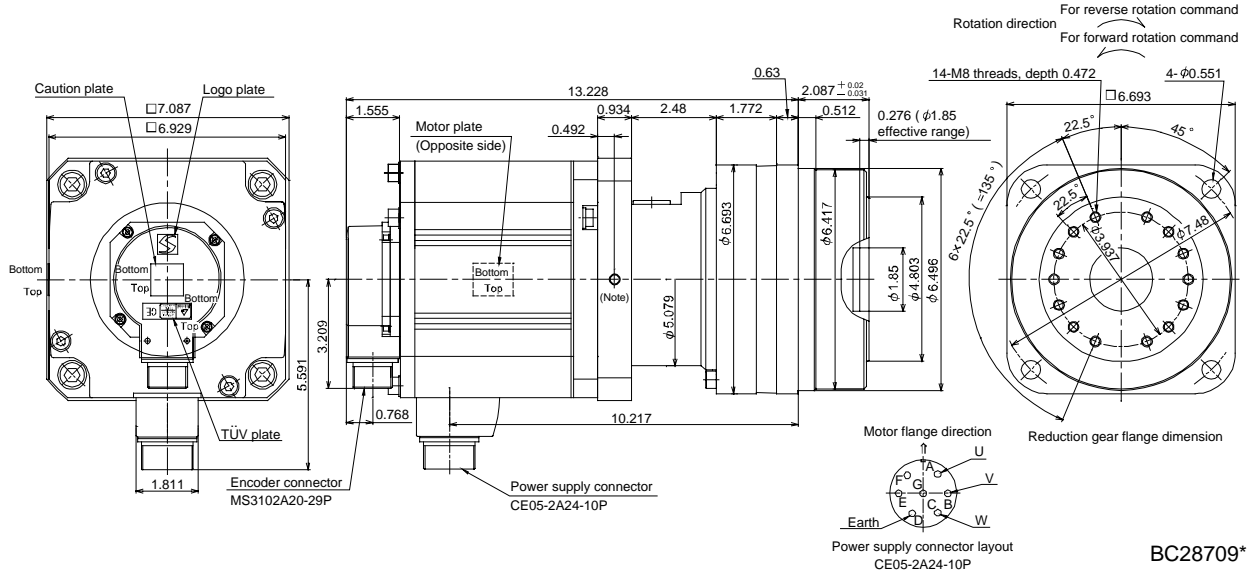


Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS352G5 * HC-SFS3524G5	3.5	HPG-50A-11-F0BBDF-S	1/11	492.62	79.6
		HPG-50A-21-F0BBDF-S	1/21	483.32	

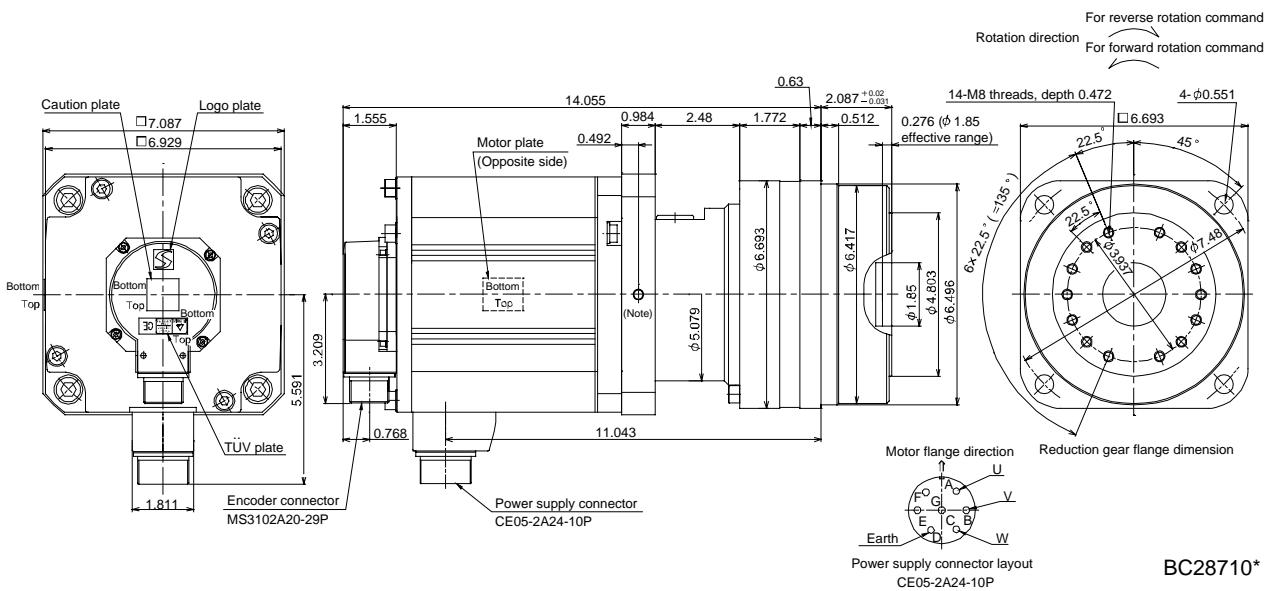
[Unit: in]



Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS502G5 * HC-SFS5024G5	5.0	HPG-50A-05-F0BBCF-S	1/5	606.89	85.1
		HPG-50A-11-F0BBDF-S	1/11	595.95	

[Unit: in]

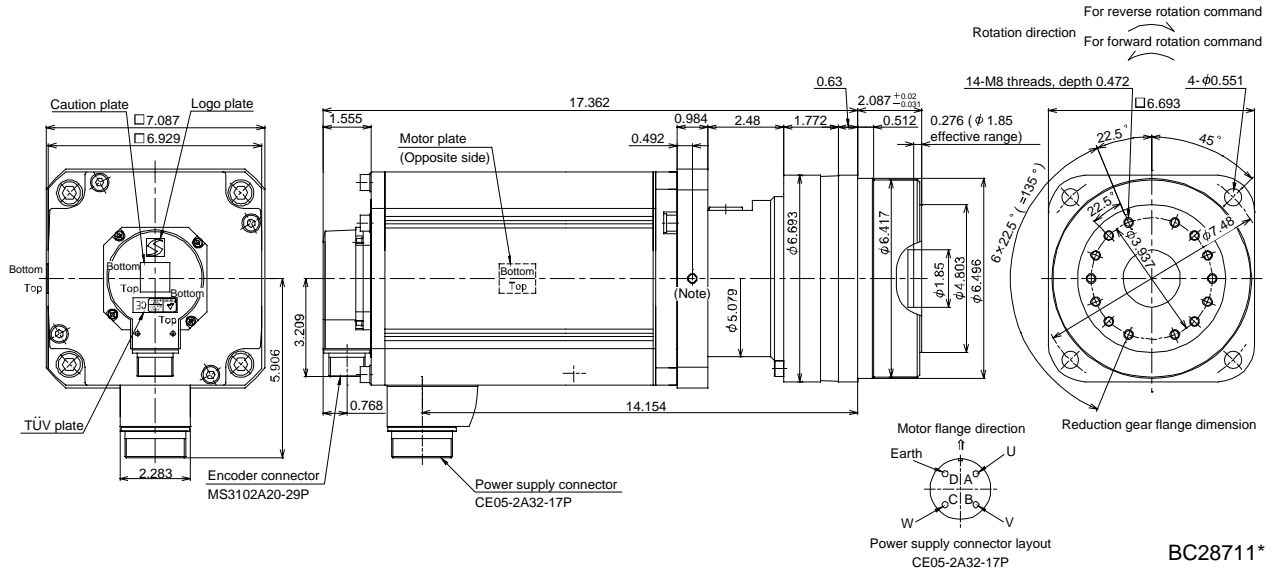


Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS702G5 * HC-SFS7024G5	7.0	HPG-50A-05-F0BBCF-S	1/5	929.47	104.9

[Unit: in]



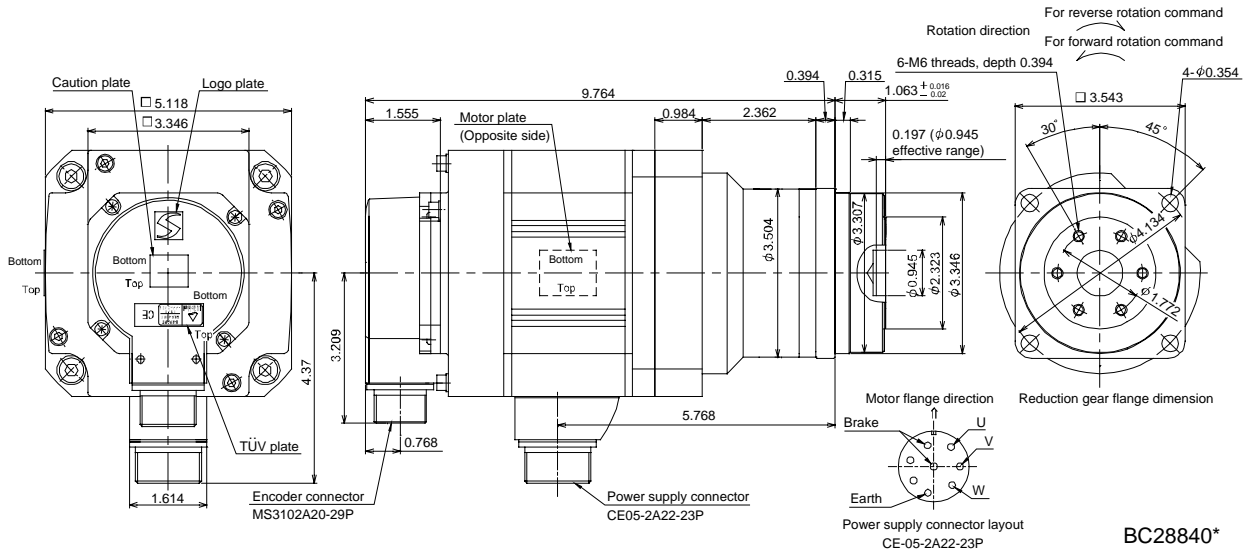
Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

(2) With electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS52BG5 * HC-SFS524BG5	0.5	HPG-20A-05-F0KSAWS-S	1/5	1175.4	50.57	21.6
		HPG-20A-11-F0KSAXS-S	1/11		50.08	22.0

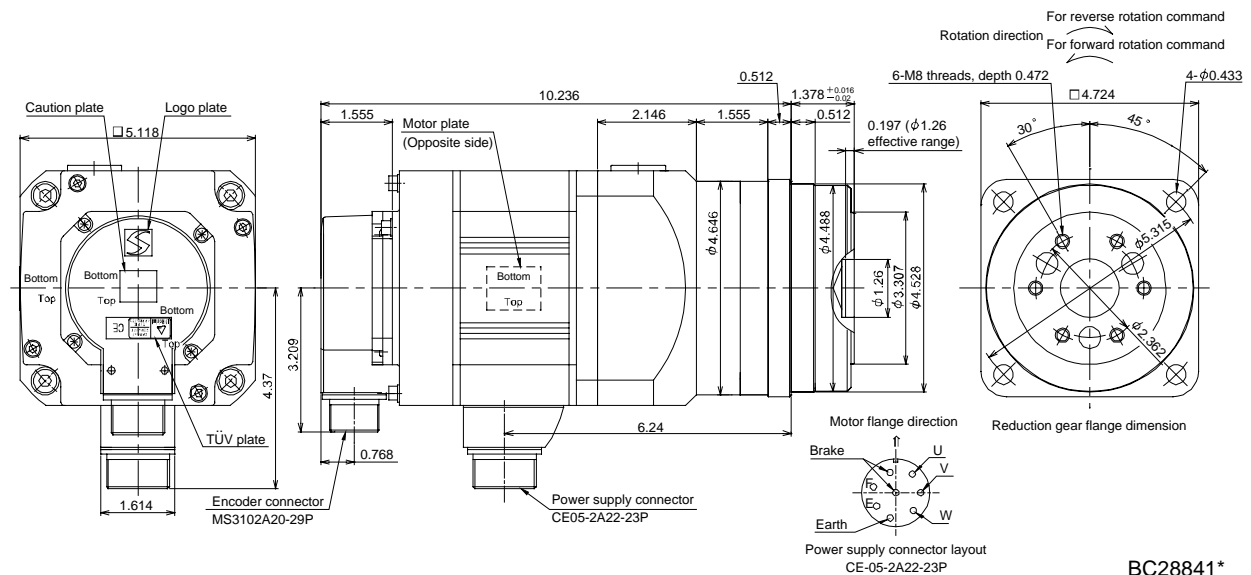
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BC28840*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS52BG5 * HC-SFS524BG5	0.5	HPG-32A-21-F0MCSYS-S	1/21	1175.4	62.88	29.8
		HPG-32A-33-F0MCSZS-S	1/33		61.78	
		HPG-32A-45-F0MCSZS-S	1/45			

[Unit: in]

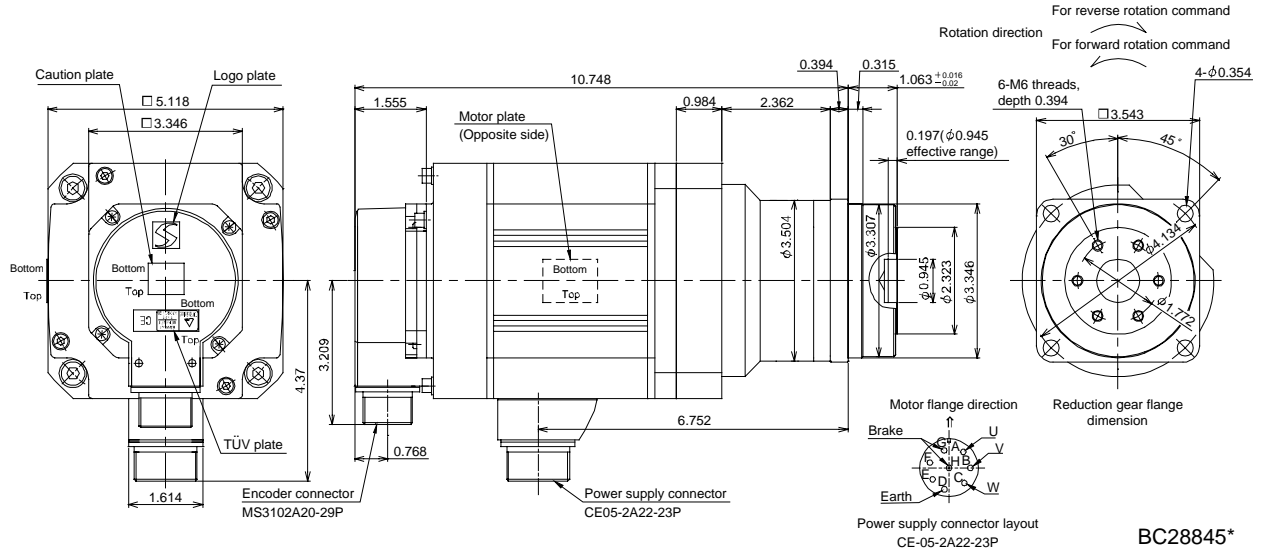


BC28841*

2. HC-SFS SERIES

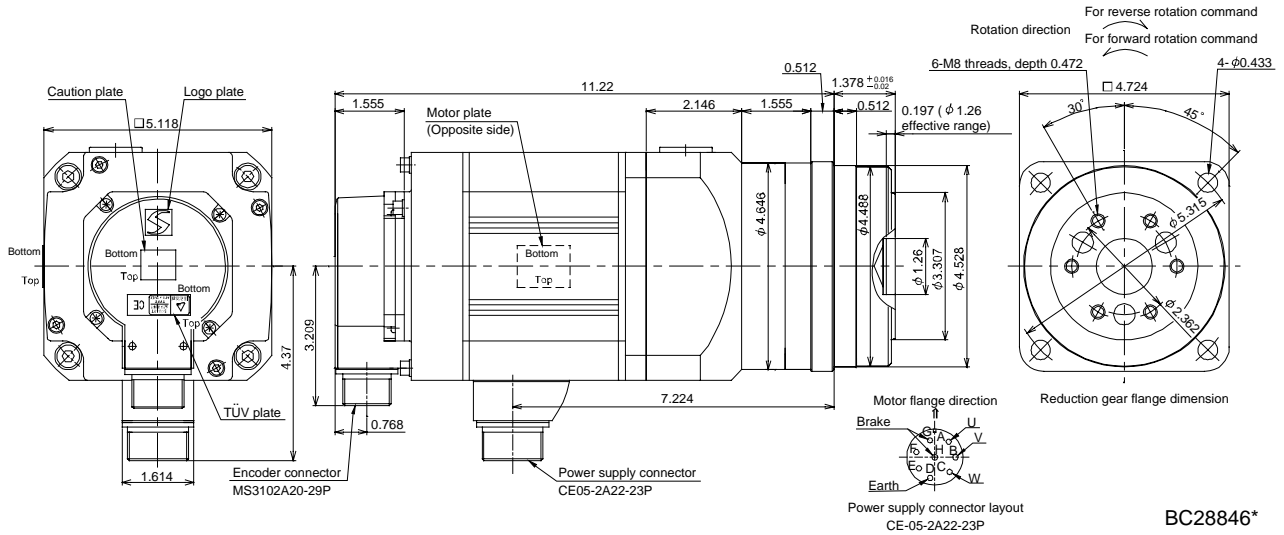
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS102BG5 * HC-SFS1024BG5	1.0	HPG-20A-05-F0KSAWS-S	1/5	1175.4	89.67	26.0

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS102BG5 * HC-SFS1024BG5	1.0	HPG-32A-11-F0MCSPS-S	1/11	1175.4	103.88	34.1
		HPG-32A-21-F0MCSYS-S	1/21		101.69	

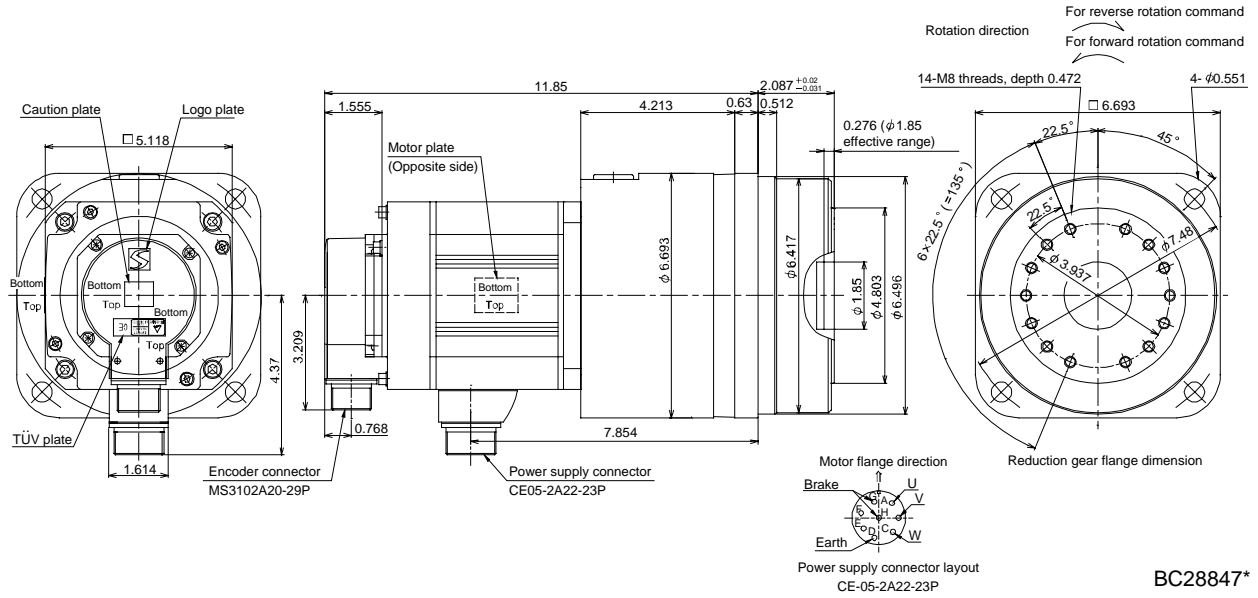
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2. HC-SFS SERIES

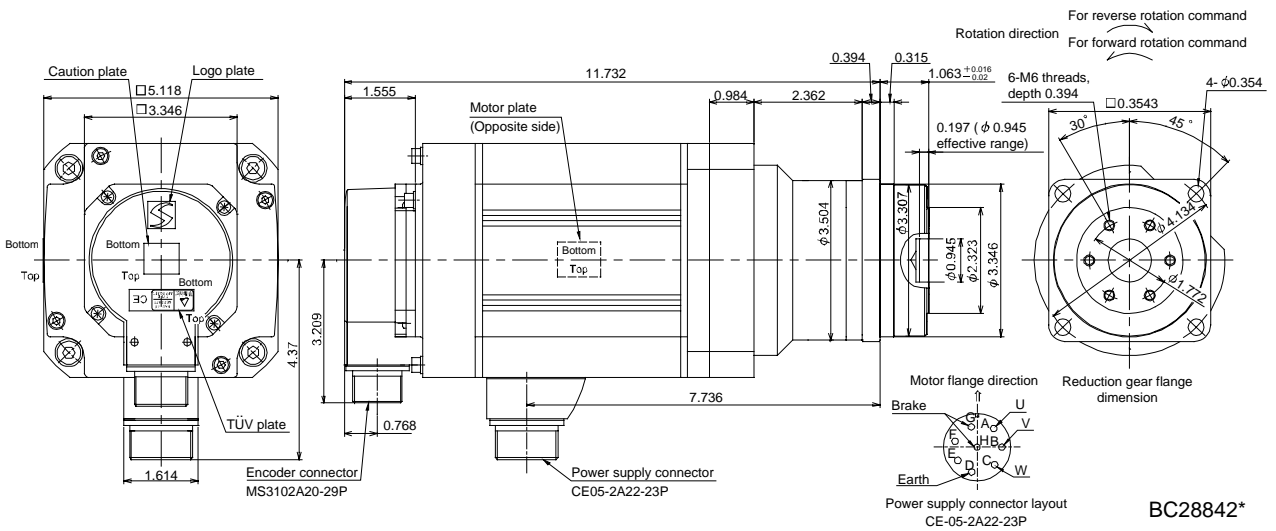
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS102BG * HC-SFS1024BG5	1.0	HPG-50A-33-F0AABC-S	1/33	1175.4	111.54	55.1
		HPG-50A-45-F0AABC-S	1/45		110.99	

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS152BG5 * HC-SFS1524BG5	1.5	HPG-20A-05-FOKSAWS-S	1/5	1175.4	124.11	30.4

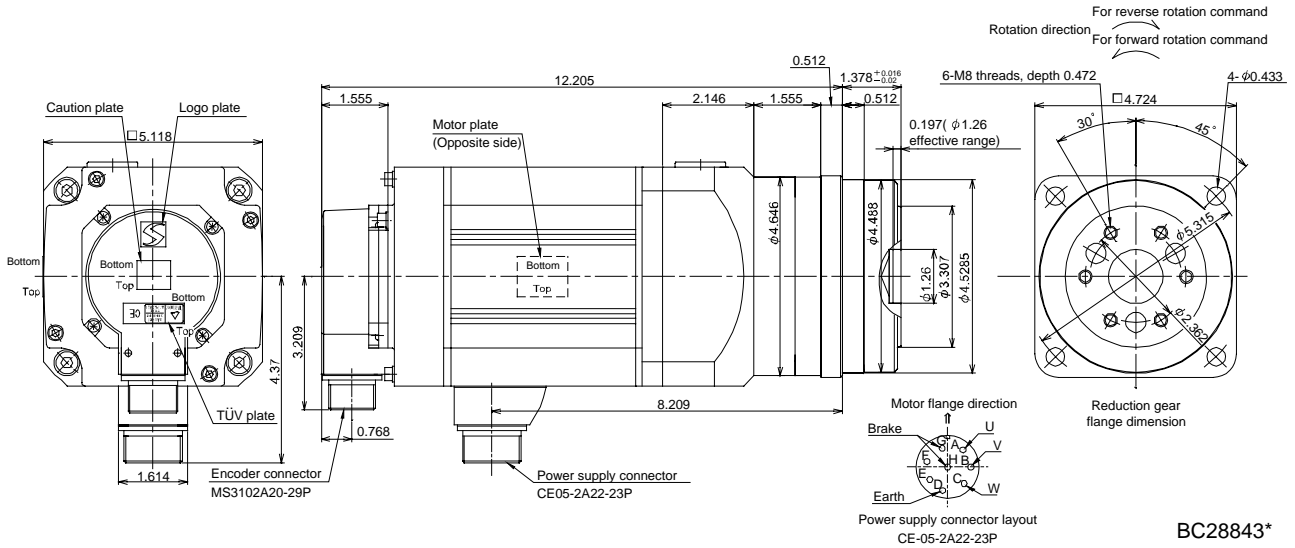
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2. HC-SFS SERIES

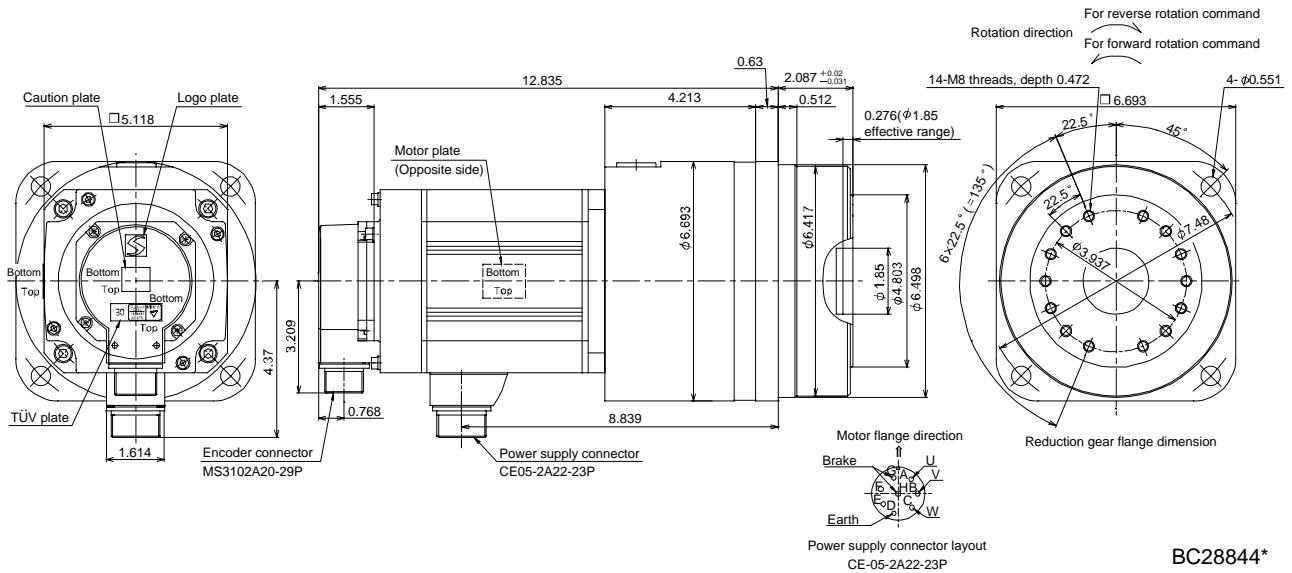
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS152BG5 * HC-SFS1524BG5	1.5	HPG-32A-11-F0MCSPS-S	1/11	1175.4	138.33	38.6

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS152BG5 * HC-SFS1524BG5	1.5	HPG-50A-21-F0AABC-S	1/21	1175.4	151.45	59.5
		HPG-50A-33-F0AABC-S	1/33		145.98	
		HPG-50A-45-F0AABC-S	1/45		145.43	

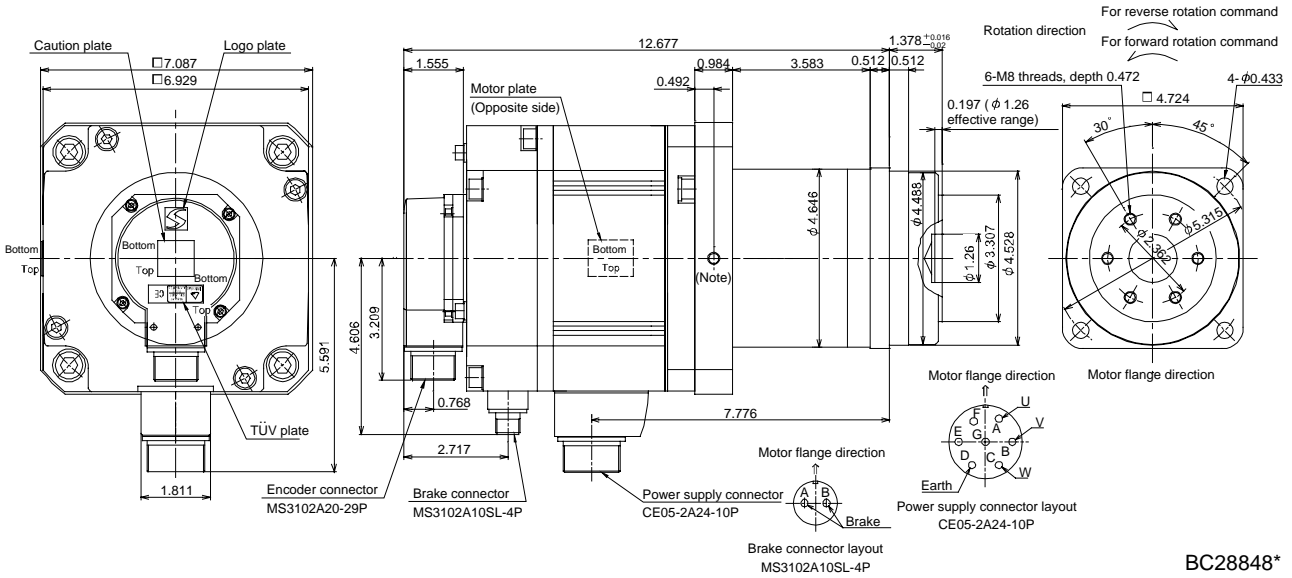
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2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS202BG5 * HC-SFS2024BG5	2.0	HPG-32A-05-F0PBZI-S	1/5	6103.5	312.19	56.2
		HPG-32A-11-F0PBZJ-S	1/11		311.10	57.3

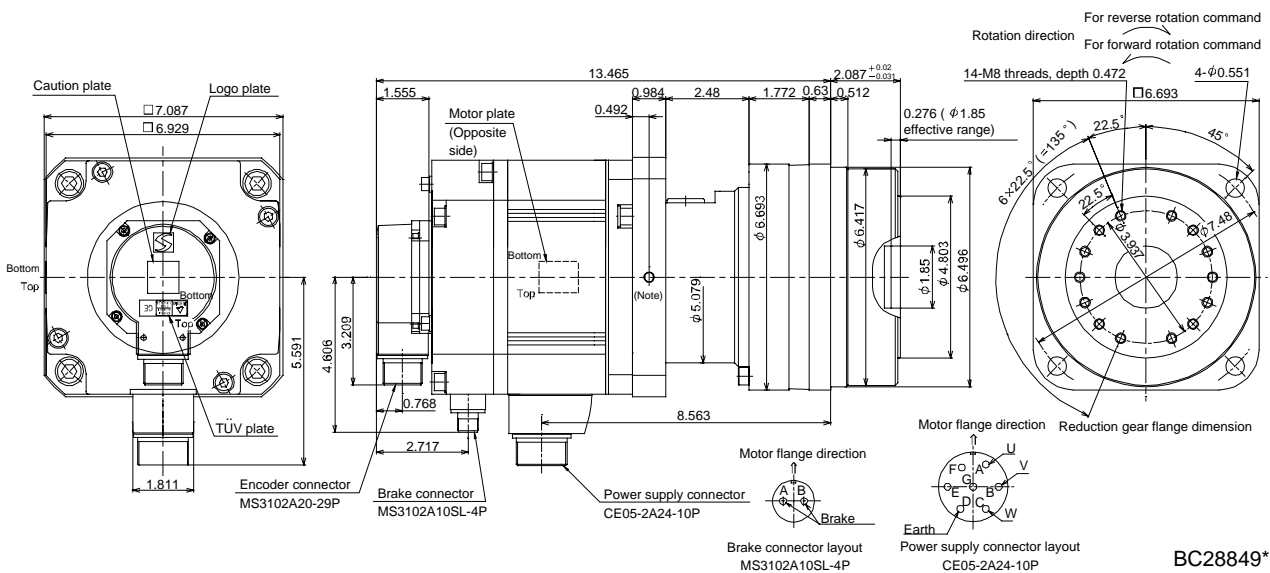
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Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS202BG5 * HC-SFS2024BG5	2.0	HPG-50A-21-F0BBDF-S	1/21	6103.5	322.03	77.4
		HPG-50A-33-F0BBDF-S	1/33		316.57	
		HPG-50A-45-F0BBDF-S	1/45			

[Unit: in]

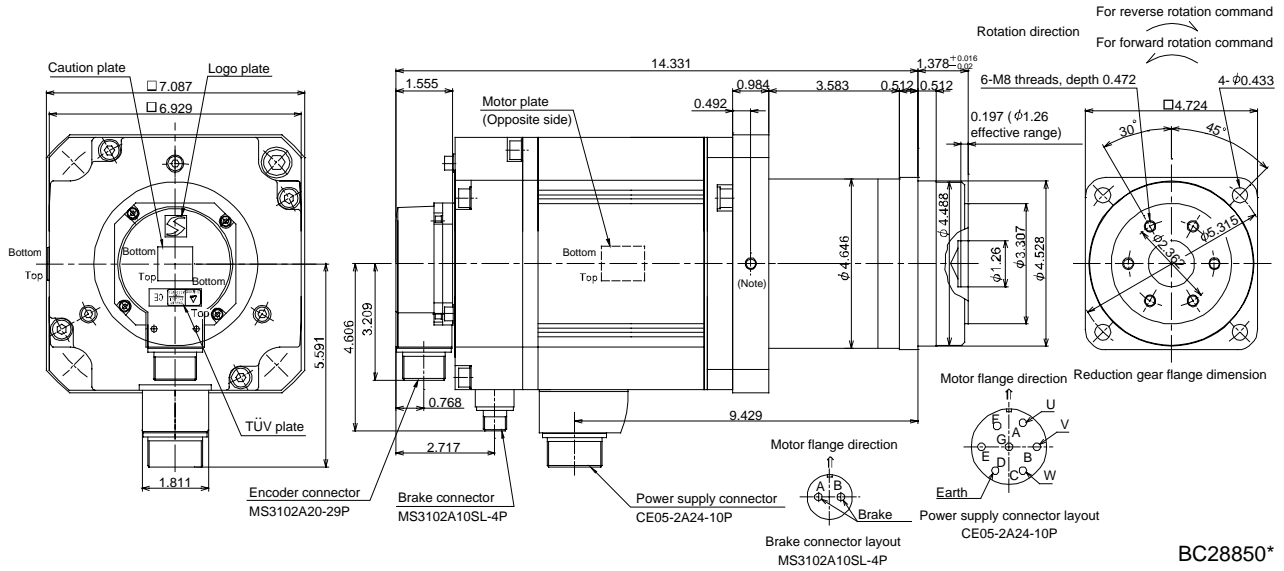


Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS352BG5 * HC-SFS3524BG5	3.5	HPG-32A-05-F0PBZI-S	1/5	6103.5	528.16	71.7

[Unit: in]

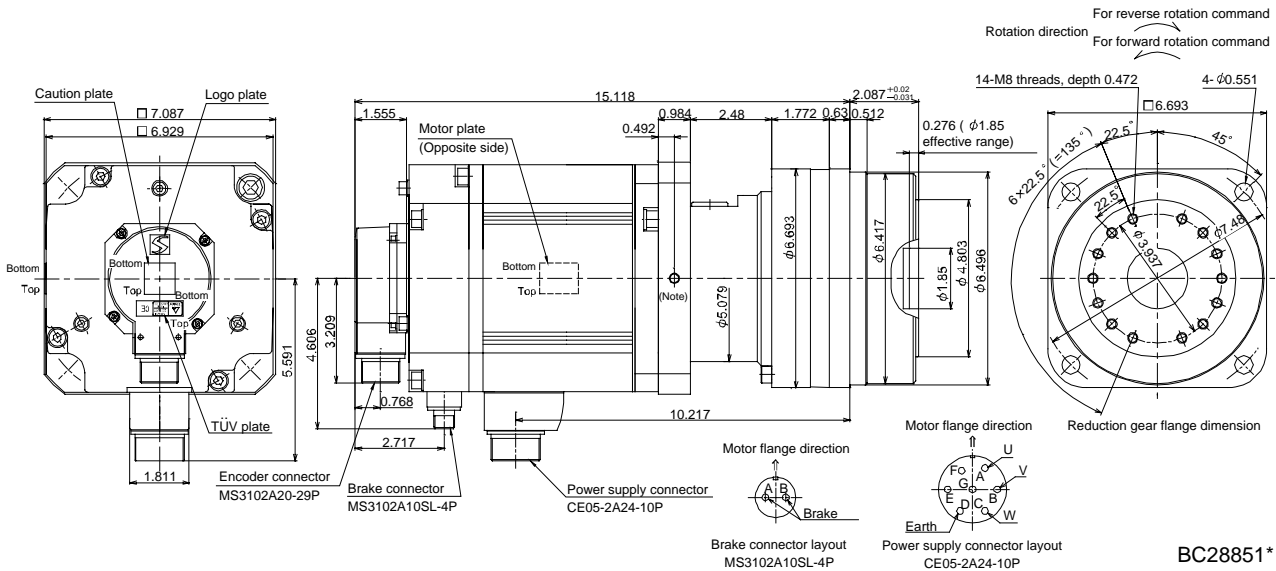


BC28850*

Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS352BG5 * HC-SFS3524BG5	3.5	HPG-50A-11-F0BBDF-S	1/11	6103.5	546.75	92.8
		HPG-50A-21-F0BBDF-S	1/21		538.00	

[Unit: in]



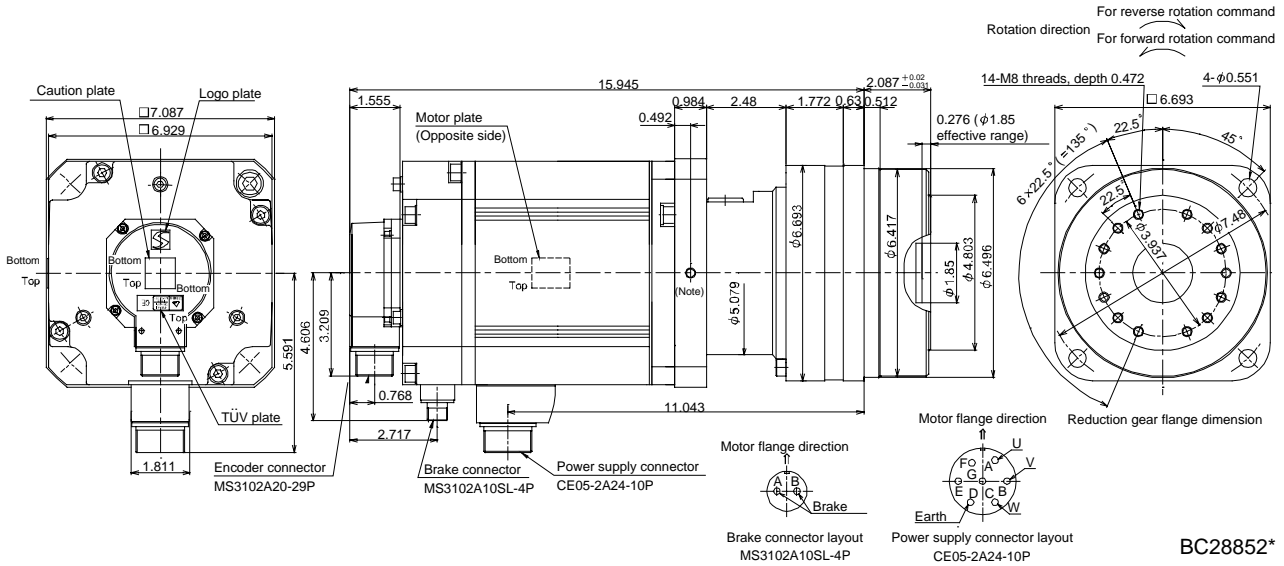
BC28851*

Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS502BG5 * HC-SFS5024BG5	5.0	HPG-50A-05-F0BBCF-S	1/5	6103.5	661.56	98.3
		HPG-50A-11-F0BBDF-S	1/11		650.63	101.6

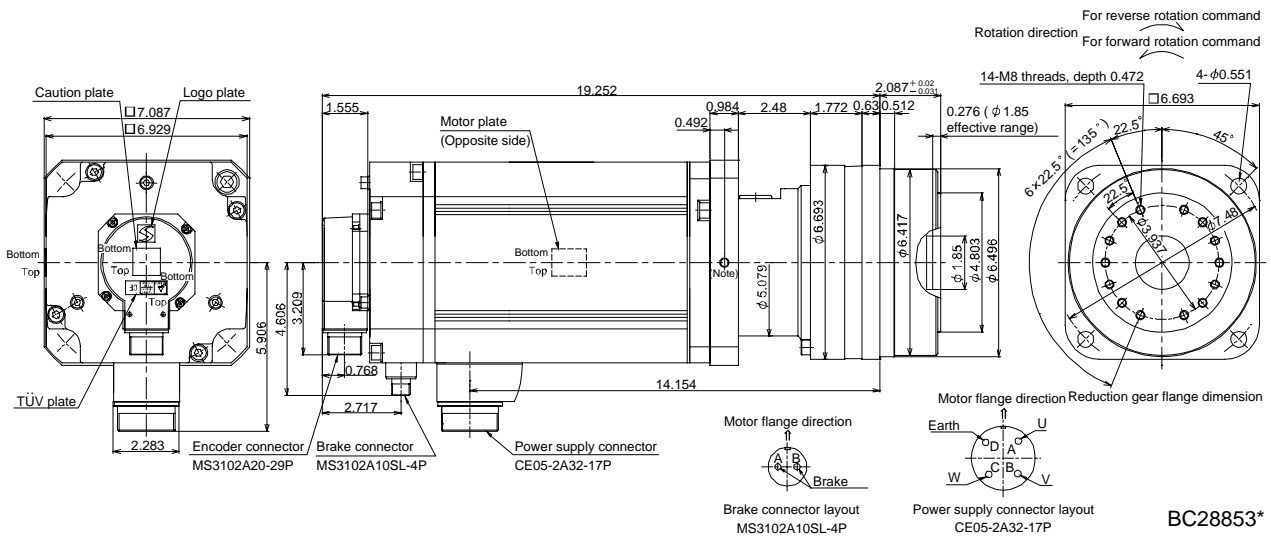
[Unit: in]



Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS702BG5 * HC-SFS7024BG5	7.0	HPG-50A-05-F0BBCF-S	1/5	6103.5	984.14	118.2

[Unit: in]



Note: Screw hole for eyebolt (M8).

