DKM MOTOREN
TEIL 1

Ott Antriebstechnik
Standardisierte Individualität

HOCHQUALITATIVE AC- UND DC-MOTOREN

MIT STIRNRAD-, SCHNECKEN- ODER HELICROSSGETRIEBE

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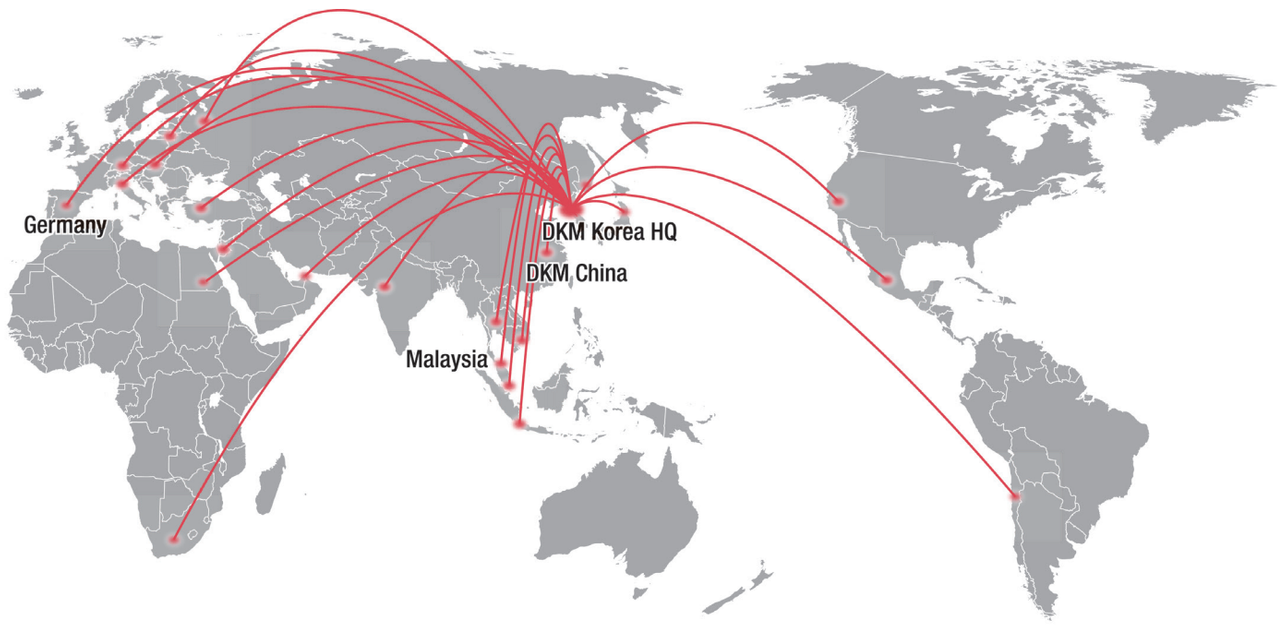
DKM
motor & gearbox


DKM

The power to move the world,
there is DKM at the center.

Global Network



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HISTORY

2020 Newly launched 'DSY SERIES'

2019 Newly launched 'HELICROSS GEARBOX' (patent)

2018 Relocation and extension of global headquarters

Acquired 'EMCD, LVD , KC Mark (FX3000)'

Acquired 'ISO9001 / 14001 Certification'

Acquired 'RoHS, Reach Certification'

2015 Acquired 'TUV certificate' (Europe UL1004-1)

Acquired 'RU Mark'

Newly launched '400W small geared motor' (patent)

Acquired 'CE Mark'

2014 Received 1 Million Dollor Export Tower Award at the

51st 'Trade Day Commemoration Ceremony'

2011 Unveiled a New Coporate Identity

2009 Established 'DKM Europe ' in Germany

2008 Established 'DKM South Asia Pte Ltd.' in Singapore

2005 Established ' DKM Shanghai Co., Ltd.' in Shanghai, China

2002 Acquired ISO 9001:2000

2000 Changed company name to DKM Co ., Ltd ., the holding company

1999 Acquired CE Mark(in some parts of Induction Motor)

Advanced into Europe

1995 Starts export to India, Indonesia and Malaysia

1994 Acquired 'NT -New Technology Mark ' from Korean government

1993 Acquired 'Q Mark' in Small Gearbox division from Korean government

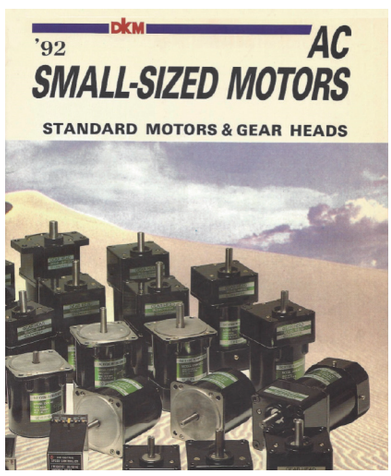
1990 Starts export to overseas markets including China

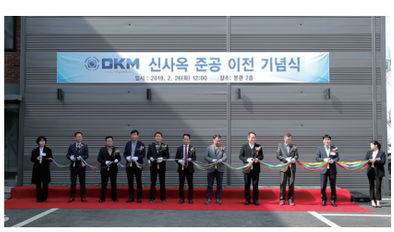
1987 Developed 'Small Geared Motor' first time in Korea

1983 The father company,

'Daekyung Machinery Co.'

founded (in Guro-gu, Seoul)

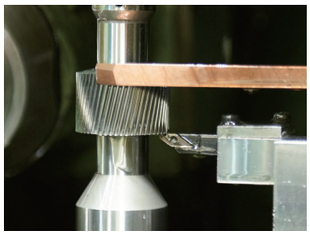


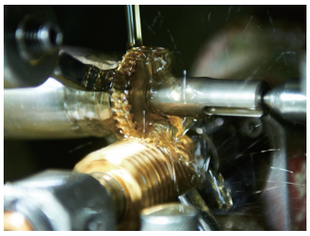
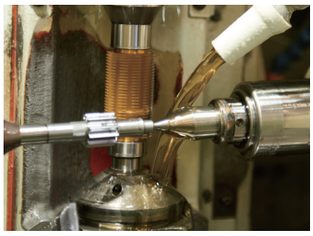


Production

Metal Processing

DKM Motor has a long worth of knowledge in manufacturing metal processing components since its foundation. We are making all metal cutting processes: turning with single or multi-spindle machines, gearing by hobbing machine, heat treatments and hardening processes.

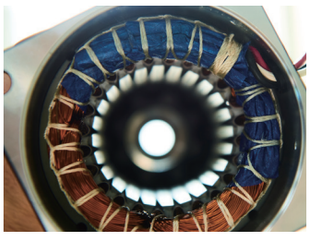


Assembly and Test

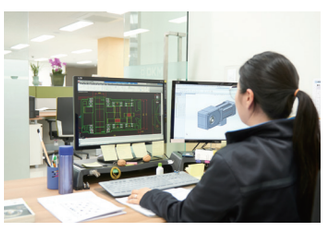
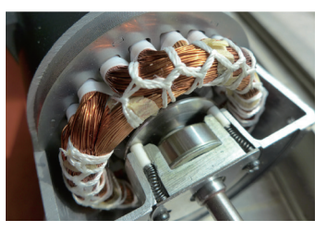
By using the precision assembly machines DKM Motor is making assembly of the selected components by the internal quality standard.We are making total 3 times test ; the test of the components before assembly, the test after assembly and the final shipping test after assembly of motor and gearbox.

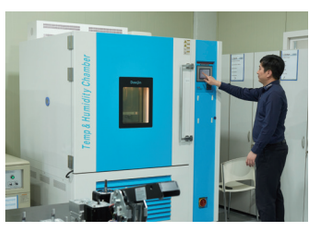




R&D

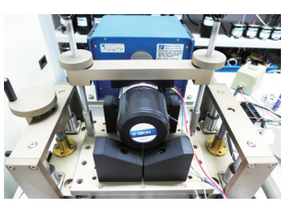
The design department of DKM Motor is connected to the development of all products and our R&D team is on standby for comprehensive and fast adaptations to match your specific requirements and specifications .

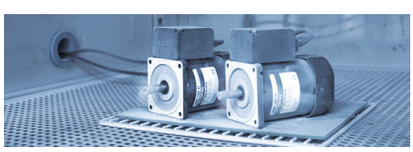





Laboratories

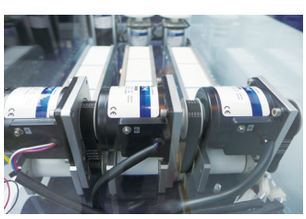
DKM Motor carries out stress, wear, tear, and life tests with the test machines.
Through this test process in our test laboratory, we can get the permissible torque and other limit values of each product to meet the required demands.



Quality Assurance

We always carry out the reliability test for sampling products from all manufactured products.
By this test we can handle any faulty in advance.

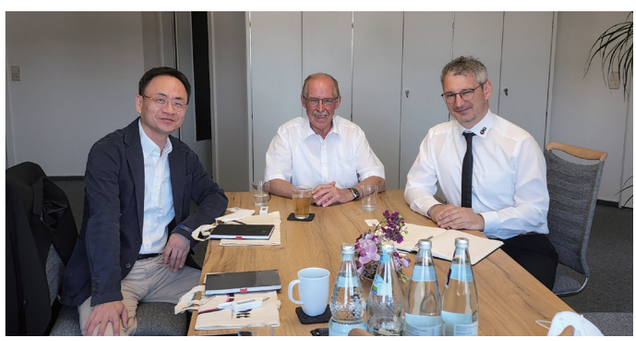


Marketing

DKM Motor is making its efforts to inform the customers of the products by the effective method through various marketing channels. Since its establishment in 1983, we have participated continuously in domestic/overseas industry/machinery exhibitions and introduced our products through dealer conferences/technical seminars, and received the requirements from agencies and users to reflect in the production of the products.
Besides, through the regular distribution of press releases, sending newsletters, etc. we are delivering the news and information on new products of DKM Motor quickly.

Partners Conferences

DKM Motor holds conferences with our partners regularly all over the world.
This conferences enable DKM Motor and the partner companies to communicate and exchange the news each other.



Technical Seminar

DKM Products Overview

AC MOTORS

Induction Motor

For Continuous Operation
- Appropriate for one way continuous running
- It stops in 2sec after the machine is switched off (Overrun : 30~40times)
- Possible for reverse rotation


Lead Wire Type


Terminal Box Type

2 Pole Motor

For High Speed Rotation
- 3,600 r/m (60Hz)
- 3,000 r/m (50Hz)
- Used without a gearbox
- Possible for reverse rotation


Lead Wire Type


Terminal Box Type

Reversible Motor

For Bi-Directional Operation
- Built-in simple brake mechanism makes overrun small
- Appropriate for the machine which needs to change the direction frequently
- Fixed speed operation + simple position control (Position control level : ★☆☆☆☆)
- It stops in 0.5 sec after the machine is switched off(Overrun : 5~6 times)
- Possible for reverse rotation


Lead Wire Type


Terminal Box Type

Brake Motor

For maintaining load
- Induction Motor with a brake to stop and hold a load
- Fixed speed operation + simple position control (Position control level : ★★☆☆☆)
- It stops in 0.2 sec after the machine is switched off (Overrun:2~3times)
- Possible for reverse rotation

Clutch & Brake Motor

For Frequent Start/Stop Operation
- Structure with an internal clutch and brake mechanism
- Fixed speed operation + simple position control (Position control level : ★★★☆☆)
- It stops in 0.1 sec after the machine is switched off(Overrun : 1time)
- Used always with a gearbox
- Possible for reverse rotation

Torque Motor

For Torque Adjustment with ease
- Suitable for Tension Control or Winding and Unwinding Applications
- Motor Torque can be adjusted with ease by using a torque controller
- Possible for reverse rotation
- Torque controller : DX3000, FX3000

FX3000
- Including control knob (Digital display)
- Built-in Capacitor
- Speed or Torque control

DX3000
- RS-485 communication control
- PLC I/O control
- Speed and Torque Control
- DIN Rail Type

Speed Control System

- Speed Control Induction Motor
- Speed Control Reversible Motor
- Speed Control Brake Motor
- Speed Control Clutch&Brake Motor

- Speed control motor allows you to set and adjust the speed of the motor easily by using a speed controller
- Speed Controller: FX3000, DX3000, DSA, DSKM

FX3000
- Including control knob (Digital display)
- Built-in Capacitor
- Speed or Torque control

DX3000
- RS-485 communication system
- PLC I/O control
- Speed or Torque Control
- DIN Rail Type

DSA
- Including control knob (Analog type)
- Unit Type (Connecting to a motor using a connector)
- Capacitor built-in

DSKM
- Including control knob
- Possible to be used with an external controller
- Socket type (wiring a motor to a socket)

DC MOTORS

DC Motor

- Big starting torque and high efficiency
- Easy to control the speed and reverse the direction
- Superiority in the responsiveness of start and stop
- Possible to attach a parallel and worm gearbox

Speed Controller DSD-90

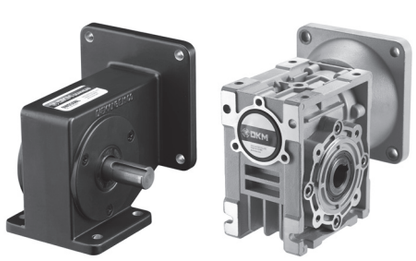
- Applicable to DC 90V motor
- Front panel potentiometer, Unit type

Gearboxes

Parallel Gearbox

- General Box Type, Powerful Box / Flange Type, High Powerful Box / Flange Type
- Frame Size: 60/70/80/90/104mm
- Gear Ratio: 2 : 1~360 : 1

Worm Gearbox



- Maximum use of space
- Worm Solid Type Gearbox
  Frame Size: 80/90mm, Gear Ratio: 10 : 1~60 : 1
- Worm Hollow Type Gearbox
  Frame Size: 90mm/104mm, Gear Ratio: 5 : 1~100 : 1

Inter-decimal Gearbox

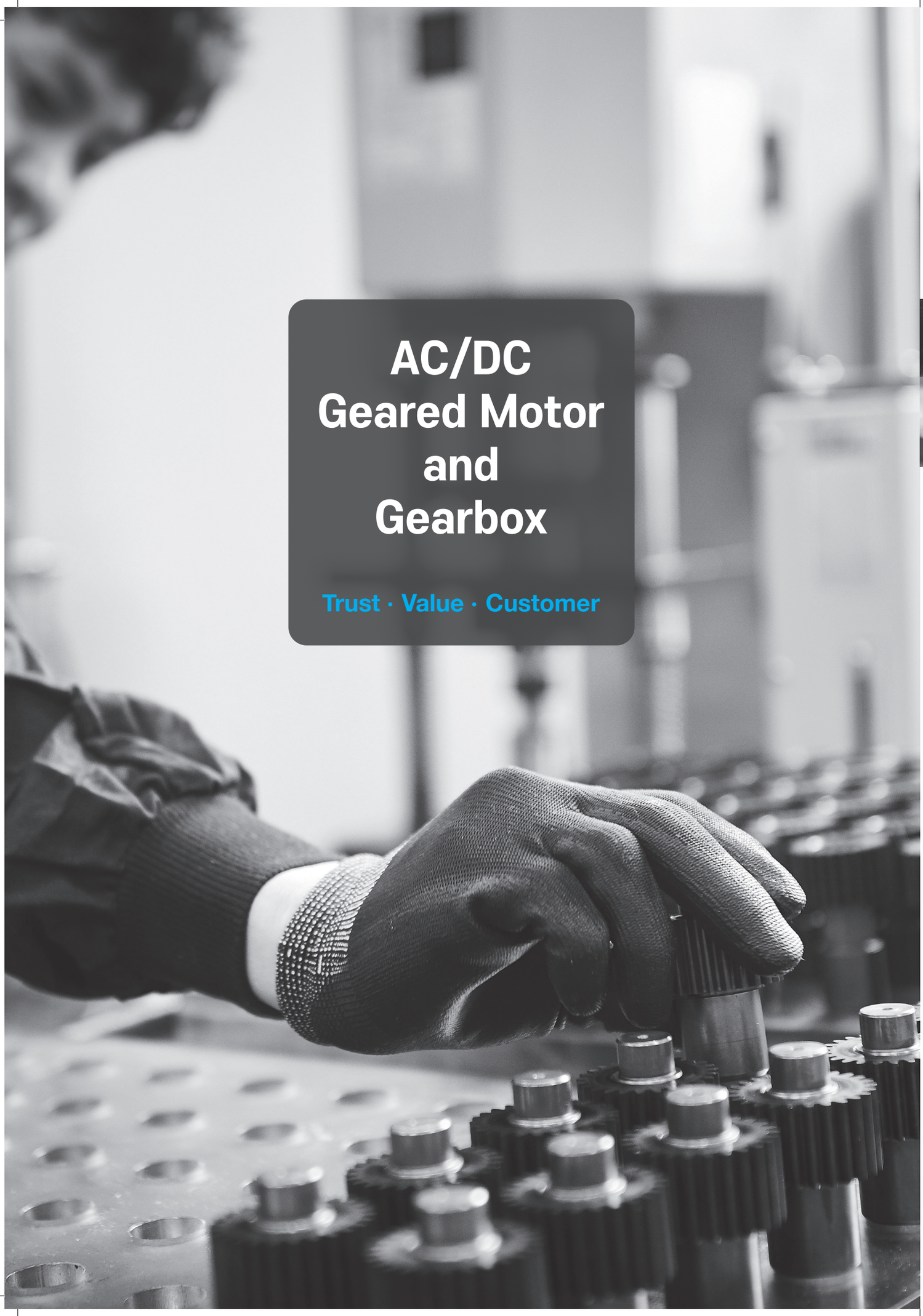
- In case of requiring high gear ratio that cannot be generated by single gearbox
- Frame Size: 80/90mm
- Gear Ratio: 10 : 1

Helicross Gearbox

- Concentric and hollow structure right angle gearbox
- Frame Size: 90/104mm
- Gear Ratio: 15:1 ~ 240:1

DSY Series

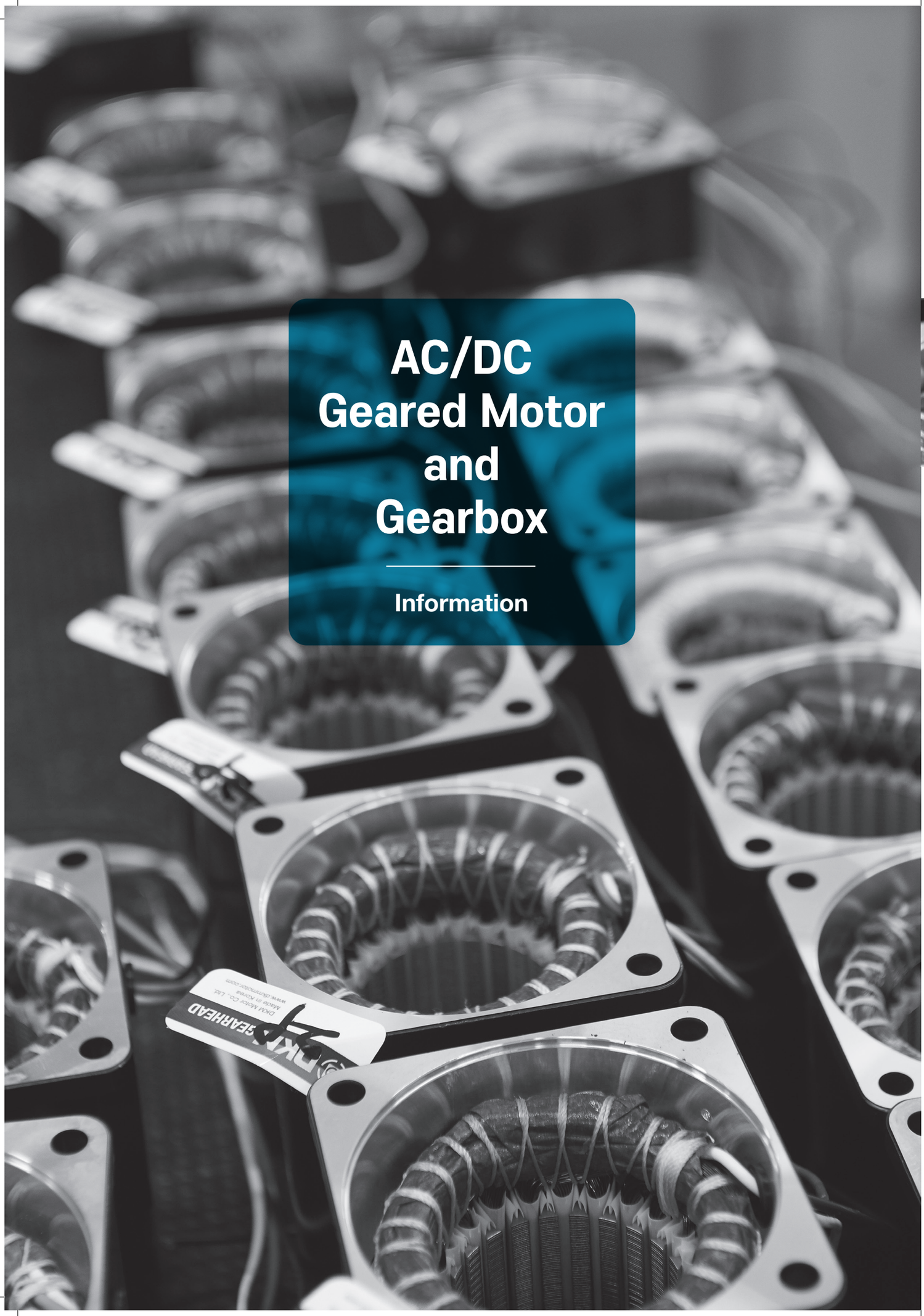
- Compact Size
- Design optimized for helical gear
- Non-separable geared motor
- Gea Ratio : 7.5:1 ~ 60:1



AC/DC Geared Motor and Gearbox

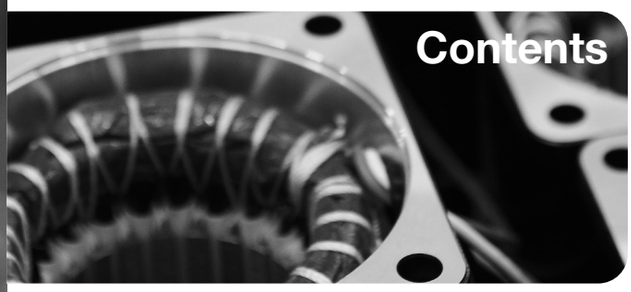
Trust · Value · Customer

Contents



AC/DC Geared Motor and Gearbox

Information

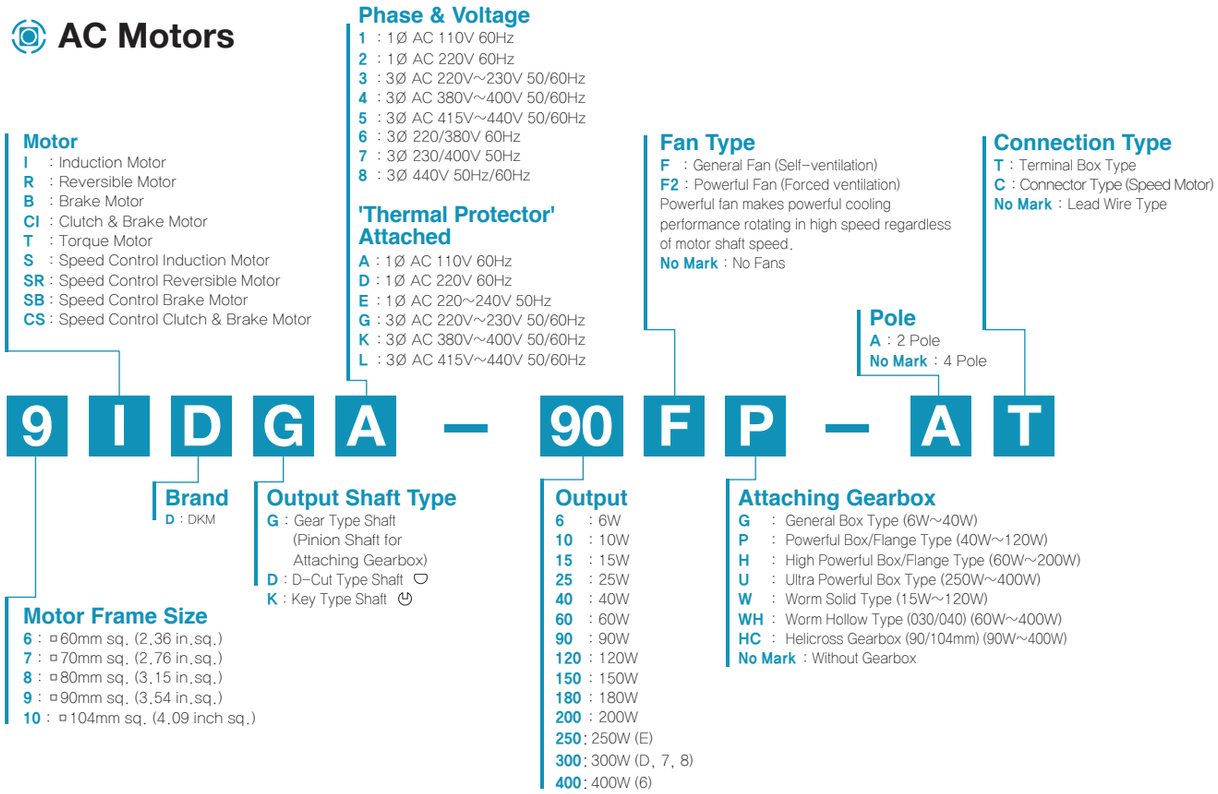


Contents

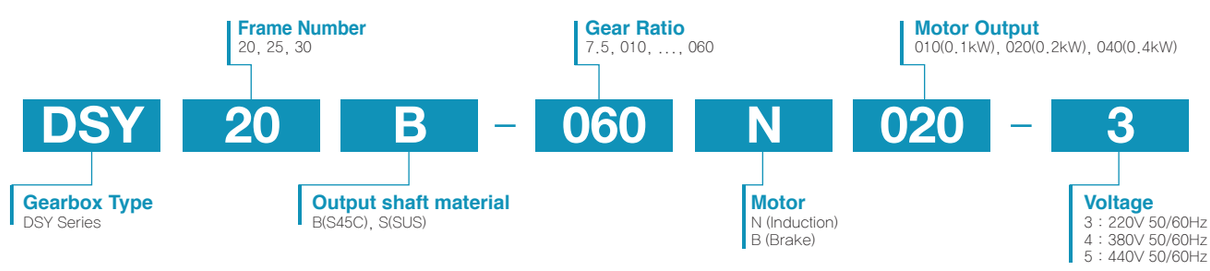
A Information

Product Coding System

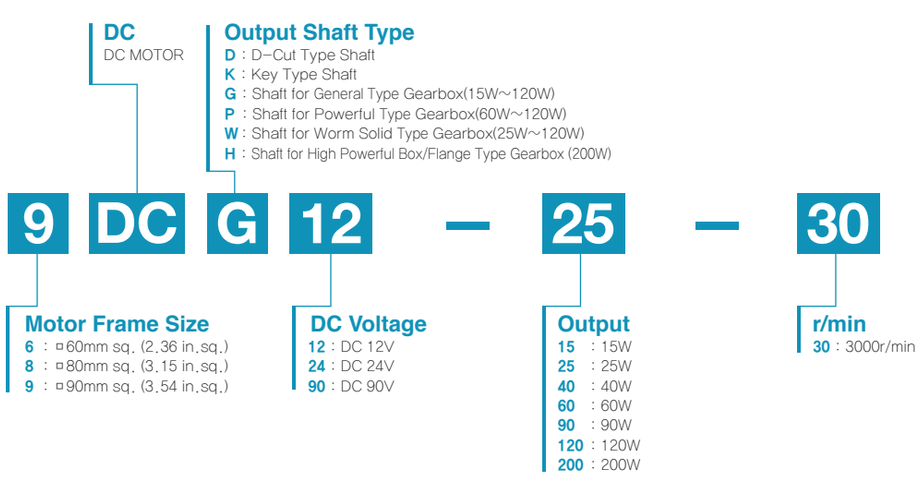
AC Motors



DSY Series



DC Motors



Parallel Gearbox

Gearbox Frame Size
- **6** : □ 60mm sq. (2.36 in.sq.)
- **7** : □ 70mm sq. (2.76 in.sq.)
- **8** : □ 80mm sq. (3.15 in.sq.)
- **9** : □ 90mm sq. (3.54 in.sq.)
- **10** : □ 104mm sq. (4.09 in.sq.)

Frame Type
- **B** : Box Type □
- **F** : Flange Type ⬡ (Only available for powerful and high powerful type Gearbox)

Bearing Type
- **B** : Ball Bearing
- **BM** : Ball Bearing + Metal Bearing
- **M** : Metal Bearing

9	P	B	K	36	B	H

Gear Type
- **G** : General Gear (6W~40W)
- **P** : Powerful Gear (40W~120W)
- **H** : High Powerful Gear (60W~200W)
- **U** : Ultra Powerful Gear (250W~400W)

Output Shaft Type
- **K** : Key Type
- **D** : D-Cut Type

Gear Ratio
- **36** : 1/36

Input Gear Type
- **H** : Helical Gear

Worm Solid Gearbox

Gearbox Type
- **W** : Worm Solid Type Gearbox (15W~120W)

Gear Ratio
- **30** : 1/30

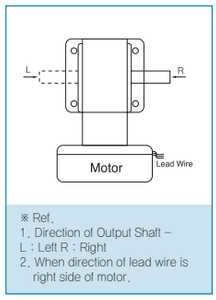
Direction of Output Shaft
- **L** : Left
- **R** : Right
- **RL** : Bi-directional

9	W	D	30	B	L

Gearbox Frame Size
- **8** : □ 80mm sq. (3.15 in.sq.)
- **9** : □ 90mm sq. (3.54 in.sq.)

Brand
- **D** : DKM

Bearing Type
- **B** : Ball Bearing



※ Ref.
1. Direction of Output Shaft – L : Left R : Right
2. When direction of lead wire is right side of motor.

Worm Hollow Gearbox

Gearbox Type
- **WH** : Worm Hollow Gearbox (60W~400W)

Gear Ratio
- **30** : 1/30

9	WH	D	30	—	030

Gearbox Frame Size
- **9** : □ 90mm sq. (3.54 in.sq.)
- **10** : □ 104mm sq. (4.09 in.sq.)

Brand
- **D** : DKM

Center Distance between Worm Wheel and Shaft
- **030** : 30mm
- **040** : 40mm

Helicross Gearbox

Gearbox Type
- **HC** : Helicross Gearbox (90W ~ 400W)

Output Shaft Material
- **B** : S45C
- **S** : SUS

9	HC	240	B

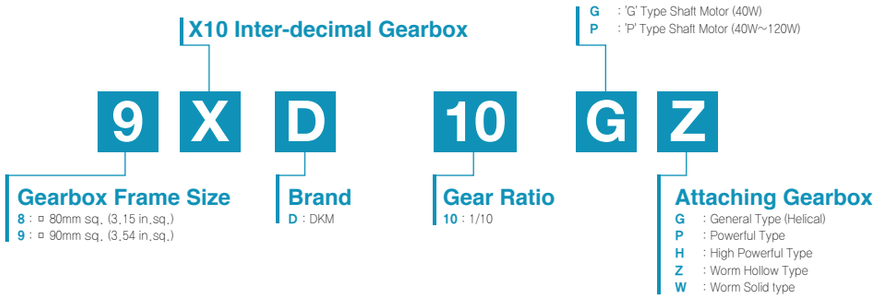
Gearbox Frame Size
- **9** : □ 90mm sq. (3.54 in.sq.)
- **10** : □ 104mm sq. (4.09 in.sq.)

Gear Ratio
- **240** : 1/240

A Information

Product Coding System

Inter-decimal Gearbox

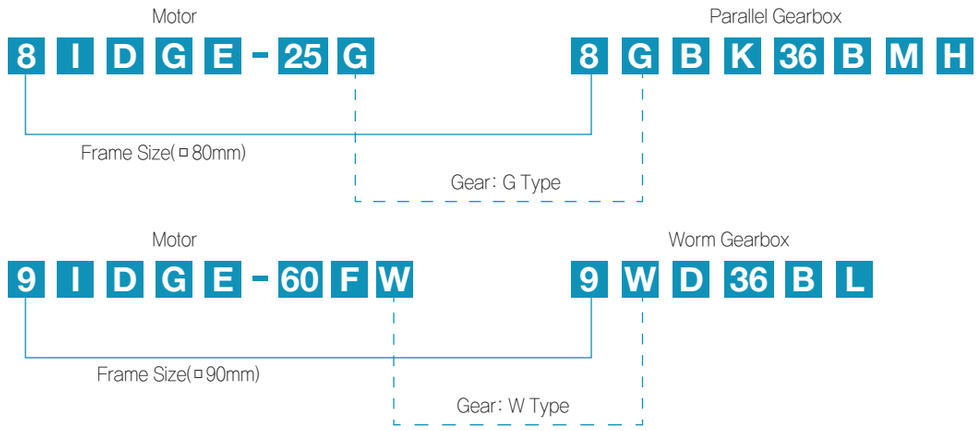


In case of requiring high gear reduction ratio that cannot be generated by single gearbox, please use inter-decimal gearbox with a general gearbox.
And please be advised that in this case only revolution speed of output shaft will be reduced by 10:1 without increasing of maximum permissible torque.

Assembly of Motor and Gearbox

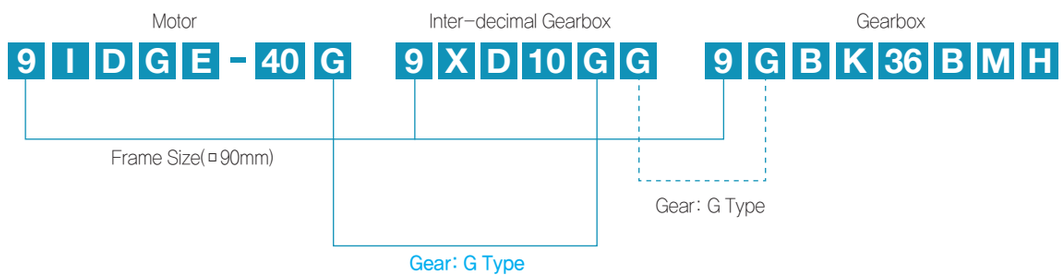
Motor + Gearbox

- As shown in the following scheme, the motor and the gearbox which have same frame size and gear type could be assembled.



Motor + Inter-decimal Gearbox + Gearbox

- When using an inter-decimal gearbox together, give attention to the gear types of a motor, a gearbox and an inter-decimal gearbox.



AC Motors

Frame Size	Voltage / Output	Induction Motor								Page
		1(A) 1Ø 110V 60Hz	2(D) 1Ø 220V 60Hz	E 1Ø 220~240V 50Hz	3(G) 3Ø 220V 50/60Hz	4(K) 3Ø 380V~400V 50/60Hz	5(L) 3Ø 415V~440V 50/60Hz	6 3Ø 220/380V 60Hz	7 3Ø 230/400V 50Hz	8 3Ø 440V 50/60Hz	
60mm	6W	6ID*1-6□(-T)	6ID*2-6□(-T)	6ID*E-6□(-T)	6ID*3-6□(-T)	-	-	-	-	-	B-09
70mm	6W	7ID*1-6□(-T)	7ID*2-6□(-T)	7ID*E-6□(-T)	-	-	-	-	-	-	B-11
	10W	7ID*1-10□(-T)	7ID*2-10□(-T)	7ID*E-10□(-T)	-	-	-	-	-	-	B-13
	15W	7ID*1-15□(-T)	7ID*2-15□(-T)	7ID*E-15□(-T)	7ID*3-15□(-T)	-	-	-	-	-	B-15
80mm	15W	8ID*1-15□(-T)	8ID*2-15□(-T)	8ID*E-15□(-T)	8ID*3-15□(-T)	8ID*4-15□(-T)	8ID*5-15□(-T)	-	-	-	B-17
	25W	8ID*1-25□(-T)	8ID*2-25□(-T)	8ID*E-25□(-T)	8ID*3-25□(-T)	8ID*4-25□(-T)	8ID*5-25□(-T)	-	-	-	B-20
	40W	8ID*1-40F□(-T)	8ID*2-40F□(-T)	8ID*E-40F□(-T)	-	-	-	-	-	-	B-23
90mm	40W	9ID*1-40□(-T)	9ID*2-40□(-T)	9ID*E-40□(-T)	9ID*3-40□(-T)	9ID*4-40□(-T)	9ID*5-40□(-T)	-	-	-	B-25
	60W	9ID*1-60F□(-T)	9ID*2-60F□(-T)	9ID*E-60F□(-T)	9ID*3-60F□(-T)	9ID*4-60F□(-T)	9ID*5-60F□(-T)	-	-	-	B-28
	90W	9ID*1-90F□(-T)	9ID*2-90F□(-T)	9ID*E-90F□(-T)	9ID*3-90F□(-T)	9ID*4-90F□(-T)	9ID*5-90F□(-T)	-	-	-	B-32
	120W	9ID*1-120F□(-T)	9ID*2-120F□(-T)	9ID*E-120F□(-T)	9ID*3-120F□(-T)	9ID*4-120F□(-T)	9ID*5-120F□(-T)	-	-	-	B-36
	150W	-	-	-	9ID*3-150F□(-T)	9ID*4-150F□(-T)	9ID*5-150F□(-T)	-	-	-	B-40
	180W	9ID*1-180F□(-T)	9ID*2-180F□(-T)	9ID*E-180F□(-T)	-	-	-	-	-	-	B-43
	200W	-		-	9ID*3-200F□(-T)	9ID*4-200F□(-T)	9ID*5-200F□(-T)	-	-	-	B-46
104mm	250W	-	-	10ID*E-250F□-T	-	-	-	-	-	-	B-49
	300W	-	10ID*D-300F□-T	-	-	-	-	-	10ID*7-300F□-T	10ID*8-300F□-T	B-52
	400W	-	-	-	-	-	-	10ID*6-400F□-T	-	-	B-55

Frame Size	Voltage / Output	2 Pole Motor						Page
		1(A) 1Ø 110V 60Hz	2(D) 1Ø 220V 60Hz	E 1Ø 220~240V 50Hz	3(G) 3Ø 220V 50/60Hz	4(K) 3Ø 380V~400V 50/60Hz	5(L) 3Ø 415V~440V 50/60Hz	
80mm	15W	8ID*1-15-A(-T)	8ID*2-15-A(-T)	8ID*E-15-A(-T)	8ID*3-15-A(-T)	-	-	B-59
	25W	8ID*1-25-A(-T)	8ID*2-25-A(-T)	8ID*E-25-A(-T)	8ID*3-25-A(-T)	-	-	B-61
90mm	40W	9ID*1-40-A(-T)	9ID*2-40-A(-T)	9ID*E-40-A(-T)	9ID*3-40-A(-T)	9ID*4-40-A(-T)	9ID*5-40-A(-T)	B-63
	60W	9ID*1-60F-A(-T)	9ID*2-60F-A(-T)	9ID*E-60F-A(-T)	9ID*3-60F-A(-T)	9ID*4-60F-A(-T)	9ID*5-60F-A(-T)	B-65
	90W	9ID*1-90F-A(-T)	9ID*2-90F-A(-T)	9ID*E-90F-A(-T)	9ID*3-90F-A(-T)	9ID*4-90F-A(-T)	9ID*5-90F-A(-T)	B-67
	120W	9ID*1-120F-A(-T)	9ID*2-120F-A(-T)	9ID*E-120F-A(-T)	9ID*3-120F-A(-T)	9ID*4-120F-A(-T)	9ID*5-120F-A(-T)	B-69
	150W	-	-	-	9ID*3-150F-A(-T)	9ID*4-150F-A(-T)	9ID*5-150F-A(-T)	B-71
	200W	-	-	-	9ID*3-200F-A(-T)	9ID*4-200F-A(-T)	9ID*5-200F-A(-T)	B-73

Frame Size	Voltage / Output	Reversible Motor						Page
		1(A) 1Ø 110V 60Hz	2(D) 1Ø 220V 60Hz	E 1Ø 220~240V 50Hz	3(G) 3Ø 220V 50/60Hz	4(K) 3Ø 380V~400V 50/60Hz	5(L) 3Ø 415V~440V 50/60Hz	
60mm	6W	6RD*1-6□(-T)	6RD*2-6□(-T)	6RD*E-6□(-T)	-	-	-	B-79
70mm	6W	7RD*1-6□(-T)	7RD*2-6□(-T)	7RD*E-6□(-T)	-	-	-	B-81
	10W	7RD*1-10□(-T)	7RD*2-10□(-T)	7RD*E-10□(-T)	-	-	-	B-83
	15W	7RD*1-15□(-T)	7RD*2-15□(-T)	7RD*E-15□(-T)	-	-	-	B-85
80mm	15W	8RD*1-15□(-T)	8RD*2-15□(-T)	8RD*E-15□(-T)	-	-	-	B-87
	25W	8RD*1-25□(-T)	8RD*2-25□(-T)	8RD*E-25□(-T)	-	-	-	B-90
90mm	40W	9RD*1-40□(-T)	9RD*2-40□(-T)	9RD*E-40□(-T)	-	-	-	B-93
	60W	9RD*1-60F□(-T)	9RD*2-60F□(-T)	9RD*E-60F□(-T)	-	-	-	B-96
	90W	9RD*1-90F□(-T)	9RD*2-90F□(-T)	9RD*E-90F□(-T)	-	-	-	B-100
	120W	9RD*1-120F□(-T)	9RD*2-120F□(-T)	9RD*E-120F□(-T)	-	-	-	B-104
	180W	9RD*1-180F□(-T)	9RD*2-180F□(-T)	9RD*E-180F□(-T)	-	-	-	B-108

1. Enter the output shaft type of motor (G: Gear Type/D: D-Cut Type/K: Key Type) in the place * within the motor model name.
2. Enter the model type of attaching gearbox (G Type/P Type/H Type/W Type/WH Type/HC Type) in the box (□) within the motor model name.
3. When using terminal box type motors, '-T' is added to the end of the motor model name.
4. The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
5. 60mm motors are Impedance Protected Type.

A Information

Products Lineup

AC Motors

Frame Size	Voltage / Output	Electromagnetic Brake Motor									Page
		1(A) 1Ø 110V 60Hz	2(D) 1Ø 220V 60Hz	E 1Ø 220~240V 50Hz	3(G) 3Ø 220V 50/60Hz	4(K) 3Ø 380V~400V 50/60Hz	5(L) 3Ø 415V~440V 50/60Hz	6 3Ø 220/380V 60Hz	7 3Ø 230/400V 50Hz	8 3Ø 440V 50/60Hz	
60mm	6W	6BD*1-6□	6BD*2-6□	6BD*E-6□	6BD*3-6□	–	–	–	–	–	B-115
70mm	6W	7BD*1-6□	7BD*2-6□	7BD*E-6□	–	–	–	–	–	–	B-117
	10W	7BD*1-10□	7BD*2-10□	7BD*E-10□	–	–	–	–	–	–	B-119
	15W	7BD*1-15□	7BD*2-15□	7BD*E-15□	7BD*3-15□	–	–	–	–	–	B-121
80mm	15W	8BD*1-15□	8BD*2-15□	8BD*E-15□	8BD*3-15□	8BD*4-15□	8BD*5-15□	–	–	–	B-123
	25W	8BD*1-25□	8BD*2-25□	8BD*E-25□	8BD*3-25□	8BD*4-25□	8BD*5-25□	–	–	–	B-126
90mm	40W	9BD*1-40□	9BD*2-40□	9BD*E-40□	9BD*3-40□	9BD*4-40□	9BD*5-40□	–	–	–	B-129
	60W	9BD*1-60F□	9BD*2-60F□	9BD*E-60F□	9BD*3-60F□	9BD*4-60F□	9BD*5-60F□	–	–	–	B-132
	90W	9BD*1-90F□	9BD*2-90F□	9BD*E-90F□	9BD*3-90F□	9BD*4-90F□	9BD*5-90F□	–	–	–	B-136
	120W	9BD*1-120F□	9BD*2-120F□	9BD*E-120F□	9BD*3-120F□	9BD*4-120F□	9BD*5-120F□	–	–	–	B-140
	150W	–	–	–	9BD*3-150F□	9BD*4-150F□	9BD*5-150F□	–	–	–	B-144
	180W	9BD*1-180F□	9BD*2-180F□	9BD*E-180F□	–	–	–	–	–	–	B-147
	200W	–	–	–	9BD*3-200F□	9BD*4-200F□	9BD*5-200F□	–	–	–	B-150
104mm	250W	–	–	10BD*E-250F□-T	–	–	–	–	–	–	B-153
	300W	–	10BD*D-300F□-T	–	–	–	–	–	10BD*7-300F□-T	10BD*8-300F□-T	B-156
	400W	–	–	–	–	–	–	10BD*6-400F□-T	–	–	B-159

Frame Size	Voltage / Output	Clutch & Brake Motor						Page
		1(A) 1Ø 110V 60Hz	2(D) 1Ø 220V 60Hz	E 1Ø 220~240V 50Hz	3(G) 3Ø 220V 50/60Hz	4(K) 3Ø 380V~400V 50/60Hz	5(L) 3Ø 415V~440V 50/60Hz	
80mm	15W	8CID*1-15□	8CID*2-15□	8CID*E-15□	8CID*3-15□	8CID*4-15□	8CID*5-15□	B-165
	25W	8CID*1-25□	8CID*2-25□	8CID*E-25□	8CID*3-25□	8CID*4-25□	8CID*5-25□	B-167
90mm	40W	9CID*1-40□	9CID*2-40□	9CID*E-40□	9CID*3-40□	9CID*4-40□	9CID*5-40□	B-169
	60W	9CID*1-60F2□	9CID*2-60F2□	9CID*E-60F2□	9CID*3-60F2□	9CID*4-60F2□	9CID*5-60F2□	B-171
	90W	9CID*1-90F2□	9CID*2-90F2□	9CID*E-90F2□	9CID*3-90F2□	9CID*4-90F2□	9CID*5-90F2□	B-173
	120W	9CID*1-120F2□	9CID*2-120F2□	9CID*E-120F2□	9CID*3-120F2□	9CID*4-120F2□	9CID*5-120F2□	B-175

Frame Size	Voltage / Output	Torque Motor						Page
		1(A) 1Ø 110V 60Hz	2(D) 1Ø 220V 60Hz	E 1Ø 220~240V 50Hz	3(G) 3Ø 220V 50/60Hz	4(K) 3Ø 380V~400V 50/60Hz	5(L) 3Ø 415V~440V 50/60Hz	
60mm	3W	6TD*1-3□	6TD*2-3□	6TD*E-3□	–	–	–	B-189
70mm	6W	7TD*1-6□	7TD*2-6□	7TD*E-6□	–	–	–	B-191
80mm	10W	8TD*1-10□	8TD*2-10□	8TD*E-10□	–	–	–	B-193
90mm	20W	9TD*1-20F2□	9TD*2-20F2□	9TD*E-20F2□	–	–	–	B-195
	30W	9TD*1-30F2□	9TD*2-30F2□	9TD*E-30F2□	–	–	–	B-197
	40W	9TD*1-40F2□	9TD*2-40F2□	9TD*E-40F2□	–	–	–	B-200
	60W	9TD*1-60F2□	9TD*2-60F2□	9TD*E-60F2□	–	–	–	B-203

1. Enter the output shaft type of motor (G: Gear Type/D: D-Cut Type/K: Key Type) in the place * within the motor model name.
2. Enter the model type of attaching gearbox (G Type/P Type/H Type/W Type/WH Type/HC Type) in the box (□) within the motor model name.
3. When using terminal box type motors, '-T' is added to the end of the motor model name.
4. The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
5. 60mm motors are Impedance Protected Type.

Frame Size	Voltage / Output	Speed Control Induction Motor						Page
		1(A) 1Ø 110V 60Hz	2(D) 1Ø 220V 60Hz	E 1Ø 220~240V 50Hz	3(G) 3Ø 220V 50/60Hz	4(K) 3Ø 380V~400V 50/60Hz	5(L) 3Ø 415V~440V 50/60Hz	
60mm	6W	6SD*1-6□	6SD*2-6□	6SD*E-6□	–	–	–	B-225
70mm	6W	7SD*1-6□	7SD*2-6□	7SD*E-6□	–	–	–	B-227
	10W	7SD*1-10□	7SD*2-10□	7SD*E-10□	–	–	–	B-229
	15W	7SD*1-15□	7SD*2-15□	7SD*E-15□	–	–	–	B-231
80mm	15W	8SD*1-15□	8SD*2-15□	8SD*E-15□	–	–	–	B-233
	25W	8SD*1-25□	8SD*2-25□	8SD*E-25□	–	–	–	B-236
90mm	40W	9SD*1-40□	9SD*2-40□	9SD*E-40□	–	–	–	B-239
	60W	9SD*1-60F2□	9SD*2-60F2□	9SD*E-60F2□	–	–	–	B-242
	90W	9SD*1-90F2□	9SD*2-90F2□	9SD*E-90F2□	–	–	–	B-246
	120W	9SD*1-120F2□	9SD*2-120F2□	9SD*E-120F2□	–	–	–	B-250
	180W	9SD*1-180F2□	9SD*2-180F2□	9SD*E-180F2□	–	–	–	B-254

Frame Size	Voltage / Output	Speed Control Reversible Motor						Page
		1(A) 1Ø 110V 60Hz	2(D) 1Ø 220V 60Hz	E 1Ø 220~240V 50Hz	3(G) 3Ø 220V 50/60Hz	4(K) 3Ø 380V~400V 50/60Hz	5(L) 3Ø 415V~440V 50/60Hz	
60mm	6W	6RD*1-6□	6RD*2-6□	6RD*E-6□	–	–	–	B-259
70mm	6W	7SRD*1-6□	7SRD*2-6□	7SRD*E-6□	–	–	–	B-261
	10W	7SRD*1-10□	7SRD*2-10□	7SRD*E-10□	–	–	–	B-263
	15W	7SRD*1-15□	7SRD*2-15□	7SRD*E-15□	–	–	–	B-265
80mm	15W	8SRD*1-15□	8SRD*2-15□	8SRD*E-15□	–	–	–	B-267
	25W	8SRD*1-25□	8SRD*2-25□	8SRD*E-25□	–	–	–	B-270
90mm	40W	9SRD*1-40□	9SRD*2-40□	9SRD*E-40□	–	–	–	B-273
	60W	9SRD*1-60F2□	9SRD*2-60F2□	9SRD*E-60F2□	–	–	–	B-276
	90W	9SRD*1-90F2□	9SRD*2-90F2□	9SRD*E-90F2□	–	–	–	B-280
	120W	9SRD*1-120F2□	9SRD*2-120F2□	9SRD*E-120F2□	–	–	–	B-284

Frame Size	Voltage / Output	Speed Control Brake Motor						Page
		1(A) 1Ø 110V 60Hz	2(D) 1Ø 220V 60Hz	E 1Ø 220~240V 50Hz	3(G) 3Ø 220V 50/60Hz	4(K) 3Ø 380V~400V 60/70Hz	5(L) 3Ø 415V~440V 50/60Hz	
60mm	6W	6SBD*1-6□	6SBD*2-6□	6SBD*E-6□	–	–	–	B-289
70mm	6W	7SBD*1-6□	7SBD*2-6□	7SBD*E-6□	–	–	–	B-291
	10W	7SBD*1-10□	7SBD*2-10□	7SBD*E-10□	–	–	–	B-293
	15W	7SBD*1-15□	7SBD*2-15□	7SBD*E-15□	–	–	–	B-295
80mm	15W	8SBD*1-15□	8SBD*2-15□	8SBD*E-15□	–	–	–	B-297
	25W	8SBD*1-25□	8SBD*2-25□	8SBD*E-25□	–	–	–	B-300
90mm	40W	9SBD*1-40□	9SBD*2-40□	9SBD*E-40□	–	–	–	B-303
	60W	9SBD*1-60F2□	9SBD*2-60F2□	9SBD*E-60F2□	–	–	–	B-306
	90W	9SBD*1-90F2□	9SBD*2-90F2□	9SBD*E-90F2□	–	–	–	B-310
	120W	9SBD*1-120F2□	9SBD*2-120F2□	9SBD*E-120F2□	–	–	–	B-314
	180W	9SBD*1-180F2□	9SBD*2-180F2□	9SBD*E-180F2□	–	–	–	B-318

1. Enter the output shaft type of motor (G: Gear Type/D: D-Cut Type/K: Key Type) in the place * within the motor model name.
2. Enter the model type of attaching gearbox (G Type/P Type/H Type/W Type/WH Type/HC Type) in the box (□) within the motor model name.
3. When using terminal box type motors, '-T' is added to the end of the motor model name.
4. The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
5. 60mm motors are Impedance Protected Type.

A Information

Products Lineup

AC Motors

Frame Size	Voltage / Output	Speed Control Clutch & Brake Motor						Page
		A 1Ø 110V 60Hz	D 1Ø 220V 60Hz	E 1Ø 220~240V 50Hz	G 3Ø 220V 50/60Hz	K 3Ø 380V~400V 50/60Hz	L 3Ø 415V~440V 50/60Hz	
80mm	15W	8CSD*1-15□	8CSD*2-15□	8CSD*E-15□	–	–	–	B-323
	25W	8CSD*1-25□	8CSD*2-25□	8CSD*E-25□	–	–	–	B-325
90mm	40W	9CSD*1-40□	9CSD*2-40□	9CSD*E-40□	–	–	–	B-327
	60W	9CSD*1-60F2□	9CSD*2-60F2□	9CSD*E-60F2□	–	–	–	B-329
	90W	9CSD*1-90F2□	9CSD*2-90F2□	9CSD*E-90F2□	–	–	–	B-331
	120W	9CSD*1-120F2□	9CSD*2-120F2□	9CSD*E-120F2□	–	–	–	B-333

1. Enter the output shaft type of motor (G: Gear Type/D: D-Cut Type/K: Key Type) in the place * within the motor model name.
2. Enter the model type of attaching gearbox (G Type/P Type/H Type/W Type/WH Type/HC Type) in the box (□) within the motor model name.
3. When using terminal box type motors, '-T' is added to the end of the motor model name.
4. The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
5. 60mm motors are Impedance Protected Type.

DSY Classified Table

Induction Motor	3Φ 220V 50/60Hz	3Φ 380V~440V 50/60Hz	3Φ 440V 50/60Hz	Page
100W	○	○	○	B-341
200W	○	○	○	B-343
400W	○	○	○	B-345

Brake Motor	3Φ 220V 50/60Hz	3Φ 380V~440V 50/60Hz	3Φ 440V 50/60Hz	Page
100W	○	○	○	B-341
200W	○	○	○	B-343
400W	○	○	○	B-345

DC Motors

Frame Size	Voltage / Output	DC Motors			Page
		DC 12V	DC 24V	DC 90V	
60mm	15W	6DC*12-15-30	6DC*24-15-30	6DC*90-15-30	C-05
80mm	25W	8DC*12-25-30	8DC*24-25-30	8DC*90-25-30	C-07
	40W	8DC*12-40-30	8DC*24-40-30	8DC*90-40-30	C-09
90mm	60W	9DC*12-60-30	9DC*24-60-30	9DC*90-60-30	C-11
	90W	9DC*12-90-30	9DC*24-90-30	9DC*90-90-30	C-13
	120W	9DC*12-120-30	9DC*24-120-30	9DC*90-120-30	C-15
	200W	9DC*12-200-30	9DC*24-200-30	9DC*90-200-30	C-17

1. Enter the output shaft type of motor in the place * within the motor model name.
(D: D-Cut Type/K: Key Type/G: Shaft for G Type Gearbox/P: Shaft for P Type Gearbox/W: Shaft for W Type Gearbox)

Gearbox

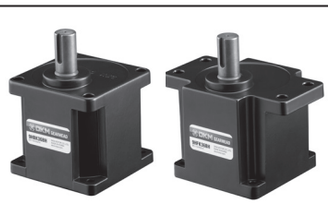
Type		Frame Size	Gearbox Model	Gear Reduction Ratio	Page
Parallel Gearbox	G Type	60mm	6GBD□MH	3/3.6/5/6/7.5/9/10/12.5/15/18/20/25/30/36/40/50/60/75/90/100/120/150/180/200/250	D-07
		70mm	7GBK□BMH	3/3.6/6/7.5/9/12.5/15/18/20/25/30/36/40/50/60/75/90/100/120/150/180/200	D-07
		80mm	8GBK□BMH	3/3.6/5/6/7.5/9/12.5/15/18/20/25/30/36/40/50/60/75/90/100/120/150/180/200/250/300/360	D-08
		90mm	9GBK□BMH	2/3/3.6/5/6/7.5/9/10/12.5/15/18/20/25/30/36/40/50/60/75/90/100/120/150/180/200	D-09
	P Type	90mm	9PBK□BH/ 9PFK□BH	2/3/3.6/5/6/7.5/9/10/12.5/15/18/20/25/30/36/40/50/60/75/90/100/120/150/180/200	D-10
	H Type	90mm	9HBK□BH/ 9HFK□BH	3/3.6/6/9/10/12.5/15/18/20/25/30/36/40/50/60/75/90/100/120/150/180/200	D-11
	U Type	104mm	10UBK□BH	3/5/9/10/15/20/25/30/40/50/60/90/100/120/150/180	D-12
Right Angle Gearbox	W Type	80mm	8WD□BL/ □BR/ □BRL	10/12/15/18/25/30/36/50/60	D-13
		90mm	9WD□BL/ □BR/ □BRL	10/12/15/18/25/30/36/50/60	D-13
	WH Type	90mm	9WHD□-030	5/7.5/10/15/20/25/30/40/50/60/80	D-14
		90mm	9WHD□-040	50/60/80/100	D-15
		104mm	10WHD□-040	5/7.5/10/15/20/25/30/40	D-15
	HC Type	90mm	9HC□□	15/20/25/30/40/50/60/80/100/120/160/200/225/240	D-16
		104mm	10HC□□	15/20/25/30/40/50/60/80/100/120/160/200/225/240	D-16
Inter-decimal Gearbox	XD Type	80mm	8XD10□□	10	D-18
		90mm	9XD10□□	10	D-18

1. Enter the gear ratio in the box (□) within the gearbox model name.

A Information

I General Information

A guide to combinations of gearboxes and motors

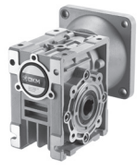
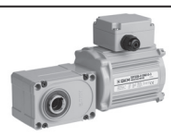
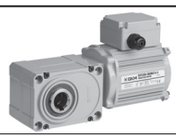
Type		Model (□ : Ratio)	Product Picture	Gear Ratio(n :1)
Parallel Gearbox	G type (General type)	6GBD□ MH(BH)		3 / 3.6 / 5 / 6 / 7.5 / 9 / 10 / 12.5 / 15 / 18
				20 / 25 / 30 / 36 / 40
				50 / 60 / 75 / 90 / 100 / 120 / 150 / 180 / 200 / 250
		7GBK□ BMH(BH)		3 / 3.6 / 5 / 6 / 7.5 / 9 / 10 / 12.5 / 15 / 18
				20 / 25 / 30 / 36 / 40
				50 / 60 / 75 / 90 / 100 / 120 / 150 / 180 / 200
		8GBK□ BMH(BH)		3 / 3.6 / 5 / 6 / 7.5 / 9 / 10 / 12.5 / 15 / 18
				20 / 25 / 30
				36 / 40
				50 / 60 / 75 / 90 / 100 / 120 / 150 / 180
				200 / 250 / 300 / 360
		9GBK□ BMH(BH)		2 / 3 / 3.6 / 5 / 6 / 7.5 / 9 / 10 / 12.5 / 15 / 18
				20 / 25 / 30
				36 / 40
				50 / 60 / 75 / 90 / 100 / 120 / 150 / 180 / 200
	PB type (Powerful Box type) & PF type (Powerful Flange type)	9PBK□BH 9PFK□BH		2 / 3 / 3.6 / 5 / 6 / 7.5 / 9 / 10
				12.5 / 15 / 18 / 20
				25 / 30 / 36 / 40 / 50 / 60
				75 / 90 / 100 / 120 / 150 / 180 / 200
	HB type (High Powerful Box type) & HF type (High Powerful Flange type)	9HBK□BH 9HFK□BH		3 / 3.6 / 5 / 6 / 7.5 / 9 / 10
				12.5 / 15 / 18 / 20
				25 / 30 / 36 / 40 / 50 / 60
				75 / 90 / 100 / 120 / 150 / 180 / 200
	UB type (High Powerful Box type)	10UBK□BH		3 / 5 / 9
				10 / 15
				20 / 25 / 30 / 40 / 50 / 60
				90 / 100 / 120 / 150 / 180

	Max. torque and Shaft Diameter	Load	Attachable Inter-decimal Gearbox	Applicable Motor	Output	Separability of Products
	Max. 30kgfcm Permissible Torque (Ø8 shaft)	For uniform loads Service Factor 1.0	–	Induction / Reversible / Brake / Torque / Speed Control Motor	3~6W	Separable
	Max. 50kgfcm Permissible Torque (Ø10 shaft)	For uniform loads Service Factor 1.0	–	Induction / Reversible / Brake / Torque / Speed Control Motor	6~15W	
	Max. 80kgfcm Permissible Torque (Ø10 shaft)	For uniform loads Service Factor 1.0	8XD10GG	Induction / Reversible / Brake / Torque / Speed Control / Clutch Brake Motor	15~40W	
	Max. 100kgfcm Permissible Torque (Ø12 shaft)	For uniform loads Service Factor 1.0	9XD10GG	Induction / Reversible / Brake / Torque / Speed Control / Clutch Brake Motor	40W	
	Max. 200kgfcm Permissible Torque (Ø15 shaft)	For uniform loads Service Factor 1.0	9XD10□P	Induction / Reversible / Brake / Torque / Speed Control / Clutch Brake Motor	40~120W	
	Max. 300kgfcm Permissible Torque (Ø18 shaft)	For uniform loads Service Factor 1.0	9XD10□H	Induction / Reversible / Brake / Torque / Speed Control / Clutch Brake Motor	60~200W	
	Max. 400kgfcm Permissible Torque (Ø22 shaft)	For uniform loads Service Factor 1.0	–	Induction / Brake Motor	250~400W	

A Information

I General Information

A guide to combinations of gearboxes and motors

Type		Model (□ : Gear ratio)	Product Picture	Gear Ratio (n :1)
Right Angle Gearbox	Worm Solid Gearbox	8/9 WD□ BL/ BR/ BRL		10 / 12 / 15 / 18 / 25 / 30 / 36 / 50 / 60
	Worm Hollow Gearbox	9WHD□-030		5 / 7.5 / 10 / 15 / 20 / 25 / 30 / 40 / 50 / 60 / 80
		9WHD□-040		50 / 60 / 80 / 100
		10WHD□-040		5 / 7.5 / 10 / 15 / 20 / 25 / 30 / 40
	Helicross Gearbox	9HC□-□		15 / 20 / 25 / 30
				40 / 50 / 60
				80 / 100 / 120
				160 / 200 / 225 / 240
		10HC□-□		15 / 20 / 25 / 30
				40 / 50 / 60
				80 / 100 / 120
				160 / 200 / 225 / 240
	DSY Series (Induction Motor)	DSY□□-□ N010-□		7.5 / 10 / 12.5 / 15 / 20 / 25 / 30
				40 / 50
				60
		DSY□□-□ N020-□		7.5 / 10 / 12.5 / 15 / 20 / 25 / 30
				40 / 50
				60
		DSY□□-□ N040-□		7.5 / 10 / 12.5 / 15 / 20 / 25 / 30
				40 / 50
				60
	DSY Series (Brake Motor)	DSY□□-□ B010-□		7.5 / 10 / 12.5 / 15 / 20 / 25 / 30
				40 / 50
				60
		DSY□□-□ B020-□		7.5 / 10 / 12.5 / 15 / 20 / 25 / 30
				40 / 50
				60
		DSY□□-□ B040-□		7.5 / 10 / 12.5 / 15 / 20 / 25 / 30
				40 / 50
				60

	Max torque and Shaft Diameter	Load	Attachable Inter-decimal Gearbox	Applicable Motor	Output	Separability of Products
	Max. 150kgfcm Ø10, Ø15	For uniform loads Service Factor 1.0	8XD10GW 9XD10GW	Induction / Reversible / Brake / Speed Control Motor	15~40W 40~120W	Separable
	Max. 210kgfcm Ø14		9XD10□Z		60~200W	
	Max. 395kgfcm Ø18		9XD10□Z		150~200W	
			–		250~400W	
	Max. 1800kgfcm Permissible Torque (90W~200W Ø25 Shaft)	For medium impact load Service Factor 1.4	–	Induction / Brake / Speed Control Motor	90~200W	
	Max. 3000kgfcm Permissible Torque (250W~400W Ø30 Shaft)	For medium impact load Service Factor 1.4	–	Induction / Brake Motor	250~400W	
	Max. 330kgfcm Permissible Torque (DSY Series 100W Ø20, Ø25 Shaft)	For uniform loads Service Factor 1.0	–	Induction / Brake Motor	100W	Non-separable
	Max. 650kgfcm Permissible Torque (DSY Series 200W Ø20, Ø25 Shaft)	For uniform loads Service Factor 1.0	–		200W	
	Max. 1300kgfcm Permissible Torque (DSY Series 400W Ø25, Ø30 Shaft)	For uniform loads Service Factor 1.0	–		400W	
	Max. 330kgfcm Permissible Torque (DSY Series 100W Ø20, Ø25 Shaft)	For uniform loads Service Factor 1.0	–		100W	
	Max. 650kgfcm Permissible Torque (DSY Series 200W Ø20, Ø25 Shaft)	For uniform loads Service Factor 1.0	–		200W	
	Max. 1300kgfcm Permissible Torque (DSY Series 400W Ø25, Ø30 Shaft)	For uniform loads Service Factor 1.0	–		400W	

A Information

General Information

How to Read Motor Specifications

Model (9IDG*-40□(-T): Gear Type Shaft, 9IDD*-40(-T): D-Cut Type Shaft, 9IDK*-40(-T): Key Type Shaft)		Output ① W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm ②	N.m	Rated Load ③ Speed r/min	④ Current A	⑤ Torque kgfcm	N.m	Capacitor μF / VAC
Lead Wire Type	Terminal Box Type												
9IDG1(A)-40□	9IDG1(A)-40□-T	40	1ø110	60	4	Cont.	2.60	0.260	1600	0.80	2.44	0.244	10.0 / 250
9IDG2(D)-40□	9IDG2(D)-40□-T	40	1ø220	60	4	Cont.	2.60	0.260	1600	0.45	2.44	0.244	2.5 / 450
9IDGE-40□	9IDGE-40□-T	40	1ø220	50	4	Cont.	2.10	0.210	1300	0.33	3.00	0.300	2.0 / 450
			1ø240				2.60	0.260		0.36	3.00	0.300	
9IDG3(G)-40□	9IDG3(G)-40□-T	40	3ø220	50	4	Cont.	9.90	0.990	1350	0.33	2.89	0.289	–
				60			7.90	0.790	1600	0.31	2.44	0.244	
			3ø230	50	4	Cont.	10.80	1.080	1350	0.35	2.89	0.289	
				60			8.50	0.850	1600	0.33	2.44	0.244	
9IDG4(K)-40□	9IDG4(K)-40□-T	40	3ø380	50	4	Cont.	10.20	1.020	1350	0.19	2.89	0.289	–
				60			8.00	0.800	1600	0.18	2.44	0.244	
			3ø400	50	4	Cont.	11.10	1.110	1350	0.20	2.89	0.289	
				60			8.80	0.880	1600	0.19	2.44	0.244	
9IDG5(L)-40□	9IDG5(L)-40□-T	40	3ø415	50	4	Cont.	10.00	1.000	1350	0.17	2.89	0.289	–
				60			8.00	0.800	1600	0.16	2.44	0.244	
			3ø 440	50	4	Cont.	11.10	1.110	1350	0.18	2.89	0.289	
				60			8.90	0.890	1600	0.17	2.44	0.244	

① Output: The amount of work that can be performed in a given period of time. It can be used as a criterion for motor capability.
② Starting Torque: This term refers to the torque generated the instant the motor starts. If the motor is subjected to a friction load smaller than this torque, it will operate.
③ Speed: This is the speed of the motor when the motor is producing rated torque.
④ Current: Rated current is the current flowing in an electrical device when it is supplied with the rated voltage and delivers its rated power.
⑤ Torque: This is the torque created when the motor is operating most efficiently. Though the maximum torque is far greater, rated torque should, from the standpoint of utility, be the highest torque.

How to Read Gearbox Specifications

60Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	12.5	15	18	20
		② r/min	900	600	500	360	300	240	200	144	120	100	90
9IDG□-60FP	9PBK□BH 9PFK□BH	❶ kgfcm	7.0	10.5	12.5	17.4	20.9	26.1	31.4	39.4	47.3	56.7	57.1
		N.m	0.68	1.02	1.23	1.71	2.05	2.56	3.07	3.86	4.63	5.56	5.60
9IDG□-60FH	9HBK□BH 9HFK□BH	kgfcm	–	10.5	12.5	–	20.9	–	31.4	39.4	47.3	56.7	57.1
		N.m		1.02	1.23		2.05		3.07	3.86	4.63	5.56	5.60

Motor Model	Gearbox Model	Gear Ratio	25	30	36	40	50	60	75	90	100	120	150	180
		r/min	72	60	50	45	36	30	24	20	18	15	12	10
9IDG□-60FP	9PBK□BH 9PFK□BH	kgfcm	71.4	85.7	102.8	114.2	142.8	171.4	192.2	200.0	200.0	200.0	200.0	200.0
		N.m	7.00	8.40	10.08	11.20	13.99	16.79	18.83	19.60	19.60	19.60	19.60	19.60
9IDG□-60FH	9HBK□BH 9HFK□BH	kgfcm	❸ 71.4	85.7	102.8	–	142.8	171.4	192.2	230.6	256.2	300.0	300.0	300.0
		N.m	7.00	8.40	10.08		13.99	16.79	18.83	22.60	25.11	29.40	29.40	29.40

① Permissible Torque: It refers to the value of load torque driven by the gearbox's output shaft. Each value is shown for the corresponding gear ratio.
② r/min: This refers to the speed of rotation at the gearbox output shaft. Speed(r/min), depending on gear ratio, is shown in the permissible torque table when the gearbox is attached. The speed is calculated by dividing the motor's synchronous speed (50Hz :1,500r/ min, 60Hz: 1,800r/min) by the gear ratio. The actual speed, according to the load condition, is 2~20% less than the displayed value.
③ Direction of Rotation: This refers to the direction of rotation viewed from the output shaft. The colored background areas indicate rotation in the same direction as the motor shaft, while the others rotate in the opposite direction. The direction of gearbox shaft rotation may differ from motor shaft rotation depending on the gear ratio of the gearbox.

Permissible Load Inertia

'J' and 'GD²' are used to describe the moment of inertia. J is generally called inertia and has the same value of physical moment of inertia in SI units. Unit is in kg · m². GD² is called 'flywheel effect' and generally used in industrial application with gravitational systems of units. Unit is in kgf · m² or kgf · cm². A relation between J and GD² is described as:
J = GD²/ 4

Calculation of Permissible Load Inertia

When the load inertia J connected to the gearbox is large, frequent start of the motor or electromagnetic brake generates a large torque. If this impact is excessive, it may damage the gearbox and the motor. Inertia varies with types of the load and the inertia of the load significantly affects life expectancy of gear and electromagnetic brake. When applying the braking force by using the electromagnetic brake, do not exceed a permissible load inertia for specific models.

- Permissible Load Inertia at Motor Shaft

$$J_M = J_G \times \frac{1}{i^2}$$

J_G : Permissible load inertia at the gearbox output shaft (kg · cm²)
J_M : Permissible load inertia at the motor output shaft (kg · cm²)
i : Gear reduction ratio (e.g. 5 if the ratio is 1/5)

- Permissible Load Inertia Moment at the Gearbox Output Shaft

$J_G = J_M \times i^2$ (when reduction ratio is 1/3 to 1/50)
$J_G = J_M \times 2500$ (when reduction ratio is 1/60 or larger)

J_G : Permissible load inertia moment at the gearbox output shaft (kg · cm²)
J_M : Permissible load inertia at the motor shaft (kg · cm²)
i : Gear reduction ratio (e.g. 5 if the ratio is 1/5)

Motor and Load Inertia

The equation of motion is described as below when the inertia loads is driven by the motor.

$$T = J\alpha = J \cdot \frac{d\omega}{dt} = \frac{GD^2}{4} \cdot \frac{d\omega}{dt} = \frac{2\pi}{60} \cdot \frac{GD^2}{4} \cdot \frac{dn}{dt}$$

T : Torque (N · m)
J : Moment of inertia (kg · m²)
ω : Angular speed (rad/s)
t : Time (s)
n : Rotational speed (r/s)
GD^2 : Flywheel Effect ($GD^2 = 4J$)
g : Gravitational acceleration (9.8m/s²)
α : Angular acceleration (rad/s²)

– In the case of an induction motor, the torque generated at the start varies depending on the speed. Therefore, an average acceleration torque is generally used, which is the average torque from the starting to the constant speed.
– A necessary average acceleration torque TA to accelerate the load inertia of J(kg · cm²)/ GD²(kgf · cm²) up to a speed n(min^–1) in time t(s) can be obtained by the following formula.