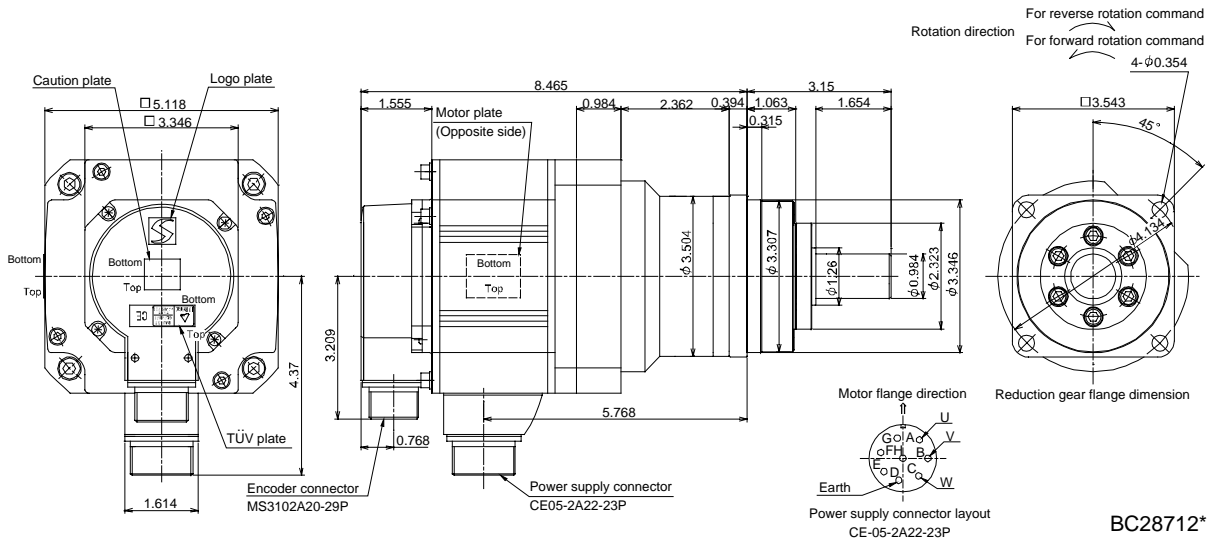
2. HC-SFS SERIES

2.7.2 Flange-mounting shaft output type for precision application compliant (G7)

(1) Without electromagnetic brake

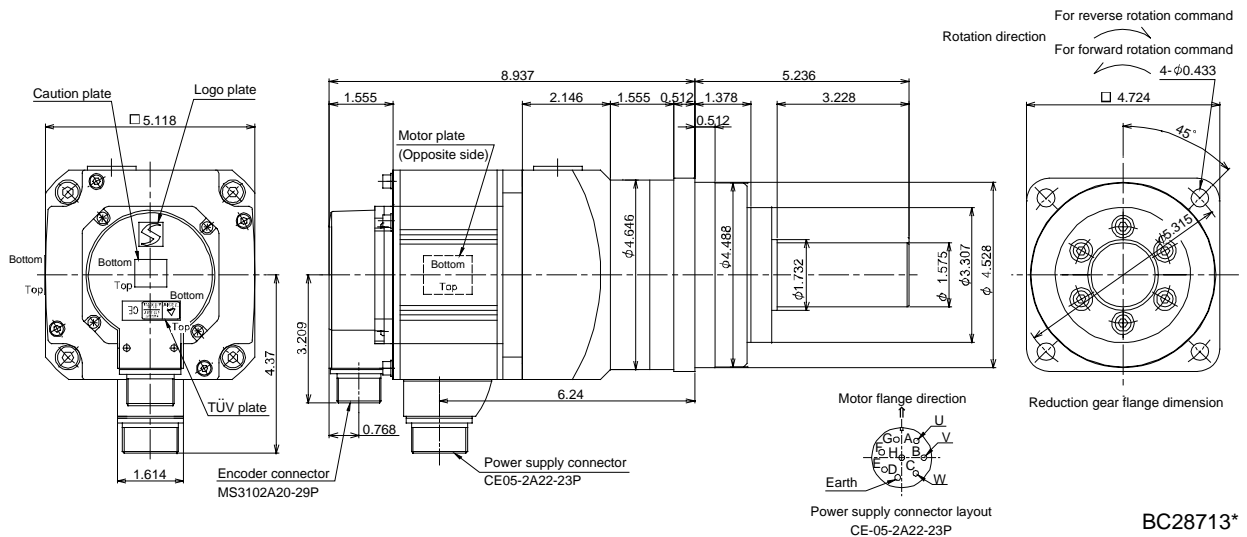
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS52G7 * HC-SFS524G7	0.5	HPG-20A-05-J2KSAWS-S	1/5	39.86	18.1
		HPG-20A-11-J2KSAXS-S	1/11	39.15	18.5

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS52G7 * HC-SFS524G7	0.5	HPG-32A-21-J2MCSYS-S	1/21	51.94	28.4
		HPG-32A-33-J2MCSZS-S	1/33	50.85	
		HPG-32A-45-J2MCSZS-S	1/45		

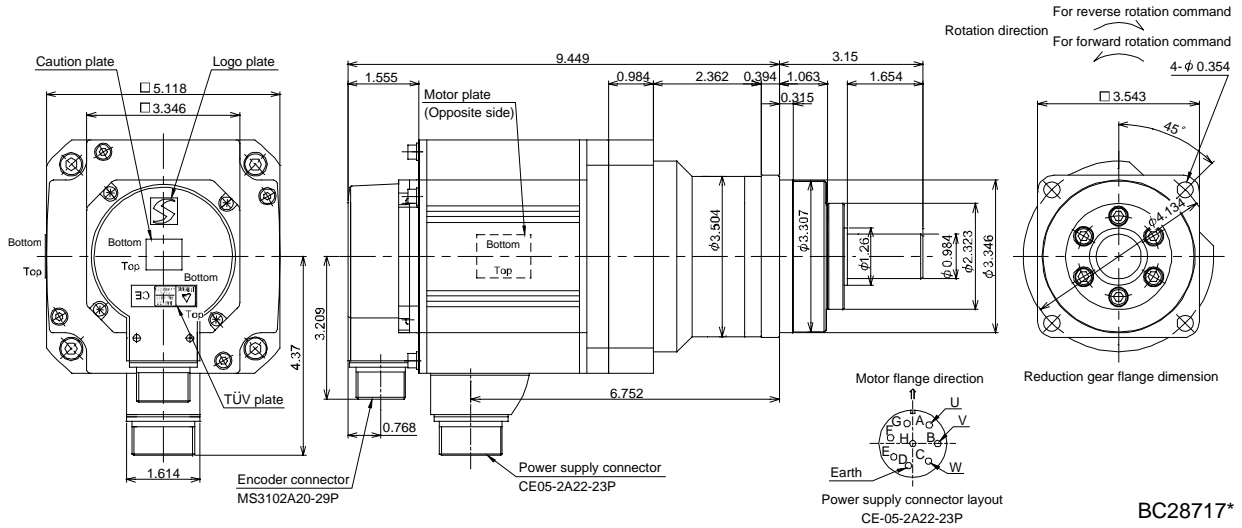
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2. HC-SFS SERIES

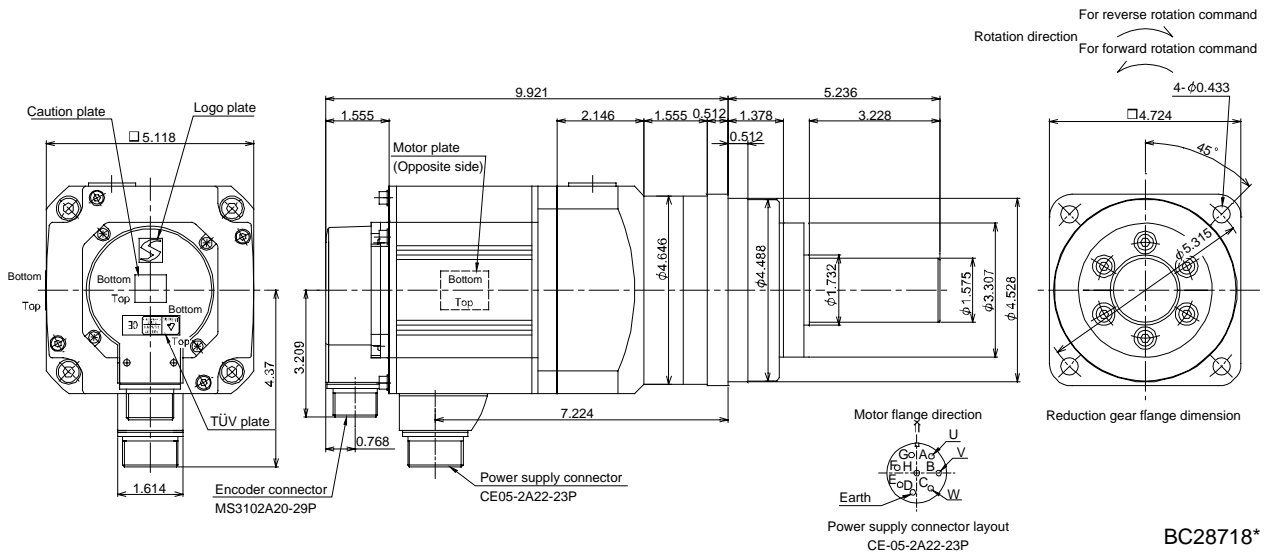
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS102G7 * HC-SFS1024G7	1.0	HPG-20A-05-J2KSAWS-S	1/5	78.73	22.5

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS102G7 * HC-SFS1024G7	1.0	HPG-32A-11-J2MCSPS-S	1/11	93.49	32.8
		HPG-32A-21-J2MCSYS-S	1/21	90.76	

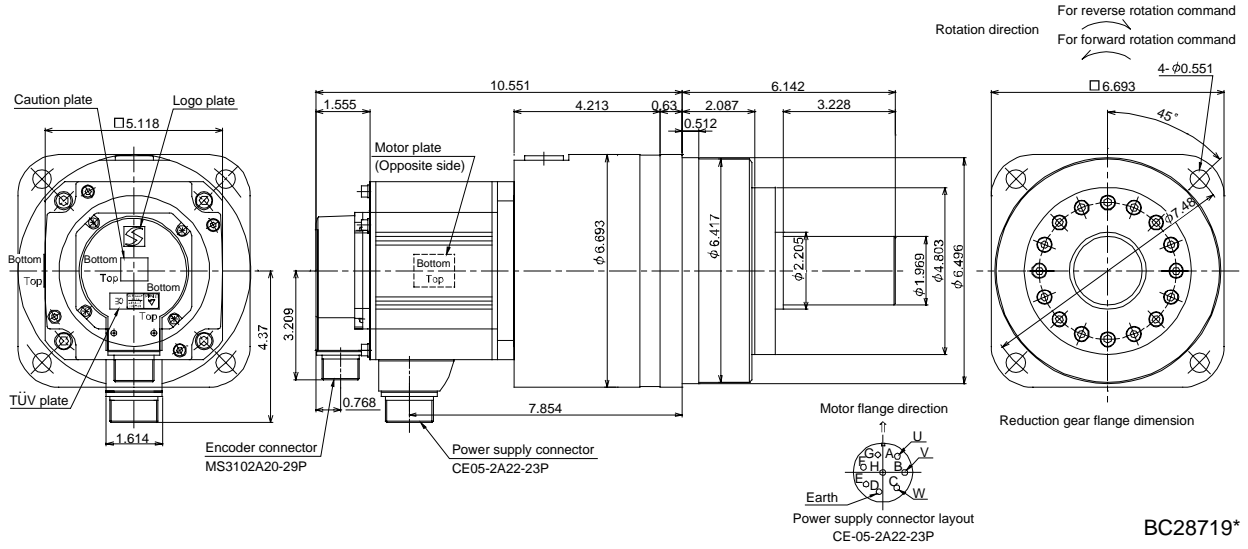
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2. HC-SFS SERIES

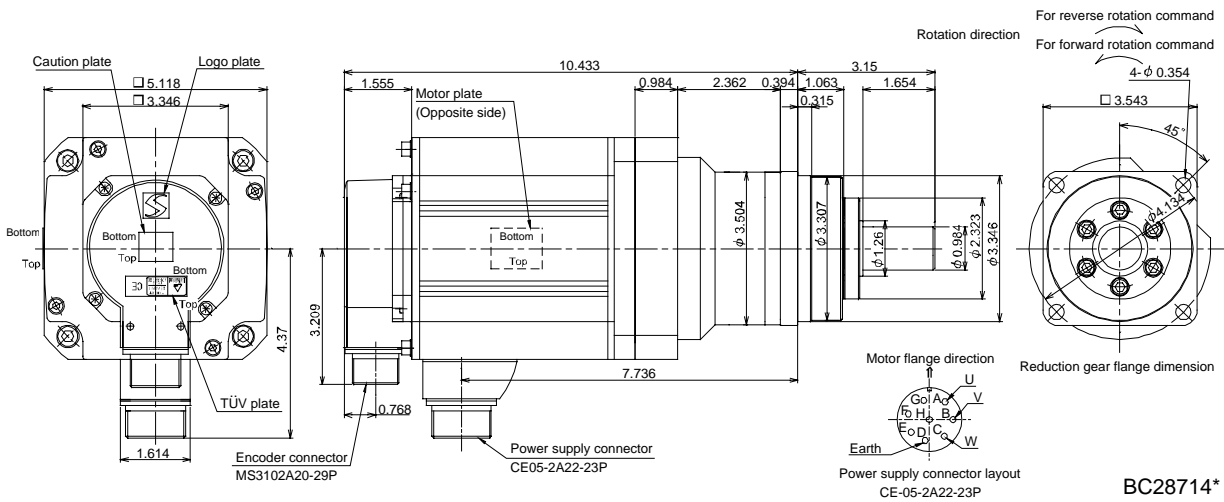
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS102G7 * HC-SFS1024G7	1.0	HPG-50A-33-J2AABC-S	1/33	100.60	57.3
		HPG-50A-45-J2AABC-S	1/45		

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS152G7 * HC-SFS1524G7	1.5	HPG-20A-05-J2KSAWS-S	1/5	113.18	26.9

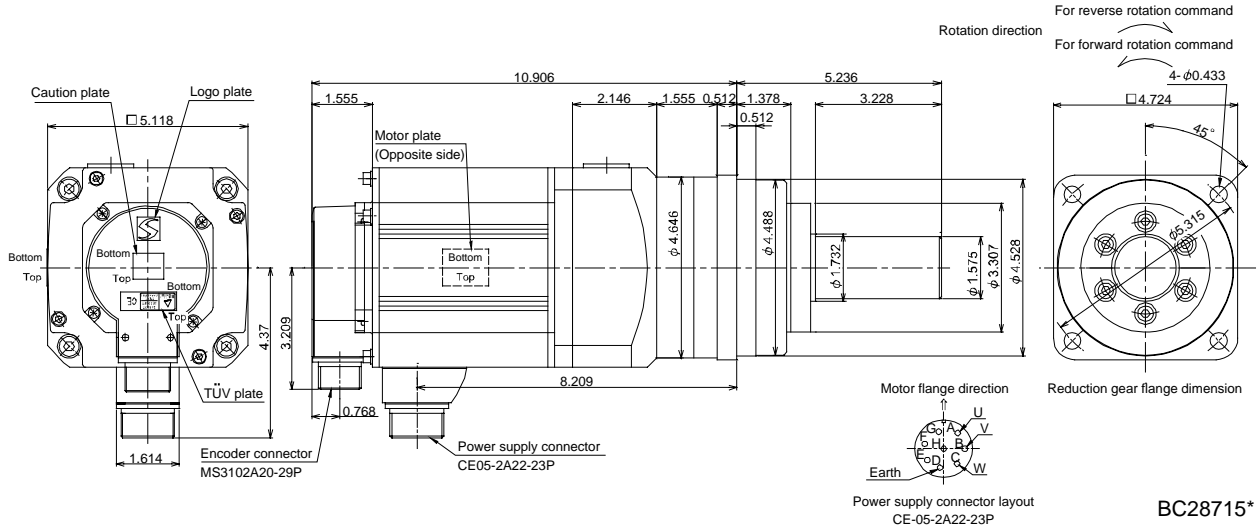
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2. HC-SFS SERIES

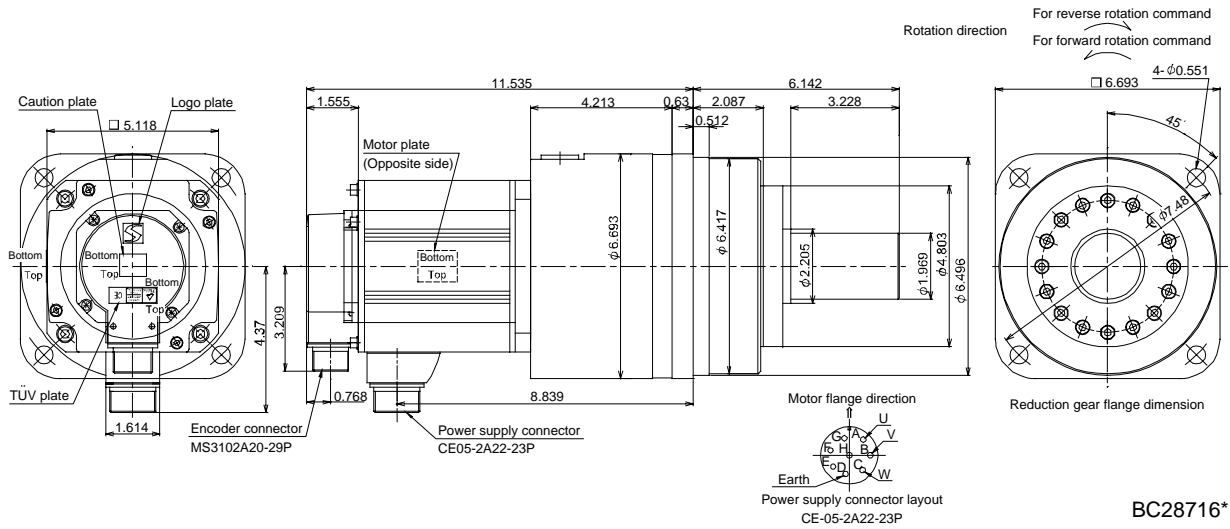
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS152G7 * HC-SFS1524G7	1.5	HPG-32A-11-J2MCSPS-S	1/11	127.94	37.3

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS152G7 * HC-SFS1524G7	1.5	HPG-50A-21-J2AABC-S	1/21	140.51	61.7
		HPG-50A-33-J2AABC-S	1/33	135.05	
		HPG-50A-45-J2AABC-S	1/45		

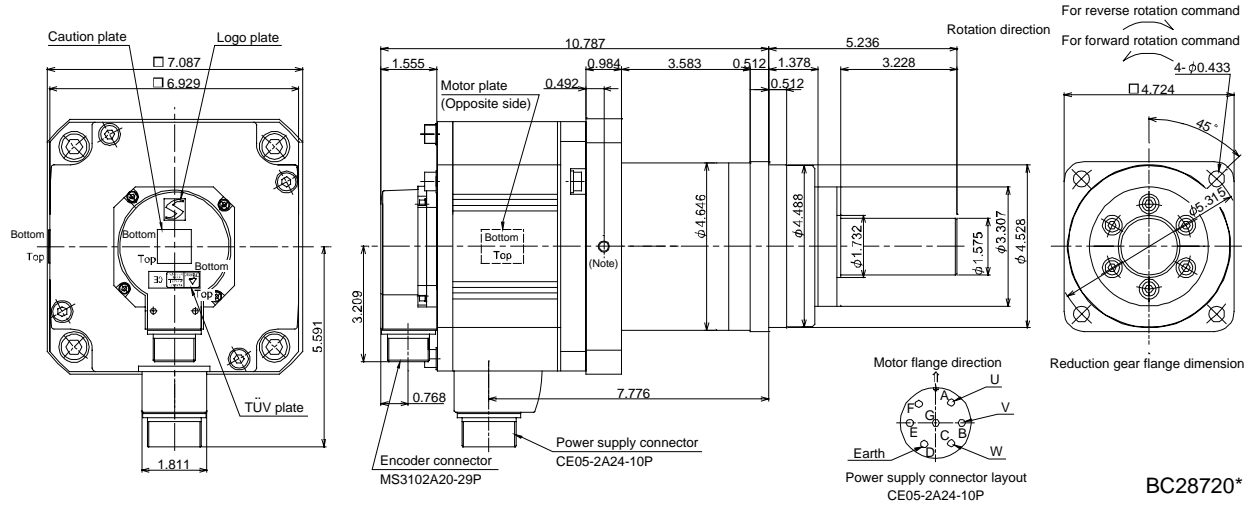
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2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS202G7 * HC-SFS2024G7	2.0	HPG-32A-05-J2PBZI-S	1/5	259.16	46.1
		HPG-32A-11-J2PBZJ-S	1/11	256.97	47.2

[Unit: in]

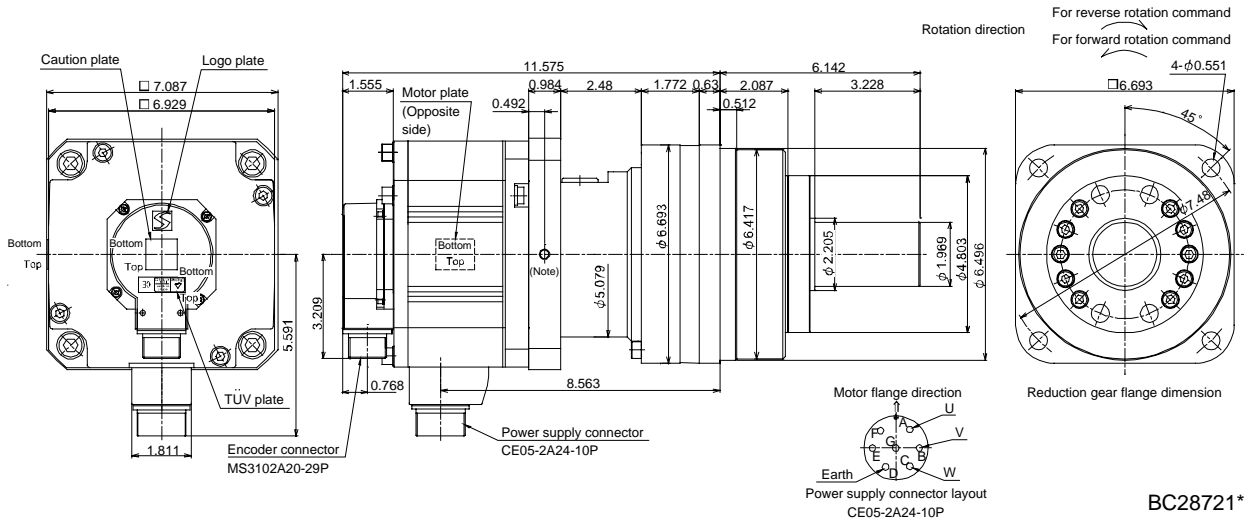


BC28720*

Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS202G7 * HC-SFS2024G7	2.0	HPG-50A-21-J2BBDF-S	1/21	267.91	70.8
		HPG-50A-33-J2BBDF-S	1/33	261.89	
		HPG-50A-45-J2BBDF-S	1/45	261.89	

[Unit: in]



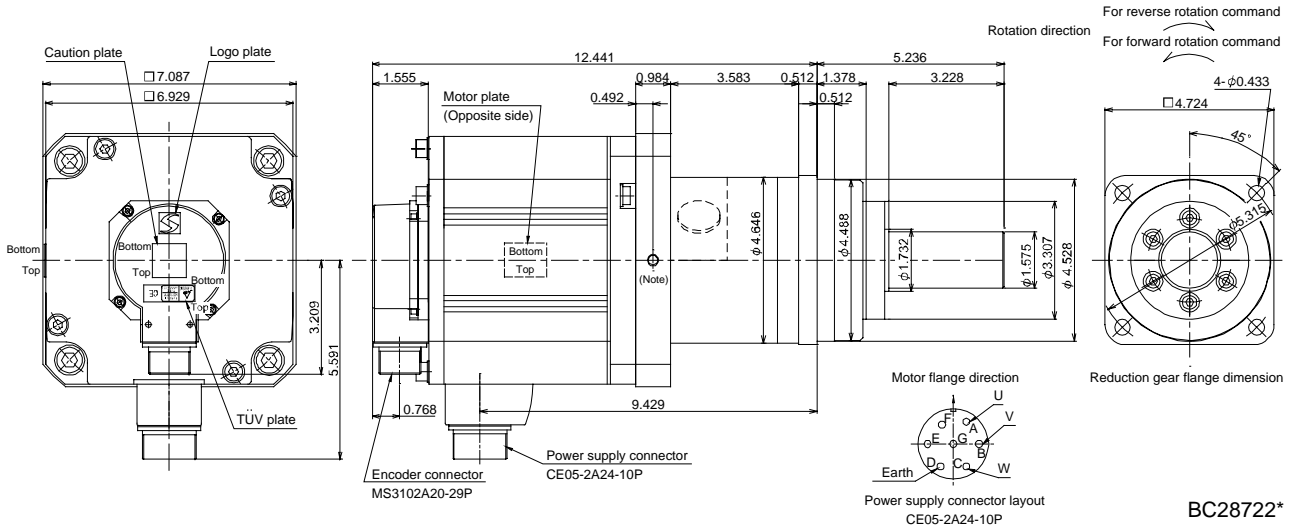
BC28721*

Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK^2 [oz · in ²]	Mass [lb]
HC-SFS352G7 * HC-SFS3524G7	3.5	HPG-32A-05-J2PBZI-S	1/5	475.12	61.5

[Unit: in]

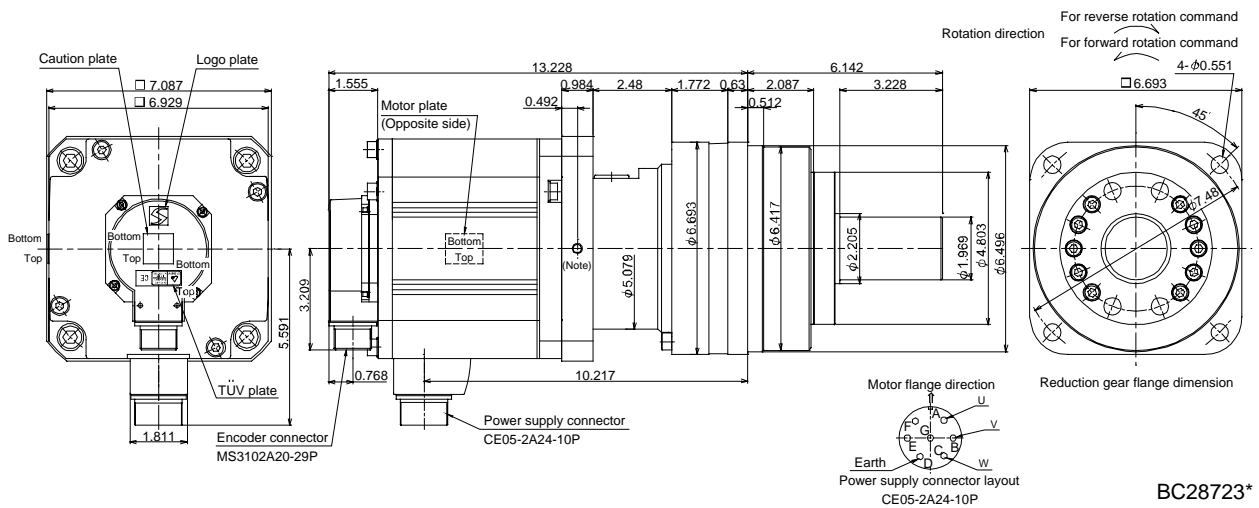


BC28722*

Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK^2 [oz · in ²]	Mass [lb]
HC-SFS352G7 * HC-SFS3524G7	3.5	HPG-50A-11-J2BBDF-S	1/11	494.26	86.2
		HPG-50A-21-J2BBDF-S	1/21	483.87	

[Unit: in]



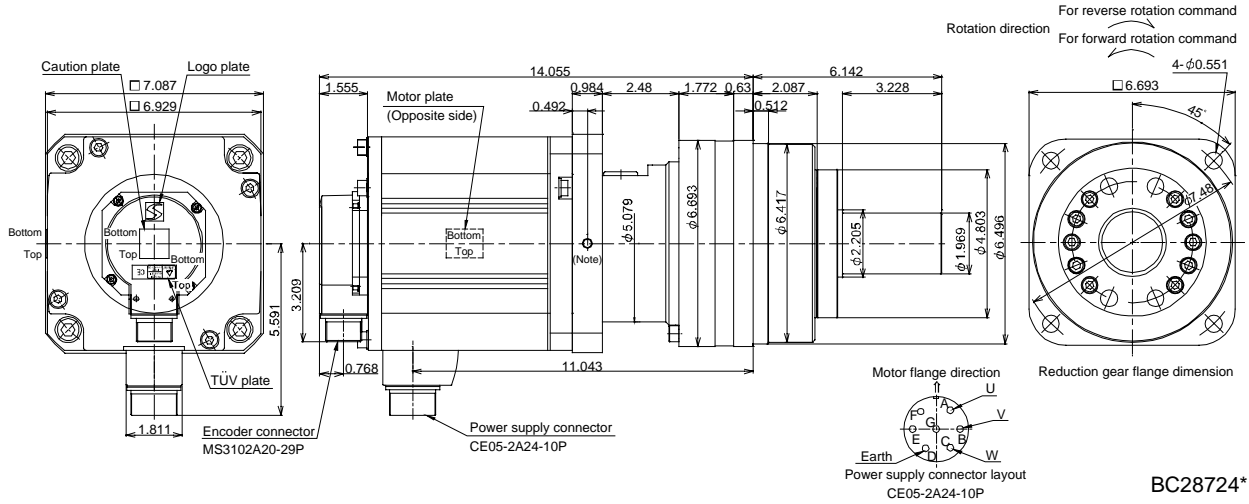
BC28723*

Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS502G7 * HC-SFS5024G7	5.0	HPG-50A-05-J2BBCF-S	1/5	617.82	91.7
		HPG-50A-11-J2BBDF-S	1/11	595.95	95.0

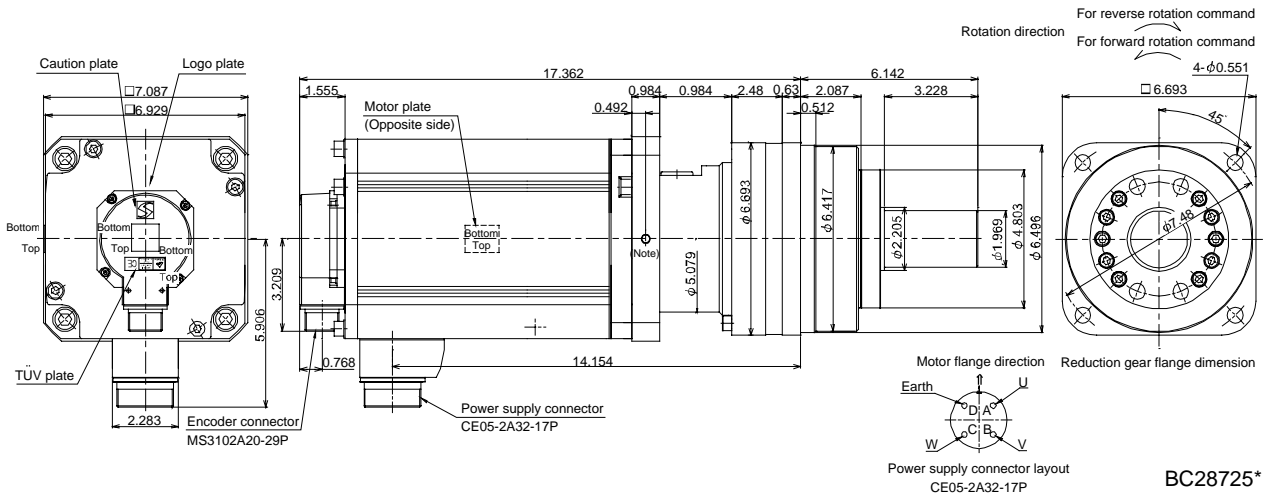
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Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS702G7	7.0	HPG-50A-05-J2BBCF-S	1/5	940.40	111.6

[Unit: in]



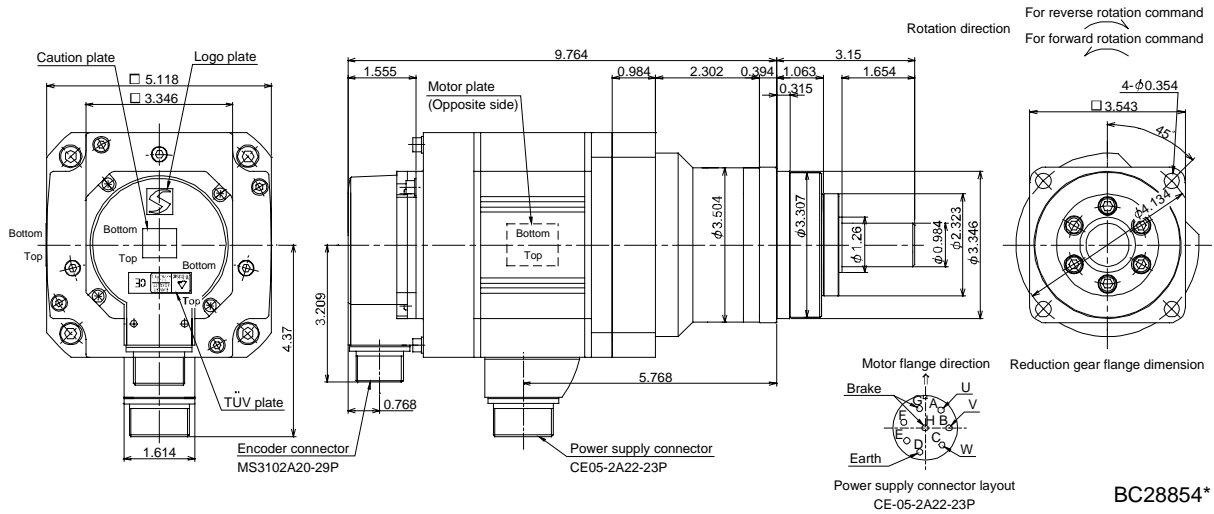
Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

(2) With electromagnetic brake

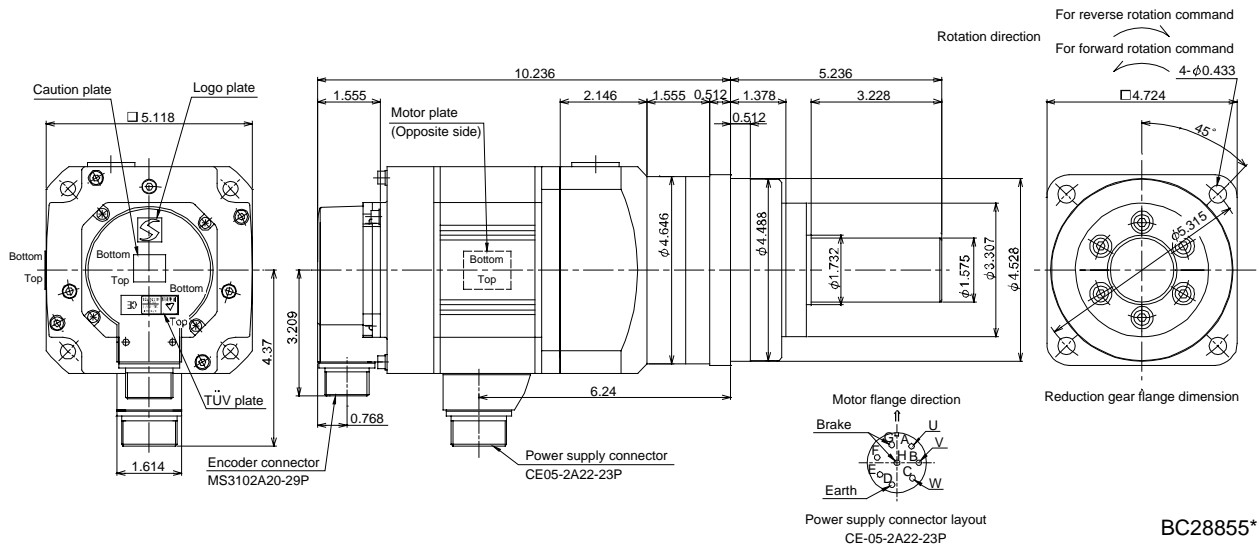
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS52BG7 * HC-SFS524BG7	0.5	HPG-20A-05-J2KSAWS-S	1/5	1175.4	50.79	22.5
		HPG-20A-11-J2KSAXS-S	1/11		50.08	22.9

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS52BG7 * HC-SFS524BG7	0.5	HPG-32A-21-J2MCSYS-S	1/21	1175.4	62.88	32.8
		HPG-32A-33-J2MCSZS-S	1/33		61.78	
		HPG-32A-45-J2MCSZS-S	1/45			

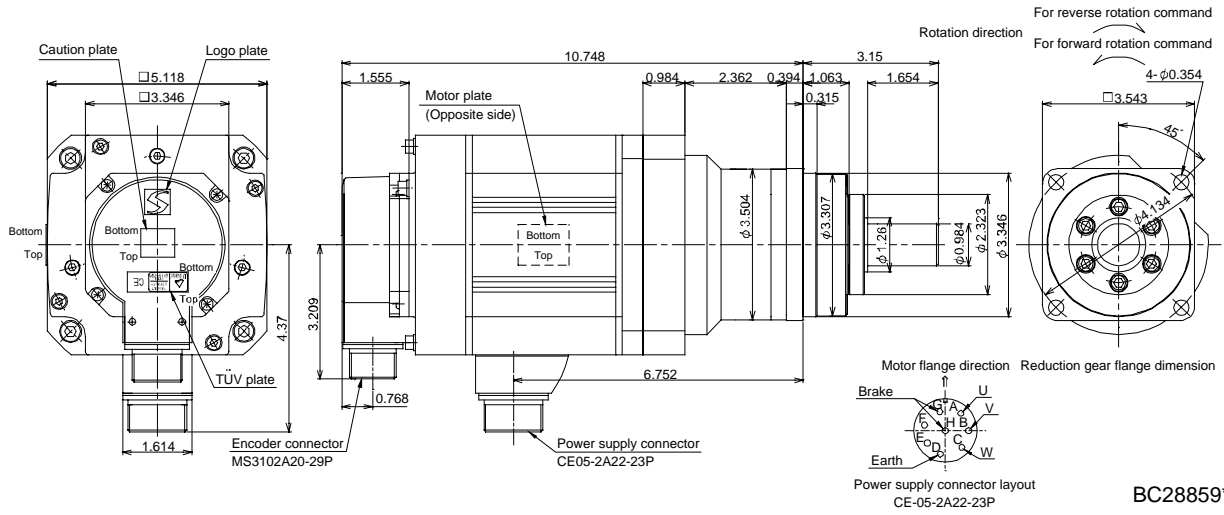
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2. HC-SFS SERIES

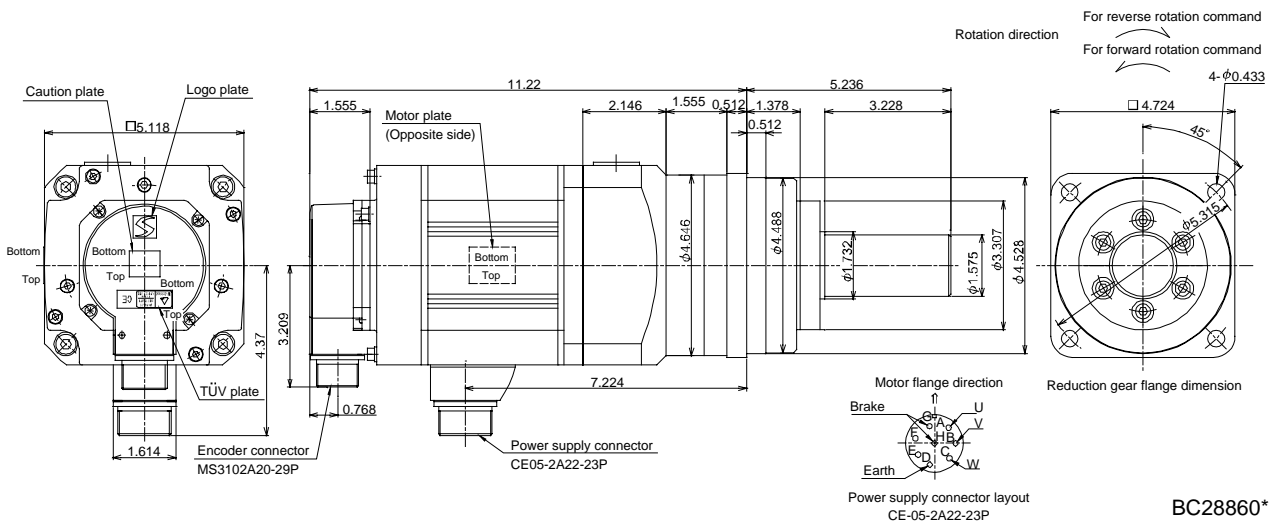
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS102BG7 * HC-SFS1024BG7	1.0	HPG-20A-05-J2KSAWS-S	1/5	1175.4	89.67	26.9

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS102BG7 * HC-SFS1024BG7	1.0	HPG-32A-11-J2MCSPS-S	1/11	1175.4	104.43	37.3
		HPG-32A-21-J2MCSYS-S	1/21		101.69	

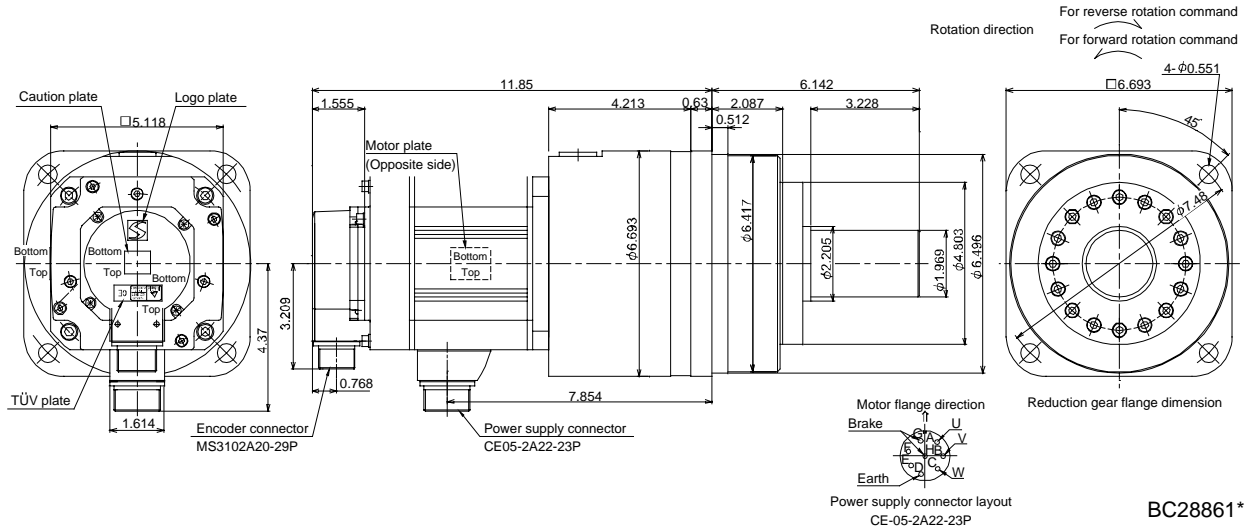
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2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS102BG7 * HC-SFS1024BG7	1.0	HPG-50A-33-J2AABC-S	1/33	1175.4	111.536	61.7
		HPG-50A-45-J2AABC-S	1/45			

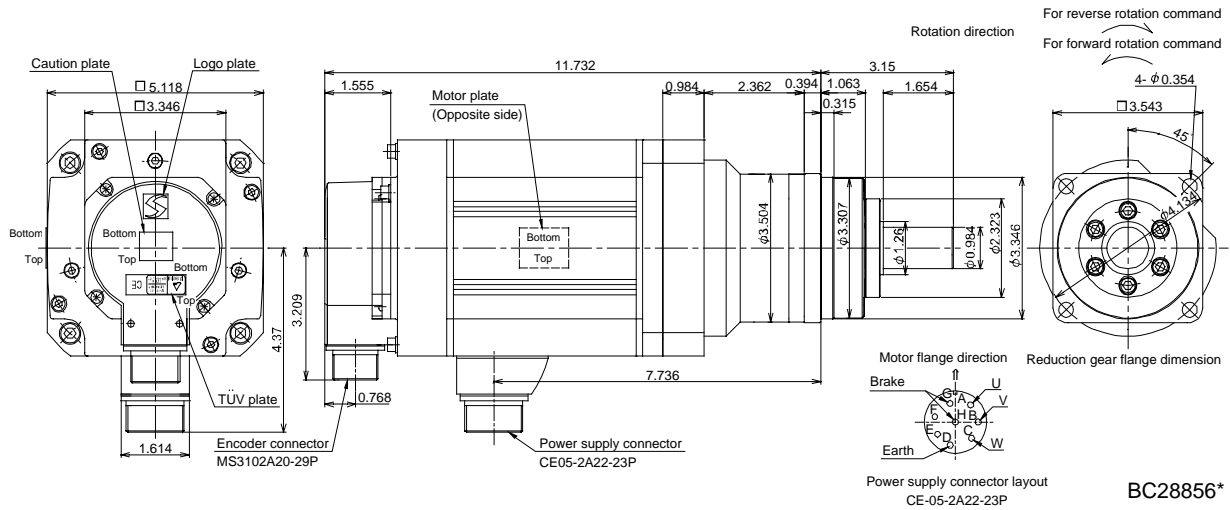
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BC28861*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS152BG7 * HC-SFS1524BG7	1.5	HPG-20A-05-J2KSAWS-S	1/5	1175.4	124.11	31.3

[Unit: in]

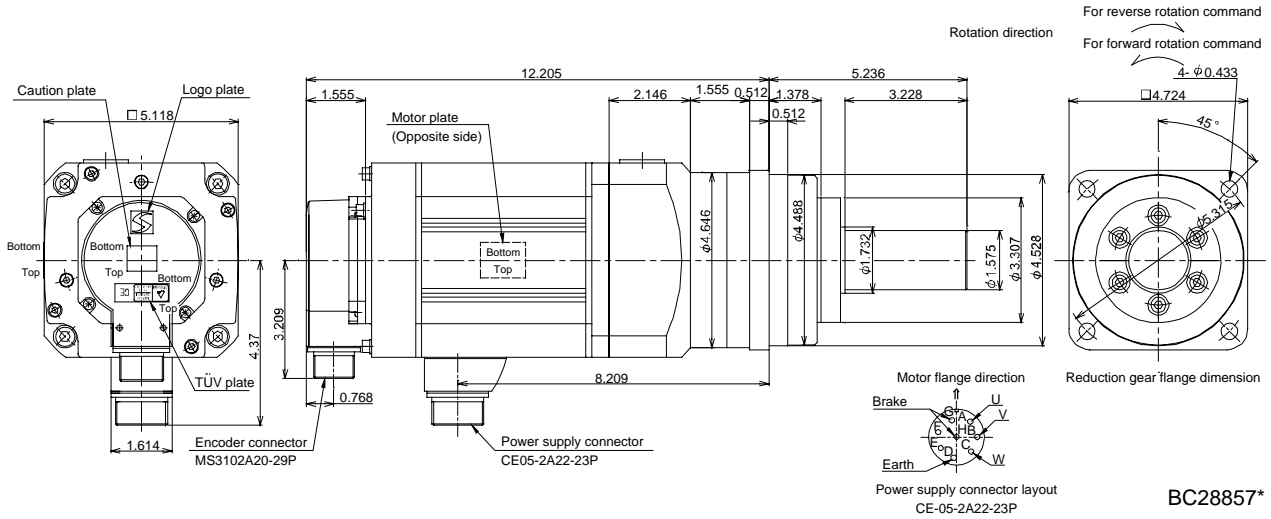


BC28856*

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS152BG7 * HC-SFS1524BG7	1.5	HPG-32A-11-J2MCSPS-S	1/11	1175.4	138.87	41.6

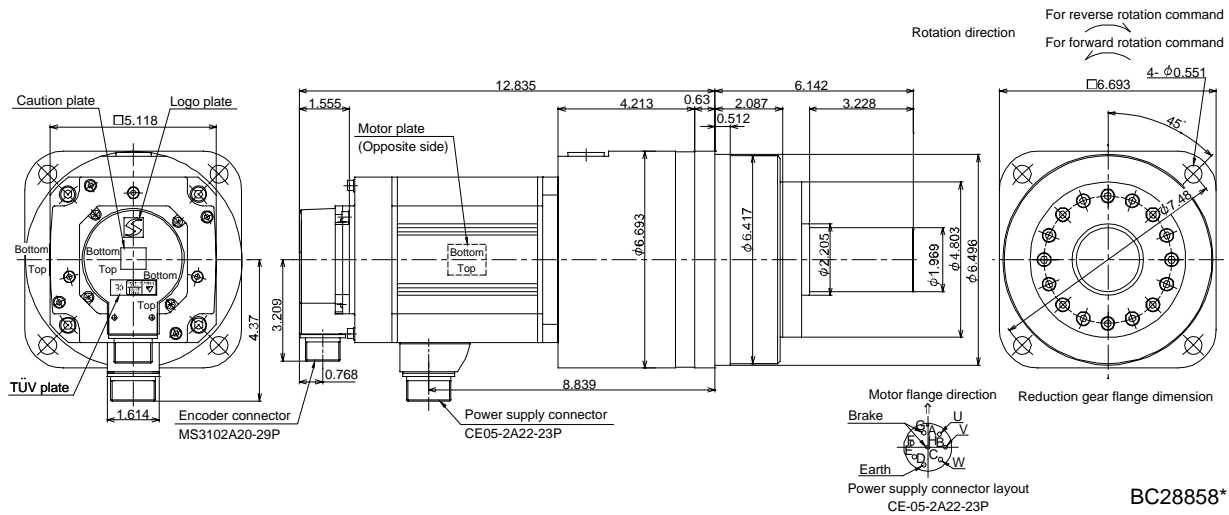
[Unit: in]



BC28857*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS152BG7 * HC-SFS1524BG7	1.5	HPG-50A-21-J2AABC-S	1/21	1175.4	151.45	66.1
		HPG-50A-33-J2AABC-S	1/33		145.98	
		HPG-50A-45-J2AABC-S	1/45			

[Unit: in]

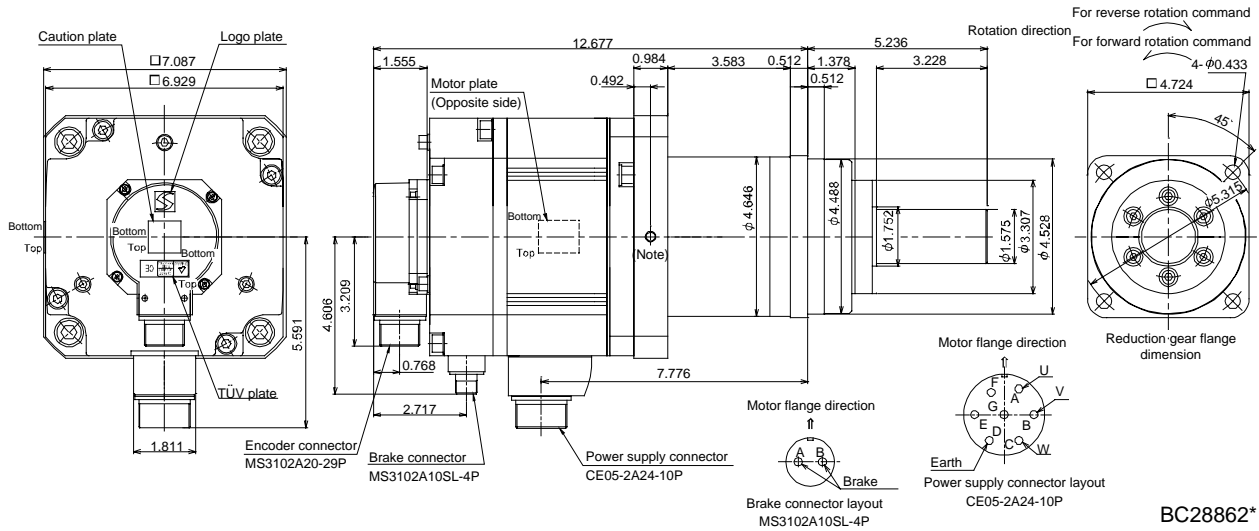


BC28858*

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS202BG7 * HC-SFS2024BG7	2.0	HPG-32A-05-J2PBZI-S	1/5	6103.5	313.83	59.3
		HPG-32A-11-J2PBZJ-S	1/11		311.64	60.4

[Unit: in]

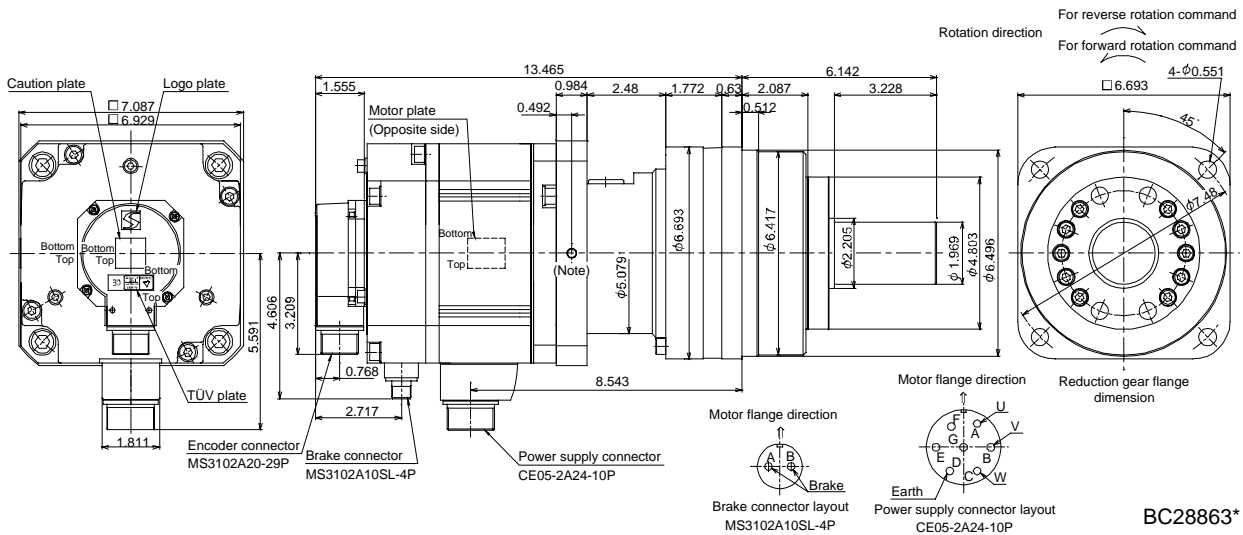


BC28862*

Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS202BG7 * HC-SFS2024BG7	2.0	HPG-50A-21-J2BBDF-S	1/21	6103.5	322.58	84.0
		HPG-50A-33-J2BBDF-S	1/33		316.57	
		HPG-50A-45-J2BBDF-S	1/45			

[Unit: in]



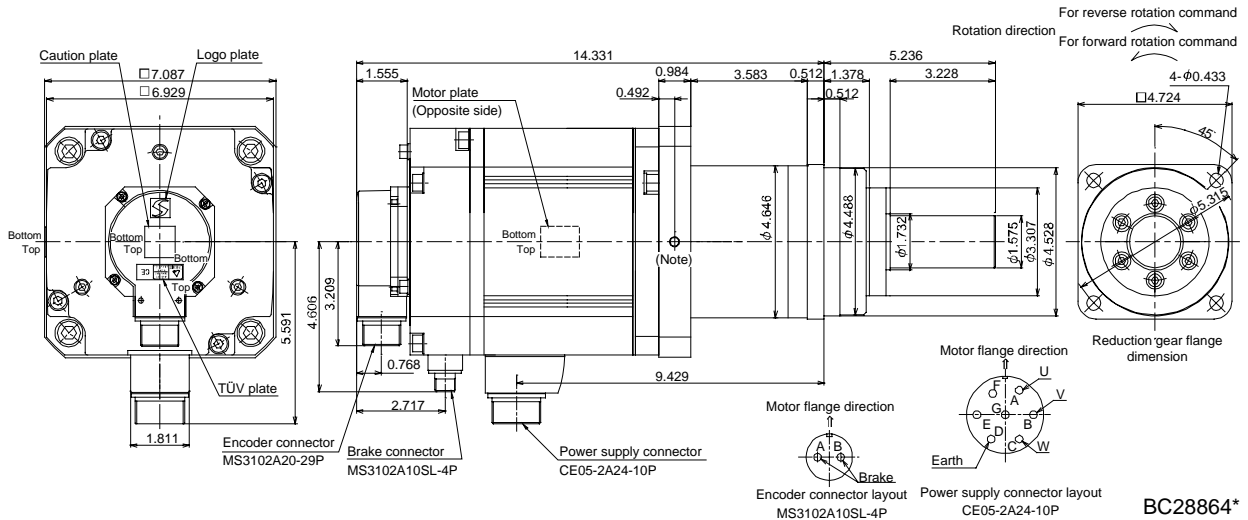
BC28863*

Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS352BG7 * HC-SFS3524BG7	3.5	HPG-32A-05-J2PBZI-S	1/5	6103.5	529.80	74.7

[Unit: in]

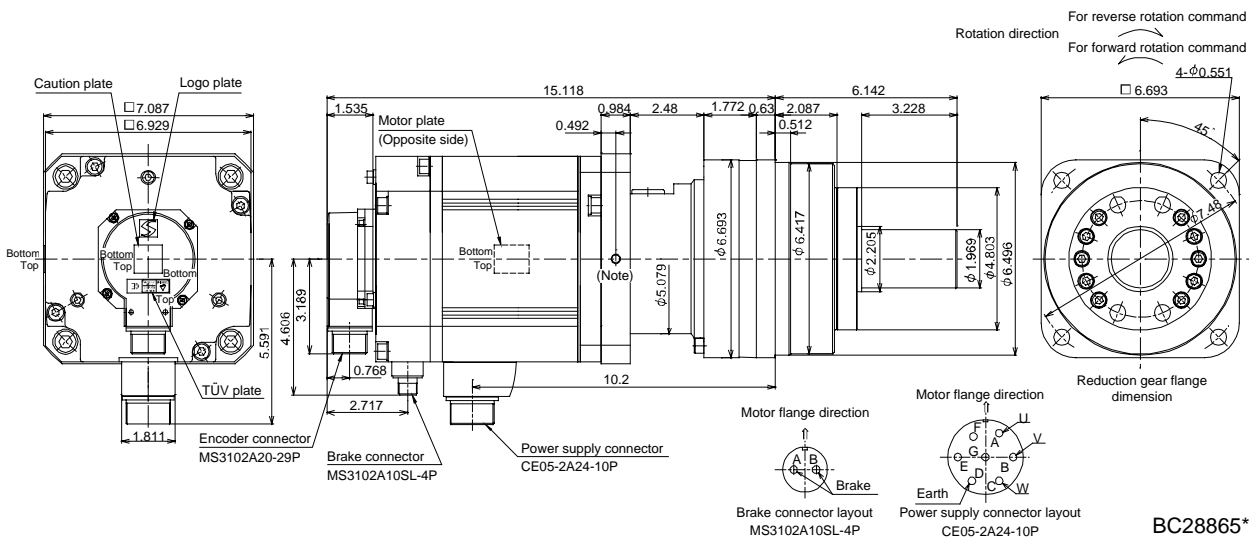


BC28864*

Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS352BG7 * HC-SFS3524BG7	3.5	HPG-50A-11-J2BBDF-S	1/11	6103.5	546.75	99.4
		HPG-50A-21-J2BBDF-S	1/21		538.54	

[Unit: in]



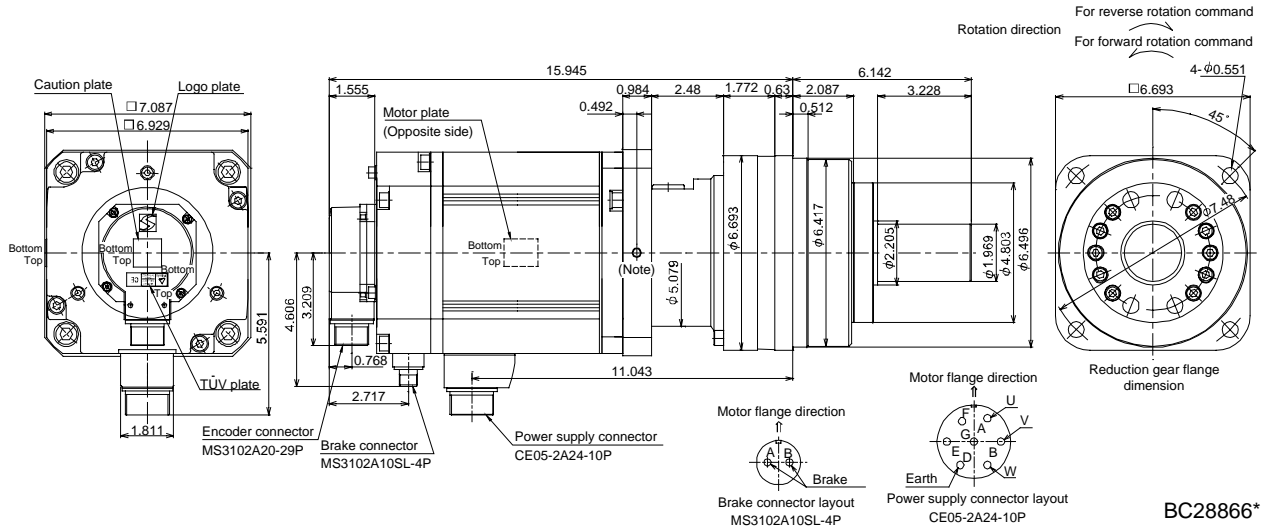
BC28865*

Note: Screw hole for eyebolt (M8).

2. HC-SFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS502BG7 * HC-SFS5024BG7	5.0	HPG-50A-05-J2BBCF-S	1/5	6103.5	672.50	104.9
		HPG-50A-11-J2BBDF-S	1/11		650.63	108.2

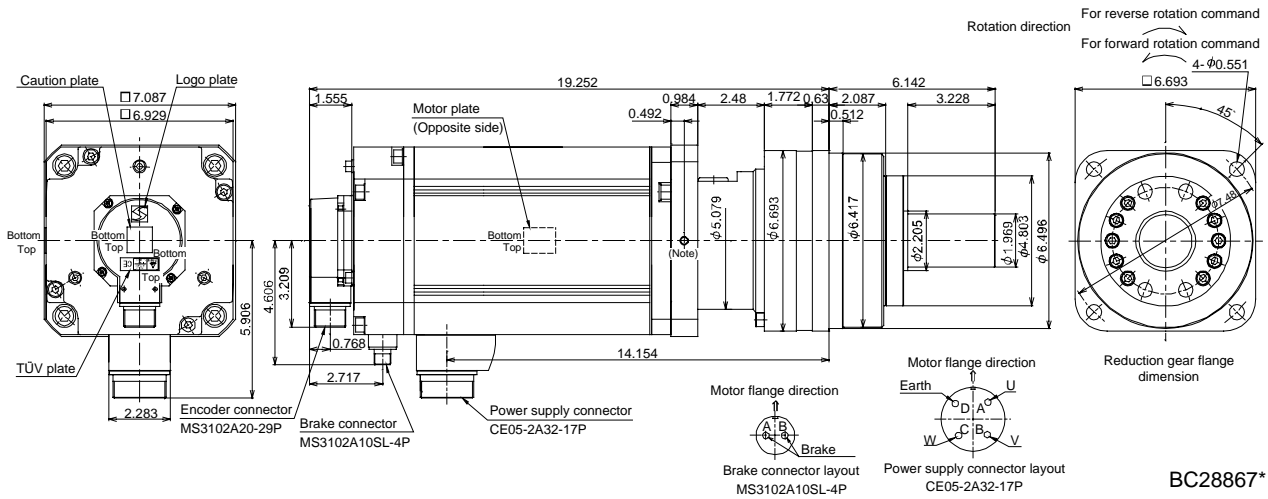
[Unit: in]



Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment WK ² [oz · in ²]	Mass [lb]
HC-SFS702BG7 * HC-SFS7024BG7	7.0	HPG-50A-05-J2BBCF-S	1/5	6103.5	995.08	124.8

[Unit: in]



Note: Screw hole for eyebolt (M8).

3. HC-RFS SERIES

3. HC-RFS SERIES

3.1 Model name

HC-RFS (Ultra low inertia, middle capacity)

HC-RFS □ 3 □ □ □

Series name

Shaft type (Special shaft)

Symbol	Shaft shape
None	Standard (Staraight shaft)
(Note) K	With keyway (With key)

Note: Not provided for G5.

Reduction gear

Symbol	Reduction gear
G5	Flange-mounting flange output type for precision application
G7	Flange-mounting shaft output type for precision application

Electomagnetic brake

Symbol	Electromagnetic brake
None	Without
(Note) B	With

Note: Electromagnetic brake can be provided for all servo motors with reduction gear.

Rated speed
3000[r/min]

Rated output

Symbol	Rated output [W]
05	50
1	100
2	200
4	400
7	750

3. HC-RFS SERIES

3.2 Manufacturing range

The symbols (20A, 32A, 50A) in the following table indicate the model numbers of the reduction gears assembled to the servo motors.

Servo motors with reduction gears having the indicated reduction gear model numbers are available.

The reduction gear model number indicates □□□ of the reduction number model name HPG-□□□-05...

Servo motor	Reduction ratio				
	1/5	1/11	1/21	1/33	1/45
HC-RFS103G5 HC-RFS103G7					
HC-RFS153G5 HC-RFS153G7	20A	32A			
HC-RFS203G5 HC-RFS203G7				50A	
HC-RFS353G5 HC-RFS353G7					
HC-RFS503G5 HC-RFS503G7					

3.3 Specifications

Item		Description
Mounting method		Flange mounting
Mounting direction		In any directions
		Grease lubrication (Already packed) (Note 1)
Lubrication method	Packed with	Reduction gear model number 20A, 32A: Harmonic grease SK-2 (Harmonic Drive Systems) Reduction gear model number 50A: EPNOC grease AP(N)2 (NIPPON OIL CORPORATION)
Output shaft rotating direction		Same as the servo motor output shaft direction.
With electromagnetic brake		Available
Backlash		3 minutes or less at reduction gear output shaft
Permissible load inertia moment ratio (when converting into the servo motor shaft) (Note 2)		5 times or less
Permissible speed (at servo motor shaft)		4500r/min
Protective structure (reduction gear area)		IP44 equivalent
Reduction gear efficiency (Note 3)		71 to 90%

Note 1. Already packed with grease.

2. If the above indicated value is exceeded, please consult us.

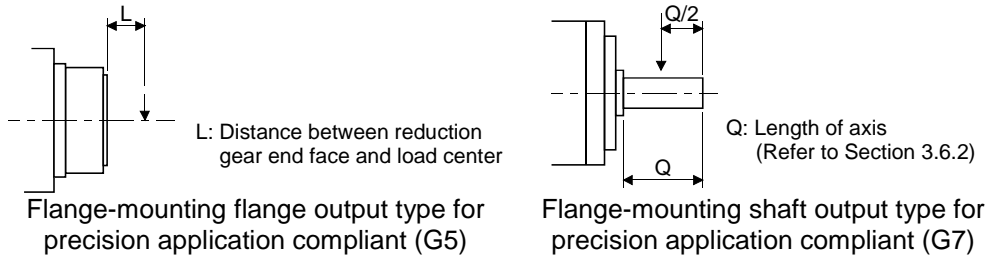
3. The reduction gear efficiency differs depending on the reduction ratio.

Also, it changes depending on the use conditions such as the output torque, speed and rotation, temperature, etc. The numerical value in the table is a typical value in the rated torque, rated speed and rotation and typical temperature, and not a guaranteed value.

3. HC-RFS SERIES

3.4 Permissible loads of servo motor shaft

The radial load point of a precision reduction gear is as shown below.



Servo motor	Reduction ratio	Radial load point L (mm)		Permissible load (Note)			
				Permissible radial load		Permissible thrust load	
		[mm]	[in]	[N]	[lb]	[N]	[lb]
HC-RFS103G5 HC-RFS103G7	1/5	32	1.26	416	93.5	1465	329.3
	1/11	32	1.26	527	118	1856	417
	1/21	57	2.24	1094	246	4359	980
	1/33	57	2.24	1252	282	4992	1120
	1/45	57	2.24	1374	309	5478	1230
HC-RFS153G5 HC-RFS153G7	1/5	32	1.26	416	93.5	1465	329
	1/11	57	2.24	901	203	3590	807
	1/21	57	2.24	1094	246	4359	980
	1/33	62	2.44	2929	658	10130	2280
	1/45	62	2.44	3215	723	11117	2500
HC-RFS203G5 HC-RFS203G7	1/5	32	1.26	416	93.5	1465	329
	1/11	57	2.24	901	203	3590	807
	1/21	62	2.44	2558	575	8845	1990
	1/33	62	2.44	2929	658	10130	2280
	1/45	62	2.44	3215	723	11117	2500
HC-RFS353G5 HC-RFS353G7	1/5	57	2.24	711	160	2834	637
	1/11	57	2.24	901	203	3590	807
	1/21	62	2.44	2558	575	8845	1990
	1/33	62	2.44	2929	658	10130	2280
HC-RFS503G5 HC-RFS503G7	1/5	57	2.24	711	160	2834	637
	1/11	62	2.44	2107	474	7285	1640
	1/21	62	2.44	2558	575	8845	1990

Note. The load above this value should not be applied to the shaft.
The value in the table assumes that the load is applied independently.

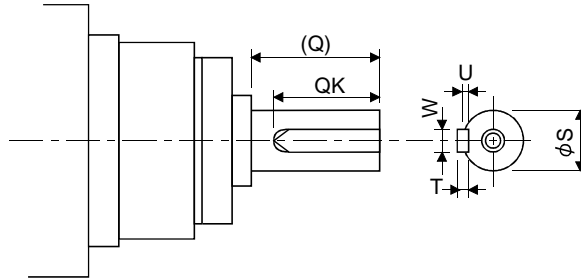
3. HC-RFS SERIES

3.5 Special shaft servo motors

Servo motors with special shafts having keyway (with single pointed keys) are available for the flange-mounting shaft output type for precision applications compliant (G7).

[Unit: mm](Unit:in)

Servo motor	Reduction gear model number	Q	ϕS	W	T	QK	U
HF-RFS□G7K	20A	42(1.65)	25(0.984)	8(0.315)	7(0.276)	36(1.42)	4(0.157)
	32A	82(3.23)	40(1.58)	12(0.472)	8(0.315)	70(2.76)	5(0.197)
	50A	82(3.23)	40(1.58)	14(0.551)	9(0.354)	70(2.756)	5.5(0.217)



3. HC-RFS SERIES

3.6 Outline dimension drawings

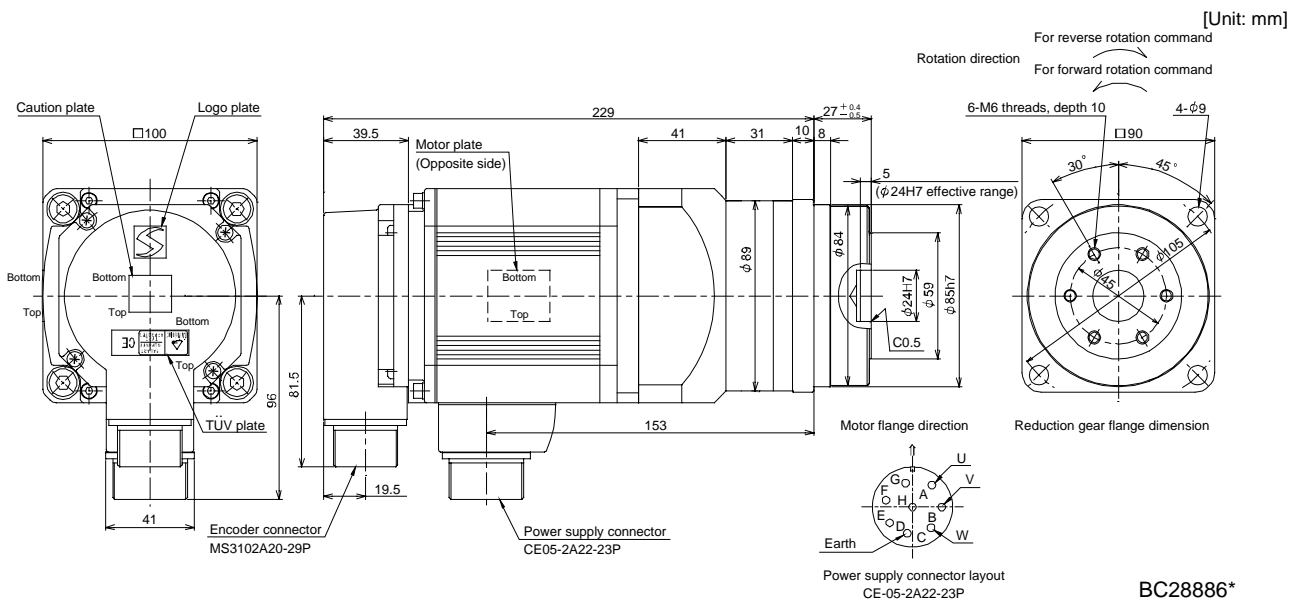
The outer frame of the reduction gear is a material surface such as casting. Its actual dimensions may be 1 to 3mm larger than the drawing dimensions. Design the machine side with allowances.

Inertia moment on the table is the value calculated by converting the total value of inertia moment for servo motor, electromagnetic brake and decelerator with servo motor shaft.