- SI Units

$$T_A = \frac{J}{9.55 \times 10^4} \times \frac{N}{t} \quad (N \cdot m)$$

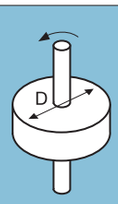
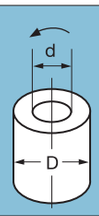
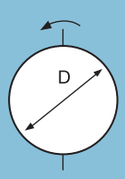
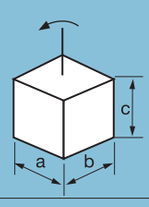
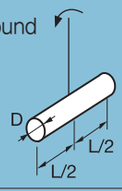
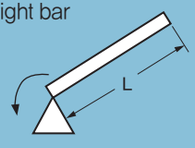
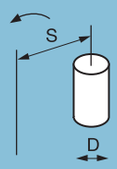
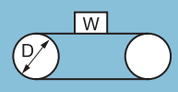
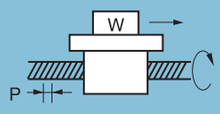
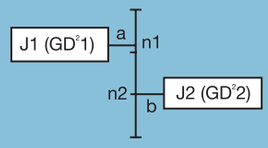
- Gravitational System of Units

$$T_A = \frac{GD^2}{3750000} \times \frac{N}{t} \quad (kgf \cdot cm)$$

A Information

General Information

Calculation of Flywheel Effect (GD^2)

Disk 	$GD^2 = \frac{1}{2} WD^2$ (kgf·cm²) W: Weight [kgf] D: Outer diameter [cm]	Hollow Circular Cylinder 	$GD^2 = \frac{1}{2} W(D^2 + d^2)$ (kgf·cm²) W: Weight [kgf] D: Outer diameter [cm] d : Inner diameter[cm]
Sphere 	$GD^2 = \frac{2}{5} WD^2$ (kgf·cm²) W : Weight [kgf] D : Diameter [cm]	Cube 	$GD^2 = \frac{1}{3} W(a^2 + b^2)$ (kgf·cm²) W: Weight [kgf] a,b : Length of side [cm]
Slender Round Bar 	$GD^2 = \frac{3D^2 + 4L^2}{12}$ (kgf·cm²) W : Weight [kgf] D : Diameter [cm] L : Length [cm]	Straight bar 	$GD^2 = \frac{4}{3} WL^2$ (kgf·cm²) W: Weight [kgf] L: Length [cm]
Discrete Shaft 	$GD^2 = \frac{1}{2} WD^2 + 4WS^2$ (kgf·cm²) W : Weight [kgf] D : Outer diameter [cm] S : Turning radius [cm]	Horizontal Linear Motion 	$GD^2 = WD^2$ (kgf·cm²) W : Weight on the conveyor [kgf] D : Drum diameter [cm] * GD^2 of drum is not included
Ball Screw 	$GD^2 = GD^2_A + \frac{W \cdot P^2}{\pi^2}$ (kgf·cm²) W: Weight [kgf] P: Lead of feed screw [cm] GD^2A: GD^2 of feed screw [kgf · cm²]	Reducer 	Equivalent all GD^2on axis 'a' $GD^2 = GD^2_1 + (\frac{n2}{n1})^2 GD^2_2$ (kgf·cm²) n1: Speed of axis 'a' [min^−1] n2: Speed of axis 'b' [min^−1] $GD^2$1: GD^2 of axis 'a' [kgf · cm²] $GD^2$2: GD^2 of axis 'b' [kgf · cm²]

Permissible Load Inertia at Motor Shaft

Frame Size	Output	Permissible Load Inertia GD^2 (kgfcm²)
□ 60mm	6W	0.25
□ 70mm	15W	0.56
□ 80mm	15W, 25W	1.24
□ 90mm	40W	3.00
	60W	4.40
	90W, 120W, 150W	4.40
	180W, 200W	6.00
□ 104mm	250W, 300W	8.40
	400W	11.00

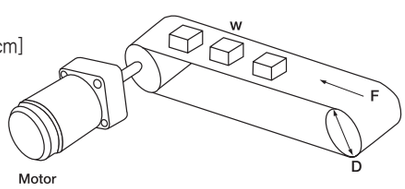
Calculation Method of Motor Capacity

To calculate the load torque, refer to the figures below for reference. According to this, the proper size of a motor for your equipment is determined. Be advised that basic calculation methods refer to below. For sizing a motor, consider the acceleration time at the start, needed power, safety index in design, and the influence of voltage fluctuation.

Belt Conveyor Application

$$T = \frac{1}{2} D(F+\mu W) \ [kgf \cdot cm]$$

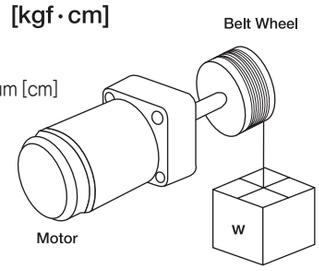
D : Diameter of drum [cm]
W : Weight [kgf]
μ : Friction coefficient
F : External force [kgf]



Hoisting Application

$$T = \frac{1}{2} D \cdot W \ [kgf \cdot cm]$$

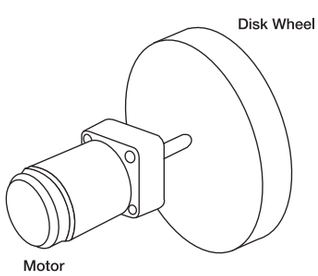
D : Diameter of drum [cm]
W : Weight [kgf]



Flywheel Application

$$T = \frac{GD^2}{37500} \times \frac{N}{t} \ [kgf \cdot cm]$$

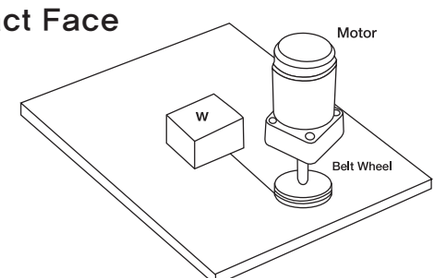
N : Revolutions per minute [r/min]
GD^2 : Flywheel effect [kgf • cm^2]
t : Time [sec]



Horizontal Travel on Contact Face

$$T = \frac{1}{2} D \cdot \mu W \ [kgf \cdot cm]$$

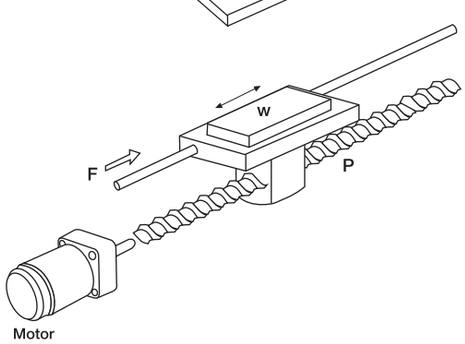
W : Weight [kgf]
μ : Friction coefficient
D : Diameter of wheel



Ball Screw Drive

$$T = \frac{1}{2\pi} P \cdot (F+\mu W) \ [kgf \cdot cm]$$

F : External force [kgf]
W : Weight[kgf]
μ : Friction coefficient of sliding surfaces [approx. 0.05 to 0.2)]
P : LEAD of Ball Screw [cm]



A Information

Terminology

Motor

Alternating Current (AC)

– Alternating current (AC) is an electric current which periodically reverses the direction and changes its magnitude at regular intervals or cycles. The alternating current follows a sine waveform where the voltage increases steadily from zero, rising to the maximum positive peak voltage. It then reverses and drops down through zero into negative direction until it reaches the negative peak value, which is equal to the positive in magnitude and only different in polarity.

Direct Current (DC)

– DC is the current coming from the power supply that positive (+) pole and negative (–) pole is constant all the times, and the direction is invariable and the size is also constant.
– DC generation device includes various rectifiers such as battery, storage battery, and DC generator.

Frequency (F)

– Frequency is the times of vibration that AC repeats for 1 second.
– The unit is Hertz (Hz).
– In Korea, 60Hz frequency is employed as a standard which means that the direction of current changes from (+) to (–) 60 times for a minute.

Rating

– This means what is designed to be suitable for the requirements specified in the motor and when satisfied with the use conditions, the use limit is called 'rating'.
– This designates voltage, current, r/min, frequency which determine the use limit for output. We call it rated output, rated voltage, rated current, rated r/min, and rated frequency.
– Rating includes continuous rating, short–time rating and intermittent periodic rating.

- **Continuous Rating**

– When using the motor continuously under the designated condition, if it is available to use it continuously without exceeding the prescribed temperature rising and general condition, it is called 'continuous rating'. (e.g. Induction Motor)

- **Short–time Rating**

– When operating the motor during the prescribed time under the designated condition, if it is available to use without exceeding the prescribed temperature rising and general condition, it is called 'short–time rating'. (e.g. Reversible Motor)

- **Intermittent Periodic Rating**

– When repeating run and stop periodically with constant load under the prescribed condition, if it is available not to exceed general condition such as the prescribed temperature rising etc., it is called 'intermittent periodic rating'.

Output

– Output is the thing which can be done by a motor during the unit time and it is determined by r/min x torque. The value of rated output is indicated as follows:

$$\text{Output [W]} = 1.027 \times T \times N$$

T: Torque [kgf · m]

N: Number of rotation [r/min]

– **Rated output:** It indicates the output which is generated continuously under the condition of designated voltage and frequency. This designated voltage and frequency is called the rated voltage and rated frequency. At this time, the rated output is called generally the output of the motor.

Torque and r/min

– Torque is the rotational force that can cause an object to rotate about an axis. The unit is [gf · cm] or [kgf · cm] and SI unit is N.m.
– The torque of 1kgf · cm is the rotational force when 1kg of force is applied to the right angle from the point of outer circle which radius of the body of revolution is 1cm.

● Starting Torque (① in figure 1)

– Staring torque is the minimum torque required to get it moving from a standstill and is called 'locked rotor torque' or 'starting torque'.
– If the torque is not greater than the starting torque, then the motor will not be able to get the system moving.

● Stalling Torque (② in figure 1)

– The maximum torque of the motor.
– The load more than maximum torque during operation causes the motor to rotate slower or makes it stop rotating.

● Rated Torque (③ in figure 1)

– It is the torque when the motor rotates at the rated r/min.
– The torque when the rated output is generated continuously by applying the rated voltage to the motor.

● Synchronous Speed (④ in figure 1)

– It is r/min which is determined by the power frequency and the number of poles of a motor.

NS=120f/P [r/min]

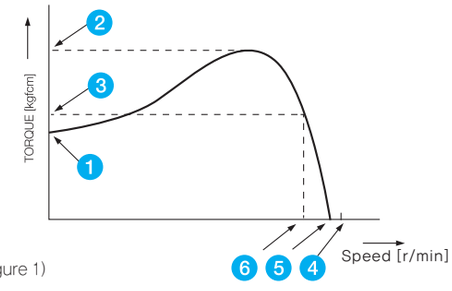
NS : Synchronous r/min [r/min]
P : The number of poles
f : Power frequency [Hz]
120 : Constant number
r/min : Revolution per minute

● No Load Speed (⑤ in figure 1)

– It is r/min when the motor runs without applying any load to motor output shaft.
In this case, the motor runs about 20~80[r/min] lower than synchronous r/min in Induction Motor and Reversible Motor.

● Rated Speed (⑥ in figure 1)

– It is r/min when rated r/min is generated by applying the rated load to the motor, and the most ideal r/min in use.



(Figure 1)

SPEED – TORQUE Characteristics

1. Starting Torque
2. Stalling Torque
3. Rated Torque
4. Synchronous Speed
5. No Load Speed
6. Rated Speed

Slippage

– Slippage can be described in the following formula as one of the rotational speed.

$$S = \frac{NS - N}{NS} \quad \text{or} \quad N = NS \times (1 - S)$$

NS : Synchronous r/min [r/min]
N : r/min at Temporary load [r/min]
S : SLIP

For example, if induction motor with 4 pole and 60Hz operates at SLIP S=0.1,

$$N = \frac{120 \times 60}{4} \times (1 - 0.1) = 1620 [r/min]$$

Permissible Torque

– It is the maximum torque available when operating the motor. This is limited by rated torque of the motor, temperature rising, and the strength of the gearbox to combine.

Overrun

– This is the angle (r/min) that indicates the excessive revolution of a motor from the moment of power shutdown to the stop.

Gearbox

Gear Reduction Ratio

– Gearbox is a speed converter using a gear and an instrumental device to reduce the r/min of motor into the required r/min and get bigger torque. Gear reduction ratio is a rate in which the gearbox decelerates the motor's r/min.
– There are two groups of gear reduction ratio; one is for 3, 5, 7.5, 12.5, 15··· and the other is 3.6, 6, 9, 15, 18··· which are 1.2 times the previous group so that you can obtain approx. the same output speed for both 50Hz and 60Hz.

Maximum Permissible Torque

– It is maximum load torque which can be applied to the output shaft of the gearbox.
– It is determined by the mechanical strength such as materials of a gearbox, gear tooth and bearing and the size of gearbox as well as the gear reduction ratio.

Transmission efficiency

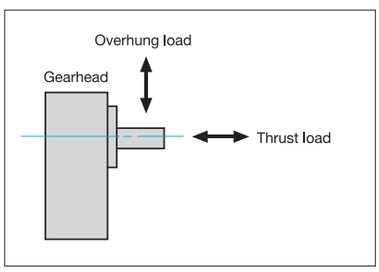
– It is an efficiency with which motor torque is increased by a gearbox and described in %.
– It is determined by the bearing, friction of the gear tooth and resistance of lubricating oil.
– In general, this efficiency is approx. 90% per stage of the gear. If gear ratio is higher, the number of gear will increase and the efficiency rate will decrease.

Service Factor

– It is a coefficient which is used to estimate the service life of the gearbox.
– This value is generally derived from experience and based on type of the load and operating conditions.
– The life of a gearbox during particular application is estimated by dividing the standard life expectancy by the service factor.

Overhung Load

– Overhung load is defined as a load applied to the output shaft in the right-angle direction.
– Maximum value of the overhung load which is applicable to the shaft is called as 'permissible overhung load'. This value varies depending on the type of a gearbox and the distance from the edge of the shaft.



Thrust Load

– The thrust load is defined as a load applied to the output shaft in the axial direction.
– Maximum value of the thrust load which is applicable to the shaft is called as 'permissible thrust load'. This value varies depending on the type of a gearbox.

Caution for Using

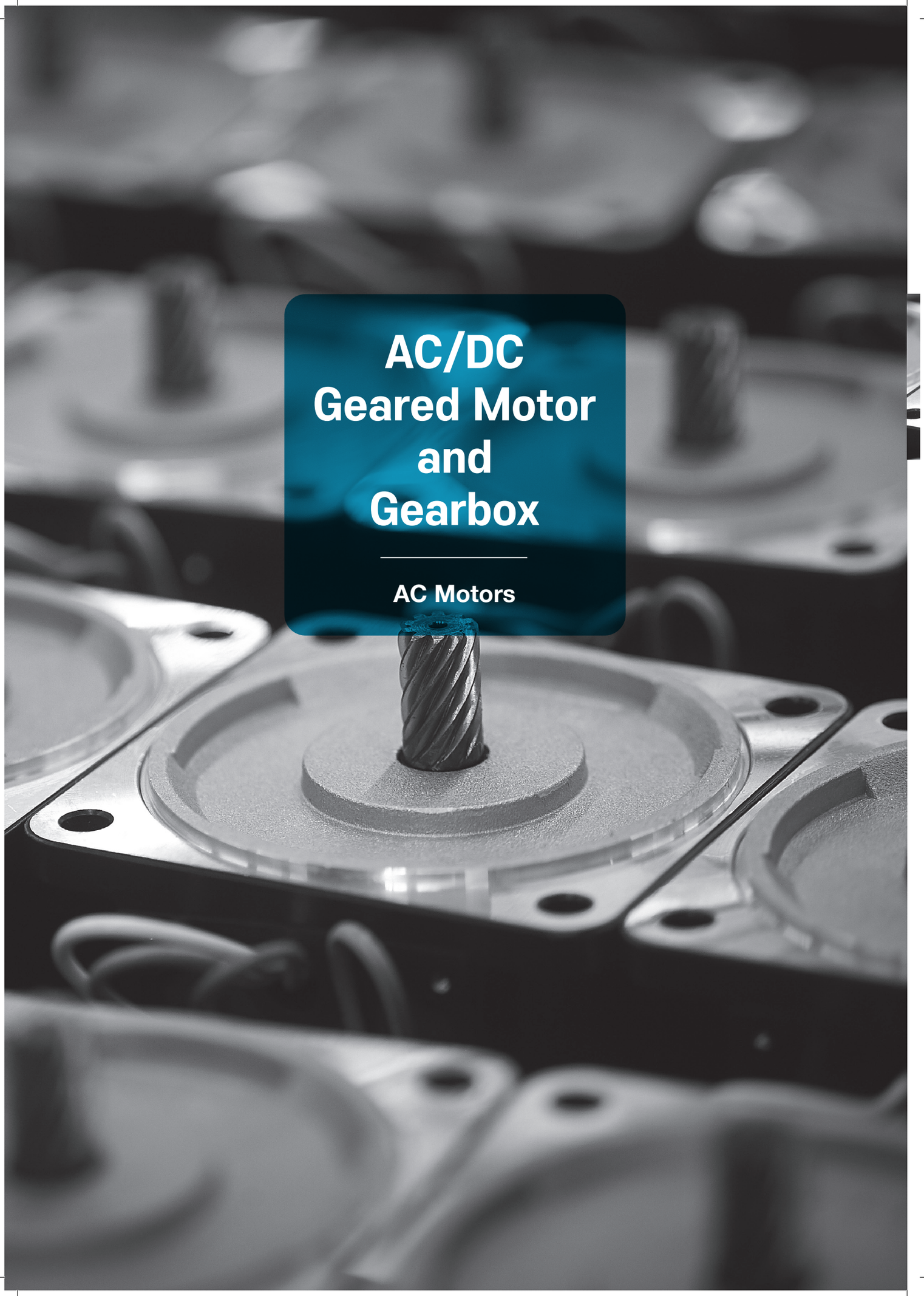
Before using the motors and gearboxes, read safety precautions carefully and use the products properly.
For the suggestions on using them, they are classified as caution and warning

⚠ Caution

- Make sure to check whether the things are what you ordered. If you install the other thing, there may occur the injury and/or the fire.
- The motor and the controlling unit should be used only by the designated compounding. If not, the fire may occur.
- The motor should be used after it is fixed tightly. If not, the injury and/or the damage of the unit may occur.
- Make sure to check the rotating direction before connecting the machine. If not, the injury and/or the damage of the unit may occur.
- When using the ac motors for machines and beginning to operate, do it in a state of emergency stop.
- Use products only according to the specification of the motor and controlling unit. If not, there will be danger of fire, electric shock, injury and/or damage of the unit.
- Do not place any obstacle around the motor which can disturb circulation of air. It could be cause of overheating or breakdown.
- Do not put the fingers or things into the outlet of the unit. There may be electric shock, injury or danger of fire.
- Do not operate with the wet hands. The electric shock may occur.
- In case of moving a motor, do not catch the output shaft, connecting part, or lead wire. There may be the injury by the drop.
- Do not touch the rotating part (output shaft, cooling fan) in running. It could be cause of injury.
- Do not touch the side of the motor output shaft (key way, cutting part) with the naked hands. It could be cause of injury.
- Make sure to install the overload device because the protection device is not attached to the motor. It is desirable to install other protection devices other than overload protection device to prevent fire.
- Electromagnetic brake is not for holding the load certainly and it doesn't hold the load if thermal protector (TP) works. So if the safety brake is needed, install another braking system.
- If there are abnormal cases, turn off the power at once. If not, there will be the electric shock, injury and the damage.
- In operating and right after the operation, do not touch the controlling device by your hands or body. The fire will occur.
- When you scrap motors, please disassemble and treat them as industrial waste.

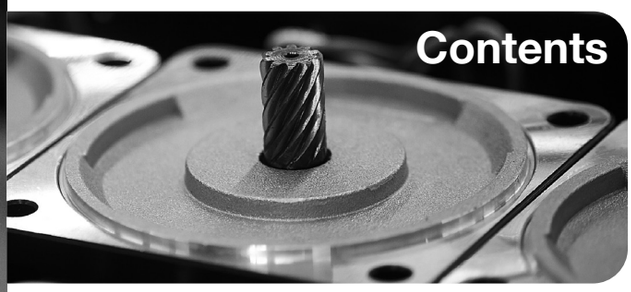
⚠ Warning

- Never put around the explosive atmosphere, gas to be burnt, corrosive air, the location to be wet, and combustibles. If not, there will be the electric shock and the fire.
- Do not move, connect or inspect with an electric current flowing. Turn off the power and work.
- Make sure to connect a motor and a speed controller based on the connection diagram. If not, there will be the electric shock and the fire.
- The power cable and the lead wire should not be bent, pulled and inserted by force. If not, the electric shock and the fire may occur.
- In case that the motor and controlling unit are attached to the machine, never touch with your hands or connect with the earth. Otherwise, an electric shock can occur.
- Never operate in the state of exposing the flowing current. If not, the electric shock can occur.
- In case of interruption of electric power and wiring the protection of overheat, please turn off the power. When motors are working continuously, there may be injury and damage of the unit.
- Within the 30 seconds after the power off, do not touch the output terminal of the controlling unit. If not, the electric shock may occur because of the residual volts.



AC/DC Geared Motor and Gearbox

AC Motors



Contents

B AC Motors

Technical Data of AC Motor

Definition of AC Motor

AC Motor is an electric motor to get a driving force for rotation or straight movement by converting the electrical energy into mechanical energy and the light-weighted motor which enables to select the model suitable for the load, has less noise and vibration as well as no exhaust pollution.

Features of DKM AC Motor

DKM AC geared motor was developed first in Korea in 1987 and has been used in a good reputation throughout the whole areas of domestic/overseas industry up to now.Our AC geared motor has various and wide range of options which satisfies various electrical requirements from all over the world.

Various and Abundant Models

- There are various and abundant models in frame size covering □60/70/80/90/104mm such as Induction Motor, 2 Pole Motor, Reversible Motor, E.M. Brake Motor, Clutch & Brake Motor, Torque Motor and Speed Control Motor.
- For use voltage, we have AC motors which have various types of voltage levels covering all areas in the globe: 100V 50/60Hz(Japan), 200V 50/60Hz(Japan), 110V 60Hz(Taiwan), 220V 60Hz(Korea, Taiwan), 115V 60Hz(North America), 230V 50Hz(Europe, Oceania), 220/240V 50Hz(South-East Asia)

Low Noise and Low Vibration

- Due to the enhancement of quality standard such as places and conditions for motors to use, the low noise and low vibration are required.
- To satisfy these conditions, we employed high precision of gear processing and skiving cutting method and we are making a rotor which is the root cause of vibration by verifying with balance machine for low noise and low vibration.

Easy to Use

- Easy and safe to use as motors and gearboxes are sold according to the requirements so that they can be designed and manufactured optimally.
- It is easy to drive to get a driving force by connecting a capacitor to the commercial power available to be used anywhere and anytime. As the capacitor is not needed for three phase power, it is available to get a driving force easily by connecting three phase power to the motor directly.

Just-In-Time System

- Just-In-Time system is available in DKM Motor Co., Ltd. for the best delivery system. DKM realized user's satisfaction with the world best delivery system.

Types of AC Motors

Classification by Power

- **AC Motor:** A motor that is operated by AC power. For example, inductive motor, synchronous motor, AC commutator motor, etc.

  1) Single Phase Motor
  - It works by using a single-phase power supply which is used mainly in homes, offices, stores and small non-industrial companies.
  - As power itself does not make a motor rotate, a capacitor needs to be connected to auxiliary coil to start.

  2) Three Phase Motor
  - Three phase motor stands for electrical power and it is consisted of three electrical sources with a phase offset of 120° in voltage.
  - Connect the power to the motor to start and the rotor will start to run easily.
  - The efficiency of a motor is high and the starting torque is relatively big.

- **DC Motor:** A motor that rotates by supplying the direct current to the armature. The torque generated by placing the coil between magnetic poles N and S and applying the current to this coil rotates the motor. Whenever this coil passes the neutral shaft, it turns the direction of current reversely and rotates continuously.

Classification by Function

- **Motor with Constant Speed**

  1) Induction Motor: An induction motor is a type of AC motor where power is supplied to the rotor by means of electromagnetic induction. These motors are widely used in industrial drives, particularly polyphase induction motors, because they are rugged and have no brushes. Their speed is determined by the frequency of the supply current, so they are most widely used in constant-speed applications, although variable speed versions, using variable frequency drives are becoming more common.

  2) Reversible Motor: The reversible motor is a kind of induction motor and also has the same characteristic in any direction such as a forward direction and backward direction. In principle, it is the same as an induction motor but there is no relation between the main coil and auxiliary coil like a general induction motor in order to stand frequent normal/reverse rotation and get a big starting torque.

- **Brake Motor**

  It is a motor embedded with fail-safe electromagnetic brake. Perfect braking enables to get a staying power.
  Brake runs only when the power is shutdown, so this is suitable for safe use.
  ※ DKM has 'A Type' electronic brake motor which runs when the power is applied. (Customized specification)

- **Clutch & Brake Motor**

  DKM Clutch&Brake motor is equipped with Clutch&Brake mechanism and only available to be used with a gearbox. As the continuously rotating induction motor and Clutch&Brake are combined, this can be used for frequent start/stop, position control, index operation and relative value feeding operation, etc.

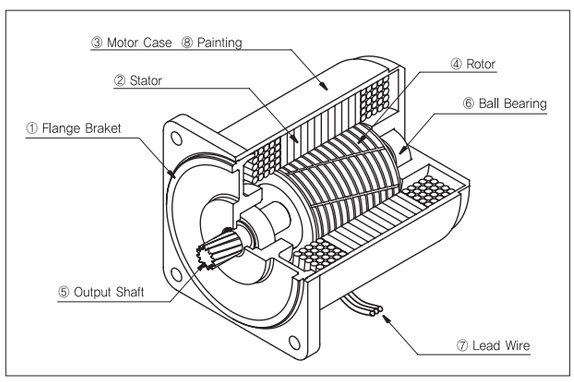
- **Torque Motor**

  DKM torque motor has big starting torque and sloping characteristics. It runs safely over the whole area of rotation speed-torque characteristics. (Torque is highest at zero speed and decreases steadily with increasing speed.) With these characteristics, this can be used for more application as a winding or tension motor.

- **Speed Control Motor**

  Users can easily set and adjust the motor speed. There are four types of speed controllers for AC speed control motors. Select the best system depending on your application.

Structure of AC Motor



① Flange Bracket
Die-cast aluminum bracket is press-fitted into the motor case. The flange and the housing are a single body type which plays an important part to attach the motor alone or combine the gearbox.

② Stator
This is comprised of a stator core made from laminated silicon/steel plates, a polyester-coated copper coil and insulation film. The roles are to generate magnetic field, form the rotation and run the rotor.

③ Motor Case
Die-cast aluminum with a machined finish inside

④ Rotor
It is comprised of laminated silicon/steel plates with die-cast aluminum. Rotor plays the part to change the electric energy to mechanical energy and transfer it to outside through shaft.

⑤ Output Shaft
There are a D-cut type shaft and a key type shaft which are for use by the motor itself and a gear type shaft(pinion shaft) which is for attaching a gearbox. It is made of S45C with a machined finish.

⑥ Ball Bearing : It ensures that the rotor remains at the right position for the reliability and fast rotational motion.

⑦ Lead Wire : Lead wires with heat-resistant polyethylene coating

⑧ Painting : Motor housing is finished with acrylic resin and melamine resin.

Temperature Rise of AC Motor

Temperature Rise

- In operation of a motor, the loss inside of the motor is changed to heat causing the motor's temperature to rise.
  - Induction Motor (for continuous duty) reaches the saturation point of temperature rise in about two or three hours of operation and temperature stabilizes.
  - Reversible Motor (30 minutes rating) reaches their limit of temperature rise in about 30 minutes of operation. If operation continues as it is, the temperature will increase further.

Measuring Temperature Rise

- DKM uses the following methods for temperature measurement and for the determination of a motor's allowable temperature rise.
  - **Thermometer Method:** The temperature rise at which the temperature rise becomes saturated during motor operation is measured by using a thermometer or thermocouple installed in the center of the motor case. The temperature rise is the difference between the ambient temperature and measured temperature during motor operation.
  - **Resistance Method:** This is the method of measuring the winding temperature according to the change in resistance value. The motor's winding resistance and ambient temperature are measured by using a resistance meter and thermostat.

Overheating Protection Device

- If a running motor locks due to overload, the input current increases due to any reason or the ambient temperature increases suddenly, the motor's temperature rises abruptly. If this state continues, the insulation performance may deteriorate and, in extreme cases, it may cause a fire. To avoid this case, DKM employs the following overheating protection devices.
  - **Thermal Protector (TP)**
    DKM installs the thermal protector for overheating protection of the motor. The TP employs a bimetal contact with pure silver used in the contacts. Pure silver has the lowest electrical resistance of all materials and has thermal conductivity second only to copper. (Operating Temperature: Open 120℃±5℃ / Close 90 ℃±5℃)
  - **Impedance Protection**
    Impedance-protected motor has higher impedance in the motor windings so although the motor locks, the increase in input current is minimized and temperature will not rise.

Insulation Class

- DKM Motor's insulation class is B class. Insulation class is according to heat-resistance class. According to JIS C4003(IEC60085), it is defined as below. It is also available to use other materials for some particular insulation class according to operating conditions or user's request. (Customized specification)

Insulation Class	Max. Permissible Temp.
Y	90℃
A	105℃
E	120℃
B	130℃
F	155℃
H	180℃

FAN

- It is available to attach two kinds of fan to the DKM's motor: 'General Fan (F type)' and 'Powerful Fan (F2 type)'. General fan is attached to a motor shaft rotating at the same speed with motor shaft speed(1,800r/min in 60Hz, 1,500r/min in 50Hz). Powerful fan makes powerful cooling performance and rotates in high speed regardless of motor shaft speed (It rotates 3200r/min at 60Hz and exhibits the effect of a 10℃ higher temperature reduction than when using the general fan.).
  DKM employs general fans to the motors with continuous speed. Also, the continuous-speed motor with a powerful fan could be customized. But in case of using a speed control motor, the powerful fan is employed basically because there is little cooling effect in low speed if general fan is employed.

Equipment Protection Structure (IP Code)

- The IP code is one of the equipment protection structures and indicates the dust-resistance and waterproofing degrees of protection for the equipment.
- The code consists of the first number and the second number. I P □ □

Second Number : Waterproof Protection Class
First Number : Dustproof Protection Class

- "□" is used when one of the two protection classes is not specified in the name. (e.g. IP□5, IP4□)
- Meanings of IP code and testing conditions are as below:

1) The Classification of Dustproof

IP Code	Protection Specifications for Dustproof	
First Number	Protection Level	Test Condition
IP0□	None	None
IP1□	Protection against approach by hands	Solid objects with a diameter of 50mm or more do not enter.
IP2□	Protection against approach by fingers	Solid objects with a diameter of 12mm or more do not enter.
IP3□	Protection against tips of tools, etc.	Solid objects with a diameter of 2.5mm or more do not enter.
IP4□	Protection against ingress of wires, etc.	Solid objects with a diameter of 1.0mm or more do not enter.
IP5□	Protection against powdery dust	Powdery dust that may inhibit normal operation does not enter.
IP6□	Completely dustproof design	Cannot be penetrated by powdery dust.

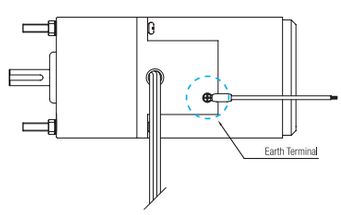
2) The Classification of Waterproof

IP Code	Protection Specifications for Waterproof	
Second Number	Protection Level	Test Condition
IP□0	None	None
IP□1	Protection against vertically falling water drops	Water drops at a rate of 3 to 5L/min. for 10 minutes from a height of 200mm
IP□2	Protection against vertically falling water drops when enclosure tilted up to 15°	Water drops at a rate of 3 to 5L/min. for 10 minutes from directions within 15° from a height of 200mm
IP□3	Protection against spraying water 60° from vertical	Sprayed water at a rate of 10L/min. for 10 minutes from directions within 60° from a height of 200mm
IP□4	Protection against water sprayed from all directions	Sprayed water at a rate of 10L/min. for 10 minutes from all directions at a distance of 300 to 500mm
IP□5	Protection against water jet from all directions	Sprayed water jet of 30kPa at a rate of 12.5L/min. for 3 minutes from all directions at a distance of 3m
IP□6	Protection against strong water jet such as ocean waves	Sprayed water jet of 100kPa at a rate of 100L/min. for 3 minutes from all directions at a distance of 3m
IP□7	Usable after immersion in water under specified conditions	Immersion to a depth of 1m for 30 minutes
IP□8	Usable under water	Determined through cooperation between a user and a manufacturer.

Earth Method

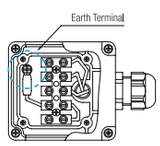
Lead Wire Type

- As shown in the figure, connect the earth wire to the earth hole in the side of the motor. Screw the earth wire to the earth hole. (Sequence: earth hole → washer → earth wire → screw bolt)



Terminal Box Type

- Connect the earth wire to the earth terminal in the terminal box.



Induction Motor

Index

B AC Motors

Outline of Induction Motor

Suitable for Unidirectional Continuous Operation

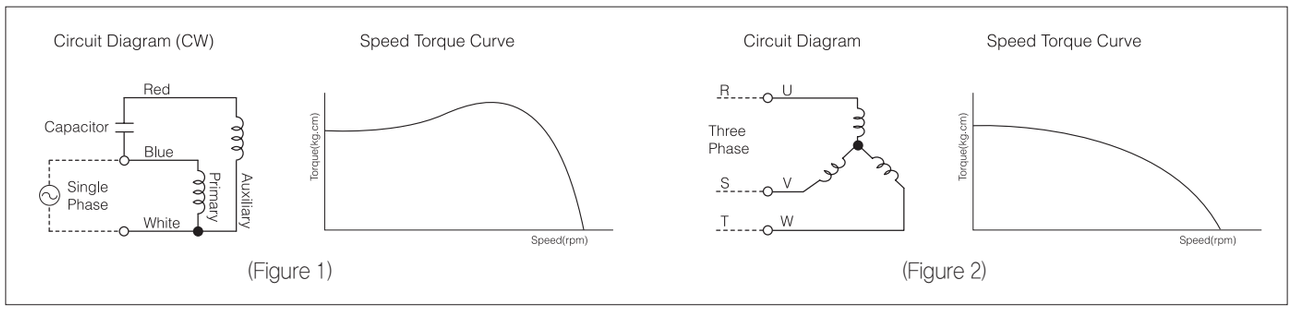
- Induction motors are suitable for unidirectional continuous operation such as conveyor belt system.

Single Phase Run

- For the running of a single phase motor, please use the capacitor complying with the capacity of the motor. For a single phase induction motor, it is not possible to reverse the direction within a short time during operation. So stop the motor first and change the direction next. (Figure 1)

Three Phase Run

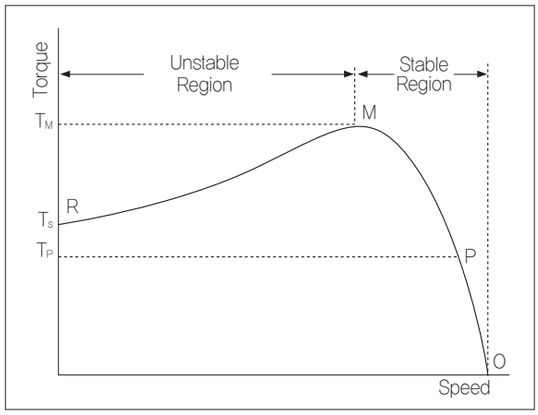
- Three phase induction motor has relatively high starting torque compared to single phase motor and has high reliability because it can be directly operated by a three phase power source.(Figure2)



(Figure 1) (Figure 2)

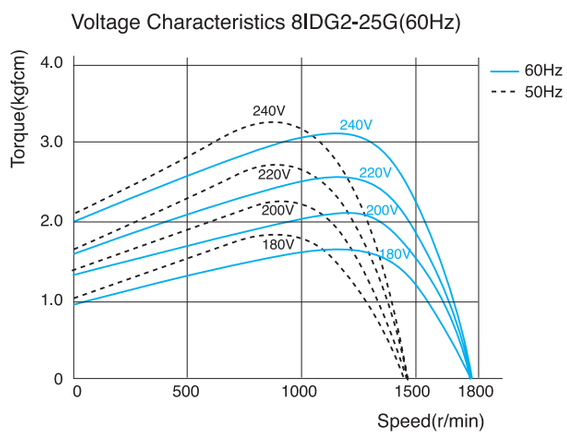
The Relation between Speed and Torque

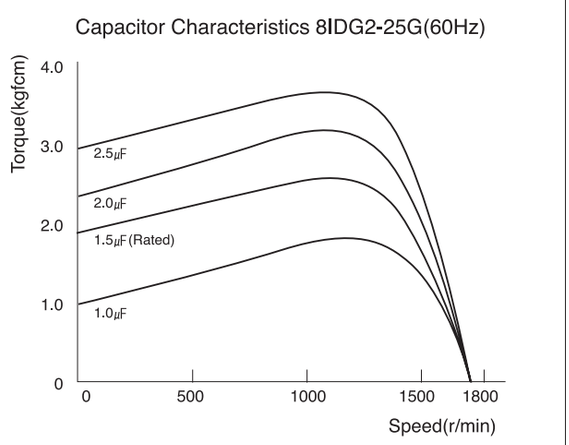
- In a condition of constant power voltage, the relation between speed and torque is like next figure. Under the condition of no-load, the number of rotation is roughly same as the number of synchronous rotation. But if the load increases, the number of rotation decreases and approaches to the speed (r/min) indicated by the point P where the torque Tp horizontally meets the load curve. When the load further increases and reaches the point M, the motor stops at the point R because the motor no longer generates further torque. Therefore, the leg R-M is referred to as an unstable zone and the leg O-M is a stable zone for operation.



Features of Voltage and Capacitor

- Generally the torque of induction motor changes proportionate to twice the voltage and it also changes according to the capacity of the capacitor. If the capacity of the capacitor increases, the starting torque and rated torque will increase. But if the capacity increases by over twice, the rated torque decreases and starting torque do not increase.
- If the induction motor has a slight lack of torque, it is possible to increase the torque by increasing the voltage or the capacity of the capacitor to continue the operation. But please be informed that in this case the loss input of the motor increases and the temperature rises rapidly. However, if the motor must be run with insufficient torque, take measures to let the motor release heat as much as possible by installing separate fan as an example and operate the motor while keeping the temperature of the motor's housing below 90℃.





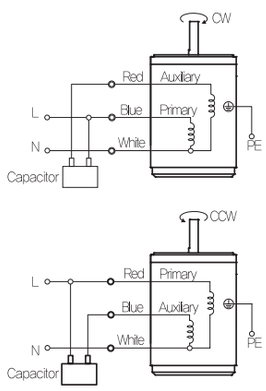
General Specifications

Item	Specification
Insulation Resistance	100㏁ or more when DC500V MEGA is applied between the windings and the frame after rated motor operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5KV at 50Hz and 60Hz applied between the windings and the frame for 1 minute after rated motor operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings are 80℃ or less measured by the resistance change method after rated motor operation with connecting a gearbox or equivalent heat radiation plate.
Insulation Class	Class B [130℃]
Overheat Protection	Operating temperature (Built-in thermal protector type motor): Open 120℃±5℃, Close 90℃±5℃
Ambient Temperature	-10℃~+40℃ (Three phase 220VAC: -10℃~+50℃)
Ambient Humidity	85% maximum

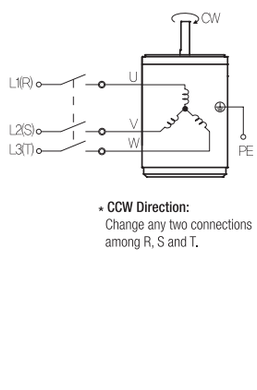
Connection Diagrams

Lead Wire Type

[Single Phase]



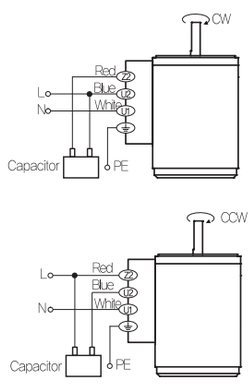
[Three Phase]



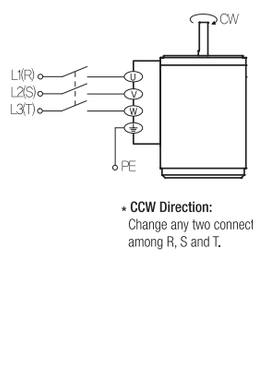
* **CCW Direction:**
Change any two connections among R, S and T.

Terminal Box Type

[Single Phase]



[Three Phase]



* **CCW Direction:**
Change any two connections among R, S and T.

B AC Motors

Induction Motor 6W(□ 60mm)

6W Induction Motor 6W(□ 60mm)

Motor Specification

Model (6IDG*-6G(-T): Gear Type Shaft, 6IDD*-6(-T): D-Cut Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
6IDG1(A)-6G	6IDG1(A)-6G-T	6	1ø 110	60	4	Cont.	0.54	0.054	1500	0.21	0.38	0.038	2.5 / 250
6IDG2(D)-6G	6IDG2(D)-6G-T	6	1ø 220	60	4	Cont.	0.60	0.060	1550	0.11	0.38	0.038	0.7 / 450
6IDGE-6G	6IDGE-6G-T	6	1ø 220	50	4	Cont.	0.55	0.055	1200	0.09	0.49	0.049	0.6 / 450
			1ø 240				0.66	0.066		0.10	0.49	0.049	
6IDG3(G)-6G	6IDG3(G)-6G-T	6	3ø 220	50	4	Cont.	1.20	0.120	1250	0.13	0.47	0.047	–
				60			0.90	0.090	1550	0.11	0.38	0.038	
			3ø 230	50	4	Cont.	1.30	0.130	1250	0.14	0.47	0.047	
				60			1.00	0.100	1550	0.12	0.38	0.038	

1) Enter the phase & voltage code in the place * within the motor model name.
2) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
3) Impedance Protected Type

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10
6IDG*-6G	6GBD □ MH	kgfcm	0.9	1.1	1.5	1.8	2.3	2.7	3.1	3.8	4.6	5.5	5.5	6.9	8.3	9.9	11.0	12.4	14.9	18.7	22.4	24.9	30.0	30.0	30.0
		N.m	0.09	0.11	0.15	0.18	0.22	0.27	0.30	0.37	0.45	0.54	0.54	0.67	0.81	0.97	1.08	1.22	1.46	1.83	2.19	2.44	2.94	2.94	2.94

Motor Model	Gearbox Model	Gear Ratio	200	250
		r/min	9	7.2
6IDG*-6G	6GBD □ MH	kgfcm	30.0	30.0
		N.m	2.94	2.94

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180
		r/min	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8
6IDG*-6G	6GBD □ MH	kgfcm	1.2	1.4	2.0	2.4	3.0	3.6	3.9	4.9	5.9	7.1	7.1	8.9	10.7	12.8	14.2	16.1	19.3	24.1	28.9	30.0	30.0	30.0	30.0
		N.m	0.12	0.14	0.19	0.23	0.29	0.35	0.39	0.48	0.58	0.70	0.70	0.87	1.05	1.25	1.39	1.57	1.89	2.36	2.83	2.94	2.94	2.94	2.94

Motor Model	Gearbox Model	Gear Ratio	200	250
		r/min	7.5	6
6IDG*-6G	6GBD □ MH	kgfcm	30.0	30.0
		N.m	2.94	2.94

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

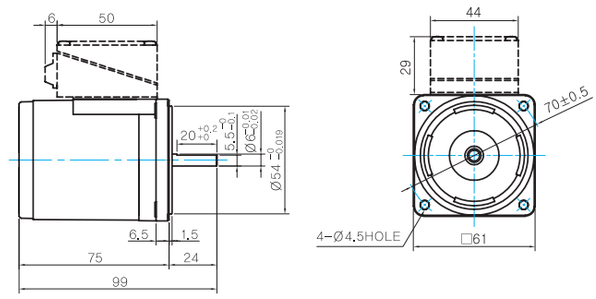
Motor Images

6IDD □ -6	6IDD □ -6-T	6IDG □ -6G+6GBD □ MH
		

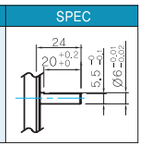
Dimensions

MOTOR ONLY

● MOTOR MODEL: 6IDD□-6(-T) (NO FAN)



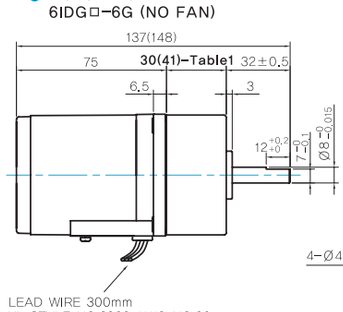
● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	

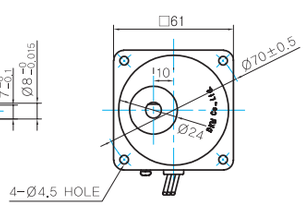
GEARED MOTOR

G TYPE GEARBOX

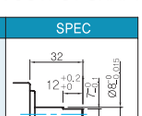
● MOTOR MODEL:
6IDG□-6G (NO FAN)



● GEARBOX MODEL:
6GBD□MH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	

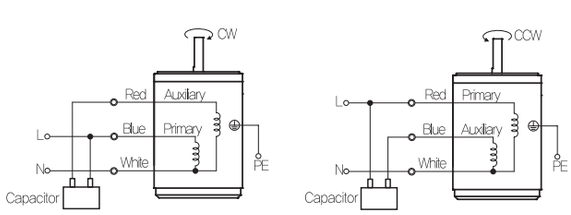
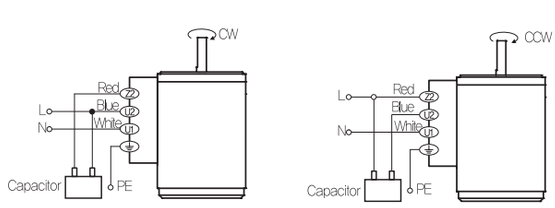
● 30(41)-Table1

SIZE(mm)	GEAR RATIO
30	6GBD3MH – 6GBD18MH
41	6GBD20MH – 6GBD250MH

WEIGHT

PART		WEIGHT(Kg)
MOTOR		0.7
GEAR BOX	6GBD3MH ~ 6GBD18MH	0.3
	6GBD20MH ~ 6GBD40MH	0.32
	6GBD50MH ~ 6GBD250MH	0.34

Connection Diagrams

Lead Wire Type	Terminal Box Type
	

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

Induction Motor 6W(□70mm)

6W Induction Motor 6W(□70mm)

Motor Specification

Model (7IDG*-6G(-T): Gear Type Shaft, 7IDD*-6(-T): D-Cut Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
7IDG1(A)-6G	7IDG1(A)-6G-T	6	1ø 110	60	4	Cont.	0.50	0.050	1600	0.26	0.37	0.037	2.5 / 250
7IDG2(D)-6G	7IDG2(D)-6G-T	6	1ø 220	60	4	Cont.	0.52	0.052	1600	0.15	0.37	0.037	0.7 / 450
7IDGE-6G	7IDGE-6G-T	6	1ø 220	50	4	Cont.	0.56	0.056	1300	0.14	0.45	0.045	0.7 / 450
			1ø 240				0.67	0.067		0.16	0.45	0.045	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10
7IDG*-6G	7GBK□ BMH	kgfcm	0.9	1.1	1.5	1.8	2.2	2.7	3.0	3.7	4.4	5.3	5.3	6.7	8.0	9.6	10.7	12.1	14.5	18.1	21.7	24.1	28.9	36.2	43.4
		N.m	0.09	0.10	0.14	0.17	0.22	0.26	0.29	0.36	0.43	0.52	0.52	0.65	0.78	0.94	1.05	1.18	1.42	1.77	2.13	2.36	2.83	3.54	4.25

Motor Model	Gearbox Model	Gear Ratio	200
		r/min	9
7IDG*-6G	7GBK□ BMH	kgfcm	48.2
		N.m	4.72

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	38	30	25	20	17	15	12.5	10	8
7IDG*-6G	7GBK□ BMH	kgfcm	1.1	1.3	1.8	2.2	2.7	3.3	3.6	4.6	5.5	6.6	6.6	8.2	9.8	11.8	13.1	14.8	17.8	22.3	26.7	29.7	35.6	44.5	50.0
		N.m	0.107	0.13	0.18	0.21	0.27	0.32	0.36	0.45	0.54	0.64	0.64	0.80	0.96	1.16	1.29	1.45	1.74	2.18	2.62	2.91	3.49	4.36	4.90

Motor Model	Gearbox Model	Gear Ratio	200
		r/min	7.5
7IDG*-6G	7GBK□ BMH	kgfcm	50.0
		N.m	4.90

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

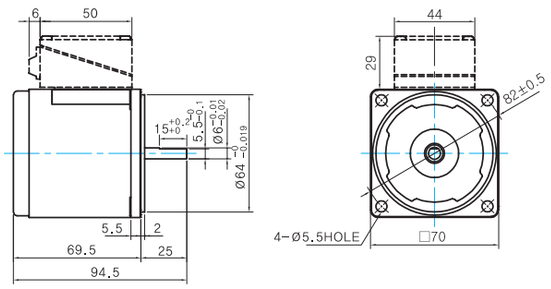
Motor Images

7IDD□-6	7IDD□-6-T	7IDG□-6G+7GBK□BMH
		

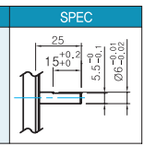
Dimensions

MOTOR ONLY

● MOTOR MODEL: 7IDD□-6(-T) (NO FAN)



● MOTOR OUTPUT SHAFT

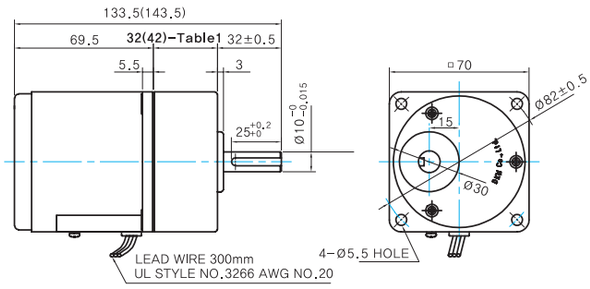
MODEL	SPEC
D-CUT TYPE	

GEARED MOTOR

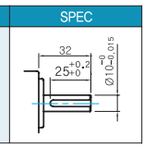
G TYPE GEARBOX

● MOTOR MODEL:
7IDG□-6G (NO FAN)

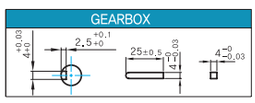
● GEARBOX MODEL:
7GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC



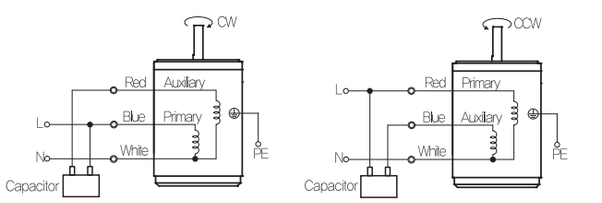
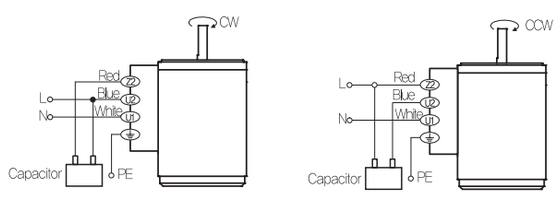
WEIGHT

PART		WEIGHT(Kg)
MOTOR		0.83
GEAR BOX	7GBK3BMH - 7GBK18BMH	0.38
	7GBK20BMH - 7GBK40BMH	0.48
	7GBK50BMH - 7GBK200BMH	0.53

● 32(42)-Table1

SIZE(mm)	GEAR RATIO
32	7GBK3BMH - 7GBK18BMH
42	7GBK20BMH - 7GBK200BMH

Connection Diagrams

Lead Wire Type	Terminal Box Type
	

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

B AC Motors

Induction Motor 10W(□ 70mm)

10W Induction Motor 10W(□ 70mm)

Motor Specification

Model 7IDG*-10G(-T): Gear Type Shaft 7IDD*-10(-T): D-Cut Type Shaft		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
7IDG1(A)-10G	7IDG1(A)-10G-T	10	1ø110	60	4	Cont.	0.58	0.058	1550	0.29	0.63	0.063	3.0 / 250
7IDG2(D)-10G	7IDG2(D)-10G-T	10	1ø220	60	4	Cont.	0.78	0.078	1550	0.18	0.63	0.063	1.0 / 450
7IDGE-10G	7IDGE-10G-T	10	1ø220	50	4	Cont.	0.63	0.063	1200	0.16	0.81	0.081	0.8 / 450
			1ø240				0.76	0.076		0.18	0.81	0.081	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10
7IDG*-10G	7GBK □ BMH	kgfcm	1.5	1.8	2.5	3.1	3.8	4.6	5.1	6.4	7.6	9.2	9.2	11.5	13.8	16.5	18.3	20.7	24.9	31.1	37.3	41.5	49.8	50.0	50.0
		N.m	0.15	0.18	0.25	0.30	0.37	0.45	0.50	0.62	0.75	0.90	0.90	1.12	1.35	1.62	1.80	2.03	2.44	3.05	3.66	4.06	4.88	4.90	4.90

Motor Model	Gearbox Model	Gear Ratio	200
		r/min	9
7IDG*-10G	7GBK □ BMH	kgfcm	50.0
		N.m	4.90

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	38	30	25	20	17	15	12.5	10	8
7IDG*-10G	7GBK □ BMH	kgfcm	2.0	2.4	3.3	3.9	4.9	5.9	6.6	8.2	9.9	11.8	11.9	14.8	17.8	21.3	23.7	26.8	32.1	40.2	48.2	50.0	50.0	50.0	50.0
		N.m	0.19	0.23	0.32	0.39	0.48	0.58	0.64	0.81	0.97	1.16	1.16	1.45	1.74	2.09	2.32	2.62	3.15	3.94	4.72	4.90	4.90	4.90	4.90

Motor Model	Gearbox Model	Gear Ratio	200
		r/min	7.5
7IDG*-10G	7GBK □ BMH	kgfcm	50.0
		N.m	4.90

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

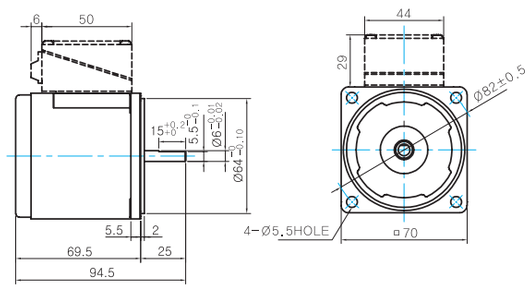
Motor Images

7IDD □ -10	7IDD □ -10-T	7IDG □ -10G+7GBK □ BMH
		

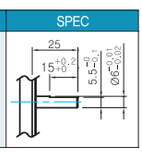
Dimensions

MOTOR ONLY

● MOTOR MODEL: 7IDD□-10(-T) (NO FAN)



● MOTOR OUTPUT SHAFT

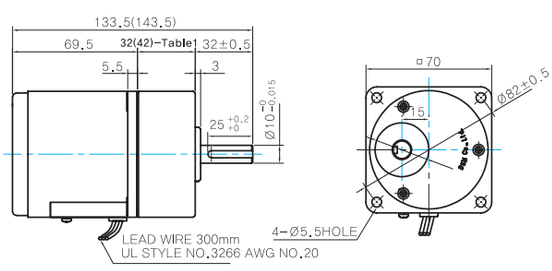
MODEL	SPEC
D-CUT TYPE	

GEARED MOTOR

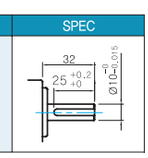
G TYPE GEARBOX

● MOTOR MODEL:
7IDG□-10G (NO FAN)

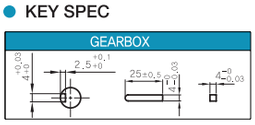
● GEARBOX MODEL:
7GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC



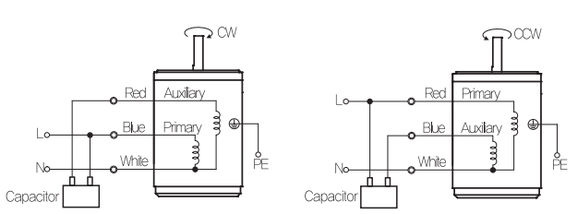
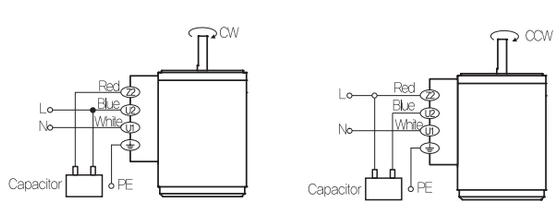
WEIGHT

PART		WEIGHT(Kg)
MOTOR		0.83
GEAR BOX	7GBK3BMH – 7GBK18BMH	0.38
	7GBK20BMH – 7GBK40BMH	0.48
	7GBK50BMH – 7GBK200BMH	0.53

● 32(42)-Table1

SIZE(mm)	GEAR RATIO
32	7GBK3BMH – 7GBK18BMH
42	7GBK20BMH – 7GBK200BMH

Connection Diagrams

Lead Wire Type	Terminal Box Type
	

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

B AC Motors

Induction Motor 15W(□70mm)

15W Induction Motor 15W(□70mm)

Motor Specification

Model 7IDG*-15G(-T): Gear Type Shaft 7IDD*-15(-T): D-Cut Type Shaft		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
7IDG1(A)-15G	7IDG1(A)-15G-T	15	1ø110	60	4	Cont.	0.70	0.070	1550	0.33	0.94	0.094	3.5 / 250
7IDG2(D)-15G	7IDG2(D)-15G-T	15	1ø220	60	4	Cont.	1.02	0.102	1600	0.19	0.91	0.091	1.2 / 450
7IDGE-15G	7IDGE-15G-T	15	1ø220	50	4	Cont.	0.94	0.094	1200	0.17	1.22	0.122	1.0 / 450
			1ø240				1.12	0.112		0.19	1.22	0.122	
7IDG3(G)-15G	7IDG3(G)-15G-T	15	3ø 220	50	4	Cont.	3.20	0.320	1300	0.27	1.13	0.113	–
				60			2.30	0.230	1550	0.22	0.94	0.094	
			3ø 230	50	4	Cont.	3.60	0.360	1300	0.28	1.13	0.113	
				60			2.50	0.250	1550	0.24	0.94	0.094	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code A, D, E, G contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10
7IDG*-15G	7GBK□ BMH	kgfcm	2.2	2.7	3.7	4.4	5.5	6.7	7.4	9.2	11.1	13.3	13.3	16.7	20.0	24.0	26.7	30.1	36.2	45.2	50.0	50.0	50.0	50.0	50.0
		N.m	0.22	0.26	0.36	0.43	0.54	0.65	0.72	0.91	1.09	1.30	1.31	1.63	1.96	2.35	2.61	2.95	3.54	4.43	4.90	4.90	4.90	4.90	4.90

Motor Model	Gearbox Model	Gear Ratio	200
		r/min	9
7IDG*-15G	7GBK□ BMH	kgfcm	50.0
		N.m	4.90

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	38	30	25	20	17	15	12.5	10	8
7IDG*-15G	7GBK□ BMH	kgfcm	3.0	3.6	4.9	5.9	7.4	8.9	9.9	12.3	14.8	17.8	17.8	22.2	26.7	32.0	35.6	40.2	48.2	50.0	50.0	50.0	50.0	50.0	50.0
		N.m	0.29	0.35	0.48	0.58	0.72	0.87	0.97	1.21	1.45	1.74	1.74	2.18	2.61	3.14	3.48	3.94	4.72	4.90	4.90	4.90	4.90	4.90	4.90

Motor Model	Gearbox Model	Gear Ratio	200
		r/min	7.5
7IDG*-15G	7GBK□ BMH	kgfcm	50.0
		N.m	4.90

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

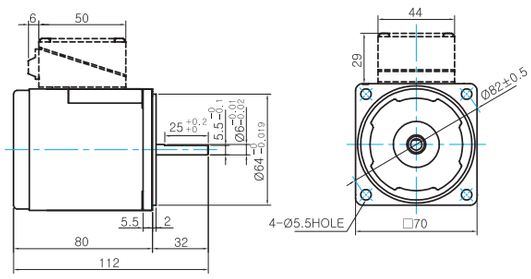
Motor Images

7IDD□-15	7IDD□-15-T	7IDG□-15G+7GBK□BMH
		

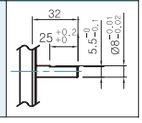
Dimensions

MOTOR ONLY

● MOTOR MODEL: 7IDD□-15(-T) (NO FAN)



● MOTOR OUTPUT SHAFT

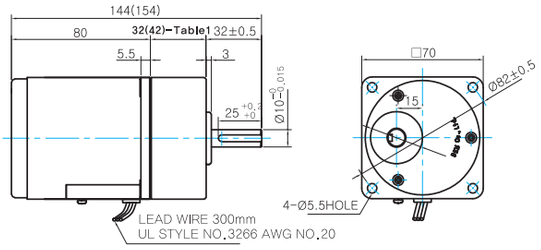
MODEL	SPEC
D-CUT TYPE	

GEARED MOTOR

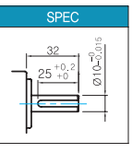
G TYPE GEARBOX

● MOTOR MODEL:
7IDG□-15G (NO FAN)

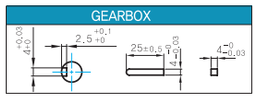
● GEARBOX MODEL:
7GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC



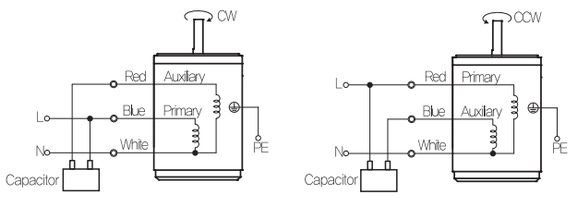
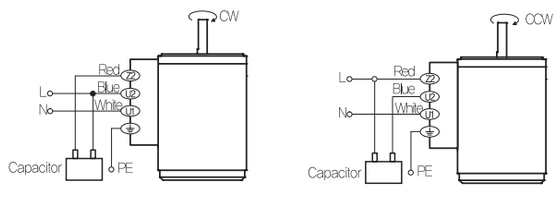
WEIGHT

PART		WEIGHT(Kg)
MOTOR		1.10
GEAR BOX	7GBK3BMH - 7GBK18BMH	0.38
	7GBK20BMH - 7GBK40BMH	0.48
	7GBK50BMH - 7GBK200BMH	0.53

● 32(42)-Table1

SIZE(mm)	GEAR RATIO
32	7GBK3BMH - 7GBK18BMH
42	7GBK20BMH - 7GBK200BMH

Connection Diagrams

Lead Wire Type	Terminal Box Type
	

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

B AC Motors

Induction Motor 15W(□80mm)

15W Induction Motor 15W(□80mm)

Motor Specification

Model (8IDG*-15□(-T): Gear Type Shaft, 8IDD*-15(-T): D-Cut Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
8IDG1(A)-15□	8IDG1(A)-15□-T	15	1ø110	60	4	Cont.	0.95	0.095	1600	0.54	0.91	0.091	3.5 / 250
8IDG2(D)-15□	8IDG2(D)-15□-T	15	1ø220	60	4	Cont.	1.25	0.125	1600	0.23	0.91	0.091	1.2 / 450
8IDGE-15□	8IDGE-15□-T	15	1ø220	50	4	Cont.	1.05	0.105	1300	0.23	1.12	0.112	1.0 / 450
			1ø240				1.27	0.127		0.25	1.12	0.112	
8IDG3(G)-15□	8IDG3(G)-15□-T	15	3ø220	50	4	Cont.	7.61	0.761	1350	0.29	1.08	0.108	–
				60			6.15	0.615	1600	0.26	0.91	0.091	
			3ø230	50	4	Cont.	8.25	0.825	1350	0.32	1.08	0.108	
				60			6.72	0.672	1600	0.28	0.91	0.091	
8IDG4(K)-15□	8IDG4(K)-15□-T	15	3ø380	50	4	Cont.	5.70	0.570	1350	0.12	1.08	0.108	–
				60			4.53	0.453	1600	0.11	0.91	0.091	
			3ø400	50	4	Cont.	6.26	0.626	1350	0.13	1.08	0.108	
				60			5.03	0.503	1600	0.12	0.91	0.091	
8IDG5(L)-15□	8IDG5(L)-15□-T	15	3ø415	50	4	Cont.	6.68	0.668	1350	0.14	1.08	0.108	–
				60			5.40	0.540	1600	0.12	0.91	0.091	
			3ø440	50	4	Cont.	7.39	0.739	1350	0.15	1.08	0.108	
				60			6.02	0.602	1600	0.13	0.91	0.091	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
3) Gear Type Shaft is for attaching gearbox and D-Cut Type Shaft is for using motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15
8IDG*-15G	8GBK□BMH	kgfcm	2.2	2.7	3.7	4.4	5.5	6.7	7.4	9.2	11.1	13.3	13.3	16.7	20.0	24.0	26.7	30.1	36.2	45.2	54.2	60.3	72.3
		N.m	0.22	0.26	0.36	0.43	0.54	0.65	0.72	0.91	1.09	1.30	1.31	1.63	1.96	2.35	2.61	2.95	3.54	4.43	5.32	5.91	7.09

Motor Model	Gearbox Model	Gear Ratio	150	180	200	250	300	360
		r/min	12	10	9	7	6	5
8IDG*-15G	8GBK□BMH	kgfcm	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
8IDG*-15W	8WD□BL/□BR/□BRL	kgfcm	7.5	8.8	10.5	12.2	16.0	18.1	21.0	27.4	30.1
		N.m	0.73	0.86	1.03	1.19	1.57	1.77	2.06	2.68	2.95

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5
8IDG*-15G	8GBK□BMH	kgfcm	2.6	3.2	4.4	5.3	6.6	7.9	8.8	11.0	13.1	15.8	15.8	19.8	23.7	28.4	31.6	35.7	42.9	53.6	64.3	71.4	80.0
		N.m	0.26	0.31	0.43	0.52	0.64	0.77	0.86	1.07	1.29	1.55	1.55	1.94	2.32	2.79	3.10	3.50	4.20	5.25	6.30	7.00	7.84

Motor Model	Gearbox Model	Gear Ratio	150	180	200	250	300	360
		r/min	10	8	7.5	6	5	4
8IDG*-15G	8GBK□BMH	kgfcm	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84	7.84	7.84

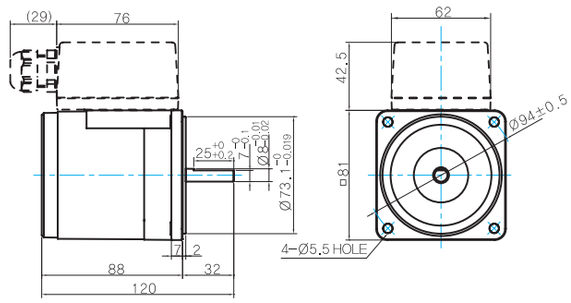
Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
8IDG*-15W	8WD□BL/□BR/□BRL	kgfcm	8.9	10.4	12.5	14.4	18.9	21.4	24.9	32.5	35.7
		N.m	0.87	1.02	1.22	1.41	1.86	2.10	2.44	3.18	3.50

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

Dimensions

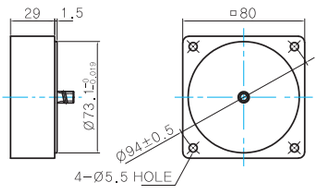
MOTOR ONLY

● MOTOR MODEL: 8IDD□-15(-T) (NO FAN)

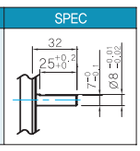


INTER-DECIMAL GEARBOX

● MODEL: 8XD10□□



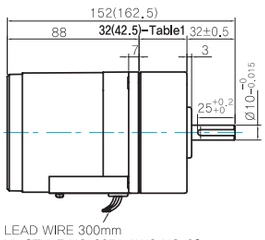
● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	

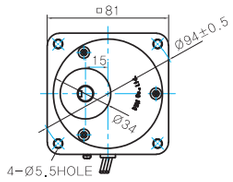
GEARED MOTOR

G TYPE GEARBOX

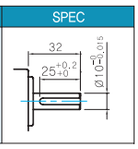
● MOTOR MODEL:
8IDG□-15G (NO FAN)



● GEARBOX MODEL:
8GBK□BMH



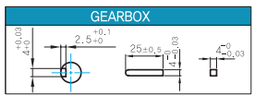
● GEARHEAD OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● 32(42.5)-Table1

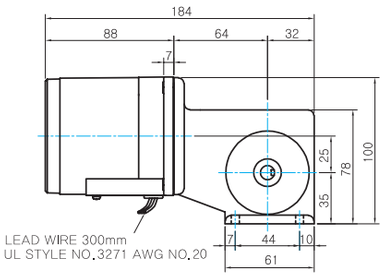
SIZE(mm)	GEAR RATIO
32	8GBK3BMH - 8GBK18BMH
42.5	8GBK20BMH - 8GBK360BMH

● KEY SPEC

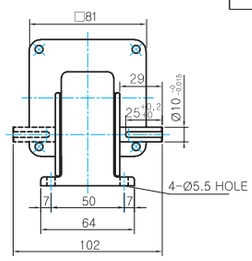
GEARBOX


W TYPE GEARBOX

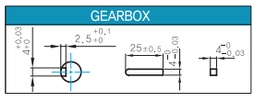
● MOTOR MODEL:
8IDG□-15W (NO FAN)



● GEARBOX MODEL:
8WD□BL/BR/BRL



● KEY SPEC

GEARBOX


WEIGHT

PART		WEIGHT(Kg)
MOTOR		1.56
GEAR BOX	8GBK3BMH - 8GBK18BMH	0.56
	8GBK20BMH - 8GBK40BMH	0.65
	8GBK50BMH - 8GBK360BMH	0.72
	8WD□BL/BR/BRL	0.68
	8XD10□□	0.45

Motor Images

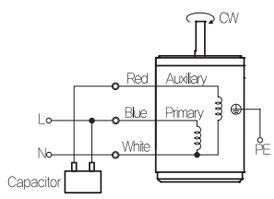
8IDD□-15	8IDD□-15-T	8IDG□-15G+8GBK□BMH	8IDG□-15W+8WD□BL
			

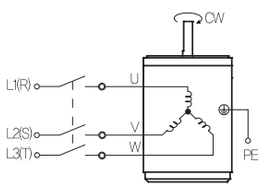
B AC Motors

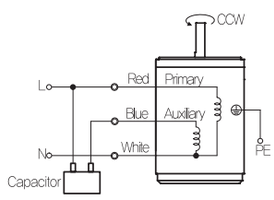
Induction Motor 15W(□80mm)

Connection Diagrams

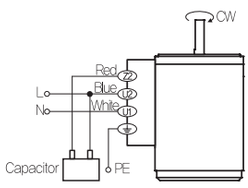
Lead Wire Type		Terminal Box Type	
[Single Phase]	[Three Phase]	[Single Phase]	[Three Phase]

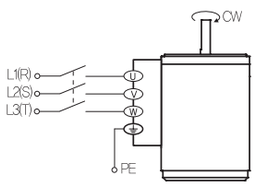


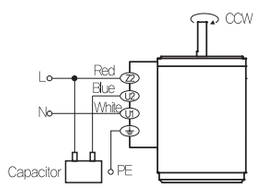




* CCW Direction:
Change any two connections between R, S and T.







* CCW Direction:
Change any two connections between R, S and T.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

25W Induction Motor 25W(□ 80mm)

Motor Specification

Model (8IDG*-25□(-T): Gear Type Shaft, 8IDD*-25(-T): D-Cut Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
8IDG1(A)-25□	8IDG1(A)-25□-T	25	1ø110	60	4	Cont.	1.63	0.163	1600	0.55	1.52	0.152	6.0 / 250
8IDG2(D)-25□	8IDG2(D)-25□-T	25	1ø220	60	4	Cont.	1.59	0.159	1550	0.27	1.57	0.157	1.5 / 450
8IDGE-25□	8IDGE-25□-T	25	1ø220	50	4	Cont.	1.57	0.157	1250	0.23	1.95	0.195	1.5 / 450
			1ø240				1.87	0.187		0.25	1.95	0.195	
8IDG3(G)-25□	8IDG3(G)-25□-T	25	3ø220	50	4	Cont.	7.61	0.761	1350	0.29	1.80	0.180	–
				60			6.15	0.615	1600	0.26	1.52	0.152	
			3ø230	50	4	Cont.	8.25	0.825	1350	0.32	1.80	0.180	
				60			6.72	0.672	1600	0.28	1.52	0.152	
8IDG4(K)-25□	8IDG4(K)-25□-T	25	3ø380	50	4	Cont.	5.70	0.570	1300	0.13	1.87	0.187	–
				60			4.53	0.453	1550	0.12	1.57	0.157	
			3ø400	50	4	Cont.	6.26	0.626	1300	0.14	1.87	0.187	
				60			5.03	0.503	1550	0.13	1.57	0.157	
8IDG5(L)-25□	8IDG5(L)-25□-T	25	3ø415	50	4	Cont.	6.68	0.668	1300	0.15	1.87	0.187	–
				60			5.40	0.540	1550	0.13	1.57	0.157	
			3ø440	50	4	Cont.	7.39	0.739	1300	0.16	1.87	0.187	
				60			6.02	0.602	1550	0.14	1.57	0.157	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15
8IDG*-25G	8GBK□ BMH	kgfcm	3.7	4.4	6.2	7.4	9.2	11.1	12.3	15.4	18.5	22.2	22.2	27.8	33.3	40.0	44.4	50.2	60.3	80.0	80.0	80.0	80.0
		N.m	0.36	0.43	0.60	0.72	0.91	1.09	1.21	1.51	1.81	2.17	2.18	2.72	3.27	3.92	4.35	4.92	5.91	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	150	180	200	250	300	360
		r/min	12	10	9	7	6	5
8IDG*-25G	8GBK□ BMH	kgfcm	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
8IDG*-25W	8WD□BL/ □BR/□BRL	kgfcm	12.5	14.6	17.6	20.3	26.6	30.1	35.1	45.7	50.2
		N.m	1.22	1.43	1.72	1.99	2.61	2.95	3.44	4.47	4.92

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5
8IDG*-25G	8GBK□ BMH	kgfcm	4.4	5.3	7.3	8.8	11.0	13.1	14.6	18.3	21.9	26.3	26.3	32.9	39.5	47.4	52.7	59.5	80.0	80.0	80.0	80.0	80.0
		N.m	0.43	0.52	0.72	0.86	1.07	1.29	1.43	1.79	2.15	2.58	2.58	3.23	3.87	4.65	5.16	5.83	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	150	180	200	250	300	360
		r/min	10	8	7.5	6	5	4
8IDG*-25G	8GBK□ BMH	kgfcm	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
8IDG*-25W	8WD□BL/ □BR/□BRL	kgfcm	14.8	17.3	20.8	24.0	31.6	35.7	41.6	54.1	59.5
		N.m	1.45	1.70	2.04	2.35	3.09	3.50	4.07	5.30	5.83

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction. 4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

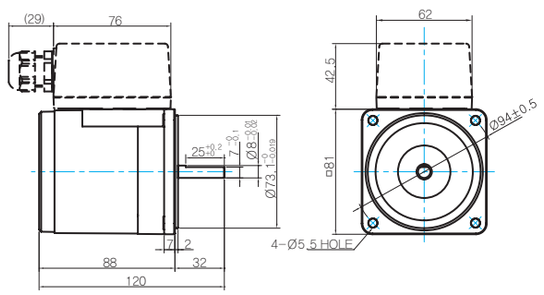
B AC Motors

Induction Motor 25W(□80mm)

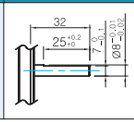
Dimensions

MOTOR ONLY

● MOTOR MODEL: 8IDD□-25(-T) (NO FAN)

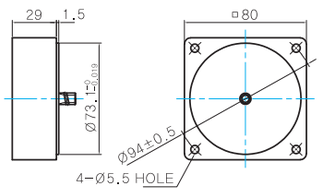


● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	

INTER-DECIMAL GEARBOX

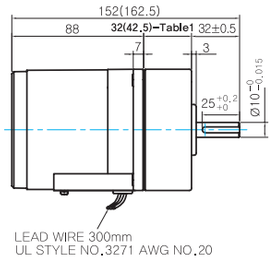
● MODEL: 8XD10□□



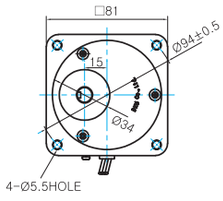
GEARED MOTOR

G TYPE GEARBOX

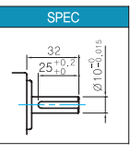
● MOTOR MODEL:
8IDG□-25G (NO FAN)



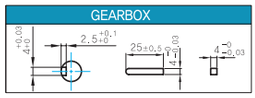
● GEARBOX MODEL:
8GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

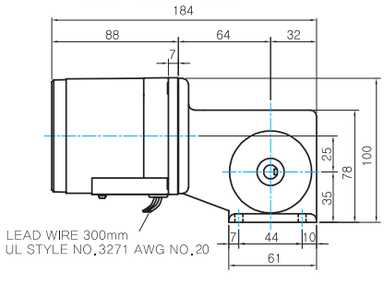


● 32(42.5)-Table1

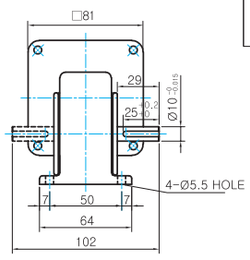
SIZE(mm)	GEAR RATIO
32	8GBK3BMH – 8GBK18BMH
42.5	8GBK20BMH – 8GBK360BMH

W TYPE GEARBOX

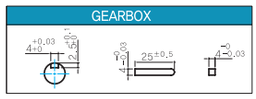
● MOTOR MODEL:
8IDG□-25W (NO FAN)



● GEARBOX MODEL:
8WD□BL/BR/BRL



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		1.56
GEAR BOX	8GBK3BMH ~ 8GBK18BMH	0.56
	8GBK20BMH ~ 8GBK40BMH	0.65
	8GBK50BMH ~ 8GBK360BMH	0.72
	8WD□BL/BR/BRL	0.68
	8XD10□□	0.45

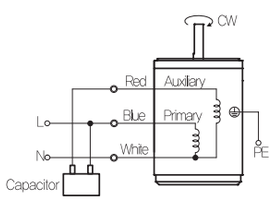
Motor Images

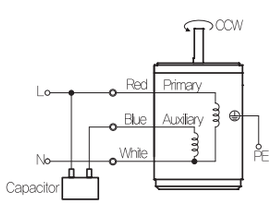
8IDD □ -25	8IDD □ -25-T	8IDG □ -25G+8GBK □ BMH	8IDG □ -25W+8WD □ BL
			

Connection Diagrams

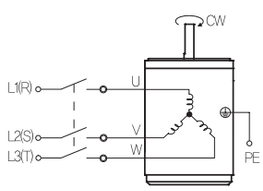
Lead Wire Type

[Single Phase]





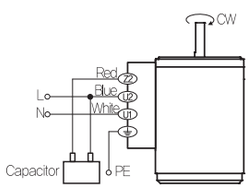
[Three Phase]

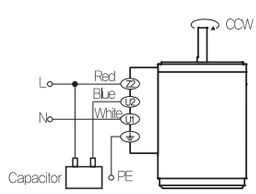


* CCW Direction:
Change any two connections between R, S and T.