3.6.1 Flange-mounting flange output type for precision application compliant (G5)

(1) Without electromagnetic brake

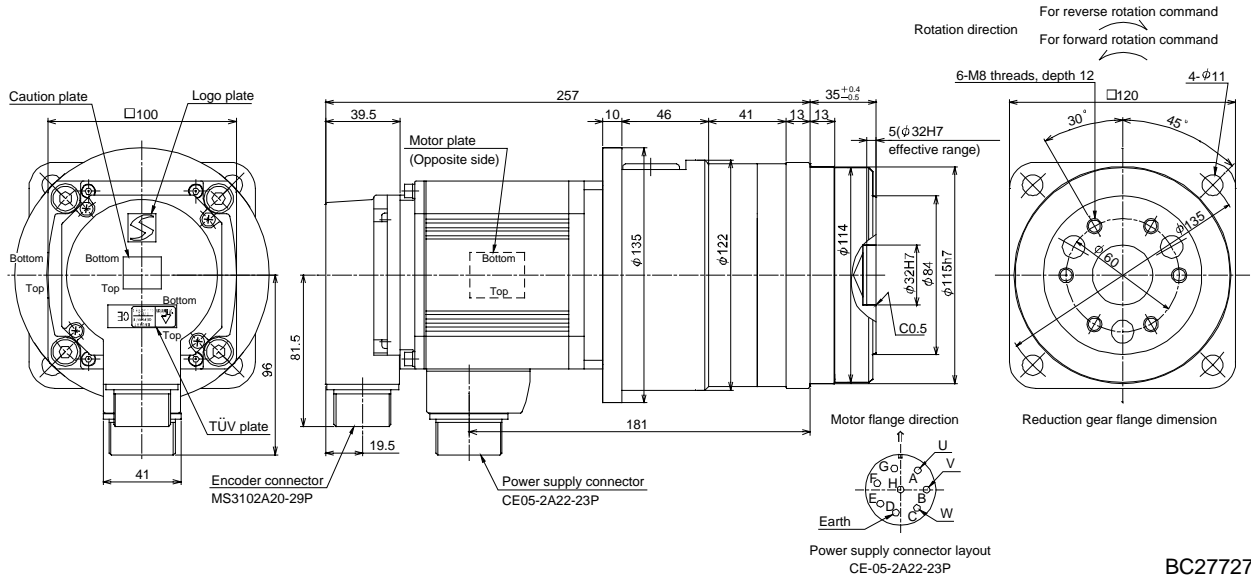
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS103G5	1.0	HPG-20A-05-F0LBWS-S	1/5	2.33	6.4
		HPG-20A-11-F0LBXS-S	1/11	2.25	6.6



3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS103G5	1.0	HPG-32A-21-F0NFSYS-S	1/21	4.40	10.4
		HPG-32A-33-F0NFSZS-S	1/33	4.20	

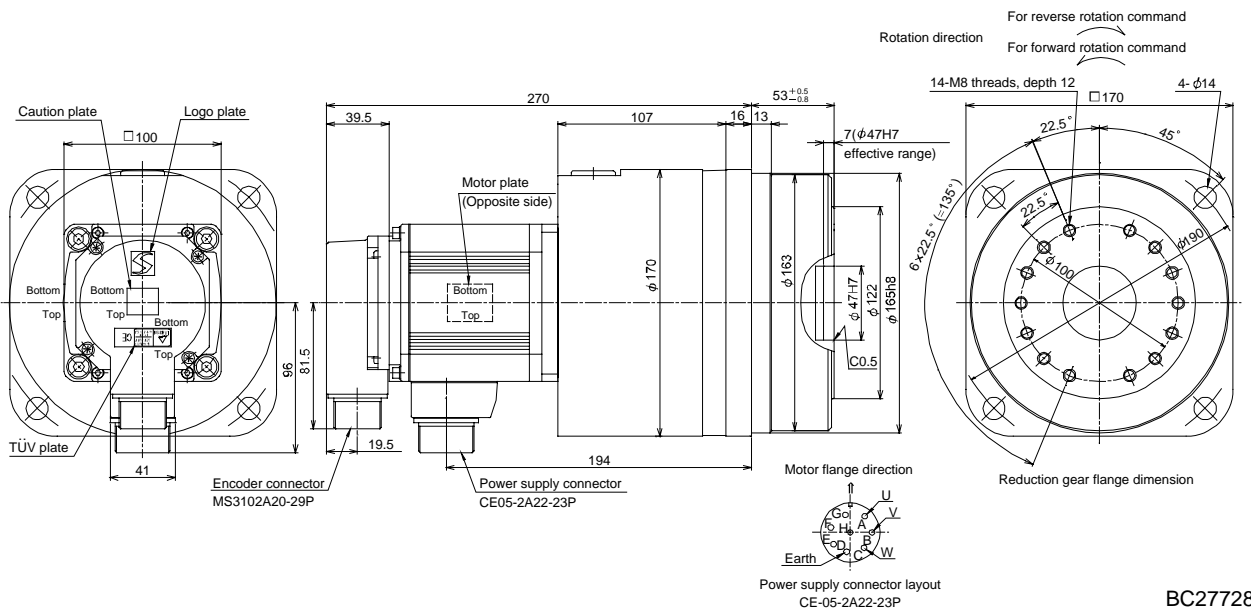
[Unit: mm]



BC27727*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS103G5	1.0	HPG-50A-45-F0ADBC-S	1/45	6.10	19.9

[Unit: mm]

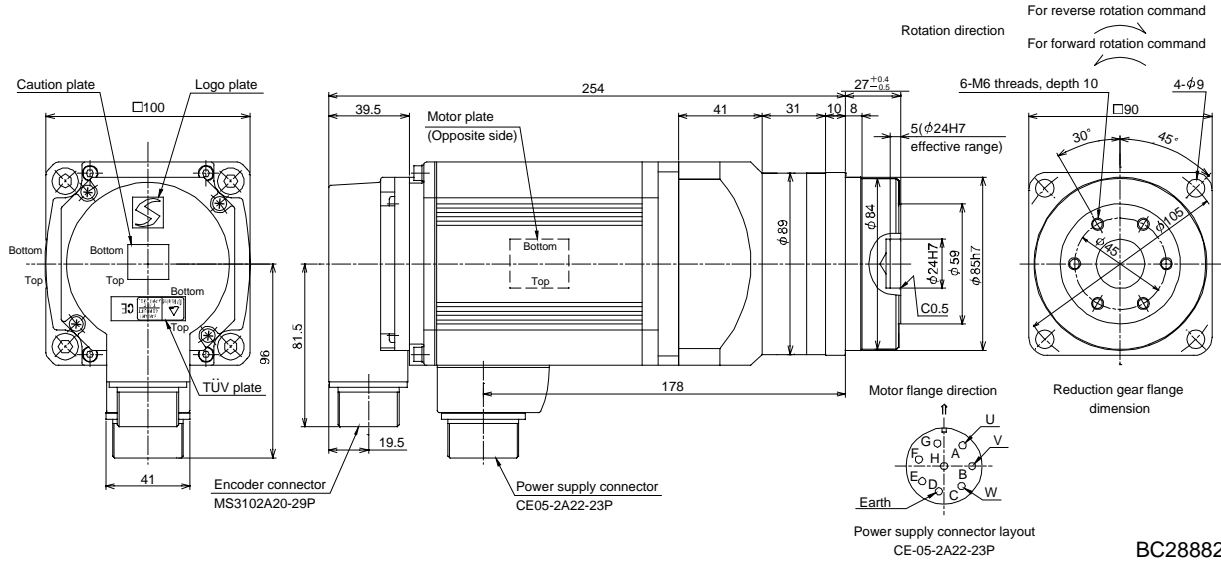


BC27728*

3. HC-RFS SERIES

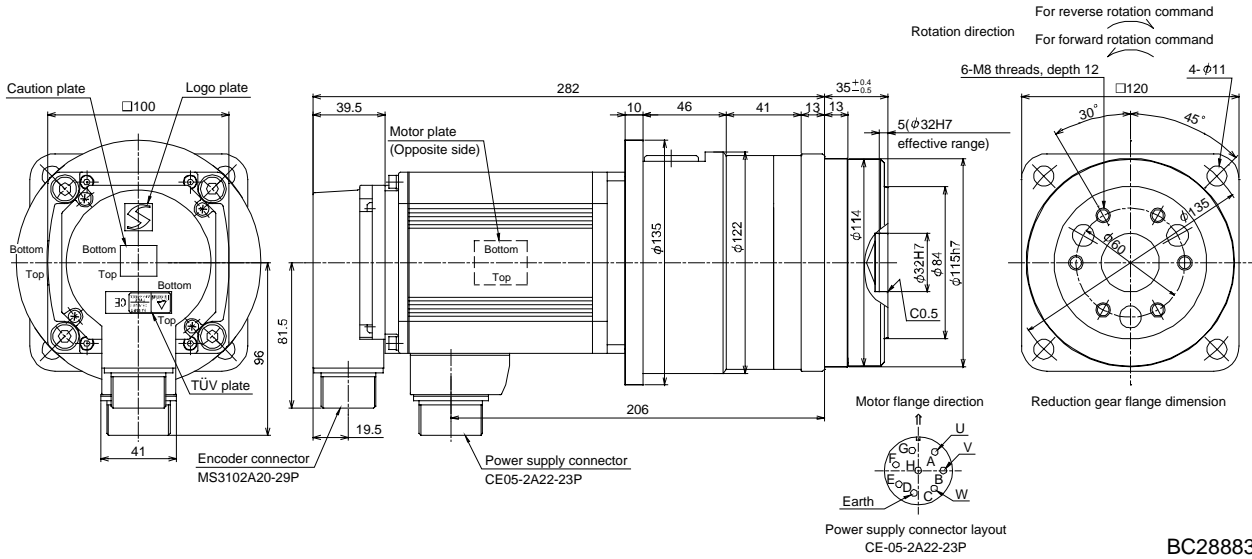
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS153G5	1.5	HPG-20A-05-F0LBWS-S	1/5	2.73	7.5

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS153G5	1.5	HPG-32A-11-F0NFSPS-S	1/11	5.20	11.5
		HPG-32A-21-F0NFSYS-S	1/21	4.80	

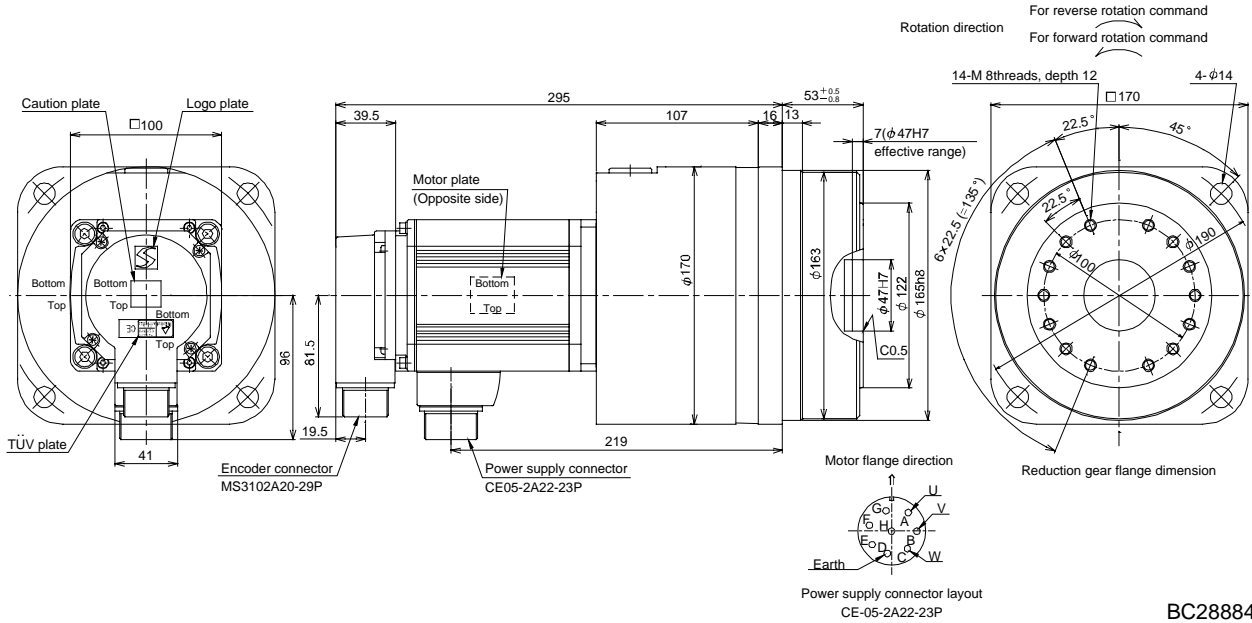
[Unit: mm]



3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS153G5	1.5	HPG-50A-33-F0ADBC-S	1/33	6.60	21.0
		HPG-50A-45-F0ADBC-S	1/45	6.50	

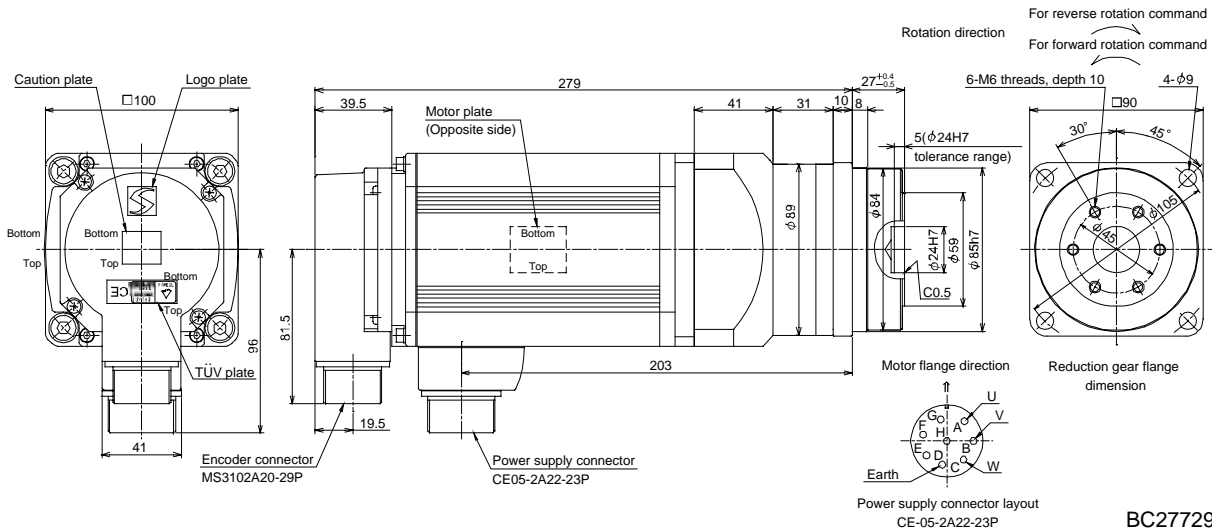
[Unit: mm]



BC28884*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS203G5	2.0	HPG-20A-05-F0LBWS-S	1/5	3.13	8.7

[Unit: mm]

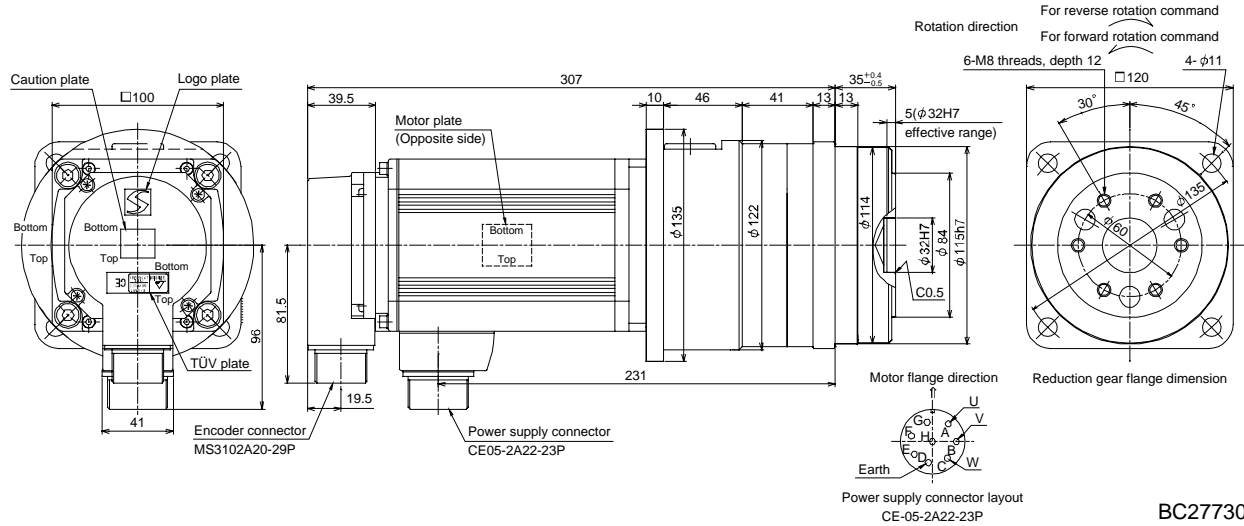


BC27729*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS203G5	2.0	HPG-32A-11-F0NFSPS-S	1/11	5.60	12.7

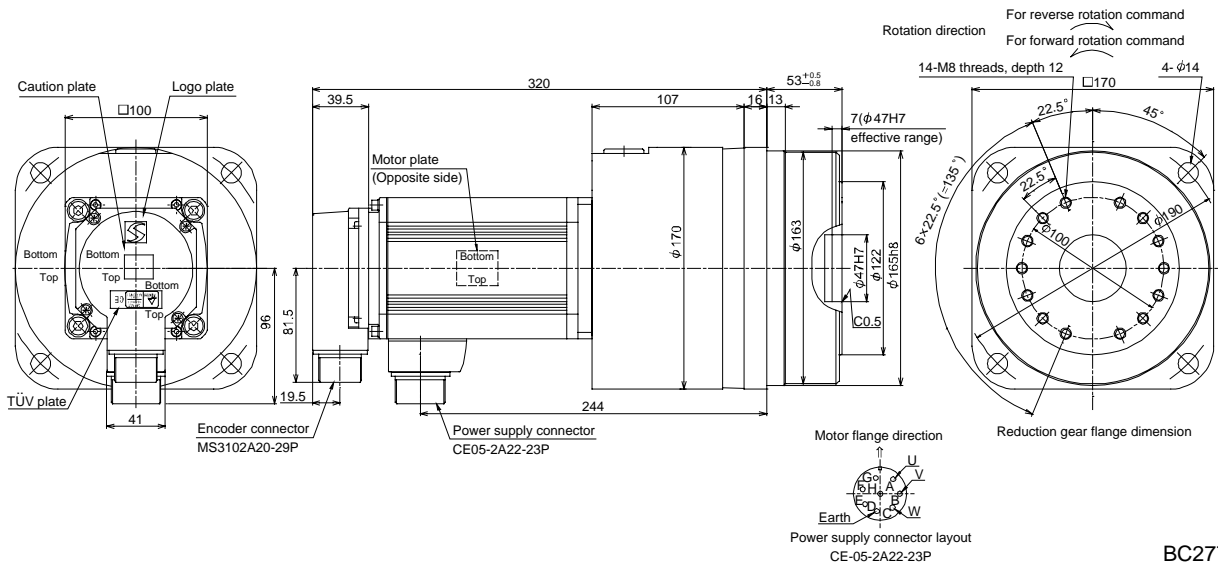
[Unit: mm]



BC27730*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS203G5	2.0	HPG-50A-21-F0ADBC-S	1/21	8.00	22.2
		HPG-50A-33-F0ADBC-S	1/33	7.00	
		HPG-50A-45-F0ADBC-S	1/45	6.90	

[Unit: mm]

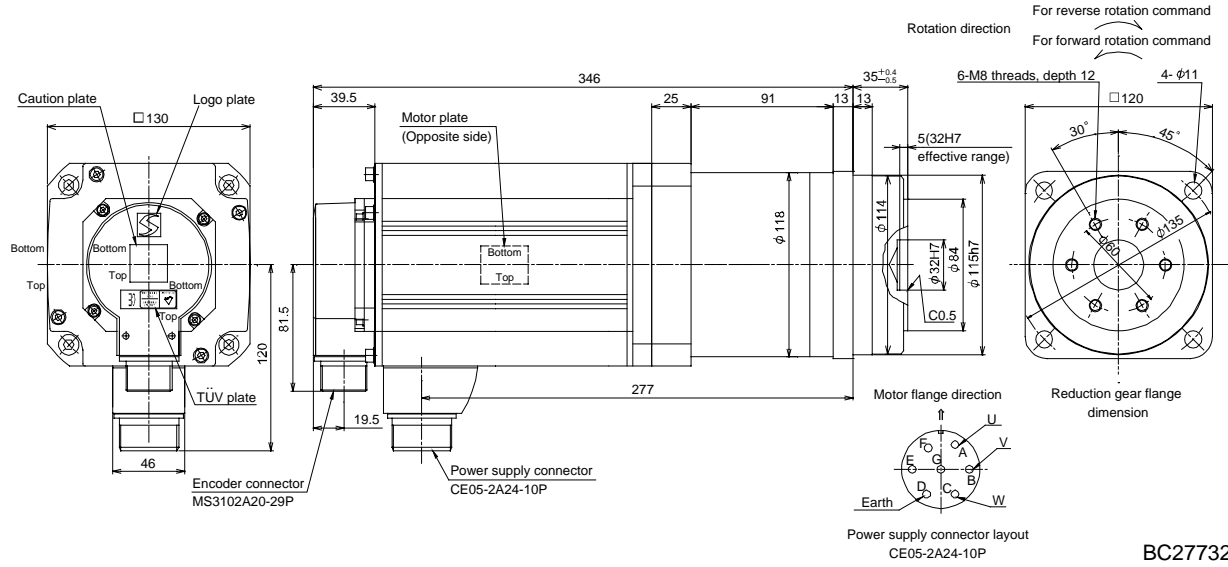


BC27731*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS353G5	3.5	HPG-32A-05-F0PAQS-S	1/5	13.5	18.5
		HPG-32A-11-F0PAR-S	1/11	13.3	19.0

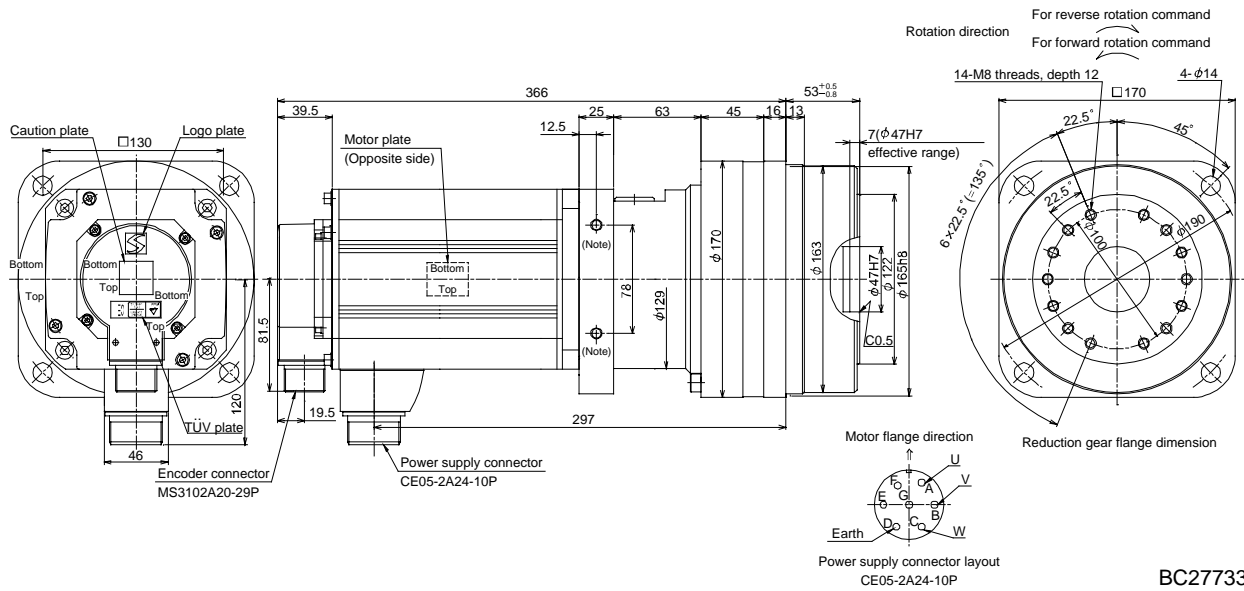
[Unit: mm]



BC27732*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS353G5	3.5	HPG-50A-21-F0BADD-S	1/21	15.3	28.1
		HPG-50A-33-F0BADD-S	1/33	14.4	

[Unit: mm]



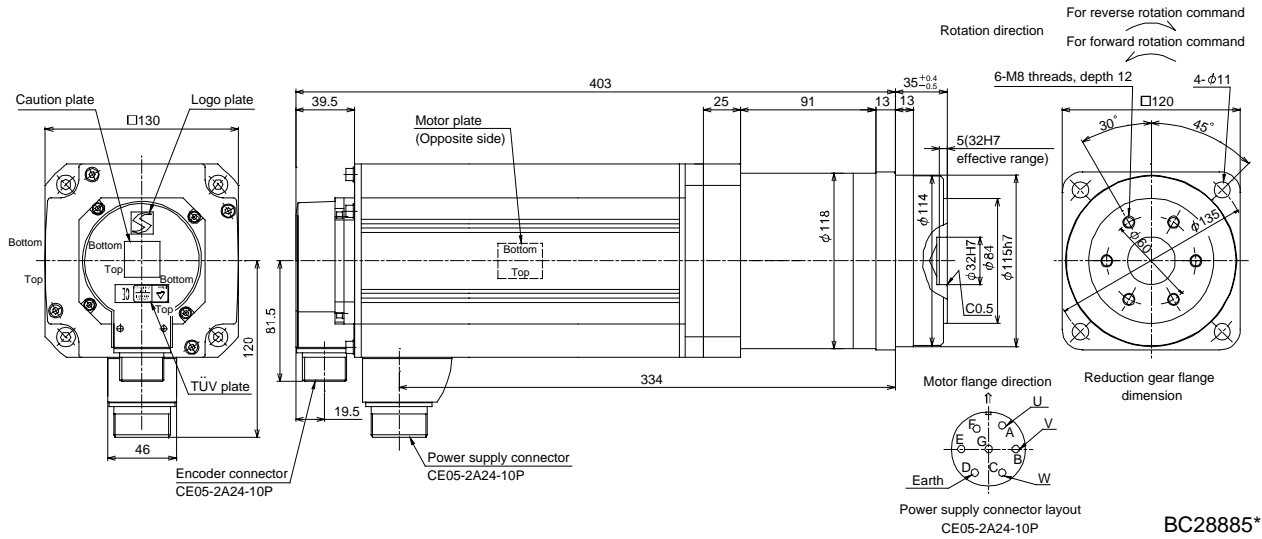
BC27733*

Note: Screw hole for eyebolt (M8).

3. HC-RFS SERIES

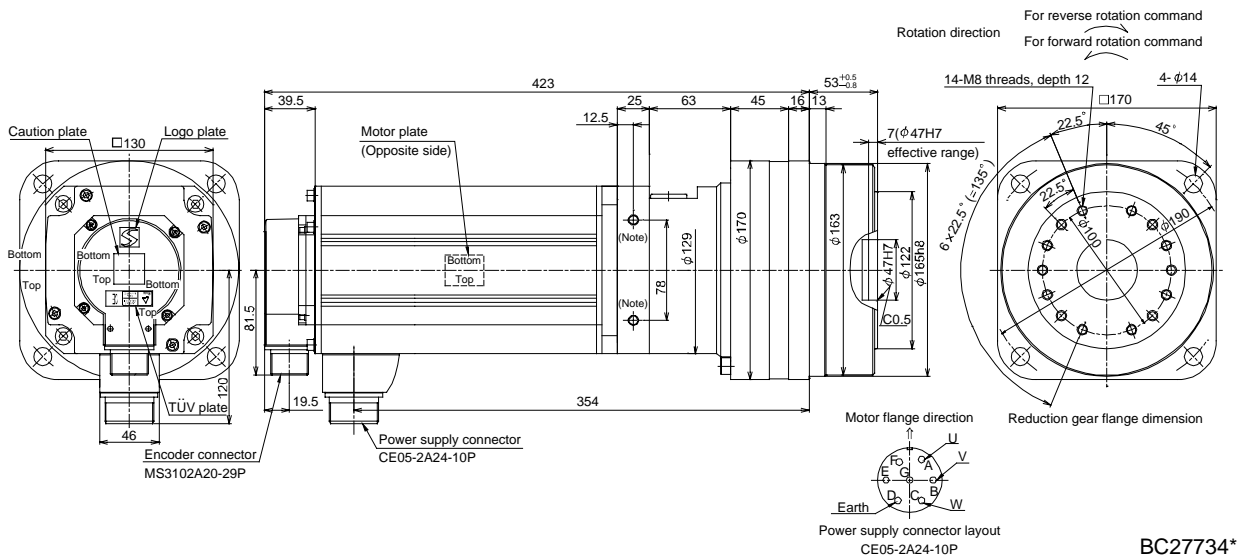
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS503G5	5.0	HPG-32A-05-F0PAQS-S	1/5	16.9	23.5

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS503G5	5.0	HPG-50A-11-F0BADD-S	1/11	20.5	33.1
		HPG-50A-21-F0BADD-S	1/21	18.7	

[Unit: mm]

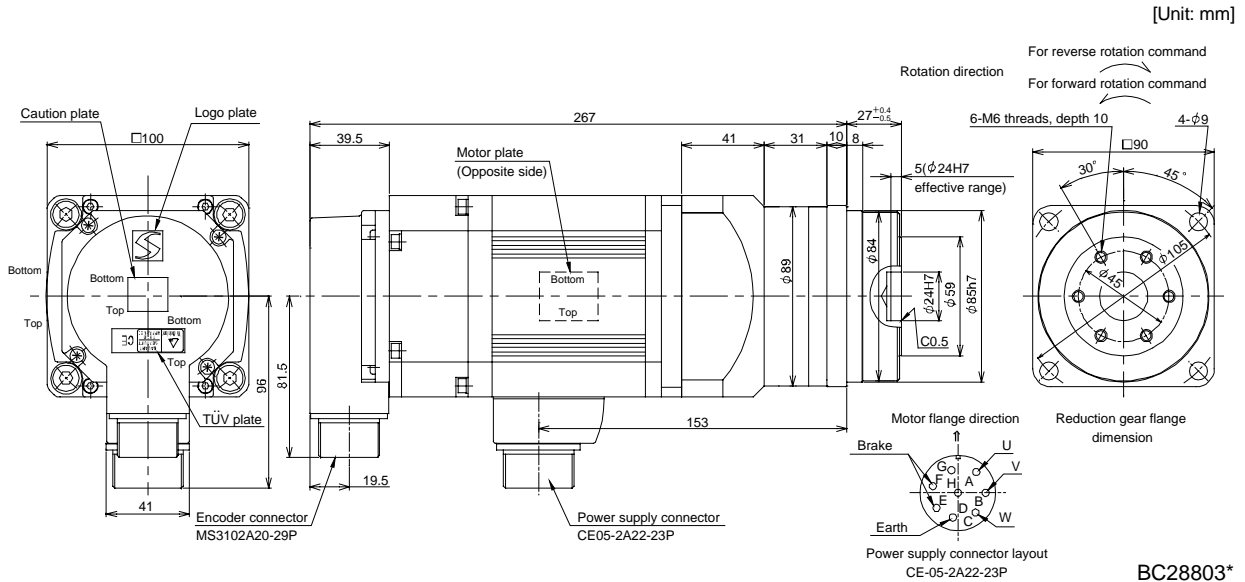


Note: Screw hole for eyebolt (M8).

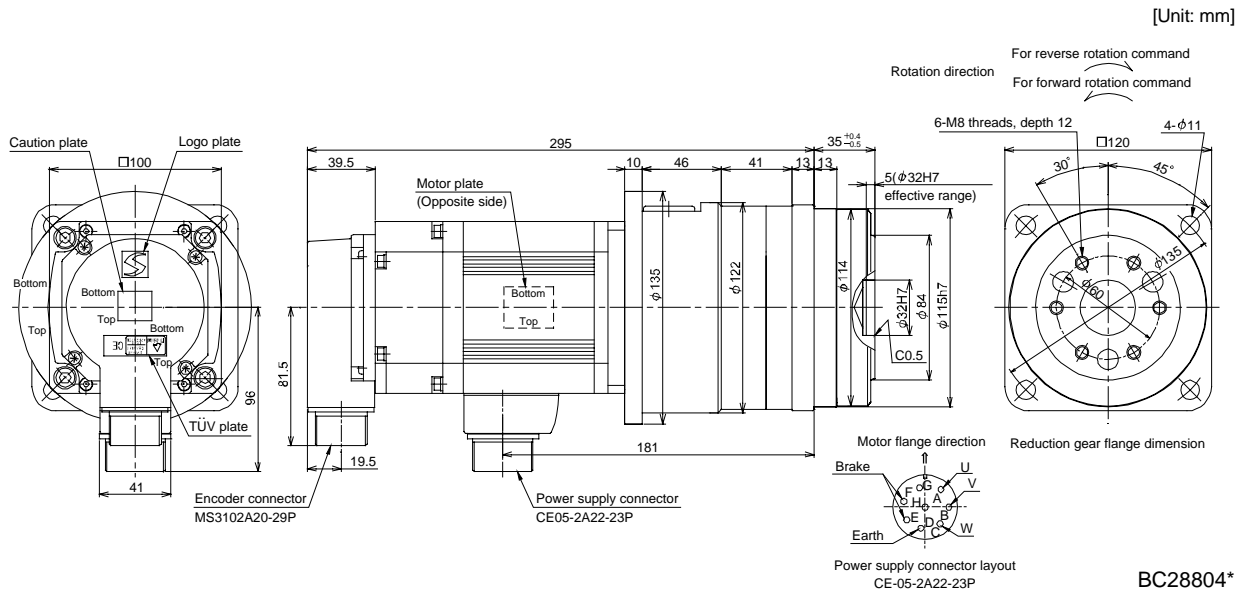
3. HC-RFS SERIES

(2) With electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS103BG5	1.0	HPG-20A-05-FOLBWS-S	1/5	7.0	2.68	8.5
		HPG-20A-11-FOLBXS-S	1/11		2.60	8.7



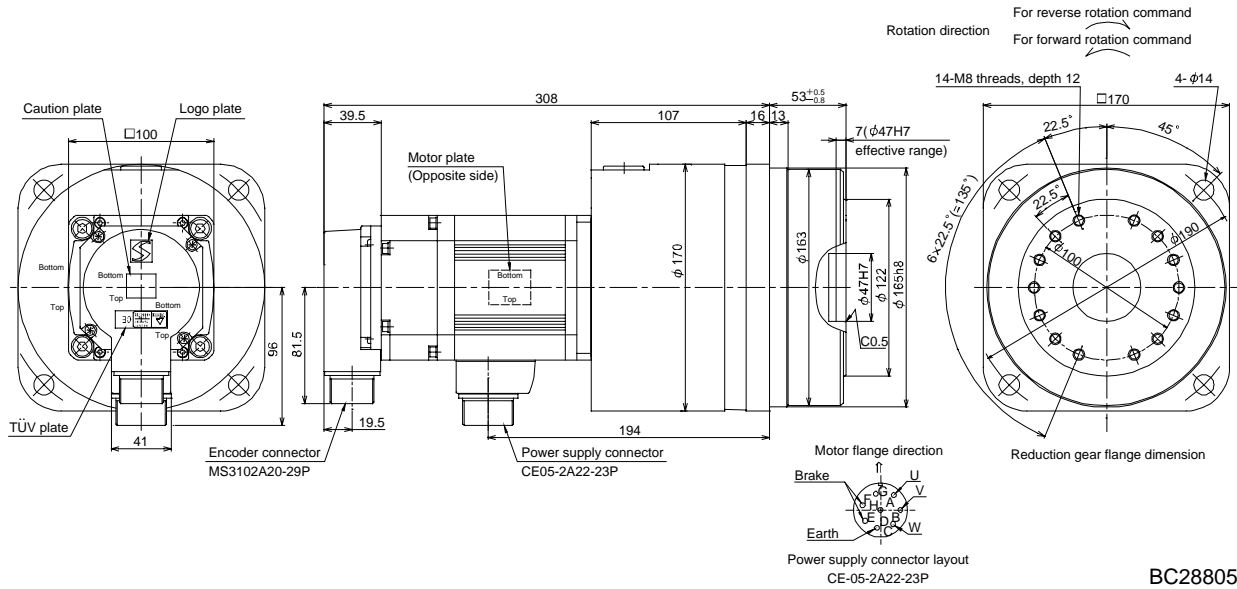
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS103BG5	1.0	HPG-32A-21-F0NFSYS-S	1/21	7.0	4.75	12.5
		HPG-32A-33-F0NFSZS-S	1/33		4.55	



3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS130BG5	1.0	HPG-50A-45-F0ADBC-S	1/45	7.0	6.45	22.0

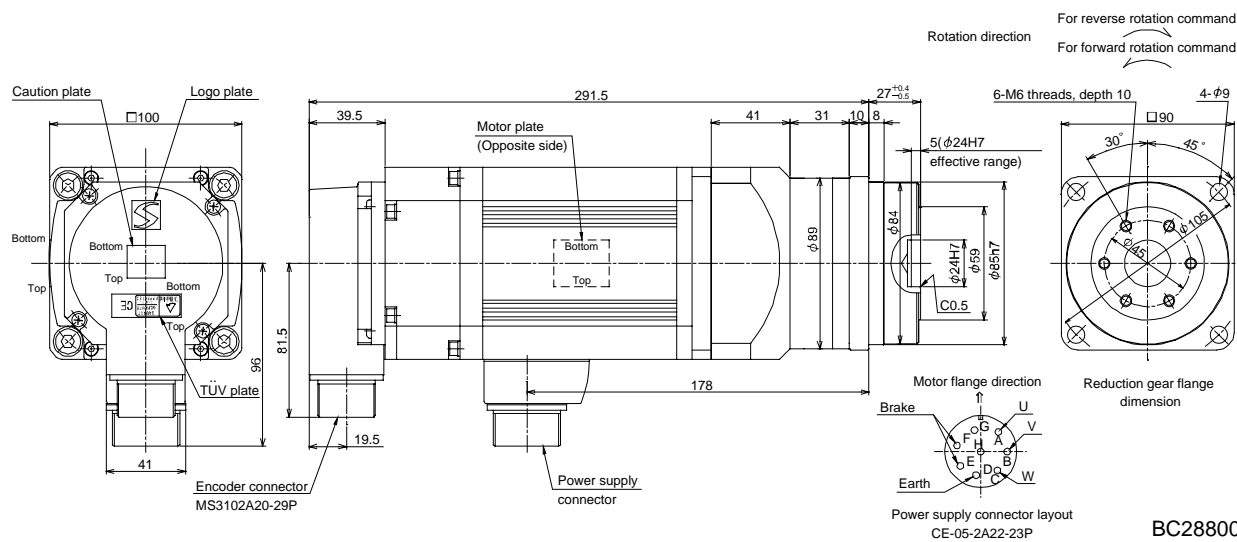
[Unit: mm]



BC28805*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS153BG5	1.5	HPG-20A-05-F0LBWS-S	1/5	7.0	3.08	9.5

[Unit: mm]

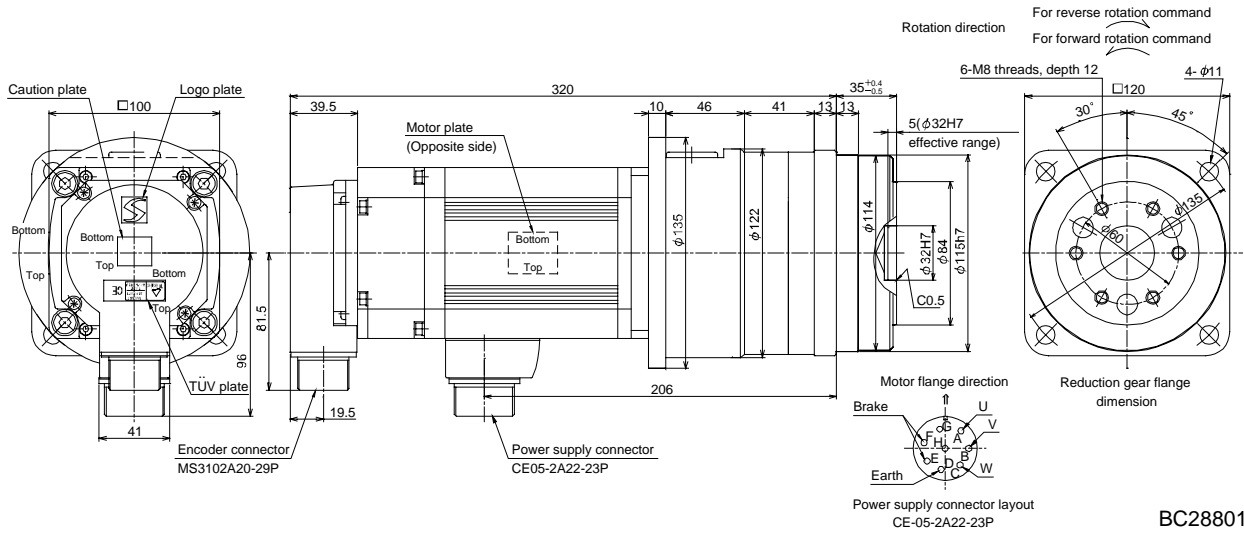


BC28800*

3. HC-RFS SERIES

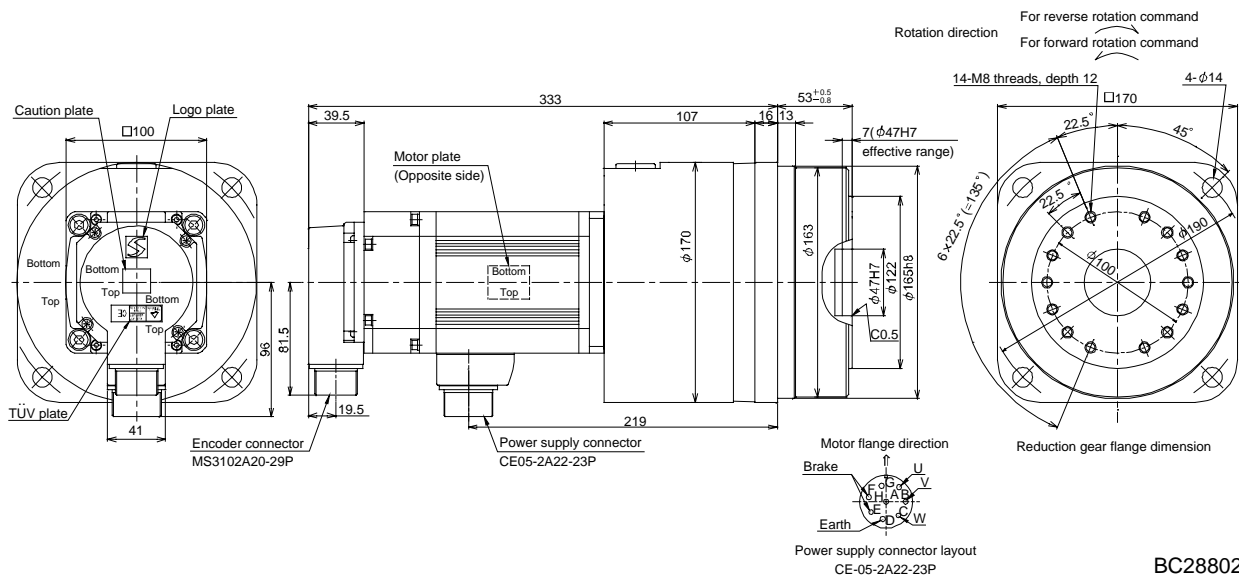
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS153BG5	1.5	HPG-32A-11-F0NFSPS-S	1/11	7.0	5.55	13.5
		HPG-32A-21-F0NFSYS-S	1/21		5.15	

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS153BG5	1.5	HPG-50A-33-F0ADBC-S	1/33	7.0	6.95	23.0
		HPG-50A-45-F0ADBC-S	1/45		6.85	

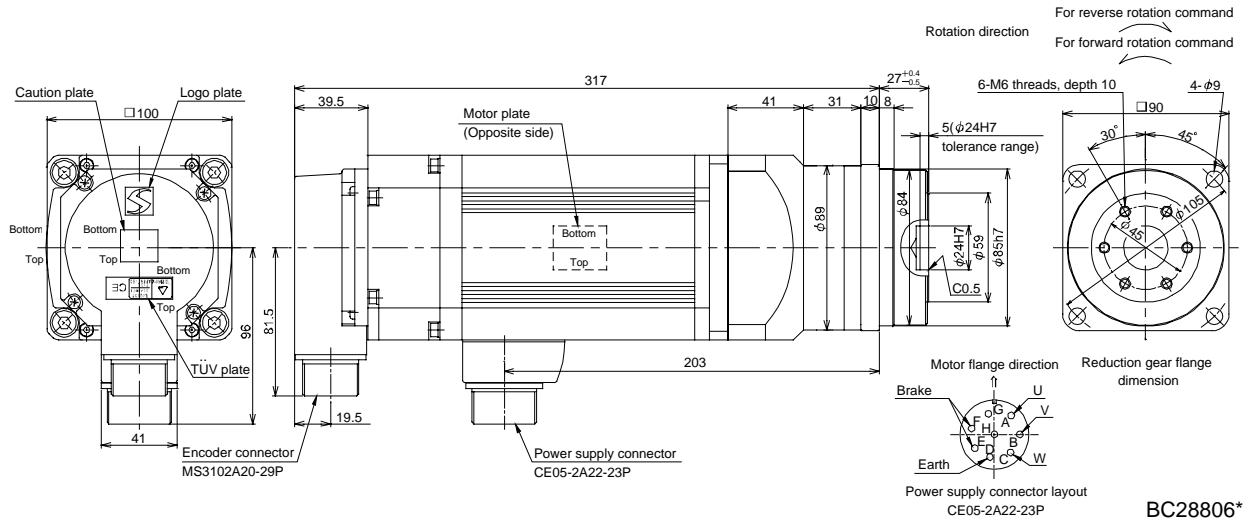
[Unit: mm]