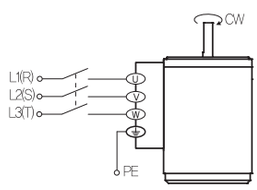
Terminal Box Type

[Single Phase]





[Three Phase]



* CCW Direction:
Change any two connections between R, S and T.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

B AC Motors

Induction Motor 40W(□80mm)

40W Induction Motor 40W(□80mm)

Motor Specification

Model (8IDG*-40F□(-T): Gear Type Shaft, 8IDD*-40F(-T): D-Cut Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
		W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
Lead Wire Type	Terminal Box Type												
8IDG1(A)-40F□	8IDG1(A)-40F□-T	40	1ø110	60	4	Cont.	2.15	0.215	1550	0.65	2.52	0.252	8.0 / 250
8IDG2(D)-40F□	8IDG2(D)-40F□-T	40	1ø220	60	4	Cont.	2.15	0.215	1500	0.33	2.60	0.260	2.0 / 450
8IDGE-40F□	8IDGE-40F□-T	40	1ø220	50	4	Cont.	2.15	0.215	1200	0.33	3.25	0.325	2.0 / 450
			1ø240				2.60	0.260	1250	0.33	3.12	0.312	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector. 3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15
8IDG*-40FG	8GBK□BMH	kgfcm	6.1	7.3	10.2	12.2	15.3	18.4	20.4	25.5	30.6	36.7	36.8	46.0	55.2	66.2	73.6	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	0.60	0.72	1.00	1.20	1.50	1.80	2.00	2.50	3.00	3.60	3.61	4.51	5.41	6.49	7.21	7.84	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear ratio	150	180	200	250	300	360
		r/min	12	10	9	7	6	5
8IDG*-40FG	8GBK□BMH	kgfcm	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
8IDG*-40FW	8WD□BL/□BR/□BRL	kgfcm	20.7	24.2	29.1	33.6	44.1	49.9	58.1	60.0	60.0
		N.m	2.03	2.37	2.85	3.29	4.32	4.89	5.69	5.88	5.88

50Hz

Motor Model	Gearbox Model	Gear ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5
8IDG*-40FG	8GBK□BMH	kgfcm	7.6	9.1	12.6	15.2	19.0	22.7	25.3	31.6	37.9	45.5	45.6	56.9	68.3	80.0	80.0	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	0.74	0.89	1.24	1.49	1.86	2.23	2.48	3.10	3.71	4.46	4.46	5.58	6.70	7.84	7.84	7.84	7.84	7.84	7.84	7.84	7.84

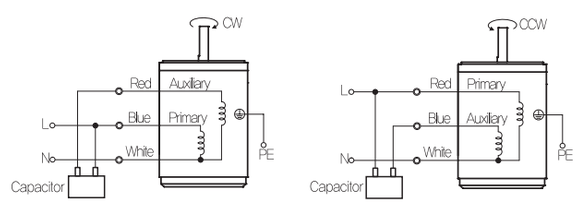
Motor Model	Gearbox Model	Gear ratio	150	180	200	250	300	360
		r/min	10	8	7.5	6	5	4
8IDG*-40FG	8GBK□BMH	kgfcm	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
8IDG*-40FW	8WD□BL/□BR/□BRL	kgfcm	25.6	30.0	36.0	41.6	54.6	60.0	60.0	60.0	60.0
		N.m	2.51	2.94	3.53	4.07	5.35	5.88	5.88	5.88	5.88

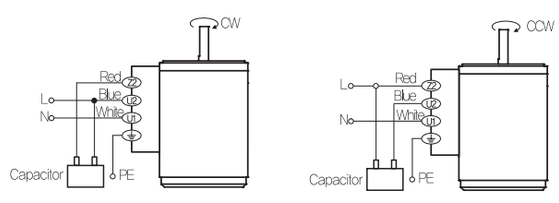
1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

Connection Diagrams

Lead Wire Type



Terminal Box Type

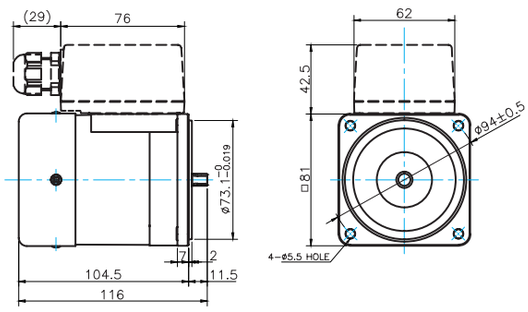


1) The direction of motor rotation is as viewed from the shaft end of the motor. 2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

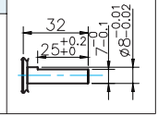
Dimensions

MOTOR ONLY

● MOTOR MODEL: 8ID□ □-40F□(-T)

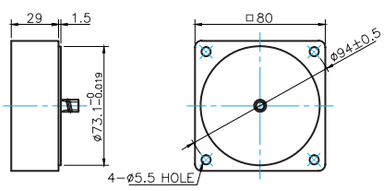


● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
8IDD□-25	

INTER-DECIMAL GEARBOX

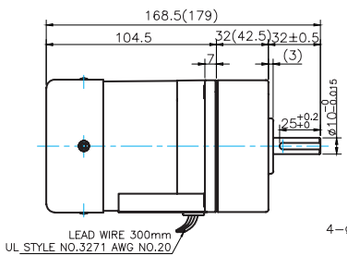
● MODEL: 8XD10□ □



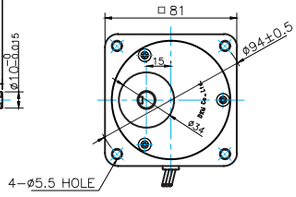
GEARED MOTOR

G TYPE GEARBOX

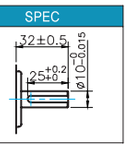
● MOTOR MODEL : 8IDG□-40FG



● GEARBOX MODEL : 8GBK□BMH



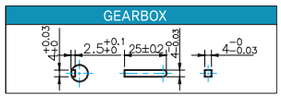
● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● 32(42.5)-Table1

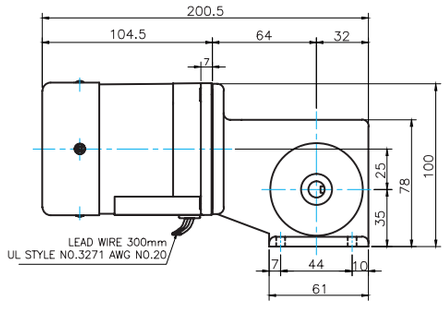
SIZE(mm)	GEAR RATIO
32	8GBK3BMH ~ 8GBK18BMH
42.5	8GBK20BMH ~ 8GBK360BMH

● Key Spec

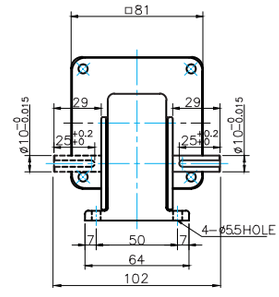


W TYPE GEARBOX

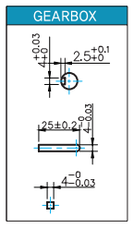
● MOTOR MODEL : 8IDG□-40FW



● GEARBOX MODEL : 8WD□BL/BR/BRL



● Key Spec



WEIGHT

PART		WEIGHT(Kg)
MOTOR		1.66
GEAR BOX	8GBK3BMH ~ 8GBK18BMH	0.56
	8GBK20BMH ~ 8GBK40BMH	0.65
	8GBK50BMH ~ 8GBK360BMH	0.72
	8WD□BL/BR/BRL	0.68
	8XD10□ □	0.45

Motor Images

8IDD□-40F	8IDD□-40F-T	8IDG□-40FG+8GBK□BMH	8IDG□-40FW+8WD□BL
			

B AC Motors

Induction Motor 40W(□90mm)

40W Induction Motor 40W(□90mm)

Motor Specification

Model (9IDG*-40□(-T): Gear Type Shaft, 9IDD*-40(-T): D-Cut Type Shaft, 9IDK*-40(-T): Key Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
		W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
Lead Wire Type	Terminal Box Type												
9IDG1(A)-40□	9IDG1(A)-40□-T	40	1ø110	60	4	Cont.	2.60	0.260	1600	0.80	2.44	0.244	10.0 / 250
9IDG2(D)-40□	9IDG2(D)-40□-T	40	1ø220	60	4	Cont.	2.60	0.260	1600	0.45	2.44	0.244	2.5 / 450
9IDGE-40□	9IDGE-40□-T	40	1ø220	50	4	Cont.	2.10	0.210	1300	0.33	3.00	0.300	2.0 / 450
			1ø240				2.60	0.260		0.36	3.00	0.300	
9IDG3(G)-40□	9IDG3(G)-40□-T	40	3ø220	50	4	Cont.	9.90	0.990	1350	0.33	2.89	0.289	–
				60			7.90	0.790	1600	0.31	2.44	0.244	
			3ø230	50	4	Cont.	10.80	1.080	1350	0.35	2.89	0.289	
				60			8.50	0.850	1600	0.33	2.44	0.244	
9IDG4(K)-40□	9IDG4(K)-40□-T	40	3ø380	50	4	Cont.	10.20	1.020	1350	0.19	2.89	0.289	–
				60			8.00	0.800	1600	0.18	2.44	0.244	
			3ø400	50	4	Cont.	11.10	1.110	1350	0.20	2.89	0.289	
				60			8.80	0.880	1600	0.19	2.44	0.244	
9IDG5(L)-40□	9IDG5(L)-40□-T	40	3ø415	50	4	Cont.	10.00	1.000	1350	0.17	2.89	0.289	–
				60			8.00	0.800	1600	0.16	2.44	0.244	
			3ø 440	50	4	Cont.	11.10	1.110	1350	0.18	2.89	0.289	
				60			8.90	0.890	1600	0.17	2.44	0.244	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name. 2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector. 3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18
9IDG*-40G	9GBK□BMH	kgfcm	3.9	5.9	7.1	9.9	11.8	14.8	17.8	19.7	24.7	29.6	35.5	35.6	44.4	53.3	64.0	71.1	80.4	96.4	100.0	100.0	100.0
		N.m	0.39	0.58	0.70	0.97	1.16	1.45	1.74	1.93	2.42	2.90	3.48	3.48	4.35	5.23	6.27	6.97	7.87	9.45	9.80	9.80	9.80

Motor Model	Gearbox Model	Gear Ratio	120	150	180	200
		r/min	15	12	10	9
9IDG*-40G	9GBK□BMH	kgfcm	100.0	100.0	100.0	100.0
		N.m	9.80	9.80	9.80	9.80

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
9IDG*-40W	9WD□BL/□BR/□BRL	kgfcm	20.0	23.4	28.1	32.4	42.6	48.2	56.1	73.1	80.4
		N.m	1.96	2.29	2.76	3.18	4.18	4.72	5.50	7.16	7.87

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9IDG*-40P	9PBK□BH	kgfcm	3.9	5.9	7.1	9.9	11.8	14.8	17.8	19.7	22.2	26.7	32.0	35.6	40.2	48.2	57.9	64.3	80.4	96.4	107.7	129.3	143.7	172.4	200.0	200.0	200.0
	9PFK□BH	N.m	0.39	0.58	0.70	0.97	1.16	1.45	1.74	1.93	2.18	2.61	3.14	3.48	3.94	4.72	5.67	6.30	7.87	9.45	10.56	12.67	14.08	16.90	19.60	19.60	19.60

50Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	38	30	25	20	17	15
9IDG*-40G	9GBK□BMH	kgfcm	4.7	7.0	8.4	11.7	14.0	17.5	21.0	23.4	29.2	35.1	42.1	42.1	52.7	63.2	75.8	84.3	95.2	100.0	100.0	100.0	100.0
		N.m	0.46	0.69	0.82	1.15	1.37	1.72	2.06	2.29	2.86	3.44	4.12	4.13	5.16	6.19	7.43	8.26	9.33	9.80	9.80	9.80	9.80

Motor Model	Gearbox Model	Gear Ratio	120	150	180	200
		r/min	13	10	8	7
9IDG*-40G	9GBK□BMH	kgfcm	100.0	100.0	100.0	100.0
		N.m	9.80	9.80	9.80	9.80

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
9IDG*-40W	9WD□BL/□BR/□BRL	kgfcm	23.7	27.7	33.3	38.4	50.5	57.1	66.5	86.6	95.2
		N.m	2.32	2.72	3.27	3.77	4.95	5.60	6.52	8.48	9.33

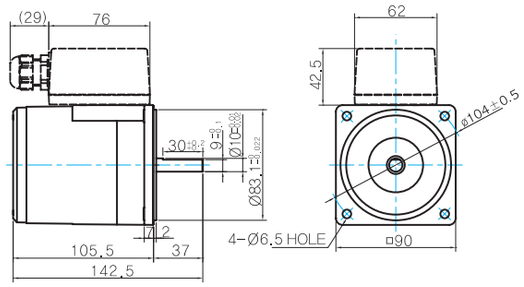
Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9IDG*-40P	9PBK□BH	kgfcm	4.7	7.0	8.4	11.7	14.0	17.5	21.0	23.4	26.3	31.6	37.9	42.1	47.6	57.1	68.6	76.2	95.2	114.3	127.7	153.2	170.3	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	0.46	0.69	0.82	1.15	1.37	1.72	2.06	2.29	2.58	3.10	3.72	4.13	4.67	5.60	6.72	7.47	9.33	11.20	12.51	15.02	16.69	19.60	19.60	19.60	19.60

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

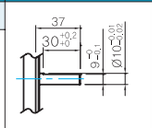
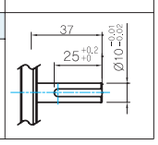
Dimensions

MOTOR ONLY

● MOTOR MODEL: 9IDD□-40(-T) (NO FAN)

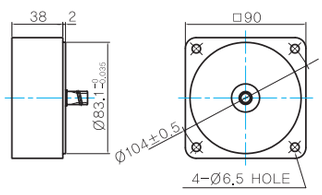


● MOTOR OUTPUT SHAFT

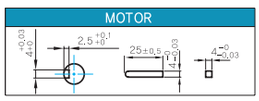
MODEL	SPEC
D-CUT TYPE 9IDD□-40	
KEY TYPE 9IDK□-40	

INTER-DECIMAL GEARBOX

● MODEL: 9XD10□□



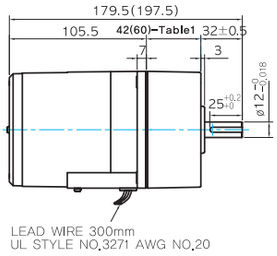
● KEY SPEC



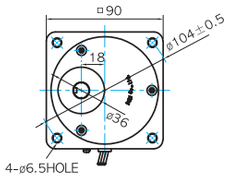
GEARED MOTOR

G TYPE GEARBOX

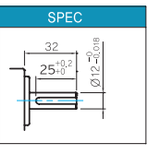
● MOTOR MODEL:
9IDG□-40G (NO FAN)



● GEARBOX MODEL:
9GBK□BMH



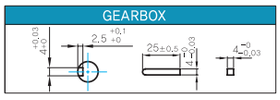
● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● 42(60)-Table1

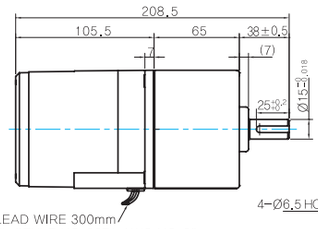
SIZE(mm)	GEAR RATIO
42	9GBK2BMH – 9GBK18BMH
60	9GBK20BMH – 9GBK200BMH

● Key Spec

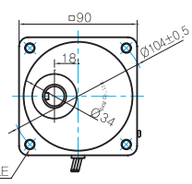


P TYPE GEARBOX

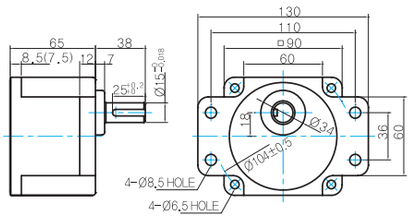
● MOTOR MODEL :
9IDG□-40P (NO FAN)



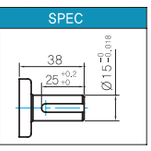
● GEARBOX MODEL :
9PBK□BH



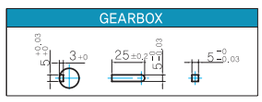
● GEARBOX MODEL :
9PFK□BH



● GEARBOX OUTPUT SHAFT

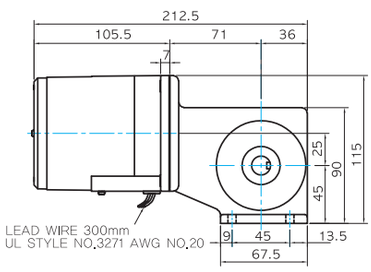
MODEL	SPEC
KEY TYPE 9PBK□BH 9PFK□BH	

● KEY SPEC

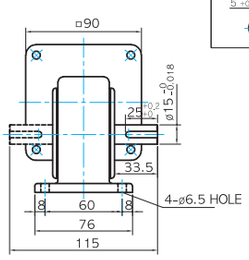


W TYPE GEARBOX

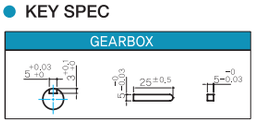
● MOTOR MODEL:
9IDG□-40W (NO FAN)



● GEARBOX MODEL:
9WD□BL/BR/BRL



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		2.45
GEAR BOX	9GBK2BMH ~ 9GBK18BMH	0.78
	9GBK20BMH ~ 9GBK40BMH	1.1
	9GBK50BMH ~ 9GBK200BMH	1.2
	9PB(F)K2BH ~ 9PB(F)K10BH	1.28
	9PB(F)K12.5BH ~ 9PB(F)K20BH	1.3
	9PB(F)K25BH ~ 9PB(F)K60BH	1.45
	9PB(F)K75BH ~ 9PB(F)K200BH	1.47
	9WD□BL/BR/BRL	1.0
	9XD10□□	0.6

B AC Motors

Induction Motor 40W(□90mm)

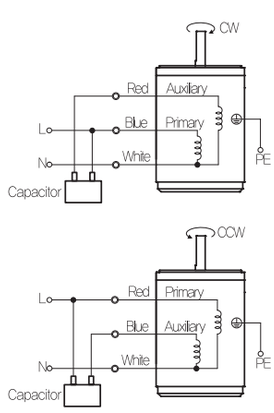
Motor Images

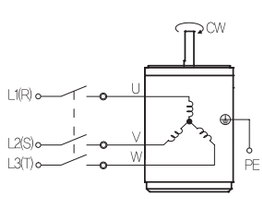
9IDD□-40	9IDD□-40-T	9IDG□-40G+9GBK□BMH	9IDG□-40P+9PBK□BH
			

9IDG□-40W+9WD□BL

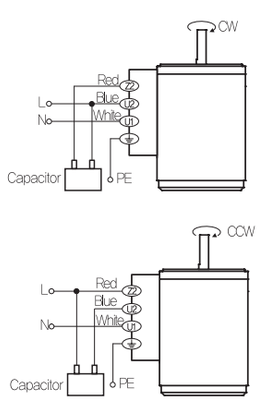

Connection Diagrams

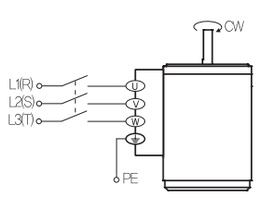
Lead Wire Type		Terminal Box Type	
[Single Phase]	[Three Phase]	[Single Phase]	[Three Phase]





* CCW Direction:
Change any two connections between R, S and T.





* CCW Direction:
Change any two connections between R, S and T.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

60W Induction Motor 60W(□90mm)

Motor Specification

Model (9IDG*-60F□(-T): Gear Type Shaft, 9IDD*-60F(-T): D-Cut Type Shaft, 9IDK*-60F(-T): Key Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
9IDG1(A)-60F□	9IDG1(A)-60F□-T	60	1ø 110	60	4	Cont.	4.30	0.430	1600	1.30	3.65	0.365	16.0 / 250
9IDG2(D)-60F□	9IDG2(D)-60F□-T	60	1ø 220	60	4	Cont.	4.20	0.420	1600	0.68	3.65	0.365	4.0 / 450
9IDGE-60F□	9IDGE-60F□-T	60	1ø 220	50	4	Cont.	3.90	0.390	1300	0.48	4.50	0.450	3.5 / 450
			1ø 240				4.80	0.480		0.54	4.50	0.450	
9IDG3(G)-60F□	9IDG3(G)-60F□-T	60	3ø 220	50	4	Cont.	17.20	1.720	1350	0.59	4.33	0.433	–
				60			13.80	1.380	1600	0.53	3.65	0.365	
			3ø 230	50	4	Cont.	18.80	1.880	1350	0.62	4.33	0.433	
				60			15.00	1.500	1600	0.56	3.65	0.365	
9IDG4(K)-60F□	9IDG4(K)-60F□-T	60	3ø 380	50	4	Cont.	16.70	1.670	1350	0.31	4.33	0.433	–
				60			13.40	1.340	1600	0.28	3.65	0.365	
			3ø 400	50	4	Cont.	18.30	1.830	1350	0.34	4.33	0.433	
				60			14.70	1.470	1600	0.30	3.65	0.365	
9IDG5(L)-60F□	9IDG5(L)-60F□-T	60	3ø 415	50	4	Cont.	16.70	1.670	1350	0.29	4.33	0.433	–
				60			13.40	1.340	1600	0.26	3.65	0.365	
			3ø 440	50	4	Cont.	18.50	1.850	1350	0.31	4.33	0.433	
				60			15.00	1.500	1600	0.28	3.65	0.365	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name. 2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector. 3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9IDG*-60FP	9PBK□BH	kgfcm	5.9	8.9	10.7	14.8	17.8	22.2	26.6	29.6	33.3	40.0	48.0	53.3	60.3	72.3	86.8	96.4	120.5	144.6	161.6	193.9	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	0.58	0.87	1.04	1.45	1.74	2.17	2.61	2.90	3.27	3.92	4.70	5.23	5.91	7.09	8.50	9.45	11.81	14.17	15.84	19.01	19.60	19.60	19.60	19.60	19.60
9IDG*-60FH	9HBK□BH	kgfcm	–	8.9	10.7	14.8	17.8	22.2	26.6	29.6	33.3	40.0	48.0	53.3	60.3	72.3	86.8	96.4	120.5	144.6	161.6	193.9	215.5	258.6	300.0	300.0	300.0
	9HFK□BH	N.m		0.87	1.04	1.45	1.74	2.17	2.61	2.90	3.27	3.92	4.70	5.23	5.91	7.09	8.50	8.50	9.45	11.81	14.17	15.84	19.01	21.12	25.34	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
9IDG*-60FW	9WD□BL/□BR/□BRL	kgfcm	30.0	35.1	42.2	48.7	63.9	72.3	84.2	109.6	120.5
		N.m	2.94	3.44	4.13	4.77	6.26	7.09	8.25	10.74	11.81

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	360	240	180	120	90	72	60	45	36	30	22
9IDG*-60FWH	9WHD□-030	kgfcm	12.7	18.4	23.7	33.3	42.1	48.2	56.1	69.0	78.9	87.7	102.9
		N.m	1.25	1.80	2.32	3.26	4.12	4.72	5.50	6.76	7.73	8.59	10.08

50Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9IDG*-60FP	9PBK□BH	kgfcm	7.0	10.5	12.6	17.5	21.0	26.3	31.6	35.1	39.5	47.4	56.9	63.2	71.4	85.7	102.9	114.3	142.9	171.4	191.6	200.0	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	0.69	1.03	1.24	1.72	2.06	2.58	3.09	3.44	3.87	4.65	5.57	6.19	7.00	8.40	10.08	11.20	14.00	16.80	18.77	19.60	19.60	19.60	19.60	19.60	19.60
9IDG*-60FH	9HBK□BH	kgfcm	–	10.5	12.6	17.5	21.0	26.3	31.6	35.1	39.5	47.4	56.9	63.2	71.4	85.7	102.9	114.3	142.9	171.4	191.6	229.9	255.4	300.0	300.0	300.0	300.0
	9HFK□BH	N.m		1.03	1.24	1.72	2.06	2.58	3.09	3.44	3.87	4.65	5.57	6.19	7.00	8.40	10.08	11.20	14.00	16.80	18.77	22.53	25.03	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
9IDG*-60FW	9WD□BL/□BR/□BRL	kgfcm	35.5	41.6	50.0	57.7	75.8	85.7	99.7	129.9	122.4
		N.m	3.48	4.07	4.90	5.65	7.42	8.40	9.77	12.73	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	300	200	150	100	75	60	50	38	30	25	18
9IDG*-60FWH	9WHD□-030	kgfcm	15.1	21.8	28.1	39.5	49.9	57.1	66.5	81.7	93.5	103.9	121.9
		N.m	1.48	2.14	2.75	3.87	4.89	5.60	6.52	8.01	9.16	10.18	11.95

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

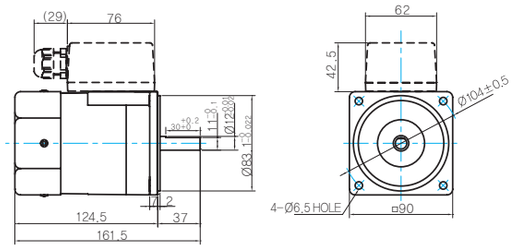
B AC Motors

Induction Motor 60W(□ 90mm)

Dimensions

MOTOR ONLY

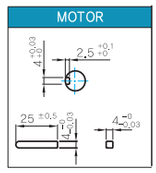
● MOTOR MODEL:
9IDD□-60F(-T) (GENERAL FAN)



● MOTOR OUTPUT SHAFT

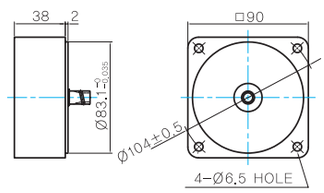
MODEL	SPEC
D-CUT TYPE	
9IDD□-60F	
KEY TYPE	
9IDK□-60F	

● KEY SPEC



INTER-DECIMAL GEARBOX

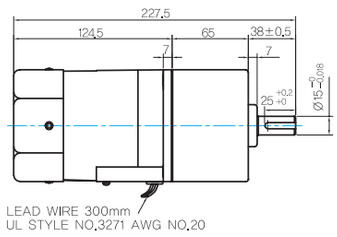
● MODEL:
9XD10□□



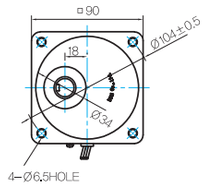
GEARED MOTOR

P TYPE GEARBOX

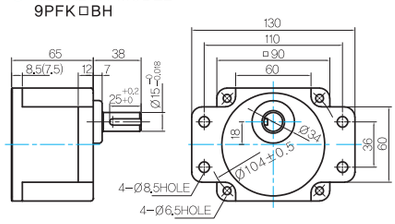
● MOTOR MODEL:
9IDG□-60FP (GENERAL FAN)



● GEARBOX MODEL:
9PBK□BH



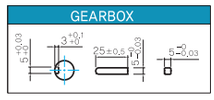
● GEARBOX MODEL:
9PFK□BH



● GEARBOX OUTPUT SHAFT

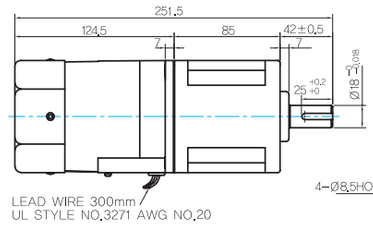
MODEL	SPEC
KEY TYPE	
9PBK□BH	
9PFK□BH	

● KEY SPEC

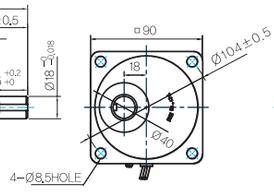


H TYPE GEARBOX

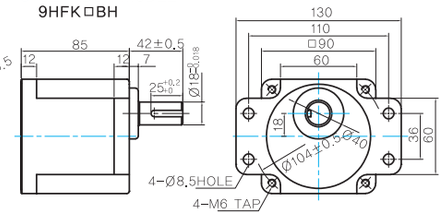
● MOTOR MODEL:
9IDG□-60FH (GENERAL FAN)



● GEARBOX MODEL:
9HBK□BH



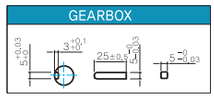
● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

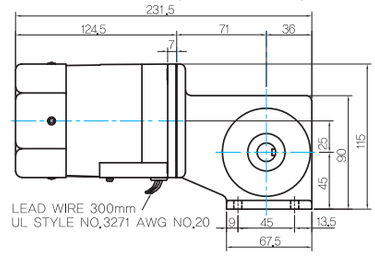
MODEL	SPEC
KEY TYPE	
9HBK□BH	
9HFK□BH	

● KEY SPEC

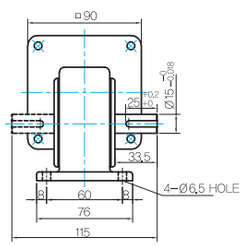


W TYPE GEARBOX

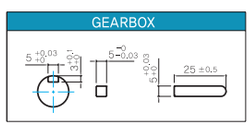
● MOTOR MODEL:
9IDG□-60FW (GENERAL FAN)



● GEARBOX MODEL:
9WD□BL/BR/BRL

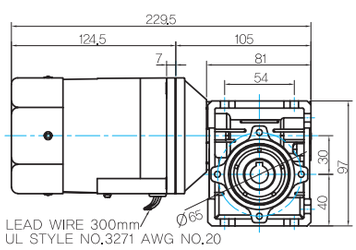


● KEY SPEC

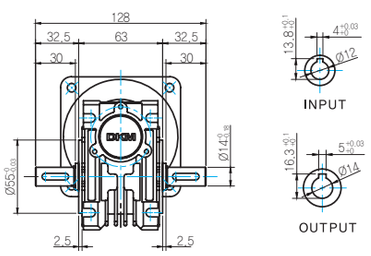


WH TYPE GEARBOX

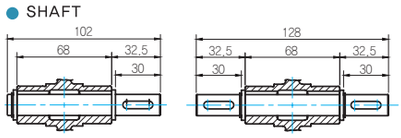
● MOTOR MODEL:
9IDG□–60FWH (GENERAL FAN)



● GEARBOX MODEL:
9WHD□–030

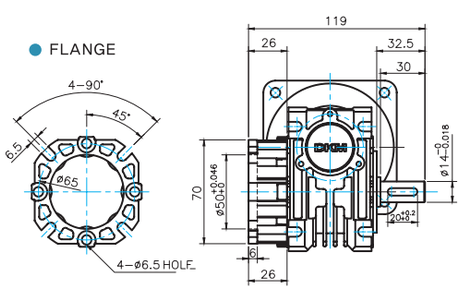


● SHAFT

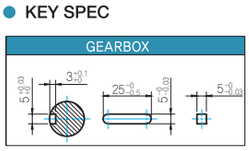


Unidirectional Bi-directional

● FLANGE



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		2.65
GEAR BOX	9PB(F)K2BH – 9PB(F)K10BH	1.28
	9PB(F)K12.5BH – 9PB(F)K20BH	1.3
	9PB(F)K25BH – 9PB(F)K60BH	1.45
	9PB(F)K75BH – 9PB(F)K200BH	1.47
	9HB(F)K3BH – 9HB(F)K10BH	1.62
	9HB(F)K12.5BH – 9HB(F)K20BH	1.68
	9HB(F)K25BH – 9HB(F)K60BH	1.73
	9HB(F)K75BH – 9HB(F)K200BH	1.78
	9WD□BL/BR/BRL	1.0
	9WHD□–030	1.2
	9XD10□□	0.6

* The output flange and shaft are sold separately

Motor Images

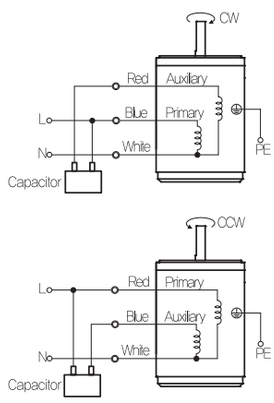
9IDD□–60F	9IDD□–60F–T	9IDG□–60FP+9PBK□BH	9IDG□–60FP+9PFK□BH
			
9IDG□–60FH+9HBK□BH	**9IDG□–60FH+9HFK□BH**	**9IDG□–60FW+9WD□BL**	**9IDG□–60FWH+9WHD□–030**
			

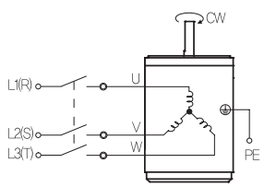
B AC Motors

Induction Motor 60W(□ 90mm)

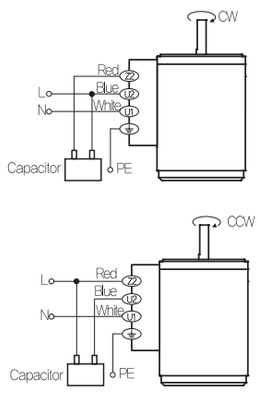
Connection Diagrams

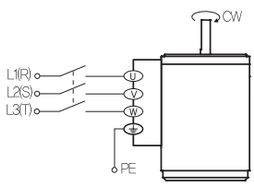
Lead Wire Type		Terminal Box Type	
[Single Phase]	[Three Phase]	[Single Phase]	[Three Phase]





* CCW Direction:
Change any two connections between R, S and T.





* CCW Direction:
Change any two connections between R, S and T.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

90W Induction Motor 90W(□ 90mm)

Motor Specification

Model (9IDG*-90F□(-T): Gear Type Shaft, 9IDD*-90F(-T): D-Cut Type Shaft, 9IDK*-90F(-T): Key Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
9IDG1(A)-90F□	9IDG1(A)-90F□-T	90	1ø 110	60	4	Cont.	5.00	0.500	1600	1.80	5.48	0.548	20.0 / 250
9IDG2(D)-90F□	9IDG2(D)-90F□-T	90	1ø 220	60	4	Cont.	5.00	0.500	1600	1.00	5.48	0.548	5.0 / 450
9IDGE-90F□	9IDGE-90F□-T	90	1ø 220	50	4	Cont.	5.30	0.530	1300	0.70	6.74	0.674	5.0 / 450
			1ø 240				6.30	0.630		0.76	6.74	0.674	
9IDG3(G)-90F□	9IDG3(G)-90F□-T	90	3ø 220	50	4	Cont.	20.50	2.050	1350	0.65	6.49	0.649	–
				60			16.20	1.620	1600	0.60	5.48	0.548	
			3ø 230	50	4	Cont.	22.00	2.200	1350	0.68	6.49	0.649	
				60			17.60	1.760	1600	0.63	5.48	0.548	
9IDG4(K)-90F□	9IDG4(K)-90F□-T	90	3ø 380	50	4	Cont.	20.00	2.000	1350	0.35	6.49	0.649	–
				60			15.70	1.570	1600	0.33	5.48	0.548	
			3ø 400	50	4	Cont.	21.80	2.180	1350	0.37	6.49	0.649	
				60			17.30	1.730	1600	0.35	5.48	0.548	
9IDG5(L)-90F□	9IDG5(L)-90F□-T	90	3ø 415	50	4	Cont.	20.50	2.050	1350	0.33	6.49	0.649	–
				60			16.20	1.620	1600	0.31	5.48	0.548	
			3ø 440	50	4	Cont.	22.70	2.270	1350	0.36	6.49	0.649	
				60			18.10	1.810	1600	0.33	5.48	0.548	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name. 2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector. 3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9IDG*-90FP	9PBK□BH	kgfcm	8.9	13.3	16.0	22.2	26.6	33.3	39.9	44.4	50.0	60.0	72.0	80.0	90.4	108.5	130.2	144.6	180.8	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	0.87	1.30	1.57	2.17	2.61	3.26	3.91	4.35	4.90	5.88	7.06	7.84	8.86	10.63	12.76	14.17	17.72	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9IDG*-90FH	9HBK□BH	kgfcm	–	13.3	16.0	22.2	26.6	33.3	39.9	44.4	50.0	60.0	72.0	80.0	90.4	108.5	130.2	144.6	180.8	217.0	242.4	290.9	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m		1.30	1.57	2.17	2.61	3.26	3.91	4.35	4.90	5.88	7.06	7.84	8.86	10.63	12.76	14.17	17.72	21.26	23.76	28.51	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
9IDG*-90FW	9WD□BL/□BR/□BRL	kgfcm	44.9	52.6	63.3	73.0	95.9	108.5	126.2	142.9	122.4
		N.m	4.40	5.15	6.20	7.15	9.40	10.63	12.37	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	360	240	180	120	90	72	60	45	36	30	22
9IDG*-90FWH	9WHD□-030	kgfcm	19.1	27.6	35.5	50.0	63.1	72.3	84.2	103.4	118.3	131.5	132.7
		N.m	1.87	2.71	3.48	4.90	6.19	7.09	8.25	10.14	11.60	12.89	13.00

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
9IDG*-90FHC	9HC□□	kgfcm	60	80	100	120	160	200	240	320	400	480	640	800	900	960
		N.m	5.88	7.84	9.8	11.8	15.7	19.6	23.5	31.4	39.2	47	62.7	78.4	88.2	94.1

50Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9IDG*-90FP	9PBK□BH	kgfcm	10.5	15.8	18.9	26.3	31.6	39.4	47.3	52.6	59.3	71.1	85.3	94.8	107.1	128.6	154.3	171.4	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	1.03	1.55	1.86	2.58	3.09	3.87	4.64	5.15	5.81	6.97	8.36	9.29	10.50	12.60	15.12	16.80	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9IDG*-90FH	9HBK□BH	kgfcm	–	15.8	18.9	26.3	31.6	39.4	47.3	52.6	59.3	71.1	85.3	94.8	107.1	128.6	154.3	171.4	214.3	257.1	287.3	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m		1.55	1.86	2.58	3.09	3.87	4.64	5.15	5.81	6.97	8.36	9.29	10.50	12.60	15.12	16.80	21.00	25.20	28.16	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
9IDG*-90FW	9WD□BL/□BR/□BRL	kgfcm	53.2	62.3	75.0	86.5	113.6	128.6	149.6	142.9	122.4
		N.m	5.22	6.11	7.35	8.48	11.14	12.60	14.66	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	300	200	150	100	75	60	50	38	30	25	18
9IDG*-90FWH	9WHD□-030	kgfcm	22.6	32.7	42.1	59.2	74.8	85.7	99.7	122.6	140.3	155.8	132.7
		N.m	2.21	3.21	4.12	5.80	7.33	8.40	9.77	12.01	13.75	15.27	13.00

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
9IDG*-90FHC	9HC□□	kgfcm	71.1	94.8	119	142	190	237	284	379	474	569	758	948	1067	1138
		N.m	6.97	9.28	11.7	13.9	18.6	23.2	27.8	37.1	46.5	55.8	74.3	92.9	105	112

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

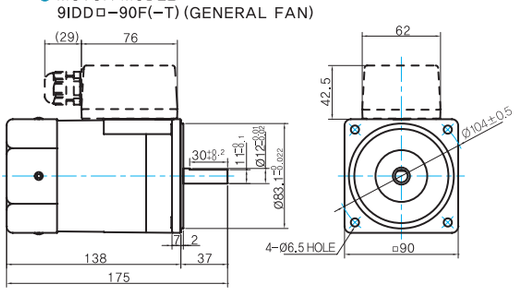
B AC Motors

Induction Motor 90W(□ 90mm)

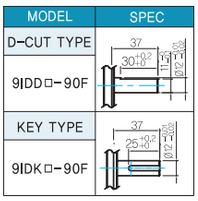
Dimensions

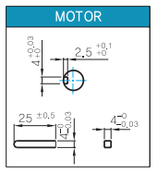
MOTOR ONLY

● MOTOR MODEL:
9IDD□-90F(-T) (GENERAL FAN)



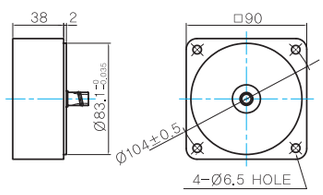
● MOTOR OUTPUT SHAFT ● KEY SPEC

MODEL	SPEC
D-CUT TYPE	
9IDD□-90F	
KEY TYPE	
9IDK□-90F	

MOTOR


INTER-DECIMAL GEARBOX

● MODEL: 9XD10□□



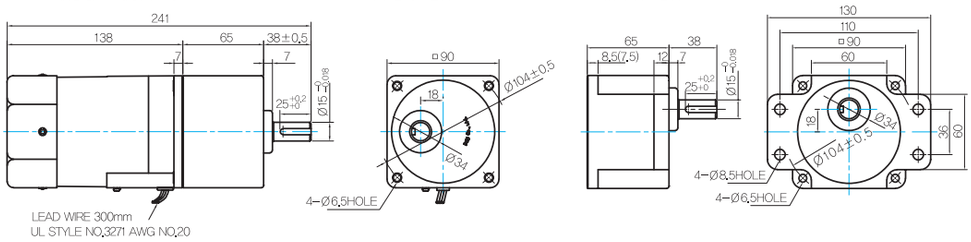
GEARED MOTOR

P TYPE GEARBOX

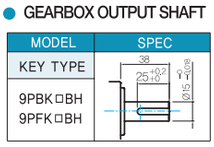
● MOTOR MODEL:
9IDG□-90FP (GENERAL FAN)

● GEARBOX MODEL:
9PBK□BH

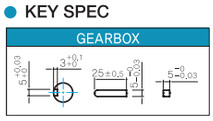
● GEARBOX MODEL:
9PFK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE 9PBK□BH 9PFK□BH	

● KEY SPEC

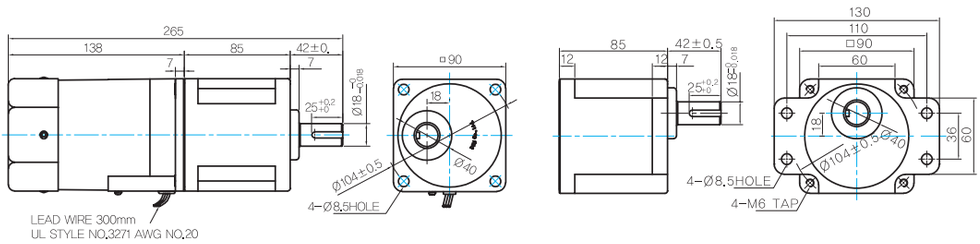
GEARBOX


H TYPE GEARBOX

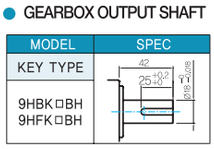
● MOTOR MODEL:
9IDG□-90FH (GENERAL FAN)

● GEARBOX MODEL:
9HBK□BH

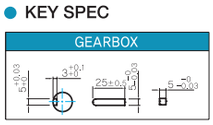
● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE 9HBK□BH 9HFK□BH	

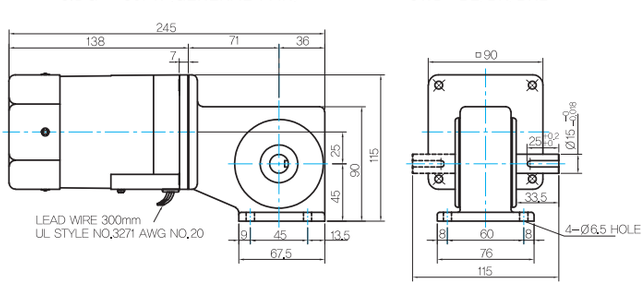
● KEY SPEC

GEARBOX


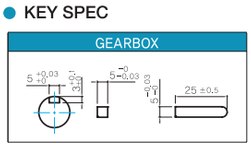
W TYPE GEARBOX

● MOTOR MODEL:
9IDG□-90FW (GENERAL FAN)

● GEARBOX MODEL:
9WD□BL/BR/BRL

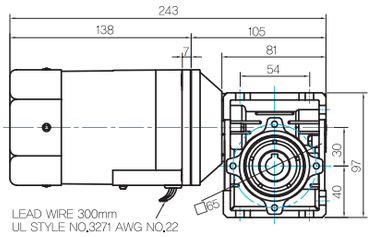


● KEY SPEC

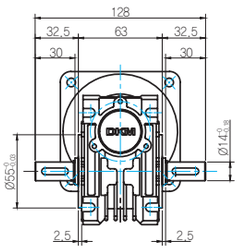
GEARBOX


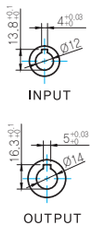
WH TYPE GEARBOX

● MOTOR MODEL:
9IDG□-90FWH (GENERAL FAN)

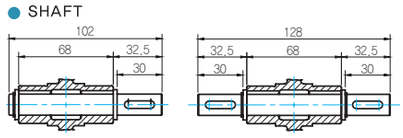


● GEARBOX MODEL:
9WHD□-030



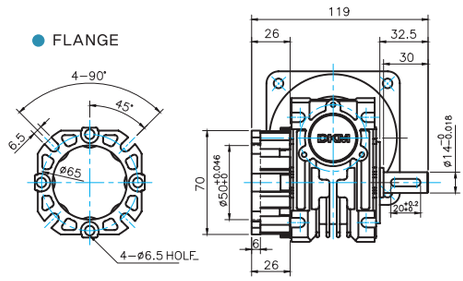


● SHAFT

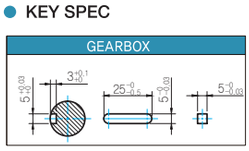


Unidirectional Bi-directional

● FLANGE

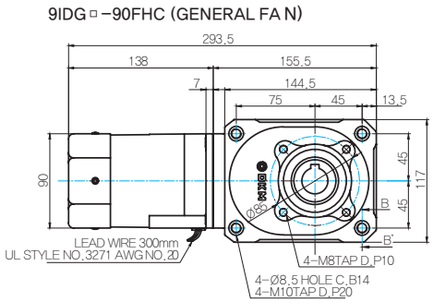


● KEY SPEC

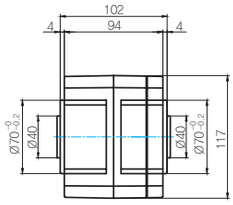


HC TYPE GEARBOX

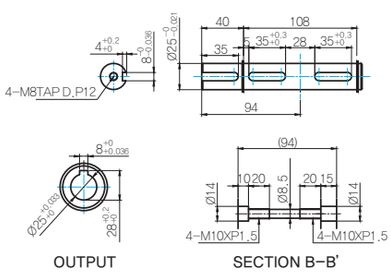
● MOTOR MODEL :
9IDG□-90FHC (GENERAL FAN)



● GEARBOX MODEL:
9HC(15 ~ 60)□

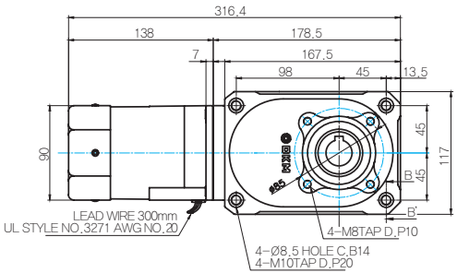


● SHAFT

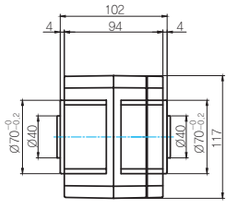


OUTPUT SECTION B-B'

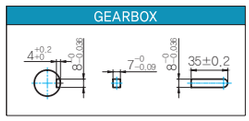
● MOTOR MODEL :
9IDG□-90FHC (GENERAL FAN)



● GEARBOX MODEL :
9HC(80 ~ 240)□



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		3.05
GEAR BOX	9PB(F)K2BH - 9PB(F)K10BH	1.28
	9PB(F)K12.5BH - 9PB(F)K20BH	1.3
	9PB(F)K25BH - 9PB(F)K60BH	1.45
	9PB(F)K75BH - 9PB(F)K200BH	1.47
	9HB(F)K3BH - 9HB(F)K10BH	1.62
	9HB(F)K12.5BH - 9HB(F)K20BH	1.68
	9HB(F)K25BH - 9HB(F)K60BH	1.73
	9HB(F)K75BH - 9HB(F)K200BH	1.78
	9WD□BL/BR/BRL	1.0
	9WHD□-030	1.2
	9HC15□	4.05
	9HC20□~9HC60□	4.1
	9HC80□~9HC240□	4.75
	9XD10□□	0.6

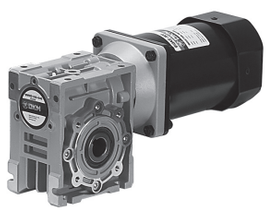
* The output flange and shaft are sold separately

B AC Motors

Induction Motor 90W(□90mm)

Motor Images

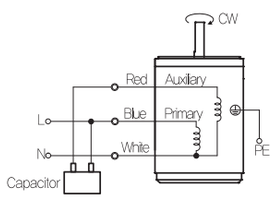
9IDD□-90F	9IDD□-90F-T	9IDG□-90FP+9PBK□BH	9IDG□-90FP+9PFK□BH
			

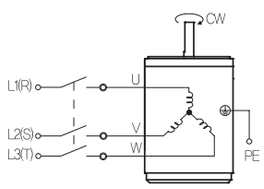
9IDG□-90FH+9HBK□BH	9IDG□-90FH+9HFK□BH	9IDG□-90FW+9WD□BL	9IDG□-90FWH+9WHD□-030
			

9IDG□-90FHC+9HC□□

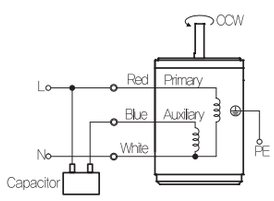

Connection Diagrams

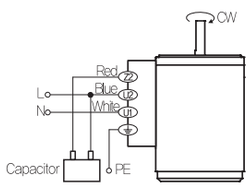
Lead Wire Type		Terminal Box Type	
[Single Phase]	[Three Phase]	[Single Phase]	[Three Phase]

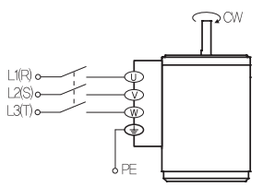




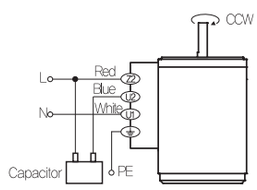
* CCW Direction:
Change any two connections between R, S and T.







* CCW Direction:
Change any two connections between R, S and T.



1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

120W Induction Motor 120W(□90mm)

Motor Specification

Model (9IDG*-120F□(-T): Gear Type Shaft, 9IDD*-120F(-T): D-Cut Type Shaft, 9IDK*-120F(-T): Key Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
9IDG1(A)-120F□	9IDG1(A)-120F□-T	120	1ø 110	60	4	Cont.	6.50	0.650	1600	2.00	7.31	0.731	25.0 / 250
9IDG2(D)-120F□	9IDG2(D)-120F□-T	120	1ø 220	60	4	Cont.	6.20	0.620	1600	1.04	7.31	0.731	6.0 / 450
9IDGE-120F□	9IDGE-120F□-T	120	1ø 220	50	4	Cont.	6.40	0.640	1250	0.90	9.35	0.935	6.0 / 450
			1ø 240				7.50	0.750		1.00	9.35	0.935	
9IDG3(G)-120F□	9IDG3(G)-120F□-T	120	3ø 220	50	4	Cont.	24.40	2.440	1300	0.88	8.99	0.899	–
				60			20.00	2.000	1600	0.71	7.31	0.731	
			3ø 230	50	4	Cont.	27.00	2.700	1350	0.86	8.66	0.866	
				60			21.70	2.170	1600	0.76	7.31	0.731	
9IDG4(K)-120F□	9IDG4(K)-120F□-T	120	3ø 380	50	4	Cont.	24.30	2.430	1300	0.50	8.99	0.899	–
				60			19.90	1.990	1600	0.41	7.31	0.731	
			3ø 400	50	4	Cont.	27.10	2.710	1350	0.49	8.66	0.866	
				60			21.90	2.190	1600	0.43	7.31	0.731	
9IDG5(L)-120F□	9IDG5(L)-120F□-T	120	3ø 415	50	4	Cont.	24.30	2.430	1300	0.47	8.99	0.899	–
				60			19.90	1.990	1600	0.37	7.31	0.731	
			3ø 440	50	4	Cont.	27.50	2.750	1350	0.47	8.66	0.866	
				60			22.20	2.220	1600	0.40	7.31	0.731	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name. 2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector. 3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9IDG*-120FP	9PBK□BH / 9PFK□BH	kgfcm	11.8	17.8	21.3	29.6	35.5	44.4	53.3	59.2	66.7	80.0	96.0	106.7	120.5	144.6	173.6	192.9	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
		N.m	1.16	1.74	2.09	2.90	3.48	4.35	5.22	5.80	6.53	7.84	9.41	10.45	11.81	14.17	17.01	18.90	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9IDG*-120FH	9HBK□BH / 9HFK□BH	kgfcm	–	17.8	21.3	29.6	35.5	44.4	53.3	59.2	66.7	80.0	96.0	106.7	120.5	144.6	173.6	192.9	241.1	289.3	300.0	300.0	300.0	300.0	300.0	300.0	300.0
		N.m		1.74	2.09	2.90	3.48	4.35	5.22	5.80	6.53	7.84	9.41	10.45	11.81	14.17	17.01	18.90	23.62	28.35	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
9IDG*-120FW	9WD□BL/□BR/□BRL	kgfcm	59.9	70.1	84.4	97.3	127.8	144.6	153.1	142.9	122.4
		N.m	5.87	6.87	8.27	9.54	12.53	14.17	15.00	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	360	240	180	120	90	72	60	45	36	30	22
9IDG*-120FWH	9WHD□-030	kgfcm	25.4	36.8	47.3	66.6	84.2	96.4	112.2	137.9	157.8	163.3	132.7
		N.m	2.49	3.61	4.64	6.53	8.25	9.45	11.00	13.52	15.46	16.00	13.00

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
9IDG*-120FHC	9HC□□	kgfcm	80	107	133	160	213	267	320	427	533	640	853	1067	1200	1280
		N.m	7.84	10.5	13	15.7	20.9	26.2	31.4	41.8	52.2	62.7	83.6	105	118	125

50Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9IDG*-120FP	9PBK□BH / 9PFK□BH	kgfcm	14.0	21.0	25.2	35.1	42.1	52.6	63.1	70.1	79.0	94.8	113.8	126.4	142.9	171.4	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
		N.m	1.37	2.06	2.47	3.44	4.12	5.15	6.19	6.87	7.74	9.29	11.15	12.39	14.00	16.80	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9IDG*-120FH	9HBK□BH / 9HFK□BH	kgfcm	–	21.0	25.2	35.1	42.1	52.6	63.1	70.1	79.0	94.8	113.8	126.4	142.9	171.4	205.7	228.6	285.7	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
		N.m		2.06	2.47	3.44	4.12	5.15	6.19	6.87	7.74	9.29	11.15	12.39	14.00	16.80	20.16	22.40	28.00	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
9IDG*-120FW	9WD□BL/□BR/□BRL	kgfcm	71.0	83.1	100.0	115.3	151.5	170.0	153.1	142.9	122.4
		N.m	6.96	8.15	9.80	11.30	14.85	16.66	15.00	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	300	200	150	100	75	60	50	38	30	25	18
9IDG*-120FWH	9WHD□-030	kgfcm	30.1	43.6	56.1	79.0	99.7	114.3	133.0	163.5	173.5	163.3	132.7
		N.m	2.95	4.28	5.50	7.74	9.77	11.20	13.03	16.02	17.00	16.00	13.00

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
9IDG*-120FHC	9HC□□	kgfcm	94.8	126	158	190	253	316	379	506	632	758	1011	1264	1422	1517
		N.m	9.29	12.3	15.5	18.6	24.8	31	37.1	49.6	61.9	74.3	99.1	124	139	149

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

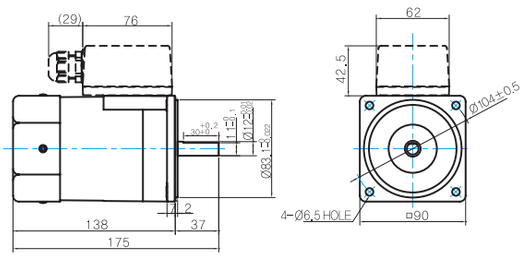
B AC Motors

Induction Motor 120W(□ 90mm)

Dimensions

MOTOR ONLY

● MOTOR MODEL:
9IDD□-120F(-T) (GENERAL FAN)



● MOTOR OUTPUT SHAFT

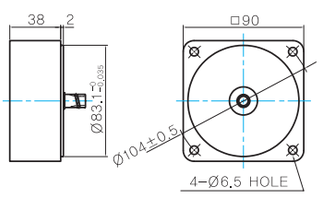
MODEL	SPEC
D-CUT TYPE	
9IDD□-120F	
KEY TYPE	
9IDK□-120F	

● KEY SPEC

MOTOR

INTER-DECIMAL GEARBOX

● MODEL:
9XD10□□



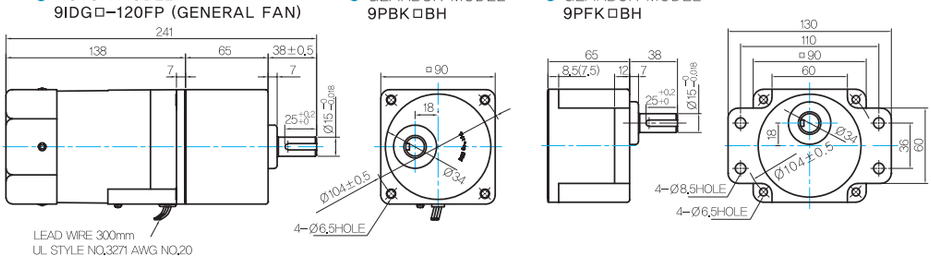
GEARED MOTOR

P TYPE GEARBOX

● MOTOR MODEL:
9IDG□-120FP (GENERAL FAN)

● GEARBOX MODEL:
9PBK□BH

● GEARBOX MODEL:
9PFK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	
9PBK□BH	
9PFK□BH	

● KEY SPEC

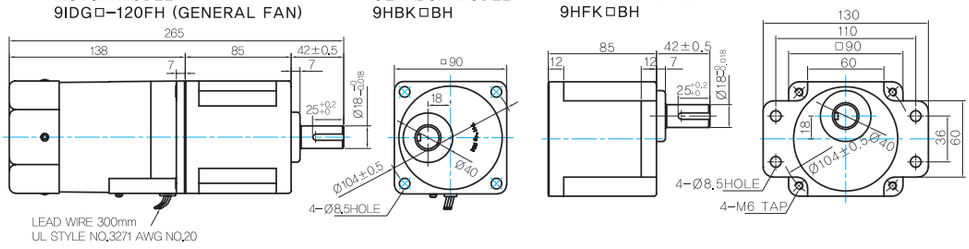
GEARBOX

H TYPE GEARBOX

● MOTOR MODEL:
9IDG□-120FH (GENERAL FAN)

● GEARBOX MODEL:
9HBK□BH

● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	
9HBK□BH	
9HFK□BH	

● KEY SPEC

GEARBOX

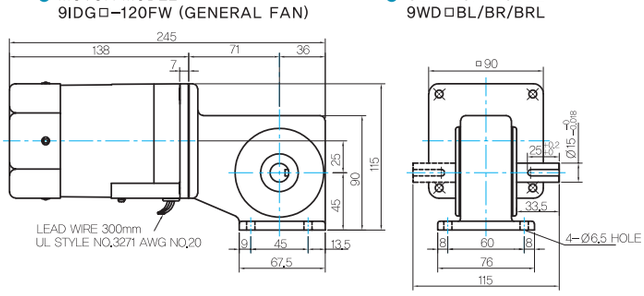
W TYPE GEARBOX

● MOTOR MODEL:
9IDG□-120FW (GENERAL FAN)

● GEARBOX MODEL:
9WD□BL/BR/BRL

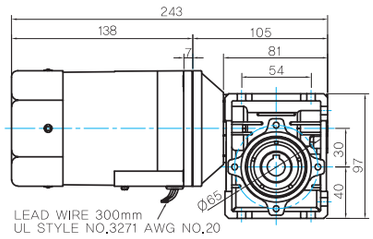
● KEY SPEC

GEARBOX

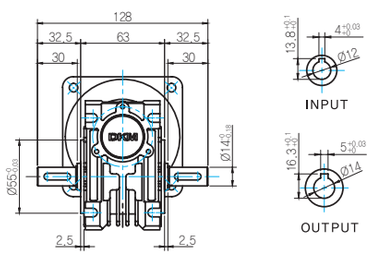


WH TYPE GEARBOX

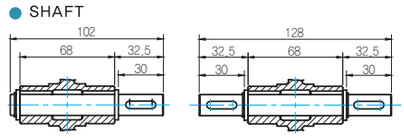
● MOTOR MODEL:
9IDG□-120FWH (GENERAL FAN)



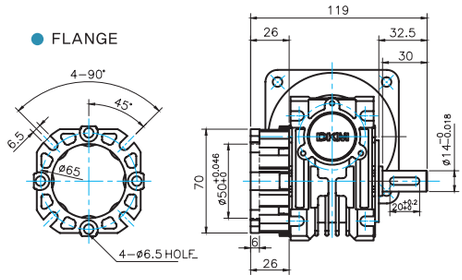
● GEARBOX MODEL:
9WHD□-030



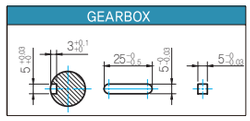
● SHAFT



● FLANGE

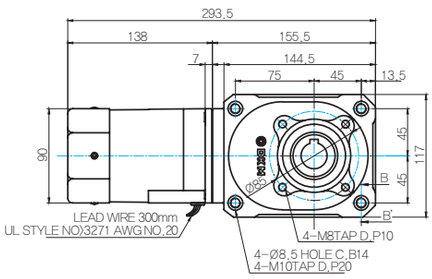


● KEY SPEC

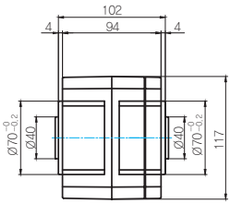


HC TYPE GEARBOX

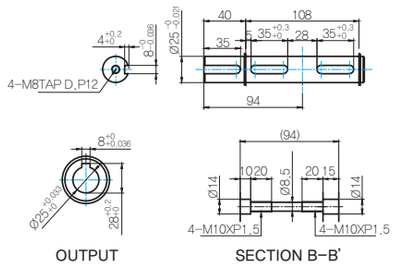
● MOTOR MODEL :
9IDG□-120FHC (GENERAL FAN)



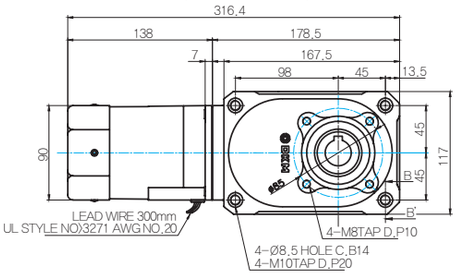
● GEARBOX MODEL:
9HC(15 ~ 60)□



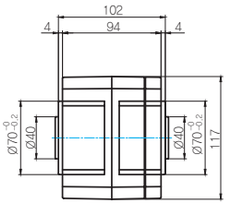
● SHAFT



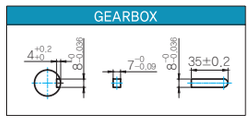
● MOTOR MODEL :
9IDG□-120FHC (GENERAL FAN)



● GEARBOX MODEL :
9HC(80 ~ 240)□



● KEY SPEC



WEIGHT

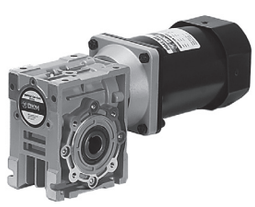
PART		WEIGHT(Kg)
MOTOR		3.05
GEAR BOX	9PB(F)K2BH ~ 9PB(F)K10BH	1.28
	9PB(F)K12.5BH ~ 9PB(F)K20BH	1.3
	9PB(F)K25BH ~ 9PB(F)K60BH	1.45
	9PB(F)K75BH ~ 9PB(F)K200BH	1.47
	9HB(F)K3BH ~ 9HB(F)K10BH	1.62
	9HB(F)K12.5BH ~ 9HB(F)K20BH	1.68
	9HB(F)K25BH ~ 9HB(F)K60BH	1.73
	9HB(F)K75BH ~ 9HB(F)K200BH	1.78
	9WD□BL/BR/BRL	1.0
	9WHD□-030	1.2
	9HC15□	4.05
	9HC20□~9HC60□	4.1
	9HC80□~9HC240□	4.75
	9XD10□□	0.6

* The output flange and shaft are sold separately

B AC Motors

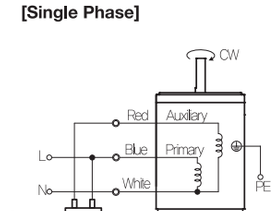
Induction Motor 120W(□90mm)

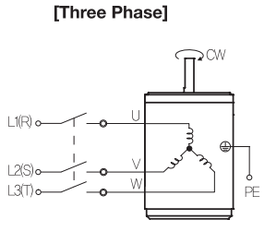
Motor Images

9IDD□-120F	9IDD□-120F-T	9IDG□-120FP+9PBK□BH	9IDG□-120FP+9PFK□BH
			
9IDG□-120FH+9HBK□BH	**9IDG□-120FH+9HFK□BH**	**9IDG□-120FW+9WD□BL**	**9IDG□-120FWH+9WHD□-030**
			
9IDG□-120FHC+9HC□□			
			

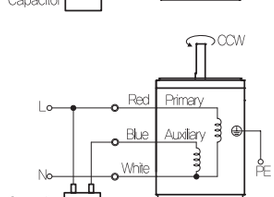
Connection Diagrams

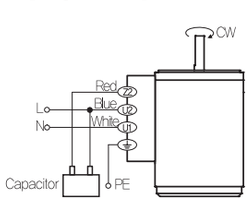
Lead Wire Type		Terminal Box Type	
[Single Phase]	[Three Phase]	[Single Phase]	[Three Phase]

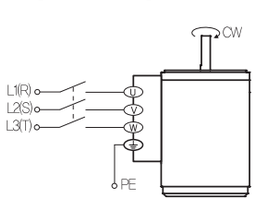


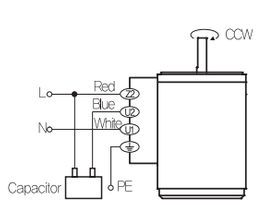


* CCW Direction:
Change any two connections between R, S and T.