3. HC-RFS SERIES

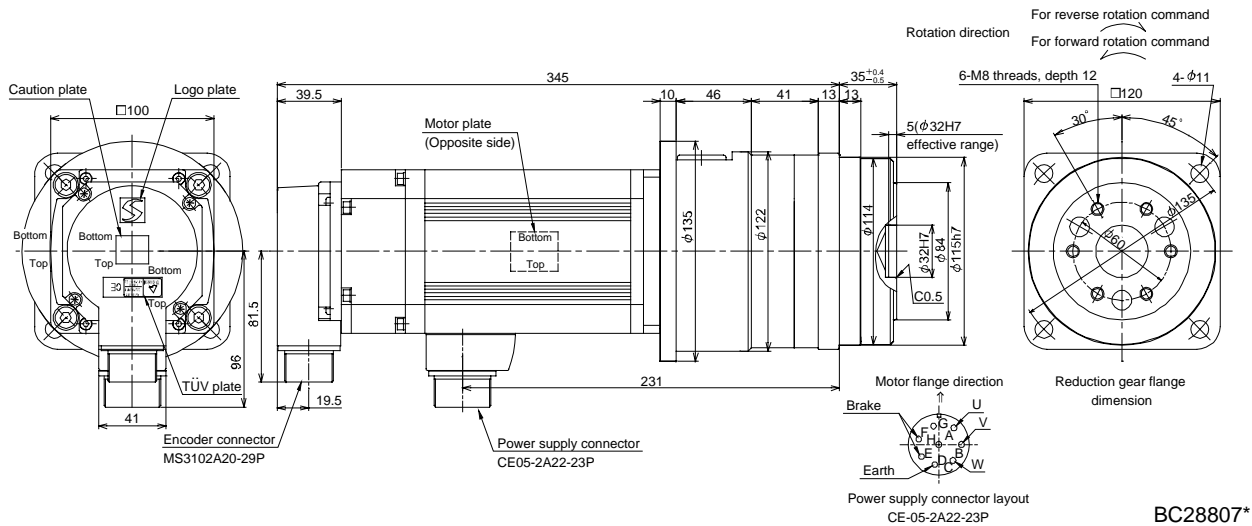
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS203BG5	2.0	HPG-20A-05-F0LBWS-S	1/5	7.0	3.48	10.8

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS203BG5	2.0	HPG-32A-11-F0NFSPS-S	1/11	7.0	5.95	14.8

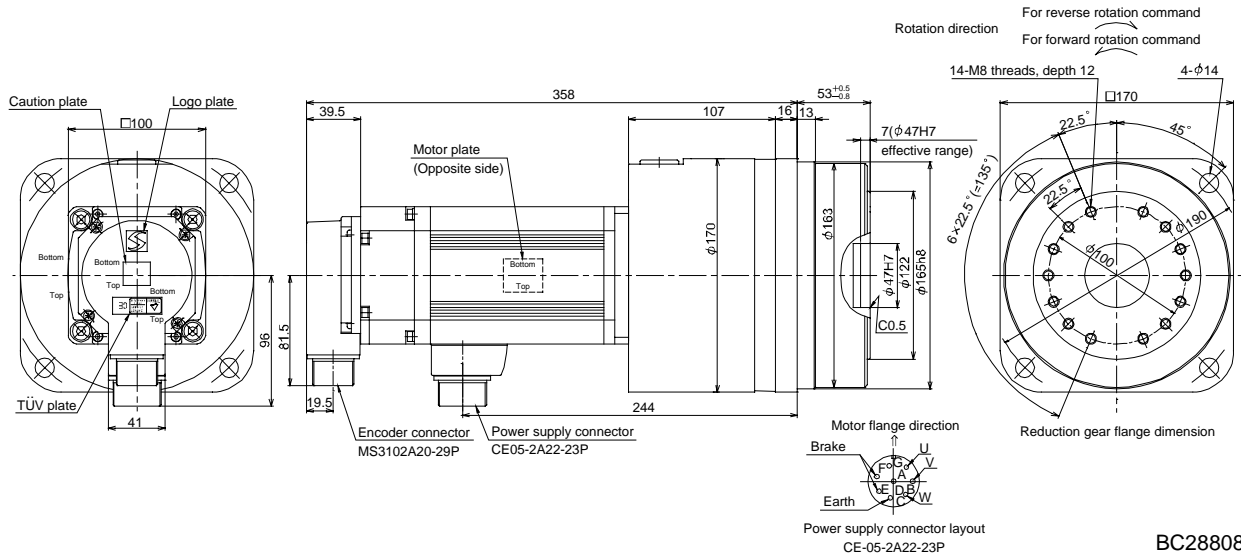
[Unit: mm]



3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J \times 10^{-4} \text{ kg} \cdot \text{m}^2$	Mass [kg]
HC-RFS203BG5	2.0	HPG-50A-21-F0ADBC-S	1/21	7.0	8.35	24.3
		HPG-50A-33-F0ADBC-S	1/33		7.35	
		HPG-50A-45-F0ADBC-S	1/45		7.25	

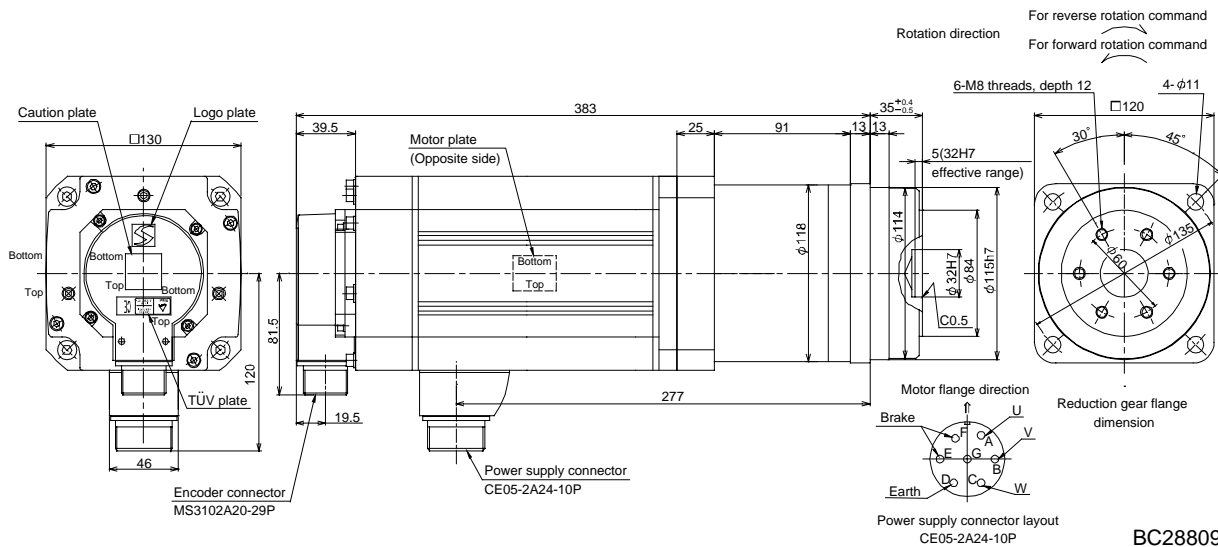
[Unit: mm]



BC28808*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J \times 10^{-4} \text{ kg} \cdot \text{m}^2$	Mass [kg]
HC-RFS353BG5	3.5	HPG-32A-05-F0PAQS-S	1/5	16.7	16.7	21.5
		HPG-32A-11-F0PAR-S	1/11		16.5	22.0

[Unit: mm]

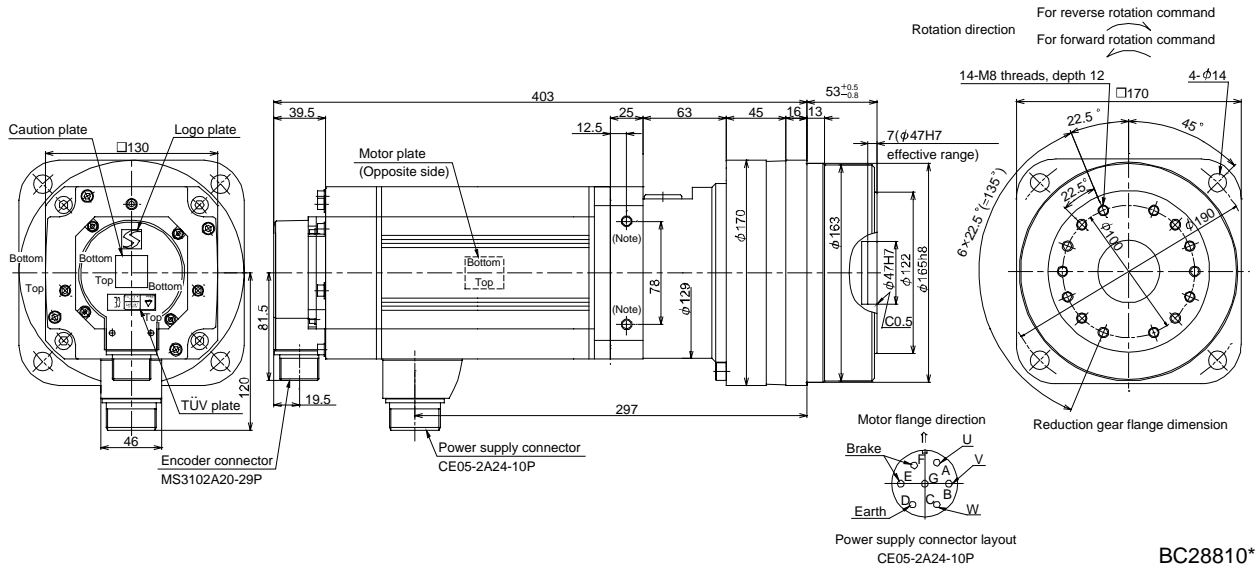


BC28809*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS353BG5	3.5	HPG-50A-21-F0BADD-S	1/21	16.7	18.5	31.1
		HPG-50A-33-FBADD0-S	1/33		17.6	

[Unit: mm]

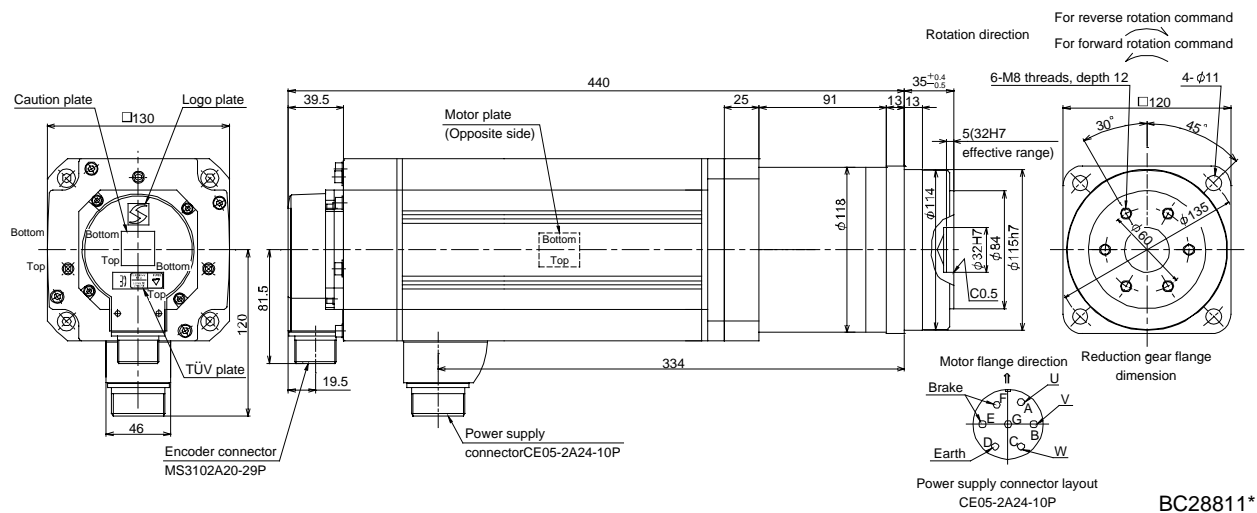


BC28810*

Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS503BG5	5.0	HPG-32A-05-F0PAQS-S	1/5	16.7	20.4	27.5

[Unit: mm]

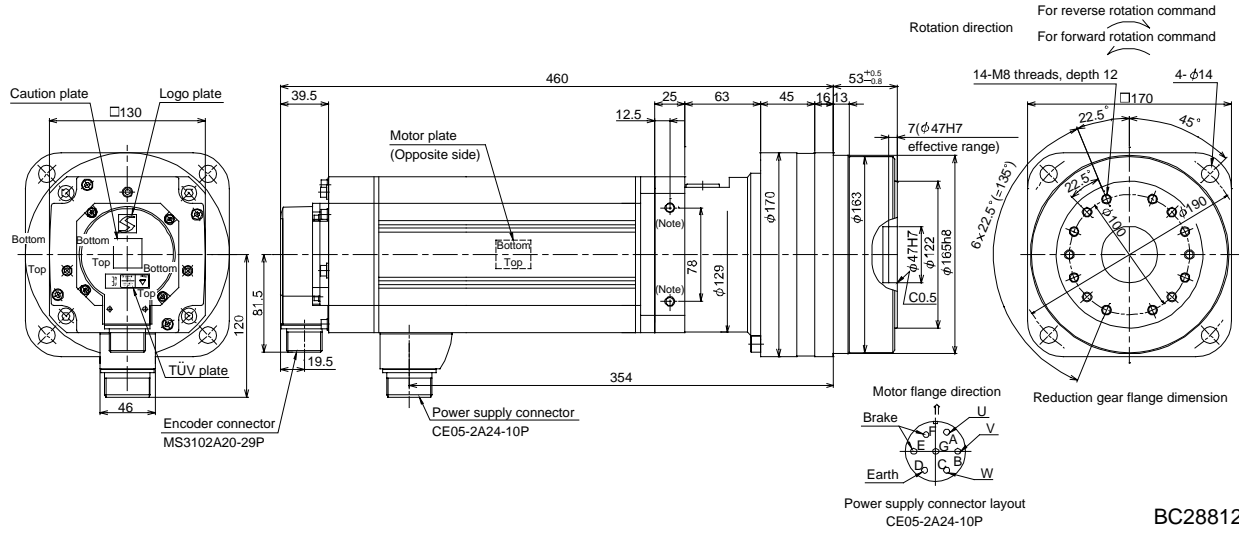


BC28811*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS503BG5	5.0	HPG-50A-11-F0BADD-S	1/11	16.7	24.0	37.1
		HPG-50A-21-F0BADD-S	1/21		22.2	

[Unit: mm]



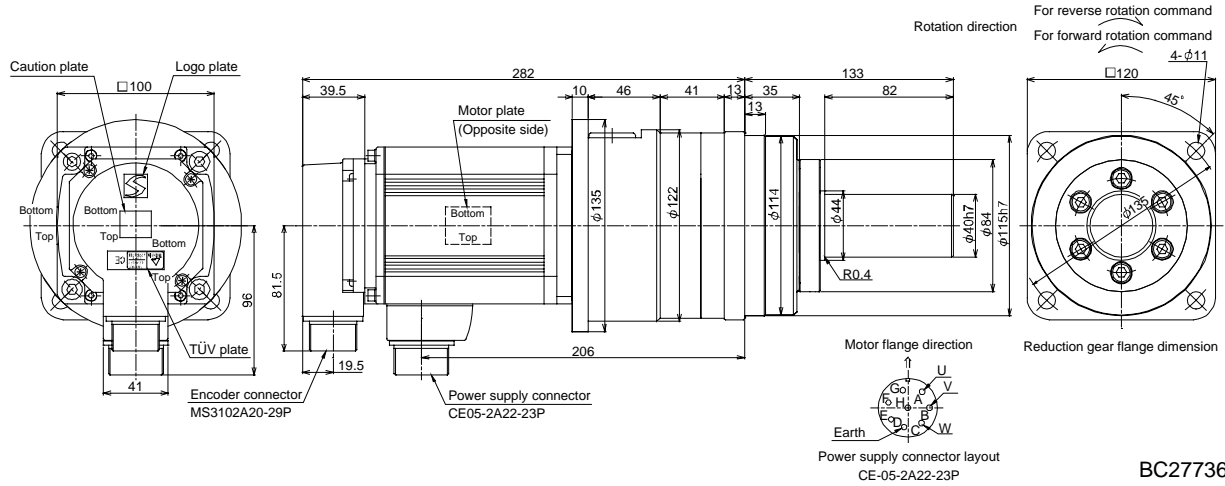
BC28812*

Note: Screw hole for eyebolt (M8).

3. HC-RFS SERIES

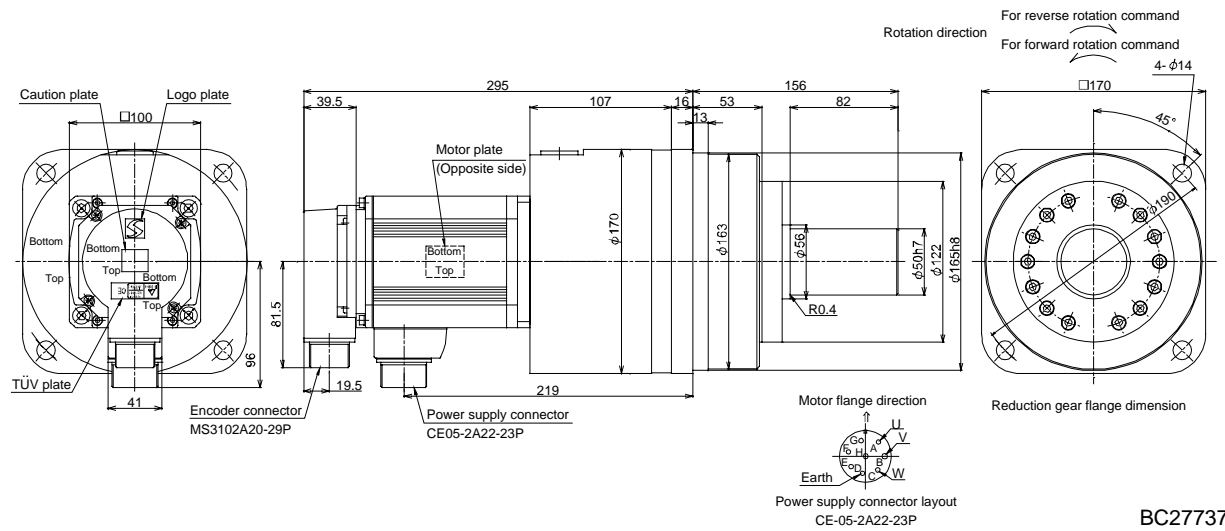
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-RFS153G7	1.5	HPG-32A-11-J2NFSPS-S	1/11	5.30	12.9
		HPG-32A-21-J2NFSYS-S	1/21	4.80	

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment J [$\times 10^{-4}$ kg · m ²]	Mass [kg]
HC-RFS153G7	1.5	HPG-50A-33-J2ADBC-S	1/33	6.60	24.0
		HPG-50A-45-J2ADBC-S	1/45		

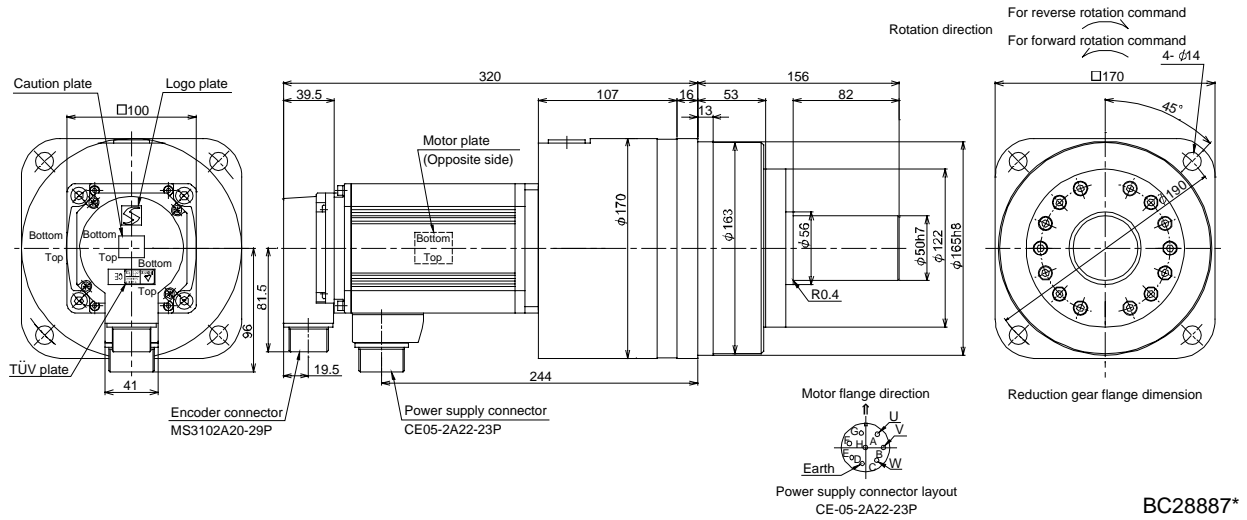
[Unit: mm]



3. HC-RFS SERIES

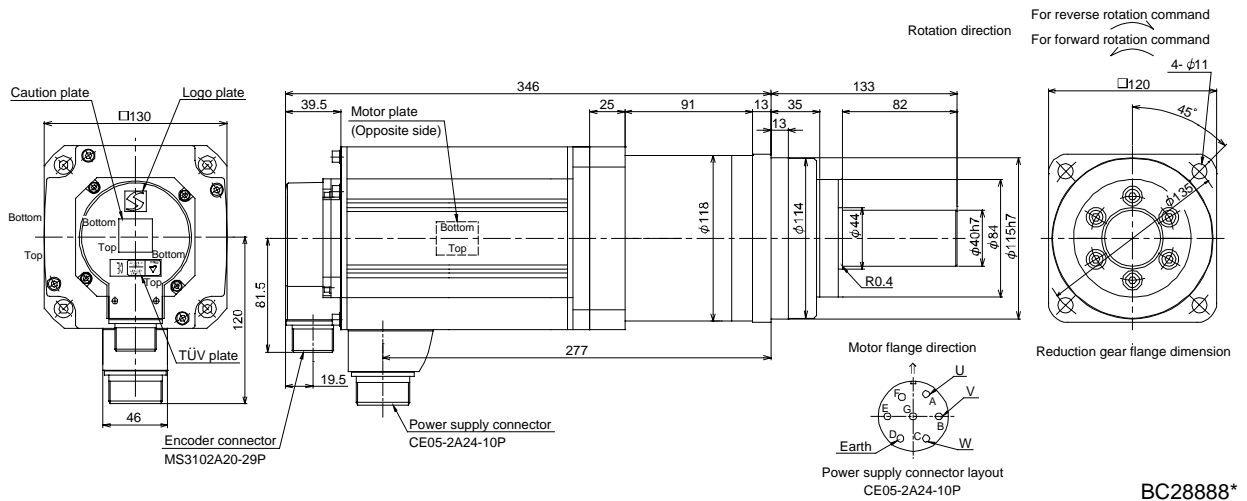
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS203G7	2.0	HPG-50A-21-J2ADBC-S	1/21	8.00	25.2
		HPG-50A-33-J2ADBC-S	1/33	7.00	
		HPG-50A-45-J2ADBC-S	1/45	7.00	

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS353G7	3.5	HPG-32A-05-J2PAQS-S	1/5	13.8	19.9
		HPG-32A-11-J2PAR-S	1/11	13.4	20.4

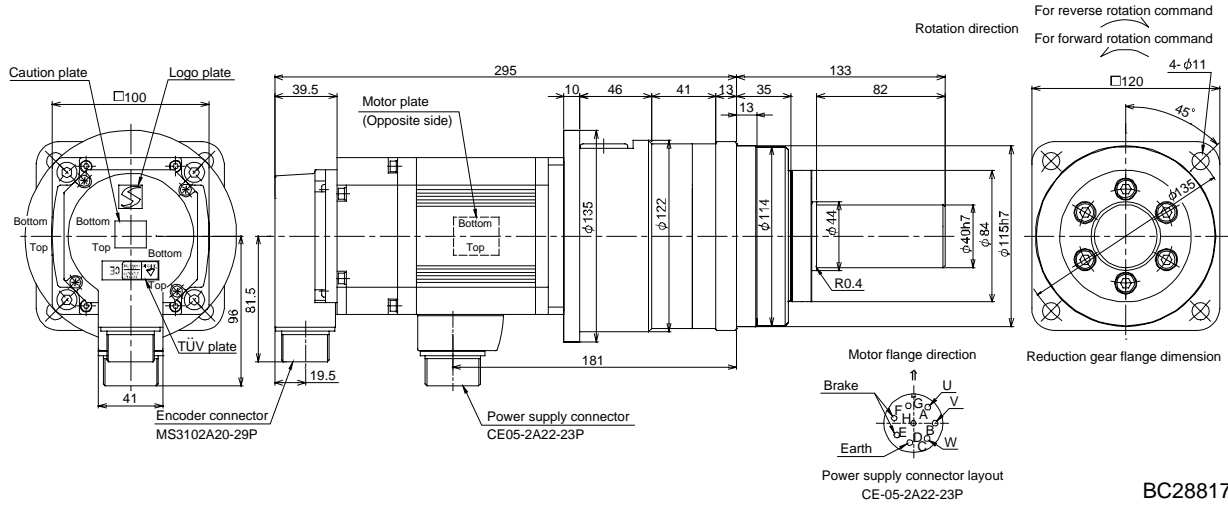
[Unit: mm]



3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS103BG7	1.0	HPG-32A-21-J2NFSYS-S	1/21	7.0	4.75	13.9
		HPG-32A-33-J2NFSZS-S	1/33		4.55	

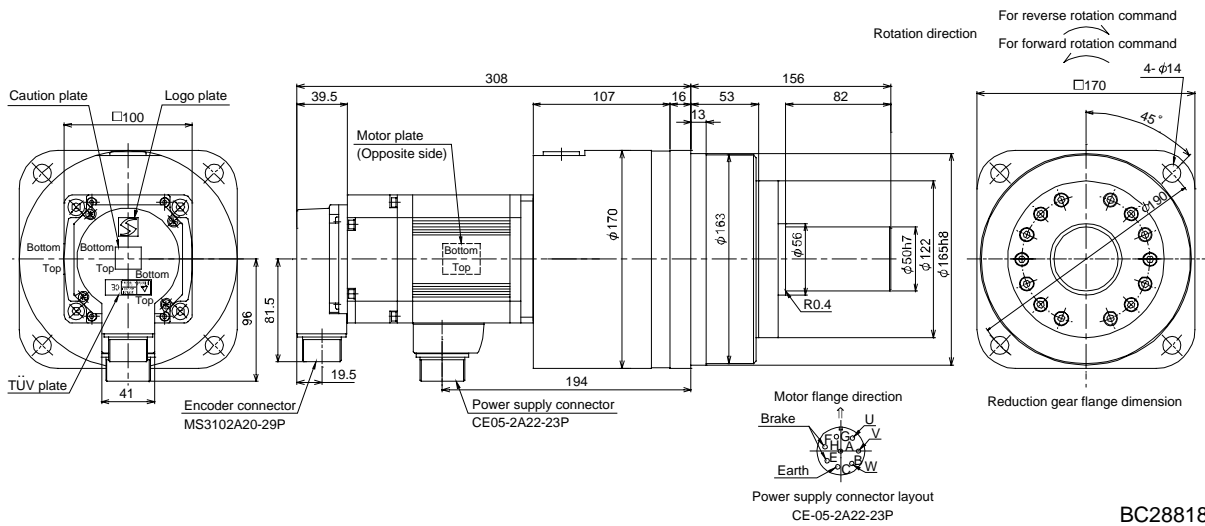
[Unit: mm]



BC28817*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS103BG7	1.0	HPG-50A-45-J2ADBC-S	1/45	7.0	6.55	25.0

[Unit: mm]

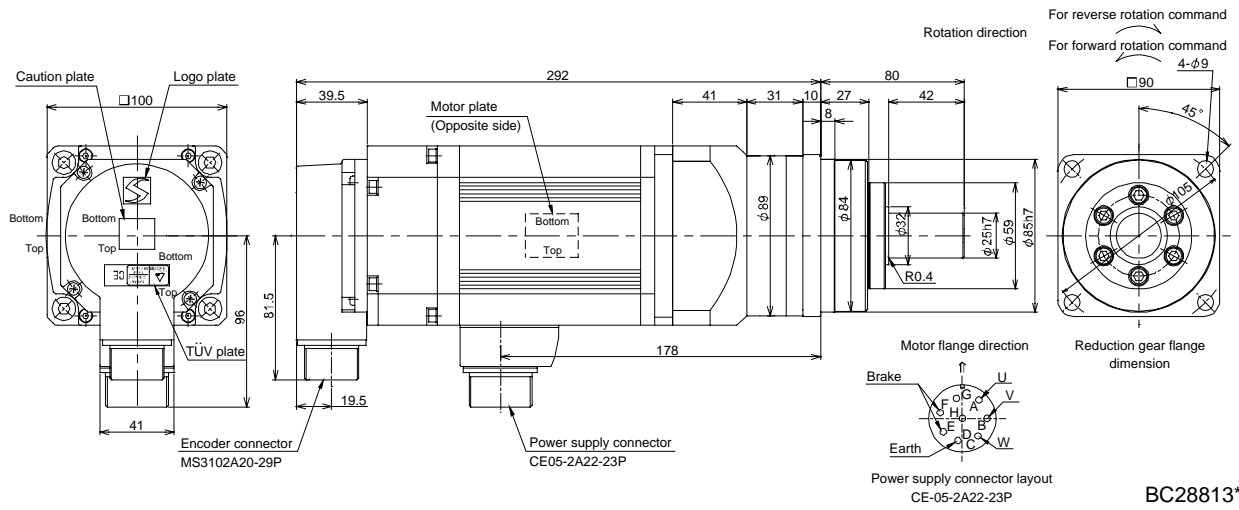


BC28818*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS153BG7	1.5	HPG-20A-05-J2LBWS-S	1/5	7.0	3.12	9.9

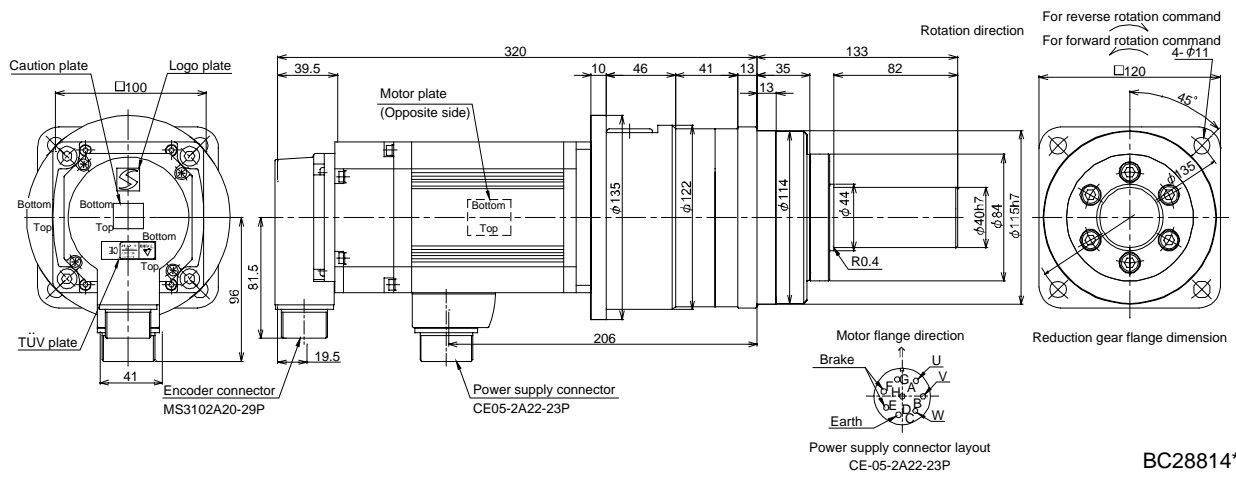
[Unit: mm]



BC28813*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS153BG7	1.5	HPG-32A-11-J2NFSPS-S	1/11	7.0	5.65	14.9
		HPG-32A-21-J2NFSYS-S	1/21		5.15	

[Unit: mm]

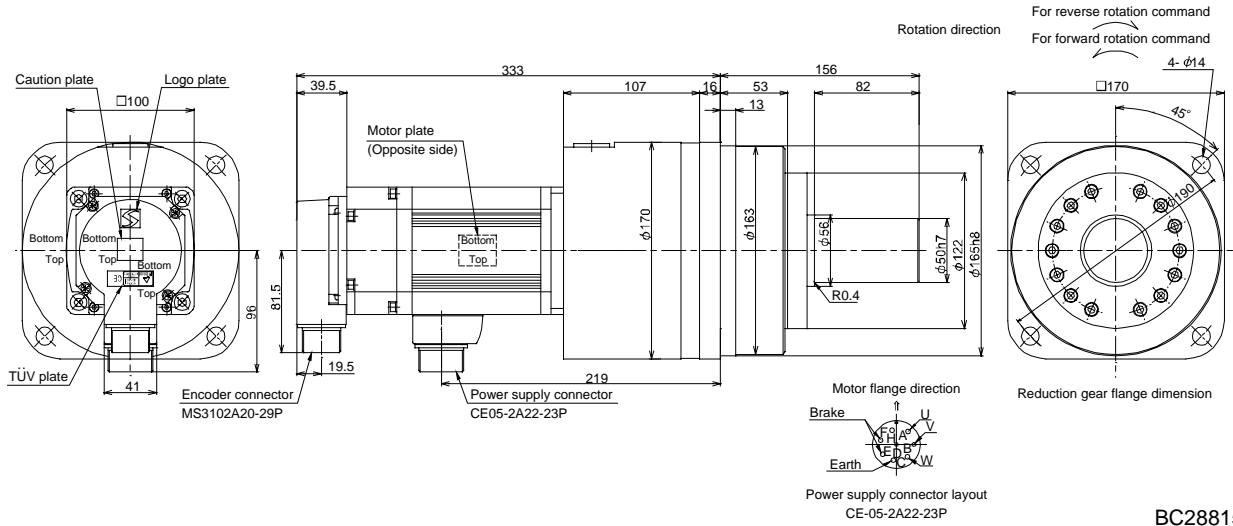


BC28814*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS153BG7	1.5	HPG-50A-33-J2ADBC-S	1/33	7.0	6.95	26.0
		HPG-50A-45-J2ADBC-S	1/45			

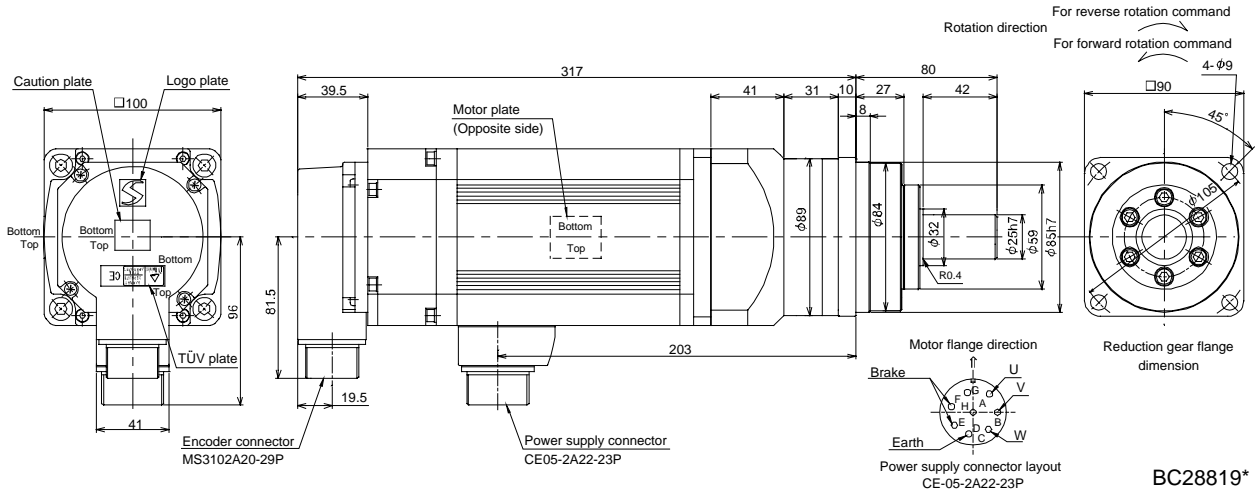
[Unit: mm]



BC28815*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS203BG7	2.0	HPG-20A-05-J2LBWS-S	1/5	7.0	3.52	11.2

[Unit: mm]

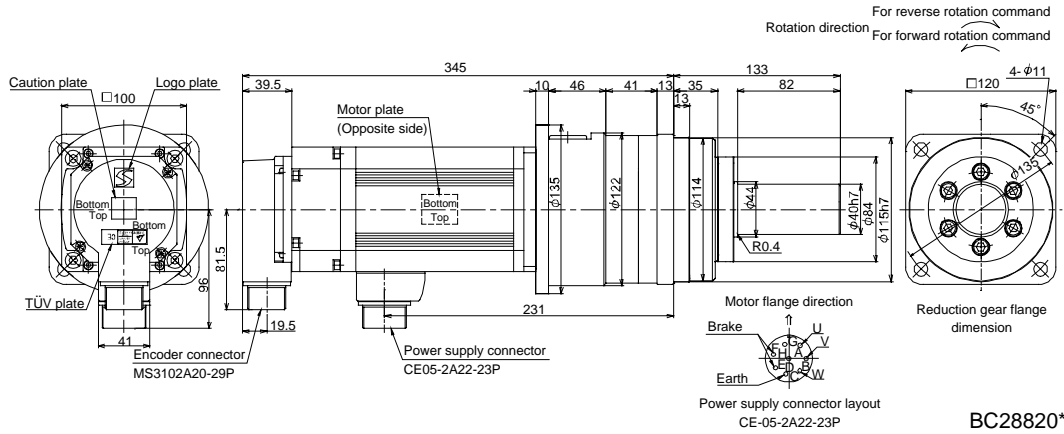


BC28819*

3. HC-RFS SERIES

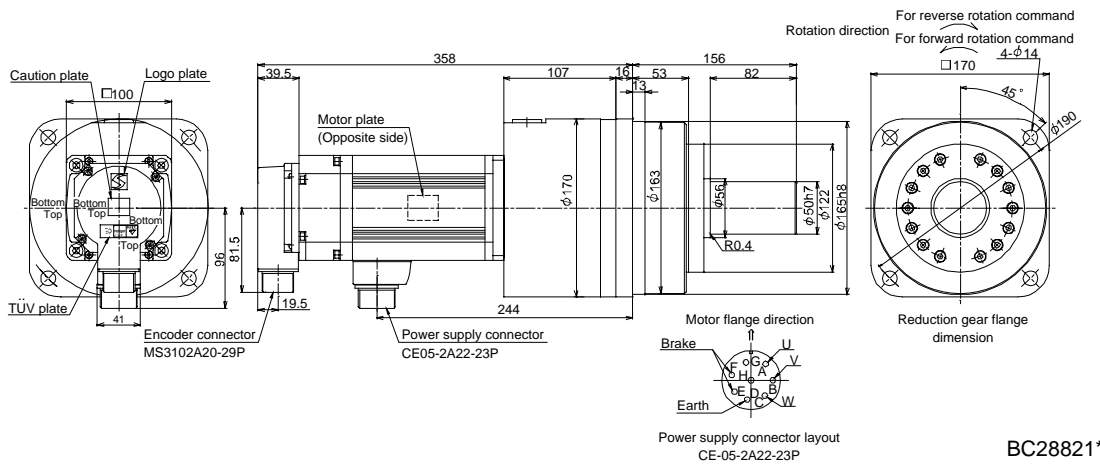
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS203BG7	2.0	HPG-32A-11-J2NFSPS-S	1/11	7.0	6.05	16.2

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS203BG7	2.0	HPG-50A-21-J2ADBC-S	1/21	7.0	8.35	27.3
		HPG-50A-33-J2ADBC-S	1/33		7.35	
		HPG-50A-45-J2ADBC-S	1/45			

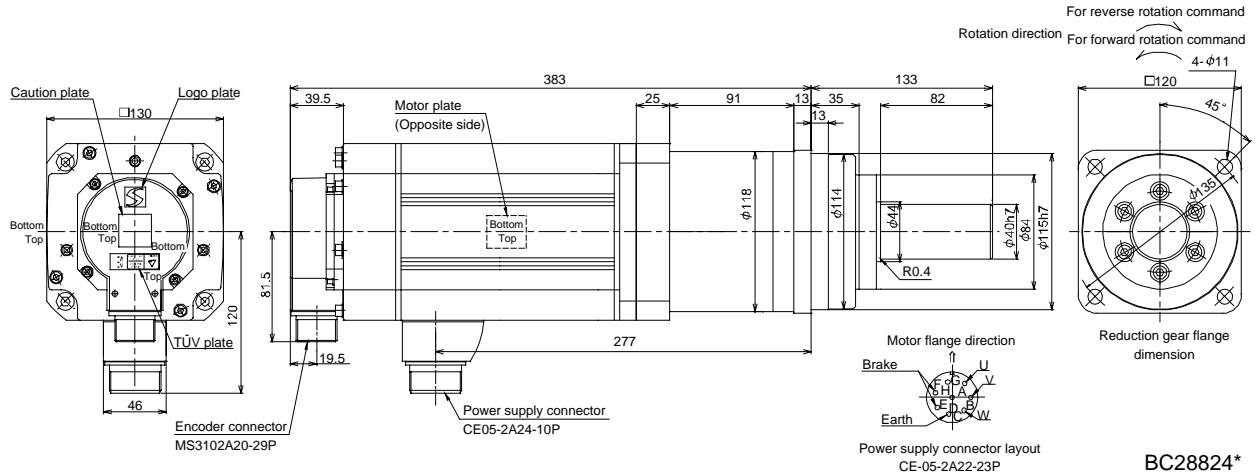
[Unit: mm]



3. HC-RFS SERIES

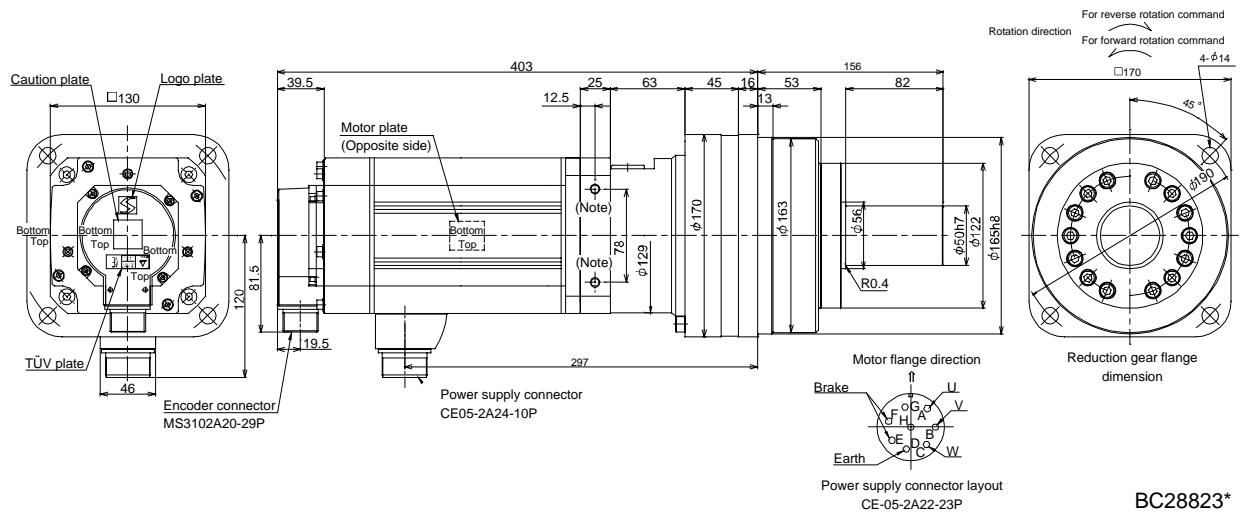
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS353BG7	3.5	HPG-32A-05-J2PAQS-S	1/5	16.7	17.0	22.9
		HPG-32A-11-J2PAR-S	1/11		16.6	23.4

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS353BG7	3.5	HPG-50A-21-J2BADD-S	1/21	16.7	18.6	34.1
		HPG-50A-33-J2BADD-S	1/33		17.6	

[Unit: mm]

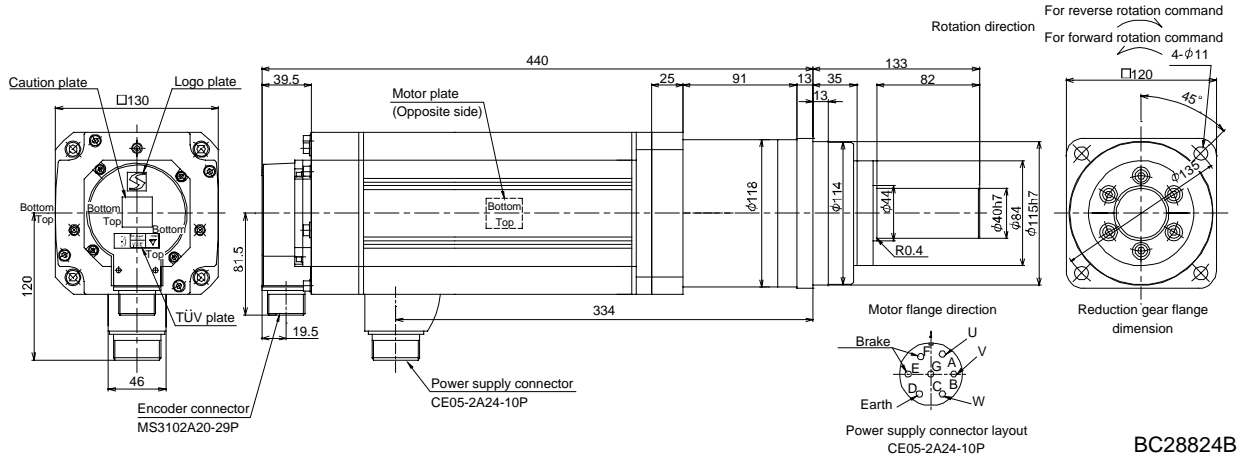


Note: Screw hole for eyebolt (M8).