* CCW Direction:
Change any two connections between R, S and T.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

150W Induction Motor 150W(□ 90mm)

Motor Specification

Model (9IDG*−150F□(−T): Gear Type Shaft, 9IDD*−150F(−T): D−Cut Type Shaft, 9IDK*−150F(−T): Key Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
9IDG3(G)−150F□	9IDG3(G)−150F□−T	150	3ø 220	50	4	Cont.	25.70	2.570	1300	0.94	11.24	1.124	−
				60			20.50	2.050	1550	0.84	9.43	0.943	
			3ø 230	50	4	Cont.	27.50	2.750	1300	1.02	11.24	1.124	
				60			22.20	2.220	1550	0.89	9.43	0.943	
9IDG4(K)−150F□	9IDG4(K)−150F□−T	150	3ø 380	50	4	Cont.	25.10	2.510	1300	0.53	11.24	1.124	−
				60			20.00	2.000	1550	0.48	9.43	0.943	
			3ø 400	50	4	Cont.	27.30	2.730	1300	0.57	11.24	1.124	
				60			22.00	2.200	1550	0.50	9.43	0.943	
9IDG5(L)−150F□	9IDG5(L)−150F□−T	150	3ø 415	50	4	Cont.	25.00	2.500	1300	0.51	11.24	1.124	−
				60			22.10	2.210	1550	0.45	9.43	0.943	
			3ø 440	50	4	Cont.	27.20	2.720	1300	0.55	11.24	1.124	
				60			22.40	2.240	1550	0.48	9.43	0.943	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name. 2) The phase & voltage code G, K, L contain a built−in thermal protector. 3) Gear Type Shaft is for attaching a gearbox and D−Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9IDG*−150FH	9HBK□BH	kgfcm	22.9	27.5	38.2	45.8	57.3	68.7	76.3	86.0	103.2	123.9	137.6	155.5	186.6	224.0	248.8	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m	2.24	2.69	3.74	4.49	5.61	6.73	7.48	8.43	10.11	12.14	13.49	15.24	18.29	21.95	24.39	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	360	240	180	120	90	72	60	45	36	30	22	18
9IDG*−150FWH	9WHD□−030	kgfcm	32.8	47.5	61.1	86.0	108.6	124.4	144.8	178.0	173.5	163.3	132.7	−
		N.m	3.21	4.66	5.99	8.42	10.64	12.19	14.19	17.44	17.00	16.00	13.00	−
	9WHD□−040	kgfcm	−	−	−	−	−	−	−	−	230.0	257.9	295.0	270.0
		N.m	−	−	−	−	−	−	−	−	22.54	25.27	28.91	26.46

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
9IDG*−150FHC	9HC□□	kgfcm	103	138	172	206	275	344	413	550	688	826	1101	1376	1548	1651
		N.m	10.1	13.5	16.9	20.2	27	33.7	40.5	53.9	67.4	80.9	108	135	152	162

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9IDG*−150FH	9HBK□BH	kgfcm	27.3	32.8	45.5	54.6	68.3	81.9	91.0	102.6	123.1	147.7	164.1	185.4	222.5	267.0	296.7	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m	2.68	3.21	4.46	5.35	6.69	8.03	8.92	10.05	12.06	14.47	16.08	18.17	21.81	26.17	29.08	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	300	200	150	100	75	60	50	38	30	25	18	15
9IDG*−150FWH	9WHD□−030	kgfcm	39.1	56.6	72.8	102.5	129.5	148.3	172.6	183.7	173.5	163.3	132.7	−
		N.m	3.83	5.55	7.14	10.04	12.69	14.54	16.92	18.00	17.00	16.00	13.00	−
	9WHD□−040	kgfcm	−	−	−	−	−	−	−	−	274.2	307.5	295.0	270.0
		N.m	−	−	−	−	−	−	−	−	26.87	30.13	28.91	26.46

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
9IDG*−150FHC	9HC□□	kgfcm	123	164	205	246	328	410	492	656	820	984	1313	1641	1800	1800
		N.m	12.1	16.1	20.1	24.1	32.1	40.2	48.2	64.3	80.4	96.4	129	161	176	176

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

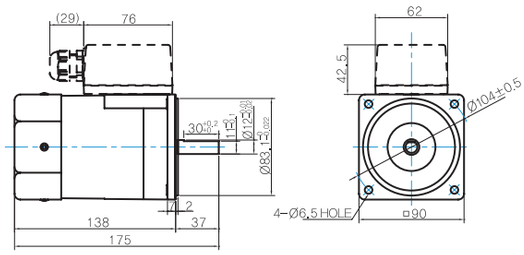
B AC Motors

Induction Motor 150W(□90mm)

Dimensions

MOTOR ONLY

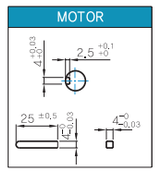
● MOTOR MODEL:
9IDD□-150F(-T) (GENERAL FAN)



● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
9IDD□-150F	
KEY TYPE	
9IDK□-150F	

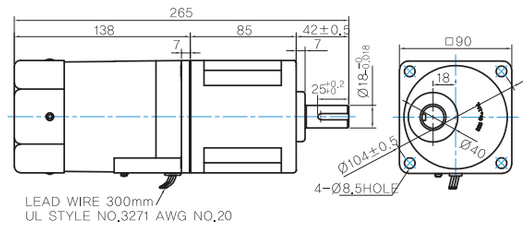
● KEY SPEC



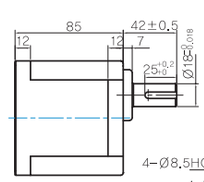
GEARED MOTOR

H TYPE GEARBOX

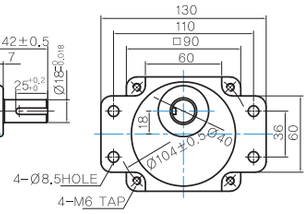
● MOTOR MODEL:
9IDG□-150FH (GENERAL FAN)



● GEARBOX MODEL:
9HBK□BH



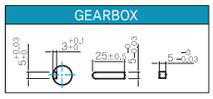
● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

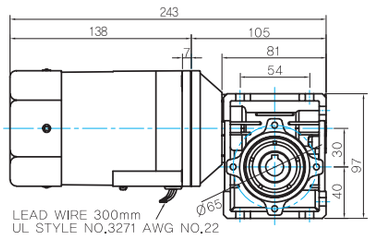
MODEL	SPEC
KEY TYPE	
9HBK□BH 9HFK□BH	

● KEY SPEC

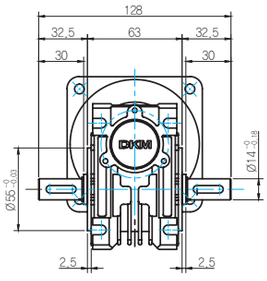


WH TYPE GEARBOX

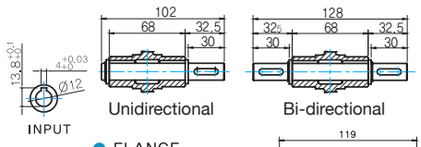
● MOTOR MODEL:
9IDG□-150FWH (GENERAL FAN)



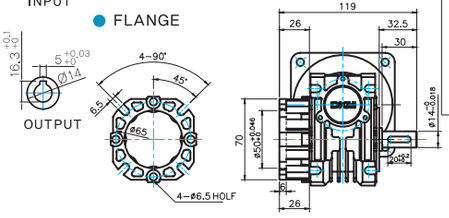
● GEARBOX MODEL:
9WHD□-030



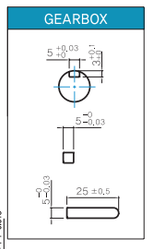
● SHAFT



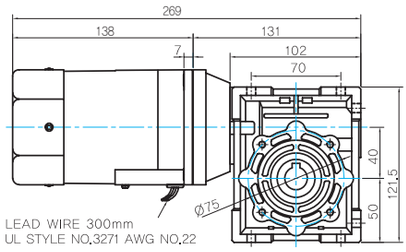
● FLANGE



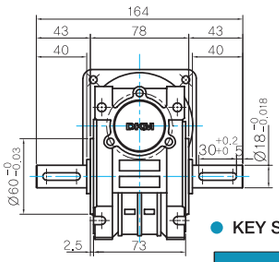
● KEY SPEC



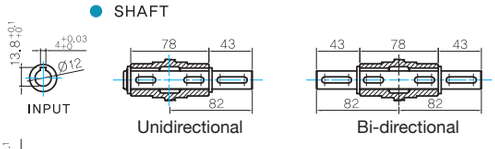
● MOTOR MODEL:
9IDG□-150FWH (GENERAL FAN)



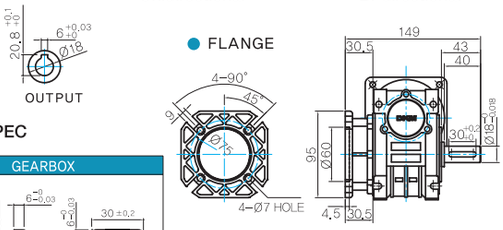
● GEARBOX MODEL:
9WHD□-040



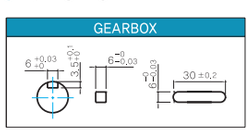
● SHAFT



● FLANGE

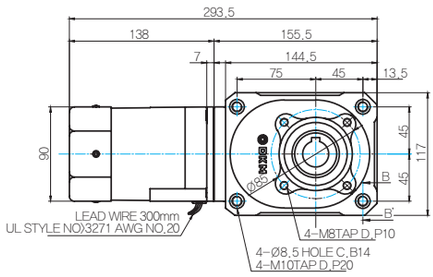


● KEY SPEC

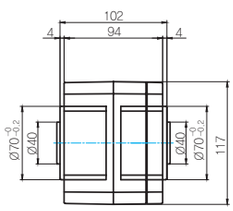


HC TYPE GEARBOX

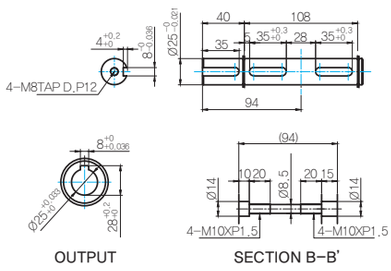
● MOTOR MODEL :
9IDG□-150FHC (GENERAL FA N)



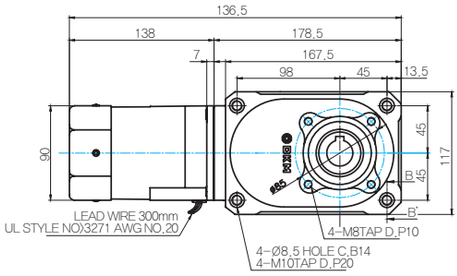
● GEARBOX MODEL:
9HC(15 ~ 60)□



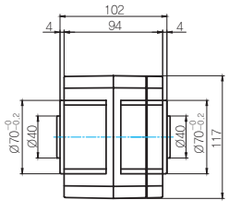
● SHAFT



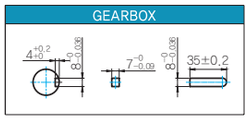
● MOTOR MODEL :
9IDG□-150FHC (GENERAL FA N)



● GEARBOX MODEL :
9HC(80 ~ 240)□



● KEY SPEC



WEIGHT

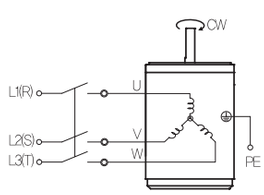
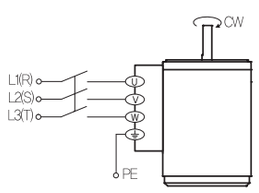
PART		WEIGHT(Kg)
MOTOR		3.05
GEAR BOX	9HB(F)K3BH ~ 9HB(F)K10BH	1.62
	9HB(F)K12.5BH ~ 9HB(F)K20BH	1.68
	9HB(F)K25BH ~ 9HB(F)K60BH	1.73
	9HB(F)K75BH ~ 9HB(F)K200BH	1.78
	9WHD□-030	1.2
	9WHD□-040	2.1
	9HC15□	4.05
	9HC20□~9HC60□	4.1
	9HC80□~9HC240□	4.75
	9XD10□□	0.6

* The output flange and shaft are sold separately

Motor Images

9IDD□-150F	9IDD□-150F-T	9IDG□-150FH+9HBK□BH	9IDG□-150FH+9HFK□BH	9IDG□-150FWH+9WHD□-030	9IDG□-150FHC+9HC□□
					

Connection Diagrams

Lead Wire Type	Terminal Box Type
	

* CCW Direction:
Change any two connections between R, S and T.

* CCW Direction:
Change any two connections between R, S and T.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.

B AC Motors

Induction Motor 180W(□90mm)

180W Induction Motor 180W(□90mm)

Motor Specification

Model 9IDG*-180F□(-T): Gear Type Shaft 9IDD*-180F(-T): D-Cut Type Shaft 9IDK*-180F(-T): Key Type Shaft		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
9IDG1(A)-180F□	9IDG1(A)-180F□-T	180	1ø 110	60	4	Cont.	7.40	0.740	1600	3.00	10.96	1.096	30.0 / 250
9IDG2(D)-180F□	9IDG2(D)-180F□-T	180	1ø 220	60	4	Cont.	7.80	0.780	1600	1.50	10.96	1.096	8.0 / 450
9IDGE-180F□	9IDGE-180F□-T	180	1ø 220	50	4	Cont.	8.10	0.810	1250	1.50	14.03	1.403	8.0 / 450
			1ø 240				9.70	0.970	1300	1.60	13.49	1.349	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9IDG*-180FH	9HBK□BH 9HFK□BH	kgfcm	26.6	32.0	44.4	53.3	66.6	79.9	88.8	100.0	120.0	144.0	160.0	180.8	217.0	260.4	289.3	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
		N.m	2.61	3.13	4.35	5.22	6.52	7.83	8.70	9.80	11.76	14.11	15.68	17.72	21.26	25.51	28.35	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	360	240	180	120	90	72	60	45	36	30	22	18
9IDG*-180FWH	9WHD□-030	kgfcm	38.1	55.2	71.0	99.9	126.2	144.6	168.3	183.7	173.5	163.3	132.7	-
		N.m	3.74	5.41	6.96	9.79	12.37	14.17	16.49	18.00	17.00	16.00	13.00	-
	9WHD□-040	kgfcm	-	-	-	-	-	-	-	-	267.4	299.8	295.0	270.0
		N.m	-	-	-	-	-	-	-	-	26.20	29.38	28.91	26.46

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
9IDG*-180FHC	9HC□□	kgfcm	120	160	200	240	320	400	480	640	800	960	1280	1600	1800	1800
		N.m	11.8	15.7	19.6	23.5	31.4	39.2	47	62.7	78.4	94.1	125	157	176	176

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9IDG*-180FH	9HBK□BH 9HFK□BH	kgfcm	32.8	39.3	54.6	65.5	81.9	98.3	109.2	123.1	147.7	177.2	196.9	222.5	267.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
		N.m	3.21	3.85	5.35	6.42	8.03	9.63	10.71	12.06	14.47	17.37	19.30	21.81	26.17	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	300	240	180	120	90	72	60	45	36	30	22	18
9IDG*-180FWH	9WHD□-030	kgfcm	46.9	68.0	87.4	123.0	155.4	178.0	204.1	183.7	173.5	163.3	132.7	-
		N.m	4.60	6.66	8.56	12.05	15.23	17.45	20.00	18.00	17.00	16.00	13.00	-
	9WHD□-040	kgfcm	-	-	-	-	-	-	-	-	329.1	330.0	295.0	270.0
		N.m	-	-	-	-	-	-	-	-	32.25	32.34	28.91	26.46

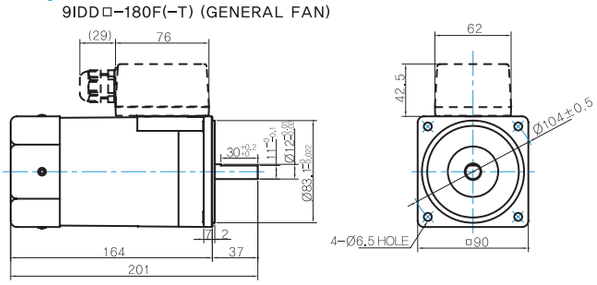
Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
9IDG*-180FHC	9HC□□	kgfcm	148	197	246	295	394	492	591	788	984	1181	1575	1800	1800	1800
		N.m	14.5	19.3	24.1	28.9	38.6	48.2	57.9	77.2	96.4	116	154	176	176	176

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

Dimensions

MOTOR ONLY

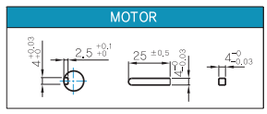
● MOTOR MODEL:
9IDD□-180F(-T) (GENERAL FAN)



● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
9IDD□-180F	
KEY TYPE	
9IDK□-180F	

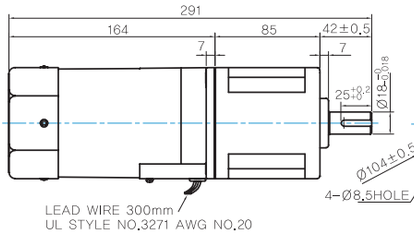
● KEY SPEC



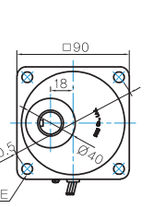
GEARED MOTOR

H TYPE GEARBOX

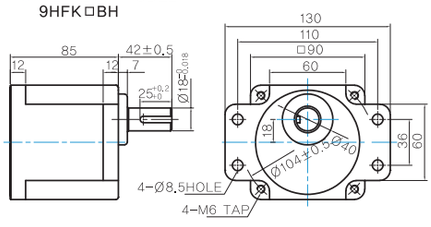
● MOTOR MODEL:
9IDG□-180FH (GENERAL FAN)



● GEARBOX MODEL:
9HBK□BH



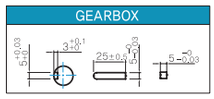
● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

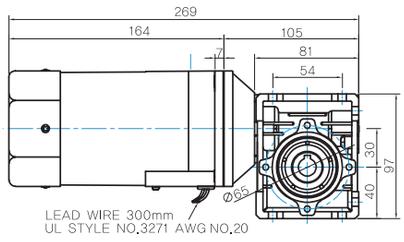
MODEL	SPEC
KEY TYPE	
9HBK□BH 9HFK□BH	

● KEY SPEC

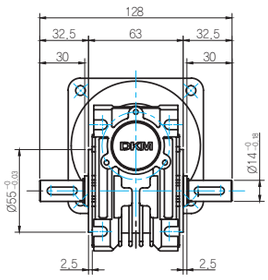


WH TYPE GEARBOX

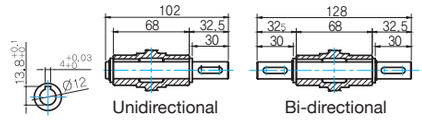
● MOTOR MODEL:
9IDG□-180FWH (GENERAL FAN)



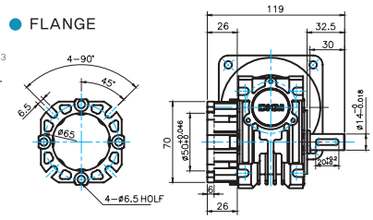
● GEARBOX MODEL:
9WHD□-030



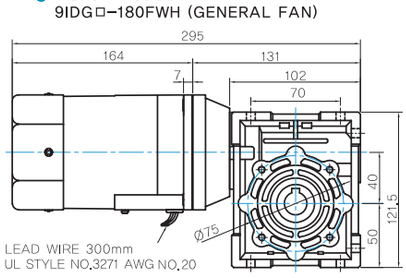
● SHAFT



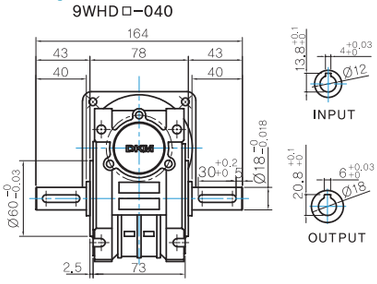
● FLANGE



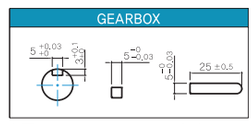
● MOTOR MODEL:
9IDG□-180FWH (GENERAL FAN)



● GEARBOX MODEL:
9WHD□-040

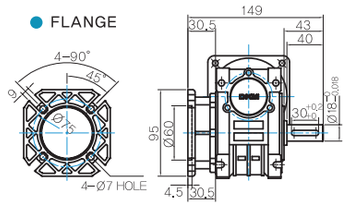


● KEY SPEC

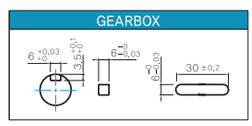


* The output flange and shaft are sold separately

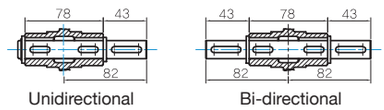
● FLANGE



● KEY SPEC



● SHAFT

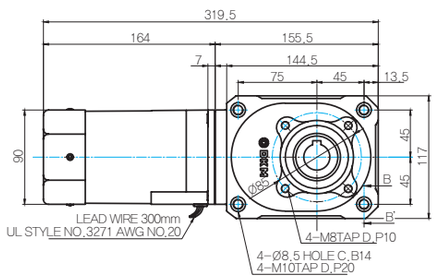


B AC Motors

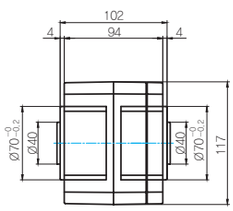
Induction Motor 180W(□90mm)

HC TYPE GEARBOX

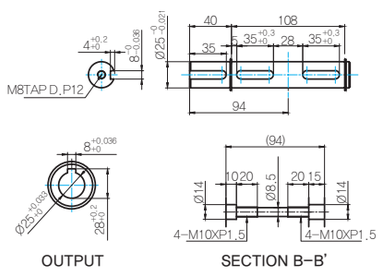
● MOTOR MODEL :
9IDG□-180FHC (GENERAL FAN)



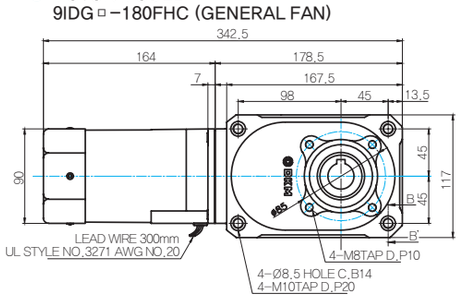
● GEARBOX MODEL:
9HC(15 ~ 60)□



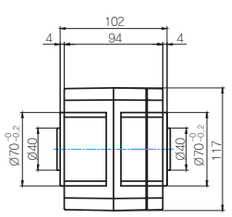
● SHAFT



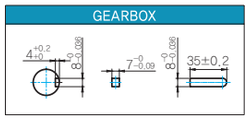
● MOTOR MODEL :
9IDG□-180FHC (GENERAL FAN)



● GEARBOX MODEL :
9HC(80 ~ 240)□



● KEY SPEC



WEIGHT

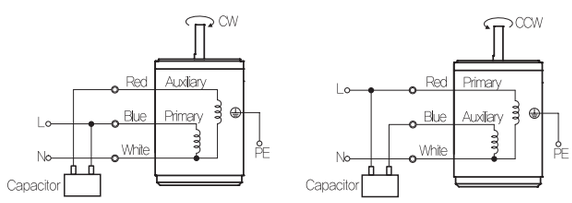
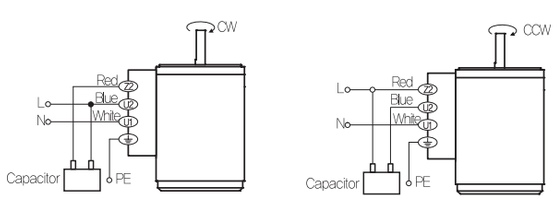
PART		WEIGHT(Kg)
MOTOR		3.05
GEAR BOX	9HB(F)K3BH - 9HB(F)K10BH	1.62
	9HB(F)K12.5BH - 9HB(F)K20BH	1.68
	9HB(F)K25BH - 9HB(F)K60BH	1.73
	9HB(F)K75BH - 9HB(F)K200BH	1.78
	9WHD□-030	1.2
	9WHD□-040	2.1
	9HC15□	4.05
	9HC20□~9HC60□	4.1
	9HC80□~9HC240□	4.75

* The output flange and shaft are sold separately

Motor Images

9IDD□-150F	9IDD□-150F-T	9IDG□-150FH+9HBK□BH	9IDG□-150FH+9HFK□BH	9IDG□-150FWH+9WHD□-030	9IDG□-180FHC+9HC□□
					

Connection Diagrams

Lead Wire Type	Terminal Box Type
	

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

200W Induction Motor 200W(□90mm)

Motor Specification

Model (9IDG*-200F□(-T): Gear Type Shaft, 9IDD*-200F(-T): D-Cut Type Shaft, 9IDK*-200F(-T): Key Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
9IDG3(G)-200F□	9IDG3(G)-200F□-T	200	3ø 220	50	4	Cont.	36.10	3.610	1300	1.27	14.98	1.498	–
				60			30.10	3.010	1550	1.17	12.57	1.257	
			3ø 230	50	4	Cont.	39.70	3.970	1300	1.33	14.98	1.498	
				60			32.60	3.260	1550	1.21	12.57	1.257	
9IDG4(K)-200F□	9IDG4(K)-200F□-T	200	3ø 380	50	4	Cont.	39.70	3.970	1300	0.74	14.98	1.498	–
				60			31.10	3.110	1550	0.67	12.57	1.257	
			3ø 400	50	4	Cont.	41.20	4.120	1300	0.81	14.98	1.498	
				60			35.10	3.510	1550	0.70	12.57	1.257	
9IDG5(L)-200F□	9IDG5(L)-200F□-T	200	3ø 415	50	4	Cont.	38.40	3.840	1300	0.70	14.98	1.498	–
				60			31.10	3.110	1550	0.62	12.57	1.257	
			3ø 440	50	4	Cont.	42.00	4.200	1300	0.76	14.98	1.498	
				60			34.60	3.460	1550	0.66	12.57	1.257	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name. 2) The phase & voltage code G, K, L contain a built-in thermal protector. 3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9IDG*-200FH	9HBK□BH	kgfcm	30.5	36.6	50.9	61.1	76.3	91.6	101.8	114.7	137.6	165.1	183.5	207.4	248.8	298.6	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m	2.99	3.59	4.99	5.99	7.48	8.98	9.98	11.24	13.49	16.18	17.98	20.32	24.39	29.26	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	360	240	180	120	90	72	60	45	36	30	22	18
9IDG*-200FWH	9WHD□-030	kgfcm	43.7	63.3	81.4	114.6	144.8	165.9	193.0	183.7	173.5	163.3	132.7	–
		N.m	4.29	6.21	7.98	11.23	14.19	16.26	18.92	18.00	17.00	16.00	13.00	–
	9WHD□-040	kgfcm	–	–	–	–	–	–	–	–	306.7	330.0	295.0	270.0
		N.m	–	–	–	–	–	–	–	–	30.05	32.34	28.91	26.46

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
9IDG*-200FHC	9HC□□	kgfcm	138	183	229	275	367	459	550	734	917	1101	1468	1800	1800	1800
		N.m	13.5	17.9	22.4	27	36	45	53.9	71.9	89.9	108	144	176	176	176

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9IDG*-200FH	9HBK□BH	kgfcm	36.4	43.7	60.7	72.8	91.0	109.2	121.4	136.7	164.1	196.9	218.8	247.2	296.7	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m	3.57	4.28	5.95	7.14	8.92	10.71	11.89	13.40	16.08	19.30	21.44	24.23	29.08	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	300	200	150	100	75	60	50	38	30	25	18	15
9IDG*-200FWH	9WHD□-030	kgfcm	52.1	75.5	97.1	136.7	172.6	183.7	204.1	183.7	173.5	163.3	132.7	–
		N.m	5.11	7.40	9.52	13.39	16.92	18.00	20.00	18.00	17.00	16.00	13.00	–
	9WHD□-040	kgfcm	–	–	–	–	–	–	–	–	350.0	330.0	295.0	270.0
		N.m	–	–	–	–	–	–	–	–	34.30	32.34	28.91	26.46

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
9IDG*-200FHC	9HC□□	kgfcm	164	219	273	328	438	547	656	875	1094	1313	1750	1800	1800	1800
		N.m	16.1	21.5	26.8	32.1	42.9	53.6	64.3	85.8	107	129	172	176	176	176

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

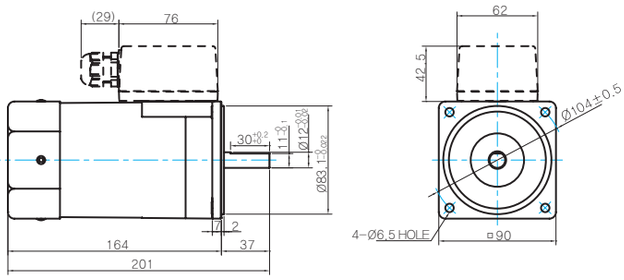
B AC Motors

Induction Motor 200W(□ 90mm)

Dimensions

MOTOR ONLY

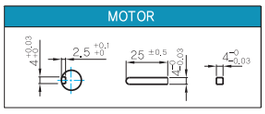
● MOTOR MODEL:
9IDD□-200F(-T) (GENERAL FAN)



● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
9IDD□-200F	
KEY TYPE	
9IDK□-200F	

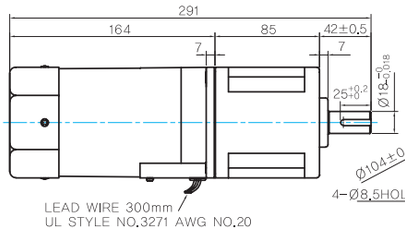
● KEY SPEC



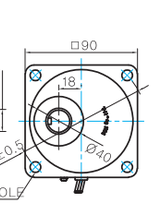
GEARED MOTOR

H TYPE GEARBOX

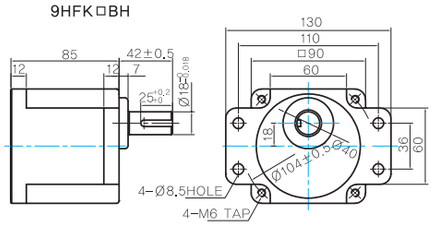
● MOTOR MODEL:
9IDG□-200FH (GENERAL FAN)



● GEARBOX MODEL:
9HBK□BH



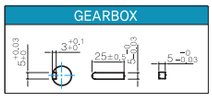
● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

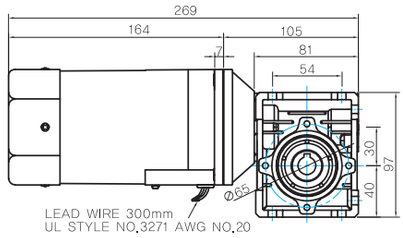
MODEL	SPEC
KEY TYPE	
9HBK□BH 9HFK□BH	

GEARBOX

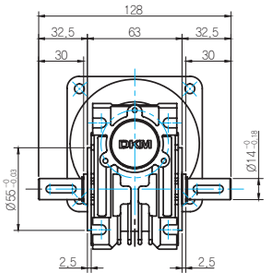


WH TYPE GEARBOX

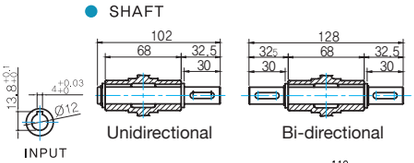
● MOTOR MODEL:
9IDG□-200FWH (GENERAL FAN)



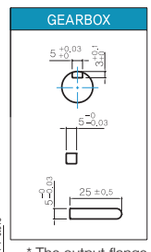
● GEARBOX MODEL:
9WHD□-030



● SHAFT

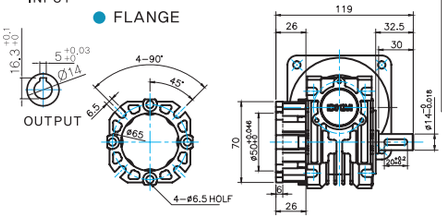


● KEY SPEC

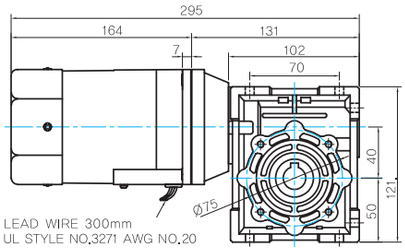


* The output flange and shaft are sold separately

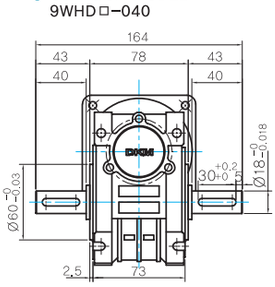
● FLANGE



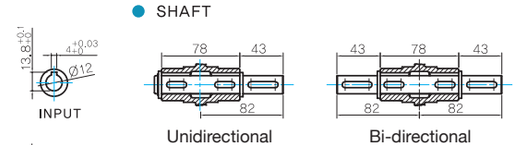
● MOTOR MODEL:
9IDG□-200FWH (GENERAL FAN)



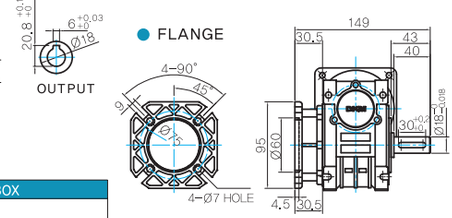
● GEARBOX MODEL:
9WHD□-040



● SHAFT

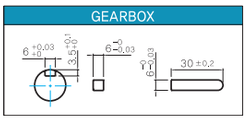


● FLANGE



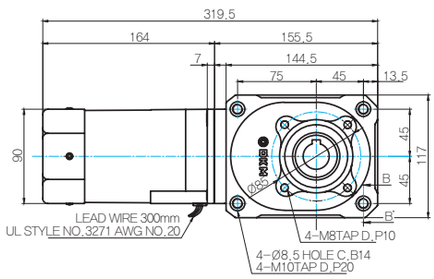
● KEY SPEC

GEARBOX

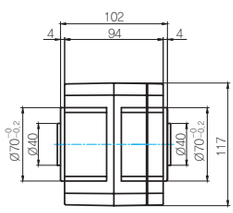


HC TYPE GEARBOX

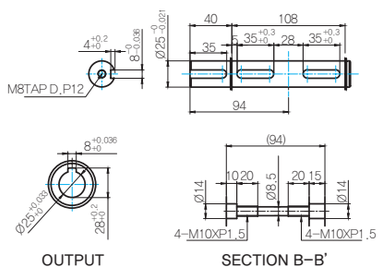
● MOTOR MODEL :
9IDG□-200FHC (GENERAL FAN)



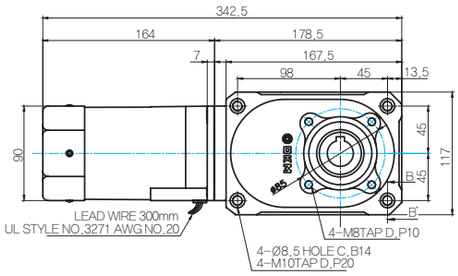
● GEARBOX MODEL:
9HC(15 ~ 60)□



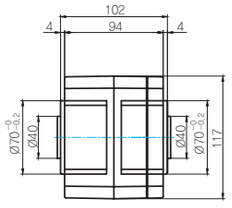
● SHAFT



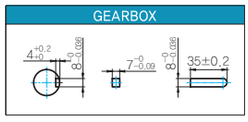
● MOTOR MODEL :
9IDG□-200FHC (GENERAL FAN)



● GEARBOX MODEL :
9HC(80 ~ 240)□



● KEY SPEC



WEIGHT

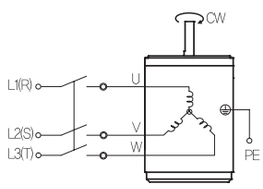
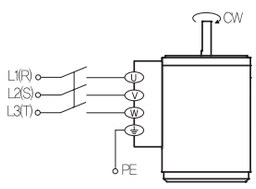
PART		WEIGHT(Kg)
MOTOR		3.05
GEAR BOX	9HB(F)K3BH ~ 9HB(F)K10BH	1.62
	9HB(F)K12.5BH ~ 9HB(F)K20BH	1.68
	9HB(F)K25BH ~ 9HB(F)K60BH	1.73
	9HB(F)K75BH ~ 9HB(F)K200BH	1.78
	9WHD□-030	1.2
	9WHD□-040	2.1
	9HC15□	4.05
	9HC20□~9HC60□	4.1
	9HC80□~9HC240□	4.75
	9XD10□□	0.6

* The output flange and shaft are sold separately

Motor Images

9IDD□-200F	9IDD□-200F-T	9IDG□-200FH+9HBK□BH	9IDG□-200FH+9HFK□BH	9IDG□-200FWH+9WHD□-030	9IDG□-200FHC+9HC□□
					

Connection Diagrams

Lead Wire Type	Terminal Box Type
	

* CCW Direction:
Change any two connections between R, S and T.

* CCW Direction:
Change any two connections between R, S and T.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.

Induction Motor 250W(□104mm)

250W Induction Motor 250W(□104mm)

Motor Specification

Model 10IDGE-250F□-T: Gear Type Shaft 10IDDE-250F-T: D-Cut Type Shaft 10IDKE-250F-T: Key Type Shaft Terminal Box Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
10IDGE-250F□-T	250	1Ø 220	50	4	Cont.	11.00	1.100	1250	2.29	19.48	1.948	13.0/450
		1Ø 240				13.50	1.350	1300	2.17	18.74	1.874	

1) Enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code E contains a built-in thermal protector.
3) Gear Type Shaft is for attaching gearbox and D-Cut & Key Type Shafts are for using motor only.

Max. Permissible Torque at Output Shaft of Gearbox

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	5	9	10	15	20	25	30	40	50	60	90	100	120	150	180
		r/min	500	300	167	150	100	75	60	50	37.5	30	25	16.7	15	12.5	10	8.3
10IDGE-250FU-T	10UBK□BH	kgfcm	50.0	80.0	145.0	150.0	220.0	270.0	335.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0
		N.m	4.90	7.84	14.21	14.70	21.56	26.46	32.83	39.20	39.20	39.20	39.20	39.20	39.20	39.20	39.20	39.20

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40
		r/min	300	200	150	100	75	60	50	38
10IDKE-250F-T	10WHD□-040	kgfcm	70.0	100.0	130.0	185.0	240.0	290.0	325.0	305.0
		N.m	6.86	9.80	12.74	18.13	23.52	28.42	31.85	29.89

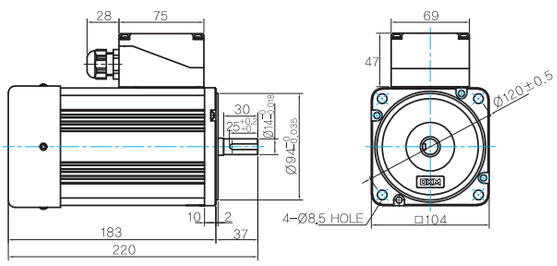
Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
10IDGE-250FHC-T	10HC□□	kgfcm	213	284	356	427	569	711	853	1138	1422	1706	2275	2844	3000	3000
		N.m	20.9	27.8	34.9	41.8	55.8	69.7	83.6	112	139	167	223	279	294	294

1) Enter the gear ratio in the box (□) within the gearbox model name.
2) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
3) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

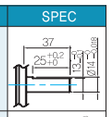
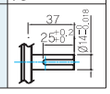
Dimensions

MOTOR ONLY

● MOTOR MODEL:
10IDKE-250F-T

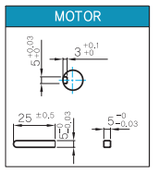


● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
KEY TYPE	

● KEY SPEC

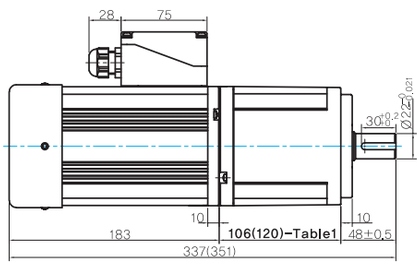
MOTOR



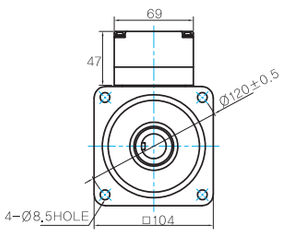
GEARED MOTOR

U TYPE GEARBOX

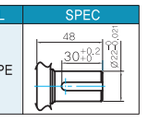
● MOTOR MODEL:
10IDGE-250FU-T



● GEARBOX MODEL:
10UBK□BH

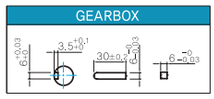


● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

GEARBOX

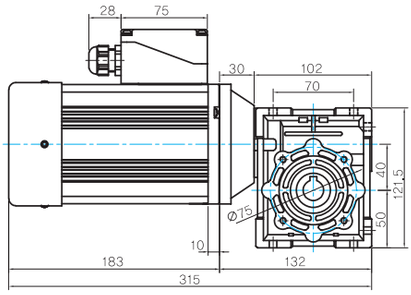


● 106(120)-Table1

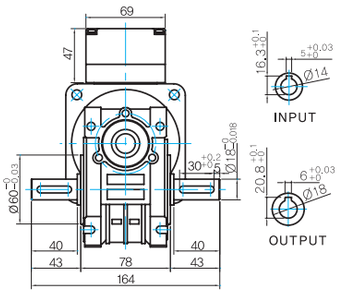
SIZE(mm)	GEAR RATIO
106	10UBK3BH – 10UBK60BH
120	10UBK90BH – 10UBK180BH

WH TYPE GEARBOX

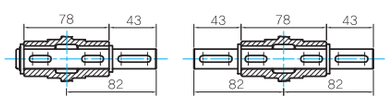
● MOTOR MODEL:
10IDKE-250F-T



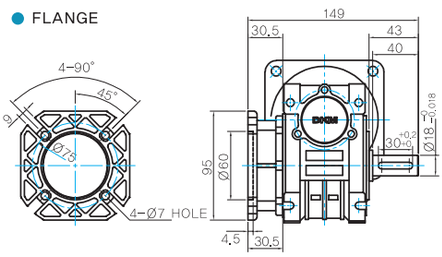
● GEARBOX MODEL:
10WHD□-040



● SHAFT

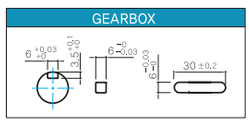


● FLANGE



● KEY SPEC

GEARBOX

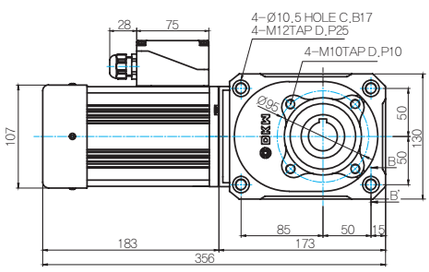


B AC Motors

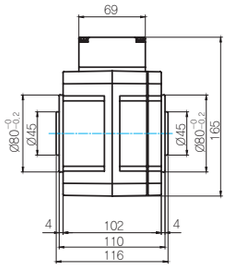
Induction Motor 250W(□104mm)

HC TYPE GEARBOX

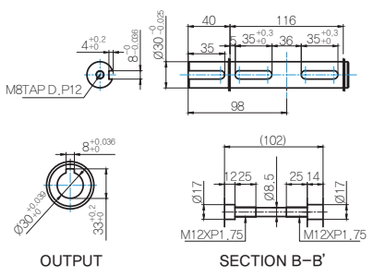
● GEARBOX MODEL : 10IDGE-250FHC-T (GENERAL FAN)



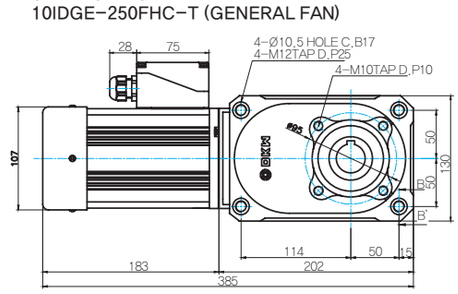
● GEARBOX MODEL : 10HC(15 ~ 60)□



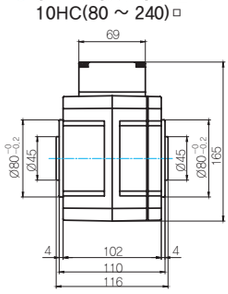
● SHAFT



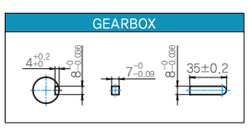
● GEARBOX MODEL : 10IDGE-250FHC-T (GENERAL FAN)



● GEARBOX MODEL : 10HC(80 ~ 240)□



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		6.1
GEAR BOX	10UBK3BH – 10UBK9BH	2.0
	10UBK10BH – 10UBK15BH	2.15
	10UBK20BH – 10UBK60BH	2.3
	10UBK90BH – 10UBK180BH	2.5
	10WHD□-040	2.2
	10HC15□	5.5
	10HC20□~10HC60□	5.6
	10HC80□~10HC240□	6.4

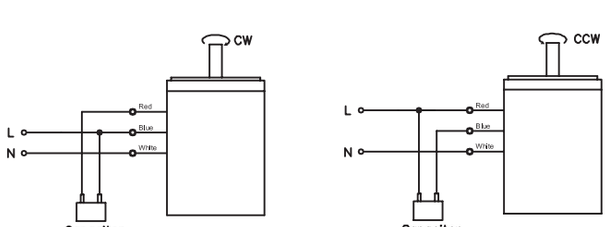
* The output flange and shaft are sold separately

Motor Images

10IDKE-250F-T	10IDGE-250FU-T+10UBK□BH	10IDKE-250F-T+10WHD□-040	10IDGE-250FHC-T+10HC□□
			

Connection Diagrams

Terminal Box Type



1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.

300W Induction Motor 300W(□104mm)

Motor Specification

Model 10IDG*-300F□-T: Gear Type Shaft 10IDD*-300F-T: D-Cut Type Shaft 10IDK*-300F-T: Key Type Shaft Terminal Box Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	Starting Torque N.m	Rated Load Speed r/min	Rated Load Current A	Rated Load Torque kgfcm	Rated Load Torque N.m	Capacitor μF / VAC
10IDGD-300F□-T	300	1Ø 220	60	4	Cont.	13.60	1.360	1600	2.52	18.27	1.827	15.0 / 450
10IDG7-300F□-T	300	3Ø 230	50	4	Cont.	47.00	4.793	1300	1.70	22.48	2.248	–
		3Ø 400				47.00	4.793	1300	1.01	22.48	2.248	
10IDG8-300F□-T	300	3Ø 440	50	4	Cont.	47.00	4.793	1300	0.88	22.48	2.248	–
			60			35.00	3.500	1550	0.88	18.86	1.886	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code D contains a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	5	9	10	15	20	25	30	40	50	60	90	100	120	150	180
		r/min	600	360	200	180	120	90	72	60	45	36	30	20	18	12.5	12	10
10IDG*-300FU-T	10UBK□ BH	kgfcm	45.0	75.0	135.0	140.0	205.0	250.0	300.0	300.0	350.0	350.0	400.0	400.0	400.0	400.0	400.0	400.0
		N.m	4.41	7.35	13.23	13.72	20.09	24.50	29.40	29.40	34.30	34.30	39.20	39.20	39.20	39.20	39.20	39.20

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40
		r/min	360	240	180	120	90	72	60	45
10IDK*-300F-T	10WHD□-040	kgfcm	65.0	95.0	125.0	175.0	225.0	270.0	300.0	285.0
		N.m	6.37	9.31	12.25	17.15	22.05	26.46	29.40	27.93

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
10IDG*-300FHC-T	10HC□□	kgfcm	200	267	333	400	533	667	800	1067	1333	1600	2133	2666	3000	3000
		N.m	19.6	26.2	32.6	39.2	52.2	65.4	78.4	105	131	157	209	261	294	294

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	5	9	10	15	20	25	30	40	50	60	90	100	120	150	180
		r/min	500	300	167	150	100	75	60	50	37.5	30	25	16.7	15	12.5	10	8.3
10IDGD-300FU-T 10IDG8-300FU-T	10UBK□ BH	kgfcm	55.0	95.0	170.0	170.0	250.0	300.0	300.0	300.0	350.0	350.0	400.0	400.0	400.0	400.0	400.0	400.0
		N.m	5.39	9.31	16.66	16.66	24.50	29.40	29.40	29.40	34.30	34.30	39.20	39.20	39.20	39.20	39.20	39.20

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40
		r/min	360	240	180	120	90	72	60	45
10IDK*-300F-T	10WHD□-040	kgfcm	80.0	115.0	150.0	215.0	275.0	335.0	375.0	350.0
		N.m	7.84	11.27	14.70	21.07	26.95	32.83	36.75	34.30

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
10IDG*-300FHC-T	10HC□□	kgfcm	246	328	410	492	656	820	984	1313	1641	1969	2625	3000	3000	3000
		N.m	24.1	32.1	40.2	48.2	64.3	80.4	96.4	129	161	193	257	294	294	294

1) Enter the phase & voltage code in the place * within the motor model name. 2)Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft: a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

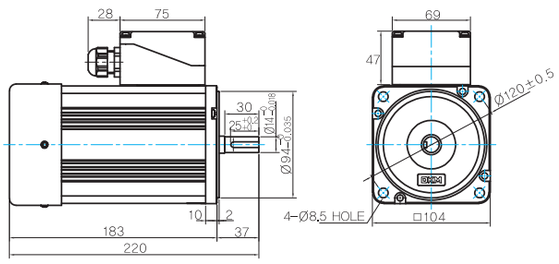
B AC Motors

Induction Motor 300W(□ 104mm)

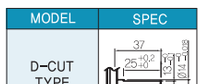
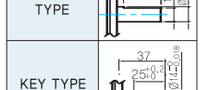
Dimensions

MOTOR ONLY

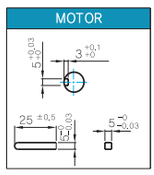
● MOTOR MODEL:
10IDK□-300F-T



● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
KEY TYPE	

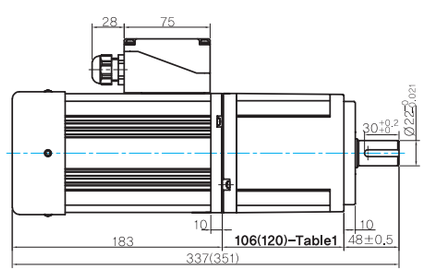
● KEY SPEC

MOTOR


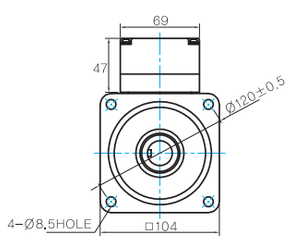
GEARED MOTOR

U TYPE GEARBOX

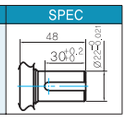
● MOTOR MODEL:
10IDG□-300FU-T



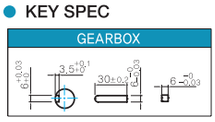
● GEARBOX MODEL:
10UBK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

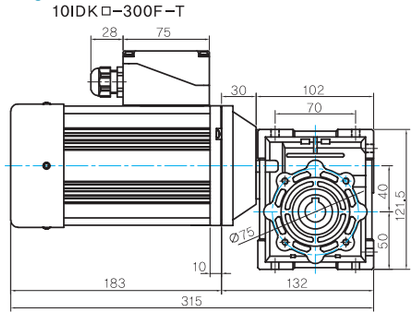
GEARBOX


● 106(120)-Table1

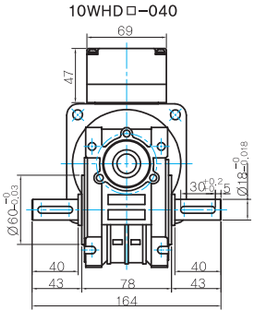
SIZE(mm)	GEAR RATIO
106	10UBK3BH – 10UBK60BH
120	10UBK90BH – 10UBK180BH

WH TYPE GEARBOX

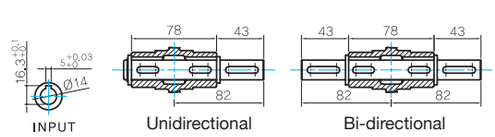
● MOTOR MODEL:
10IDK□-300F-T



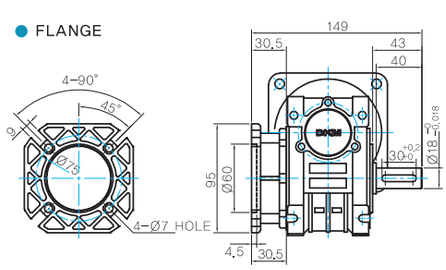
● GEARBOX MODEL:
10WHD□-040



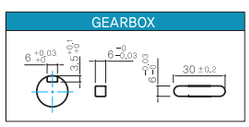
● SHAFT



● FLANGE

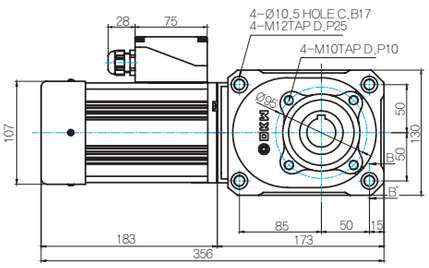


● KEY SPEC

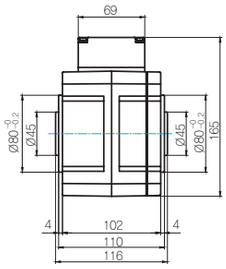
GEARBOX


HC TYPE GEARBOX

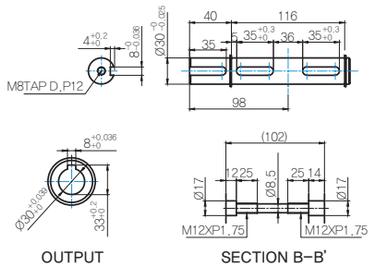
● GEARBOX MODEL :
10IDG□-300FHC-T (GENERAL FAN)



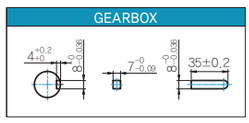
● GEARBOX MODEL :
10HC(15 ~ 60)□



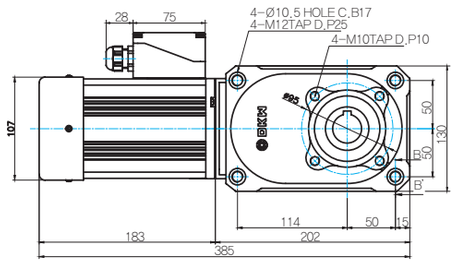
● SHAFT



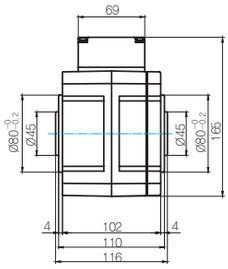
● KEY SPEC



● GEARBOX MODEL :
10IDG□-300FHC-T (GENERAL FAN)



● GEARBOX MODEL :
10HC(80 ~ 240)□



WEIGHT

PART		WEIGHT(Kg)
MOTOR		6.1
GEAR BOX	10UBK3BH – 10UBK9BH	2.0
	10UBK10BH – 10UBK15BH	2.15
	10UBK20BH – 10UBK60BH	2.3
	10UBK90BH – 10UBK180BH	2.5
	10WHD□-040	2.2
	10HC15□	5.5
	10HC20□~10HC60□	5.6
	10HC80□~10HC240□	6.4

* The output flange and shaft are sold separately

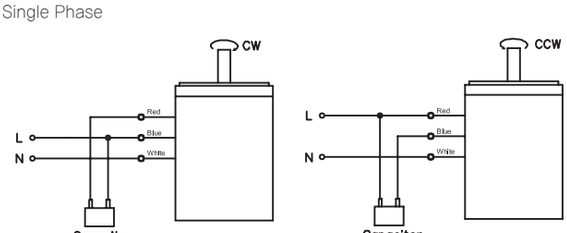
Motor Images

10IDK□-300F-T	10IDG□-300FU-T+10UBK□BH	10IDK□-300F-T+10WHD□-040	10IDG□-300FHC-T+10HC□□
			

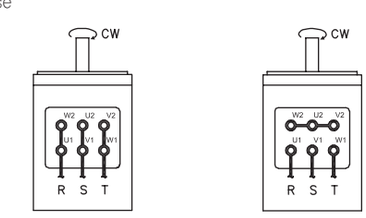
Connection Diagrams

Terminal Box Type

Single Phase



Three Phase



1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.

B AC Motors

Induction Motor 400W(□104mm)

400W Induction Motor 400W(□104mm)

Motor Specification

Model 10IDG6-400F□-T: Gear Type Shaft 10IDD6-400F-T: D-Cut Type Shaft 10IDK6-400F-T: Key Type Shaft Terminal Box Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
10IDG6-400F□-T	400	3Ø 220	60	4	Cont.	47.00	4.793	1600	2.10	24.35	2.435	–
		3Ø 380				47.00	4.793	1600	1.21	24.35	2.435	

1) Enter the model type of attaching gearbox in the box (□) within the motor model name.
2) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Output	Gearbox Model	GearRatio	3	5	9	10	15	20	25	30	40	50	60	90	100	120	150	180
		r/min	600	360	200	180	120	90	72	60	45	36	30	20	18	12.5	12	10
10IDG6-400FU-T	10UBK□BH	kgfcm	60.0	100.0	180.0	185.0	275.0	300.0	300.0	300.0	350.0	350.0	400.0	400.0	400.0	400.0	400.0	400.0
		N.m	5.88	9.80	17.64	18.13	26.95	29.40	29.40	29.40	34.30	34.30	39.20	39.20	39.20	39.20	39.20	39.20

Motor Model	Gearbox Model	GearRatio	5	7.5	10	15	20	25	30	40
		r/min	360	240	180	120	90	72	60	45
10IDK6-400F-T	10WHD□-040	kgfcm	85.0	125.0	160.0	230.0	295.0	355.0	395.0	375.0
		N.m	8.33	12.25	15.68	22.54	28.91	34.79	38.71	36.75

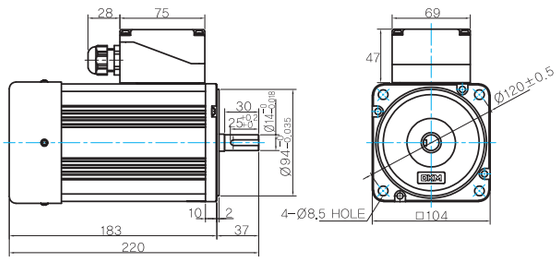
Motor Model	Gearbox Model	GearRatio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
10IDG6-400FHC-T	10HC□□	kgfcm	267	356	444	533	711	889	1067	1422	1778	2133	2844	3000	3000	3000
		N.m	26.2	34.9	43.5	52.2	69.7	87.1	105	139	174	209	279	294	294	294

1) Enter the gear ratio in the box (□) within the gearbox model name.
2) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
3) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

Dimensions

MOTOR ONLY

● MOTOR MODEL:
10IDK6-400F-T



● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
KEY TYPE	

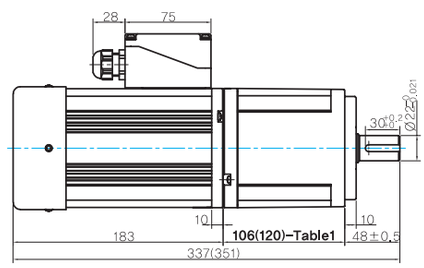
● KEY SPEC

MOTOR

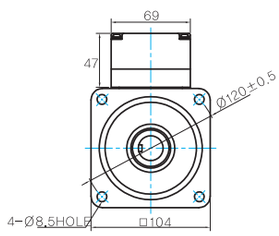
GEARED MOTOR

U TYPE GEARBOX

● MOTOR MODEL:
10IDG6-400FU-T



● GEARBOX MODEL:
10UBK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

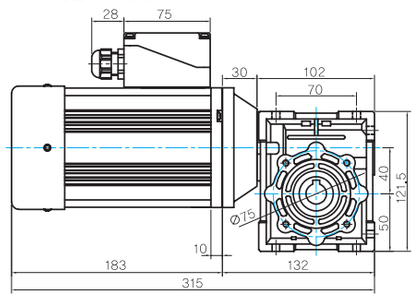
GEARBOX

● 106(120)-Table1

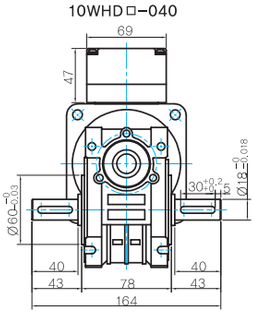
SIZE(mm)	GEAR RATIO
106	10UBK3BH – 10UBK60BH
120	10UBK90BH – 10UBK180BH

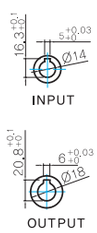
WH TYPE GEARBOX

● MOTOR MODEL:
10IDK6-400F-T

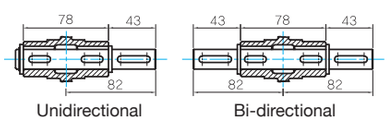


● GEARBOX MODEL:
10WHD□-040

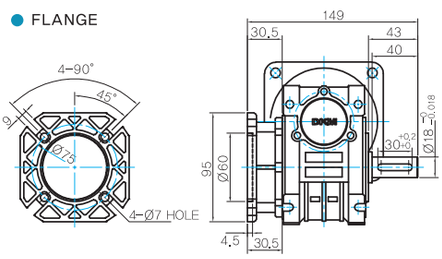




● SHAFT



● FLANGE



● KEY SPEC

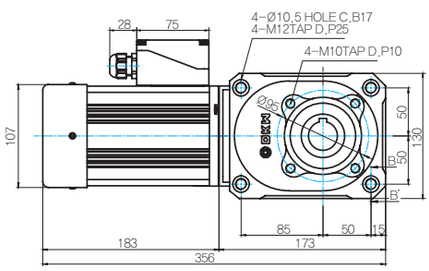
GEARBOX

B AC Motors

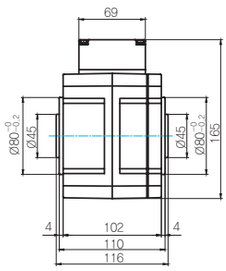
Induction Motor 400W(□104mm)

HC TYPE GEARBOX

● GEARBOX MODEL :
10IDG6-400FHC-T (GENERAL FAN)



● GEARBOX MODEL :
10HC(15 ~ 60)□



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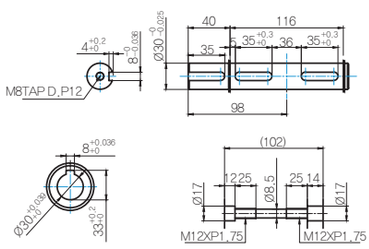
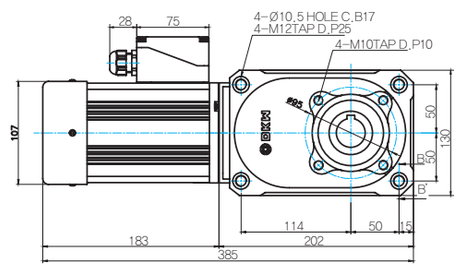
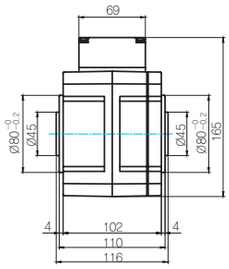


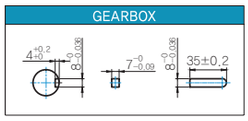
● GEARBOX MODEL :
10IDG6-400FHC-T (GENERAL FAN)



● GEARBOX MODEL :
10HC(80 ~ 240)□



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		6.1
GEAR BOX	10UBK3BH – 10UBK9BH	2.0
	10UBK10BH – 10UBK15BH	2.15
	10UBK20BH – 10UBK60BH	2.3
	10UBK90BH – 10UBK180BH	2.5
	10HC15□	5.5
	10HC20□~10HC60□	5.6
	10HC80□~10HC240□	6.4

* The output flange and shaft are sold separately

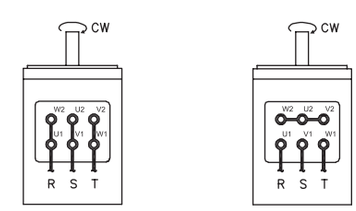
Motor Images

10IDK6-400 F-T	10IDG6-400 FU-T+10UBK□BH	10IDK6-400 F-T+10WHD□-040	10IDG6-400FHC-T+10HC□□
			

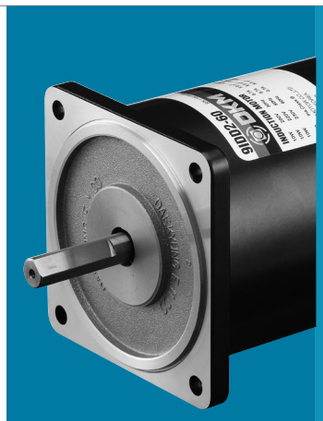
Connection Diagrams

Terminal Box Type

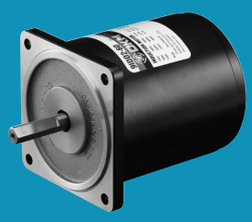
Three Phase



1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.



2 Pole Motor



Index

B AC Motors

2 Pole Motor 15W(□80mm)

15W 2 Pole Motor 15W(□80mm)

Motor Specification

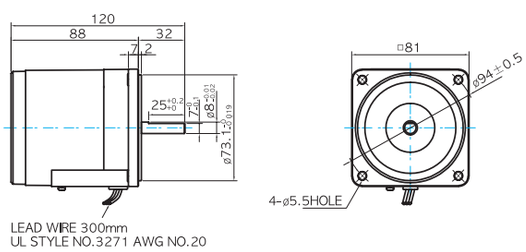
Model (8IDD*-15-A(T): D-Cut Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
8IDD1(A)-15-A	8IDD1(A)-15-AT	15	1ø 110	60	2	Cont.	0.75	0.075	3200	0.51	0.46	0.046	6.0 / 250
8IDD2(D)-15-A	8IDD2(D)-15-AT	15	1ø 220	60	2	Cont.	0.58	0.058	3200	0.23	0.46	0.046	1.2 / 450
8IDDE-15-A	8IDDE-15-AT	15	1ø 220	50	2	Cont.	0.58	0.058	2700	0.19	0.54	0.054	1.2 / 450
			1ø 240				0.73	0.073		0.22	0.54	0.054	
8IDD3(G)-15-A	8IDD3(G)-15-AT	15	3ø 220	50	2	Cont.	2.08	0.208	2800	0.13	0.52	0.052	–
				60			1.66	0.166	3300	0.13	0.44	0.044	
			3ø 230	50	2	Cont.	2.24	0.224	2800	0.14	0.52	0.052	–
				60			1.81	0.181	3300	0.14	0.44	0.044	

1) Enter the phase & voltage code in the place * within the motor model name..
2) The phase & voltage code A, D, E, G contain a built-in thermal protector.

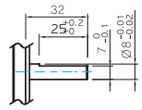
Dimensions

LEAD WIRE TYPE

● MOTOR MODEL: 8IDD□-15-A (NO FAN)

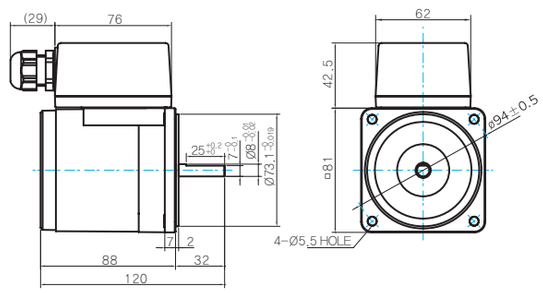


● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	

TERMINAL BOX TYPE

● MOTOR MODEL: 8IDD□-15-AT (NO FAN)



WEIGHT

PART	WEIGHT(Kg)
MOTOR	1.56

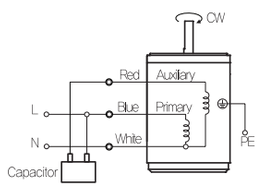
Motor Images

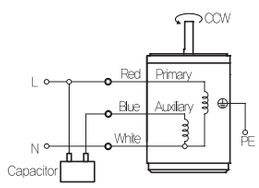
8IDD□-15-A	8IDD□-15-AT
	

Connection Diagrams

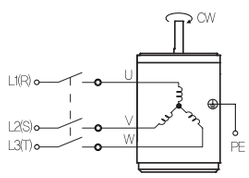
Lead Wire Type	Terminal Box Type

[Single Phase]



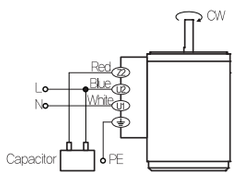


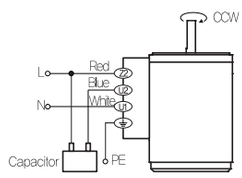
[Three Phase]



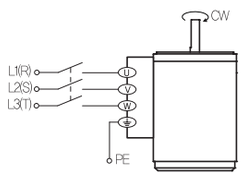
* **CCW Direction:**
Change any two connections among R, S and T.

[Single Phase]





[Three Phase]



* **CCW Direction:**
Change any two connections among R, S and T.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

B AC Motors

2 Pole Motor 25W(□80mm)

25W 2 Pole Motor 25W(□80mm)

Motor Specification

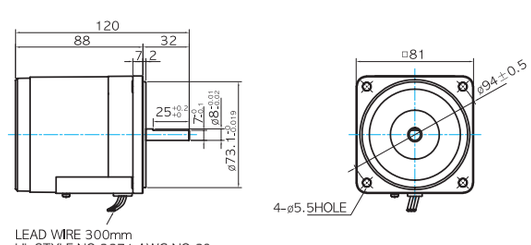
Model (8IDD*-25-A(T): D-Cut Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
							kgfcm	N.m	Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz					r/min	A	kgfcm	N.m	μF / VAC
8IDD1(A)-25-A	8IDD1(A)-25-AT	25	1ø 110	60	2	Cont.	0.75	0.075	3200	0.52	0.76	0.076	6.0 / 250
8IDD2(D)-25-A	8IDD2(D)-25-AT	25	1ø 220	60	2	Cont.	0.73	0.073	3200	0.26	0.76	0.076	1.5 / 450
8IDDE-25-A	8IDDE-25-AT	25	1ø 220	50	2	Cont.	0.73	0.073	2600	0.24	0.94	0.094	1.5 / 450
			1ø 240				0.91	0.091		0.26	0.94	0.094	
8IDD3(G)-25-A	8IDD3(G)-25-AT	25	3ø 220	50	2	Cont.	2.12	0.212	2700	0.15	0.90	0.090	–
				60			1.70	0.170	3200	0.15	0.76	0.076	
			3ø 230	50	2	Cont.	2.29	0.229	2700	0.16	0.90	0.090	–
				60			1.85	0.185	3200	0.16	0.76	0.076	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code A, D, E, G contain a built-in thermal protector.

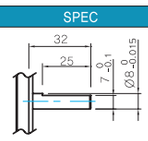
Dimensions

LEAD WIRE TYPE

● MOTOR MODEL: 8IDD□-25-A (NO FAN)

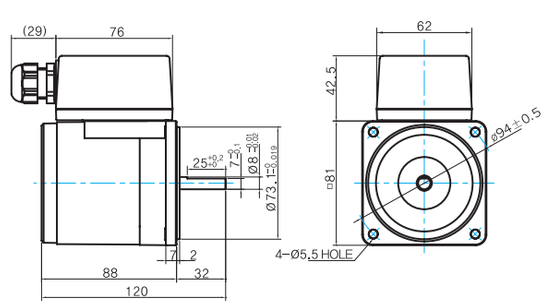


● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	

TERMINAL BOX TYPE

● MOTOR MODEL: 8IDD□-25-AT (NO FAN)



WEIGHT

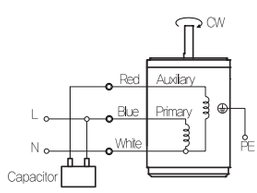
PART	WEIGHT(Kg)
MOTOR	1.56

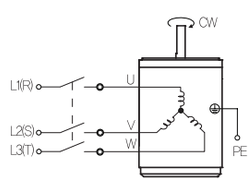
Motor Images

8IDD□-25-A	8IDD□-25-AT
	

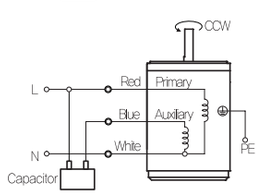
Connection Diagrams

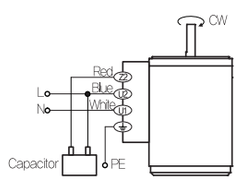
Lead Wire Type		Terminal Box Type	
[Single Phase]	[Three Phase]	[Single Phase]	[Three Phase]

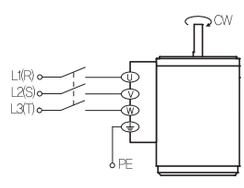




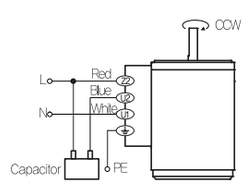
* **CCW Direction:**
Change any two connections among R, S and T.







* **CCW Direction:**
Change any two connections among R, S and T.



1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

40W 2 Pole Motor 40W(□90mm)

Motor Specification

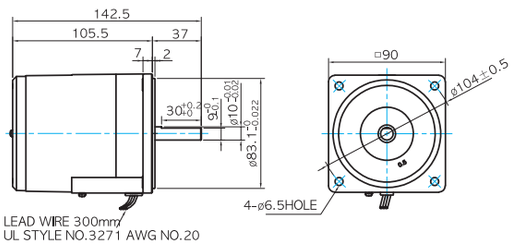
Model (9IDD*-40-A(T): D-Cut Type Shaft, 9IDK*-40-A(T): Key Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
9IDD1(A)-40-A	9IDD1(A)-40-AT	40	1ø 110	60	2	Cont.	1.40	0.140	3200	1.07	1.22	0.122	12.0 / 250
9IDD2(D)-40-A	9IDD2(D)-40-AT	40	1ø 220	60	2	Cont.	1.82	0.182	3200	0.63	1.22	0.122	4.0 / 450
9IDDE-40-A	9IDDE-40-AT	40	1ø 220	50	2	Cont.	1.75	0.175	2700	0.49	1.44	0.144	4.0 / 450
			1ø 240				2.05	0.205		0.52	1.44	0.144	
9IDD3(G)-40-A	9IDD3(G)-40-AT	40	3ø 220	50	2	Cont.	5.16	0.516	2700	0.28	1.44	0.144	–
				60			4.15	0.415	3200	0.28	1.22	0.122	
			3ø 230	50	2	Cont.	5.63	0.563	2700	0.30	1.44	0.144	
				60			4.48	0.448	3200	0.29	1.22	0.122	
9IDD4(K)-40-A	9IDD4(K)-40-AT	40	3ø 380	50	2	Cont.	6.27	0.627	2700	0.18	1.44	0.144	–
				60			4.96	0.496	3200	0.19	1.22	0.122	
			3ø 400	50	2	Cont.	6.86	0.686	2700	0.20	1.44	0.144	
				60			5.41	0.541	3200	0.20	1.22	0.122	
9IDD5(L)-40-A	9IDD5(L)-40-AT	40	3ø 415	50	2	Cont.	6.12	0.612	2700	0.17	1.44	0.144	–
				60			4.95	0.495	3200	0.17	1.22	0.122	
			3ø 440	50	2	Cont.	6.80	0.680	2700	0.18	1.44	0.144	
				60			5.48	0.548	3200	0.18	1.22	0.122	

1) Enter the phase & voltage code in the place * within the motor model name. 2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

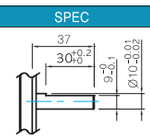
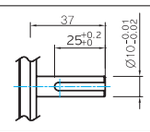
Dimensions

LEAD WIRE TYPE

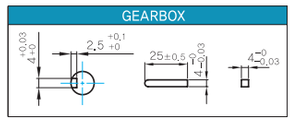
● MOTOR MODEL: 9IDD□-40-A (NO FAN)



● MOTOR OUTPUT SHAFT

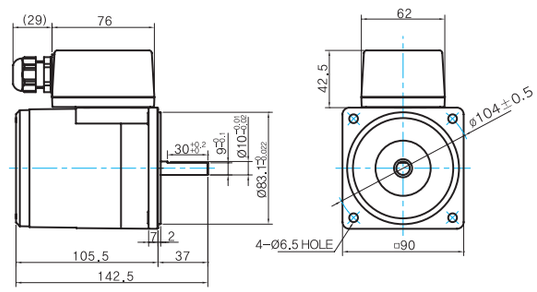
MODEL	SPEC
D-CUT TYPE	
9IDD□-40-A	
KEY TYPE	
9IDK□-40-A	

● KEY SPEC



TERMINAL BOX TYPE

● MOTOR MODEL: 9IDD□-40-AT (NO FAN)



WEIGHT

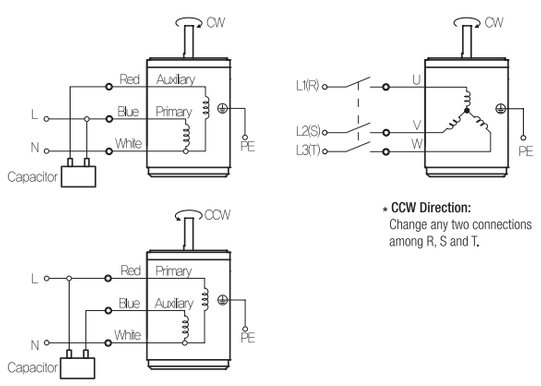
PART	WEIGHT(Kg)
MOTOR	2.45

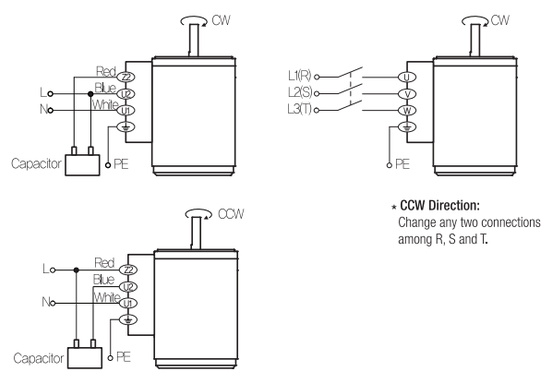
Motor Images

9IDD□-40-A	9IDD□-40-AT
	

Connection Diagrams

Lead Wire Type		Terminal Box Type	
[Single Phase]	[Three Phase]	[Single Phase]	[Three Phase]





1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

B AC Motors

2 Pole Motor 60W(□90mm)

60W 2 Pole Motor 60W(□90mm)

Motor Specification

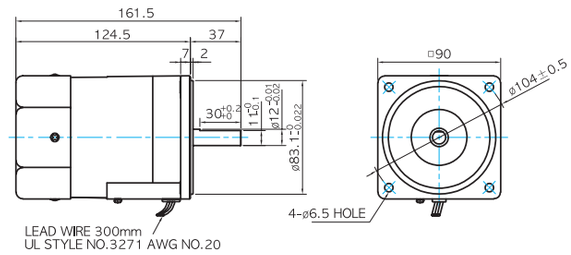
Model 9IDD*-60F-A(T): D-Cut Type Shaft 9IDK*-60F-A(T): Key Type Shaft		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
9IDD1(A)-60F-A	9IDD1(A)-60F-AT	60	1ø 110	60	2	Cont.	2.00	0.200	3200	1.40	1.83	0.183	16.0 / 250
9IDD2(D)-60F-A	9IDD2(D)-60F-AT	60	1ø 220	60	2	Cont.	2.68	0.268	3200	0.86	1.83	0.183	5.0 / 450
9IDDE-60F-A	9IDDE-60F-AT	60	1ø 220	50	2	Cont.	2.49	0.249	2700	0.61	2.16	0.216	5.0 / 450
			1ø 240				3.06	0.306		0.68	2.16	0.216	
9IDD3(G)-60F-A	9IDD3(G)-60F-AT	60	3ø 220	50	2	Cont.	6.88	0.688	2700	0.35	2.16	0.216	–
				60			5.50	0.550	3200	0.33	1.83	0.183	
			3ø 230	50	2	Cont.	7.46	0.746	2700	0.36	2.16	0.216	
				60			5.96	0.596	3200	0.35	1.83	0.183	
9IDD4(K)-60F-A	9IDD4(K)-60F-AT	60	3ø 380	50	2	Cont.	7.35	0.735	2700	0.22	2.16	0.216	–
				60			5.76	0.576	3200	0.21	1.83	0.183	
			3ø 400	50	2	Cont.	8.10	0.810	2700	0.23	2.16	0.216	
				60			6.39	0.639	3200	0.22	1.83	0.183	
9IDD5(L)-60F-A	9IDD5(L)-60F-AT	60	3ø 415	50	2	Cont.	7.80	0.780	2700	0.21	2.16	0.216	–
				60			6.20	0.620	3200	0.20	1.83	0.183	
			3ø 440	50	2	Cont.	8.66	0.866	2700	0.23	2.16	0.216	
				60			6.86	0.686	3200	0.21	1.83	0.183	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

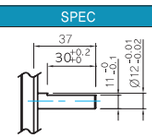
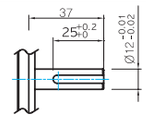
Dimensions

LEAD WIRE TYPE

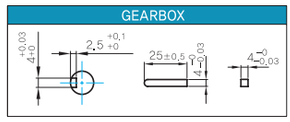
● MOTOR MODEL: 9IDD□-60F-A (GENERAL FAN)



● MOTOR OUTPUT SHAFT

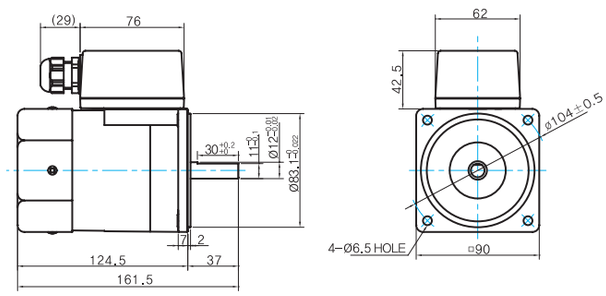
MODEL	SPEC
D-CUT TYPE 9IDD□-60F-A	
KEY TYPE 9IDK□-60F-A	

● KEY SPEC



TERMINAL BOX TYPE

● MOTOR MODEL: 9IDD□-60F-AT (GENERAL FAN)



WEIGHT

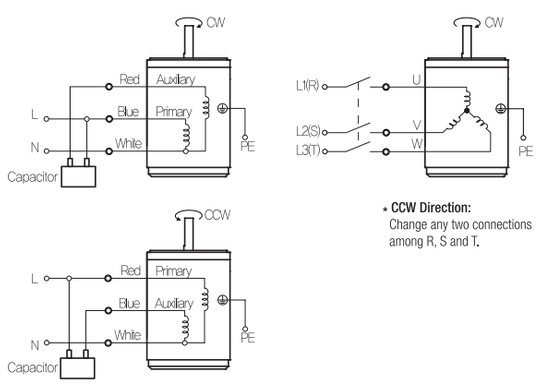
PART	WEIGHT(Kg)
MOTOR	2.65

Motor Images

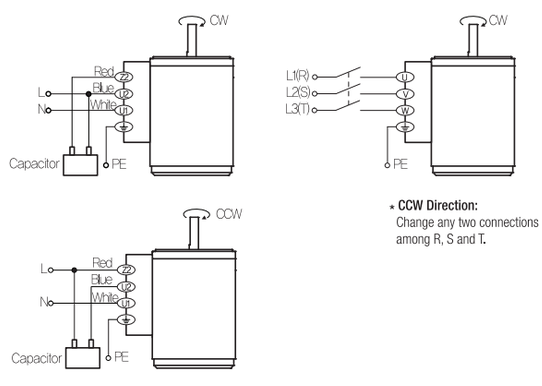
9IDD□-60F-A	9IDD□-60F-AT
	

Connection Diagrams

Lead Wire Type		Terminal Box Type	
[Single Phase]	[Three Phase]	[Single Phase]	[Three Phase]



* **CCW Direction:**
Change any two connections among R, S and T.