3. HC-RFS SERIES

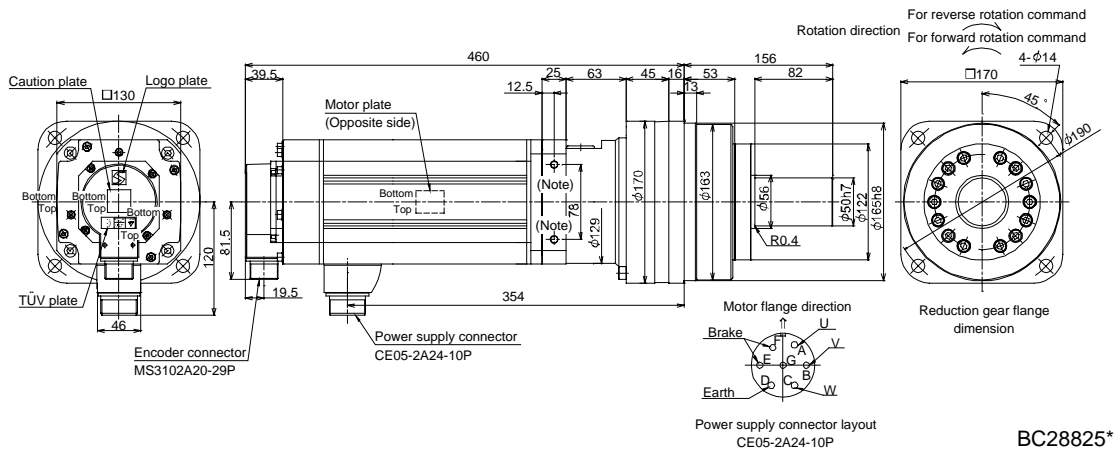
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS503BG7	5.0	HPG-32A-05-J2PAQS-S	1/5	16.7	20.7	28.9

[Unit: mm]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [N · m]	Inertia Moment $J[\times 10^{-4} \text{ kg} \cdot \text{m}^2]$	Mass [kg]
HC-RFS503BG7	5.0	HPG-50A-11-J2BADD-S	1/11	16.7	24.2	40.1
		HPG-50A-21-J2BADD-S	1/21		22.3	

[Unit: mm]



Note: Screw hole for eyebolt (M8).

3. HC-RFS SERIES

3.7 Outline dimension drawings (in inches)

POINT
The values in yards/pounds are reference values.

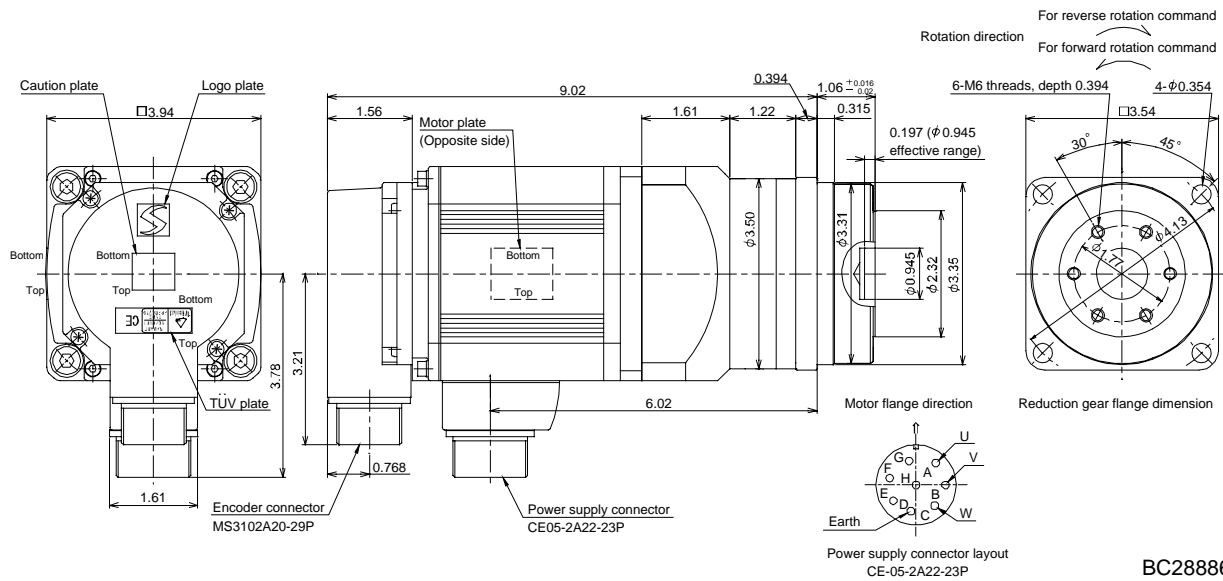
The outer frame of the reduction gear is a material surface such as casting. Its actual dimensions may be 0.039 to 0.118 in larger than the drawing dimensions. Design the machine side with allowances.
 Inertia moment on the table is the value calculated by converting the total value of inertia moment for servo motor, electromagnetic brake and decelerator with servo motor shaft.

3.7.1 Flange-mounting flange output type for precision application compliant (G5)

(1) Without electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS103G5	1.0	HPG-20A-05-F0LBWS-S	1/5	12.7	14.1
		HPG-20A-11-F0LBXS-S	1/11	12.3	14.6

[Unit: in]

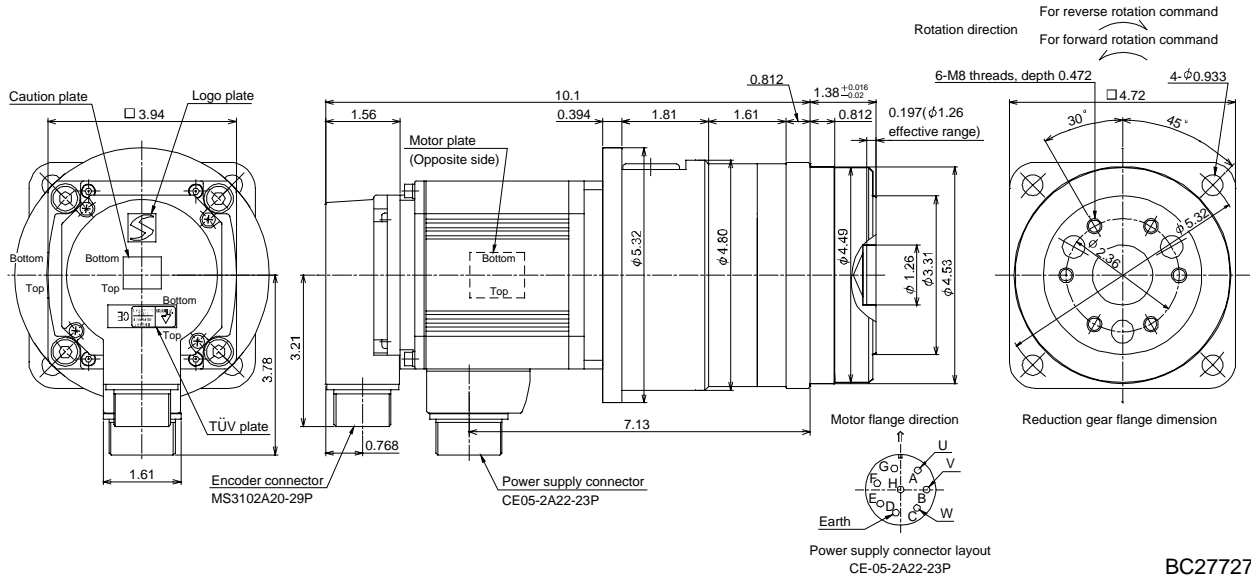


BC28886*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $KW^2 [oz \cdot in^2]$	Mass [lb]
HC-RFS103G5	1.0	HPG-32A-21-F0NFSYS-S	1/21	24.1	22.9
		HPG-32A-33-F0NFSZS-S	1/33	23.0	

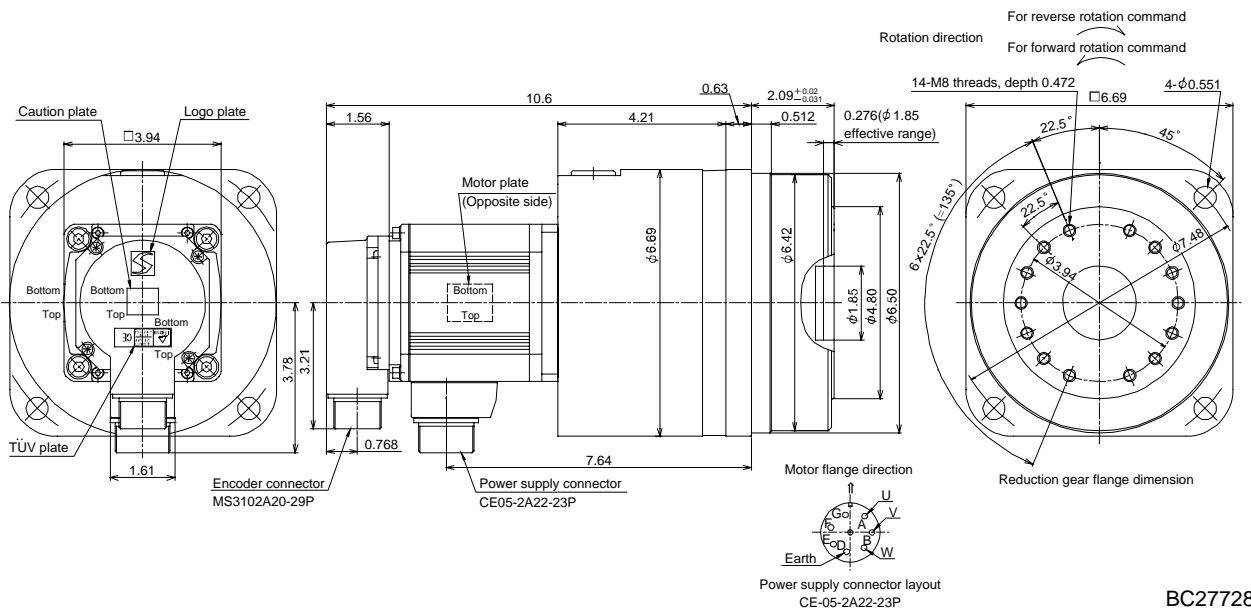
[Unit: in]



BC27727*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $KW^2 [oz \cdot in^2]$	Mass [lb]
HC-RFS103G5	1.0	HPG-50A-45-F0ADBC-S	1/45	33.4	43.9

[Unit: in]

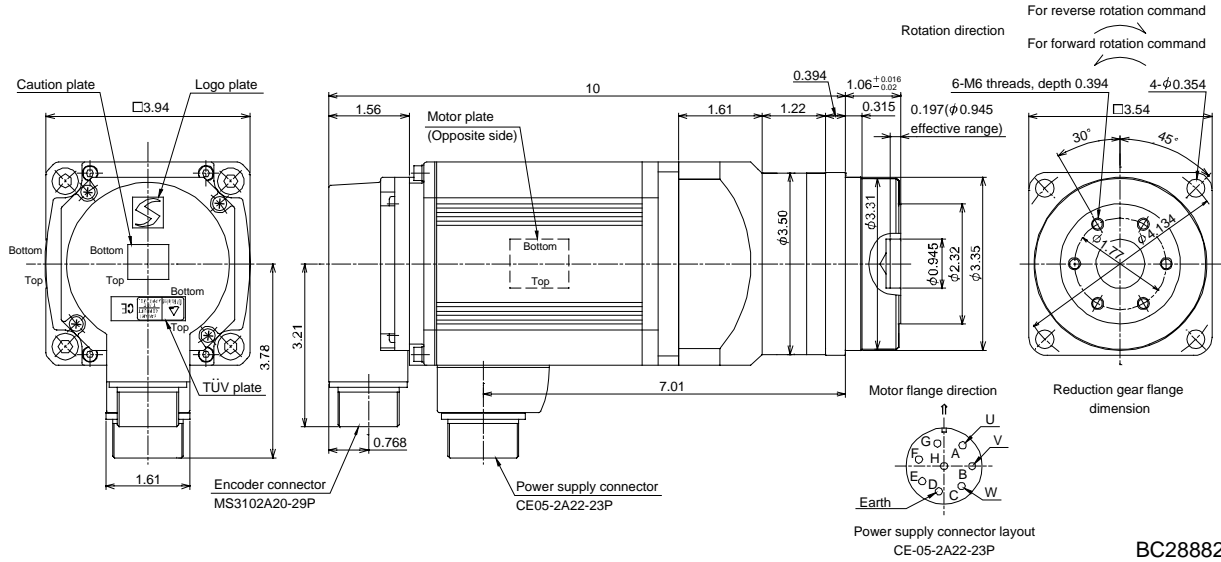


BC27728*

3. HC-RFS SERIES

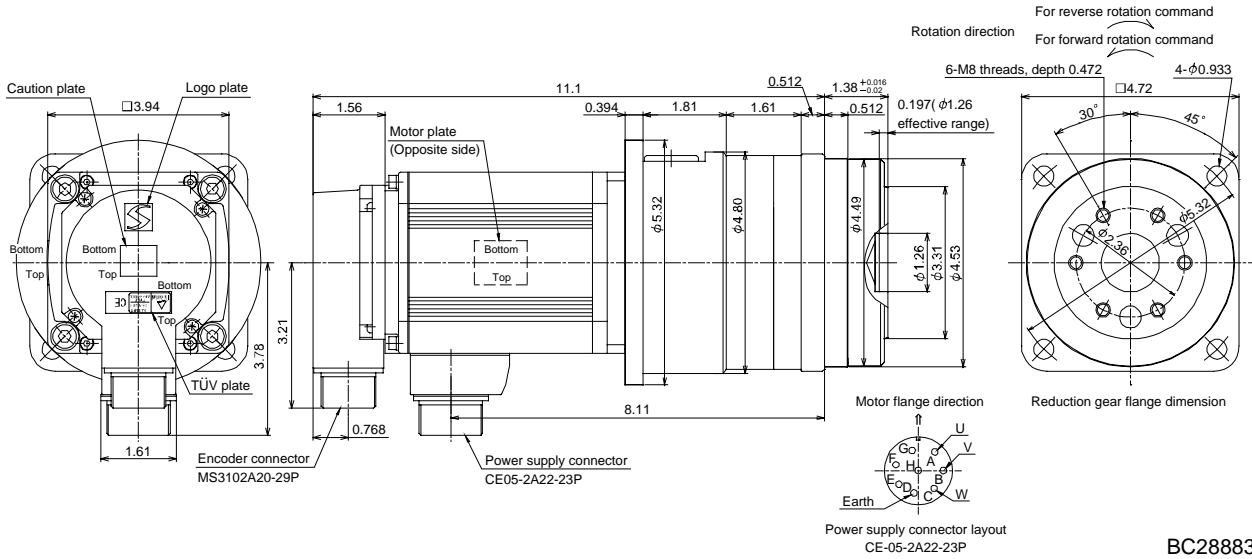
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS153G5	1.5	HPG-20A-05-F0LBWS-S	1/5	14.9	16.5

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS153G5	1.5	HPG-32A-11-F0NFSPS-S	1/11	28.4	25.4
		HPG-32A-21-F0NFSYS-S	1/21	26.2	

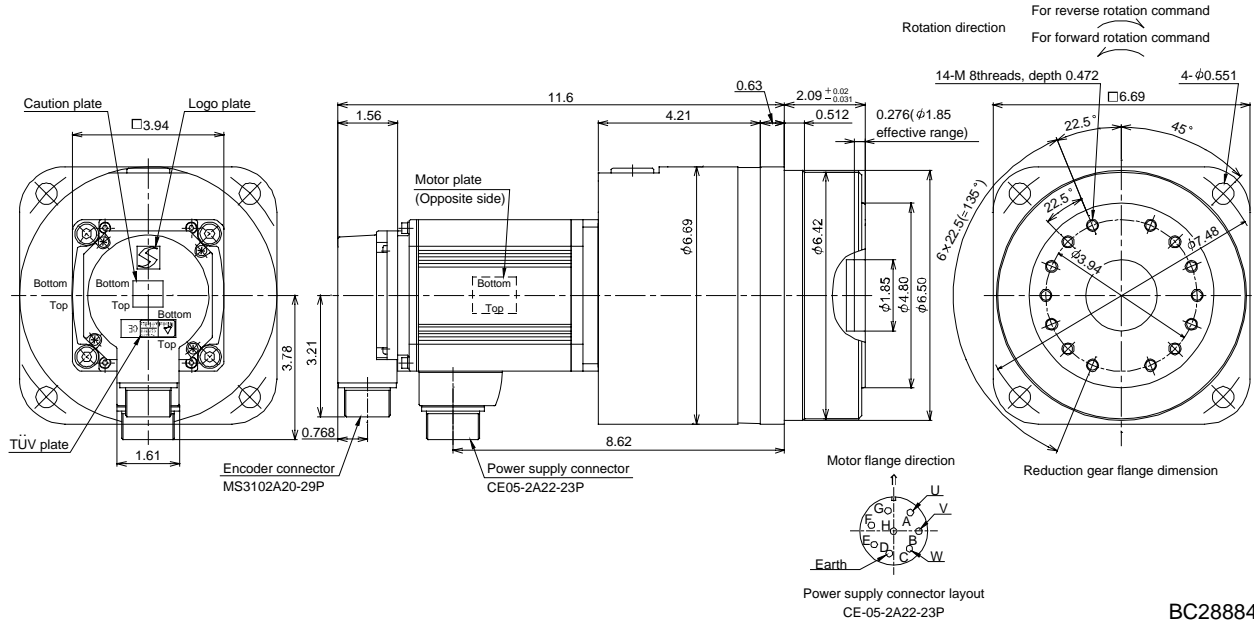
[Unit: in]



3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS153G5	1.5	HPG-50A-33-F0ADBC-S	1/33	36.1	46.3
		HPG-50A-45-F0ADBC-S	1/45	35.5	

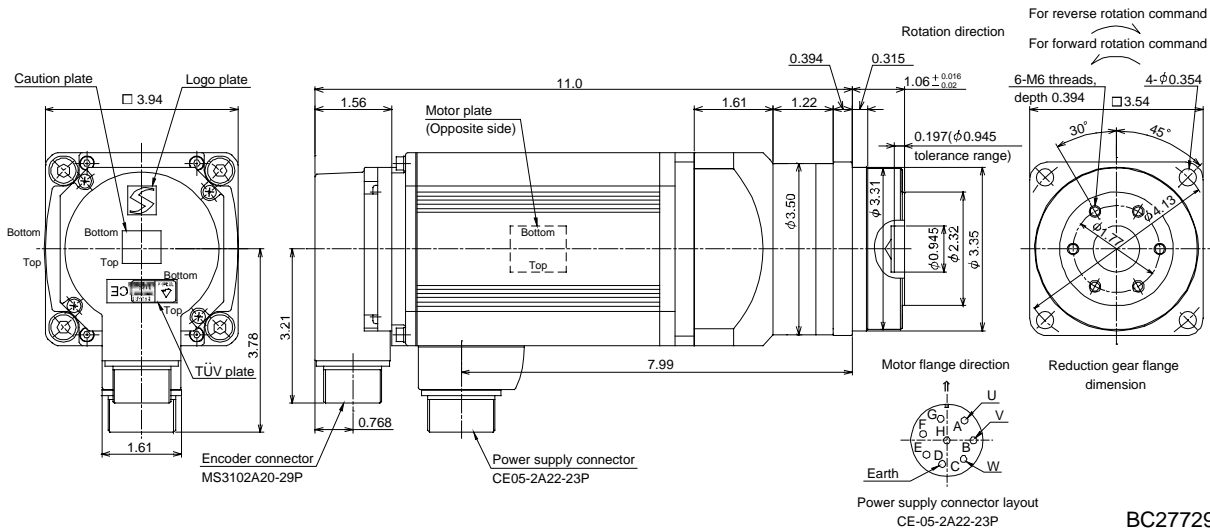
[Unit: in]



BC28884*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS203G5	2.0	HPG-20A-05-F0LBWS-S	1/5	11.6	19.2

[Unit: in]

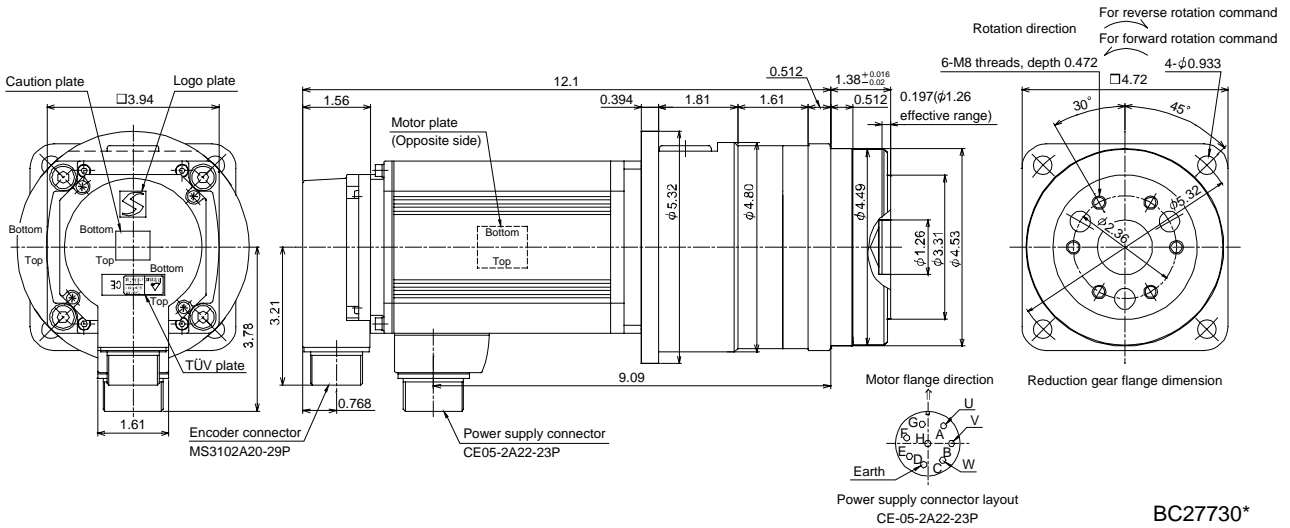


BC27729*

3. HC-RFS SERIES

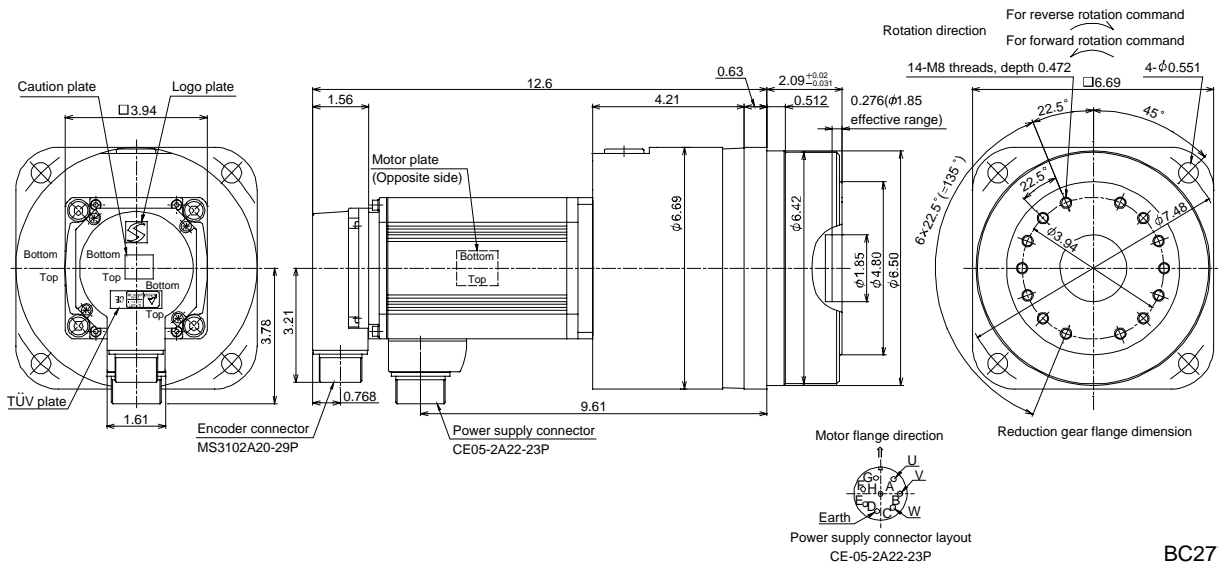
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS203G5	2.0	HPG-32A-11-F0NFSPS-S	1/11	30.6	28.0

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS203G5	2.0	HPG-50A-21-F0ADBC-S	1/21	43.7	48.9
		HPG-50A-33-F0ADBC-S	1/33	38.3	
		HPG-50A-45-F0ADBC-S	1/45	37.7	

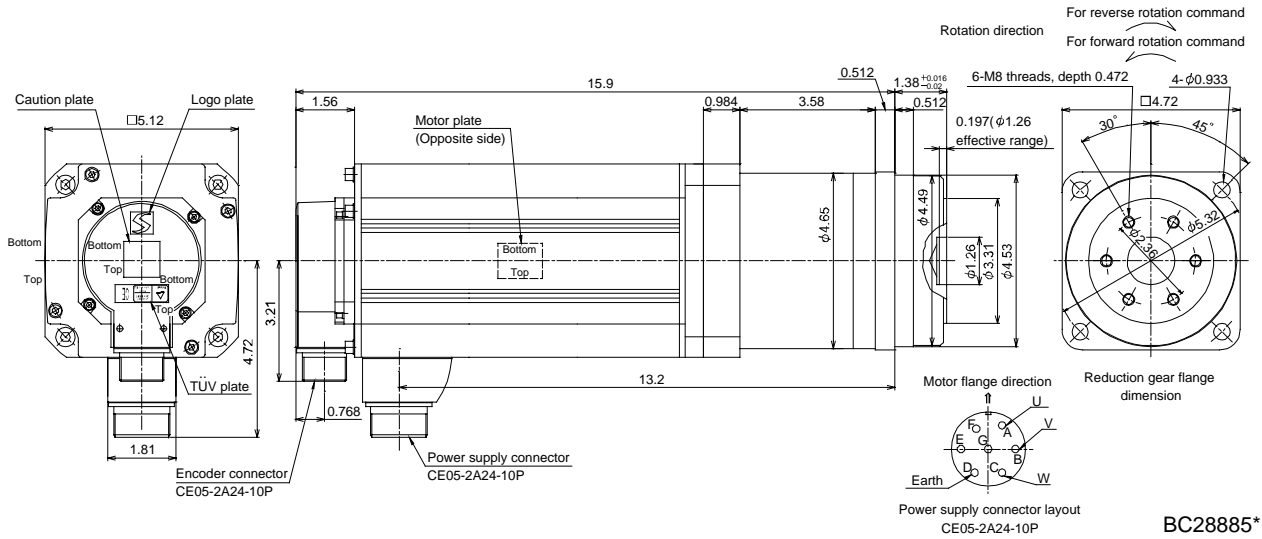
[Unit: in]



3. HC-RFS SERIES

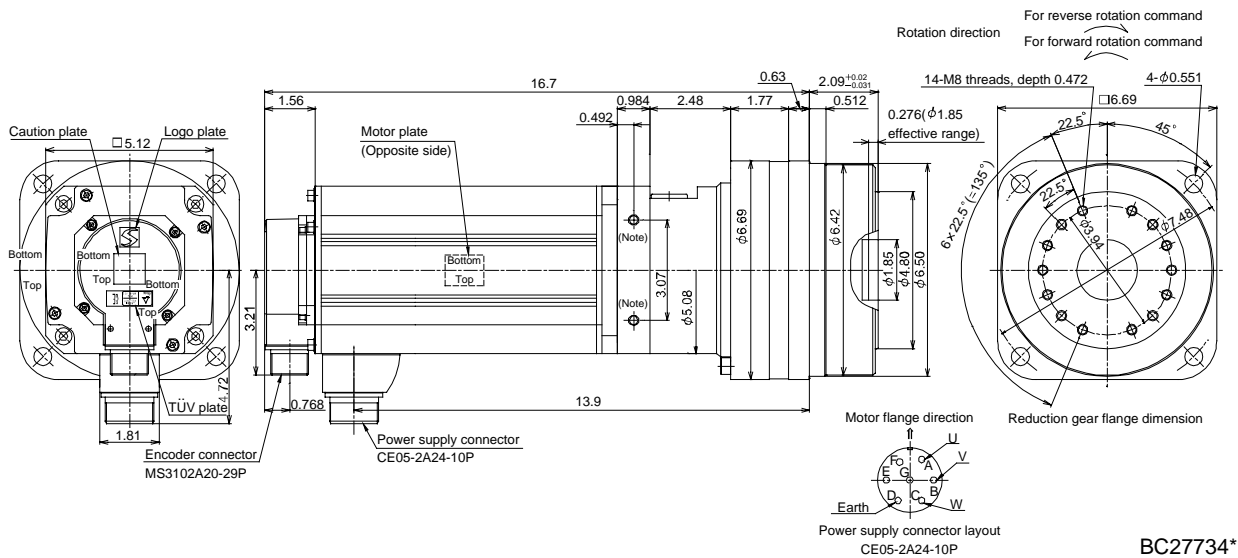
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS503G5	5.0	HPG-32A-05-F0PAQS-S	1/5	92.4	51.8

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS503G5	5.0	HPG-50A-11-F0BADD-S	1/11	112	73.0
		HPG-50A-21-F0BADD-S	1/21	102	

[Unit: in]



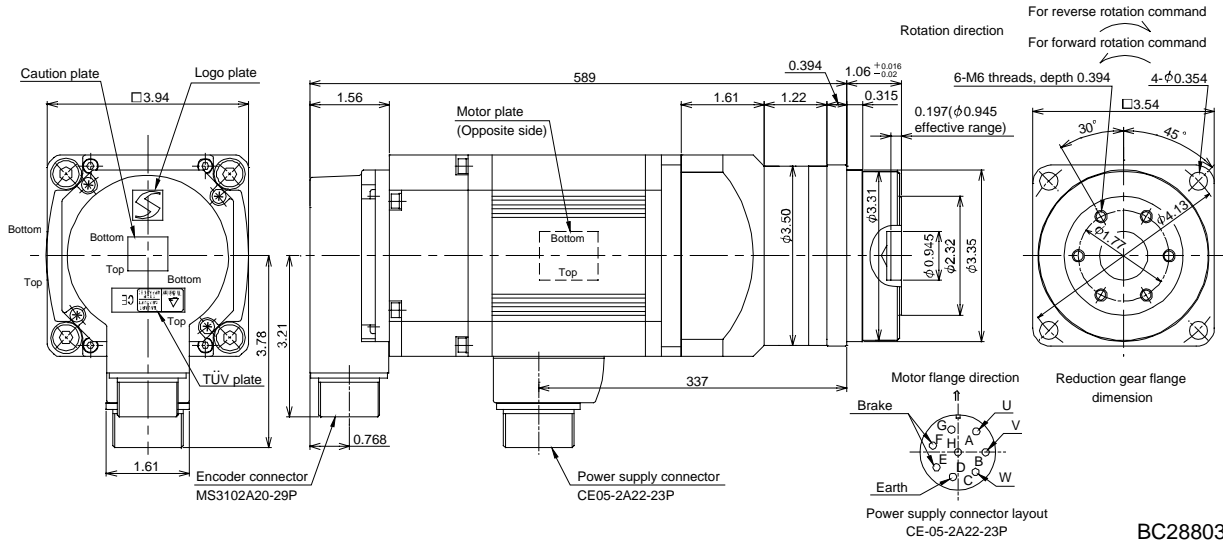
Note: Screw hole for eyebolt (M8).

3. HC-RFS SERIES

(2) With electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS103BG5	1.0	HPG-20A-05-FOLBWS-S	1/5	991	14.7	18.7
		HPG-20A-11-FOLBXS-S	1/11		14.2	

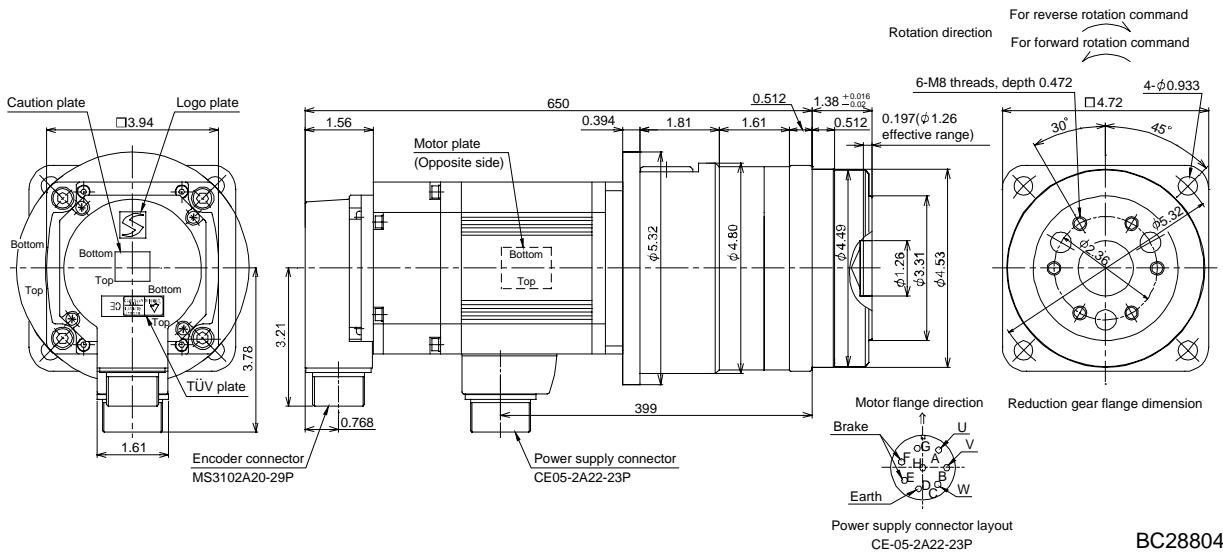
[Unit: in]



BC28803*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS103BG5	1.0	HPG-32A-21-F0NFSYS-S	1/21	991	26.0	27.6
		HPG-32A-33-F0NFSZS-S	1/33		24.9	

[Unit: in]

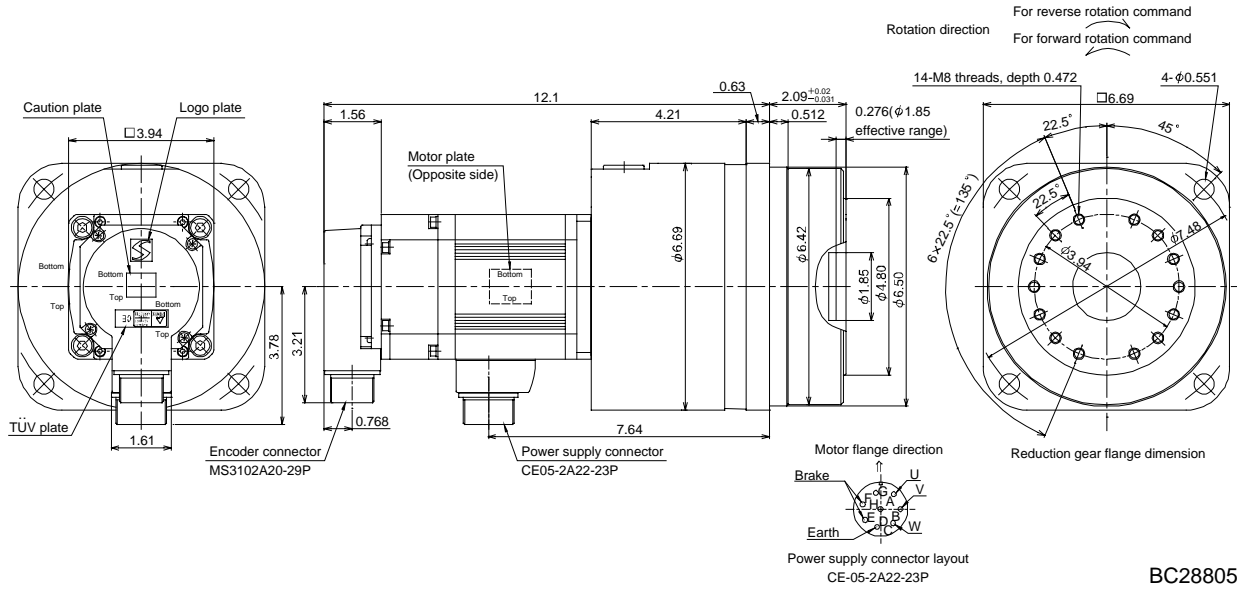


BC28804*

3. HC-RFS SERIES

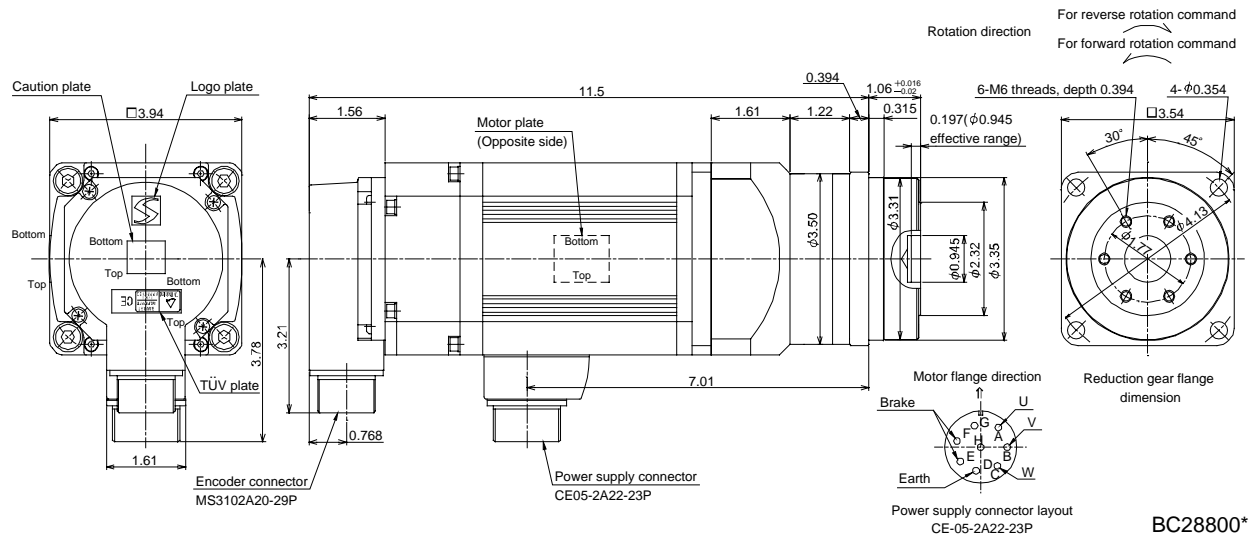
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW^2 [oz · in ²]	Mass [lb]
HC-RFS130BG5	1.0	HPG-50A-45-F0ADBC-S	1/45	991	35.3	48.5

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW^2 [oz · in ²]	Mass [lb]
HC-RFS153BG5	1.5	HPG-20A-05-F0LBWS-S	1/5	991	16.8	20.9

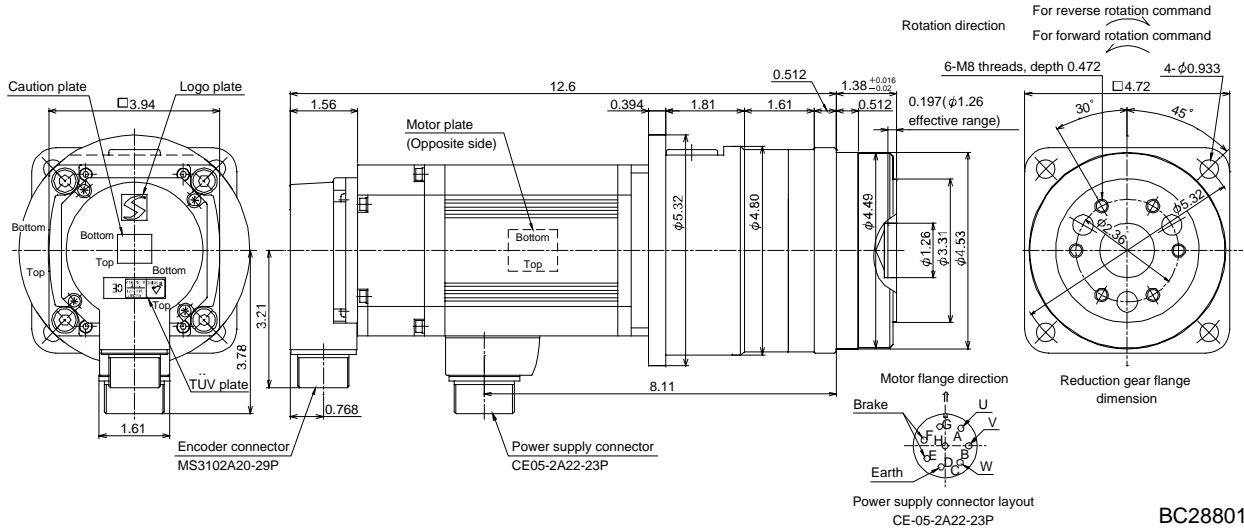
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3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS153BG5	1.5	HPG-32A-11-F0NFSPS-S	1/11	991	30.3	29.8
		HPG-32A-21-F0NFSYS-S	1/21		28.2	

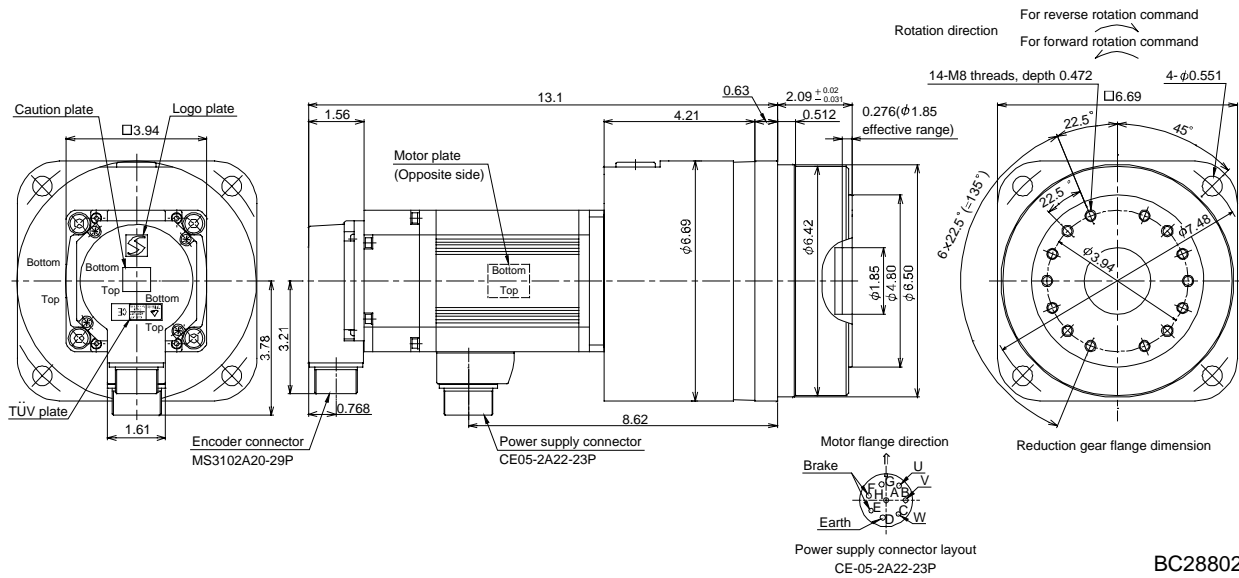
[Unit: in]



BC28801*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS153BG5	1.5	HPG-50A-33-F0ADBC-S	1/33	991	38.0	50.7
		HPG-50A-45-F0ADBC-S	1/45		37.5	

[Unit: in]

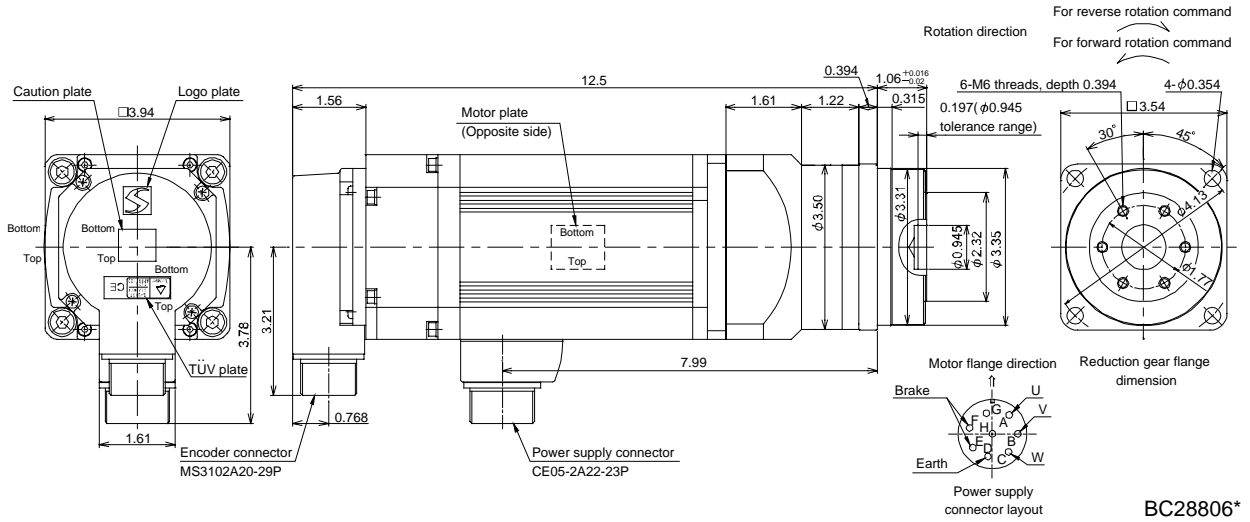


BC28802*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW^2 [oz · in ²]	Mass [lb]
HC-RFS203BG5	2.0	HPG-20A-05-F0LBWS-S	1/5	991	19.0	23.8

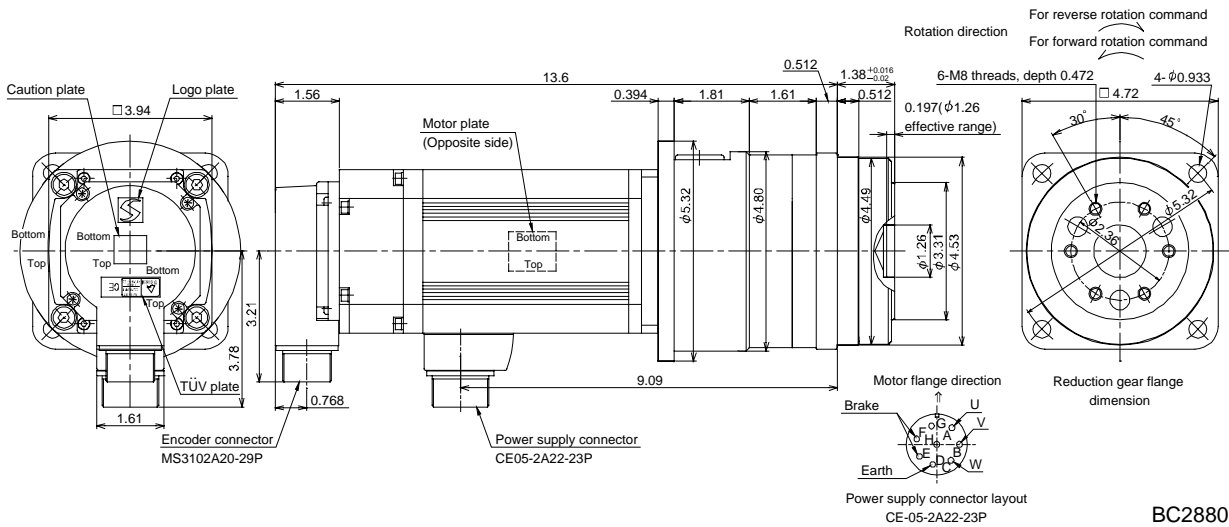
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BC28806*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW^2 [oz · in ²]	Mass [lb]
HC-RFS203BG5	2.0	HPG-32A-11-F0NFSPS-S	1/11	991	32.5	32.6

[Unit: in]

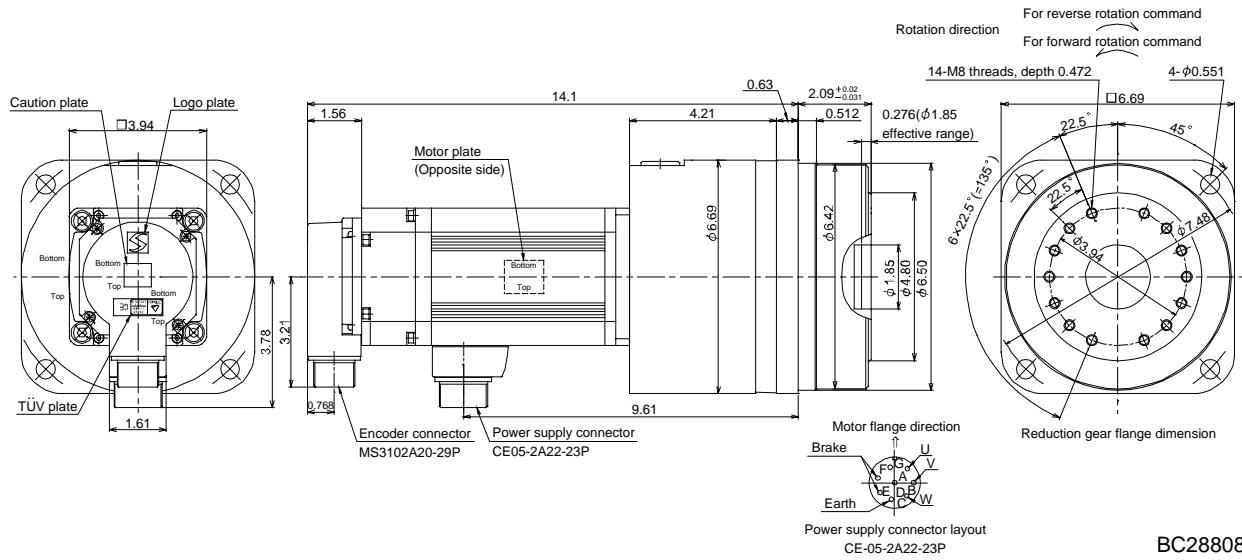


BC28807*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS203BG5	2.0	HPG-50A-21-F0ADBC-S	1/21	991	45.7	53.6
		HPG-50A-33-F0ADBC-S	1/33		40.2	
		HPG-50A-45-F0ADBC-S	1/45		39.6	

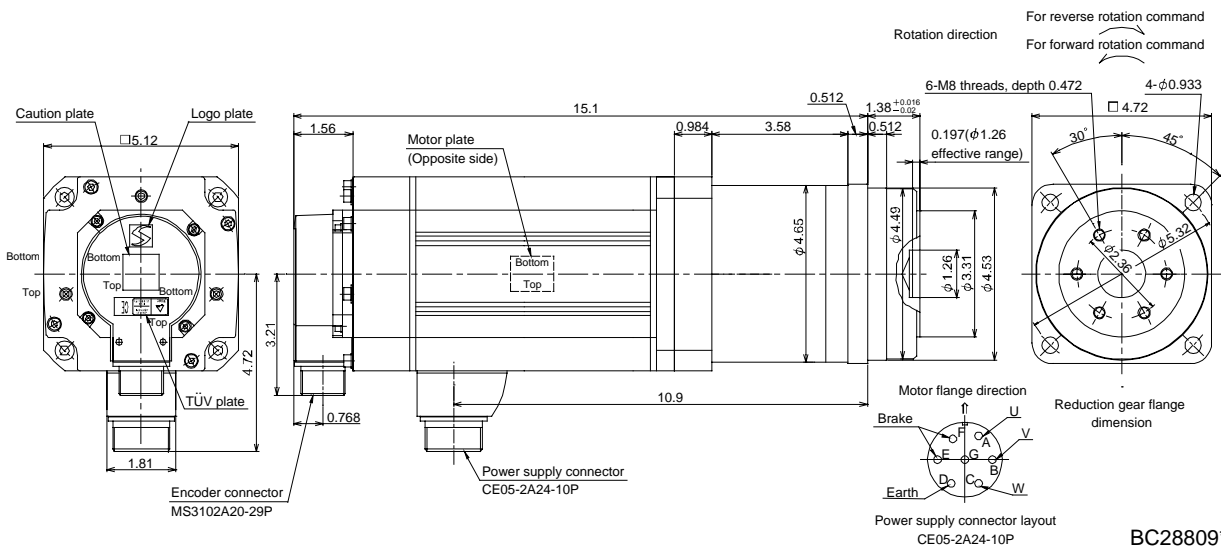
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BC28808*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS353BG5	3.5	HPG-32A-05-F0PAQS-S	1/5	2365	91.3	47.4
		HPG-32A-11-F0PAR-S	1/11		90.2	

[Unit: in]

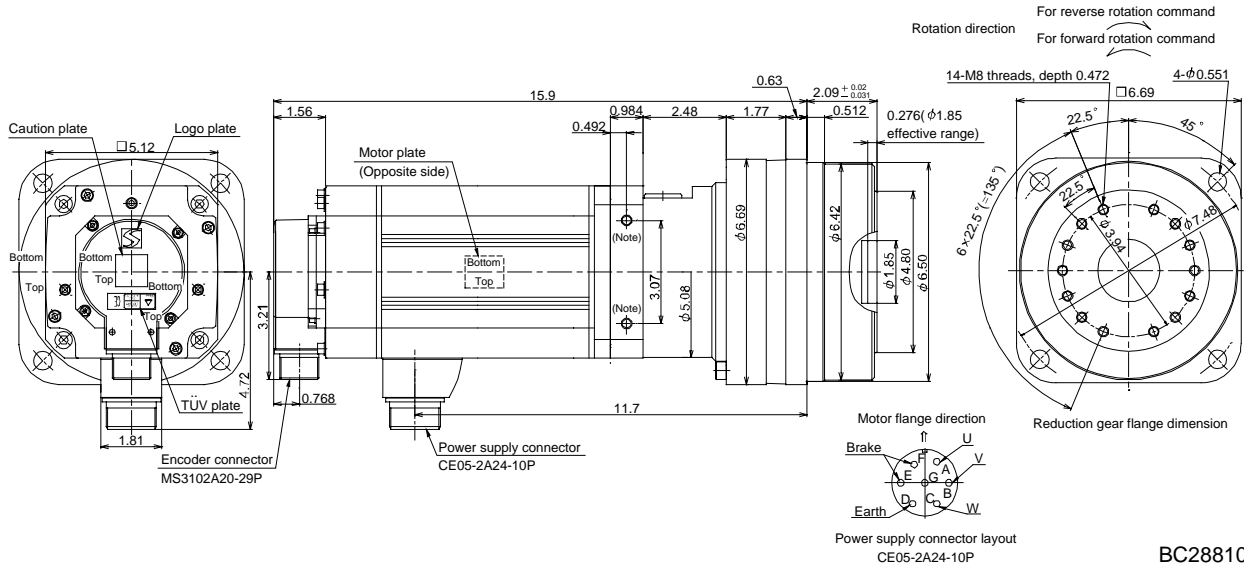


BC28809*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS353BG5	3.5	HPG-50A-21-F0BADD-S	1/21	2365	101	68.6
		HPG-50A-33-FBADD0-S	1/33		96.2	

[Unit: in]

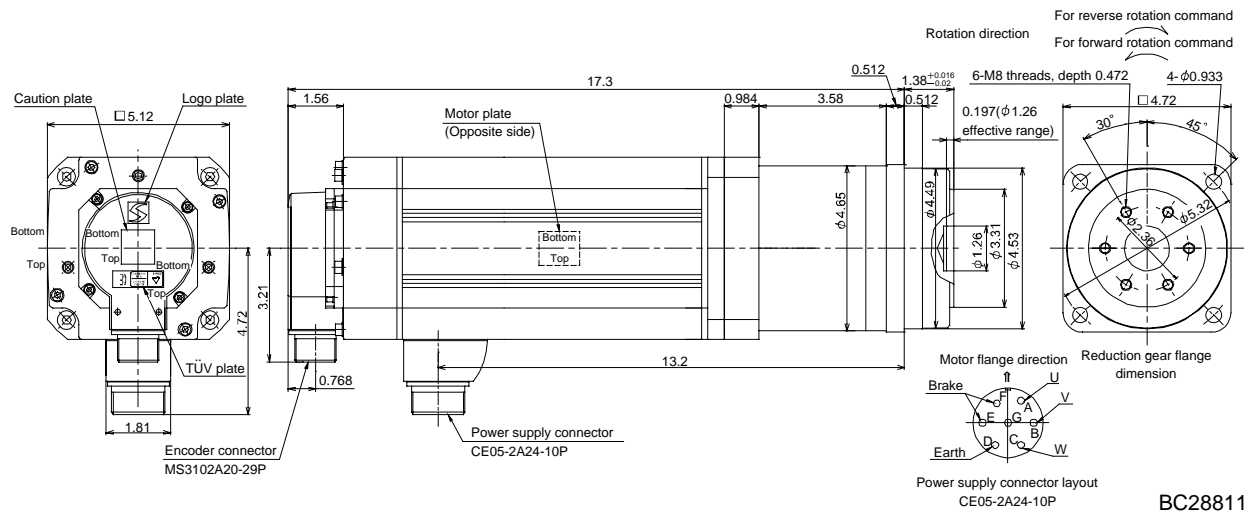


BC28810*

Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS503BG5	5.0	HPG-32A-05-F0PAQS-S	1/5	2365	112	60.6

[Unit: in]

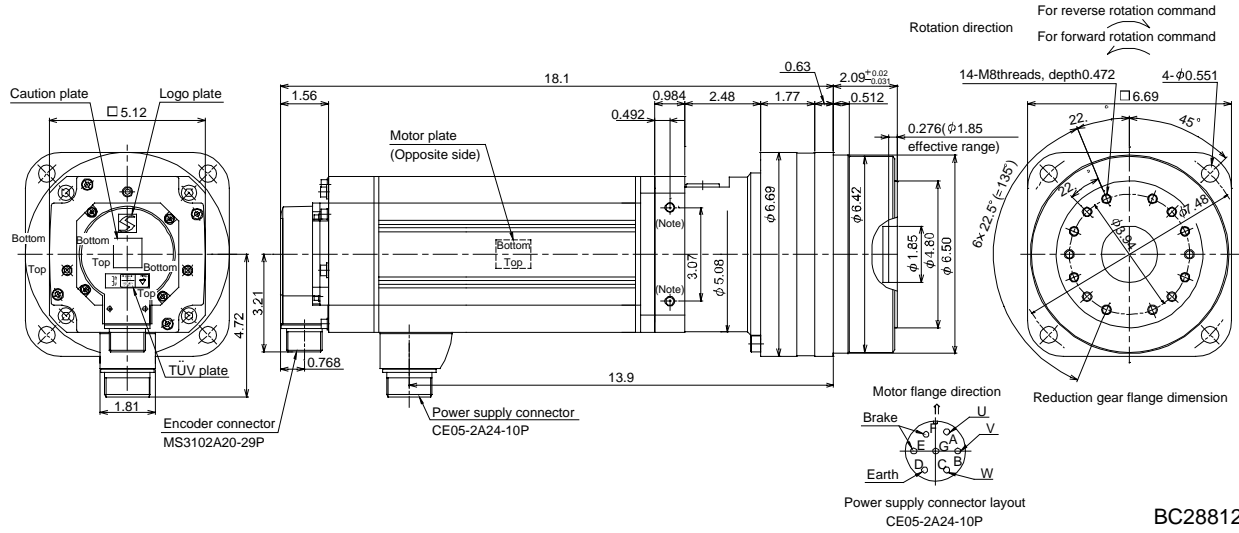


BC28811*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS503BG5	5.0	HPG-50A-11-F0BADD-S	1/11	2365	131	81.8
		HPG-50A-21-F0BADD-S	1/21		121	

[Unit: in]



Note: Screw hole for eyebolt (M8).

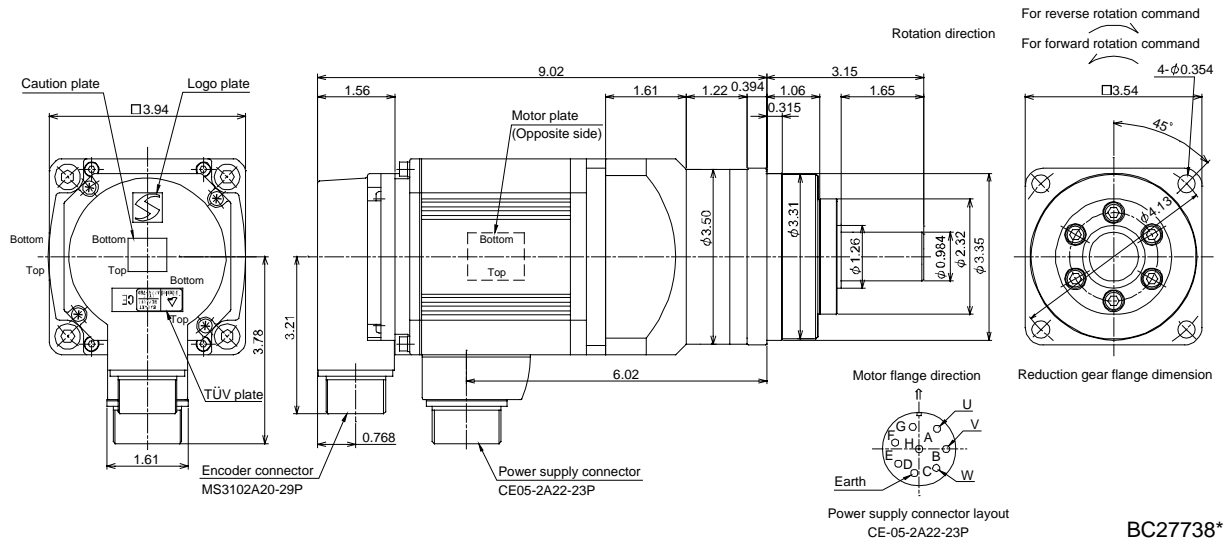
3. HC-RFS SERIES

3.7.2 Flange-mounting shaft output type for precision application compliant (G7)

(1) Without electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS103G7	1.0	HPG-20A-05-J2LBWS-S	1/5	13.0	15.0
		HPG-20A-11-J2LBXS-S	1/11	12.3	15.4

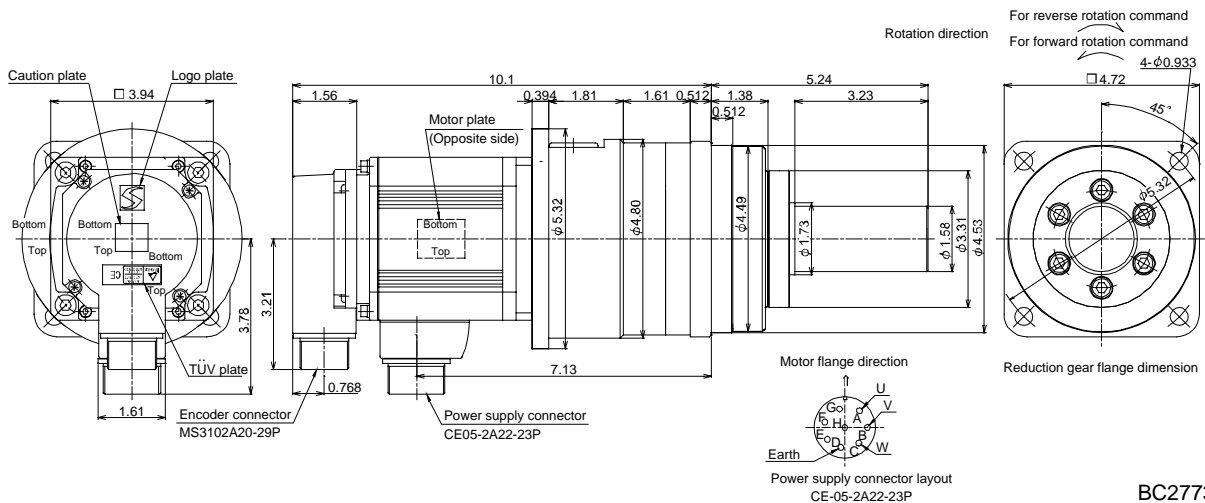
[Unit: in]



BC27738*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS103G7	1.0	HPG-32A-21-J2NFSYS-S	1/21	24.1	26.0
		HPG-32A-33-J2NFSZS-S	1/33	23.0	

[Unit: in]

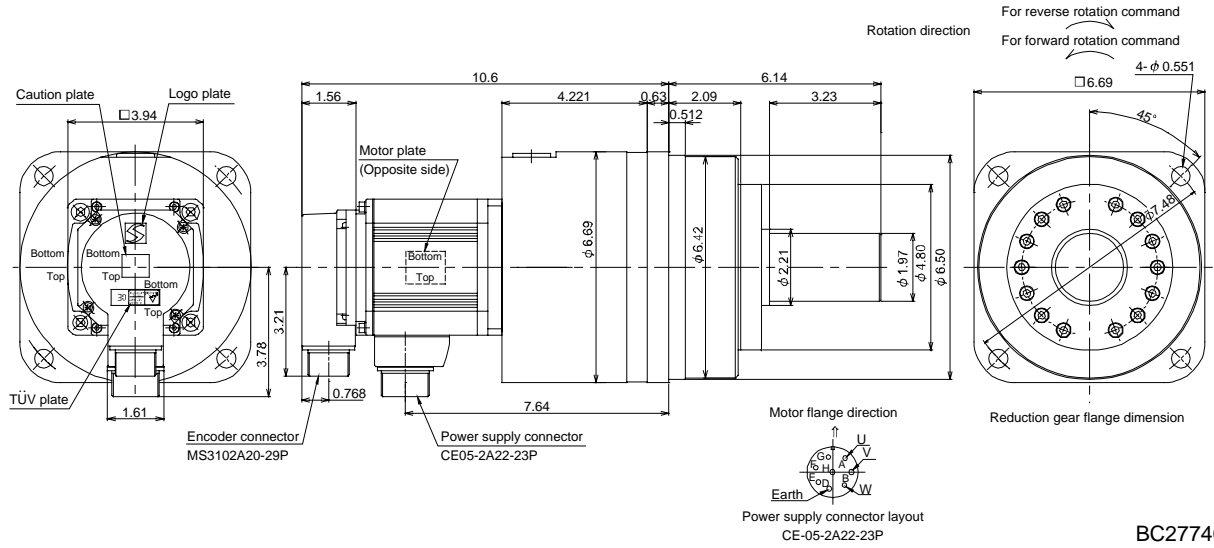


BC27739*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS103G7	1.0	HPG-50A-45-J2ADBC-S	1/45	33.9	50.5

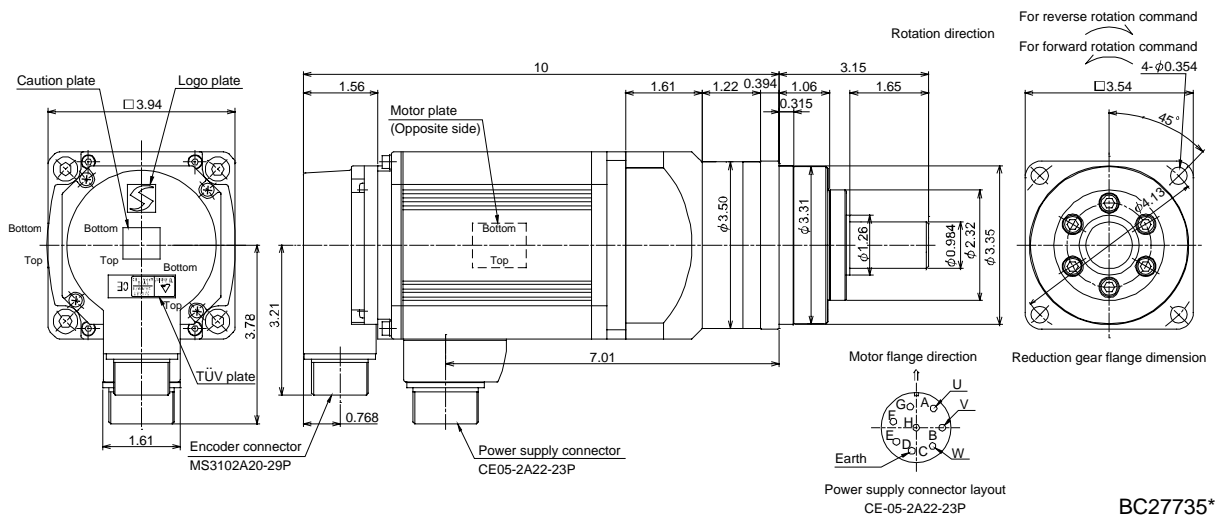
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BC27740*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS153G7	1.5	HPG-20A-05-J2LBWS-S	1/5	15.1	17.4

[Unit: in]

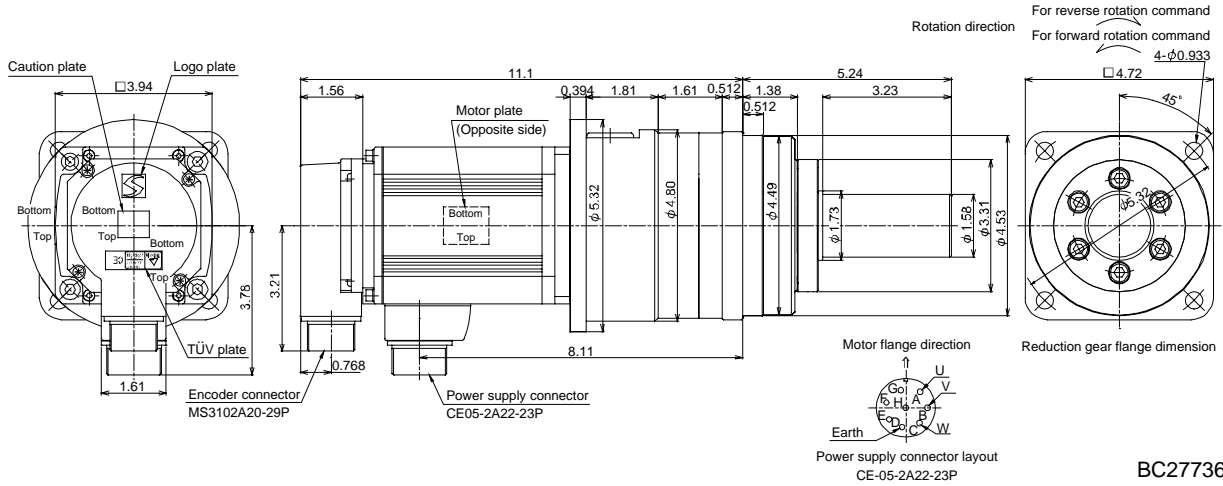


BC27735*

3. HC-RFS SERIES

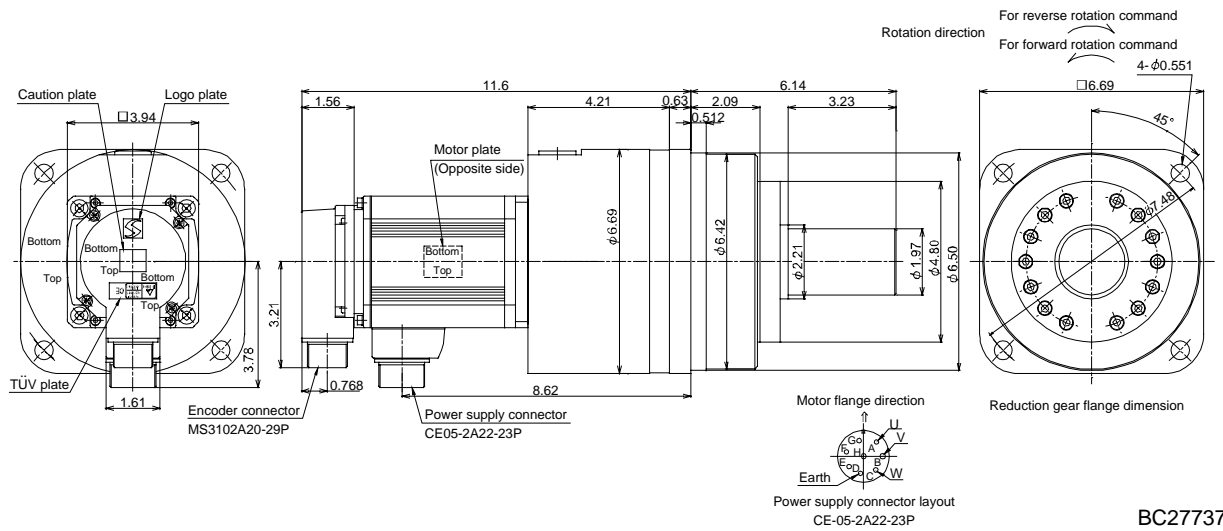
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS153G7	1.5	HPG-32A-11-J2NFSPS-S	1/11	29.0	28.4
		HPG-32A-21-J2NFSYS-S	1/21	26.2	

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS153G7	1.5	HPG-50A-33-J2ADBC-S	1/33	36.1	52.9
		HPG-50A-45-J2ADBC-S	1/45		

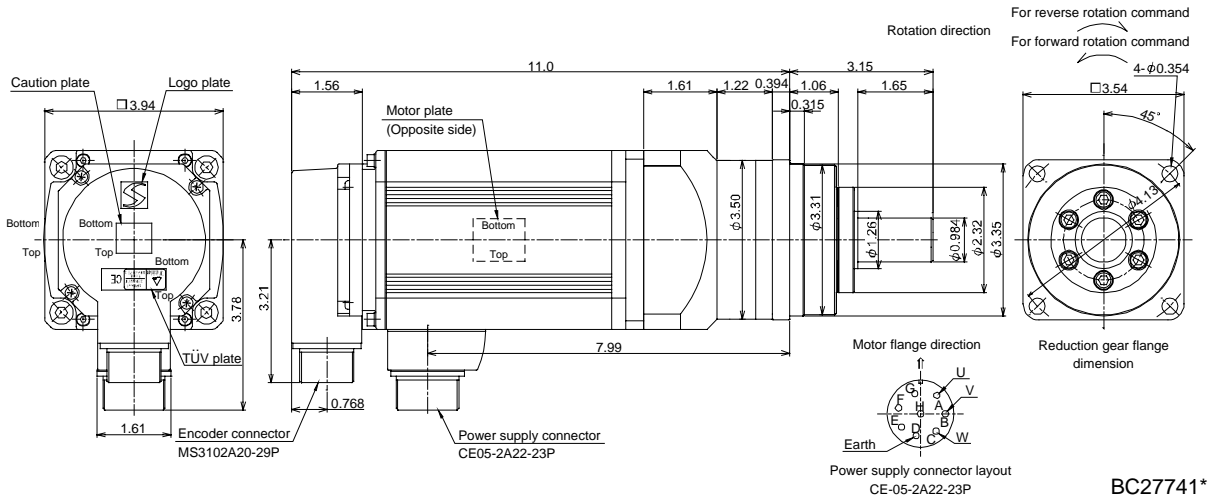
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3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $KW^2 [oz \cdot in^2]$	Mass [lb]
HC-RFS203G7	2.0	HPG-20A-05-J2LBWS-S	1/5	17.3	20.1

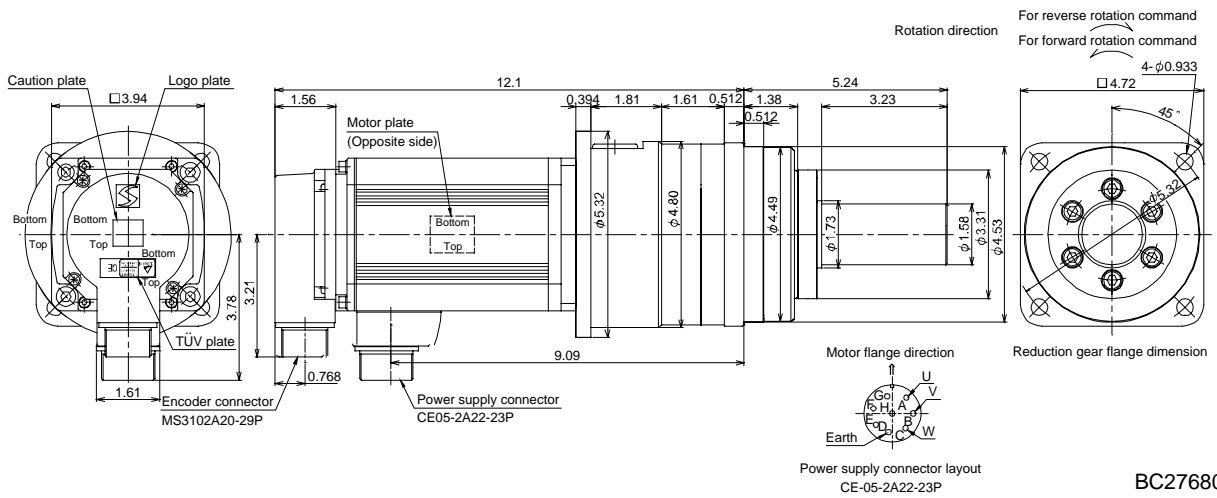
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BC27741*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $KW^2 [oz \cdot in^2]$	Mass [lb]
HC-RFS203G7	2.0	HPG-32A-11-J2NFSPS-S	1/11	31.2	31.1