* **CCW Direction:**
Change any two connections among R, S and T.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

B AC Motors

2 Pole Motor 90W(□90mm)

90W 2 Pole Motor 90W(□90mm)

Motor Specification

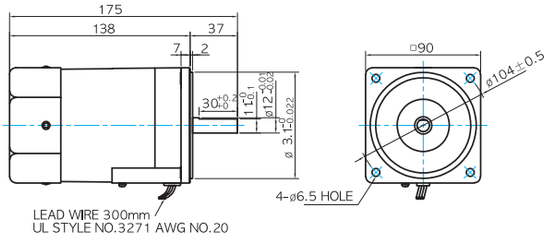
Model (9IDD*-90F-A(T): D-Cut Type Shaft, 9IDK*-90F-A(T): Key Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
9IDD1(A)-90F-A	9IDD1(A)-90F-AT	90	1ø 110	60	2	Cont.	2.23	0.223	3200	1.98	2.74	0.274	20.0 / 250
9IDD2(D)-90F-A	9IDD2(D)-90F-AT	90	1ø 220	60	2	Cont.	2.74	0.274	3200	1.09	2.74	0.274	6.0 / 450
9IDDE-90F-A	9IDDE-90F-AT	90	1ø 220	50	2	Cont.	2.92	0.292	2700	0.82	3.25	0.325	6.0 / 450
			1ø 240				3.49	0.349		0.91	3.25	0.325	
9IDD3(G)-90F-A	9IDD3(G)-90F-AT	90	3ø 220	50	2	Cont.	11.00	1.100	2750	0.55	3.19	0.319	–
				60			8.00	0.800	3250	0.54	2.70	0.270	
			3ø 230	50	2	Cont.	12.00	1.200	2750	0.60	3.19	0.319	
				60			9.00	0.900	3250	0.56	2.70	0.270	
9IDD4(K)-90F-A	9IDD4(K)-90F-AT	90	3ø 380	50	2	Cont.	10.44	1.044	2700	0.34	3.25	0.325	–
				60			8.06	0.806	3200	0.33	2.74	0.274	
			3ø 400	50	2	Cont.	11.41	1.141	2700	0.36	3.25	0.325	
				60			8.90	0.890	3200	0.34	2.74	0.274	
9IDD5(L)-90F-A	9IDD5(L)-90F-AT	90	3ø 415	50	2	Cont.	10.16	1.016	2700	0.34	3.25	0.325	–
				60			7.81	0.781	3200	0.32	2.74	0.274	
			3ø 440	50	2	Cont.	11.24	1.124	2700	0.36	3.25	0.325	
				60			8.66	0.866	3200	0.34	2.74	0.274	

1) Enter the phase & voltage code in the place * within the motor model name. 2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

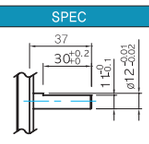
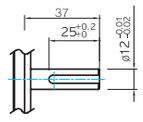
Dimensions

LEAD WIRE TYPE

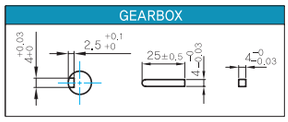
● MOTOR MODEL: 9IDD□-90F-A (GENERAL FAN)



● MOTOR OUTPUT SHAFT

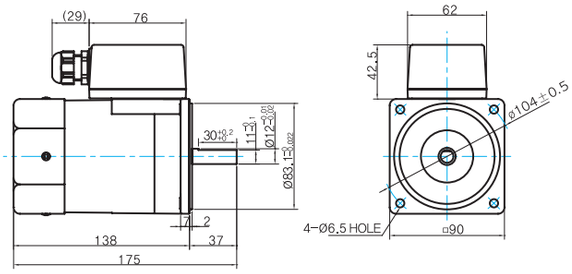
MODEL	SPEC
D-CUT TYPE 9IDD□-90F-A	
KEY TYPE 9IDK□-90F-A	

● KEY SPEC



TERMINAL BOX TYPE

● MOTOR MODEL: 9IDD□-90F-AT (GENERAL FAN)



WEIGHT

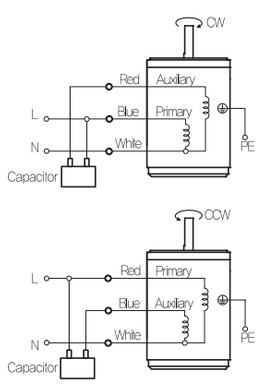
PART	WEIGHT(Kg)
MOTOR	3.05

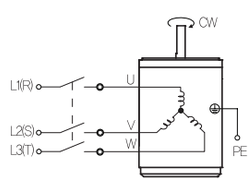
Motor Images

9IDD□-90F-A	9IDD□-90F-AT
	

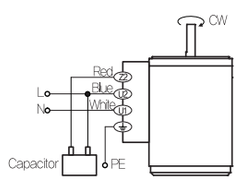
Connection Diagrams

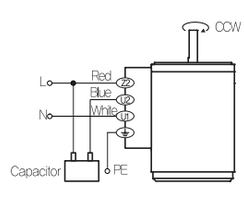
Lead Wire Type		Terminal Box Type	
[Single Phase]	[Three Phase]	[Single Phase]	[Three Phase]

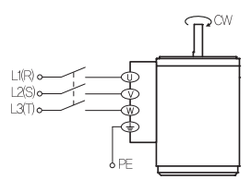




* **CCW Direction:**
Change any two connections among R, S and T.







* **CCW Direction:**
Change any two connections among R, S and T.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

B AC Motors

2 Pole Motor 120W(□90mm)

120W 2 Pole Motor 120W(□90mm)

Motor Specification

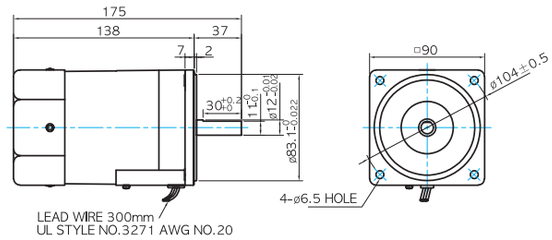
Model 9IDD*-120F-A(T): D-Cut Type Shaft 9IDK*-120F-A(T): Key Type Shaft		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
9IDD1(A)-120F-A	9IDD1(A)-120F-AT	120	1ø 110	60	2	Cont.	3.00	0.300	3200	2.30	3.65	0.365	25.0 / 250
9IDD2(D)-120F-A	9IDD2(D)-120F-AT	120	1ø 220	60	2	Cont.	3.00	0.300	3200	1.15	3.65	0.365	6.5 / 450
9IDDE-120F-A	9IDDE-120F-AT	120	1ø 220	50	2	Cont.	3.20	0.320	2600	0.98	4.50	0.450	6.5 / 450
			1ø 240				3.80	0.380		1.08	4.50	0.450	
9IDD3(G)-120F-A	9IDD3(G)-120F-AT	120	3ø 220	50	2	Cont.	12.35	1.235	2700	0.65	4.33	0.433	–
				60			9.67	0.967	3200	0.63	3.65	0.365	
			3ø 230	50	2	Cont.	13.35	1.335	2700	0.69	4.33	0.433	
				60			10.49	1.049	3200	0.67	3.65	0.365	
9IDD4(K)-120F-A	9IDD4(K)-120F-AT	120	3ø 380	50	2	Cont.	12.40	1.240	2700	0.35	4.33	0.433	–
				60			9.58	0.958	3200	0.34	3.65	0.365	
			3ø 400	50	2	Cont.	13.55	1.355	2700	0.37	4.33	0.433	
				60			10.57	1.057	3200	0.35	3.65	0.365	
9IDD5(L)-120F-A	9IDD5(L)-120F-AT	120	3ø 415	50	2	Cont.	12.07	1.207	2700	0.35	4.33	0.433	–
				60			9.27	0.927	3200	0.33	3.60	0.360	
			3ø 440	50	2	Cont.	13.35	1.335	2700	0.37	4.25	0.425	
				60			10.29	1.029	3200	0.35	3.60	0.360	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

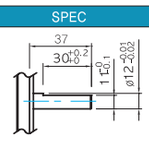
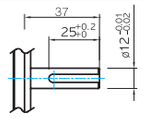
Dimensions

LEAD WIRE TYPE

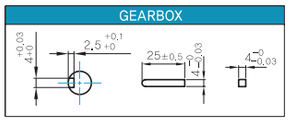
● MOTOR MODEL: 9IDD□-120F-A (GENERAL FAN)



● MOTOR OUTPUT SHAFT

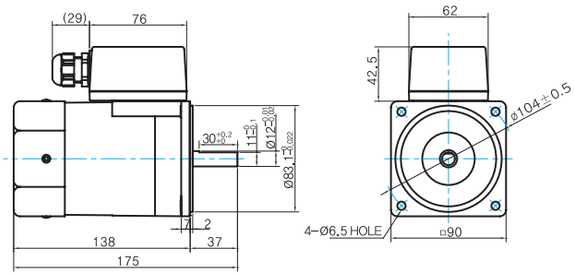
MODEL	SPEC
D-CUT TYPE 9IDD□-120F-A	
KEY TYPE 9IDK□-120F-A	

● KEY SPEC



TERMINAL BOX TYPE

● MOTOR MODEL: 9IDD□-120F-AT (GENERAL FAN)



WEIGHT

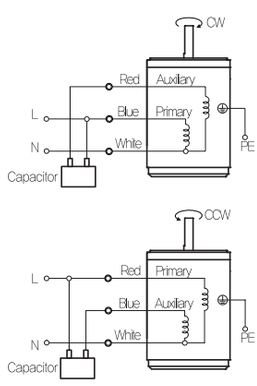
PART	WEIGHT(Kg)
MOTOR	3.05

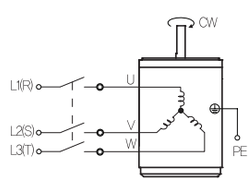
Motor Images

9IDD□-120F-A	9IDD□-120F-AT
	

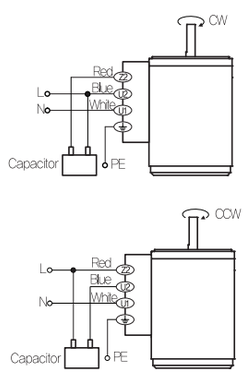
Connection Diagrams

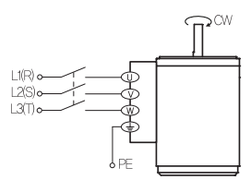
Lead Wire Type		Terminal Box Type	
[Single Phase]	[Three Phase]	[Single Phase]	[Three Phase]





* **CCW Direction:**
Change any two connections among R, S and T.





* **CCW Direction:**
Change any two connections among R, S and T.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) Change the direction of single phase motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction after some delay.

B AC Motors

2 Pole Motor 150W(□90mm)

150W 2 Pole Motor 150W(□90mm)

Motor Specification

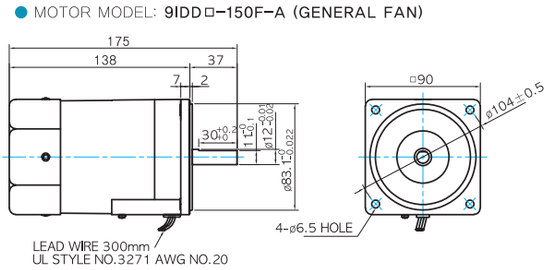
Model 9IDD*-150F-A(T): D-Cut Type Shaft 9IDK*-150F-A(T): Key Type Shaft		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
9IDD3(G)-150F-A	9IDD3(G)-150F-AT	150	3ø 220	50	2	Cont.	13.91	1.391	2700	0.83	5.41	0.541	–
				60			11.08	1.108	3200	0.75	4.57	0.457	
			3ø 230	50	2	Cont.	14.97	1.497	2700	0.91	5.41	0.541	
				60			11.97	1.197	3200	0.80	4.57	0.457	
9IDD4(K)-150F-A	9IDD4(K)-150F-AT	150	3ø 380	50	2	Cont.	14.38	1.438	2700	0.44	5.41	0.541	–
				60			11.48	1.148	3200	0.41	4.57	0.457	
			3ø 400	50	2	Cont.	15.59	1.559	2700	0.49	5.41	0.541	
				60			12.56	1.256	3200	0.43	4.57	0.457	
9IDD5(L)-150F-A	9IDD5(L)-150F-AT	150	3ø 415	50	2	Cont.	14.02	1.402	2700	0.44	5.41	0.541	–
				60			11.27	1.127	3200	0.40	4.57	0.457	
			3ø 440	50	2	Cont.	15.52	1.552	2700	0.48	5.41	0.541	
				60			12.51	1.251	3200	0.44	4.57	0.457	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code G, K, L contain a built-in thermal protector.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

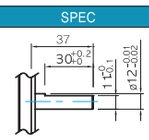
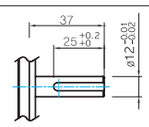
Dimensions

LEAD WIRE TYPE

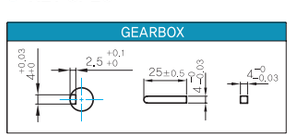
● MOTOR MODEL: 9IDD□-150F-A (GENERAL FAN)



● MOTOR OUTPUT SHAFT

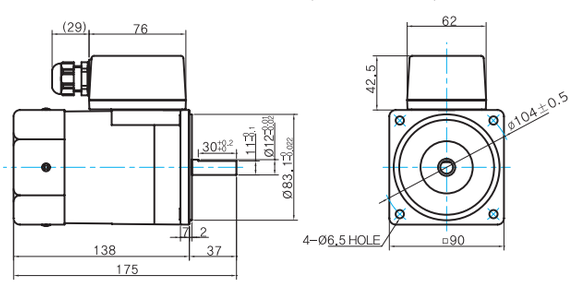
MODEL	SPEC
D-CUT TYPE 9IDD□-150F-A	
KEY TYPE 9IDK□-150F-A	

● KEY SPEC



TERMINAL BOX TYPE

● MOTOR MODEL: 9IDD□-150F-AT (GENERAL FAN)



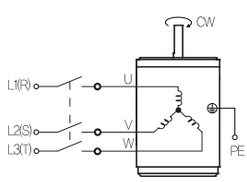
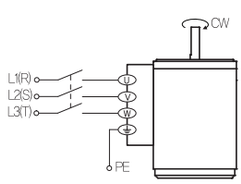
WEIGHT

PART	WEIGHT(Kg)
MOTOR	3.05

Motor Images

9IDD□-150F-A	9IDD□-150F-AT
	

Connection Diagrams

Lead Wire Type	Terminal Box Type
	
※ **CCW Direction:** Change any two connections among R, S and T.	※ **CCW Direction:** Change any two connections among R, S and T.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.

B AC Motors

2 Pole Motor 200W(□90mm)

200W

2 Pole
Motor
200W(□90mm)

Motor Specification

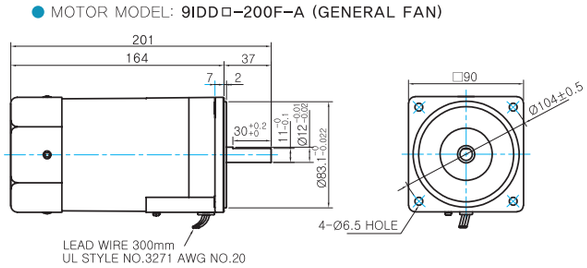
Model 9IDD*-200F-A(T): D-Cut Type Shaft 9IDK*-200F-A(T): Key Type Shaft		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
							kgfcm	N.m	Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz					r/min	A	kgfcm	N.m	μF / VAC
9IDD3(G)-200F-A	9IDD3(G)-200F-AT	200	3ø 220	50	2	Cont.	17.96	1.796	2600	1.09	7.49	0.749	–
				60			14.12	1.412	3200	0.89	6.09	0.609	
			3ø 230	50	2	Cont.	19.37	1.937	2600	1.10	7.49	0.749	
				60			15.30	1.530	3200	0.91	6.09	0.609	
9IDD4(K)-200F-A	9IDD4(K)-200F-AT	200	3ø 380	50	2	Cont.	17.57	1.757	2600	0.55	7.49	0.749	–
				60			13.91	1.391	3200	0.48	6.09	0.609	
			3ø 400	50	2	Cont.	19.15	1.915	2600	0.58	7.49	0.749	
				60			15.27	1.527	3200	0.49	6.09	0.609	
9IDD5(L)-200F-A	9IDD5(L)-200F-AT	200	3ø 415	50	2	Cont.	17.01	1.701	2600	0.55	7.49	0.749	–
				60			13.45	1.345	3200	0.45	6.09	0.609	
			3ø 440	50	2	Cont.	18.87	1.887	2600	0.57	7.49	0.749	
				60			14.87	1.487	3200	0.46	6.09	0.609	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code G, K, L contain a built-in thermal protector.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

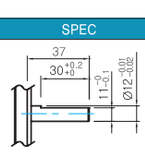
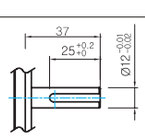
Dimensions

LEAD WIRE TYPE

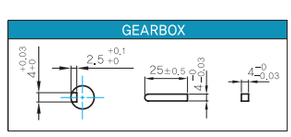
● MOTOR MODEL: 9IDD□-200F-A (GENERAL FAN)



● MOTOR OUTPUT SHAFT

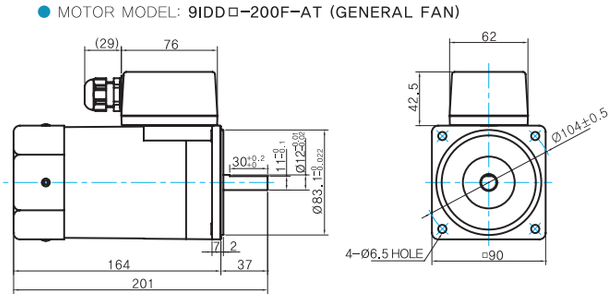
MODEL	SPEC
D-CUT TYPE	
9IDD□-200F-A	
KEY TYPE	
9IDK□-200F-A	

● KEY SPEC



TERMINAL BOX TYPE

● MOTOR MODEL: 9IDD□-200F-AT (GENERAL FAN)



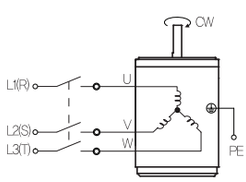
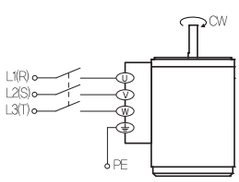
WEIGHT

PART	WEIGHT(Kg)
MOTOR	3.8

Motor Images

9IDD□-200F-A	9IDD□-200F-AT
	

Connection Diagrams

Lead Wire Type	Terminal Box Type
	
⋆ **CCW Direction:** Change any two connections among R, S and T.	⋆ **CCW Direction:** Change any two connections among R, S and T.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.

Reversible Motor

Index

B AC Motors

Outline of Reversible Motor

Suitable for Bi-directional Continuous Operation

- Reversible motors are designed for applications where frequent changes of direction is required. It is capacitor run type and single phase induction motor. So its basic features including speed, torque and voltage are same with induction motors. For the functions of frequent bi-directional operation within short time, the temporary brake is employed.

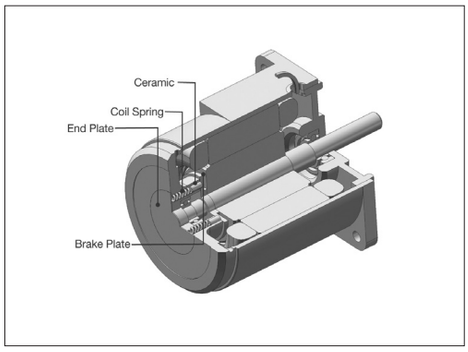
The Rating Time: 30 Minutes

- Reversible motors are designed for bi-directional operation within a short time so they can't avoid very high loss of input. So generally their temperature rising could be more severe than the induction motors. As a result, the rated operating time could be limited to 30 minutes. But please be informed that depending on the operating condition, they can be operated for more than 30 minutes if they are operated intermittently.

Brake Mechanism of the Reversible Motor

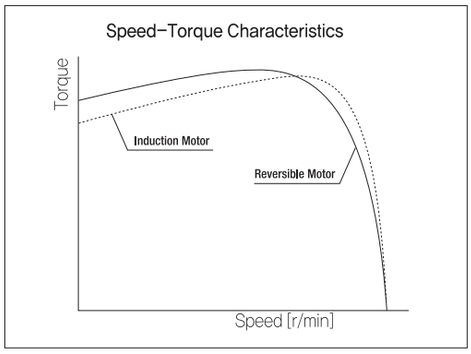
- A reversible motor employed a simple and built-in brake mechanism for the following purposes: (1) To improve the frequent and instant reversing function by applying a friction load (2) To reduce overrun

- The coil spring applies constant pressure so that the ceramic (brake block) slides toward the brake plate. This mechanism provides some degree of holding brake force, but there is limit in the force due to the mechanism's structure. The brake force is approximately 10% of the motor's output.



Speed-Torque Characteristics

- The reversible motor is a single phase induction motor of capacitor run type which has the same characteristics as an induction motor. The reversible motor has a higher starting torque than an induction motor in order to improve the instant reversing characteristics.

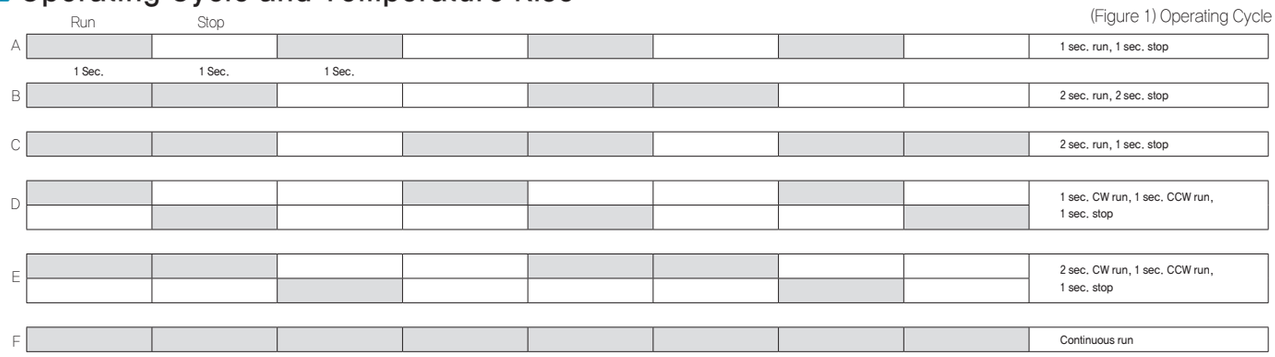


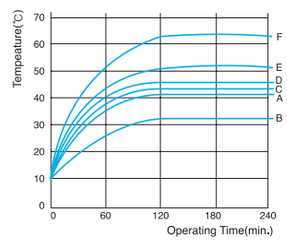
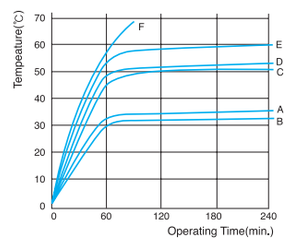
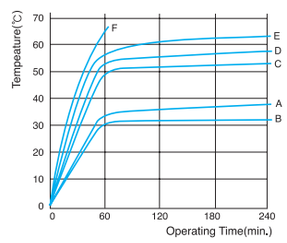
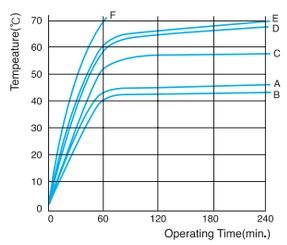
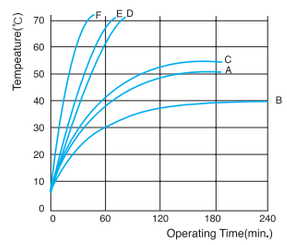
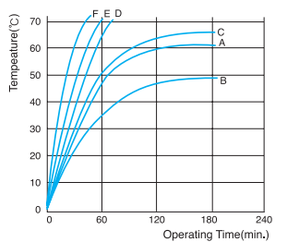
Operation Time and Temperature Rise

- The rating time of reversible motor is 30 minutes. But when the motor is operated intermittently for a short period of time, the operation time may vary depending on the operating conditions. The intermittent operation for a short period of time will cause a considerable flow of electric current in starting or reversing causing greater heat generation. But the motor's temperature rise can be controlled by keeping the motor at rest without using for a longer time by enhancing its natural cooling capability. Generally if the temperature of motor case remains below 90℃ constantly, the continuous operation is possible under unchanged condition considering insulation class of coil winding. The lower a temperature is, the longer the life time of bearing grease is.

Operating Cycle and Temperature Rise

(Figure 1) Operating Cycle

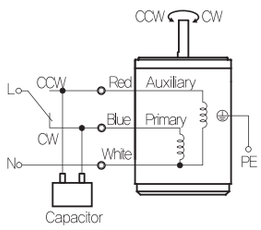
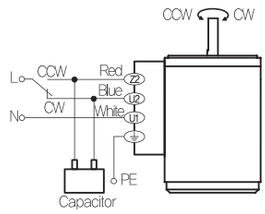


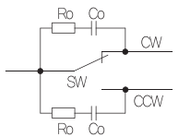
〈Figure2〉 7RDD □ -6	〈Figure3〉 7RDD □ -10	〈Figure4〉 8RDD □ -15
		
〈Figure5〉 8RDD □ -25	〈Figure6〉 9RDD □ -40	〈Figure7〉 9RDD □ -60F
		

General Specifications

Item	Specification
Insulation Resistance	100MΩ or more when DC500V MEGA is applied between the windings and the frame after rated motor operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5KV at 50Hz and 60Hz applied between the windings and the frame for 1 minute after rated motor operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings are 80℃ or less measured by the resistance change method after rated motor operation with connecting a gearbox or equivalent heat radiation plate.
Insulation Class	Class B [130℃]
Overheat Protection	Operating temperature (Built-in thermal protector type motor): Open 120℃±5℃, Close 90℃±5℃
Ambient Temperature	-10℃~+40℃ (Three phase 220VAC: -10℃~+50℃)
Ambient Humidity	85% maximum

Connection Diagrams

Lead Wire Type	Terminal Box Type
	



Code	Contact Capacity
SW	AC125V 5A min. or AC250V 5A min. (Inductive load)
Ro, Co	Ro=5~200Ω Co=0.1~0.2μF, 200WV (400WV)

* Connect a CR circuit for surge suppression to protect the contact.

B AC Motors

Reversible Motor 6W(□60mm)

6W Reversible Motor 6W(□60mm)

Motor Specification

Model 6RDG*-6G(-T): Gear Type Shaft 6RDD*-6(-T): D-Cut Type Shaft		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
6RDG1(A)-6G	6RDG1(A)-6G-T	6	1ø 110	60	4	30min.	0.60	0.060	1550	0.25	0.38	0.038	3.0 / 250
6RDG2(D)-6G	6RDG2(D)-6G-T	6	1ø 220	60	4	30min.	0.62	0.062	1550	0.15	0.38	0.038	1.0 / 450
6RDGE-6G	6RDGE-6G-T	6	1ø 220	50	4	30min.	0.50	0.050	1200	0.10	0.49	0.049	0.7 / 450
			1ø 240				0.55	0.055		0.11	0.49	0.049	

1) Enter the phase & voltage code in the place * within the motor model name.
2) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
3) Impedance Protected Type

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10
6RDG*-6G	6GBD□MH	kgfcm	0.9	1.1	1.5	1.8	2.3	2.7	3.1	3.8	4.6	5.5	5.5	6.9	8.3	9.9	11.0	12.4	14.9	18.7	22.4	24.9	30.0	30.0	30.0
		N.m	0.09	0.11	0.15	0.18	0.22	0.27	0.30	0.37	0.45	0.54	0.54	0.67	0.81	0.97	1.08	1.22	1.46	1.83	2.19	2.44	2.94	2.94	2.94

Motor Model	Gearbox Model	Gear Ratio	200	250
		r/min	9	7.2
6RDG*-6G	6GBD□MH	kgfcm	30.0	30.0
		N.m	2.94	2.94

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180
		r/min	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16	15	12	10	8
6RDG*-6G	6GBD□MH	kgfcm	1.2	1.4	2.0	2.4	3.0	3.6	3.9	4.9	5.9	7.1	7.1	8.9	10.7	12.8	14.2	16.1	19.3	24.1	28.9	30.0	30.0	30.0	30.0
		N.m	0.12	0.14	0.19	0.23	0.29	0.35	0.39	0.48	0.58	0.70	0.70	0.87	1.05	1.25	1.39	1.57	1.89	2.36	2.83	2.94	2.94	2.94	2.94

Motor Model	Gearbox Model	Gear Ratio	200	250
		r/min	7.5	6
6RDG*-6G	6GBD□MH	kgfcm	30.0	30.0
		N.m	2.94	2.94

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

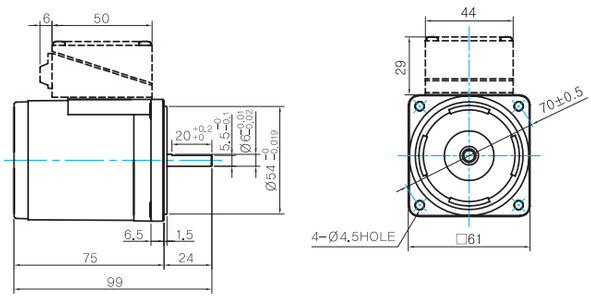
Motor Images

6RDD□-6	6RDD□-6-T	6RDG□-6G+6GBD□MH
		

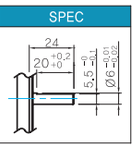
Dimensions

MOTOR ONLY

● MOTOR MODEL: 6RDD□-6(-T) (NO FAN)



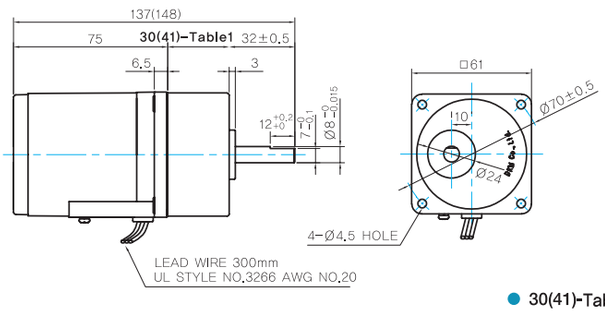
● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	

GEARED MOTOR

G TYPE GEARBOX

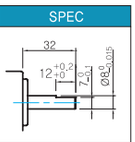
● MOTOR MODEL: 6RDG□-6G (NO FAN) ● GEARBOX MODEL: 6GBD□MH



● 30(41)-Table1

SIZE(mm)	GEAR RATIO
30	6GBD3MH ~ 6GBD18MH
41	6GBD20MH ~ 6GBD250MH

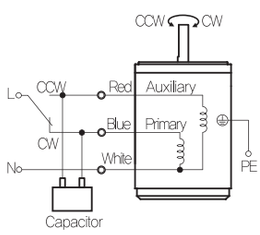
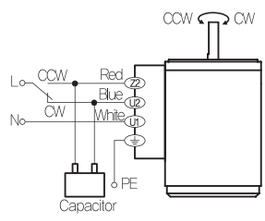
● GEARBOX OUTPUT SHAFT

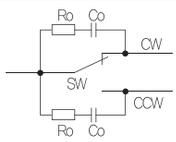
MODEL	SPEC
D-CUT TYPE	

WEIGHT

PART		WEIGHT(Kg)
MOTOR		0.7
GEAR BOX	6GBD3MH ~ 6GBD18MH	0.3
	6GBD20MH ~ 6GBD40MH	0.32
	6GBD50MH ~ 6GBD250MH	0.34

Connection Diagrams

Lead Wire Type	Terminal Box Type
	



Code	Contact Capacity
SW	AC125V 5A min. or AC250V 5A min. (Inductive load)
Ro, Co	Ro=5~200Ω Co=0.1~0.2μF, 200WV (400WV)

* Connect a CR circuit for surge suppression to protect the contact.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) During operation it is available to change the rotating direction by turning the switch to CW or CCW.

B AC Motors

Reversible Motor 6W(□70mm)

6W Reversible Motor 6W(□70mm)

Motor Specification

Model (7RDG*-6G(-T): Gear Type Shaft, 7RDD*-6(-T): D-Cut Type Shaft)		Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	Starting Torque N.m	Rated Load Speed r/min	Rated Load Current A	Rated Load Torque kgfcm	Rated Load Torque N.m	Capacitor μF / VAC
Lead Wire Type	Terminal Box Type												
7RDG1(A)-6G	7RDG1(A)-6G-T	6	1ø 110	60	4	30min.	0.56	0.056	1600	0.27	0.37	0.037	3.0 / 250
7RDG2(D)-6G	7RDG2(D)-6G-T	6	1ø 220	60	4	30min.	0.75	0.075	1600	0.17	0.37	0.037	1.0 / 450
7RDGE-6G	7RDGE-6G-T	6	1ø 220	50	4	30min.	0.61	0.061	1250	0.15	0.47	0.047	0.8 / 450
			1ø 240				0.72	0.072		0.17	0.47	0.047	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12
7RDG*-6G	7GBK□ BMH	kgfcm	0.9	1.1	1.5	1.8	2.2	2.7	3.0	3.7	4.4	5.3	5.3	6.7	8.0	9.6	10.7	12.1	14.5	18.1	21.7	24.1	28.9	36.2
		N.m	0.09	0.10	0.14	0.17	0.22	0.26	0.29	0.36	0.43	0.52	0.52	0.65	0.78	0.94	1.05	1.18	1.42	1.77	2.13	2.36	2.83	3.54

Motor Model	Gearbox Model	Gear Ratio	180	200
		r/min	10	9
7RDG*-6G	7GBK□ BMH	kgfcm	43.4	48.2
		N.m	4.25	4.72

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	38	30	25	20	17	15	12.5	10
7RDG*-6G	7GBK□ BMH	kgfcm	1.1	1.3	1.8	2.2	2.7	3.3	3.6	4.6	5.5	6.6	6.6	8.2	9.8	11.8	13.1	14.8	17.8	22.3	26.7	29.7	35.6	44.5
		N.m	0.107	0.13	0.18	0.21	0.27	0.32	0.36	0.45	0.54	0.64	0.64	0.80	0.96	1.16	1.29	1.45	1.74	2.18	2.62	2.91	3.49	4.36

Motor Model	Gearbox Model	Gear Ratio	180	200
		r/min	8	7.5
7RDG*-6G	7GBK□ BMH	kgfcm	50.0	50.0
		N.m	4.90	4.90

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

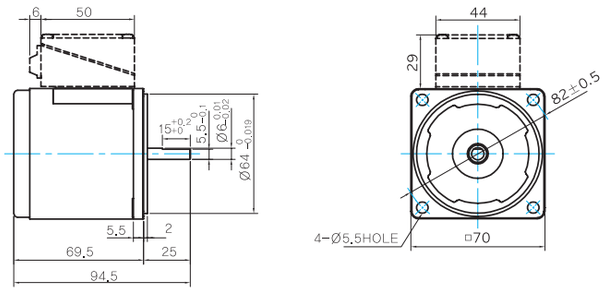
Motor Images

7RDD□-6	7RDD□-6-T	7RDG□-6G+7GBK□BMH
		

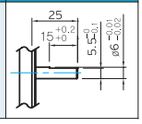
Dimensions

MOTOR ONLY

● MOTOR MODEL: 7RDD□-6(-T) (NO FAN)



● MOTOR OUTPUT SHAFT

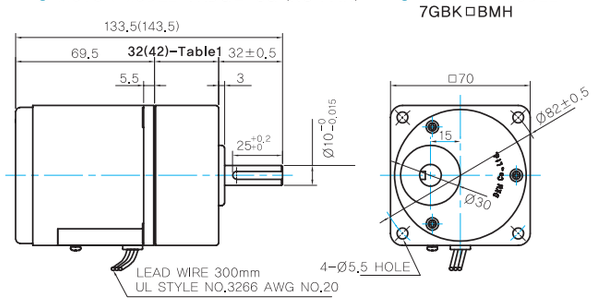
MODEL	SPEC
D-CUT TYPE	

GEARED MOTOR

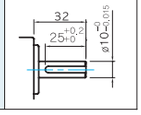
G TYPE GEARBOX

● MOTOR MODEL: 7RDG□-6G (NO FAN)

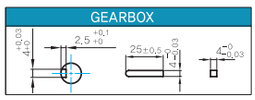
● GEARBOX MODEL: 7GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

GEARBOX


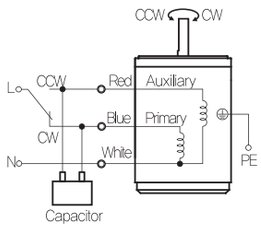
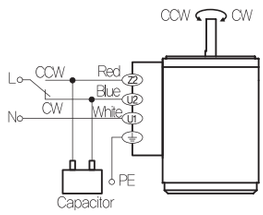
WEIGHT

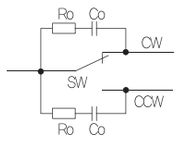
PART		WEIGHT(Kg)
MOTOR		0.83
GEAR BOX	7GBK3BMH ~ 7GBK18BMH	0.38
	7GBK20BMH ~ 7GBK40BMH	0.48
	7GBK50MH ~ 7GBK200MH	0.53

● 32(42)-Table1

SIZE(mm)	GEAR RATIO
32	7GBK3BMH – 7GBK18BMH
42	7GBK20BMH – 7GBK200BMH

Connection Diagrams

Lead Wire Type	Terminal Box Type
	



Code	Contact Capacity
SW	AC125V 5A min. or AC250V 5A min. (Inductive load)
Ro, Co	Ro=5~200Ω Co=0.1~0.2μF, 200WV (400WV)

* Connect a CR circuit for surge suppression to protect the contact.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) During operation it is available to change the rotating direction by turning the switch to CW or CCW.

B AC Motors

Reversible Motor 10W(□70mm)

10W Reversible Motor 10W(□70mm)

Motor Specification

Model 7RDG*-10G(-T): Gear Type Shaft 7RDD*-10(-T): D-Cut Type Shaft		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
7RDG1(A)-10G	7RDG1(A)-10G-T	10	1ø 110	60	4	30min.	0.70	0.070	1550	0.31	0.63	0.063	3.5 / 250
7RDG2(D)-10G	7RDG2(D)-10G-T	10	1ø 220	60	4	30min.	0.92	0.092	1550	0.20	0.63	0.063	1.2 / 450
7RDGE-10G	7RDGE-10G-T	10	1ø 220	50	4	30min.	0.78	0.078	1200	0.17	0.81	0.081	1.0 / 450
			1ø 240				0.94	0.094		0.18	0.81	0.081	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12
7RDG*-10G	7GBK□ BMH	kgfcm	1.5	1.8	2.5	3.1	3.8	4.6	5.1	6.4	7.6	9.2	9.2	11.5	13.8	16.5	18.3	20.7	24.9	31.1	37.3	41.5	49.8	50.0
		N.m	0.15	0.18	0.25	0.30	0.37	0.45	0.50	0.62	0.75	0.90	0.90	1.12	1.35	1.62	1.80	2.03	2.44	3.05	3.66	4.06	4.88	4.90

Motor Model	Gearbox Model	Gear Ratio	180	200
		r/min	10	9
7RDG*-10G	7GBK□ BMH	kgfcm	50.0	50.0
		N.m	4.90	4.90

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	38	30	25	20	17	15	12.5	10
7RDG*-10G	7GBK□ BMH	kgfcm	2.0	2.4	3.3	3.9	4.9	5.9	6.6	8.2	9.9	11.8	11.9	14.8	17.8	21.3	23.7	26.8	32.1	40.2	48.2	50.0	50.0	50.0
		N.m	0.19	0.23	0.32	0.39	0.48	0.58	0.64	0.81	0.97	1.16	1.16	1.45	1.74	2.09	2.32	2.62	3.15	3.94	4.72	4.90	4.90	4.90

Motor Model	Gearbox Model	Gear Ratio	180	200
		r/min	8	7.5
7RDG*-10G	7GBK□ BMH	kgfcm	50.0	50.0
		N.m	4.90	4.90

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

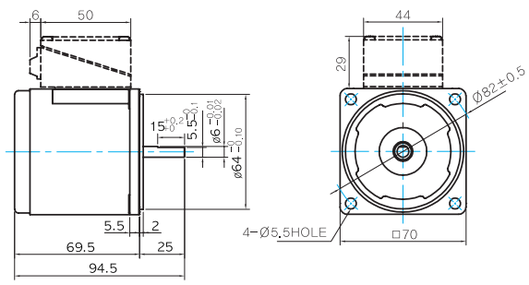
Motor Images

7RDD□-10	7RDD□-10-T	7RDG□-10G+7GBK□BMH
		

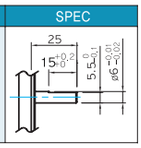
Dimensions

MOTOR ONLY

● MOTOR MODEL: 7RDD□-10(-T) (NO FAN)



● MOTOR OUTPUT SHAFT

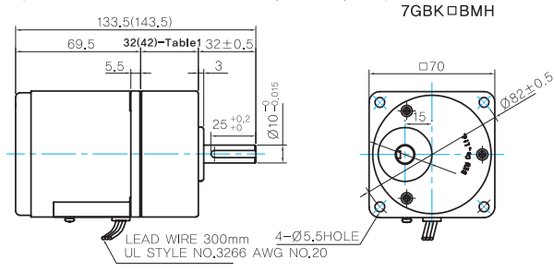
MODEL	SPEC
D-CUT TYPE	

GEARED MOTOR

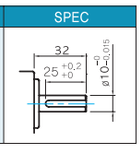
G TYPE GEARBOX

● MOTOR MODEL: 7RDG□-10G (NO FAN)

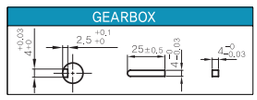
● GEARBOX MODEL: 7GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC



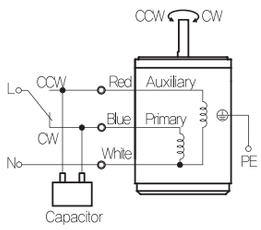
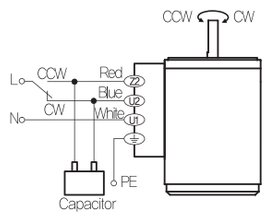
WEIGHT

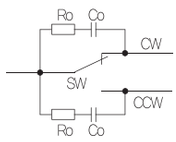
PART		WEIGHT(Kg)
MOTOR		0.83
GEAR BOX	7GBK3BMH ~ 7GBK18BMH	0.38
	7GBK20BMH ~ 7GBK40BMH	0.48
	7GBK50MH ~ 7GBK200MH	0.53

● 32(42)-Table1

SIZE(mm)	GEAR RATIO
32	7GBK3BMH – 7GBK18BMH
42	7GBK20BMH – 7GBK200BMH

Connection Diagrams

Lead Wire Type	Terminal Box Type
	



Code	Contact Capacity
SW	AC125V 5A min. or AC250V 5A min. (Inductive load)
Ro, Co	Ro=5~200Ω Co=0.1~0.2μF, 200WV (400WV)

* Connect a CR circuit for surge suppression to protect the contact.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) During operation it is available to change the rotating direction by turning the switch to CW or CCW.

B AC Motors

Reversible Motor 15W(□70mm)

15W Reversible Motor 15W(□70mm)

Motor Specification

Model (7RDG*-15G(-T): Gear Type Shaft, 7RDD*-15(-T): D-Cut Type Shaft)		Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	N.m	Rated Load Speed r/min	Current A	Torque kgfcm	N.m	Capacitor μF / VAC
Lead Wire Type	Terminal Box Type												
7RDG1(A)-15G	7RDG1(A)-15G-T	15	1ø 110	60	4	30min.	1.35	0.135	1550	0.49	0.94	0.094	6.0 / 250
7RDG2(D)-15G	7RDG2(D)-15G-T	15	1ø 220	60	4	30min.	1.23	0.123	1600	0.22	0.91	0.091	1.5 / 450
7RDGE-15G	7RDGE-15G-T	15	1ø 220	50	4	30min.	1.07	0.107	1200	0.19	1.22	0.122	1.2 / 450
			1ø 240				1.28	0.128		0.21	1.22	0.122	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12
7RDG*-15G	7GBK□ BMH	kgfcm	2.2	2.7	3.7	4.4	5.5	6.7	7.4	9.2	11.1	13.3	13.3	16.7	20.0	24.0	26.7	30.1	36.2	45.2	50.0	50.0	50.0	50.0
		N.m	0.22	0.26	0.36	0.43	0.54	0.65	0.72	0.91	1.09	1.30	1.31	1.63	1.96	2.35	2.61	2.95	3.54	4.43	4.90	4.90	4.90	4.90

Motor Model	Gearbox Model	Gear Ratio	180	200
		r/min	10	9
7RDG*-15G	7GBK□ BMH	kgfcm	50.0	50.0
		N.m	4.90	4.90

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	38	30	25	20	17	15	12.5	10
7RDG*-15G	7GBK□ BMH	kgfcm	3.0	3.6	4.9	5.9	7.4	8.9	9.9	12.3	14.8	17.8	17.8	22.2	26.7	32.0	35.6	40.2	48.2	50.0	50.0	50.0	50.0	50.0
		N.m	0.29	0.35	0.48	0.58	0.72	0.87	0.97	1.21	1.45	1.74	1.74	2.18	2.61	3.14	3.48	3.94	4.72	4.90	4.90	4.90	4.90	4.90

Motor Model	Gearbox Model	Gear Ratio	180	200
		r/min	8	7.5
7RDG*-15G	7GBK□ BMH	kgfcm	50.0	50.0
		N.m	4.90	4.90

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft: a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

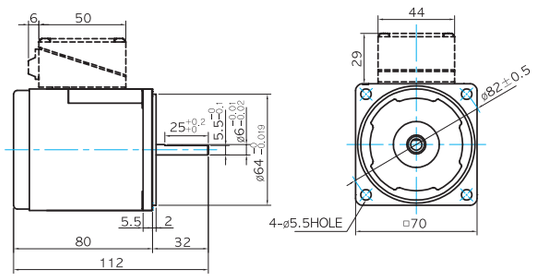
Motor Images

7RDD□-15	7RDD□-15-T	7RDG□-15G+7GBK□BMH
		

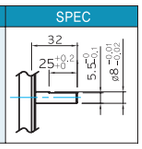
Dimensions

MOTOR ONLY

● MOTOR MODEL: 7RDD□-15(-T) (NO FAN)



● MOTOR OUTPUT SHAFT

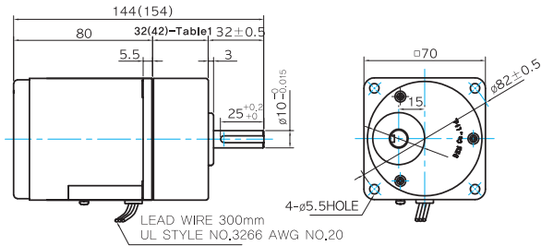
MODEL	SPEC
D-CUT TYPE	

GEARED MOTOR

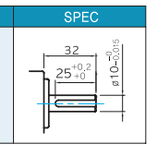
G TYPE GEARBOX

● MOTOR MODEL: 7RDG□-15G (NO FAN)

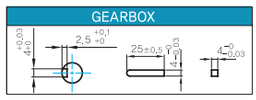
● GEARBOX MODEL: 7GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

GEARBOX


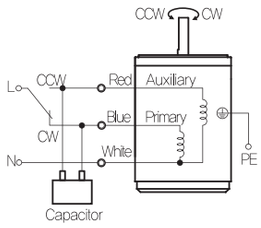
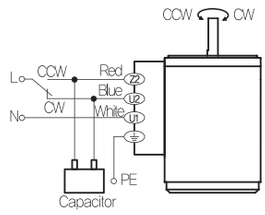
WEIGHT

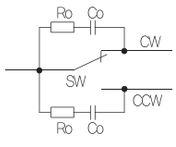
PART		WEIGHT(Kg)
MOTOR		1.10
GEAR BOX	7GBK3BMH ~ 7GBK18BMH	0.38
	7GBK20BMH ~ 7GBK40BMH	0.48
	7GBK50MH ~ 7GBK200MH	0.53

● 32(42)-Table1

SIZE(mm)	GEAR RATIO
32	7GBK3BMH - 7GBK18BMH
42	7GBK20BMH - 7GBK200BMH

Connection Diagrams

Lead Wire Type	Terminal Box Type
	



Code	Contact Capacity
SW	AC125V 5A min. or AC250V 5A min. (Inductive load)
Ro, Co	Ro=5~200Ω Co=0.1~0.2μF, 200WV (400WV)

* Connect a CR circuit for surge suppression to protect the contact.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) During operation it is available to change the rotating direction by turning the switch to CW or CCW.

B AC Motors

Reversible Motor 15W(□80mm)

15W Reversible Motor 15W(□80mm)

Motor Specification

Model 8RDG*-15□(-T): Gear Type Shaft 8RDD*-15(-T): D-Cut Type Shaft		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
		W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
Lead Wire Type	Terminal Box Type												
8RDG1(A)-15□	8RDG1(A)-15□-T	15	1ø 110	60	4	30min.	1.58	0.158	1600	0.55	0.91	0.091	6.0 / 250
8RDG2(D)-15□	8RDG2(D)-15□-T	15	1ø 220	60	4	30min.	1.51	0.151	1600	0.24	0.91	0.091	1.5 / 450
8RDGE-15□	8RDGE-15□-T	15	1ø 220	50	4	30min.	1.49	0.149	1300	0.23	1.12	0.112	1.5 / 450
			1ø 240				1.77	0.177		0.25	1.12	0.112	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10
8RDG*-15G	8GBK□BMH	kgfcm	2.2	2.7	3.7	4.4	5.5	6.7	7.4	9.2	11.1	13.3	13.3	16.7	20.0	24.0	26.7	30.1	36.2	45.2	54.2	60.3	72.3	80.0	80.0
		N.m	0.22	0.26	0.36	0.43	0.54	0.65	0.72	0.91	1.09	1.30	1.31	1.63	1.96	2.35	2.61	2.95	3.54	4.43	5.32	5.91	7.09	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	200	250	300	360
		r/min	9	7	6	5
8RDG*-15G	8GBK□BMH	kgfcm	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
8RDG*-15W	8WD□BL/□BR/□BRL	kgfcm	7.5	8.8	10.5	12.2	16.0	18.1	21.0	27.4	30.1
		N.m	0.73	0.86	1.03	1.19	1.57	1.77	2.06	2.68	2.95

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8
8RDG*-15G	8GBK□BMH	kgfcm	2.6	3.2	4.4	5.3	6.6	7.9	8.8	11.0	13.1	15.8	15.8	19.8	23.7	28.4	31.6	35.7	42.9	53.6	64.3	71.4	80.0	80.0	80.0
		N.m	0.26	0.31	0.43	0.52	0.64	0.77	0.86	1.07	1.29	1.55	1.55	1.94	2.32	2.79	3.10	3.50	4.20	5.25	6.30	7.00	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	200	250	300	360
		r/min	7.5	6	5	4
8RDG*-15G	8GBK□BMH	kgfcm	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84

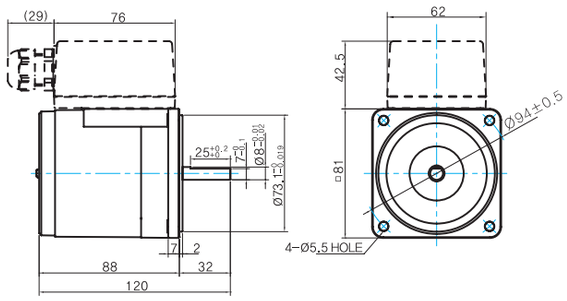
Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
8RDG*-15W	8WD□BL/□BR/□BRL	kgfcm	7.5	8.8	10.5	12.2	16.0	18.1	21.0	27.4	30.1
		N.m	0.73	0.86	1.03	1.19	1.57	1.77	2.06	2.68	2.95

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

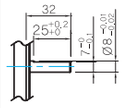
Dimensions

MOTOR ONLY

● MOTOR MODEL: 8RDD□-15(-T) (NO FAN)

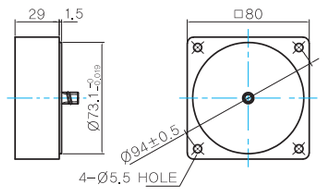


● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	

INTER-DECIMAL GEARBOX

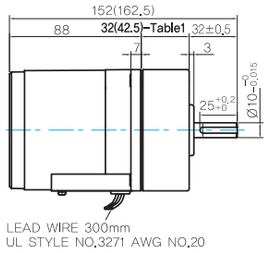
● MODEL: 8XD10□□



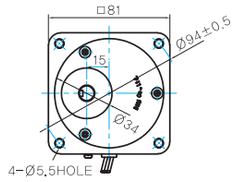
GEARED MOTOR

G TYPE GEARBOX

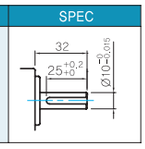
● MOTOR MODEL: 8RDG□-15G (NO FAN)



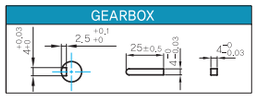
● GEARBOX MODEL: 8GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

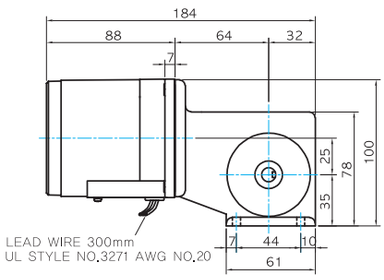


● 32(42.5)-Table1

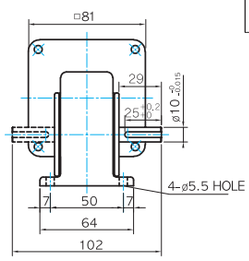
SIZE(mm)	GEAR RATIO
32	8GBK3BMH – 8GBK18BMH
42.5	8GBK20BMH – 8GBK360BMH

W TYPE GEARBOX

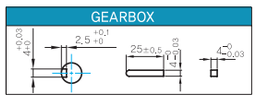
● MOTOR MODEL: 8RDG□-15W (NO FAN)



● GEARBOX MODEL: 8WD□BL/BR/BRL



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		1.56
GEAR BOX	8GBK3BMH ~ 8GBK18BMH	0.56
	8GBK20BMH ~ 8GBK40BMH	0.65
	8GBK50BMH ~ 8GBK360BMH	0.72
	8WD□BL/BR/BRL	0.68
	8XD10□□	0.45

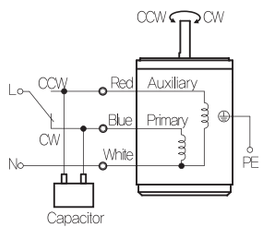
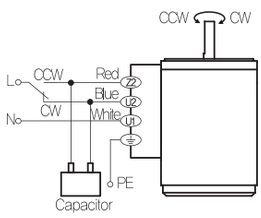
Motor Images

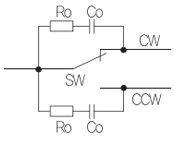
8RDD□-15	8RDD□-15-T	8RDG□-15G+8GBK□BMH	8RDG□-15W+8WD□BL
			

B AC Motors

Reversible Motor 15W(□80mm)

Connection Diagrams

Lead Wire Type	Terminal Box Type
	



Code	Contact Capacity
SW	AC125V 5A min. or AC250V 5A min. (Inductive load)
Ro, Co	Ro=5~200Ω Co=0.1~0.2μF, 200WV (400WV)

* Connect a CR circuit for surge suppression to protect the contact.

1) The direction of the motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) During operation it is available to change the rotating direction by turning the switch to CW or CCW.

25W Reversible Motor 25W(□80mm)

Motor Specification

Model (8RDG*-25□(-T): Gear Type Shaft, 8RDD*-25(-T): D-Cut Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
8RDG1(A)-25□	8RDG1(A)-25□-T	25	1ø 110	60	4	30min.	2.40	0.240	1600	0.74	1.52	0.152	10.0 / 250
8RDG2(D)-25□	8RDG2(D)-25□-T	25	1ø 220	60	4	30min.	2.47	0.247	1600	0.35	1.52	0.152	2.5 / 450
8RDGE-25□	8RDGE-25□-T	25	1ø 220	50	4	30min.	1.97	0.197	1250	0.28	1.95	0.195	2.0 / 450
			1ø 240				2.49	0.249		0.31	1.95	0.195	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15
8RDG*-25G	8GBK□ BMH	kgfcm	3.7	4.4	6.2	7.4	9.2	11.1	12.3	15.4	18.5	22.2	22.2	27.8	33.3	40.0	44.4	50.2	60.3	80.0	80.0	80.0	80.0
		N.m	0.36	0.43	0.60	0.72	0.91	1.09	1.21	1.51	1.81	2.17	2.18	2.72	3.27	3.92	4.35	4.92	5.91	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	150	180	200	250	300	360
		r/min	12	10	9	7	6	5
8RDG*-25G	8GBK□ BMH	kgfcm	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
8RDG*-25W	8WD□BL/□BR/□BRL	kgfcm	12.5	14.6	17.6	20.3	26.6	30.1	35.1	45.7	50.2
		N.m	1.22	1.43	1.72	1.99	2.61	2.95	3.44	4.47	4.92

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5
8RDG*-25G	8GBK□ BMH	kgfcm	4.4	5.3	7.3	8.8	11.0	13.1	14.6	18.3	21.9	26.3	26.3	32.9	39.5	47.4	52.7	59.5	80.0	80.0	80.0	80.0	80.0
		N.m	0.43	0.52	0.72	0.86	1.07	1.29	1.43	1.79	2.15	2.58	2.58	3.23	3.87	4.65	5.16	5.83	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	150	180	200	250	300	360
		r/min	10	8	7.5	6	5	4
8RDG*-25G	8GBK□ BMH	kgfcm	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
8RDG*-25W	8WD□BL/□BR/□BRL	kgfcm	14.8	17.3	20.8	24.0	31.6	35.7	41.6	54.1	59.5
		N.m	1.45	1.70	2.04	2.35	3.09	3.50	4.07	5.30	5.83

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

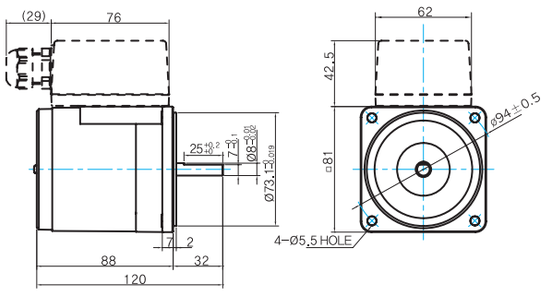
B AC Motors

Reversible Motor 25W(□80mm)

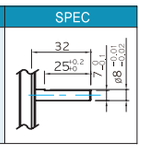
Dimensions

MOTOR ONLY

● MOTOR MODEL: 8RDD□-25(-T) (NO FAN)

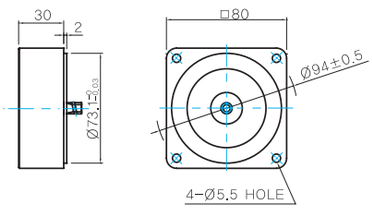


● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	

INTER-DECIMAL GEARBOX

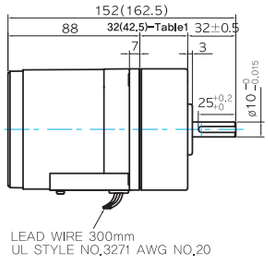
● MODEL: 8XD10□□



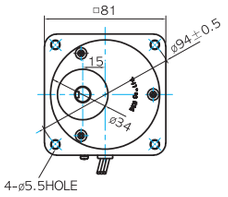
GEARED MOTOR

G TYPE GEARBOX

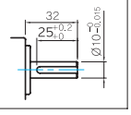
● MOTOR MODEL: 8RDG□-25G (NO FAN)



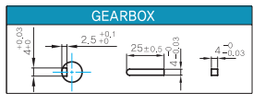
● GEARBOX MODEL: 8GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

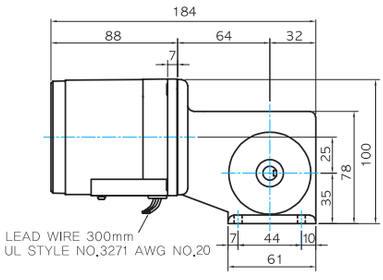


● 30(40)-Table1

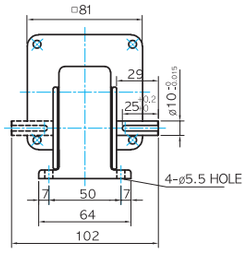
SIZE(mm)	GEAR RATIO
32	8GBK3BMH - 8GBK18BMH
42.5	8GBK20BMH - 8GBK360BMH

W TYPE GEARBOX

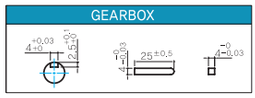
● MOTOR MODEL: 8RDG□-25W (NO FAN)



● GEARBOX MODEL: 8WD□BL/BR/BRL



● KEY SPEC



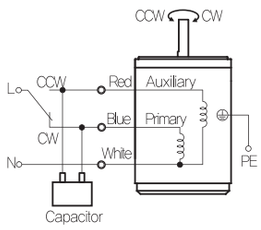
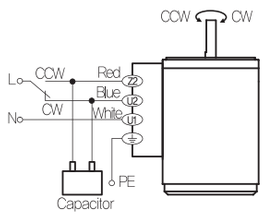
WEIGHT

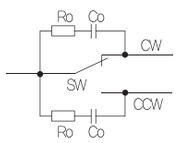
PART		WEIGHT(Kg)
MOTOR		1.56
GEAR BOX	8GBK3BMH ~ 8GBK18BMH	0.56
	8GBK20BMH ~ 8GBK40BMH	0.65
	8GBK50BMH ~ 8GBK360BMH	0.72
	8WD□BL/BR/BRL	0.68
	8XD10□□	0.45

Motor Images

8RDD□-25	8RDD□-25-T	8RDG□-25G+8GBK□BMH	8RDG□-25W+8WD□BL
			

Connection Diagrams

Lead Wire Type	Terminal Box Type
	



Code	Contact Capacity
SW	AC125V 5A min. or AC250V 5A min. (Inductive load)
Ro, Co	Ro=5~200Ω Co=0.1~0.2μF, 200WV (400WV)

* Connect a CR circuit for surge suppression to protect the contact.

1) The direction of the motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) During operation it is available to change the rotating direction by turning the switch to CW or CCW.

B AC Motors

Reversible Motor 40W(□90mm)

40W Reversible Motor 40W(□90mm)

Motor Specification

Model 9RDG*-40□(-T): Gear Type Shaft 9RDD*-40(-T): D-Cut Type Shaft 9RDK*-40(-T): Key Type Shaft		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
		W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
Lead Wire Type	Terminal Box Type												
9RDG1(A)-40□	9RDG1(A)-40□-T	40	1ø 110	60	4	30min.	4.00	0.400	1600	1.25	2.44	0.244	16.0 / 250
9RDG2(D)-40□	9RDG2(D)-40□-T	40	1ø 220	60	4	30min.	4.00	0.400	1600	0.61	2.44	0.244	4.0 / 450
9RDGE-40□	9RDGE-40□-T	40	1ø 220	50	4	30min.	3.20	0.320	1350	0.36	2.89	0.289	3.0 / 450
			1ø 240				3.91	0.391		0.39	2.89	0.289	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18
9RDG*-40G	9GBK□BMH	kgfcm	3.9	5.9	7.1	9.9	11.8	14.8	17.8	19.7	24.7	29.6	35.5	35.6	44.4	53.3	64.0	71.1	80.4	96.4	100.0	100.0	100.0
		N.m	0.39	0.58	0.70	0.97	1.16	1.45	1.74	1.93	2.42	2.90	3.48	3.48	4.35	5.23	6.27	6.97	7.87	9.45	9.80	9.80	9.80

Motor Model	Gearbox Model	Gear Ratio	120	150	180	200
		r/min	15	12	10	9
9RDG*-40G	9GBK□BMH	kgfcm	100.0	100.0	100.0	100.0
		N.m	9.80	9.80	9.80	9.80

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
9RDG*-40W	9WD□BL/□BR/□BRL	kgfcm	20.0	23.4	28.1	32.4	42.6	48.2	56.1	73.1	80.4
		N.m	1.96	2.29	2.76	3.18	4.18	4.72	5.50	7.16	7.87

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24
9RDG*-40P	9PBK□BH 9PFK□BH	kgfcm	3.9	5.9	7.1	9.9	11.8	14.8	17.8	19.7	22.2	26.7	32.0	35.6	40.2	48.2	57.9	64.3	80.4	96.4	107.7
		N.m	0.39	0.58	0.70	0.97	1.16	1.45	1.74	1.93	2.18	2.61	3.14	3.48	3.94	4.72	5.67	6.30	7.87	9.45	10.56

Motor Model	Gearbox Model	Gear Ratio	90	100	120	150	180	200
		r/min	20	18	15	12	10	9
9RDG*-40P	9PBK□BH 9PFK□BH	kgfcm	129.3	143.7	172.4	200.0	200.0	200.0
		N.m	12.67	14.08	16.90	19.60	19.60	19.60

50Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	38	30	25	20	17	15
9RDG*-40G	9GBK□BMH	kgfcm	4.7	7.0	8.4	11.7	14.0	17.5	21.0	23.4	29.2	35.1	42.1	42.1	52.7	63.2	75.8	84.3	95.2	100.0	100.0	100.0	100.0
		N.m	0.46	0.69	0.82	1.15	1.37	1.72	2.06	2.29	2.86	3.44	4.12	4.13	5.16	6.19	7.43	8.26	9.33	9.80	9.80	9.80	9.80

Motor Model	Gearbox Model	Gear Ratio	120	150	180	200
		r/min	13.0	10.0	8.0	7
9RDG*-40G	9GBK□BMH	kgfcm	100.0	100.0	100.0	100.0
		N.m	9.80	9.80	9.80	9.80

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
9RDG*-40W	9WD□BL/□BR/□BRL	kgfcm	23.7	27.7	33.3	38.4	50.5	57.1	66.5	86.6	95.2
		N.m	2.32	2.72	3.27	3.77	4.95	5.60	6.52	8.48	9.33

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20
9RDG*-40P	9PBK□BH 9PFK□BH	kgfcm	4.7	7.0	8.4	11.7	14.0	17.5	21.0	23.4	26.3	31.6	37.9	42.1	47.6	57.1	68.6	76.2	95.2	114.3	127.7
		N.m	0.46	0.69	0.82	1.15	1.37	1.72	2.06	2.29	2.58	3.10	3.72	4.13	4.67	5.60	6.72	7.47	9.33	11.20	12.51

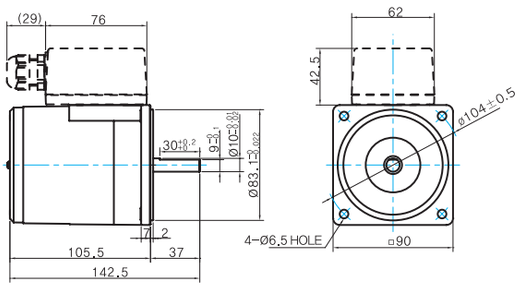
Motor Model	Gearbox Model	Gear Ratio	90	100	120	150	180	200
		r/min	17	15	12.5	10	8	7.5
9RDG*-40P	9PBK□BH 9PFK□BH	kgfcm	153.2	170.3	200.0	200.0	200.0	200.0
		N.m	15.02	16.69	19.60	19.60	19.60	19.60

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

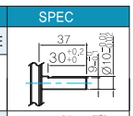
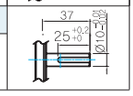
Dimensions

MOTOR ONLY

● MOTOR MODEL: 9RDD□-40(-T) (NO FAN)

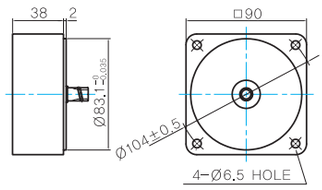


● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE 9RDD□-40	
KEY TYPE 9RDK□-40	

INTER-DECIMAL GEARBOX

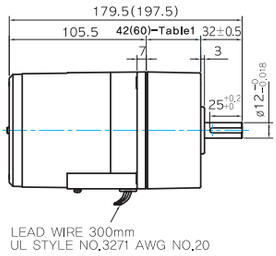
● MODEL: 9XD10□□



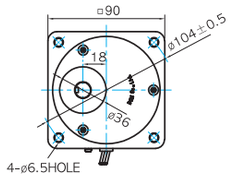
GEARED MOTOR

G TYPE GEARBOX

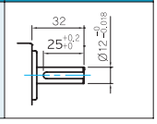
● MOTOR MODEL: 9RDG□-40G (NO FAN)



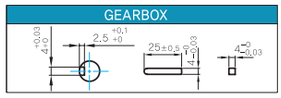
● GEARBOX MODEL: 9GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

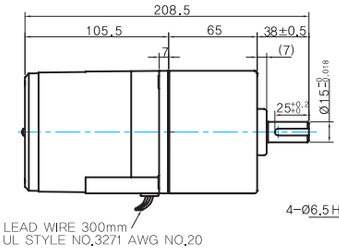


● 42(60)-Table1

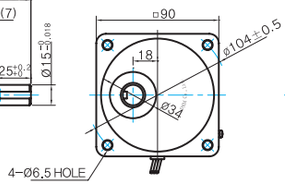
SIZE(mm)	GEAR RATIO
42	9GBK2BMH – 9GBK18BMH
60	9GBK20BMH – 9GBK200BMH

P TYPE GEARBOX

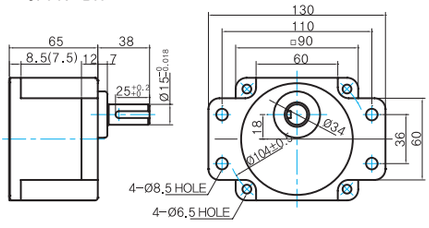
● MOTOR MODEL: 9RDG□-40P (NO FAN)



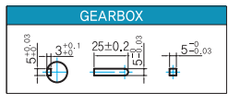
● GEARBOX MODEL: 9PBK□BH



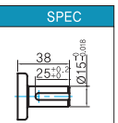
● GEARBOX MODEL: 9PFK□BH



● KEY SPEC

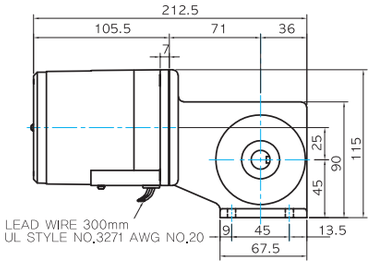


● GEARBOX OUTPUT SHAFT

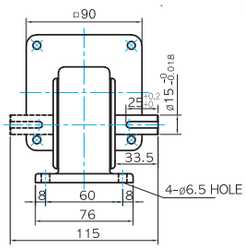
MODEL	SPEC
KEY TYPE 9PBK□BH 9PFK□BH	

W TYPE GEARBOX

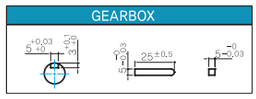
● MOTOR MODEL: 9RDG□-40W (NO FAN)



● GEARBOX MODEL: 9WD□BL/BR/BRL



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		2.45
GEAR BOX	9GBK2BMH ~ 9GBK18BMH	0.78
	9GBK20BMH ~ 9GBK40BMH	1.1
	9GBK50BMH ~ 9GBK200BMH	1.2
	9PB(F)K2BH ~ 9PB(F)K10BH	1.28
	9PB(F)K12.5BH ~ 9PB(F)K20BH	1.3
	9PB(F)K25BH ~ 9PB(F)K60BH	1.45
	9PB(F)K75BH ~ 9PB(F)K200BH	1.47
	9WD□BL/BR/BRL	1.0
	9XD10□□	0.6

B AC Motors

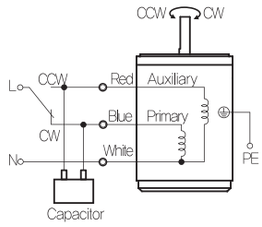
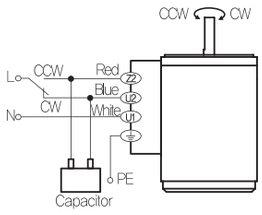
Reversible Motor 40W(□90mm)

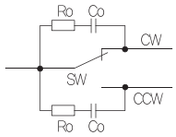
Motor Images

9RDD□-40	9RDD□-40-T	9RDG□-40G+9GBK□BMH	9RDG□-40P+9PBK□BH
			

9RDG□-40W+9WD□BL


Connection Diagrams

Lead Wire Type	Terminal Box Type
	



Code	Contact Capacity
SW	AC125V 5A min. or AC250V 5A min. (Inductive load)
Ro, Co	Ro=5~200Ω Co=0.1~0.2μF, 200WV (400WV)

* Connect a CR circuit for surge suppression to protect the contact.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) During operation it is available to change the rotating direction by turning the switch to CW or CCW.

60W Reversible Motor 60W(□90mm)

Motor Specification

Model (9RDG*-60F□(-T): Gear Type Shaft, 9RDD*-60F(-T): D-Cut Type Shaft, 9RDK*-60F(-T): Key Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
9RDG1(A)-60F□	9RDG1(A)-60F□-T	60	1ø 110	60	4	30min.	5.20	0.520	1600	1.60	3.65	0.365	20.0 / 250
9RDG2(D)-60F□	9RDG2(D)-60F□-T	60	1ø 220	60	4	30min.	5.19	0.519	1600	0.75	3.65	0.365	5.0 / 450
9RDGE-60F□	9RDGE-60F□-T	60	1ø 220	50	4	30min.	5.52	0.552	1300	0.59	4.50	0.450	5.0 / 450
			1ø 240				6.52	0.652		0.64	4.50	0.450	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9RDG*-60FP	9PBK□BH	kgfcm	5.9	8.9	10.7	14.8	17.8	22.2	26.6	29.6	33.3	40.0	48.0	53.3	60.3	72.3	86.8	96.4	120.5	144.6	161.6	193.9	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	0.58	0.87	1.04	1.45	1.74	2.17	2.61	2.90	3.27	3.92	4.70	5.23	5.91	7.09	8.50	9.45	11.81	14.17	15.84	19.01	19.60	19.60	19.60	19.60	19.60
9RDG*-60FH	9HBK□BH	kgfcm	–	8.9	10.7	14.8	17.8	22.2	26.6	29.6	33.3	40.0	48.0	53.3	60.3	72.3	86.8	96.4	120.5	144.6	161.6	193.9	215.5	258.6	300.0	300.0	300.0
	9HFK□BH	N.m		0.87	1.04	1.45	1.74	2.17	2.61	2.90	3.27	3.92	4.70	5.23	5.91	7.09	8.50	9.45	11.81	14.17	15.84	19.01	21.12	25.34	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
9RDG*-60FW	9WD□BL/□BR/□BRL	kgfcm	30.0	35.1	42.2	48.7	63.9	72.3	84.2	109.6	120.5
		N.m	2.94	3.44	4.13	4.77	6.26	7.09	8.25	10.74	11.81

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	360	240	180	120	90	72	60	45	36	30	22
9RDG*-60FWH	9WHD□-030	kgfcm	12.7	18.4	23.7	33.3	42.1	48.2	56.1	69.0	78.9	87.7	102.9
		N.m	1.25	1.80	2.32	3.26	4.12	4.72	5.50	6.76	7.73	8.59	10.08

50Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9RDG*-60FP	9PBK□BH	kgfcm	7.3	10.9	13.1	18.2	21.8	27.3	32.8	36.4	41.0	49.2	59.1	65.6	74.2	89.0	106.8	118.7	148.3	178.0	198.9	200.0	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	0.71	1.07	1.28	1.78	2.14	2.68	3.21	3.57	4.02	4.82	5.79	6.43	7.27	8.72	10.47	11.63	14.54	17.45	19.49	19.60	19.60	19.60	19.60	19.60	19.60
9RDG*-60FH	9HBK□BH	kgfcm	–	10.9	13.1	18.2	21.8	27.3	32.8	36.4	41.0	49.2	59.1	65.6	74.2	89.0	106.8	118.7	148.3	178.0	198.9	238.7	265.2	300.0	300.0	300.0	300.0
	9HFK□BH	N.m		1.07	1.28	1.78	2.14	2.68	3.21	3.57	4.02	4.82	5.79	6.43	7.27	8.72	10.47	11.63	14.54	17.45	19.49	23.39	25.99	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
9RDG*-60FW	9WD□BL/□BR/□BRL	kgfcm	36.9	43.2	51.9	59.9	78.7	89.0	103.6	134.9	122.4
		N.m	3.61	4.23	5.09	5.87	7.71	8.72	10.15	13.22	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	300	200	150	100	75	60	50	38	30	25	18
9IDG*-60FWH	9WHD□-030	kgfcm	15.1	21.8	28.1	39.5	49.9	57.1	66.5	81.7	93.5	103.9	121.9
		N.m	1.48	2.14	2.75	3.87	4.89	5.60	6.52	8.01	9.16	10.18	11.95

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

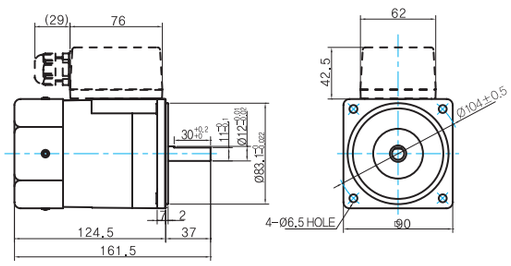
B AC Motors

Reversible Motor 60W(□90mm)

Dimensions

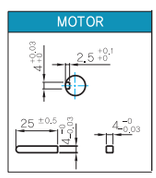
MOTOR ONLY

● MOTOR MODEL:
9RDD□-60F(-T) (GENERAL FAN)



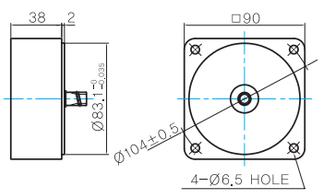
● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
9RDD□-60F	
KEY TYPE	
9RDK□-60F	



INTER-DECIMAL GEARBOX

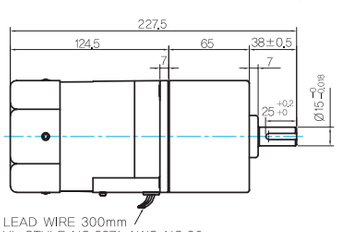
● MODEL: 9XD10□□



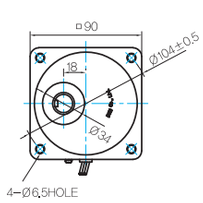
GEARED MOTOR

P TYPE GEARBOX

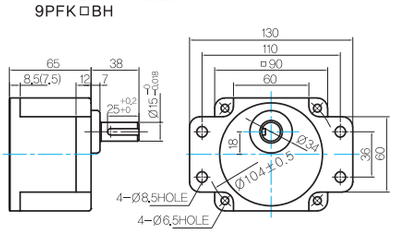
● MOTOR MODEL:
9RDG□-60FP (GENERAL FAN)



● GEARBOX MODEL:
9PBK□BH



● GEARBOX MODEL:
9PFK□BH



● GEARBOX OUTPUT SHAFT

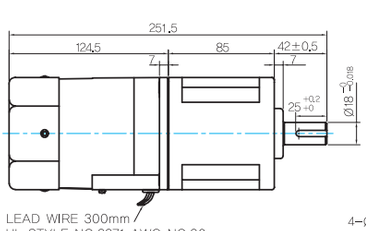
MODEL	SPEC
KEY TYPE	
9PBK□BH 9PFK□BH	

● KEY SPEC

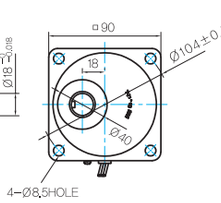
GEARBOX

H TYPE GEARBOX

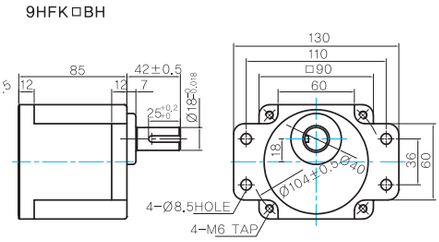
● MOTOR MODEL:
9RDG□-60FH (GENERAL FAN)



● GEARBOX MODEL:
9HBK□BH



● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

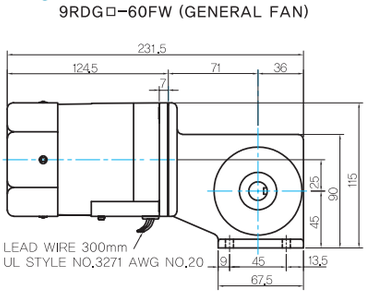
MODEL	SPEC
KEY TYPE	
9HBK□BH 9HFK□BH	

● KEY SPEC

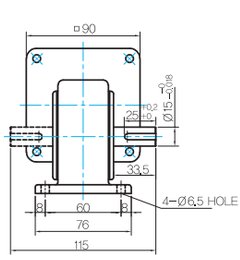
GEARBOX

W TYPE GEARBOX

● MOTOR MODEL:
9RDG□-60FW (GENERAL FAN)



● GEARBOX MODEL:
9WD□BL/BR/BRL

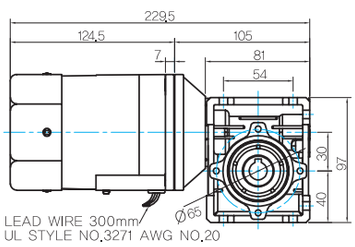


● KEY SPEC

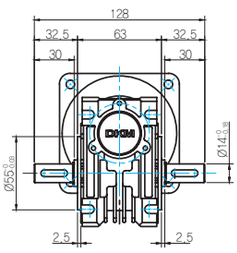
GEARBOX

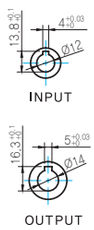
WH TYPE GEARBOX

● MOTOR MODEL:
9RDG□–60FWH (GENERAL FAN)

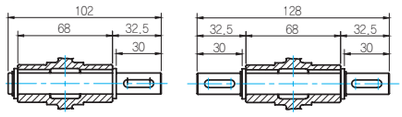


● GEARBOX MODEL:
9WHD□–030





● SHAFT



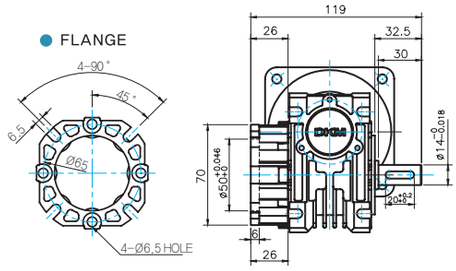
Unidirectional Bi-directional

WEIGHT

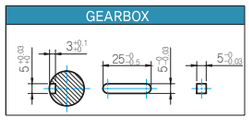
PART		WEIGHT(Kg)
MOTOR		2.65
GEAR BOX	9PB(F)K2BH – 9PB(F)K10BH	1.28
	9PB(F)K12.5BH – 9PB(F)K20BH	1.3
	9PB(F)K25BH – 9PB(F)K60BH	1.45
	9PB(F)K75BH – 9PB(F)K200BH	1.47
	9HB(F)K3BH – 9HB(F)K10BH	1.62
	9HB(F)K12.5BH – 9HB(F)K20BH	1.68
	9HB(F)K25BH – 9HB(F)K60BH	1.73
	9HB(F)K75BH – 9HB(F)K200BH	1.78
	9WD□BL/BR/BRL	1.0
	9WHD□–030	1.2
	9XD10□□	0.6

* The output flange and shaft are sold separately

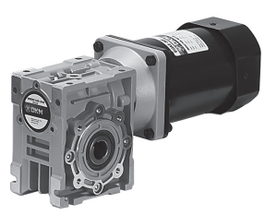
● FLANGE



● KEY SPEC



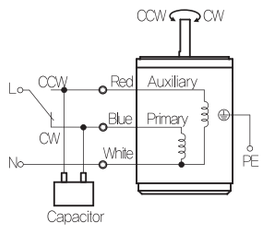
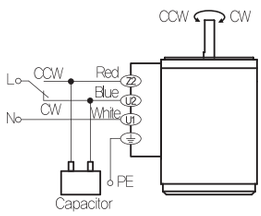
Motor Images

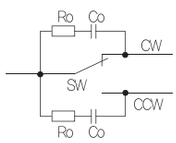
9RDD□–60F	9RDD□–60F–T	9RDG□–60FP+9PBK□BH	9RDG□–60FP+9PFK□BH
			
9RDG□–60FH+9HBK□BH	**9RDG□–60FH+9HFK□BH**	**9RDG□–60FW+9WD□BL**	**9RDG□–60FWH+9WHD□**
			

B AC Motors

Reversible Motor 60W(□90mm)

Connection Diagrams

Lead Wire Type	Terminal Box Type
	



Code	Contact Capacity
SW	AC125V 5A min. or AC250V 5A min. (Inductive load)
Ro, Co	Ro=5~200Ω Co=0.1~0.2μF, 200WV (400WV)

* Connect a CR circuit for surge suppression to protect the contact.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) During operation it is available to change the rotating direction by turning the switch to CW or CCW.

90W Reversible Motor 90W(□90mm)

Motor Specification

Model (9RDG*-90F□(-T): Gear Type Shaft, 9RDD*-90F(-T): D-Cut Type Shaft, 9RDK*-90F(-T): Key Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
Lead Wire Type	Terminal Box Type	W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
9RDG1(A)-90F□	9RDG1(A)-90F□-T	90	1ø 110	60	4	30min.	6.49	0.649	1600	2.00	5.48	0.548	25.0 / 250
9RDG2(D)-90F□	9RDG2(D)-90F□-T	90	1ø 220	60	4	30min.	6.11	0.611	1600	1.04	5.48	0.548	6.0 / 450
9RDGE-90F□	9RDGE-90F□-T	90	1ø 220	50	4	30min.	6.07	0.607	1250	0.92	7.01	0.701	6.0 / 450
			1ø 240				7.15	0.715		1.00	7.01	0.701	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9RDG*-90FP	9PBK□BH	kgfcm	8.9	13.3	16.0	22.2	26.6	33.3	39.9	44.4	50.0	60.0	72.0	80.0	90.4	108.5	130.2	144.6	180.8	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	0.87	1.30	1.57	2.17	2.61	3.26	3.91	4.35	4.90	5.88	7.06	7.84	8.86	10.63	12.76	14.17	17.72	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9RDG*-90FH	9HBK□BH	kgfcm	–	13.3	16.0	22.2	26.6	33.3	39.9	44.4	50.0	60.0	72.0	80.0	90.4	108.5	130.2	144.6	180.8	217.0	242.4	290.9	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m		1.30	1.57	2.17	2.61	3.26	3.91	4.35	4.90	5.88	7.06	7.84	8.86	10.63	12.76	14.17	17.72	21.26	23.76	28.51	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
9RDG*-90FW	9WD□BL/□BR/□BRL	kgfcm	44.9	52.6	63.3	73.0	95.9	108.5	126.2	142.9	122.4
		N.m	4.40	5.15	6.20	7.15	9.40	10.63	12.37	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	360	240	180	120	90	72	60	45	36	30	22
9RDG*-90FWH	9WHD□-030	kgfcm	19.1	27.6	35.5	50.0	63.1	72.3	84.2	103.4	118.3	131.5	132.7
		N.m	1.87	2.71	3.48	4.90	6.19	7.09	8.25	10.14	11.60	12.89	13.00

50Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9RDG*-90FP	9PBK□BH	kgfcm	11.4	17.0	20.4	28.4	34.1	42.6	51.1	56.8	64.0	76.8	92.1	102.4	115.7	138.9	166.6	185.1	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	1.11	1.67	2.00	2.78	3.34	4.18	5.01	5.57	6.27	7.53	9.03	10.03	11.34	13.61	16.33	18.14	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9RDG*-90FH	9HBK□BH	kgfcm	–	17.0	20.4	28.4	34.1	42.6	51.1	56.8	64.0	76.8	92.1	102.4	115.7	138.9	166.6	185.1	231.4	277.7	300.0	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m		1.67	2.00	2.78	3.34	4.18	5.01	5.57	6.27	7.53	9.03	10.03	11.34	13.61	16.33	18.14	22.68	27.22	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
9RDG*-90FW	9WD□BL/□BR/□BRL	kgfcm	57.5	67.3	81.0	93.4	122.7	138.9	153.1	142.9	122.4
		N.m	5.64	6.60	7.94	9.15	12.03	13.61	15.00	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	300	200	150	100	75	60	50	38	30	25	18
9IDG*-90FWH	9WHD□-030	kgfcm	22.6	32.7	42.1	59.2	74.8	85.7	99.7	122.6	140.3	155.8	132.7
		N.m	2.21	3.21	4.12	5.80	7.33	8.40	9.77	12.01	13.75	15.27	13.00

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

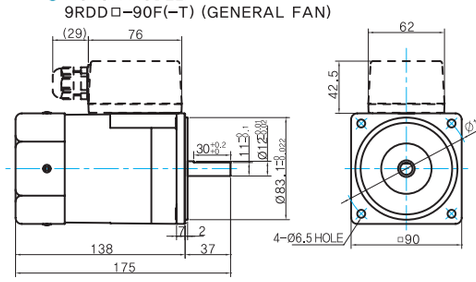
B AC Motors

Reversible Motor 90W(□90mm)

Dimensions

MOTOR ONLY

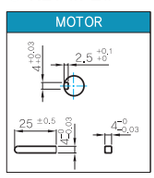
● MOTOR MODEL:
9RDD□-90F(-T) (GENERAL FAN)



● MOTOR OUTPUT SHAFT

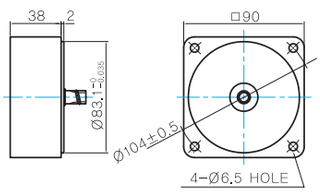
MODEL	SPEC
D-CUT TYPE	
9RDD□-90F	
KEY TYPE	
9RDK□-90F	

● KEY SPEC



INTER-DECIMAL GEARBOX

● MODEL: 9XD10□□



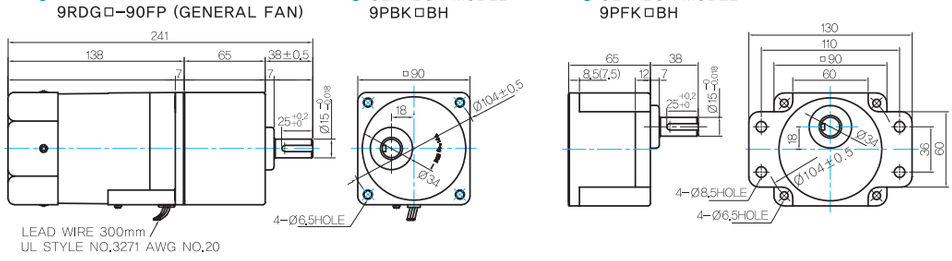
GEARED MOTOR

P TYPE GEARBOX

● MOTOR MODEL:
9RDG□-90FP (GENERAL FAN)

● GEARBOX MODEL:
9PBK□BH

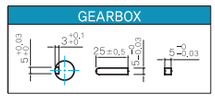
● GEARBOX MODEL:
9PFK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	
9PBK□BH 9PFK□BH	

● KEY SPEC

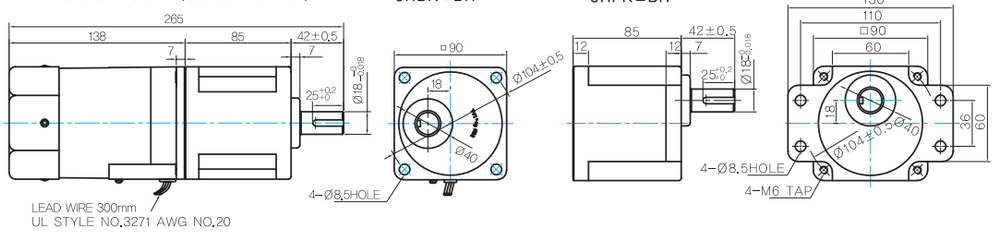


H TYPE GEARBOX

● MOTOR MODEL:
9RDG□-90FH (GENERAL FAN)

● GEARBOX MODEL:
9HBK□BH

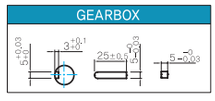
● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	
9HBK□BH 9HFK□BH	

● KEY SPEC

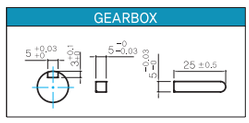


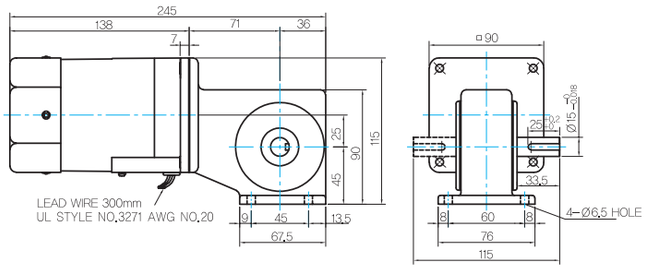
W TYPE GEARBOX

● MOTOR MODEL:
9RDG□-90FW (GENERAL FAN)

● GEARBOX MODEL:
9WD□BL/BR/BRL

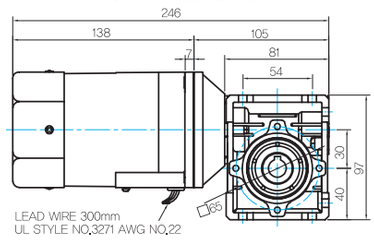
● KEY SPEC



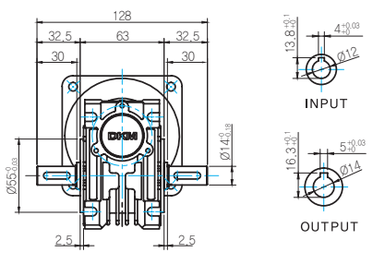


WH TYPE GEARBOX

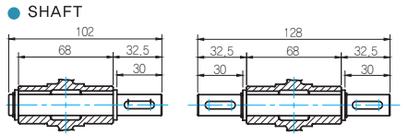
● MOTOR MODEL:
9RDG□-90FWH (GENERAL FAN)



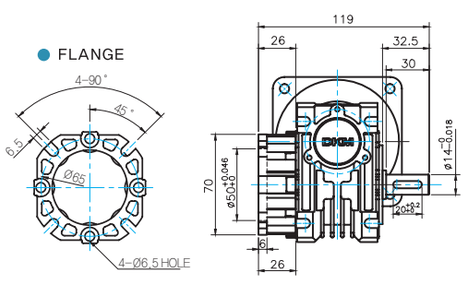
● GEARBOX MODEL:
9WHD□-030



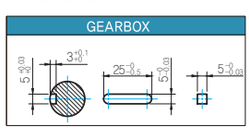
● SHAFT



● FLANGE



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		3.05
GEAR BOX	9PB(F)K2BH – 9PB(F)K10BH	1.28
	9PB(F)K12.5BH – 9PB(F)K20BH	1.3
	9PB(F)K25BH – 9PB(F)K60BH	1.45
	9PB(F)K75BH – 9PB(F)K200BH	1.47
	9HB(F)K3BH – 9HB(F)K10BH	1.62
	9HB(F)K12.5BH – 9HB(F)K20BH	1.68
	9HB(F)K25BH – 9HB(F)K60BH	1.73
	9HB(F)K75BH – 9HB(F)K200BH	1.78
	9WD□BL/BR/BRL	1.0
	9WHD□-030	1.2
	9XD10□□	0.6

* The output flange and shaft are sold separately

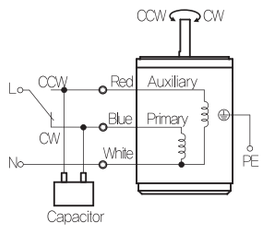
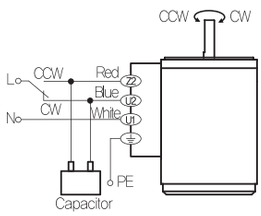
Motor Images

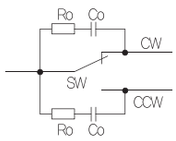
9RDD□-90F	9RDD□-90F-T	9RDG□-90FP+9PBK□BH	9RDG□-90FP+9PFK□BH
			
9RDG□-90FH+9HBK□BH	**9RDG□-90FH+9HFK□BH**	**9RDG□-90FW+9WD□BL**	**9RDG□-90FWH+9WHD□**
			

B AC Motors

Reversible Motor 90W(□90mm)

Connection Diagrams

Lead Wire Type	Terminal Box Type
	



Code	Contact Capacity
SW	AC125V 5A min. or AC250V 5A min. (Inductive load)
Ro, Co	Ro=5~200Ω Co=0.1~0.2μF, 200WV (400WV)

* Connect a CR circuit for surge suppression to protect the contact.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) During operation it is available to change the rotating direction by turning the switch to CW or CCW.

120W Reversible Motor 120W(□ 90mm)

Motor Specification

Model (9RDG*-120F□(-T): Gear Type Shaft, 9RDD*-120F(-T): D-Cut Type Shaft, 9RDK*-120F(-T): Key Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
		W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
Lead Wire Type	Terminal Box Type												
9RDG1(A)-120F□	9RDG1(A)-120F□-T	120	1ø 110	60	4	30min.	7.11	0.711	1550	2.50	7.54	0.754	30.0 / 250
9RDG2(D)-120F□	9RDG2(D)-120F□-T	120	1ø 220	60	4	30min.	6.42	0.642	1600	1.08	7.31	0.731	6.5 / 450
9RDGE-120F□	9RDGE-120F□-T	120	1ø 220	50	4	30min.	6.28	0.628	1250	1.10	9.35	0.935	6.5 / 450
			1ø 240				7.50	0.750		1.21	9.35	0.935	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9RDG*-120FP	9PBK□BH	kgfcm	11.8	17.8	21.3	29.6	35.5	44.4	53.3	59.2	66.7	80.0	96.0	106.7	120.5	144.6	173.6	192.9	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	1.16	1.74	2.09	2.90	3.48	4.35	5.22	5.80	6.53	7.84	9.41	10.45	11.81	14.17	17.01	18.90	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9RDG*-120FH	9HBK□BH	kgfcm	–	17.8	21.3	29.6	35.5	44.4	53.3	59.2	66.7	80.0	96.0	106.7	120.5	144.6	173.6	192.9	241.1	289.3	300.0	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m		1.74	2.09	2.90	3.48	4.35	5.22	5.80	6.53	7.84	9.41	10.45	11.81	14.17	17.01	18.90	23.62	28.35	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
9RDG*-120FW	9WD□BL/□BR/□BRL	kgfcm	59.9	70.1	84.4	97.3	127.8	144.6	153.1	142.9	122.4
		N.m	5.87	6.87	8.27	9.54	12.53	14.17	15.00	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	360	240	180	120	90	72	60	45	36	30	22
9RDG*-120FWH	9WHD□-030	kgfcm	25.4	36.8	47.3	66.6	84.2	96.4	112.2	137.9	157.8	163.3	132.7
		N.m	2.49	3.61	4.64	6.53	8.25	9.45	11.00	13.52	15.46	16.00	13.00

50Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9RDG*-120FP	9PBK□BH	kgfcm	15.1	22.7	27.3	37.9	45.4	56.8	68.2	75.7	85.3	102.4	122.9	136.5	154.3	185.1	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	1.48	2.23	2.67	3.71	4.45	5.57	6.68	7.42	8.36	10.03	12.04	13.38	15.12	18.14	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9RDG*-120FH	9HBK□BH	kgfcm	–	22.7	27.3	37.9	45.4	56.8	68.2	75.7	85.3	102.4	122.9	136.5	154.3	185.1	222.2	246.9	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m		2.23	2.67	3.71	4.45	5.57	6.68	7.42	8.36	10.03	12.04	13.38	15.12	18.14	21.77	24.19	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
9RDG*-120FW	9WD□BL/□BR/□BRL	kgfcm	76.7	89.8	108.0	124.5	163.6	170.0	153.1	142.9	122.4
		N.m	7.51	8.80	10.58	12.21	16.04	16.66	15.00	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	300	200	150	100	75	60	50	38	30	25	18
9IDG*-120FWH	9WHD□-030	kgfcm	30.1	43.6	56.1	79.0	99.7	114.3	133.0	163.5	173.5	163.3	132.7
		N.m	2.95	4.28	5.50	7.74	9.77	11.20	13.03	16.02	17.00	16.00	13.00

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

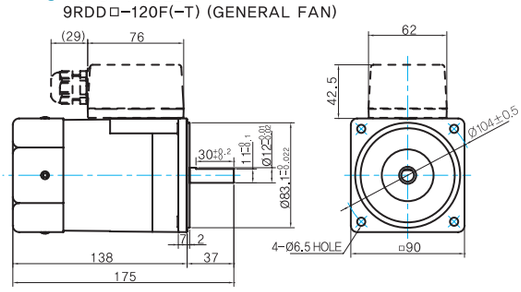
B AC Motors

Reversible Motor 120W(□90mm)

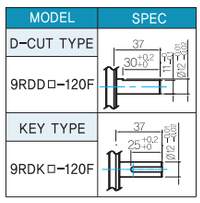
Dimensions

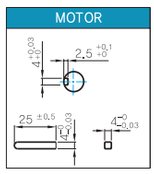
MOTOR ONLY

● MOTOR MODEL:
9RDD□-120F(-T) (GENERAL FAN)



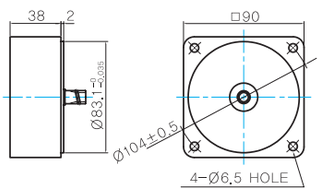
● MOTOR OUTPUT SHAFT ● KEY SPEC

MODEL	SPEC
D-CUT TYPE	
9RDD□-120F	
KEY TYPE	
9RDK□-120F	



INTER-DECIMAL GEARBOX

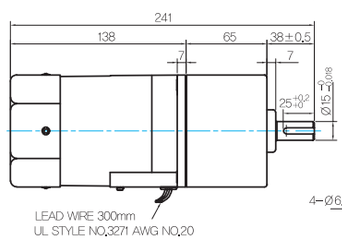
● MODEL: 9XD10□□



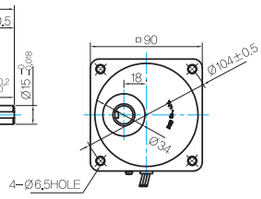
GEARED MOTOR

P TYPE GEARBOX

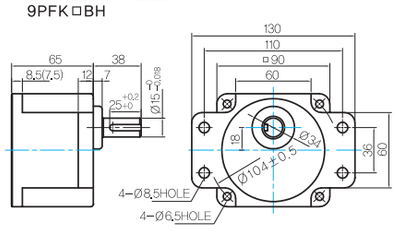
● MOTOR MODEL:
9RDG□-120FP (GENERAL FAN)



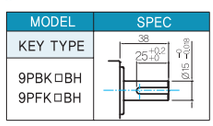
● GEARBOX MODEL:
9PBK□BH



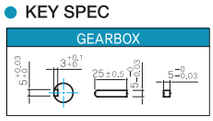
● GEARBOX MODEL:
9PFK□BH



● GEARBOX OUTPUT SHAFT

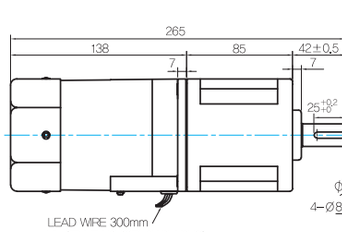
MODEL	SPEC
KEY TYPE 9PBK□BH 9PFK□BH	

● KEY SPEC

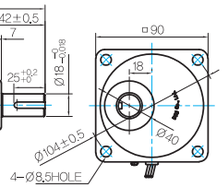
GEARBOX


H TYPE GEARBOX

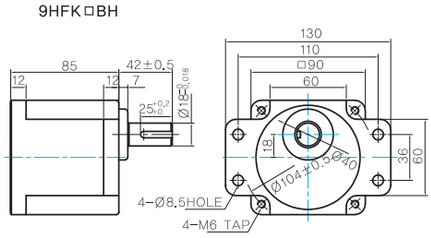
● MOTOR MODEL:
9RDG□-120FH (GENERAL FAN)



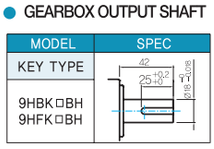
● GEARBOX MODEL:
9HBK□BH



● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

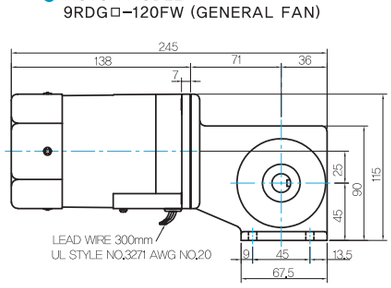
MODEL	SPEC
KEY TYPE 9HBK□BH 9HFK□BH	

● KEY SPEC

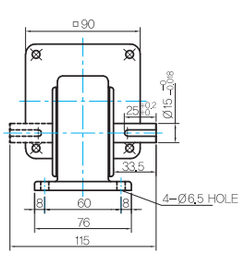
GEARBOX


W TYPE GEARBOX

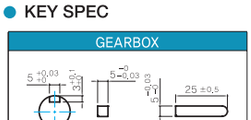
● MOTOR MODEL:
9RDG□-120FW (GENERAL FAN)



● GEARBOX MODEL:
9WD□BL/BR/BRL

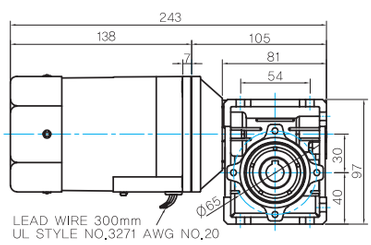


● KEY SPEC

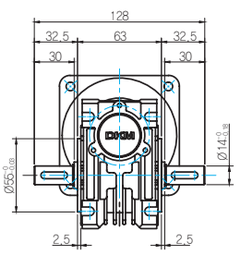
GEARBOX


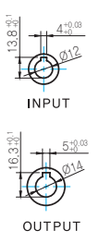
WH TYPE GEARBOX

● MOTOR MODEL:
9RDG□–120FWH (GENERAL FAN)

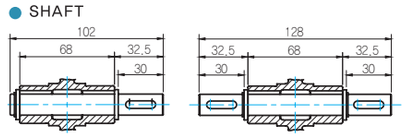


● GEARBOX MODEL:
9WHD□–030



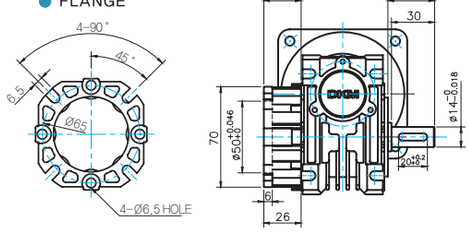


● SHAFT

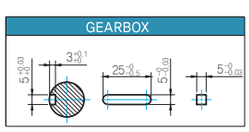


Unidirectional Bi-directional

● FLANGE



● KEY SPEC



WEIGHT

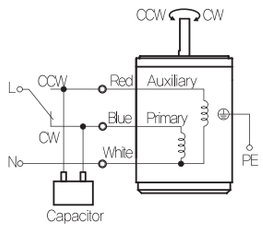
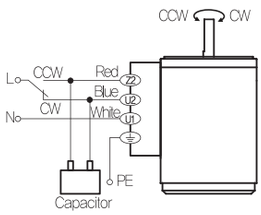
PART		WEIGHT(Kg)
MOTOR		3.05
GEAR BOX	9PB(F)K2BH – 9PB(F)K10BH	1.28
	9PB(F)K12.5BH – 9PB(F)K20BH	1.3
	9PB(F)K25BH – 9PB(F)K60BH	1.45
	9PB(F)K75BH – 9PB(F)K200BH	1.47
	9HB(F)K3BH – 9HB(F)K10BH	1.62
	9HB(F)K12.5BH – 9HB(F)K20BH	1.68
	9HB(F)K25BH – 9HB(F)K60BH	1.73
	9HB(F)K75BH – 9HB(F)K200BH	1.78
	9WD□BL/BR/BRL	1.0
	9WHD□–030	1.2
	9XD10□□	0.6

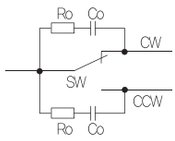
* The output flange and shaft are sold separately

Motor Images

9RDD□–120F	9RDD□–120F–T	9RDG□–120FP+9PBK□BH	9RDG□–120FP+9PFK□BH
			
9RDG□–120FH+9HBK□BH	**9RDG□–120FH+9HFK□BH**	**9RDG□–120FW+9WD□BL**	**9RDG□–120FWH+9WHD□**
			

Connection Diagrams

Lead Wire Type	Terminal Box Type
	



Code	Contact Capacity
SW	AC125V 5A min. or AC250V 5A min. (Inductive load)
Ro, Co	Ro=5~200Ω Co=0.1~0.2μF, 200WV (400WV)

* Connect a CR circuit for surge suppression to protect the contact.

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) During operation it is available to change the rotating direction by turning the switch to CW or CCW.

180W Reversible Motor 180W(□90mm)

Motor Specification

Model (9RDG*-180F□(-T): Gear Type Shaft, 9RDD*-180F(-T): D-Cut Type Shaft, 9RDK*-180F(-T): Key Type Shaft)		Output	Voltage	Frequency	Poles	Duty	Starting Torque		Rated Load				Capacitor
									Speed	Current	Torque		
		W	V	Hz			kgfcm	N.m	r/min	A	kgfcm	N.m	μF / VAC
Lead Wire Type	Terminal Box Type												
9RDG1(A)-180F□	9RDG1(A)-180F□-T	180	1ø 110	60	4	30min.	7.40	0.740	1600	3.00	10.96	1.096	30.0 / 250
9RDG2(D)-180F□	9RDG2(D)-180F□-T	180	1ø 220	60	4	30min.	7.40	0.740	1600	1.50	10.96	1.096	8.0 / 450
9RDGE-180F□	9RDGE-180F□-T	180	1ø 220	50	4	30min.	7.00	0.700	1250	1.50	14.03	1.403	8.0 / 450
			1ø 240				7.80	0.780	1300	1.60	13.49	1.349	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9RDG*-180FH	9HBK□BH	kgfcm	26.6	32.0	44.4	53.3	66.6	79.9	88.8	100.0	120.0	144.0	160.0	180.8	217.0	260.4	289.3	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m	2.61	3.13	4.35	5.22	6.52	7.83	8.70	9.80	11.76	14.11	15.68	17.72	21.26	25.51	28.35	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	360	240	180	120	90	72	60	45	36	30	22	18
9RDG*-180FWH	9WHD□-030	kgfcm	38.1	55.2	71.0	99.9	126.2	144.6	168.3	183.7	173.5	163.3	132.7	–
		N.m	3.74	5.41	6.96	9.79	12.37	14.17	16.49	18.00	17.00	16.00	13.00	–
	9WHD□-040	kgfcm	–	–	–	–	–	–	–	–	267.4	299.8	295.0	270.0
		N.m	–	–	–	–	–	–	–	–	26.20	29.38	28.91	26.46

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9RDG*-180FH	9HBK□BH	kgfcm	32.8	39.3	54.6	65.5	81.9	98.3	109.2	123.1	147.7	177.2	196.9	222.5	267.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m	3.21	3.85	5.35	6.42	8.03	9.63	10.71	12.06	14.47	17.37	19.30	21.81	26.17	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	300	200	150	100	75	60	50	38	30	25	18	15
9RDG*-180FWH	9WHD□-030	kgfcm	46.9	68.0	87.4	123.0	155.4	178.0	204.1	183.7	173.5	163.3	132.7	–
		N.m	4.60	6.66	8.56	12.05	15.23	17.45	20.00	18.00	17.00	16.00	13.00	–
	9WHD□-040	kgfcm	–	–	–	–	–	–	–	–	329.1	330.0	295.0	270.0
		N.m	–	–	–	–	–	–	–	–	32.25	32.34	28.91	26.46

1) Enter the phase & voltage code in the place * within the motor model name.
2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

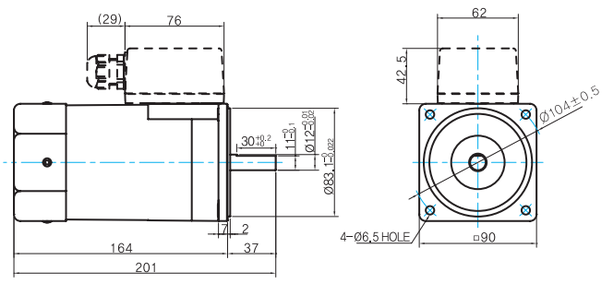
B AC Motors

Reversible Motor 180W(□90mm)

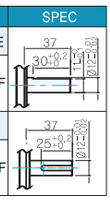
Dimensions

MOTOR ONLY

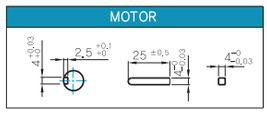
● MOTOR MODEL:
9RDD□-180F(-T) (GENERAL FAN)



● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE 9RDD□-180F	
KEY TYPE 9RDK□-180F	

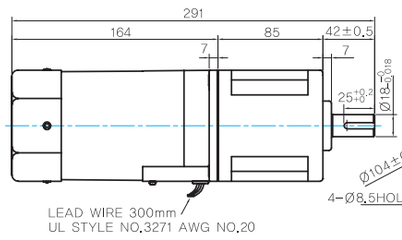
● KEY SPEC

MOTOR


GEARED MOTOR

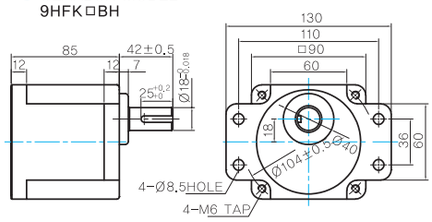
H TYPE GEARBOX

● MOTOR MODEL:
9RDG□-180FH (GENERAL FAN)

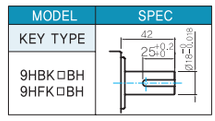


● GEARBOX MODEL:
9HBK□BH

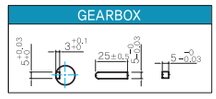
● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

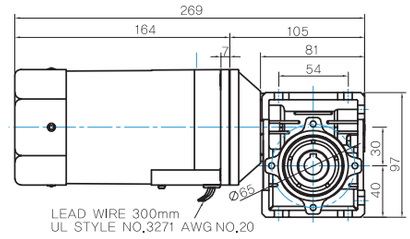
MODEL	SPEC
KEY TYPE 9HBK□BH 9HFK□BH	

● KEY SPEC

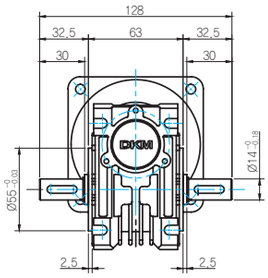
GEARBOX


WH TYPE GEARBOX

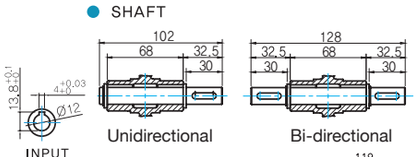
● MOTOR MODEL:
9RDG□-180FWH (GENERAL FAN)



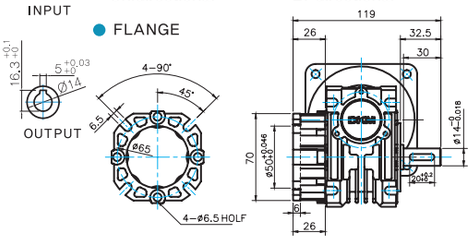
● GEARBOX MODEL:
9WHD□-030



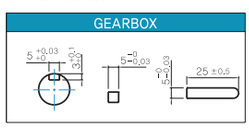
● SHAFT



● FLANGE

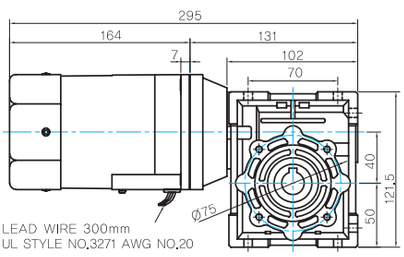


● KEY SPEC

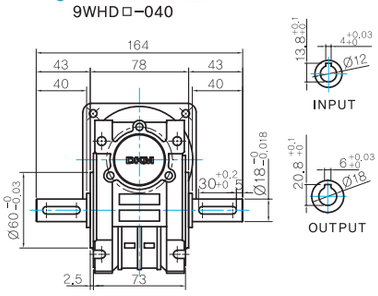
GEARBOX


* The output flange and shaft are sold separately

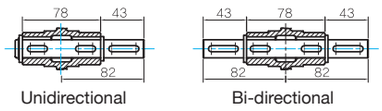
● MOTOR MODEL:
9RDG□-180FWH (GENERAL FAN)



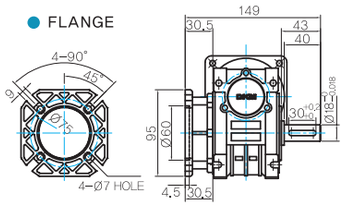
● GEARBOX MODEL:
9WHD□-040



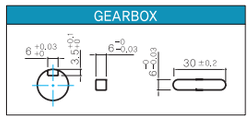
● SHAFT



● FLANGE



● KEY SPEC



WEIGHT

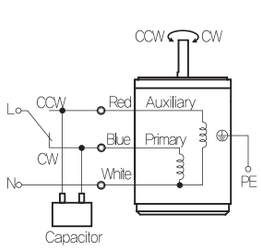
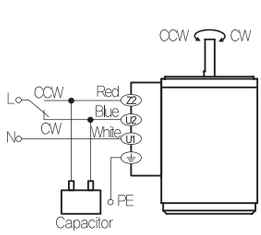
PART		WEIGHT(Kg)
MOTOR		3.05
GEAR BOX	9HB(F)K3BH ~ 9HB(F)K10BH	1.62
	9HB(F)K12.5BH ~ 9HB(F)K20BH	1.68
	9HB(F)K25BH ~ 9HB(F)K60BH	1.73
	9HB(F)K75BH ~ 9HB(F)K200BH	1.78
	9WHD□-030	1.2
	9WHD□-040	2.1
	9XD10□□	0.6

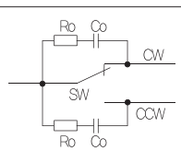
* The output flange and shaft are sold separately

Motor Images

9RDD□-180F	9RDD□-180F-T	9RDG□-180FP+9PBK□BH	9RDG□-180FP+9PFK□BH
			
9RDG□-180FH+9HBK□BH	**9RDG□-180FH+9HFK□BH**	**9RDG□-180FW+9WD□BL**	**9RDG□-180FWH+9WHD□**
			

Connection Diagrams

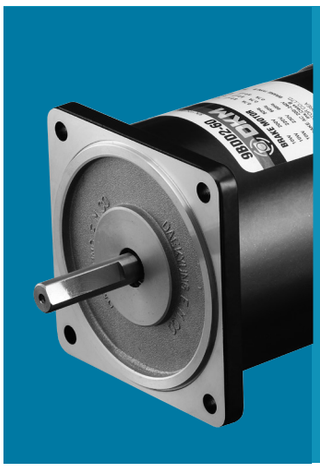
Lead Wire Type	Terminal Box Type
	



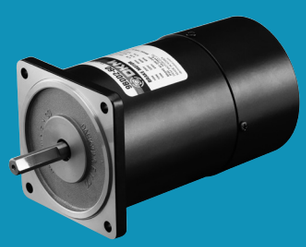
Code	Contact Capacity
SW	AC125V 5A min. or AC250V 5A min. (Inductive load)
Ro, Co	Ro=5~200Ω Co=0.1~0.2μF, 200WV (400WV)

* Connect a CR circuit for surge suppression to protect the contact.

1) The direction of motor rotation is as viewed from the shaft end of the motor. 2) CW represents the clockwise direction, while CCW represents the counterclockwise direction. 3) During operation it is available to change the rotating direction by turning the switch to CW or CCW.



Brake Motor



Index

Outline of Brake Motor

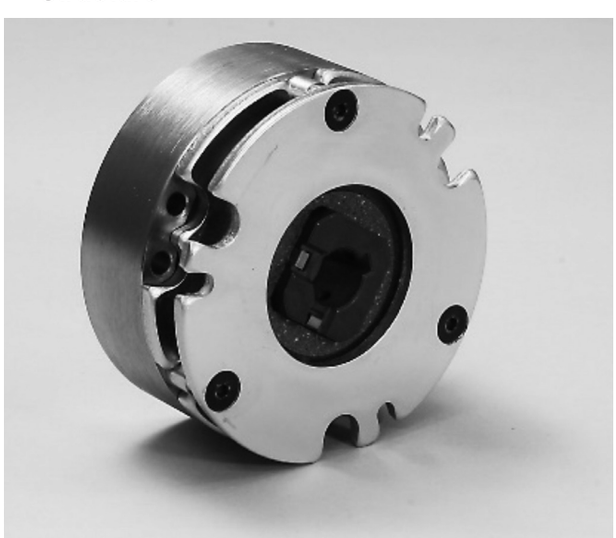
Power Off Activated Type Electromagnetic Brake

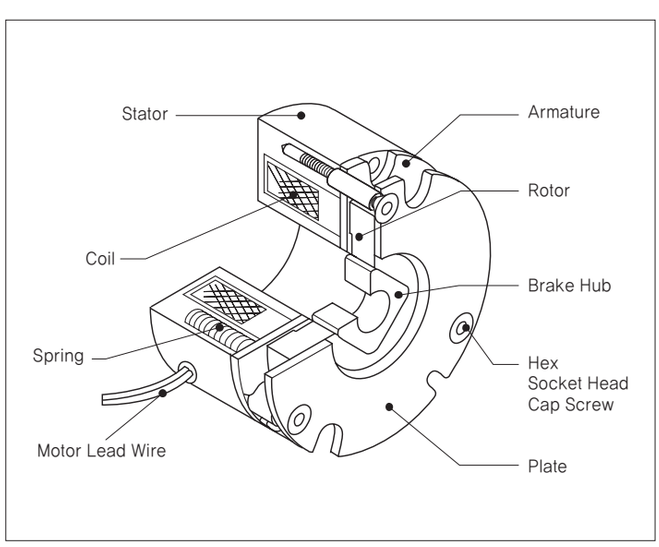
AC electromagnetic brake is mounted on the brake motors. When the power source is turned off, the brake is activated and the motor stops instantaneously and holds the load. Brake motors are commonly used in motion control applications for stopping or holding a load (or both), especially on vertical axes or for emergency stop functionality.

Operation

- There are 2~3 times of overrun rotation at the time the power is turned off as an individual motor.(Induction motor: 30~40 times overrun, Reversible motor: 5~6 times overrun)
- The frequent and instantaneous directional changes are possible. By a simple control, it is possible to make 6 stops per a minute with more than 3 seconds of stoppage. Roughly the operating cycle is 50 cylces per a minute or less. (Note: This value is based merely on brake response. And this value is maximum, so it may not be possible to repeat braking operation at this frequency. Please make the treatment so that the surface of the motor case remains below 90℃.)
- The motor and the brake use the same power source. (For example, if motor voltage is 110V, that of brake is 110V.)

Structure





General Specifications

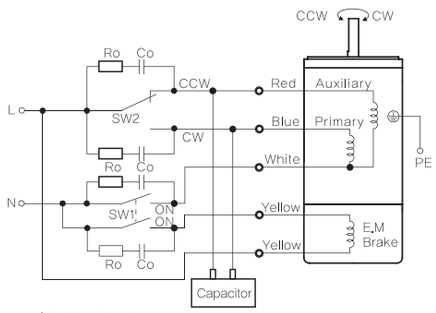
Item	Specification
Insulation Resistance	100MΩ or more when DC500V MEGA is applied between the windings and the frame after rated motor operation under normal ambient temperature and humidity.
Dielectric Strength	Sufficient to withstand 1.5KV at 50Hz and 60Hz applied between the windings and the frame for 1 minute after rated motor operation under normal ambient temperature and humidity.
Temperature Rise	Temperature rise of windings are 80℃ or less measured by the resistance change method after rated motor operation with connecting a gearbox or equivalent heat radiation plate.
Insulation Class	Class B [130℃]
Overheat Protection	Operating temperature (Built-in thermal protector type motor): Open 120℃±5℃, Close 90℃±5℃
Ambient Temperature	-10℃~+40℃ (Three phase 220VAC: -10℃~+50℃)
Ambient Humidity	85% maximum

Brake Specifications

Brake Motor			Brake Model	commutator	Coil (at 20℃)				Static Friction Torque [N.m]	Shaft Dia.
Frame	Output	Voltage			Voltage[V]	Output[W]	Current[A]	Resistance[Ω]		
60mm	6W	110	BXW-01-10M	BEM-2T	45	2.4	0.053	845	0.05	Φ6
		220	BXW-01-10M		90		0.027	3382	0.05	
70mm	6W	110	BXW-02-10M	BEM-2T	45	2.8	0.062	724	0.10	Φ7
	10W	220			90		0.031	2898	0.10	
80mm	15W 25W	110	BXW-03-10M	BEM-2T BEM-4T	45	4.3	0.095	471	0.20	Φ8
		220			90		0.048	1886	0.20	
		380			180		0.024	7543	0.20	
90mm	40W 60W	110	BXW-04-10M-05	BEM-2T BEM-4T	45	6.8	0.151	297	0.50	
		220			90		0.076	1190	0.50	
		380			180		0.038	4762	0.50	
	90W ~ 200W	110	BXW-04-10M-10	BEM-2T BEM-4T	45	10	0.222	202	1.0	Φ10
		220			90		0.111	810	1.0	
		380			180		0.056	3241	1.0	
104mm	250W ~ 400W	220	BXW-05-10L	BEM-2T BEM-4T	90 180	13	0.144	623	2.0	Φ12
		380					0.072	2492	2.0	
		440					0.072	2492	2.0	
DSY	100W ~ 200W	220	BXW-05-10L	BEM-2T BEM-4T	90	13	0.144	623	2.0	Φ12
		380			180		0.072	2492	2.0	
		440			180		0.072	2492	2.0	
	400W	220	BXL-08-10J	BEM-4T	99	19	0.192	516	4.0	Φ14
		380			198		0.096	2063	4.0	
		440			198		0.096	2063	4.0	

Connection Diagrams

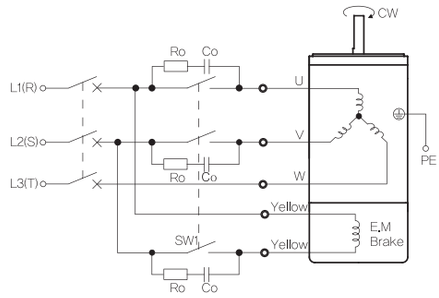
Single Phase



*** Rotation Direction:**
To rotate the motor in a clockwise (CW) direction, turn SW2 to CW.
To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Specifications		Note
	Single Phase 110V/115V Input	Single Phase 220V/230V Input	
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
SW2			–

Three Phase



*** CCW Direction:**
Change any two connections between R, S and T.

Switch No.	Specifications	Note
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously

1) SW1 operates both motor and electromagnetic brake action.
2) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON.
3) When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
4) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
5) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

# 6W Brake Motor
6W(□60mm)

Motor Specificat

Model 6BDG*-6G: Gear Type Shaft 6BDD*-6: D-Cut Type Shaft Lead Wire Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
6BDG1(A)-6G	6	1ø 110	60	4	Cont.	0.60	0.060	1550	0.25	0.38	0.038	3.0 / 250
6BDG2(D)-6G	6	1ø 220	60	4	Cont.	0.62	0.062	1550	0.15	0.38	0.038	1.0 / 450
6BDGE-6G	6	1ø 220	50	4	Cont.	0.50	0.050	1200	0.10	0.49	0.049	0.7 / 450
		1ø 240				0.55	0.055		0.11	0.49	0.049	
6BDG3(G)-6G	6	3ø 220	50	4	Cont.	1.20	0.120	1250	0.13	0.47	0.047	--
			60			0.90	0.090	1550	0.11	0.38	0.038	
		3ø 230	50	4	Cont.	1.30	0.130	1250	0.14	0.47	0.047	
			60			1.00	0.100	1550	0.12	0.38	0.038	

1) Enter the phase & voltage code in the place * within the motor model name.
2) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
3) Impedance Protected Type

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20
6BDG*-6G	6GBD□MH	kgfcm	0.9	1.1	1.5	1.8	2.3	2.7	3.1	3.8	4.6	5.5	5.5	6.9	8.3	9.9	11.0	12.4	14.9	18.7	22.4
		N.m	0.09	0.11	0.15	0.18	0.22	0.27	0.30	0.37	0.45	0.54	0.54	0.67	0.81	0.97	1.08	1.22	1.46	1.83	2.19

Motor Model	Gearbox Model	Gear Ratio	100	120	150	180	200	250
		r/min	18	15	12	10	9	7.2
6BDG*-6G	6GBD□MH	kgfcm	24.9	29.9	30.0	30.0	30.0	30.0
		N.m	2.44	2.93	2.94	2.94	2.94	2.94

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90
		r/min	500	417	300	250	200	166	150	120	100	83	75	60	50	41	37	30	25	20	16
6BDG*-6G	6GBD□MH	kgfcm	1.2	1.4	2.0	2.4	3.0	3.6	3.9	4.9	5.9	7.1	7.1	8.9	10.7	12.8	14.2	16.1	19.3	24.1	28.9
		N.m	0.12	0.14	0.19	0.23	0.29	0.35	0.39	0.48	0.58	0.70	0.70	0.87	1.05	1.25	1.39	1.57	1.89	2.36	2.83

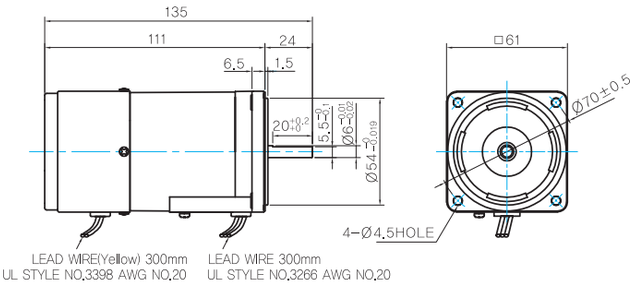
Motor Model	Gearbox Model	Gear Ratio	100	120	150	180	200	250
		r/min	15	12	10	8	7.5	6
6BDG*-6G	6GBD□MH	kgfcm	30.0	30.0	30.0	30.0	30.0	30.0
		N.m	2.94	2.94	2.94	2.94	2.94	2.94

1) Enter the phase & voltage code in the place * within the motor model name.
2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

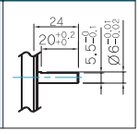
Dimensions

MOTOR ONLY

● MOTOR MODEL: 6BDD□-6 (NO FAN)



● MOTOR OUTPUT SHAFT

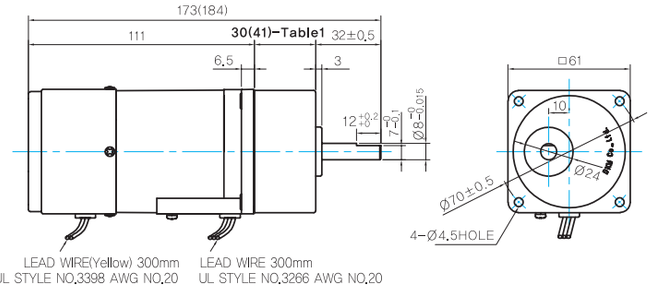
MODEL	SPEC
D-CUT TYPE	

GEARED MOTOR

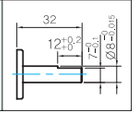
G TYPE GEARBOX

● MOTOR MODEL:
6BDG□-6G (NO FAN)

● GEARBOX MODEL:
6GBD□MH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	

WEIGHT

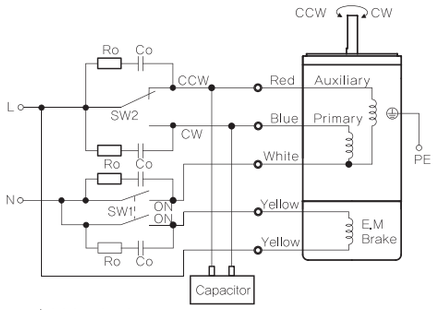
PART		WEIGHT(Kg)
MOTOR		0.7
GEAR BOX	6GBD3MH ~ 6GBD18MH	0.3
	6GBD20MH ~ 6GBD40MH	0.32
	6GBD50MH ~ 6GBD250MH	0.34

● 32(42)-Table1

SIZE(mm)	GEAR RATIO
32	6GBD3MH – 6GBD18MH
42	6GBD25MH – 6GBD180MH

Connection Diagrams

Single Phase



*** Rotation Direction:**
To rotate the motor in a clockwise (CW) direction, turn SW2 to CW.
To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Specifications		Note
	Single Phase 110V/115V Input	Single Phase 220V/230V Input	
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
SW2			–

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) SW1 operates both motor and electromagnetic brake action.
4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

Motor Images

6BDD□-6	6BDG□-6G+6GBD□MH
	

6W Brake Motor 6W(□ 70mm)

Motor Specification

Model 7BDG*-6G: Gear Type Shaft 7BDD*-6: D-Cut Type Shaft Lead Wire Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
7BDG1(A)-6G	6	1ø 110	60	4	30min.	0.56	0.056	1600	0.27	0.37	0.037	3.0 / 250
7BDG2(D)-6G	6	1ø 220	60	4	30min.	0.75	0.075	1600	0.17	0.37	0.037	1.0 / 450
7BDGE-6G	6	1ø 220	50	4	30min.	0.61	0.061	1250	0.15	0.47	0.047	0.8 / 450
		1ø 240				0.72	0.072		0.17	0.47	0.047	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20
7BDG*-6G	7GBK □ BMH	kgfcm	0.9	1.1	1.5	1.8	2.2	2.7	3.0	3.7	4.4	5.3	5.3	6.7	8.0	9.6	10.7	12.1	14.5	18.1	22.4
		N.m	0.09	0.10	0.14	0.17	0.22	0.26	0.29	0.36	0.43	0.52	0.52	0.65	0.78	0.94	1.05	1.18	1.42	1.77	2.19

Motor Model	Gearbox Model	Gear Ratio	100	120	150	180	200
		r/min	18	15	12	10	9
7BDG*-6G	7GBK □ BMH	kgfcm	24.1	28.9	36.2	43.4	48.2
		N.m	2.36	2.83	3.54	4.25	4.72

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	38	30	25	20	16
7BDG*-6G	7GBK □ BMH	kgfcm	1.1	1.3	1.8	2.2	2.7	3.3	3.6	4.6	5.5	6.6	6.6	8.2	9.8	11.8	13.1	14.8	17.8	22.3	26.7
		N.m	0.107	0.13	0.18	0.21	0.27	0.32	0.36	0.45	0.54	0.64	0.64	0.80	0.96	1.16	1.29	1.45	1.74	2.18	2.62

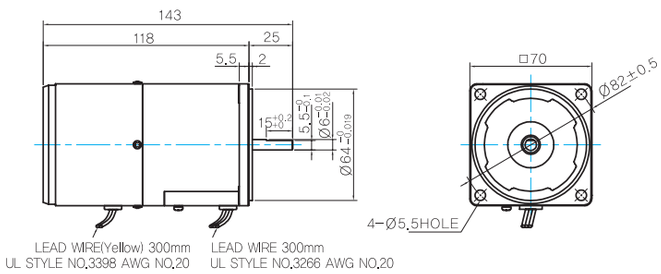
Motor Model	Gearbox Model	Gear Ratio	100	120	150	180	200
		r/min	15	12.5	10	8	7.5
7BDG*-6G	7GBK □ BMH	kgfcm	29.7	35.6	44.5	50.0	50.0
		N.m	2.91	3.49	4.36	4.90	4.90

1) Enter the phase & voltage code in the place * within the motor model name.
2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

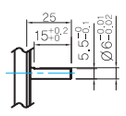
Dimensions

MOTOR ONLY

● MOTOR MODEL: 7BDD□-6 (NO FAN)



● MOTOR OUTPUT SHAFT

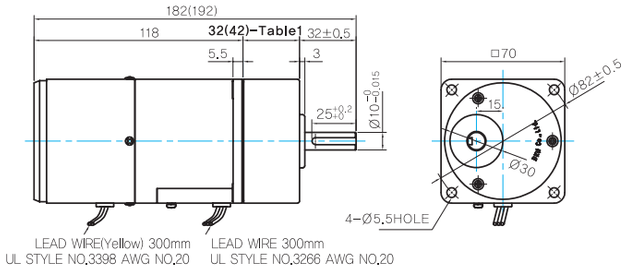
MODEL	SPEC
D-CUT TYPE	

GEARED MOTOR

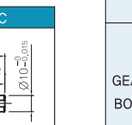
G TYPE GEARBOX

● MOTOR MODEL:
7BDG□-6G (NO FAN)

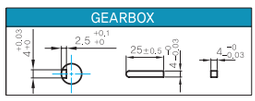
● GEARBOX MODEL:
7GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC



WEIGHT

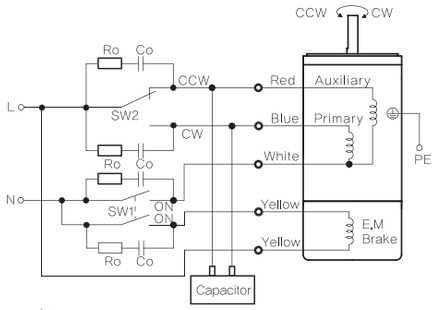
PART		WEIGHT(Kg)
MOTOR		1.2
GEAR BOX	7GBK3BMH – 7GBK18BMH	0.38
	7GBK20BMH – 7GBK40BMH	0.48
	7GBK50BMH – 7GBK200BMH	0.53

● 32(42)-Table1

SIZE(mm)	GEAR RATIO
32	7GBK3BMH – 7GBK18BMH
42	7GBK20BMH – 7GBK200BMH

Connection Diagrams

Single Phase



*** Rotation Direction:**
To rotate the motor in a clockwise (CW) direction, turn SW2 to CW.
To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Specifications		Note
	Single Phase 110V/115V Input	Single Phase 220V/230V Input	
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
SW2			–

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) SW1 operates both motor and electromagnetic brake action.
4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

Motor Images

7BDD□-6	7BDG□-6G+7GBK□BMH
	

B AC Motors

Brake Motor 10W (□70mm)

# 10W Brake Motor
10W(□70mm)

Motor Specification

Model 7BDG*-10G: Gear Type Shaft 7BDD*-10: D-Cut Type Shaft Lead Wire Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
7BDG1(A)-10G	10	1ø 110	60	4	30min.	0.70	0.070	1550	0.31	0.63	0.063	3.5 / 250
7BDG2(D)-10G	10	1ø 220	60	4	30min.	0.92	0.092	1550	0.20	0.63	0.063	1.2 / 450
7BDGE-10G	10	1ø 220	50	4	30min.	0.78	0.078	1200	0.17	0.81	0.081	1.0 / 450
		1ø 240				0.94	0.094		0.18	0.81	0.081	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20
7BDG*-10G	7GBK□BMH	kgfcm	1.5	1.8	2.5	3.1	3.8	4.6	5.1	6.4	7.6	9.2	9.2	11.5	13.8	16.5	18.3	20.7	24.9	31.1	37.3
		N.m	0.15	0.18	0.25	0.30	0.37	0.45	0.50	0.62	0.75	0.90	0.90	1.12	1.35	1.62	1.80	2.03	2.44	3.05	3.66

Motor Model	Gearbox Model	Gear Ratio	100	120	150	180	200
		r/min	18	15	12	10	9
7BDG*-10G	7GBK□BMH	kgfcm	41.5	49.8	50.0	50.0	50.0
		N.m	4.06	4.88	4.90	4.90	4.90

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	38	30	25	20	17
7BDG*-10G	7GBK□BMH	kgfcm	2.0	2.4	3.3	3.9	4.9	5.9	6.6	8.2	9.9	11.8	11.9	14.8	17.8	21.3	23.7	26.8	32.1	40.2	48.2
		N.m	0.19	0.23	0.32	0.39	0.48	0.58	0.64	0.81	0.97	1.16	1.16	1.45	1.74	2.09	2.32	2.62	3.15	3.94	4.72

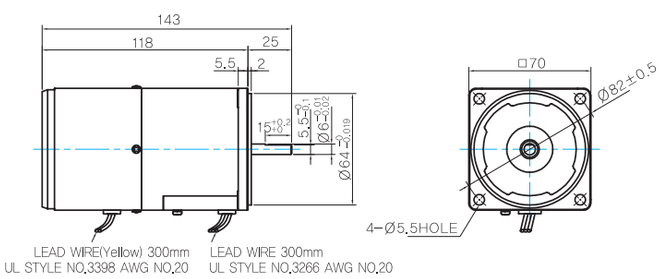
Motor Model	Gearbox Model	Gear Ratio	100	120	150	180	200
		r/min	15	12.5	10	8	7.5
7BDG*-10G	7GBK□BMH	kgfcm	50.0	50.0	50.0	50.0	50.0
		N.m	4.90	4.90	4.90	4.90	4.90

1) Enter the phase & voltage code in the place * within the motor model name.
2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

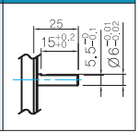
Dimensions

MOTOR ONLY

● MOTOR MODEL: 7BDD□-10 (NO FAN)



● MOTOR OUTPUT SHAFT

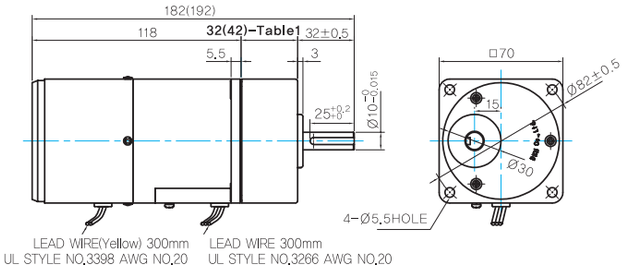
MODEL	SPEC
D-CUT TYPE	

GEARED MOTOR

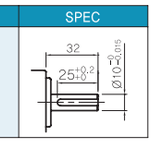
G TYPE GEARBOX

● MOTOR MODEL:
7BDG□-10G (NO FAN)

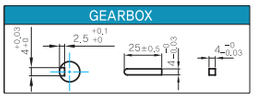
● GEARBOX MODEL:
7BGK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC



WEIGHT

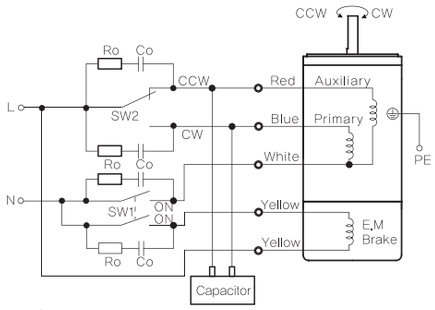
PART		WEIGHT(Kg)
MOTOR		1.2
GEAR BOX	7GBK3BMH – 7GBK18BMH	0.38
	7GBK20BMH – 7GBK40BMH	0.48
	7GBK50BMH – 7GBK200BMH	0.53

● 32(42)-Table1

SIZE(mm)	GEAR RATIO
32	7GBK3BMH – 7GBK18BMH
42	7GBK20BMH – 7GBK200BMH

Connection Diagrams

Single Phase



*** Rotation Direction:**
To rotate the motor in a clockwise (CW) direction, turn SW2 to CW.
To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Specifications		Note
	Single Phase 110V/115V Input	Single Phase 220V/230V Input	
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
SW2			–

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) SW1 operates both motor and electromagnetic brake action.
4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

Motor Images

7BDD□-10	7BDG□-10G+7GBK□BMH
	

Brake Motor 15W (□70mm)

# 15W Brake Motor
15W(□70mm)

Motor Specification

Model 7BDG*-15G: Gear Type Shaft 7BDD*-15: D-Cut Type Shaft Lead Wire Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
7BDG1(A)-15G	15	1ø 110	60	4	30min.	1.35	0.135	1550	0.49	0.94	0.094	6.0 / 250
7BDG2(D)-15G	15	1ø 220	60	4	30min.	1.23	0.123	1600	0.22	0.91	0.091	1.5 / 450
7BDGE-15G	15	1ø 220	50	4	30min.	1.07	0.107	1200	0.19	1.22	0.122	1.2 / 450
		1ø 240				1.28	0.128		0.21	1.22	0.122	
7BDG3(G)-15G	15	3ø 220	50	4	Cont.	3.20	0.320	1300	0.27	1.13	0.113	--
			60			2.30	0.230	1550	0.22	0.94	0.094	
		3ø 230	50	4	Cont.	3.60	0.360	1300	0.28	1.13	0.113	
			60			2.50	0.250	1550	0.24	0.94	0.094	

1) Enter the phase & voltage code in the place * within the motor model name.
2) The phase & voltage code A, D, E, G contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20
7BDG*-15G	7GBK□BMH	kgfcm	2.2	2.7	3.7	4.4	5.5	6.7	7.4	9.2	11.1	13.3	13.3	16.7	20.0	24.0	26.7	30.1	36.2	45.2	50.0
		N.m	0.22	0.26	0.36	0.43	0.54	0.65	0.72	0.91	1.09	1.30	1.31	1.63	1.96	2.35	2.61	2.95	3.54	4.43	4.90

Motor Model	Gearbox Model	Gear Ratio	100	120	150	180	200
		r/min	18	15	12	10	9
7BDG*-15G	7GBK□BMH	kgfcm	50.0	50.0	50.0	50.0	50.0
		N.m	4.90	4.90	4.90	4.90	4.90

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	38	30	25	20	17
7BDG*-15G	7GBK□BMH	kgfcm	3.0	3.6	4.9	5.9	7.4	8.9	9.9	12.3	14.8	17.8	17.8	22.2	26.7	32.0	35.6	40.2	48.2	50.0	50.0
		N.m	0.29	0.35	0.48	0.58	0.72	0.87	0.97	1.21	1.45	1.74	1.74	2.18	2.61	3.14	3.48	3.94	4.72	4.90	4.90