[Unit: in]

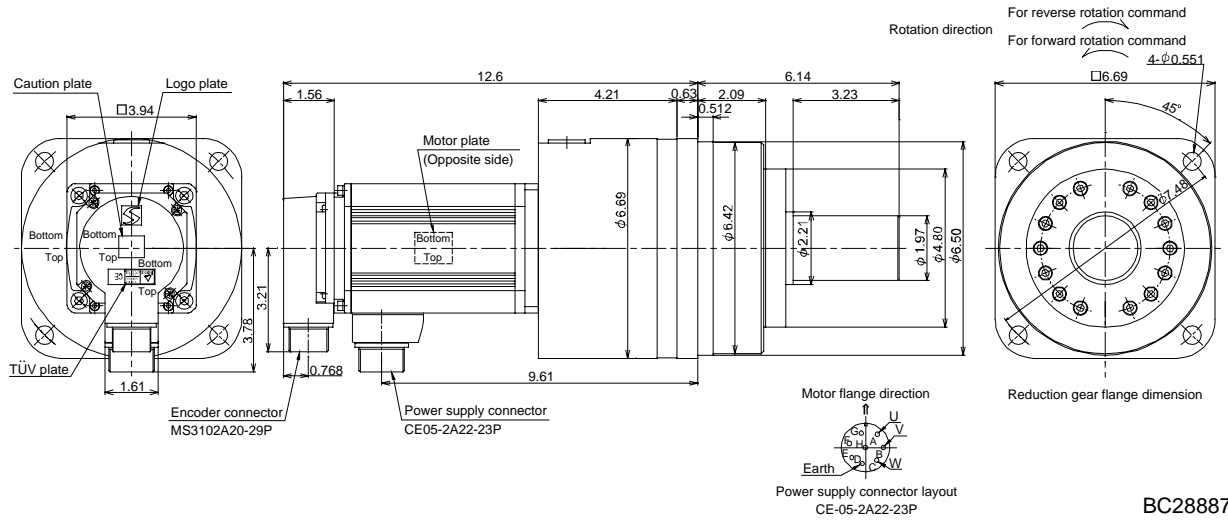


BC27680*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS203G7	2.0	HPG-50A-21-J2ADBC-S	1/21	43.7	55.6
		HPG-50A-33-J2ADBC-S	1/33	38.3	
		HPG-50A-45-J2ADBC-S	1/45	38.3	

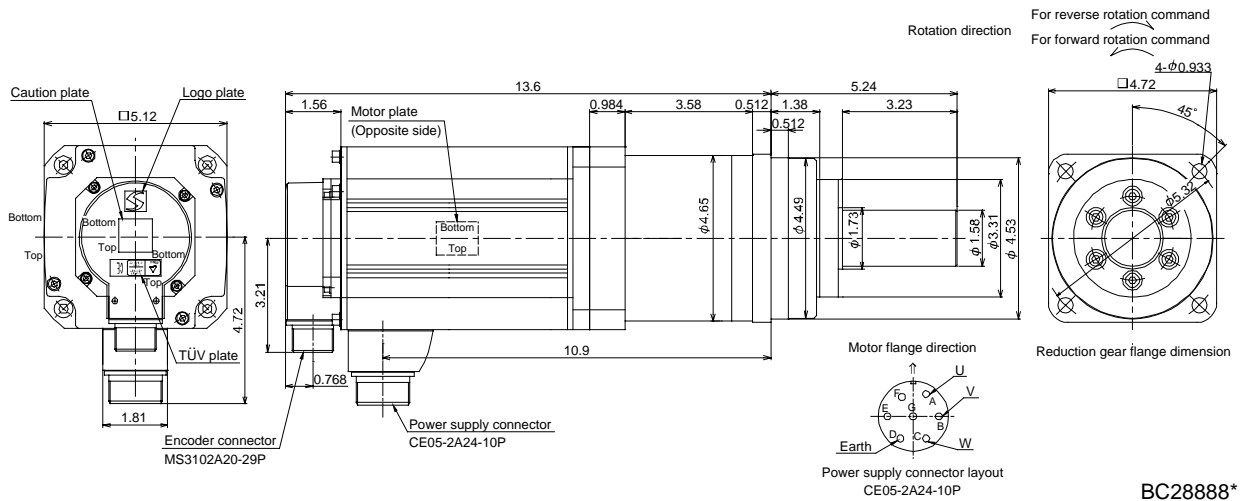
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BC28887*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS353G7	3.5	HPG-32A-05-J2PAQS-S	1/5	75.5	43.9
		HPG-32A-11-J2PAR-S	1/11	73.3	45.0

[Unit: in]

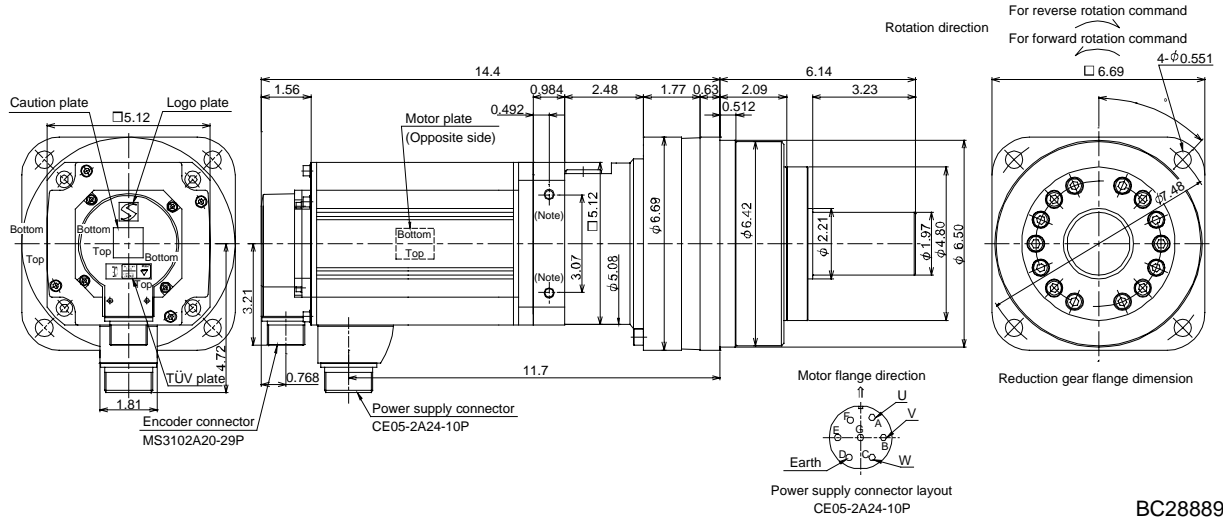


BC28888*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $KW^2 [oz \cdot in^2]$	Mass [lb]
HC-RFS353G7	3.5	HPG-50A-21-J2BADD-S	1/21	84.2	68.6
		HPG-50A-33-J2BADD-S	1/33	78.7	

[Unit: in]

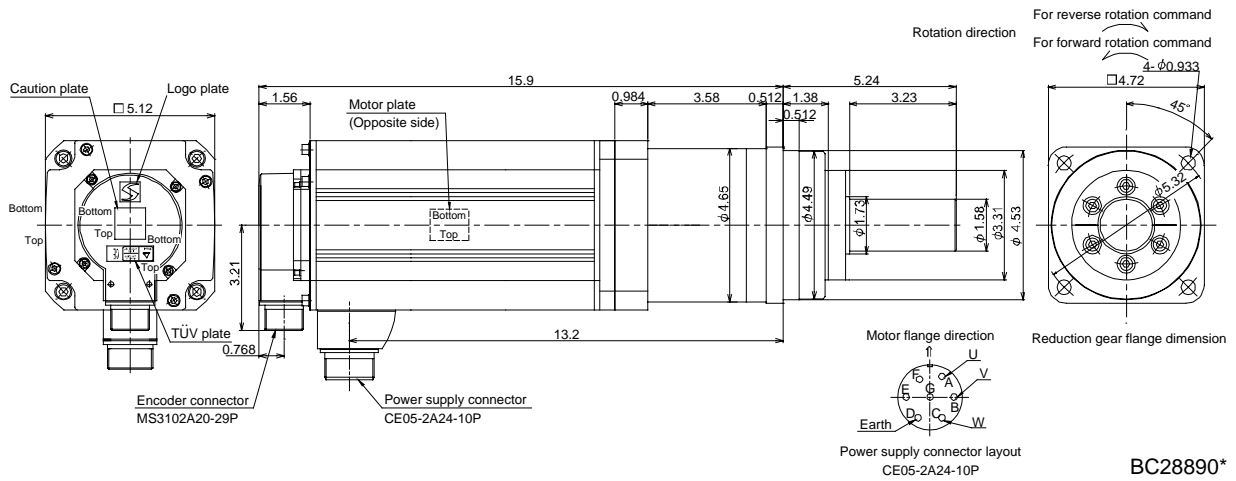


BC28889*

Note: Screw hole for eyebolt (M8).

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment $KW^2 [oz \cdot in^2]$	Mass [lb]
HC-RFS503G7	5.0	HPG-32A-05-J2PAQS-S	1/5	94.0	54.9

[Unit: in]

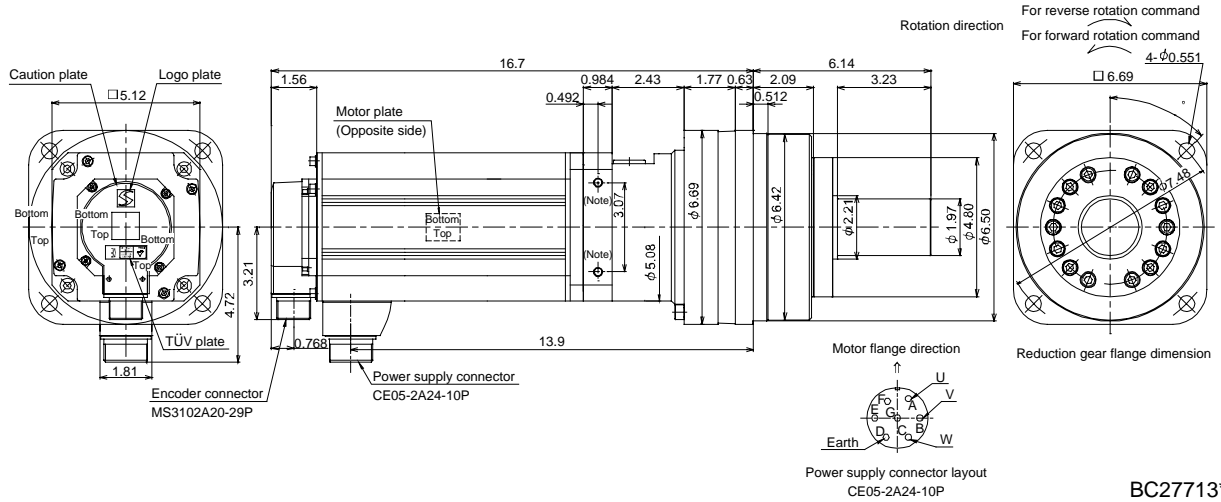


BC28890*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS503G7	5.0	HPG-50A-11-J2BADD-S	1/11	113	79.6
		HPG-50A-21-J2BADD-S	1/21	103	

[Unit: in]



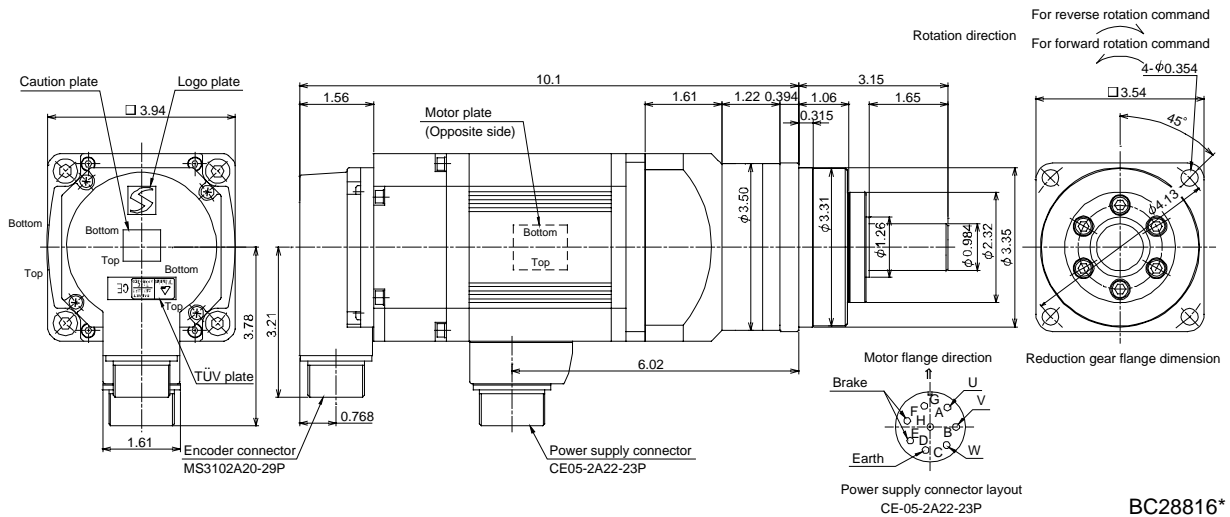
BC27713*

Note: Screw hole for eyebolt (M8).

(2) With electromagnetic brake

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS103BG7	1.0	HPG-20A-05-J2LBWS-S	1/5	991	14.9	19.6
		HPG-20A-11-J2LBXS-S	1/11		14.2	20.1

[Unit: in]

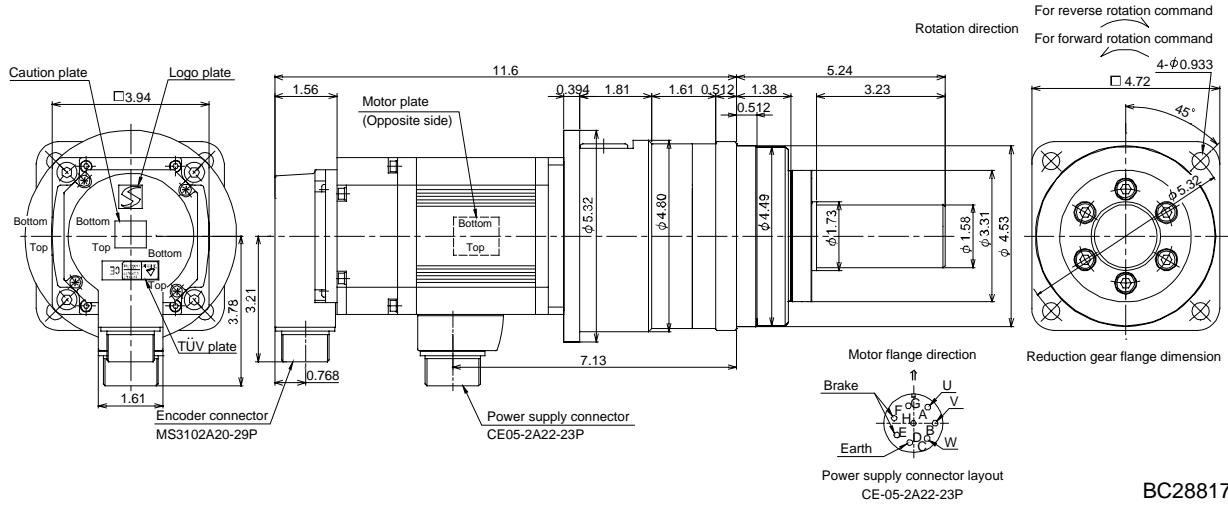


BC28816*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW^2 [oz · in ²]	Mass [lb]
HC-RFS103BG7	1.0	HPG-32A-21-J2NFSYS-S	1/21	991	26.0	30.6
		HPG-32A-33-J2NFSZS-S	1/33		24.9	

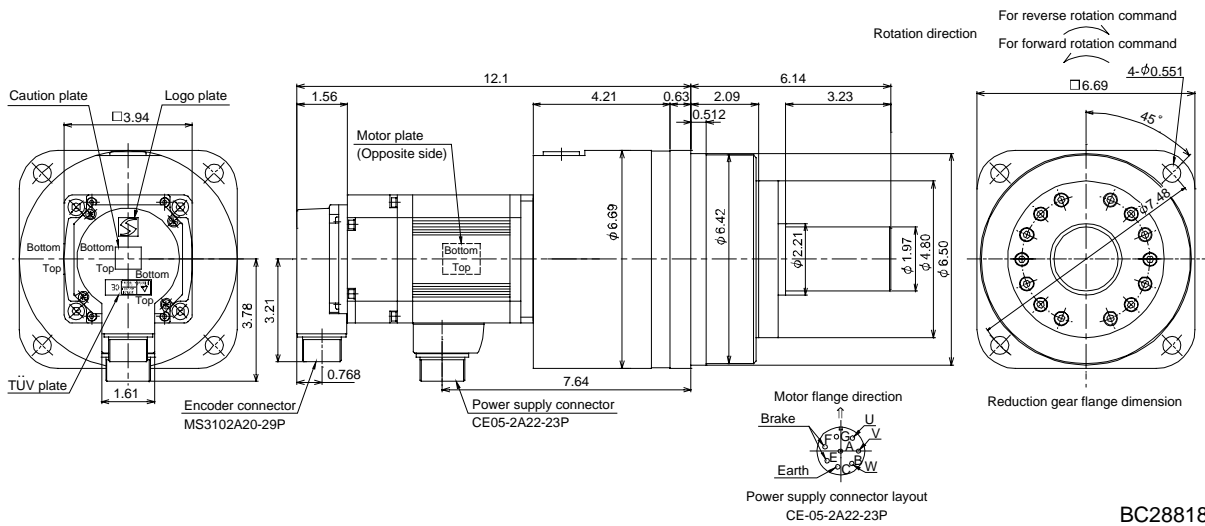
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BC28817*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW^2 [oz · in ²]	Mass [lb]
HC-RFS103BG7	1.0	HPG-50A-45-J2ADBC-S	1/45	991	35.8	55.1

[Unit: in]

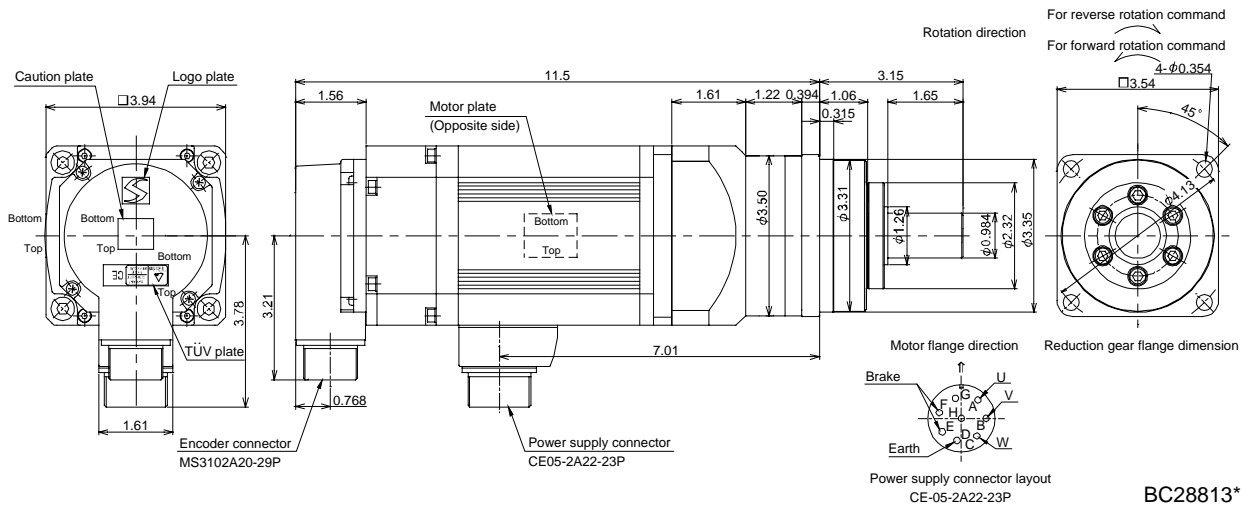


BC28818*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW^2 [oz · in ²]	Mass [lb]
HC-RFS153BG7	1.5	HPG-20A-05-J2LBWS-S	1/5	991	17.1	21.8

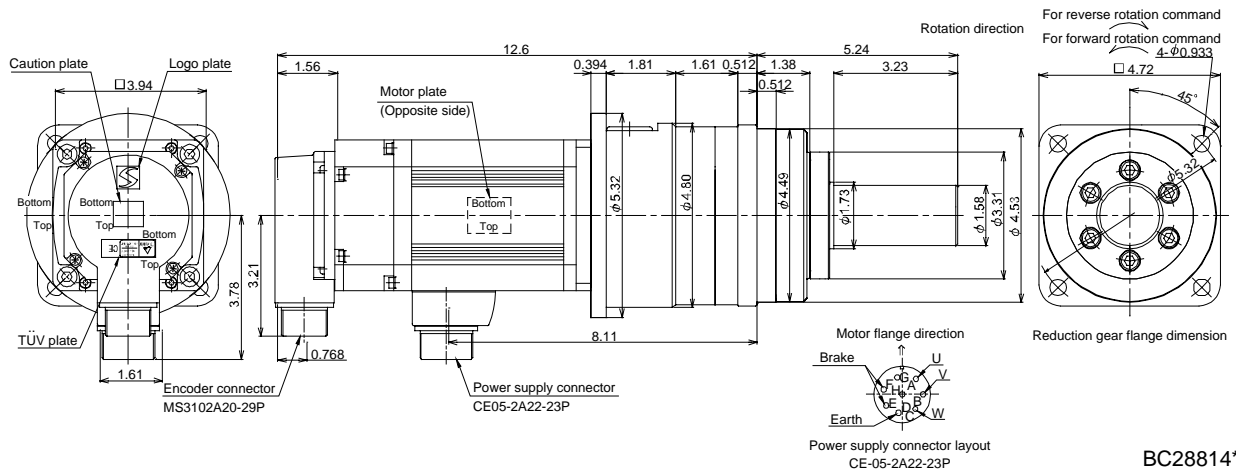
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BC28813*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW^2 [oz · in ²]	Mass [lb]
HC-RFS153BG7	1.5	HPG-32A-11-J2NFSPS-S	1/11	991	30.9	32.8
		HPG-32A-21-J2NFSYS-S	1/21		28.2	

[Unit: in]

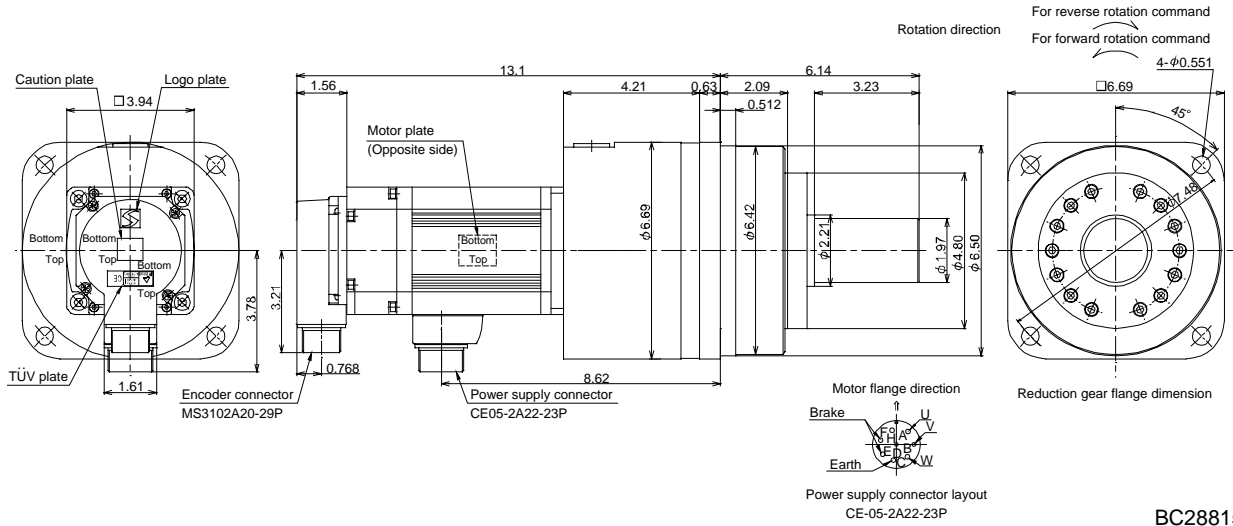


BC28814*

3. HC-RFS SERIES

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS153BG7	1.5	HPG-50A-33-J2ADBC-S	1/33	991	38.0	57.3
		HPG-50A-45-J2ADBC-S	1/45			

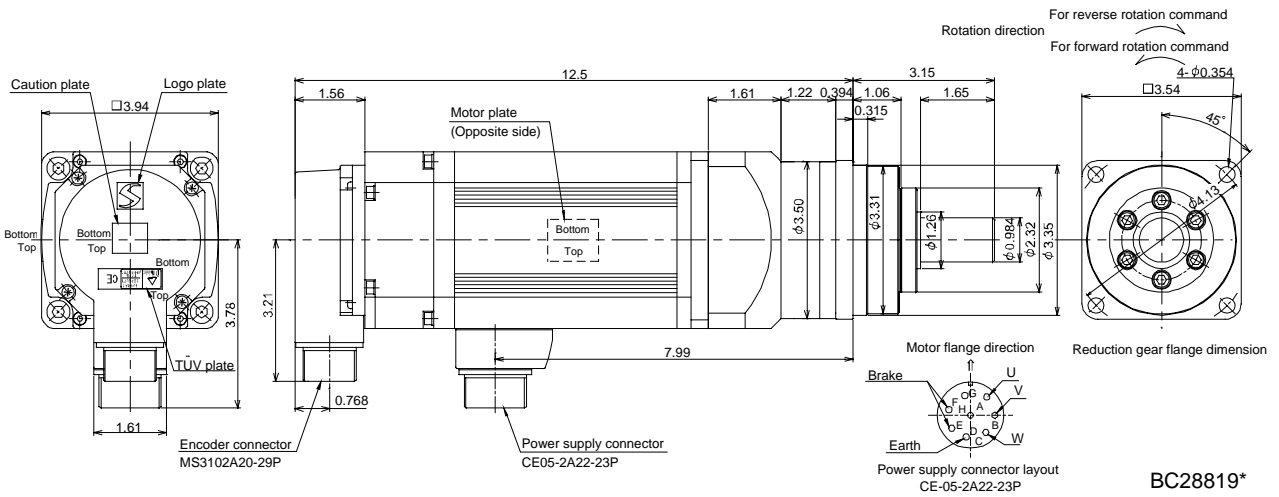
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BC28815*

Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS203BG7	2.0	HPG-20A-05-J2LBWS-S	1/5	991	19.2	24.7

[Unit: in]

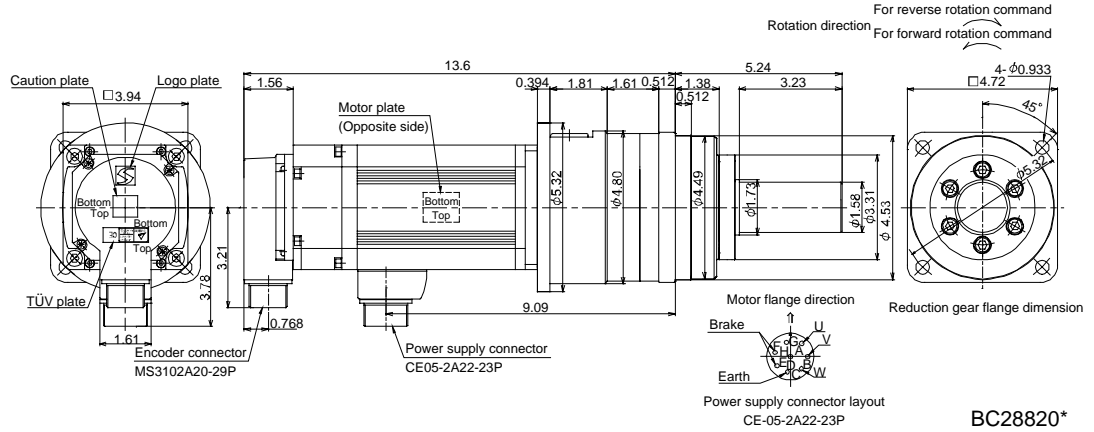


BC28819*

3. HC-RFS SERIES

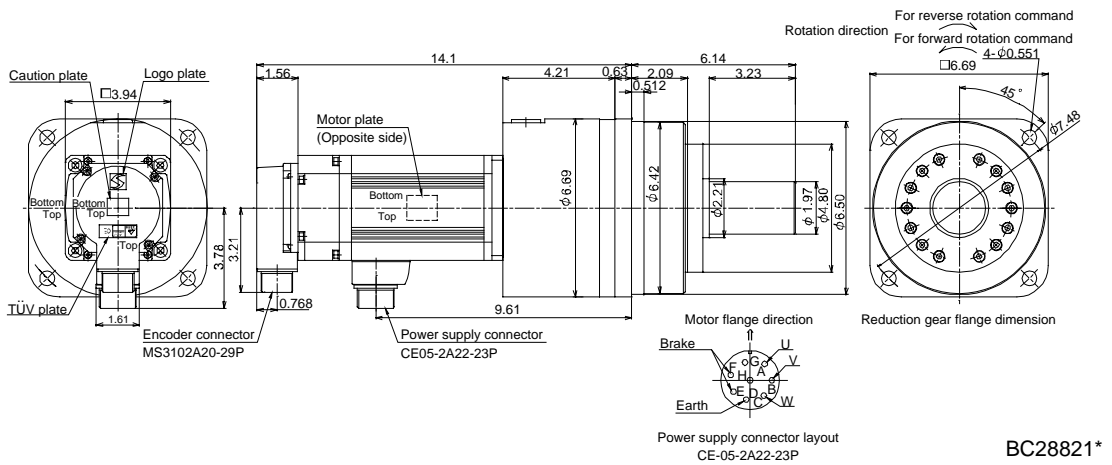
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW^2 [oz · in ²]	Mass [lb]
HC-RFS203BG7	2.0	HPG-32A-11-J2NFSPS-S	1/11	991	33.1	35.7

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW^2 [oz · in ²]	Mass [lb]
HC-RFS203BG7	2.0	HPG-50A-21-J2ADBC-S	1/21	991	45.7	60.2
		HPG-50A-33-J2ADBC-S	1/33		40.2	
		HPG-50A-45-J2ADBC-S	1/45			

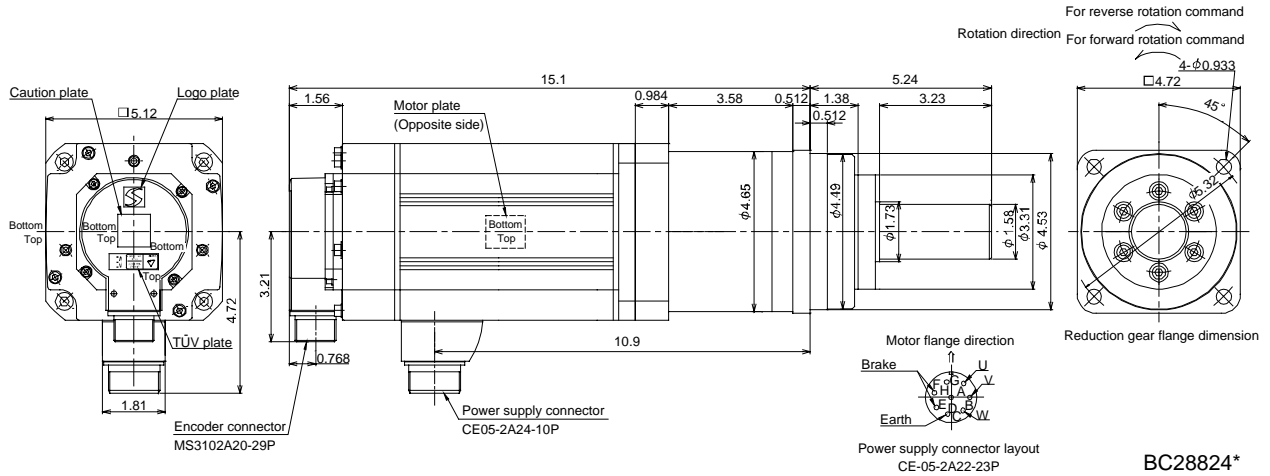
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3. HC-RFS SERIES

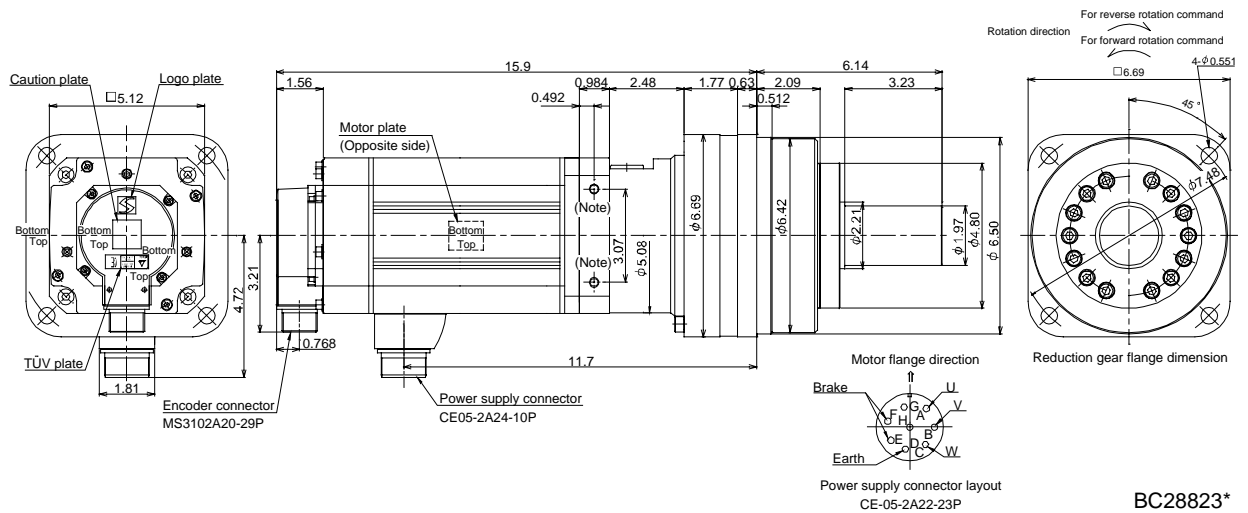
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW^2 [oz · in ²]	Mass [lb]
HC-RFS353BG7	3.5	HPG-32A-05-J2PAQS-S	1/5	2365	92.9	50.5
		HPG-32A-11-J2PAR-S	1/11		90.8	51.6

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW^2 [oz · in ²]	Mass [lb]
HC-RFS353BG7	3.5	HPG-50A-21-J2BADD-S	1/21	2365	102	75.2
		HPG-50A-33-J2BADD-S	1/33		96.2	

[Unit: in]

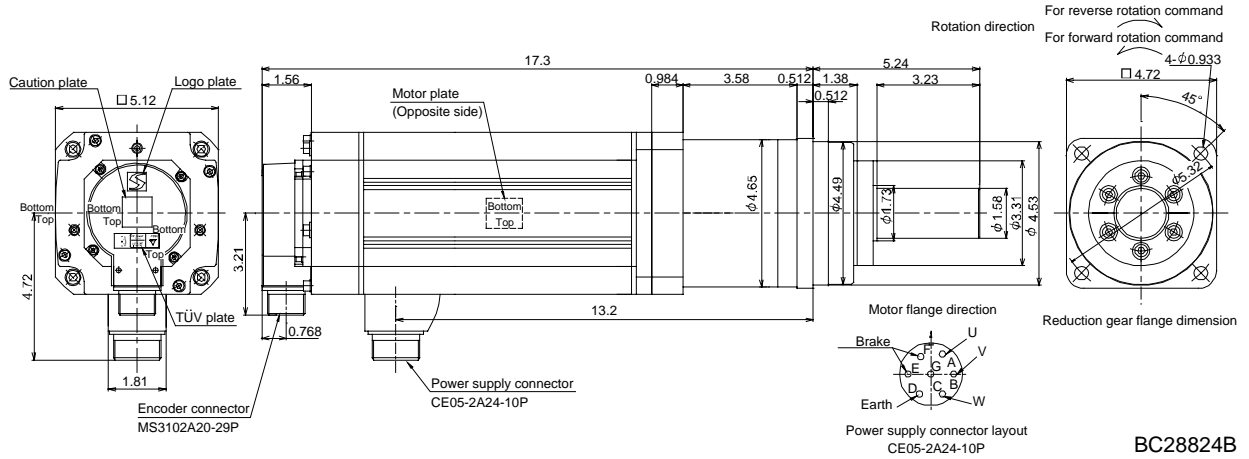


Note: Screw hole for eyebolt (M8).

3. HC-RFS SERIES

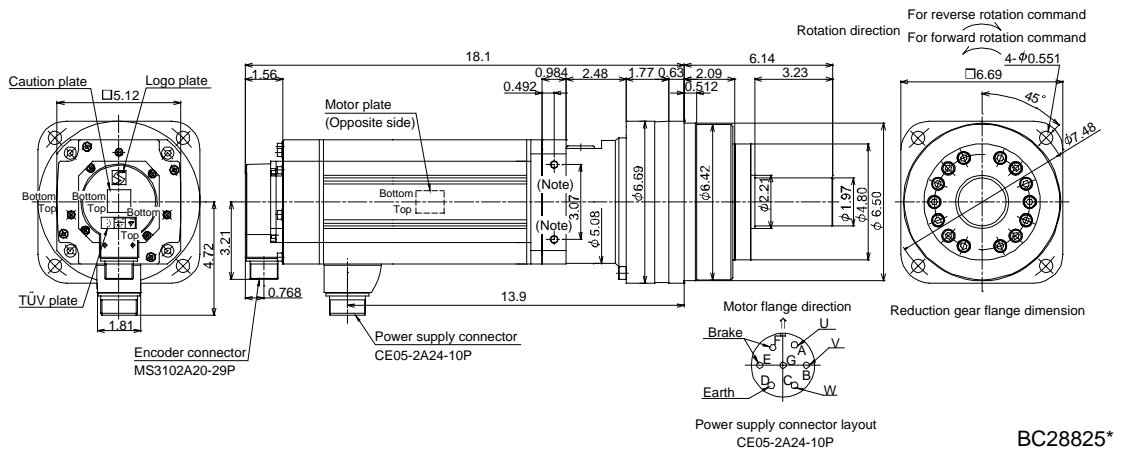
Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS503BG7	5.0	HPG-32A-05-J2PAQS-S	1/5	2365	113	63.7

[Unit: in]



Model	Output [kW]	Reduction Gear Model	Reduction Ratio	Brake Static Friction Torque [oz · in]	Inertia Moment KW ² [oz · in ²]	Mass [lb]
HC-RFS503BG7	5.0	HPG-50A-11-J2BADD-S	1/11	2365	132	88.4
		HPG-50A-21-J2BADD-S	1/21		122	

[Unit: in]



Note: Screw hole for eyebolt (M8).

REVISIONS

*The manual number is given on the bottom left of the back cover.

Print Data	*Manual Number	Revision
Mar., 2005	SH(NA)030052-A	First edition
Nov., 2005	SH(NA)030052-B	<p>Safety Instructions: 4. Additional instructions (2) (4) Addition of instruction sentences</p> <p>UL/C-UL standard: Change of sentences</p> <p>Section 1.3: Partial change of table Change of Note sentences</p> <p>Section 1.6.1 (1) (2): HC-KFS23 · 43(B)G5 Error correction of inertia moment J</p> <p>Section 1.6.2 (1) (2): HC-KFS23 · 43(B)G7 Error correction of inertia moment J</p> <p>Section 1.7.1 (1) (2): HC-KFS23 · 43(B)G5 Error correction of inertia moment J</p> <p>Section 1.7.2 (1) (2): HC-KFS23 · 43(B)G7 Error correction of inertia moment J</p> <p>Section 2.3: Change of Note sentences</p> <p>Section 3.3: Change of Note sentences</p>

MODEL	
MODEL CODE	



mitsubishi electric corporation

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