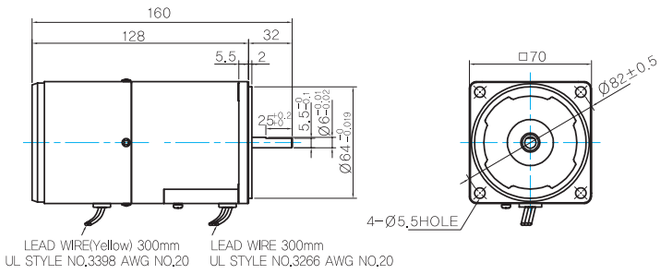
Motor Model	Gearbox Model	Gear Ratio	100	120	150	180	200
		r/min	15	12.5	10	8	7.5
7BDG*-15G	7GBK□BMH	kgfcm	50.0	50.0	50.0	50.0	50.0
		N.m	4.90	4.90	4.90	4.90	4.90

1) Enter the phase & voltage code in the place * within the motor model name.
2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

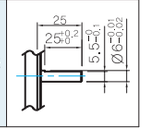
Dimensions

MOTOR ONLY

● MOTOR MODEL: 7BDD□-15 (NO FAN)



● MOTOR OUTPUT SHAFT

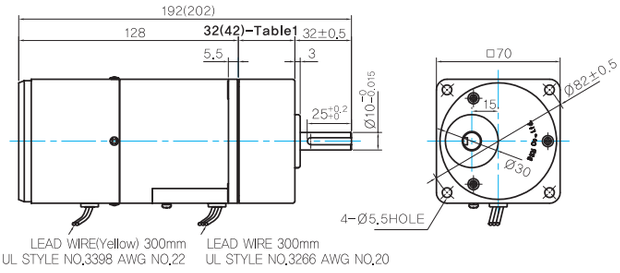
MODEL	SPEC
D-CUT TYPE	

GEARED MOTOR

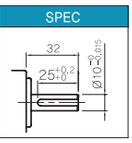
G TYPE GEARBOX

● MOTOR MODEL:
7BDG□-15G (NO FAN)

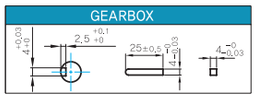
● GEARBOX MODEL:
7GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

GEARBOX


WEIGHT

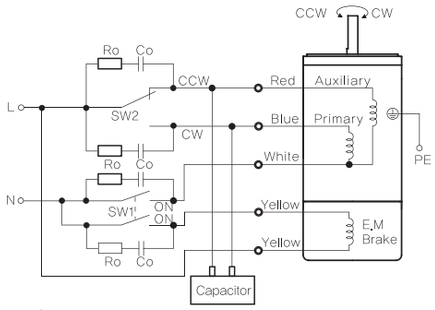
PART		WEIGHT(Kg)
MOTOR		1.5
GEAR BOX	7GBK3BMH – 7GBK18BMH	0.38
	7GBK20BMH – 7GBK40BMH	0.48
	7GBK50BMH – 7GBK200BMH	0.53

● 32(42)-Table1

SIZE(mm)	GEAR RATIO
32	7GBK3BMH – 7GBK18BMH
42	7GBK20BMH – 7GBK200BMH

Connection Diagrams

Single Phase



* Rotation Direction:
To rotate the motor in a clockwise (CW) direction, turn SW2 to CW.
To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Specifications		Note
	Single Phase 110V/115V Input	Single Phase 220V/230V Input	
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
SW2			–

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) SW1 operates both motor and electromagnetic brake action.
4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

Motor Images

7BDD□-15	7BDG□-15G+7GBK□BMH
	

Brake Motor 15W (□80mm)

# 15W Brake Motor
15W(□80mm)

Motor Specification

Model 8BDG*-15□ : Gear Type Shaft 8BDD*-15: D-Cut Type Shaft Lead Wire Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
8BDG1(A)-15□	15	1ø 110	60	4	30min.	1.58	0.158	1600	0.55	0.91	0.091	6.0 / 250
8BDG2(D)-15□	15	1ø 220	60	4	30min.	1.51	0.151	1600	0.24	0.91	0.091	1.5 / 450
8BDGE-15□	15	1ø 220	50	4	30min.	1.49	0.149	1300	0.23	1.12	0.112	1.5 / 450
		1ø 240				1.77	0.177		0.25	1.12	0.112	
8BDG3(G)-15□	15	3ø 220	50	4	Cont.	7.61	0.761	1350	0.29	1.08	0.108	–
			60			6.15	0.615	1600	0.26	0.91	0.091	
		3ø 230	50	4	Cont.	8.25	0.825	1350	0.32	1.08	0.108	
			60			6.72	0.672	1600	0.28	0.91	0.091	
8BDG4(K)-15□	15	3ø 380	50	4	Cont.	5.70	0.570	1350	0.12	1.08	0.108	–
			60			4.53	0.453	1600	0.11	0.91	0.091	
		3ø 400	50	4	Cont.	6.26	0.626	1350	0.13	1.08	0.108	
			60			5.03	0.503	1600	0.12	0.91	0.091	
8BDG5(L)-15□	15	3ø 415	50	4	Cont.	6.68	0.668	1350	0.14	1.08	0.108	–
			60			5.40	0.540	1600	0.12	0.91	0.091	
		3ø 440	50	4	Cont.	7.39	0.739	1350	0.15	1.08	0.108	
			60			6.02	0.602	1600	0.13	0.91	0.091	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15
8BDG*-15G	8GBK□BMH	kgfcm	2.2	2.7	3.7	4.4	5.5	6.7	7.4	9.2	11.1	13.3	13.3	16.7	20.0	24.0	26.7	30.1	36.2	45.2	54.2	60.3	72.3
		N.m	0.22	0.26	0.36	0.43	0.54	0.65	0.72	0.91	1.09	1.30	1.31	1.63	1.96	2.35	2.61	2.95	3.54	4.43	5.32	5.91	7.09

Motor Model	Gearbox Model	Gear Ratio	150	180	200	250	300	360
		r/min	12	10	9	7	6	5
8BDG*-15G	8GBK□BMH	kgfcm	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
8BDG*-15W	8WD□BL/□ BR/□BRL	kgfcm	7.5	8.8	10.5	12.2	16.0	18.1	21.0	27.4	30.1
		N.m	0.73	0.86	1.03	1.19	1.57	1.77	2.06	2.68	2.95

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5
8BDG*-15G	8GBK□BMH	kgfcm	2.6	3.2	4.4	5.3	6.6	7.9	8.8	11.0	13.1	15.8	15.8	19.8	23.7	28.4	31.6	35.7	42.9	53.6	64.3	71.4	80.0
		N.m	0.26	0.31	0.43	0.52	0.64	0.77	0.86	1.07	1.29	1.55	1.55	1.94	2.32	2.79	3.10	3.50	4.20	5.25	6.30	7.00	7.84

Motor Model	Gearbox Model	Gear Ratio	150	180	200	250	300	360
		r/min	10	8	7.5	6	5	4
8BDG*-15G	8GBK□BMH	kgfcm	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84	7.84	7.84

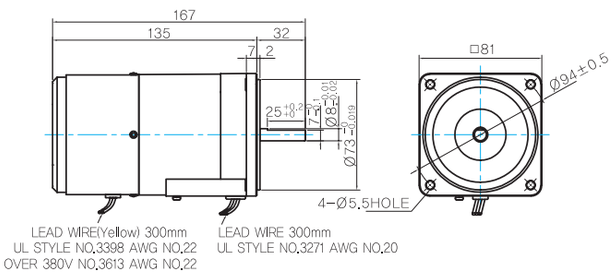
Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
8BDG*-15W	8WD□BL/□ BR/□BRL	kgfcm	8.9	10.4	12.5	14.4	18.9	21.4	24.9	32.5	35.7
		N.m	0.87	1.02	1.22	1.41	1.86	2.10	2.44	3.18	3.50

1) Enter the phase & voltage code in the place * within the motor model name.
2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

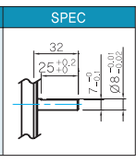
Dimensions

MOTOR ONLY

● MOTOR MODEL: 8BDD□-15 (NO FAN)

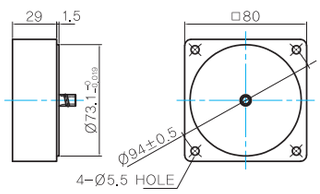


● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	

INTER-DECIMAL GEARBOX

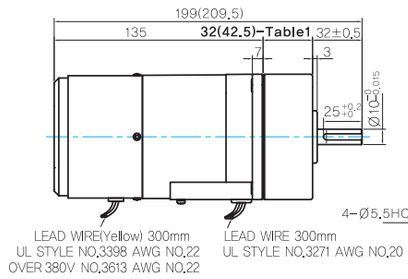
● MODEL: 8XD10□□



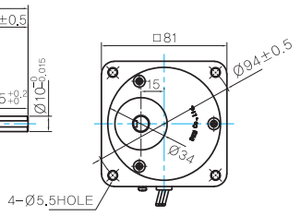
GEARED MOTOR

G TYPE GEARBOX

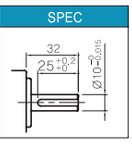
● MOTOR MODEL:
8BDG□-15G (NO FAN)



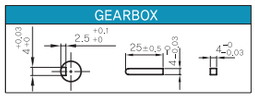
● GEARBOX MODEL:
8GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

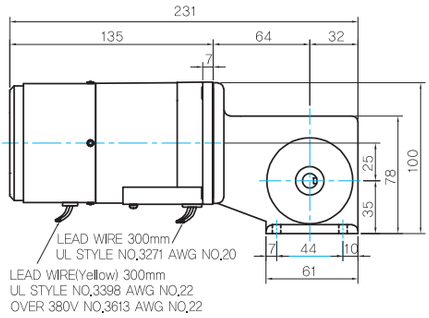


● 32(42.5)-Table1

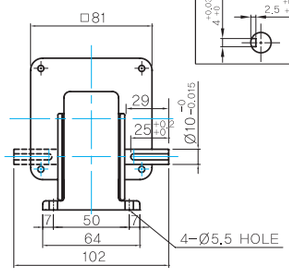
SIZE(mm)	GEAR RATIO
32	8GBK3BMH – 8GBK18BMH
42.5	8GBK20BMH – 8GBK360BMH

W TYPE GEARBOX

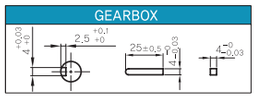
● MOTOR MODEL:
8BDG□-15W (NO FAN)



● GEARBOX MODEL:
8WD□BL/BR/BRL



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		2.0
GEAR BOX	8GBK3BMH – 8GBK18BMH	0.56
	8GBK20BMH – 8GBK40BMH	0.65
	8GBK50BMH – 8GBK360BMH	0.72
	8WD□BL/BR/BRL	0.68
	8XD10□□	0.45

Motor Images

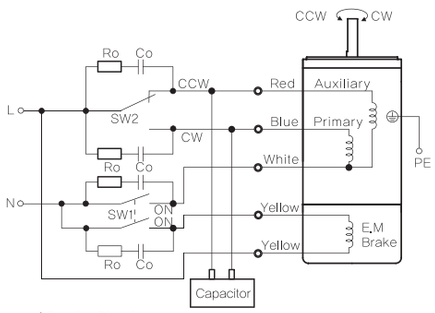
8BDD□-15	8BDG□-15G+8GBK□BMH	8BDG□-15W+8WD□BL
		

B AC Motors

Brake Motor 15W (□80mm)

Connection Diagrams

Single Phase

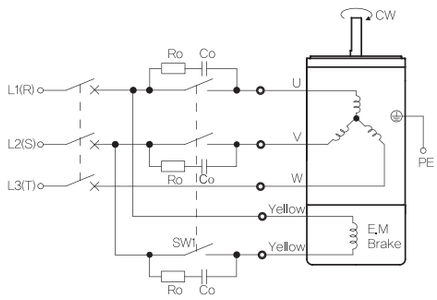


*** Rotation Direction:**

To rotate the motor in a clockwise (CW) direction, turn SW2 to CW.
To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Specifications		Note
	Single Phase 110V/115V Input	Single Phase 220V/230V Input	
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
SW2			–

Three Phase



*** CCW Direction:**

Change any two connections between R, S and T.

Switch No.	Specifications	Note
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) SW1 operates both motor and electromagnetic brake action.
4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

# 25W Brake Motor
25W(□ 80mm)

Motor Specification

Model 8BDG*-25□ : Gear Type Shaft 8BDD*-25: D-Cut Type Shaft Lead Wire Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm N.m		Rated Load Speed r/min	Current A	Torque kgfcm	 N.m	Capacitor μF / VAC
8BDG1(A)-25□	25	1ø 110	60	4	30min.	2.40	0.240	1600	0.74	1.52	0.152	10.0 / 250
8BDG2(D)-25□	25	1ø 220	60	4	30min.	2.47	0.247	1600	0.35	1.52	0.152	2.5 / 450
8BDGE-25□	25	1ø 220	50	4	30min.	1.97	0.197	1250	0.28	1.95	0.195	2.0 / 450
		1ø 240				2.49	0.249		0.31	1.95	0.195	
8BDG3(G)-25□	25	3ø 220	50	4	Cont.	7.61	0.761	1350	0.29	1.80	0.180	-
			60			6.15	0.615	1600	0.26	1.52	0.152	
		3ø 230	50	4	Cont.	8.25	0.825	1350	0.32	1.80	0.180	
			60			6.72	0.672	1600	0.28	1.52	0.152	
8BDG4(K)-25□	25	3ø 380	50	4	Cont.	5.70	0.570	1300	0.13	1.87	0.187	-
			60			4.53	0.453	1550	0.12	1.57	0.157	
		3ø 400	50	4	Cont.	6.26	0.626	1300	0.14	1.87	0.187	
			60			5.03	0.503	1550	0.13	1.57	0.157	
8BDG5(L)-25□	25	3ø 415	50	4	Cont.	6.68	0.668	1300	0.15	1.87	0.187	-
			60			5.40	0.540	1550	0.13	1.57	0.157	
		3ø 440	50	4	Cont.	7.39	0.739	1300	0.16	1.87	0.187	
			60			6.02	0.602	1550	0.14	1.57	0.157	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15
8BDG*-25G	8GBK□ BMH	kgfcm	3.7	4.4	6.2	7.4	9.2	11.1	12.3	15.4	18.5	22.2	22.2	27.8	33.3	40.0	44.4	50.2	60.3	75.3	80.0	80.0	80.0
		N.m	0.36	0.43	0.60	0.72	0.91	1.09	1.21	1.51	1.81	2.17	2.18	2.72	3.27	3.92	4.35	4.92	5.91	7.38	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	150	180	200	250	300	360
		r/min	12	10	9	7	6	5
8BDG*-25G	8GBK□ BMH	kgfcm	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
8BDG*-25W	8WD□BL/□ BR/□BRL	kgfcm	12.5	14.6	17.6	20.3	26.6	30.1	35.1	45.7	50.2
		N.m	1.22	1.43	1.72	1.99	2.61	2.95	3.44	4.47	4.92

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5
8BDG*-25G	8GBK□ BMH	kgfcm	4.4	5.3	7.3	8.8	11.0	13.1	14.6	18.3	21.9	26.3	26.3	32.9	39.5	47.4	52.7	59.5	71.4	80.0	80.0	80.0	80.0
		N.m	0.43	0.52	0.72	0.86	1.07	1.29	1.43	1.79	2.15	2.58	2.58	3.23	3.87	4.65	5.16	5.83	7.00	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	150	180	200	250	300	360
		r/min	10	8	7.5	6	5	4
8BDG*-25G	8GBK□ BMH	kgfcm	80.0	80.0	80.0	80.0	80.0	80.0
		N.m	7.84	7.84	7.84	7.84	7.84	7.84

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
8BDG*-25W	8WD□BL/□ BR/□BRL	kgfcm	14.8	17.3	20.8	24.0	31.6	35.7	41.6	54.1	59.5
		N.m	1.45	1.70	2.04	2.35	3.09	3.50	4.07	5.30	5.83

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

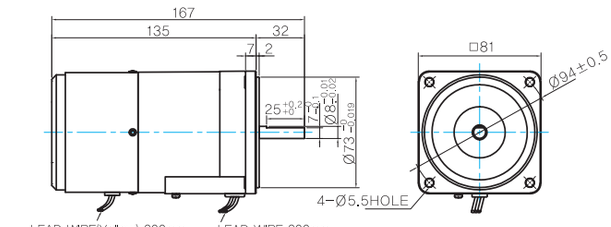
B AC Motors

Brake Motor 25W (□80mm)

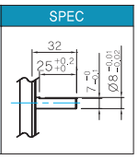
Dimensions

MOTOR ONLY

● MOTOR MODEL: 8BDD□-25 (NO FAN)

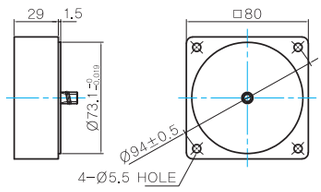


● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	

INTER-DECIMAL GEARBOX

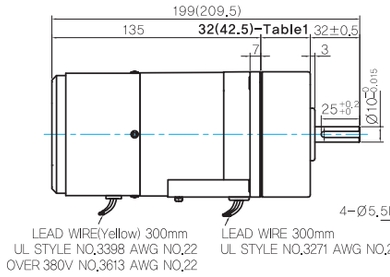
● MODEL: 8XD10□□



GEARED MOTOR

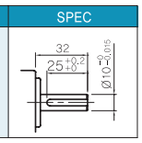
G TYPE GEARBOX

● MOTOR MODEL:
8BDG□-25G (NO FAN)



● GEARBOX MODEL:
8GBK□BMH

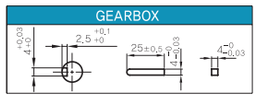
● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● 32(42.5)-Table1

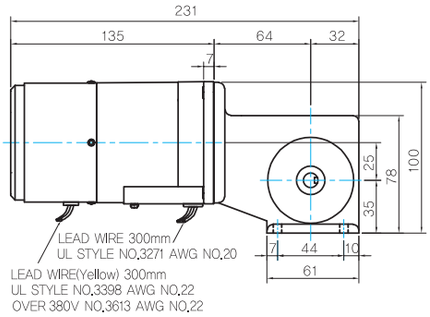
SIZE(mm)	GEAR RATIO
32	8GBK3BMH – 8GBK18BMH
42.5	8GBK20BMH – 8GBK360BMH

● KEY SPEC

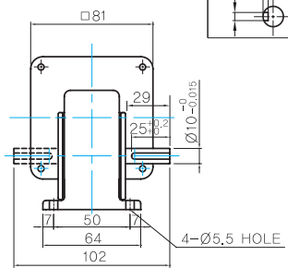


W TYPE GEARBOX

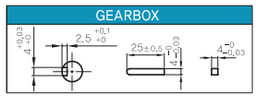
● MOTOR MODEL:
8BDG□-25W (NO FAN)



● GEARBOX MODEL:
8WD□BL/BR/BRL



● KEY SPEC



WEIGHT

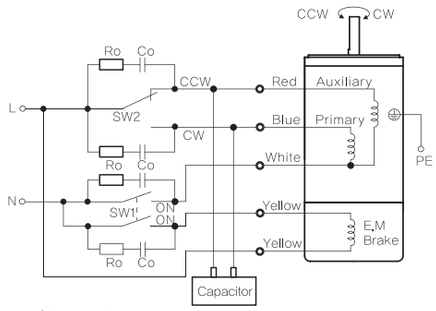
PART		WEIGHT(Kg)
MOTOR		2.0
GEAR BOX	8GBK3BMH – 8GBK18BMH	0.56
	8GBK20BMH – 8GBK40BMH	0.65
	8GBK50BMH – 8GBK360BMH	0.72
	8WD□BL/BR/BRL	0.68
	8XD10□□	0.45

Motor Images

8BDD□-25	8BDG□-25G+8GBK□BMH	8BDG□-25W+8WD□BL
		

Connection Diagrams

Single Phase



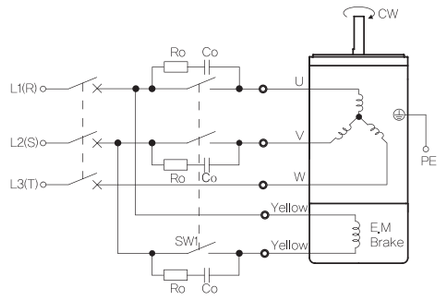
*** Rotation Direction:**

To rotate the motor in a clockwise (CW) direction, turn SW2 to CW.

To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Specifications		Note
	Single Phase 110V/115V Input	Single Phase 220V/230V Input	
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
SW2			–

Three Phase



*** CCW Direction:**

Change any two connections between R, S and T.

Switch No.	Specifications	Note
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) SW1 operates both motor and electromagnetic brake action.
4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2㎌, 200WV (400WV)]

B AC Motors

Brake Motor 40W (□ 90mm)

# 40W Brake Motor
40W(□ 90mm)

Motor Specification

Model 9BDG*-40□: Gear Type Shaft 9BDD*-40: D-Cut Type Shaft 9BDK*-40: Key Type Shaft Lead Wire Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
9BDG1(A)-40□	40	1ø 110	60	4	30min.	4.00	0.400	1600	1.25	2.44	0.244	16.0 / 250
9BDG2(D)-40□	40	1ø 220	60	4	30min.	4.00	0.400	1600	0.61	2.44	0.244	4.0 / 450
9BDGE-40□	40	1ø 220	50	4	30min.	3.20	0.320	1350	0.36	2.89	0.289	3.0 / 450
		1ø 240				3.91	0.391		0.39	2.89	0.289	
9BDG3(G)-40□	40	3ø 220	50	4	Cont.	9.90	0.990	1350	0.33	2.89	0.289	–
			60			7.90	0.790	1600	0.31	2.44	0.244	
		3ø 230	50	4	Cont.	10.80	1.080	1350	0.35	2.89	0.289	
			60			8.50	0.850	1600	0.33	2.44	0.244	
9BDG4(K)-40□	40	3ø 380	50	4	Cont.	10.20	1.020	1350	0.19	2.89	0.289	–
			60			8.00	0.800	1600	0.18	2.44	0.244	
		3ø 400	50	4	Cont.	11.10	1.110	1350	0.20	2.89	0.289	
			60			8.80	0.880	1600	0.19	2.44	0.244	
9BDG5(L)-40□	40	3ø 415	50	4	Cont.	10.00	1.000	1350	0.17	2.89	0.289	–
			60			8.00	0.800	1600	0.16	2.44	0.244	
		3ø 440	50	4	Cont.	11.10	1.110	1350	0.18	2.89	0.289	
			60			8.90	0.890	1600	0.17	2.44	0.244	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18
9BDG*-40G	9GBK□BMH	kgfcm	3.9	5.9	7.1	9.9	11.8	14.8	17.8	19.7	24.7	29.6	35.5	35.6	44.4	53.3	64.0	71.1	80.4	96.4	100.0	100.0	100.0
		N.m	0.39	0.58	0.70	0.97	1.16	1.45	1.74	1.93	2.42	2.90	3.48	3.48	4.35	5.23	6.27	6.97	7.87	9.45	9.80	9.80	9.80

Motor Model	Gearbox Model	Gear Ratio	120	150	180	200
		r/min	15	12	10	9
9BDG*-40G	9GBK□BMH	kgfcm	100.0	100.0	100.0	100.0
		N.m	9.80	9.80	9.80	9.80

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
9BDG*-40W	9WD□BL/□BR/□BRL	kgfcm	20.0	23.4	28.1	32.4	42.6	48.2	56.1	73.1	80.4
		N.m	1.96	2.29	2.76	3.18	4.18	4.72	5.50	7.16	7.87

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9BDG*-40P	9PBK□BH 9PFK□BH	kgfcm	3.9	5.9	7.1	9.9	11.8	14.8	17.8	19.7	22.2	26.7	32.0	35.6	40.2	48.2	57.9	64.3	80.4	96.4	107.7	129.3	143.7	172.4	200.0	200.0	200.0
		N.m	0.39	0.58	0.70	0.97	1.16	1.45	1.74	1.93	2.18	2.61	3.14	3.48	3.94	4.72	5.67	6.30	7.87	9.45	10.56	12.67	14.08	16.90	19.60	19.60	19.60

50Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100
		r/min	750.0	500.0	417.0	300.0	250.0	200.0	167.0	150.0	120.0	100.0	83.0	75.0	60.0	50.0	42.0	38.0	30.0	25.0	20.0	17.0	15.0
9BDG*-40G	9GBK□BMH	kgfcm	4.7	7.0	8.4	11.7	14.0	17.5	21.0	23.4	29.2	35.1	42.1	42.1	52.7	63.2	75.8	84.3	95.2	100.0	100.0	100.0	100.0
		N.m	0.46	0.69	0.82	1.15	1.37	1.72	2.06	2.29	2.86	3.44	4.12	4.13	5.16	6.19	7.43	8.26	9.33	9.80	9.80	9.80	9.80

Motor Model	Gearbox Model	Gear Ratio	120	150	180	200
		r/min	13.0	10.0	8.0	7
9BDG*-40G	9GBK□BMH	kgfcm	100.0	100.0	100.0	100.0
		N.m	9.80	9.80	9.80	9.80

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
9BDG*-40W	9WD□BL/□BR/□BRL	kgfcm	23.7	27.7	33.3	38.4	50.5	57.1	66.5	86.6	95.2
		N.m	2.32	2.72	3.27	3.77	4.95	5.60	6.52	8.48	9.33

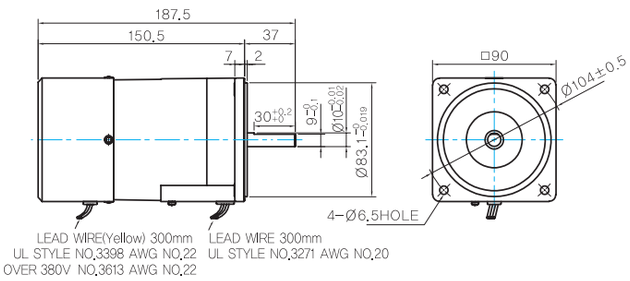
Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9BDG*-40P	9PBK□BH 9PFK□BH	kgfcm	4.7	7.0	8.4	11.7	14.0	17.5	21.0	23.4	26.3	31.6	37.9	42.1	47.6	57.1	68.6	76.2	95.2	114.3	127.7	153.2	170.3	200.0	200.0	200.0	200.0
		N.m	0.46	0.69	0.82	1.15	1.37	1.72	2.06	2.29	2.58	3.10	3.72	4.13	4.67	5.60	6.72	7.47	9.33	11.20	12.51	15.02	16.69	19.60	19.60	19.60	19.60

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

Dimensions

MOTOR ONLY

● MOTOR MODEL: 9BDD□-40 (NO FAN)



● MOTOR OUTPUT SHAFT

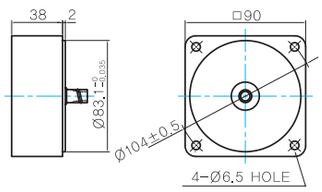
MODEL	SPEC
D-CUT TYPE	
9BDD□-40	
KEY TYPE	
9BDK□-40	

● KEY SPEC

GEARBOX

INTER-DECIMAL GEARBOX

● MODEL: 9XD10□□

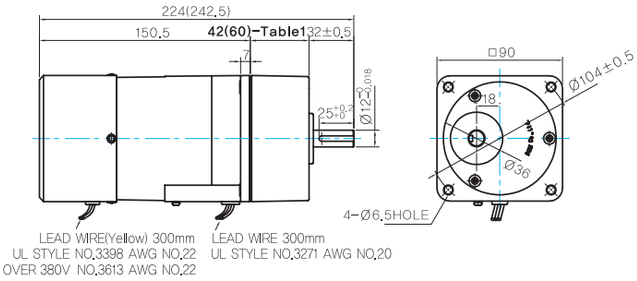


GEARED MOTOR

G TYPE GEARBOX

● MOTOR MODEL: 9BDG□-40G (NO FAN)

● GEARBOX MODEL: 9GBK□BMH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

GEARBOX

● 42(60)-Table1

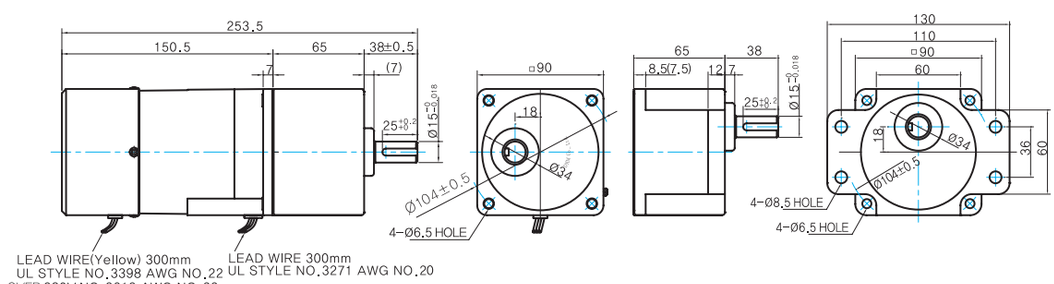
SIZE(mm)	GEAR RATIO
42	9GBK2BMH ~ 9GBK18BMH
60	9GBK20BMH ~ 9GBK200BMH

P TYPE GEARBOX

● MOTOR MODEL: 9BDG□-40P (NO FAN)

● GEARBOX MODEL: 9PBK□BH

● GEARBOX MODEL: 9PFK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	
9PBK□BH 9PFK□BH	

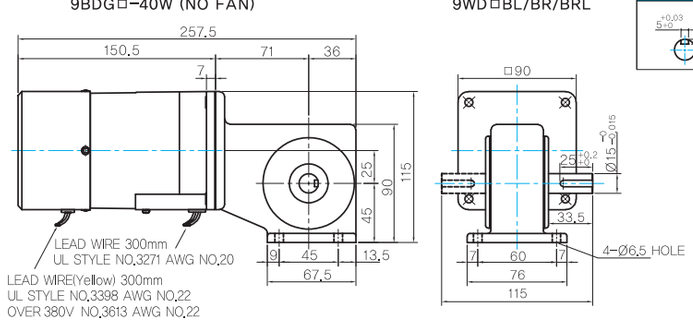
● KEY SPEC

GEARBOX

W TYPE GEARBOX

● MOTOR MODEL: 9BDG□-40W (NO FAN)

● GEARBOX MODEL: 9WD□BL/BR/BRL



● KEY SPEC

GEARBOX

WEIGHT

PART		WEIGHT(Kg)
MOTOR		3.0
GEAR BOX	9GBK2BMH ~ 9GBK18BMH	0.78
	9GBK20BMH ~ 9GBK40BMH	1.1
	9GBK50BMH ~ 9GBK200BMH	1.2
	9PB(F)K2BH ~ 9PB(F)K10BH	1.28
	9PB(F)K12.5BH ~ 9PB(F)K20BH	1.3
	9PB(F)K25BH ~ 9PB(F)K60BH	1.45
	9PB(F)K75BH ~ 9PB(F)K200BH	1.47
	9WD□BL/BR/BRL	1.0
	9XD10□□	0.6

B AC Motors

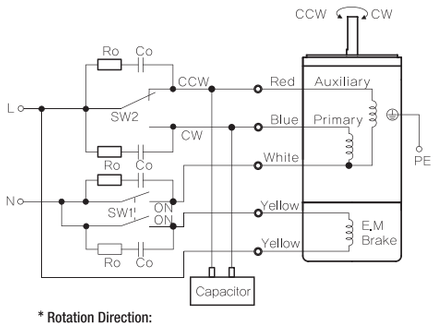
Brake Motor 40W (□90mm)

Motor Images

9BDD□-40	9BDG□-40G+9GBK□BMH	9BDG□-40P+9PBK□BH	9BDG□-40W+9WD□BL
			

Connection Diagrams

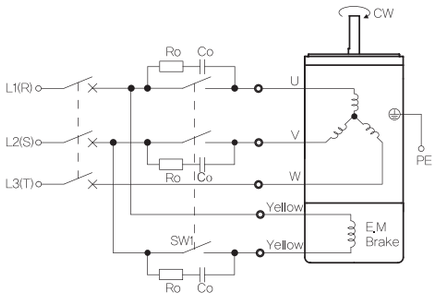
Single Phase



*** Rotation Direction:**
To rotate the motor in a clockwise (CW) direction, turn SW2 to CW.
To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Specifications		Note
	Single Phase 110V/115V Input	Single Phase 220V/230V Input	
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
SW2			–

Three Phase



*** CCW Direction:**
Change any two connections between R, S and T.

Switch No.	Specifications	Note
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) SW1 operates both motor and electromagnetic brake action.
4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

60W Brake Motor 60W(□ 90mm)

Motor Specification

Model 9BDG*-60F□ : Gear Type Shaft 9BDD*-60F: D-Cut Type Shaft 9BDK*-60F: Key Type Shaft Lead Wire Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
9BDG1(A)-60F□	60	1ø 110	60	4	30min.	5.20	0.520	1600	1.60	3.65	0.365	20.0 / 250
9BDG2(D)-60F□	60	1ø 220	60	4	30min.	5.19	0.519	1600	0.75	3.65	0.365	5.0 / 450
9BDGE-60F□	60	1ø 220	50	4	30min.	5.52	0.552	1300	0.59	4.50	0.450	5.0 / 450
		1ø 240				6.52	0.652		0.64	4.50	0.450	
9BDG3(G)-60F□	60	3ø 220	50	4	Cont.	17.20	1.720	1350	0.59	4.33	0.433	–
			60			13.80	1.380	1600	0.53	3.65	0.365	
		3ø 230	50	4	Cont.	18.80	1.880	1350	0.62	4.33	0.433	
			60			15.00	1.500	1600	0.56	3.65	0.365	
9BDG4(K)-60F□	60	3ø 380	50	4	Cont.	16.70	1.670	1350	0.31	4.33	0.433	–
			60			13.40	1.340	1600	0.28	3.65	0.365	
		3ø 400	50	4	Cont.	18.30	1.830	1350	0.34	4.33	0.433	
			60			14.70	1.470	1600	0.30	3.65	0.365	
9BDG5(L)-60F□	60	3ø 415	50	4	Cont.	16.70	1.670	1350	0.29	4.33	0.433	–
			60			13.40	1.340	1600	0.26	3.65	0.365	
		3ø 440	50	4	Cont.	18.50	1.850	1350	0.31	4.33	0.433	
			60			15.00	1.500	1600	0.28	3.65	0.365	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9BDG*-60FP	9PBK□BH 9PFK□BH	kgfcm	5.9	8.9	10.7	14.8	17.8	22.2	26.6	29.6	33.3	40.0	48.0	53.3	60.3	72.3	86.8	96.4	120.5	144.6	161.6	193.9	200.0	200.0	200.0	200.0	200.0
		N.m	0.58	0.87	1.04	1.45	1.74	2.17	2.61	2.90	3.27	3.92	4.70	5.23	5.91	7.09	8.50	9.45	11.81	14.17	15.84	19.01	19.60	19.60	19.60	19.60	19.60
9BDG*-60FH	9HBK□BH 9HFK□BH	kgfcm	–	8.9	10.7	14.8	17.8	22.2	26.6	29.6	33.3	40.0	48.0	53.3	60.3	72.3	86.8	96.4	120.5	144.6	161.6	193.9	215.5	258.6	300.0	300.0	300.0
		N.m		0.87	1.04	1.45	1.74	2.17	2.61	2.90	3.27	3.92	4.70	5.23	5.91	7.09	8.50	9.45	11.81	14.17	15.84	19.01	21.12	25.34	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
9BDG*-60FW	9WD□BL/ □BR/□BRL	kgfcm	30.0	35.1	42.2	48.7	63.9	72.3	84.2	109.6	120.5
		N.m	2.94	3.44	4.13	4.77	6.26	7.09	8.25	10.74	11.81

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	360	240	180	120	90	72	60	45	36	30	22
9BDG*-60FWH	9WHD□ -030	kgfcm	12.7	18.4	23.7	33.3	42.1	48.2	56.1	69.0	78.9	87.7	102.9
		N.m	1.25	1.80	2.32	3.26	4.12	4.72	5.50	6.76	7.73	8.59	10.08

50Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9BDG*-60FP	9PBK□BH 9PFK□BH	kgfcm	7.0	10.5	12.6	17.5	21.0	26.3	31.6	35.1	39.5	47.4	56.9	63.2	71.4	85.7	102.9	114.3	142.9	171.4	191.6	200.0	200.0	200.0	200.0	200.0	200.0
		N.m	0.69	1.03	1.24	1.72	2.06	2.58	3.09	3.44	3.87	4.65	5.57	6.19	7.00	8.40	10.08	11.20	14.00	16.80	18.77	19.60	19.60	19.60	19.60	19.60	19.60
9BDG*-60FH	9HBK□BH 9HFK□BH	kgfcm	–	10.5	12.6	17.5	21.0	26.3	31.6	35.1	39.5	47.4	56.9	63.2	71.4	85.7	102.9	114.3	142.9	171.4	191.6	229.9	255.4	300.0	300.0	300.0	300.0
		N.m		1.03	1.24	1.72	2.06	2.58	3.09	3.44	3.87	4.65	5.57	6.19	7.00	8.40	10.08	11.20	14.00	16.80	18.77	22.53	25.03	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
9BDG*-60FW	9WD□BL/ □BR/□BRL	kgfcm	35.5	41.6	50.0	57.7	75.8	85.7	99.7	129.9	122.4
		N.m	3.48	4.07	4.90	5.65	7.42	8.40	9.77	12.73	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	300	200	150	100	75	60	50	38	30	25	18
9BDG*-60FWH	9WHD□ -030	kgfcm	15.1	21.8	28.1	39.5	49.9	57.1	66.5	81.7	93.5	103.9	121.9
		N.m	1.48	2.14	2.75	3.87	4.89	5.60	6.52	8.01	9.16	10.18	11.95

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

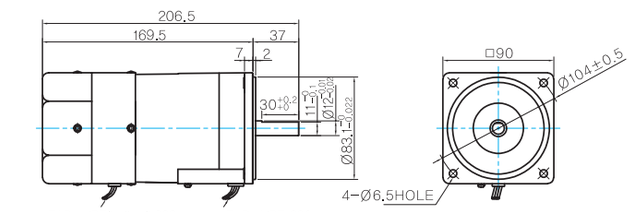
B AC Motors

Brake Motor 60W (□ 90mm)

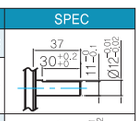
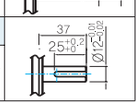
Dimensions

MOTOR ONLY

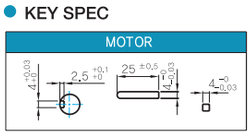
● MOTOR MODEL:
9BDD□-60F (GENERAL FAN)



● MOTOR OUTPUT SHAFT

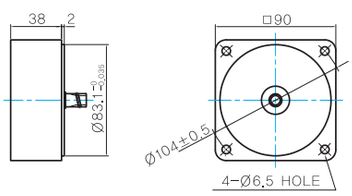
MODEL	SPEC
D-CUT TYPE 9BDD□-60F	
KEY TYPE 9BDK□-60F	

● KEY SPEC

MOTOR


INTER-DECIMAL GEARBOX

● MODEL:
9XD10□□



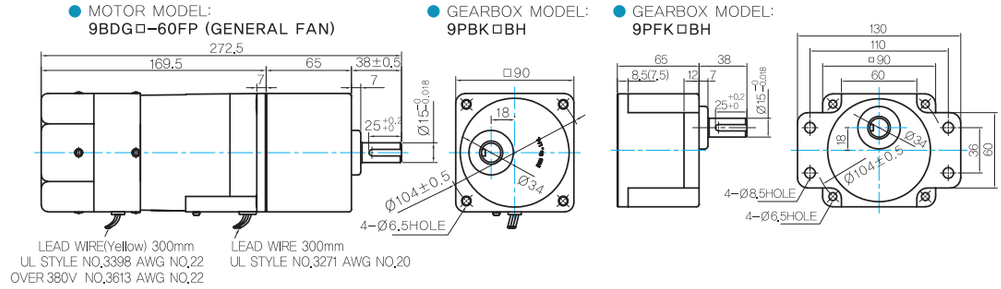
GEARED MOTOR

P TYPE GEARBOX

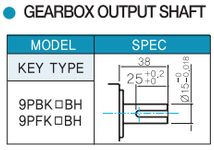
● MOTOR MODEL:
9BDG□-60FP (GENERAL FAN)

● GEARBOX MODEL:
9PBK□BH

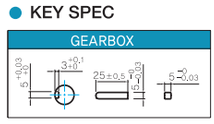
● GEARBOX MODEL:
9PFK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE 9PBK□BH 9PFK□BH	

● KEY SPEC

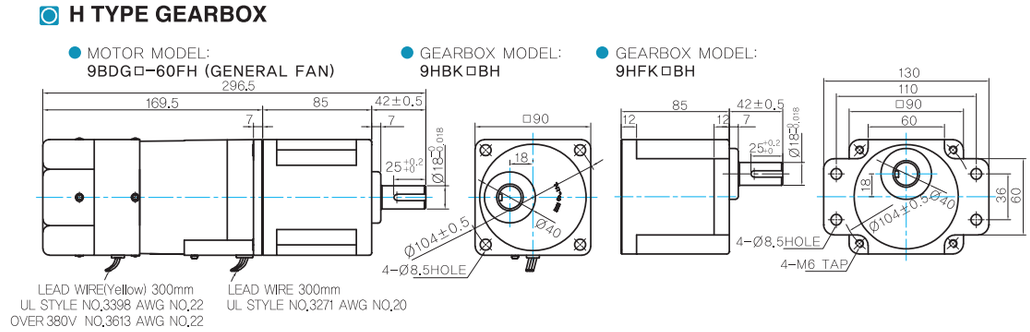
GEARBOX


H TYPE GEARBOX

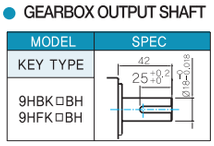
● MOTOR MODEL:
9BDG□-60FH (GENERAL FAN)

● GEARBOX MODEL:
9HBK□BH

● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE 9HBK□BH 9HFK□BH	

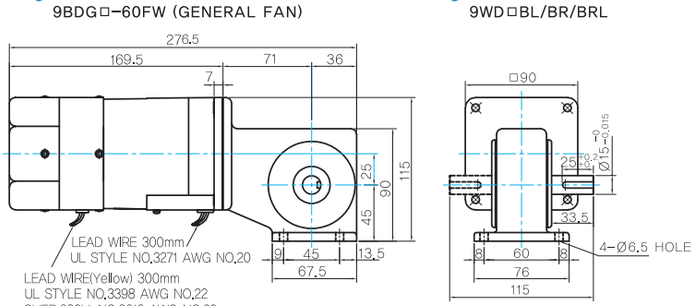
● KEY SPEC

GEARBOX

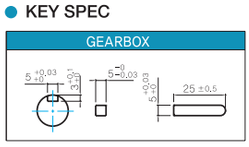

W TYPE GEARBOX

● MOTOR MODEL:
9BDG□-60FW (GENERAL FAN)

● GEARBOX MODEL:
9WD□BL/BR/BRL

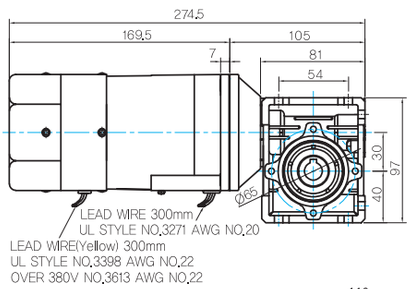


● KEY SPEC

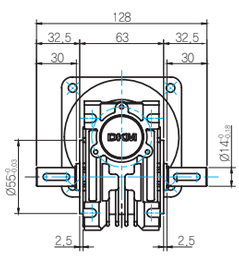
GEARBOX


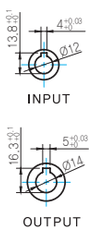
WH TYPE GEARBOX

● MOTOR MODEL:
9BDG□-60FWH (GENERAL FAN)

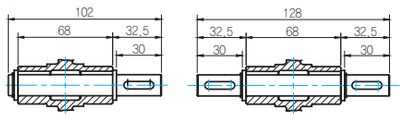


● GEARBOX MODEL:
9WHD□-030



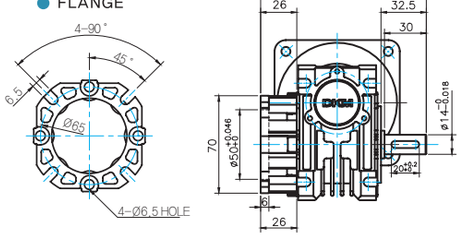


● SHAFT

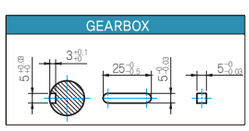


Unidirectional Bi-directional

● FLANGE



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		3.3
GEAR BOX	9PB(F)K2BH – 9PB(F)K10BH	1.28
	9PB(F)K12.5BH – 9PB(F)K20BH	1.3
	9PB(F)K25BH – 9PB(F)K60BH	1.45
	9PB(F)K75BH – 9PB(F)K200BH	1.47
	9HB(F)K3BH – 9HB(F)K10BH	1.62
	9HB(F)K12.5BH – 9HB(F)K20BH	1.68
	9HB(F)K25BH – 9HB(F)K60BH	1.73
	9HB(F)K75BH – 9HB(F)K200BH	1.78
	9WD□BL/BR/BRL	1.0
	9WHD□-030	1.2
	9XD10□□	0.6

* The output flange and shaft are sold separately

Motor Images

9BDD□-60F	9BDG□-60FP+9PBK□BH	9BDG□-60FP+9PFK□BH	9BDG□-60FH+9HBK□BH
			

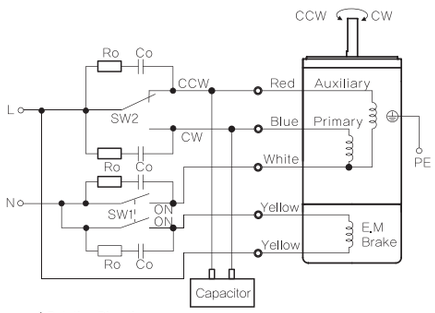
9BDG□-60FH+9HFK□BH	9BDG□-60FW+9WD□BL	9BDG□-60FWH+9WHD□
		

B AC Motors

Brake Motor 60W (□90mm)

Connection Diagrams

Single Phase

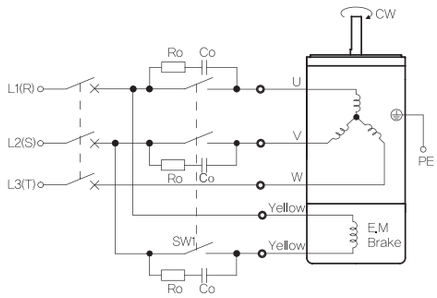


*** Rotation Direction:**

To rotate the motor in a clockwise (CW) direction, turn SW2 to CW.
To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Specifications		Note
	Single Phase 110V/115V Input	Single Phase 220V/230V Input	
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
SW2			–

Three Phase



*** CCW Direction:**

Change any two connections between R, S and T.

Switch No.	Specifications	Note
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) SW1 operates both motor and electromagnetic brake action.
4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

90W Brake Motor 90W(□90mm)

Motor Specification

Model 9BDG*-90F□: Gear Type Shaft 9BDD*-90F: D-Cut Type Shaft 9BDK*-90F: Key Type Shaft Lead Wire Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
9BDG1(A)-90F□	90	1ø 110	60	4	30min.	6.49	0.649	1600	2.00	5.48	0.548	25.0 / 250
9BDG2(D)-90F□	90	1ø 220	60	4	30min.	6.11	0.611	1600	1.04	5.48	0.548	6.0 / 450
9BDGE-90F□	90	1ø 220	50	4	30min.	6.07	0.607	1250	0.92	7.01	0.701	6.0 / 450
		1ø 240				7.15	0.715		1.00	7.01	0.701	
9BDG3(G)-90F□	90	3ø 220	50	4	Cont.	20.50	2.050	1350	0.65	6.49	0.649	-
			60			16.20	1.620	1600	0.60	5.48	0.548	
		3ø 230	50	4	Cont.	22.00	2.200	1350	0.68	6.49	0.649	
			60			17.60	1.760	1600	0.63	5.48	0.548	
9BDG4(K)-90F□	90	3ø 380	50	4	Cont.	20.00	2.000	1350	0.35	6.49	0.649	-
			60			15.70	1.570	1600	0.33	5.48	0.548	
		3ø 400	50	4	Cont.	21.80	2.180	1350	0.37	6.49	0.649	
			60			17.30	1.730	1600	0.35	5.48	0.548	
9BDG5(L)-90F□	90	3ø 415	50	4	Cont.	20.50	2.050	1350	0.33	6.49	0.649	-
			60			16.20	1.620	1600	0.31	5.48	0.548	
		3ø 440	50	4	Cont.	22.70	2.270	1350	0.36	6.49	0.649	
			60			18.10	1.810	1600	0.33	5.48	0.548	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9BDG*-90FP	9PBK□BH 9PFK□BH	kgfcm	8.9	13.3	16.0	22.2	26.6	33.3	39.9	44.4	50.0	60.0	72.0	80.0	90.4	108.5	130.2	144.6	180.8	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
		N.m	0.87	1.30	1.57	2.17	2.61	3.26	3.91	4.35	4.90	5.88	7.06	7.84	8.86	10.63	12.76	14.17	17.72	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9BDG*-90FH	9HBK□BH 9HFK□BH	kgfcm	-	13.3	16.0	22.2	26.6	33.3	39.9	44.4	50.0	60.0	72.0	80.0	90.4	108.5	130.2	144.6	180.8	217.0	242.4	290.9	300.0	300.0	300.0	300.0	300.0
		N.m		1.30	1.57	2.17	2.61	3.26	3.91	4.35	4.90	5.88	7.06	7.84	8.86	10.63	12.76	14.17	17.72	21.26	23.76	28.51	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
9BDG*-90FW	9WD□BL/□BR/□BRL	kgfcm	44.9	52.6	63.3	73.0	95.9	108.5	126.2	142.9	122.4
		N.m	4.40	5.15	6.20	7.15	9.40	10.63	12.37	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	360	240	180	120	90	72	60	45	36	30	22
9BDG*-90FWH	9WHD□-030	kgfcm	19.1	27.6	35.5	50.0	63.1	72.3	84.2	103.4	118.3	131.5	132.7
		N.m	1.87	2.71	3.48	4.90	6.19	7.09	8.25	10.14	11.60	12.89	13.00

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
9BDG*-90FHC	9HC□□	kgfcm	60	80	100	120	160	200	240	320	400	480	640	800	900	960
		N.m	5.88	7.84	9.8	11.8	15.7	19.6	23.5	31.4	39.2	47	62.7	78.4	88.2	94.1

50Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9BDG*-90FP	9PBK□BH 9PFK□BH	kgfcm	10.5	15.8	18.9	26.3	31.6	39.4	47.3	52.6	59.3	71.1	85.3	94.8	107.1	128.6	154.3	171.4	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
		N.m	1.03	1.55	1.86	2.58	3.09	3.87	4.64	5.15	5.81	6.97	8.36	9.29	10.50	12.60	15.12	16.80	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9BDG*-90FH	9HBK□BH 9HFK□BH	kgfcm	-	15.8	18.9	26.3	31.6	39.4	47.3	52.6	59.3	71.1	85.3	94.8	107.1	128.6	154.3	171.4	214.3	257.1	287.3	300.0	300.0	300.0	300.0	300.0	300.0
		N.m		1.55	1.86	2.58	3.09	3.87	4.64	5.15	5.81	6.97	8.36	9.29	10.50	12.60	15.12	16.80	21.00	25.20	28.16	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
9BDG*-90FW	9WD□BL/□BR/□BRL	kgfcm	53.2	62.3	75.0	86.5	113.6	128.6	149.6	142.9	122.4
		N.m	5.22	6.11	7.35	8.48	11.14	12.60	14.66	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	300	200	150	100	75	60	50	38	30	25	18
9BDG*-90FWH	9WHD□-030	kgfcm	22.6	32.7	42.1	59.2	74.8	85.7	99.7	122.6	140.3	155.8	132.7
		N.m	2.21	3.21	4.12	5.80	7.33	8.40	9.77	12.01	13.75	15.27	13.00

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
9BDG*-90FHC	9HC□□	kgfcm	71.1	94.8	119	142	190	237	284	379	474	569	758	948	1067	1138
		N.m	6.97	9.28	11.7	13.9	18.6	23.2	27.8	37.1	46.5	55.8	74.3	92.9	105	112

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft: a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

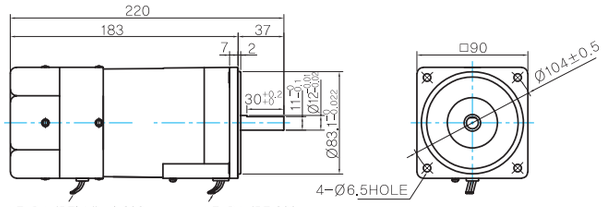
B AC Motors

Brake Motor 90W (□ 90mm)

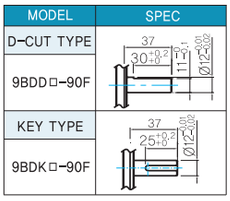
Dimensions

MOTOR ONLY

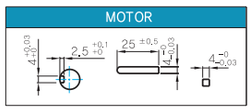
● MOTOR MODEL:
9BDD□-90F (GENERAL FAN)



● MOTOR OUTPUT SHAFT

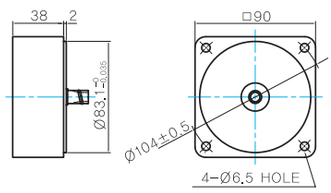
MODEL	SPEC
D-CUT TYPE 9BDD□-90F	
KEY TYPE 9BDK□-90F	

● KEY SPEC

MOTOR


INTER-DECIMAL GEARBOX

● MODEL:
9XD10□□



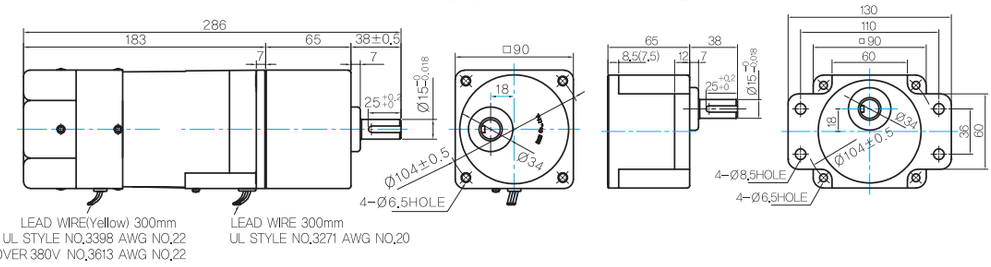
GEARED MOTOR

P TYPE GEARBOX

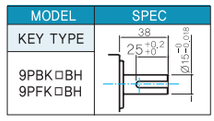
● MOTOR MODEL:
9BDG□-90FP (GENERAL FAN)

● GEARBOX MODEL:
9PBK□BH

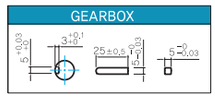
● GEARBOX MODEL:
9PFK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE 9PBK□BH 9PFK□BH	

● KEY SPEC

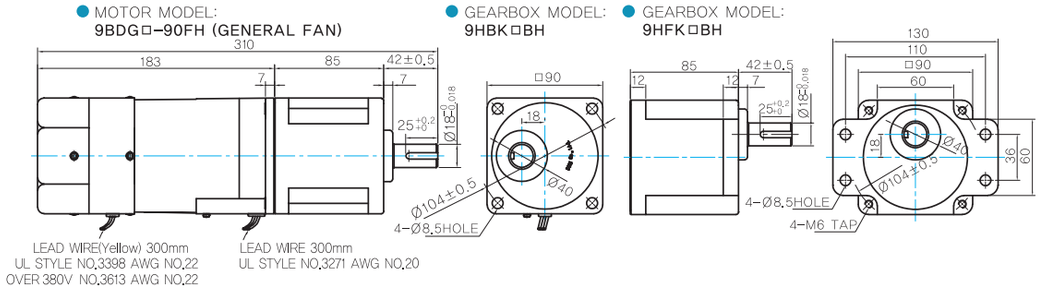
GEARBOX


H TYPE GEARBOX

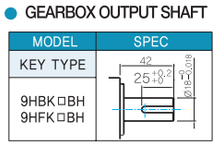
● MOTOR MODEL:
9BDG□-90FH (GENERAL FAN)

● GEARBOX MODEL:
9HBK□BH

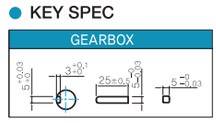
● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

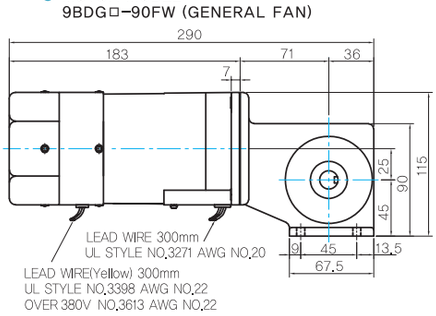
MODEL	SPEC
KEY TYPE 9HBK□BH 9HFK□BH	

● KEY SPEC

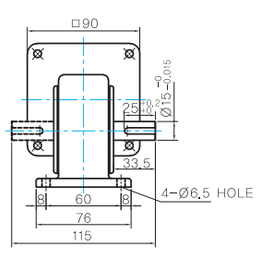
GEARBOX


W TYPE GEARBOX

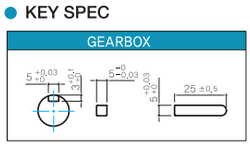
● MOTOR MODEL:
9BDG□-90FW (GENERAL FAN)



● GEARBOX MODEL:
9WD□BL/BR/BRL

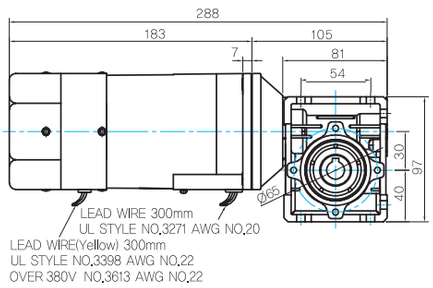


● KEY SPEC

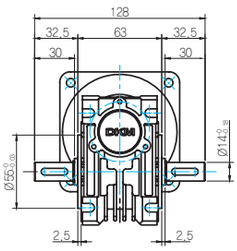
GEARBOX


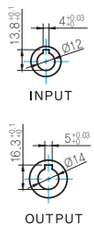
WH TYPE GEARBOX

● MOTOR MODEL:
9BDG□-90FWH (GENERAL FAN)

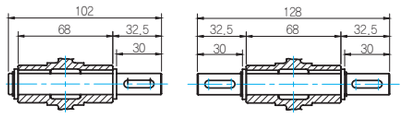


● GEARBOX MODEL:
9WHD□-030



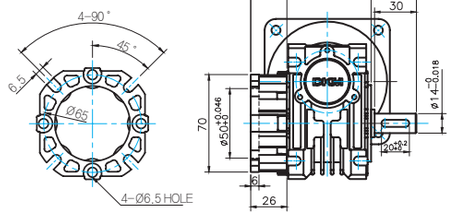


● SHAFT

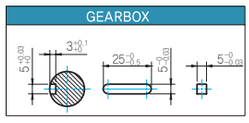


Unidirectional Bi-directional

● FLANGE

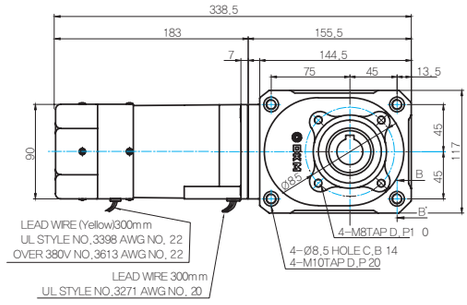


● KEY SPEC

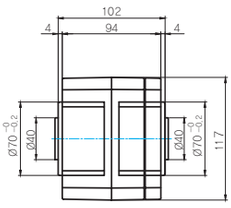


HC TYPE GEARBOX

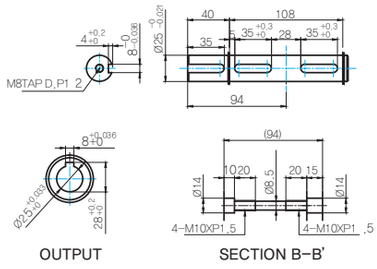
● MOTOR MODEL :
9BDG□-90FHC (GENERAL FAN)



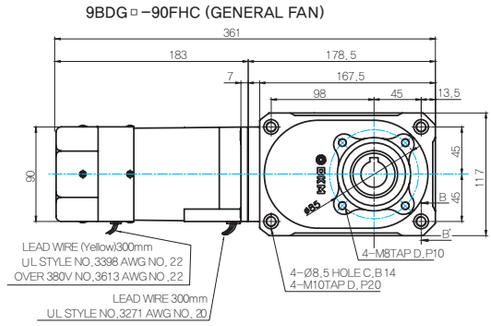
● GEARBOX MODEL:
9HC(15 ~ 60)□



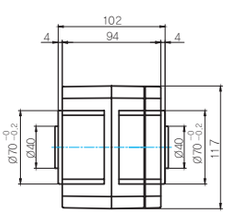
● SHAFT



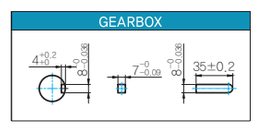
● MOTOR MODEL :
9BDG□-90FHC (GENERAL FAN)



● GEARBOX MODEL :
9HC(80 ~ 240)□



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		3.05
GEAR BOX	9PB(F)K2BH - 9PB(F)K10BH	1.28
	9PB(F)K12.5BH - 9PB(F)K20BH	1.3
	9PB(F)K25BH - 9PB(F)K60BH	1.45
	9PB(F)K75BH - 9PB(F)K200BH	1.47
	9HB(F)K3BH - 9HB(F)K10BH	1.62
	9HB(F)K12.5BH - 9HB(F)K20BH	1.68
	9HB(F)K25BH - 9HB(F)K60BH	1.73
	9HB(F)K75BH - 9HB(F)K200BH	1.78
	9WD□BL/BR/BRL	1.0
	9WHD□-030	1.2
	9HC15□	4.05
	9HC20□~9HC60□	4.1
	9HC80□~9HC240□	4.75
	9XD10□□	0.6

* The output flange and shaft are sold separately

B AC Motors

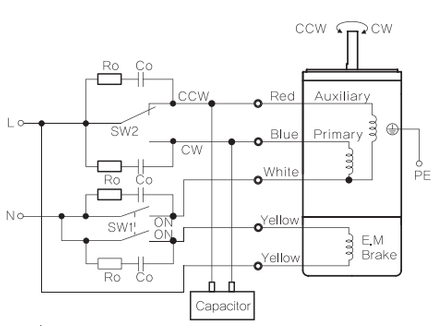
Brake Motor 90W (□ 90mm)

Motor Images

9BDD□-90F	9BDG□-90FP+9PBK□BH	9BDG□-90FP+9PFK□BH	9BDG□-90FH+9HBK□BH
			
9BDG□-90FH+9HFK□BH	**9BDG□-90FW+9WD□BL**	**9BDG□-90FWH+9WHD□**	**9BDG□-90FHC+9HC□□**
			

Connection Diagrams

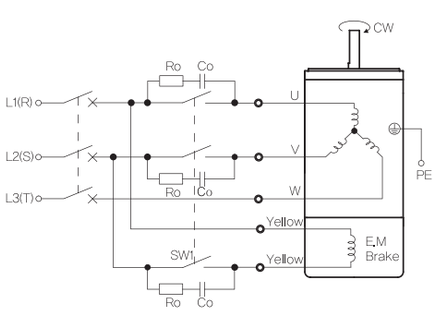
Single Phase



*** Rotation Direction:**
To rotate the motor in a clockwise (CW) direction, turn SW2 to CW.
To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Specifications		Note
	Single Phase 110V/115V Input	Single Phase 220V/230V Input	
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
SW2			–

Three Phase



*** CCW Direction:**
Change any two connections between R, S and T.

Switch No.	Specifications	Note
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) SW1 operates both motor and electromagnetic brake action.
4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

120W Brake Motor 120W(□ 90mm)

Motor Specification

Model (9BDG*-120F□ : Gear Type Shaft, 9BDD*-120F: D-Cut Type Shaft, 9BDK*-120F: Key Type Shaft) / Lead Wire Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	Starting Torque N.m	Rated Load Speed r/min	Rated Load Current A	Rated Load Torque kgfcm	Rated Load Torque N.m	Capacitor μF / VAC
9BDG1(A)-120F□	120	1ø 110	60	4	30min.	7.11	0.711	1550	2.50	7.54	0.754	30.0 / 250
9BDG2(D)-120F□	120	1ø 220	60	4	30min.	6.42	0.642	1600	1.08	7.31	0.731	6.5 / 450
9BDGE-120F□	120	1ø 220	50	4	30min.	6.28	0.628	1250	1.10	9.35	0.935	6.5 / 450
		1ø 240				7.50	0.750		1.21	9.35	0.935	
9BDG3(G)-120F□	120	3ø 220	50	4	Cont.	24.40	2.440	1300	0.88	8.99	0.899	–
			60			20.00	2.000	1600	0.71	7.31	0.731	
		3ø 230	50	4	Cont.	27.00	2.700	1350	0.86	8.66	0.866	
			60			21.70	2.170	1600	0.76	7.31	0.731	
9BDG4(K)-120F□	120	3ø 380	50	4	Cont.	24.30	2.430	1300	0.50	8.99	0.899	–
			60			19.90	1.990	1600	0.41	7.31	0.731	
		3ø 400	50	4	Cont.	27.10	2.710	1350	0.49	8.66	0.866	
			60			21.90	2.190	1600	0.43	7.31	0.731	
9BDG5(L)-120F□	120	3ø 415	50	4	Cont.	24.30	2.430	1300	0.47	8.99	0.899	–
			60			19.90	1.990	1600	0.37	7.31	0.731	
		3ø 440	50	4	Cont.	27.50	2.750	1350	0.47	8.66	0.866	
			60			22.20	2.220	1600	0.40	7.31	0.731	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E, G, K, L contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	900	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9BDG*-120FP	9PBK□BH	kgfcm	11.8	17.8	21.3	29.6	35.5	44.4	53.3	59.2	66.7	80.0	96.0	106.7	120.5	144.6	173.6	192.9	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	1.16	1.74	2.09	2.90	3.48	4.35	5.22	5.80	6.53	7.84	9.41	10.45	11.81	14.17	17.01	18.90	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9BDG*-120FH	9HBK□BH	kgfcm	–	17.8	21.3	29.6	35.5	44.4	53.3	59.2	66.7	80.0	96.0	106.7	120.5	144.6	173.6	192.9	241.1	289.3	300.0	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m		1.74	2.09	2.90	3.48	4.35	5.22	5.80	6.53	7.84	9.41	10.45	11.81	14.17	17.01	18.90	23.62	28.35	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	180	150	120	100	72	60	50	36	30
9BDG*-120FW	9WD□BL/□BR/□BRL	kgfcm	59.9	70.1	84.4	97.3	127.8	144.6	153.1	142.9	122.4
		N.m	5.87	6.87	8.27	9.54	12.53	14.17	15.00	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	360	240	180	120	90	72	60	45	36	30	22
9BDG*-120FWH	9WHD□-030	kgfcm	25.4	36.8	47.3	66.6	84.2	96.4	112.2	137.9	157.8	163.3	132.7
		N.m	2.49	3.61	4.64	6.53	8.25	9.45	11.00	13.52	15.46	16.00	13.00

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
9BDG*-120FHC	9HC□□	kgfcm	80	107	133	160	213	267	320	427	533	640	853	1067	1200	1280
		N.m	7.84	10.5	13	15.7	20.9	26.2	31.4	41.8	52.2	62.7	83.6	105	118	125

50Hz

Motor Model	Gearbox Model	Gear Ratio	2	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	750	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9BDG*-120FP	9PBK□BH	kgfcm	14.0	21.0	25.2	35.1	42.1	52.6	63.1	70.1	79.0	94.8	113.8	126.4	142.9	171.4	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0	200.0
	9PFK□BH	N.m	1.37	2.06	2.47	3.44	4.12	5.15	6.19	6.87	7.74	9.29	11.15	12.39	14.00	16.80	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60	19.60
9BDG*-120FH	9HBK□BH	kgfcm	–	21.0	25.2	35.1	42.1	52.6	63.1	70.1	79.0	94.8	113.8	126.4	142.9	171.4	205.7	228.6	285.7	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m		2.06	2.47	3.44	4.12	5.15	6.19	6.87	7.74	9.29	11.15	12.39	14.00	16.80	20.16	22.40	28.00	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	10	12	15	18	25	30	36	50	60
		r/min	150	125	100	83	60	50	42	30	25
9BDG*-120FHC	9WD□BL/□BR/□BRL	kgfcm	71.0	83.1	100.0	115.3	151.5	170.0	153.1	142.9	122.4
		N.m	6.96	8.15	9.80	11.30	14.85	16.66	15.00	14.00	12.00

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80
		r/min	300	200	150	100	75	60	50	38	30	25	18
9BDG*-120FWH	9WHD□-030	kgfcm	30.1	43.6	56.1	79.0	99.7	114.3	133.0	163.5	173.5	163.3	132.7
		N.m	2.95	4.28	5.50	7.74	9.77	11.20	13.03	16.02	17.00	16.00	13.00

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
9BDG*-120FHC	9HC□□	kgfcm	94.8	126	158	190	253	316	379	506	632	758	1011	1264	1422	1517
		N.m	9.29	12.3	15.5	18.6	24.8	31	37.1	49.6	61.9	74.3	99.1	124	139	149

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

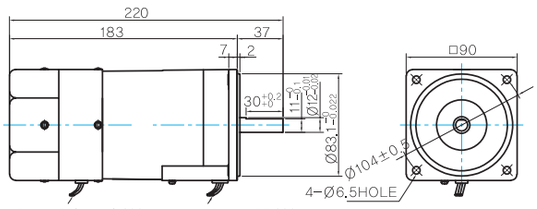
B AC Motors

Brake Motor 120W (□90mm)

Dimensions

MOTOR ONLY

● MOTOR MODEL:
9BDD□-120F (GENERAL FAN)



● MOTOR OUTPUT SHAFT

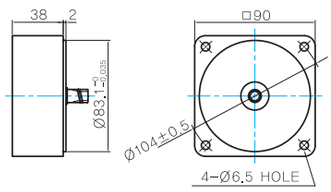
MODEL	SPEC
D-CUT TYPE	
9BDD□-120F	
KEY TYPE	
9BDK□-120F	

● KEY SPEC

MOTOR

INTER-DECIMAL GEARBOX

● MODEL:
9XD10□□



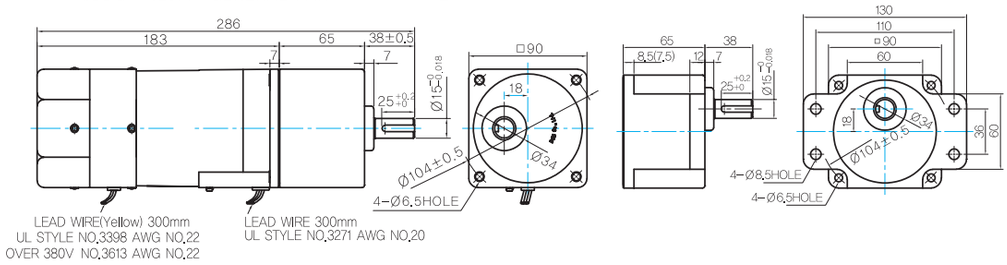
GEARED MOTOR

P TYPE GEARBOX

● MOTOR MODEL:
9BDG□-120FP (GENERAL FAN)

● GEARBOX MODEL:
9PBK□BH

● GEARBOX MODEL:
9PFK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	
9PBK□BH 9PFK□BH	

● KEY SPEC

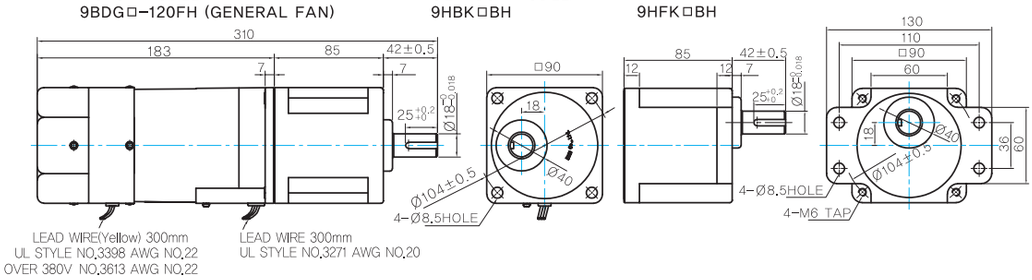
GEARBOX

H TYPE GEARHEAD

● MOTOR MODEL:
9BDG□-120FH (GENERAL FAN)

● GEARBOX MODEL:
9HBK□BH

● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

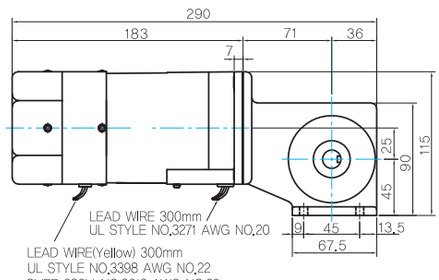
MODEL	SPEC
KEY TYPE	
9HBK□BH 9HFK□BH	

● KEY SPEC

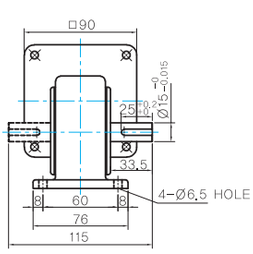
GEARBOX

W TYPE GEARBOX

● MOTOR MODEL:
9BDG□-120FW (GENERAL FAN)



● GEARBOX MODEL:
9WD□BL/BR/BRL

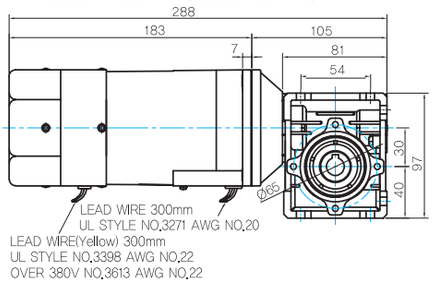


● KEY SPEC

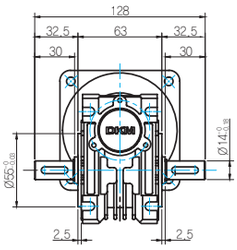
GEARBOX

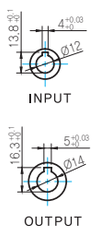
WH TYPE GEARBOX

● MOTOR MODEL:
9BDG□-120FWH (GENERAL FAN)

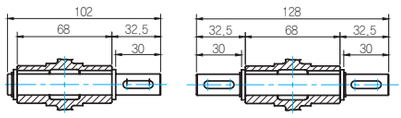


● GEARBOX MODEL:
9WHD□-030

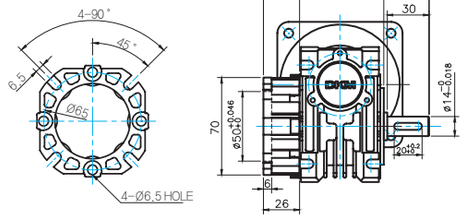




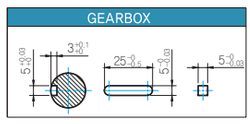
● SHAFT



● FLANGE

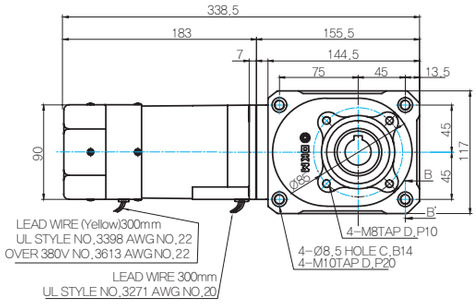


● KEY SPEC

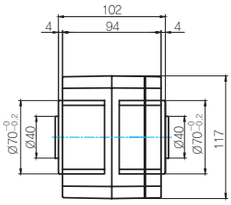


HC TYPE GEARBOX

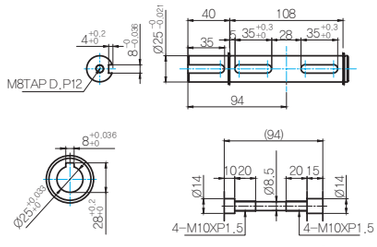
● MOTOR MODEL :
9BDG□-120FHC (GENERAL FAN)



● GEARBOX MODEL:
9HC(15 ~ 60)□



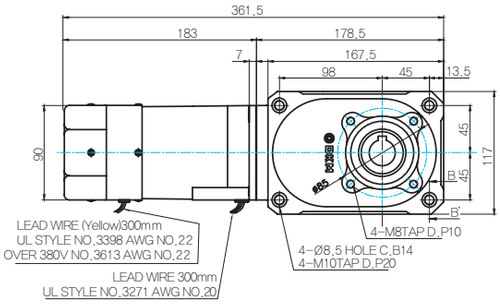
● SHAFT



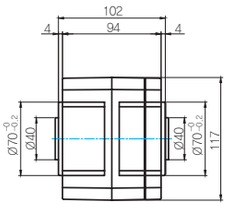
OUTPUT

SECTION B-B'

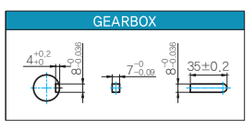
● MOTOR MODEL :
9BDG□-120FHC (GENERAL FAN)



● GEARBOX MODEL :
9HC(80 ~ 240)□



● KEY SPEC



WEIGHT

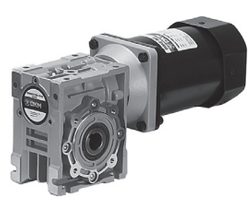
PART		WEIGHT(Kg)
MOTOR		3.05
GEAR BOX	9PB(F)K2BH ~ 9PB(F)K10BH	1.28
	9PB(F)K12.5BH ~ 9PB(F)K20BH	1.3
	9PB(F)K25BH ~ 9PB(F)K60BH	1.45
	9PB(F)K75BH ~ 9PB(F)K200BH	1.47
	9HB(F)K3BH ~ 9HB(F)K10BH	1.62
	9HB(F)K12.5BH ~ 9HB(F)K20BH	1.68
	9HB(F)K25BH ~ 9HB(F)K60BH	1.73
	9HB(F)K75BH ~ 9HB(F)K200BH	1.78
	9WD□BL/BR/BRL	1.0
	9WHD□-030	1.2
	9HC15□	4.05
	9HC20□~9HC60□	4.1
	9HC80□~9HC240□	4.75
	9XD10□□	0.6

* The output flange and shaft are sold separately

B AC Motors

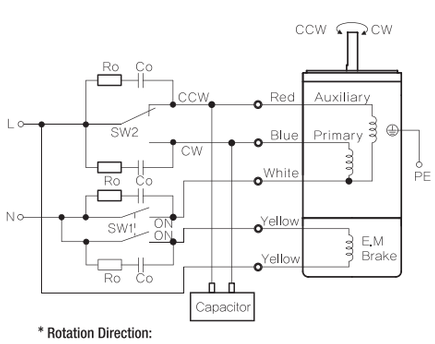
Brake Motor 120W (□90mm)

Motor Images

9BDD□-120F	9BDG□-120FP+9PBK□BH	9BDG□-120FP+9PFK□BH	9BDG□-120FH+9HBK□BH
			
9BDG□-120FH+9HFK□BH	**9BDG□-120FW+9WD□BL**	**9BDG□-120FWH+9WHD□**	**9BDG□-120FHC+9HC□□**
			

Connection Diagrams

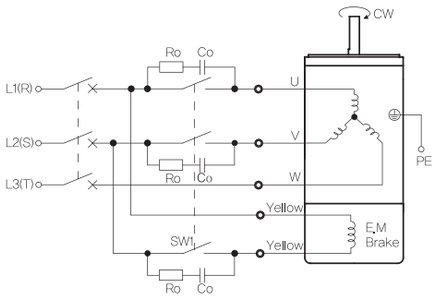
Single Phase



*** Rotation Direction:**
To rotate the motor in a clockwise (CW) direction, turn SW2 to CW.
To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Specifications		Note
	Single Phase 110V/115V Input	Single Phase 220V/230V Input	
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
SW2			–

Three Phase



*** CCW Direction:**
Change any two connections between R, S and T.

Switch No.	Specifications	Note
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously

1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) SW1 operates both motor and electromagnetic brake action.
4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

150W Brake Motor 150W(□ 90mm)

Motor Specification

Model 9BDG*-150F□ : Gear Type Shaft 9BDD*-150F: D-Cut Type Shaft 9BDK*-150F: Key Type Shaft Lead Wire Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
9BDG3(G)-150F□	150	3ø220	50	4	Cont.	25.70	2.570	1300	0.94	11.24	1.124	–
			60			20.50	2.050	1550	0.84	9.43	0.943	
		3ø230	50	4	Cont.	27.50	2.750	1300	1.02	11.24	1.124	
			60			22.20	2.220	1550	0.89	9.43	0.943	
9BDG4(K)-150F□	150	3ø380	50	4	Cont.	25.10	2.510	1300	0.53	11.24	1.124	–
			60			20.00	2.000	1550	0.48	9.43	0.943	
		3ø400	50	4	Cont.	27.30	2.730	1300	0.57	11.24	1.124	
			60			22.00	2.200	1550	0.50	9.43	0.943	
9BDG5(L)-150F□	150	3ø415	50	4	Cont.	25.00	2.500	1300	0.51	11.24	1.124	–
			60			22.10	2.210	1550	0.45	9.43	0.943	
		3ø440	50	4	Cont.	27.20	2.720	1300	0.55	11.24	1.124	
			60			22.40	2.240	1550	0.48	9.43	0.943	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code G, K, L contain a built-in thermal protector. 3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9BDG*-150FH	9HBK□BH 9HFK□BH	kgfcm	22.9	27.5	38.2	45.8	57.3	68.7	76.3	86.0	103.2	123.9	137.6	155.5	186.6	224.0	248.8	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
		N.m	2.24	2.69	3.74	4.49	5.61	6.73	7.48	8.43	10.11	12.14	13.49	15.24	18.29	21.95	24.39	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	360	240	180	120	90	72	60	45	36	30	22	18
9BDG*-150FWH	9WHD□-030	kgfcm	32.8	47.5	61.1	86.0	108.6	124.4	144.8	178.0	173.5	163.3	132.7	–
		N.m	3.21	4.66	5.99	8.42	10.64	12.19	14.19	17.44	17.00	16.00	13.00	–
	9WHD□-040	kgfcm	–	–	–	–	–	–	–	–	230.0	257.9	295.0	270.0
		N.m	–	–	–	–	–	–	–	–	22.54	25.27	28.91	26.46

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
9BDG*-150FHC	9HC□□	kgfcm	103	138	172	206	275	344	413	550	688	826	1101	1376	1548	1651
		N.m	10.1	13.5	16.9	20.2	27	33.7	40.5	53.9	67.4	80.9	108	135	152	162

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9BDG*-150FH	9HBK□BH 9HFK□BH	kgfcm	27.3	32.8	45.5	54.6	68.3	81.9	91.0	102.6	123.1	147.7	164.1	185.4	222.5	267.0	296.7	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
		N.m	2.68	3.21	4.46	5.35	6.69	8.03	8.92	10.05	12.06	14.47	16.08	18.17	21.81	26.17	29.08	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	300	200	150	100	75	60	50	38	30	25	18	15
9BDG*-150FWH	9WHD□-030	kgfcm	39.1	56.6	72.8	102.5	129.5	148.3	172.6	183.7	173.5	163.3	132.7	–
		N.m	3.83	5.55	7.14	10.04	12.69	14.54	16.92	18.00	17.00	16.00	13.00	–
	9WHD□-040	kgfcm	–	–	–	–	–	–	–	–	274.2	307.5	295.0	270.0
		N.m	–	–	–	–	–	–	–	–	26.87	30.13	28.91	26.46

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
9BDG*-150FHC	9HC□□	kgfcm	123	164	205	246	328	410	492	656	820	984	1313	1641	1800	1800
		N.m	12.1	16.1	20.1	24.1	32.1	40.2	48.2	64.3	80.4	96.4	129	161	176	176

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

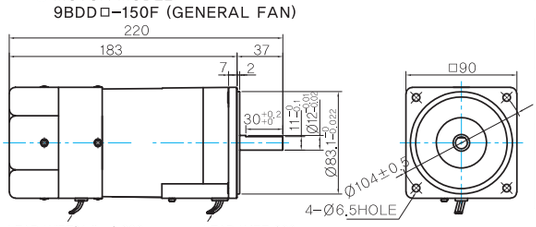
B AC Motors

Brake Motor 150W (□ 90mm)

Dimensions

MOTOR ONLY

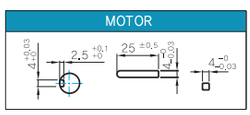
● MOTOR MODEL:
9BDD□-150F (GENERAL FAN)



● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
9BDD□-150F	
KEY TYPE	
9BDK□-150F	

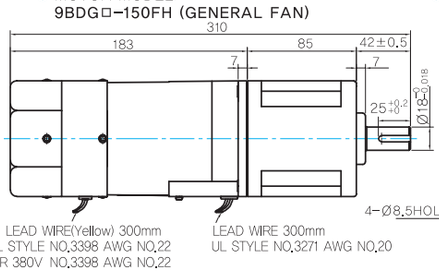
● KEY SPEC



GEARED MOTOR

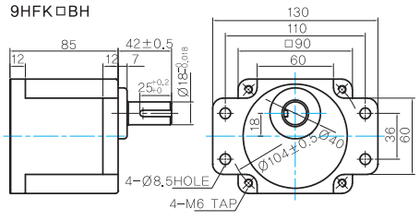
H TYPE GEARBOX

● MOTOR MODEL:
9BDG□-150FH (GENERAL FAN)



● GEARBOX MODEL:
9HBK□BH

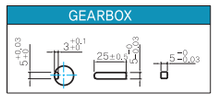
● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

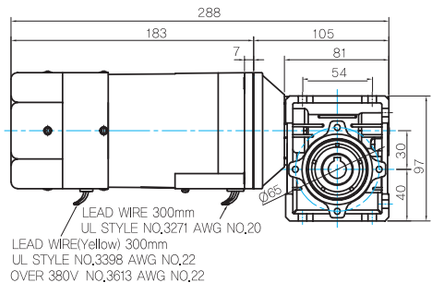
MODEL	SPEC
KEY TYPE	
9HBK□BH 9HFK□BH	

● KEY SPEC

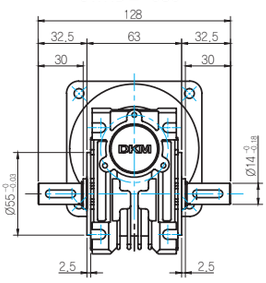


WH TYPE GEARBOX

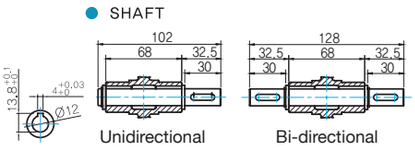
● MOTOR MODEL:
9BDG□-150FWH (GENERAL FAN)



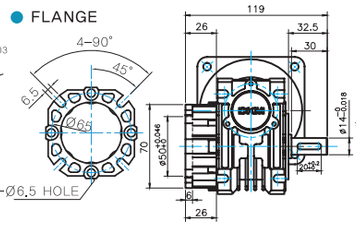
● GEARBOX MODEL:
9WHD□-030



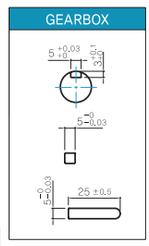
● SHAFT



● FLANGE

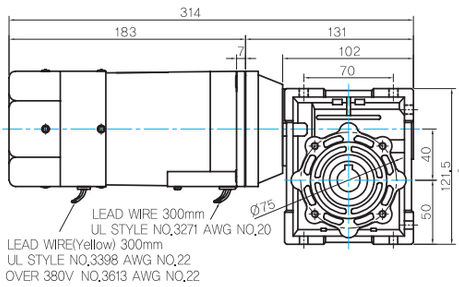


● KEY SPEC

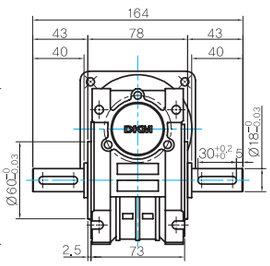


* The output flange and shaft are sold separately

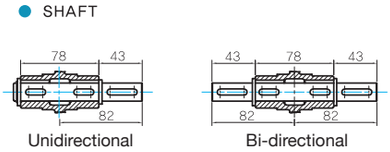
● MOTOR MODEL:
9BDG□-150FWH (GENERAL FAN)



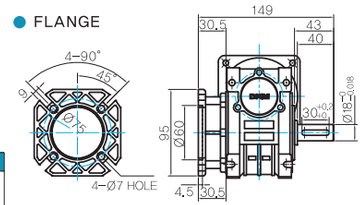
● GEARBOX MODEL:
9WHD□-040



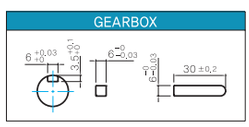
● SHAFT



● FLANGE

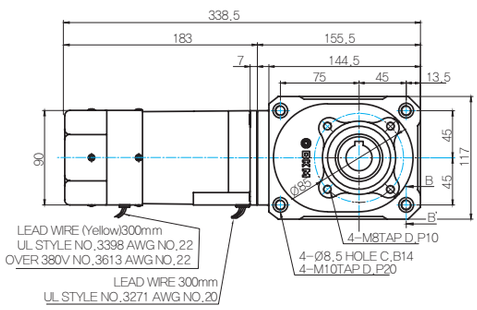


● KEY SPEC

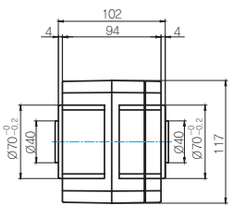


HC TYPE GEARBOX

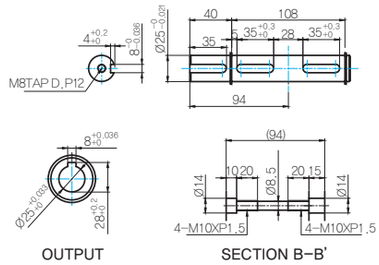
● MOTOR MODEL :
9BDG□-150FHC (GENERAL FAN)



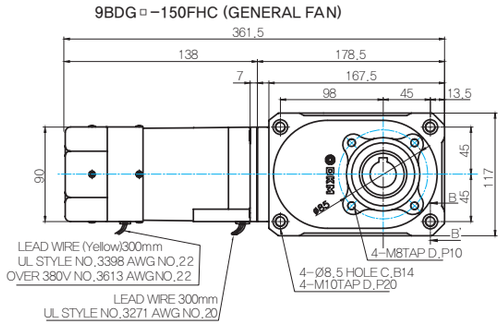
● GEARBOX MODEL:
9HC(15 ~ 60)□



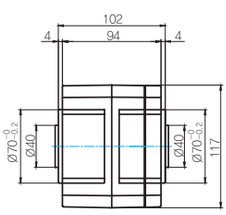
● SHAFT



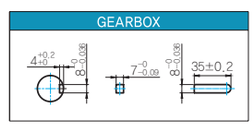
● MOTOR MODEL :
9BDG□-150FHC (GENERAL FAN)



● GEARBOX MODEL :
9HC(80 ~ 240)□



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		3.05
GEAR BOX	9HB(F)K3BH ~ 9HB(F)K10BH	1.62
	9HB(F)K12.5BH ~ 9HB(F)K20BH	1.68
	9HB(F)K25BH ~ 9HB(F)K60BH	1.73
	9HB(F)K75BH ~ 9HB(F)K200BH	1.78
	9WHD□-030	1.2
	9WHD□-040	2.1
	9HC15□	4.05
	9HC20□~9HC60□	4.1
	9HC80□~9HC240□	4.75
	9XD10□□	0.6

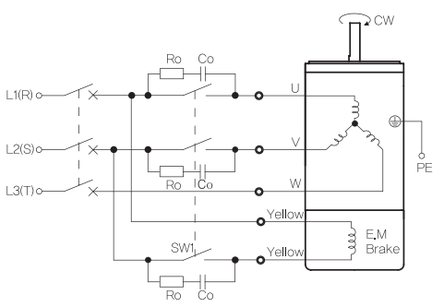
* The output flange and shaft are sold separately

Motor Images

9BDD□-150F	9BDG□-150FH+9HBK□BH	9BDG□-150FH+9HFK□BH	9BDG□-150FWH+9WHD□	9BDG□-150FHC+9HC□□
				

Connection Diagrams

Three Phase



1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) SW1 operates both motor and electromagnetic brake action.
4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

*** CCW Direction:**
Change any two connections between R, S and T.

Switch No.	Specifications	Note
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously

B AC Motors

Brake Motor 180W (□90mm)

# 180W Brake Motor
180W(□90mm)

Motor Specification

Model 9BDG*-180F□ : Gear Type Shaft 9BDD*-180F: D-Cut Type Shaft 9BDK*-180F: Key Type Shaft Lead Wire Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
9BDG1(A)-180F□	180	1ø110	60	4	30min.	7.40	0.740	1600	3.00	10.96	1.096	30.0 / 250
9BDG2(D)-180F□	180	1ø220	60	4	30min.	7.40	0.740	1600	1.50	10.96	1.096	8.0 / 450
9BDGE-180F□	180	1ø220	50	4	30min.	7.00	0.700	1250	1.50	14.03	1.403	8.0 / 450
		1ø240				7.80	0.780	1300	1.60	13.49	1.349	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code A, D, E contain a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9BDG*-180FH	9HBK□BH	kgfcm	26.6	32.0	44.4	53.3	66.6	79.9	88.8	100.0	120.0	144.0	160.0	180.8	217.0	260.4	289.3	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m	2.61	3.13	4.35	5.22	6.52	7.83	8.70	9.80	11.76	14.11	15.68	17.72	21.26	25.51	28.35	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	360	240	180	120	90	72	60	45	36	30	22	18
9BDG*-180FWH	9WHD□-030	kgfcm	38.1	55.2	71.0	99.9	126.2	144.6	168.3	183.7	173.5	163.3	132.7	-
		N.m	3.74	5.41	6.96	9.79	12.37	14.17	16.49	18.00	17.00	16.00	13.00	-
	9WHD□-040	kgfcm	-	-	-	-	-	-	-	-	267.4	299.8	295.0	270.0
		N.m	-	-	-	-	-	-	-	-	26.20	29.38	28.91	26.46

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
9BDG*-180FHC	9HC□□	kgfcm	120	160	200	240	320	400	480	640	800	960	1280	1600	1800	1800
		N.m	11.8	15.7	19.6	23.5	31.4	39.2	47	62.7	78.4	94.1	125	157	176	176

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9BDG*-180FH	9HBK□BH	kgfcm	32.8	39.3	54.6	65.5	81.9	98.3	109.2	123.1	147.7	177.2	196.9	222.5	267.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
	9HFK□BH	N.m	3.21	3.85	5.35	6.42	8.03	9.63	10.71	12.06	14.47	17.37	19.30	21.81	26.17	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	300	200	150	100	75	60	50	38	30	25	18	15
9BDG*-180FWH	9WHD□-030	kgfcm	46.9	68.0	87.4	123.0	155.4	178.0	204.1	183.7	173.5	163.3	132.7	-
		N.m	4.60	6.66	8.56	12.05	15.23	17.45	20.00	18.00	17.00	16.00	13.00	-
	9WHD□-040	kgfcm	-	-	-	-	-	-	-	-	329.1	330.0	295.0	270.0
		N.m	-	-	-	-	-	-	-	-	32.25	32.34	28.91	26.46

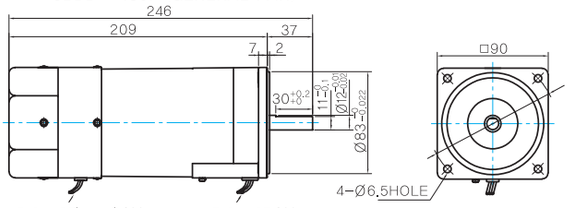
Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
9BDG*-180FHC	9HC□□	kgfcm	148	197	246	295	394	492	591	788	984	1181	1575	1800	1800	1800
		N.m	14.5	19.3	24.1	28.9	38.6	48.2	57.9	77.2	96.4	116	154	176	176	176

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

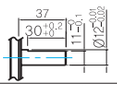
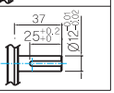
Dimensions

MOTOR ONLY

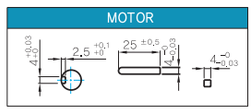
● MOTOR MODEL:
9BDD□-180F (GENERAL FAN)



● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
9BDD□-180F	
KEY TYPE	
9BDK□-180F	

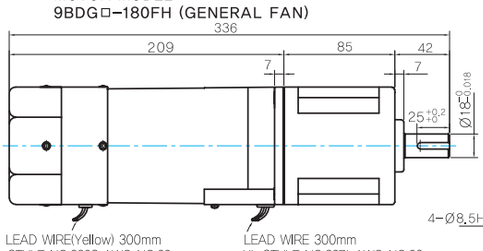
● KEY SPEC



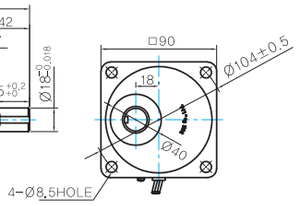
GEARED MOTOR

H TYPE GEARBOX

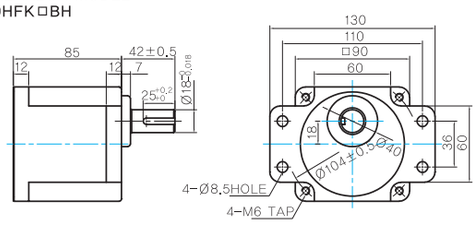
● MOTOR MODEL:
9BDG□-180FH (GENERAL FAN)



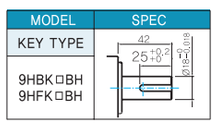
● GEARBOX MODEL:
9HBK□BH



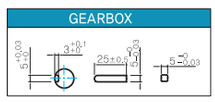
● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

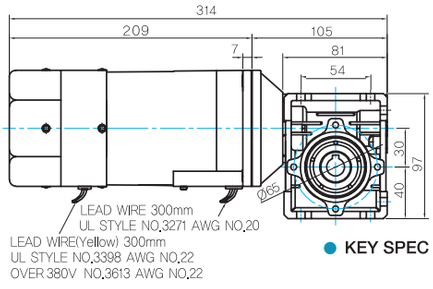
MODEL	SPEC
KEY TYPE	
9HBK□BH 9HFK□BH	

● KEY SPEC



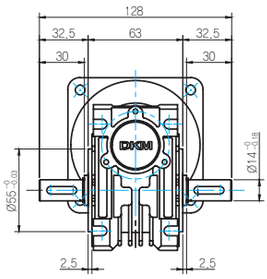
WH TYPE GEARBOX

● MOTOR MODEL:
9BDG□-180FWH (GENERAL FAN)

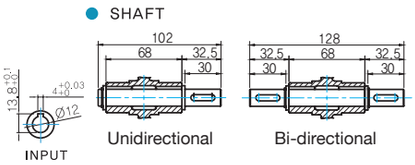


● KEY SPEC

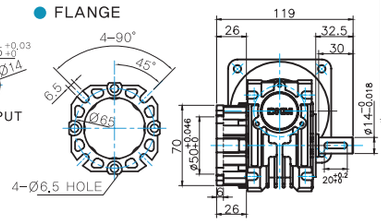
● GEARBOX MODEL:
9WHD□-030



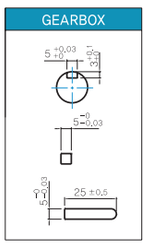
● SHAFT



● FLANGE

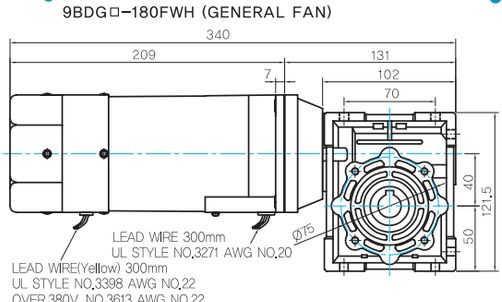


● KEY SPEC

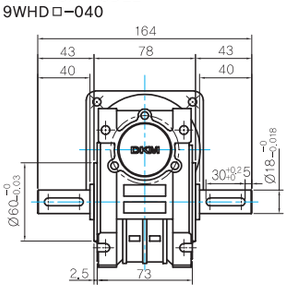


* The output flange and shaft are sold separately

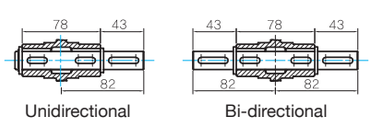
● MOTOR MODEL:
9BDG□-180FWH (GENERAL FAN)



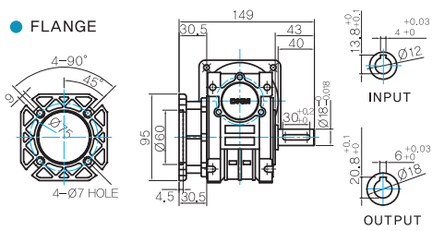
● GEARBOX MODEL:
9WHD□-040



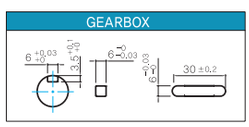
● SHAFT



● FLANGE



● KEY SPEC

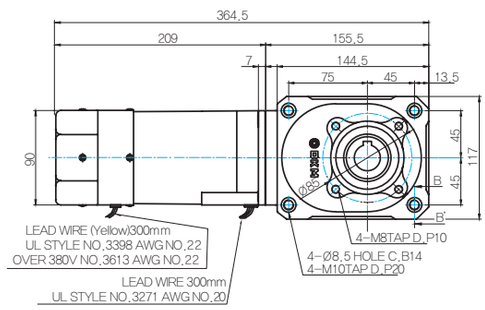


B AC Motors

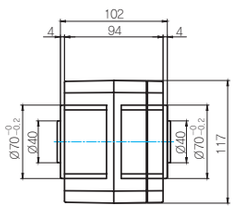
Brake Motor 180W (□90mm)

HC TYPE GEARBOX

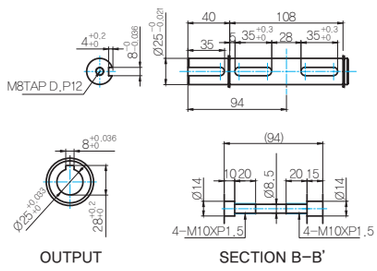
● MOTOR MODEL :
9BDG□-180FHC (GENERAL FA N)



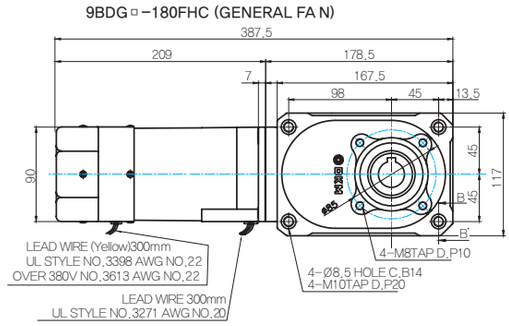
● GEARBOX MODEL:
9HC(15 ~ 60)□



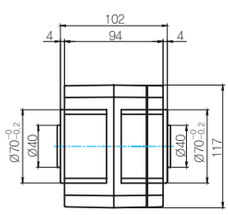
● SHAFT



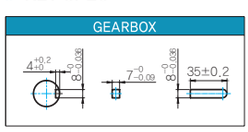
● MOTOR MODEL :
9BDG□-180FHC (GENERAL FA N)



● GEARBOX MODEL :
9HC(80 ~ 240)□



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		4.4
GEAR BOX	9HB(F)K3BH - 9HB(F)K10BH	1.62
	9HB(F)K12.5BH - 9HB(F)K20BH	1.68
	9HB(F)K25BH - 9HB(F)K60BH	1.73
	9HB(F)K75BH - 9HB(F)K200BH	1.78
	9WHD□-030	1.2
	9WHD□-040	2.1
	9HC15□	4.05
	9HC20□~9HC60□	4.1
	9HC80□~9HC240□	4.75
	9XD10□□	0.6

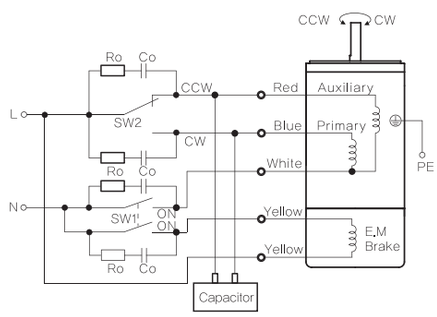
* The output flange and shaft are sold separately

Motor Images

9BDD□-180F	9BDG□-180FH+9HBK□BH	9BDG□-180FH+9HFK□BH	9BDG□-180FWH+9WHD□	9BDG□-180FHC+9HC□□
				

Connection Diagrams

Three Phase



1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) SW1 operates both motor and electromagnetic brake action.
4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2μF, 200WV (400WV)]

*** Rotation Direction:**
To rotate the motor in a clockwise (CW) direction, turn SW2 to CW.
To rotate the motor in a counterclockwise (CCW) direction, turn SW2 to CCW.

Switch No.	Specifications		Note
	Single Phase 110V/115V Input	Single Phase 220V/230V Input	
SW1	AC 125V 3A minimum (Inductive load)	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously
SW2			–

200W Brake Motor 200W(□ 90mm)

Motor Specification

Model 9BDG*-200F□ : Gear Type Shaft 9BDD*-200F: D-Cut Type Shaft 9BDK*-200F: Key Type Shaft Lead Wire Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
9BDG3(G)-200F□	200	3ø 220	50	4	Cont.	36.10	3.610	1300	1.27	14.98	1.498	–
			60			30.10	3.010	1550	1.17	12.57	1.257	
		3ø 230	50	4	Cont.	39.70	3.970	1300	1.33	14.98	1.498	
			60			32.60	3.260	1550	1.21	12.57	1.257	
9BDG4(K)-200F□	200	3ø 380	50	4	Cont.	39.70	3.970	1300	0.74	14.98	1.498	–
			60			31.10	3.110	1550	0.67	12.57	1.257	
		3ø 400	50	4	Cont.	41.20	4.120	1300	0.81	14.98	1.498	
			60			35.10	3.510	1550	0.70	12.57	1.257	
9BDG5(L)-200F□	200	3ø 415	50	4	Cont.	38.40	3.840	1300	0.70	14.98	1.498	–
			60			31.10	3.110	1550	0.62	12.57	1.257	
		3ø 440	50	4	Cont.	42.00	4.200	1300	0.76	14.98	1.498	
			60			34.60	3.460	1550	0.66	12.57	1.257	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code G, K, L contain a built-in thermal protector. 3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	600	500	360	300	240	200	180	144	120	100	90	72	60	50	45	36	30	24	20	18	15	12	10	9
9BDG*-200FH	9HBK□BH 9HFK□BH	kgfcm	30.5	36.6	50.9	61.1	76.3	91.6	101.8	114.7	137.6	165.1	183.5	207.4	248.8	298.6	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
		N.m	2.99	3.59	4.99	5.99	7.48	8.98	9.98	11.24	13.49	16.18	17.98	20.32	24.39	29.26	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	360	240	180	120	90	72	60	45	36	30	22	18
9BDG*-200FWH	9WHD□-030	kgfcm	43.7	63.3	81.4	114.6	144.8	165.9	193.0	183.7	173.5	163.3	132.7	–
		N.m	4.29	6.21	7.98	11.23	14.19	16.26	18.92	18.00	17.00	16.00	13.00	–
	9WHD□-040	kgfcm	–	–	–	–	–	–	–	–	306.7	330.0	295.0	270.0
		N.m	–	–	–	–	–	–	–	–	30.05	32.34	28.91	26.46

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
9BDG*-200FHC	9HC□□	kgfcm	138	183	229	275	367	459	550	734	917	1101	1468	1800	1800	1800
		N.m	13.5	17.9	22.4	27	36	45	53.9	71.9	89.9	108	144	176	176	176

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	40	50	60	75	90	100	120	150	180	200
		r/min	500	417	300	250	200	167	150	120	100	83	75	60	50	42	37.5	30	25	20	17	15	12.5	10	8	7.5
9BDG*-200FH	9HBK□BH 9HFK□BH	kgfcm	36.4	43.7	60.7	72.8	91.0	109.2	121.4	136.7	164.1	196.9	218.8	247.2	296.7	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0	300.0
		N.m	3.57	4.28	5.95	7.14	8.92	10.71	11.89	13.40	16.08	19.30	21.44	24.23	29.08	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40	29.40

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40	50	60	80	100
		r/min	300	200	150	100	75	60	50	38	30	25	18	15
9BDG*-200FWH	9WHD□-030	kgfcm	52.1	75.5	97.1	136.7	172.6	183.7	204.1	183.7	173.5	163.3	132.7	–
		N.m	5.11	7.40	9.52	13.39	16.92	18.00	20.00	18.00	17.00	16.00	13.00	–
	9WHD□-040	kgfcm	–	–	–	–	–	–	–	–	350.0	330.0	295.0	270.0
		N.m	–	–	–	–	–	–	–	–	34.30	32.34	28.91	26.46

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
9BDG*-200FHC	9HC□□	kgfcm	164	219	273	328	438	547	656	875	1094	1313	1750	1800	1800	1800
		N.m	16.1	21.5	26.8	32.1	42.9	53.6	64.3	85.8	107	129	172	176	176	176

1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

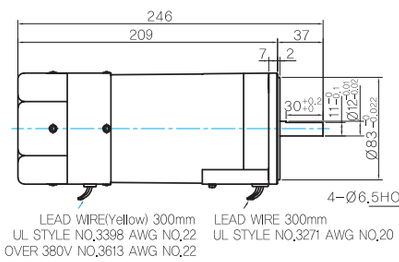
B AC Motors

Brake Motor 200W (□ 90mm)

Dimensions

MOTOR ONLY

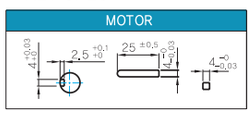
● MOTOR MODEL:
9BDD□-200F (GENERAL FAN)



● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
9BDD□-200F	
KEY TYPE	
9BDK□-200F	

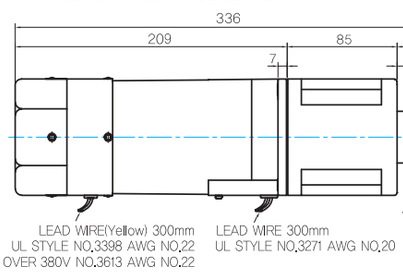
● KEY SPEC



GEARED MOTOR

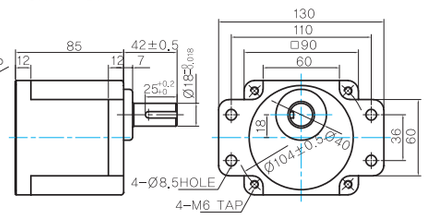
H TYPE GEARBOX

● MOTOR MODEL:
9BDG□-200FH (GENERAL FAN)



● GEARBOX MODEL:
9HBK□BH

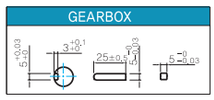
● GEARBOX MODEL:
9HFK□BH



● GEARBOX OUTPUT SHAFT

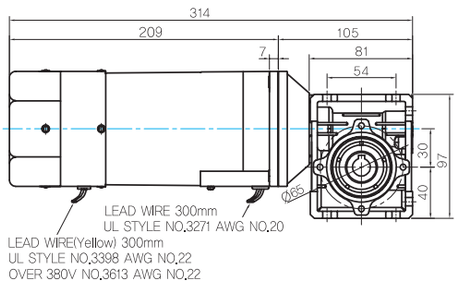
MODEL	SPEC
KEY TYPE	
9HBK□BH 9HFK□BH	

● KEY SPEC

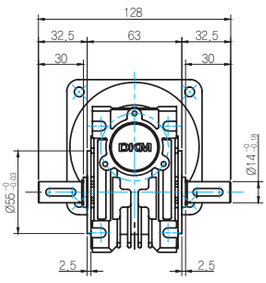


WH TYPE GEARBOX

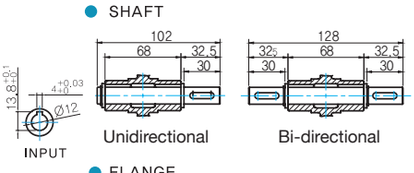
● MOTOR MODEL:
9BDG□-200FWH (GENERAL FAN)



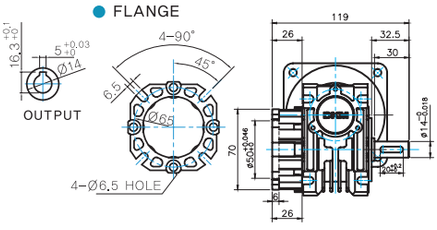
● GEARBOX MODEL:
9WHD□-030



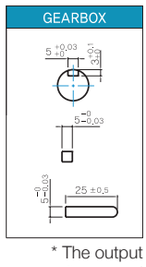
● SHAFT



● FLANGE

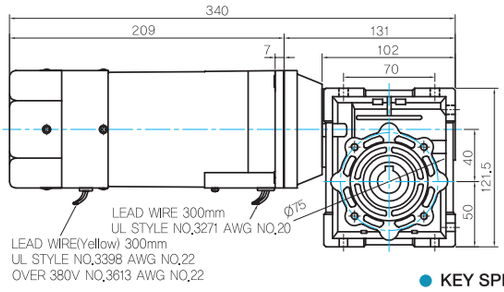


● KEY SPEC

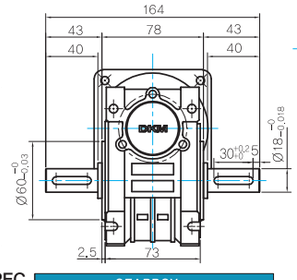


* The output flange and shaft are sold separately

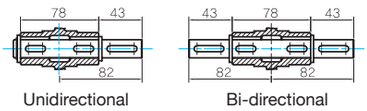
● MOTOR MODEL:
9BDG□-200FWH (GENERAL FAN)



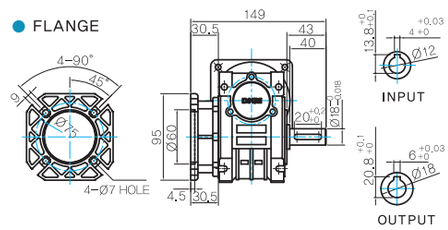
● GEARBOX MODEL:
9WHD□-040



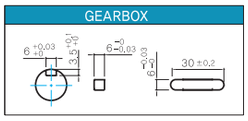
● SHAFT



● FLANGE

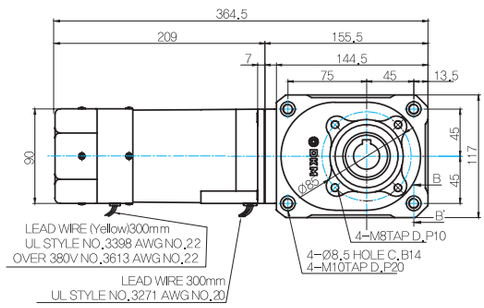


● KEY SPEC

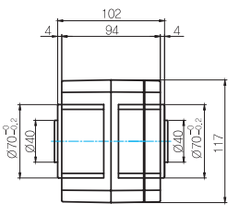


HC TYPE GEARBOX

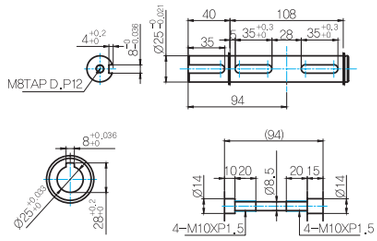
● MOTOR MODEL :
9BDG□-200FHC (GENERAL FAN)



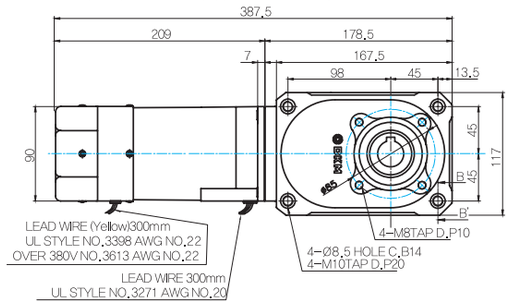
● GEARBOX MODEL:
9HC(15 ~ 60)□



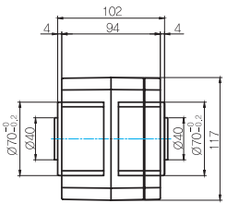
● SHAFT



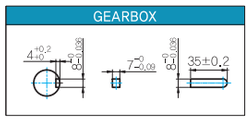
● MOTOR MODEL :
9BDG□-200FHC (GENERAL FAN)



● GEARBOX MODEL :
9HC(80 ~ 240)□



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		4.4
GEAR BOX	9HB(F)K3BH ~ 9HB(F)K10BH	1.62
	9HB(F)K12.5BH ~ 9HB(F)K20BH	1.68
	9HB(F)K25BH ~ 9HB(F)K60BH	1.73
	9HB(F)K75BH ~ 9HB(F)K200BH	1.78
	9WHD□-030	1.2
	9WHD□-040	2.1
	9HC15□	4.05
	9HC20□~9HC60□	4.1
	9HC80□~9HC240□	4.75
	9XD10□□	0.6

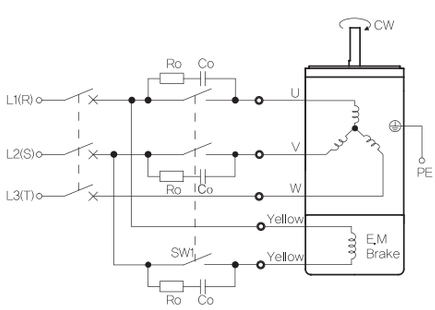
* The output flange and shaft are sold separately

Motor Images

9BDD□-200F	9BDG□-200FH+9HBK□BH	9BDG□-200FH+9HFK□BH	9BDG□-200FWH+9WHD□	9BDG□-200FHC+9HC□□
				

Connection Diagrams

Three Phase



1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) SW1 operates both motor and electromagnetic brake action.
4) The electromagnetic brake will be released and the motor will rotate when SW1 is switched simultaneously to ON. When SW1 is switched simultaneously to OFF, the motor stops immediately with the electromagnetic brake and holds the load.
5) If you wish to release the brake while the motor is stopped, apply voltage between the two brake lead wires (yellow).
6) Ro and Co indicate CR circuit for surge suppression. [Ro=5~200Ω, Co=0.1~0.2㎌, 200WV (400WV)]

*** CCW Direction:**
Change any two connections between R, S and T.

Switch No.	Specifications	Note
SW1	AC 250V 1.5A minimum (Inductive load)	Switched Simultaneously

Brake Motor 250W (□104mm)

# 250W Brake Motor
250W(□104mm)

Motor Specification

Model 10BDGE-250F□-T: Gear Type Shaft 10BDDE-250F-T: D-Cut Type Shaft 10BDKE-250F-T: Key Type Shaft Terminal Box Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm N.m		Rated Load Speed r/min	Rated Load Current A	Rated Load Torque kgfcm	Rated Load Torque N.m	Capacitor μF / VAC
10BDKE-250F□-T	250	1ø220	50	4	30min.	11.00	1.100	1250	2.29	19.48	1.948	13.0 / 450
		1ø240				13.50	1.350	1300	2.17	18.74	1.874	

1) Enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code E contains a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.

Max. Permissible Torque at Output Shaft of Gearbox

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	5	9	10	15	20	25	30	40	50	60	90	100	120	150	180
		r/min	500	300	167	150	100	75	60	50	37.5	30	25	16.7	15	12.5	10	8.3
10BDGE-250FU-T	10UBK□BH	kgfcm	50.0	80.0	145.0	150.0	220.0	270.0	335.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0	400.0
		N.m	4.90	7.84	14.21	14.70	21.56	26.46	32.83	39.20	39.20	39.20	39.20	39.20	39.20	39.20	39.20	39.20

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40
		r/min	300	200	150	100	75	60	50	38
10BDKE-250F-T	10WHD□-040	kgfcm	70.0	100.0	130.0	185.0	240.0	290.0	325.0	305.0
		N.m	6.86	9.80	12.74	18.13	23.52	28.42	31.85	29.89

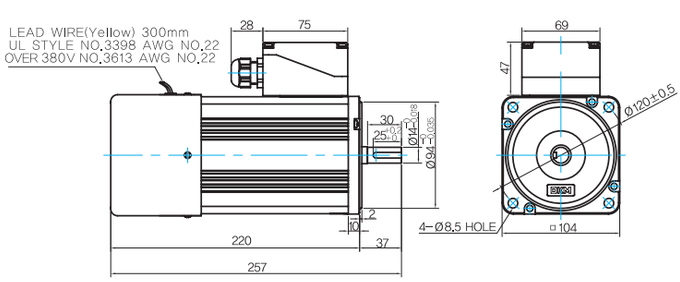
Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
10BDGE-250FHC-T	10HC□□	kgfcm	213	284	356	427	569	711	853	1138	1422	1706	2275	2844	3000	3000
		N.m	20.9	27.8	34.9	41.8	55.8	69.7	83.6	112	139	167	223	279	294	294

1) Enter the gear ratio in the box (□) within the gearbox model name.
2) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
3) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

Dimensions

MOTOR ONLY

● MOTOR MODEL:
10BDKE-250F-T



● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
KEY TYPE	

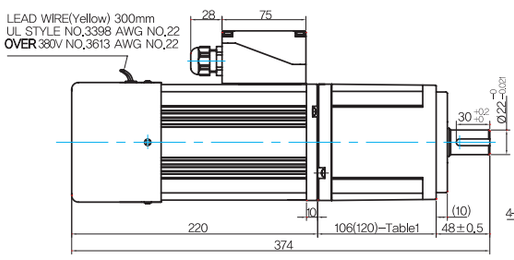
● KEY SPEC

MOTOR

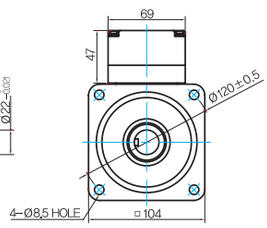
GEARED MOTOR

U TYPE GEARBOX

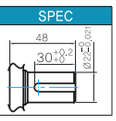
● MOTOR MODEL:
10BDGE-250FU-T



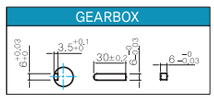
● GEARBOX MODEL:
10UBK □ BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

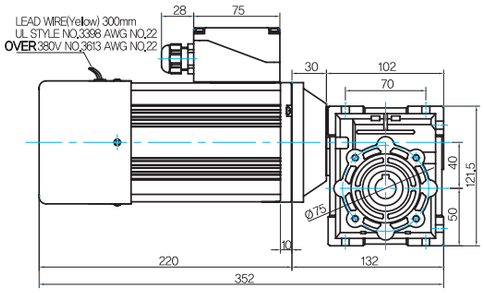
GEARBOX


● 106(120)-Table1

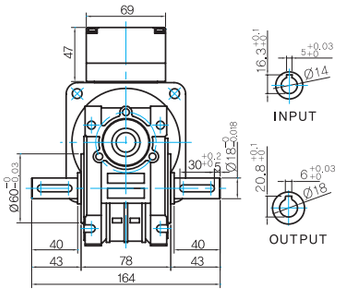
SIZE(mm)	GEAR RATIO
106	10UBK3BH – 10UBK60BH
120	10UBK90BH – 10UBK180BH

WH TYPE GEARBOX

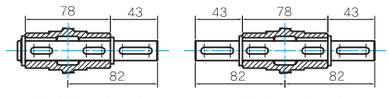
● MOTOR MODEL:
10BDKE-250F-T



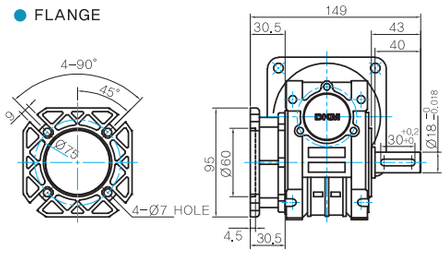
● GEARBOX MODEL:
10WHD □ -040



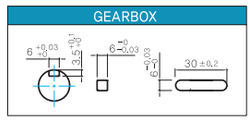
● SHAFT



● FLANGE

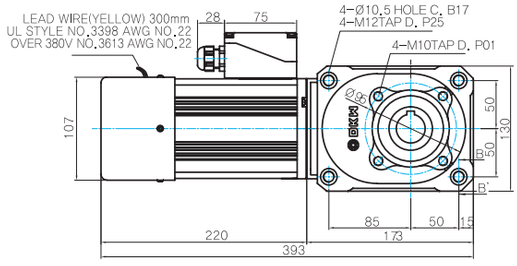


● KEY SPEC

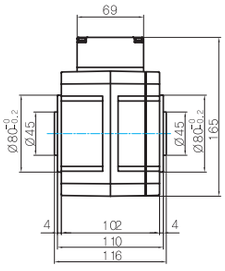
GEARBOX


HC TYPE GEARBOX

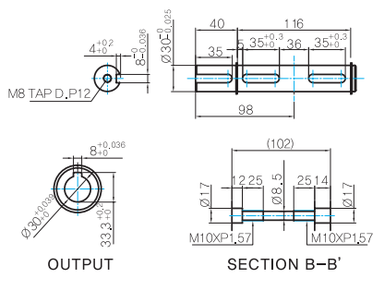
● GEARBOX MODEL :
10BDGE-250FHC-T (GENERAL FAN)



● GEARBOX MODEL :
10HC(15 ~ 60) □



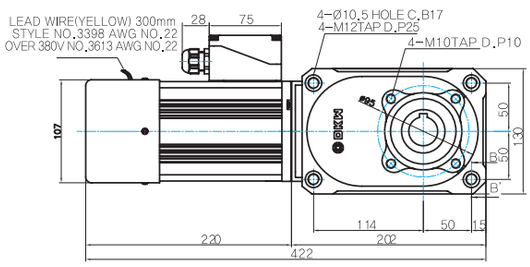
● SHAFT



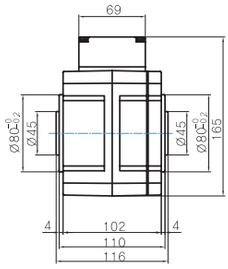
B AC Motors

Brake Motor 250W (□104mm)

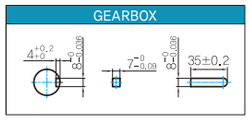
● GEARBOX MODEL :
10BDGE-250FHC-T (GENERAL FAN)



● GEARBOX MODEL :
10HC(80 ~ 240)□



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		7.1
GEAR BOX	10UBK3BH ~ 10UBK9BH	2.0
	10UBK10BH ~ 10UBK15BH	2.15
	10UBK20BH ~ 10UBK60BH	2.3
	10UBK90BH ~ 10UBK180BH	2.5
	10WHD□-040	2.2
	10HC15□	5.5
	10HC20□ ~ 10HC60□	5.6
	10HC80□ ~ 10HC240□	6.4

* The output flange and shaft are sold separately

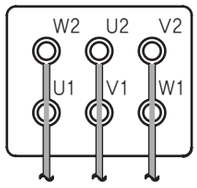
Motor Images

10BDKE-250F-T	10BDGE-250FU-T + 10UBK□BH	10BDKE-250F-T + 10WHD□-040	10BDG□-250FHC-T+10HC□□
			

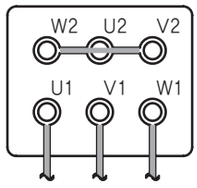
Connection Diagrams

Terminal Box

1ø 220~240V
3ø 220V, 230V, 440V

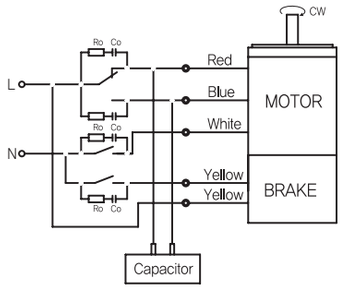


3ø 380V, 400V

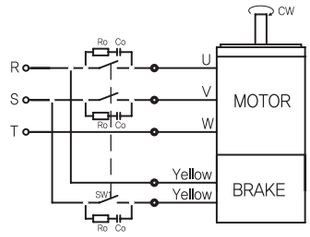


Brake Motor

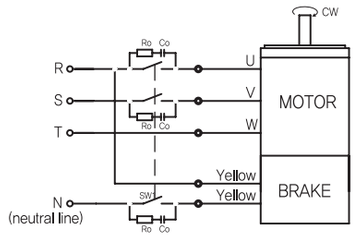
1ø



3ø 220~230V



3ø 380~440V



1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) The supply voltage for brakes is 220V.

# 300W Brake Motor
300W(□ 104mm)

Motor Specification

Model 10BDG*-300F□-T: Gear Type Shaft 10BDD*-300F-T: D-Cut Type Shaft 10BDK*-300F-T: Key Type Shaft Terminal Box Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm	 N.m	Rated Load Speed r/min	 Current A	 Torque kgfcm	 N.m	Capacitor μF / VAC
10BDGD-300F□-T	300	1Ø 220	60	4	30min.	13.60	1.360	1600	2.52	18.27	1.827	15.0 / 450
10BDG7-300F□-T	300	3Ø 230	50	4	30min.	47.00	4.793	1300	1.70	22.48	2.248	–
		3Ø 400				47.00	4.793	1300	1.01	22.48	2.248	
10BDG8-300F□-T	300	3Ø 440	50	4	30min.	47.00	4.793	1300	0.88	22.48	2.248	–
			60			35.00	3.500	1550	0.88	18.86	1.886	

1) Enter the phase & voltage code in the place * and enter the model type of attaching gearbox in the box (□) within the motor model name.
2) The phase & voltage code D contains a built-in thermal protector.
3) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	5	9	10	15	20	25	30	40	50	60	90	100	120	150	180
		r/min	600	360	200	180	120	90	72	60	45	36	30	20	18	15	12	10
10BDG*-300FU-T	10UBK□ BH	kgfcm	45.0	75.0	135.0	140.0	205.0	250.0	300.0	300.0	350.0	350.0	400.0	400.0	400.0	400.0	400.0	400.0
		N.m	4.41	7.35	13.23	13.72	20.09	24.50	29.40	29.40	34.30	34.30	39.20	39.20	39.20	39.20	39.20	39.20

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40
		r/min	360	240	180	120	90	72	60	45
10BDK*-300FU-T	10WHD□-040	kgfcm	65.0	95.0	125.0	175.0	225.0	270.0	300.0	285.0
		N.m	6.37	9.31	12.25	17.15	22.05	26.46	29.40	27.93

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
10BDG*-300FHC-T	10HC□□	kgfcm	200	267	333	400	533	667	800	1067	1333	1600	2133	2666	3000	3000
		N.m	19.6	26.2	32.6	39.2	52.2	65.4	78.4	105	131	157	209	261	294	294

50Hz

Motor Model	Gearbox Model	Gear Ratio	3	5	9	10	15	20	25	30	40	50	60	90	100	120	150	180
		r/min	500	300	167	150	100	75	60	50	37.5	30	25	16.7	15	12.5	10	8.3
10BDG*-300FU-T	10UBK□ BH	kgfcm	55.0	95.0	170.0	170.0	250.0	300.0	300.0	300.0	350.0	350.0	400.0	400.0	400.0	400.0	400.0	400.0
		N.m	5.39	9.31	16.66	16.66	24.50	29.40	29.40	29.40	34.30	34.30	39.20	39.20	39.20	39.20	39.20	39.20

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40
		r/min	300	200	150	100	75	60	50	37.5
10BDK*-300F-T	10WHD□-040	kgfcm	80.0	115.0	150.0	215.0	275.0	335.0	375.0	350.0
		N.m	7.84	11.27	14.70	21.07	26.95	32.83	36.75	34.30

Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	100	75	60	50	37.5	30	25	18.8	15	12.5	9.4	7.5	6.7	6.3
10BDG*-300FHC-T	10HC□□	kgfcm	246	328	410	492	656	820	984	1313	1641	1969	2625	3000	3000	3000
		N.m	24.1	32.1	40.2	48.2	64.3	80.4	96.4	129	161	193	257	294	294	294

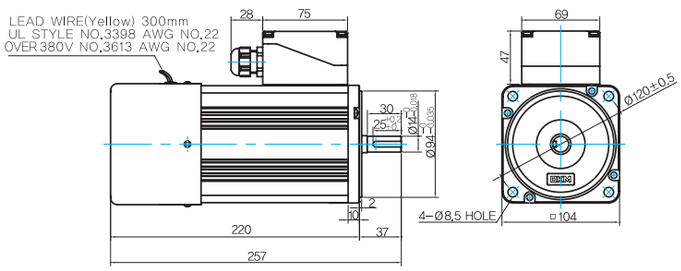
1) Enter the phase & voltage code in the place * within the motor model name. 2) Enter the gear ratio in the box (□) within the gearbox model name.
3) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
4) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

Brake Motor 300W (□104mm)

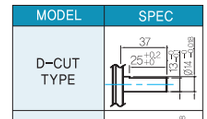
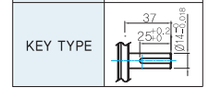
Dimensions

MOTOR ONLY

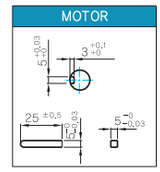
● MOTOR MODEL:
10BDK□-300F-T



● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
KEY TYPE	

● KEY SPEC

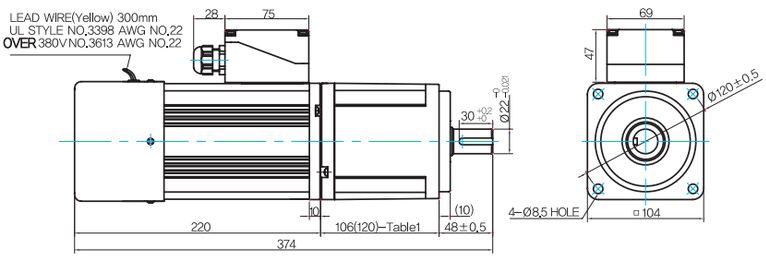
MOTOR


GEARED MOTOR

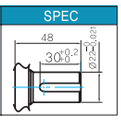
U TYPE GEARBOX

● MOTOR MODEL:
10BDG□-300FU-T

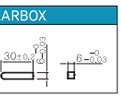
● GEARBOX MODEL:
10UBK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

GEARBOX


● 106(120)-Table1

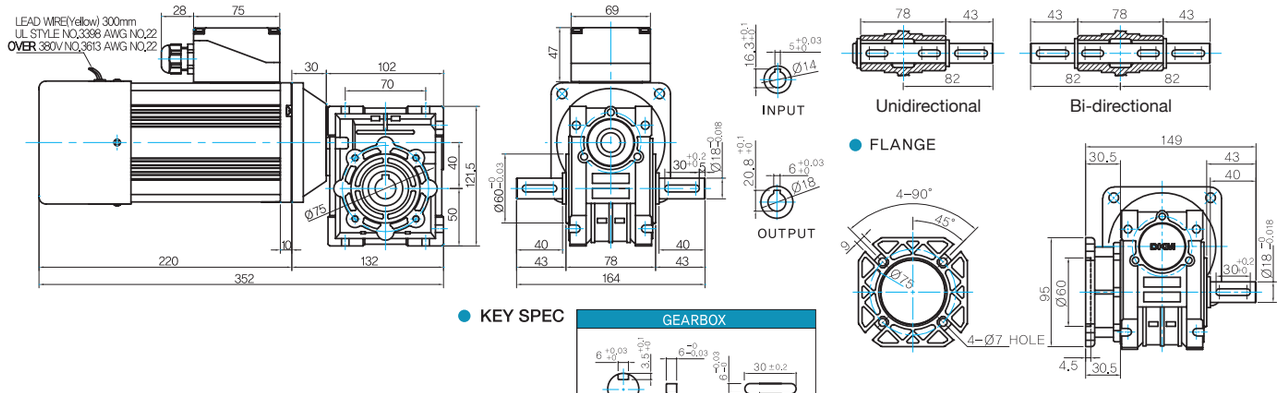
SIZE(mm)	GEAR RATIO
106	10UBK3BH – 10UBK60BH
120	10UBK90BH – 10UBK180BH

WH TYPE GEARBOX

● MOTOR MODEL:
10BDK□-300F-T

● GEARBOX MODEL:
10WHD□-040

● SHAFT



● FLANGE

● KEY SPEC

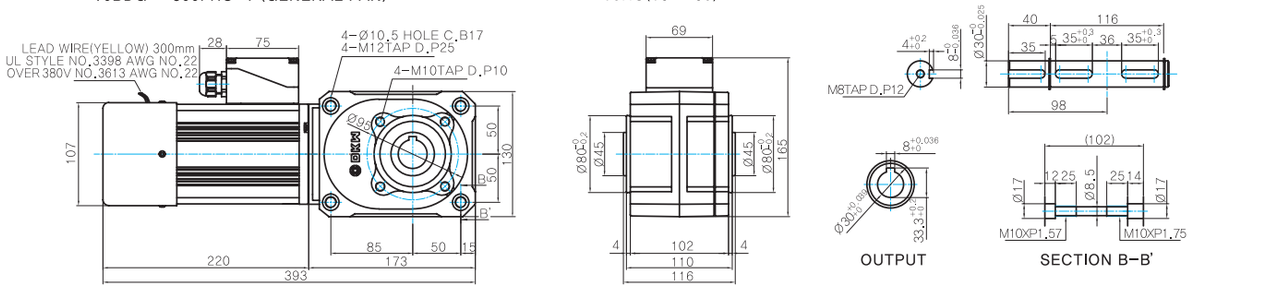
GEARBOX

HC TYPE GEARBOX

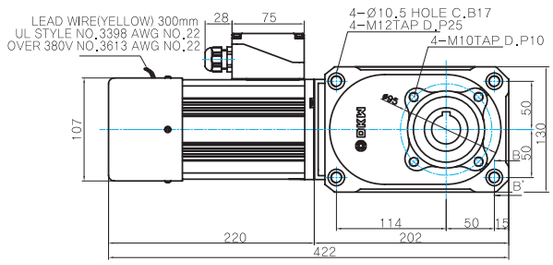
● GEARBOX MODEL :
10BDG□-300FHC-T (GENERAL FAN)

● GEARBOX MODEL :
10HC(15 ~ 60)□

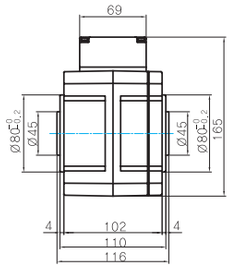
● SHAFT



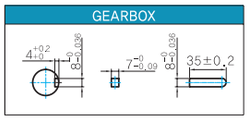
● GEARBOX MODEL :
10BDG□-300FHC-T (GENERAL FAN)



● GEARBOX MODEL :
10HC(80 ~ 240)□



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		7.1
GEAR BOX	10UBK3BH ~ 10UBK9BH	2.0
	10UBK10BH ~ 10UBK15BH	2.15
	10UBK20BH ~ 10UBK60BH	2.3
	10UBK90BH ~ 10UBK180BH	2.5
	10WHD□-040	2.2
	10HC15□	5.5
	10HC20□ ~ 10HC60□	5.6
	10HC80□ ~ 10HC240□	6.4

* The output flange and shaft are sold separately

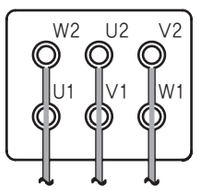
Motor Images

10BDK□-300F-T	10BDG□-300FU-T + 10UBK□BH	10BDK□-300F-T + 10WHD□-040	10BDG□-300FHC-T+10HC□□
			

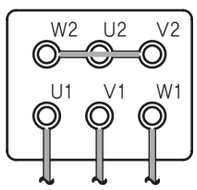
Connection Diagrams

Terminal Box

1ø 220~240V
3ø 220V, 230V, 440V

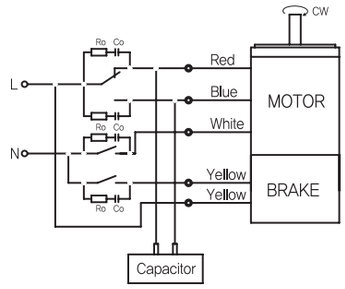


3ø 380V, 400V

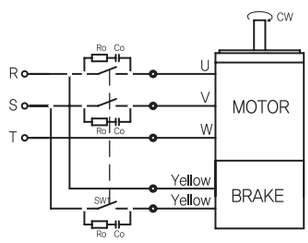


Brake Motor

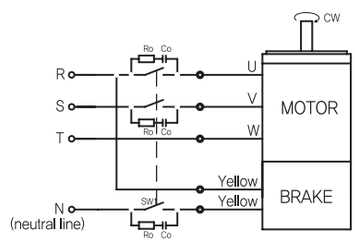
1ø



3ø 220~230V



3ø 380~440V



1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) The supply voltage for brakes is 220V.

Brake Motor 400W (□104mm)

# 400W Brake Motor
400W(□104mm)

Motor Specification

Model 10BDG6-400F□-T: Gear Type Shaft 10BDD6-400F-T: D-Cut Type Shaft 10BDK6-400F-T: Key Type Shaft Terminal Box Type	Output W	Voltage V	Frequency Hz	Poles	Duty	Starting Torque kgfcm N.m		Rated Load Speed r/min	Rated Load Current A	Rated Load Torque kgfcm	Rated Load Torque N.m	Capacitor μF / VAC
10BDG6-400F□-T	400	3Ø 220	60	4	30min.	47.00	4.793	1600	2.10	24.35	2.435	–
		3Ø 380				47.00	4.793	1600	1.21	24.35	2.435	

1) Enter the model type of attaching gearbox in the box (□) within the moto r model name.
2) Gear Type Shaft is for attaching a gearbox and D-Cut Type Shaft is for using the motor only.
※ It is not possible to use an inverter for three phase 380~440V motor. When the inverter is used, the insulation of winding coil becomes hot and may cause damage to the motor.

Max. Permissible Torque at Output Shaft of Gearbox

60Hz

Motor Model	Gearbox Model	Gear Ratio	3	5	9	10	15	20	25	30	40	50	60	90	100	120	150	180
		r/min	600	360	200	180	120	90	72	60	45	36	30	20	18	15	12	10
10BDG6-400FU-T	10UBK□BH	kgfcm	60.0	100.0	180.0	185.0	275.0	300.0	300.0	300.0	350.0	350.0	400.0	400.0	400.0	400.0	400.0	400.0
		N.m	5.88	9.80	17.64	18.13	26.95	29.40	29.40	29.40	34.30	34.30	39.20	39.20	39.20	39.20	39.20	39.20

Motor Model	Gearbox Model	Gear Ratio	5	7.5	10	15	20	25	30	40
		r/min	360	240	180	120	90	72	60	45
10BDK6-400F-T	10WHD□-040	kgfcm	85.0	125.0	160.0	230.0	295.0	355.0	395.0	375.0
		N.m	8.33	12.25	15.68	22.54	28.91	34.79	38.71	36.75

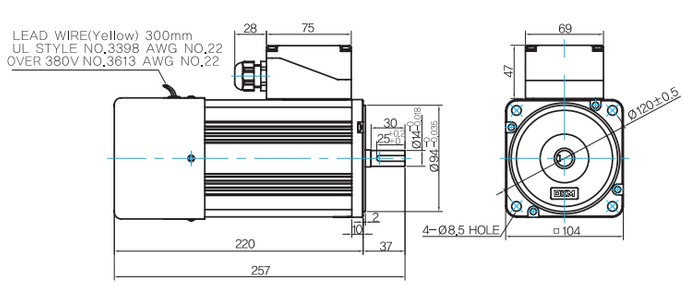
Motor Model	Gearbox Model	Gear Ratio	15	20	25	30	40	50	60	80	100	120	160	200	225	240
		r/min	120	90	72	60	45	36	30	22.5	18	15	11.3	9	8	7.5
10BDG*-400FHC-T	10HC□□	kgfcm	267	356	444	533	711	889	1067	1422	1778	2133	2844	3000	3000	3000
		N.m	26.2	34.9	43.5	52.2	69.7	87.1	105	139	174	209	279	294	294	294

1) Enter the gear ratio in the box (□) within the gearbox model name.
2) A colored background indicates the gear shaft rotation in the same direction as the motor shaft; a white background indicates the rotation in the opposite direction.
3) The rotating speed is calculated by dividing the motor's synchronous speed (50Hz: 1,500r/min, 60Hz: 1,800r/min) by the gear ratio. The actual speed is 2~20% less than the displayed value, depending on the size of the load.

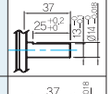
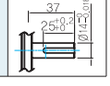
Dimensions

MOTOR ONLY

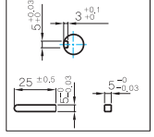
● MOTOR MODEL:
10BDK6-400F-T



● MOTOR OUTPUT SHAFT

MODEL	SPEC
D-CUT TYPE	
KEY TYPE	

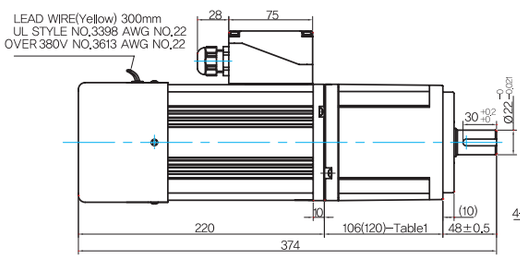
● KEY SPEC

MOTOR


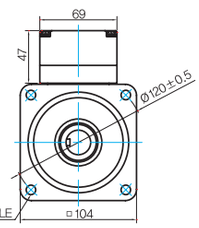
GEARED MOTOR

U TYPE GEARBOX

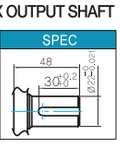
● MOTOR MODEL:
10BDG6-400FU-T



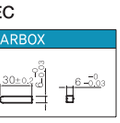
● GEARBOX MODEL:
10UBK□BH



● GEARBOX OUTPUT SHAFT

MODEL	SPEC
KEY TYPE	

● KEY SPEC

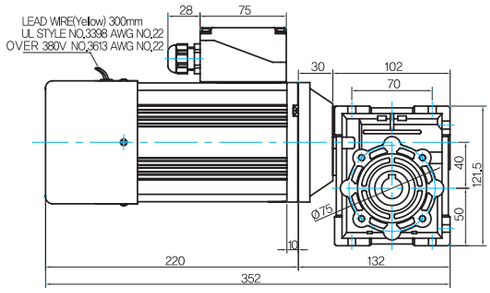
GEARBOX


● 106(120)-Table1

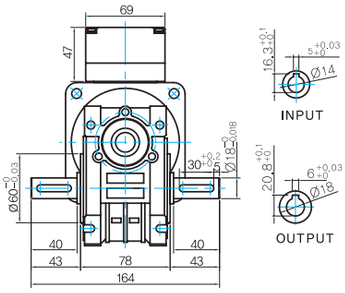
SIZE(mm)	GEAR RATIO
106	10UBK3BH – 10UBK60BH
120	10UBK90BH – 10UBK180BH

WH TYPE GEARBOX

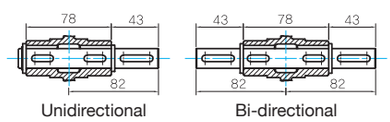
● MOTOR MODEL:
10BDK6-400F-T



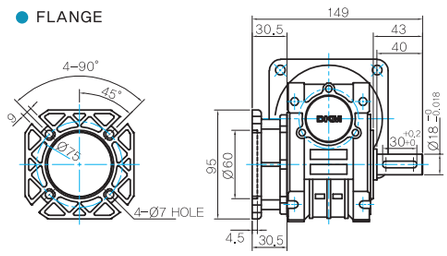
● GEARBOX MODEL:
10WHD□-040



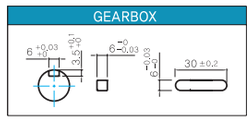
● SHAFT(Unidirectional, Bi-directional)



● FLANGE

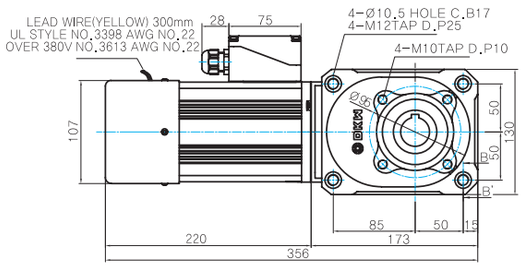


● KEY SPEC

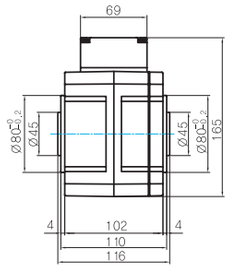
GEARBOX


HC TYPE GEARBOX

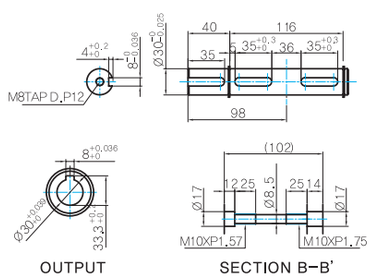
● GEARBOX MODEL :
10BDG6-400FHC-T (GENERAL FAN)



● GEARBOX MODEL :
10HC(15 ~ 60)□



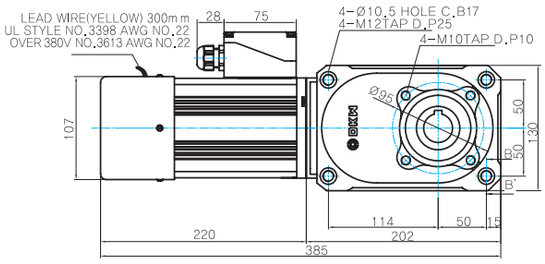
● SHAFT



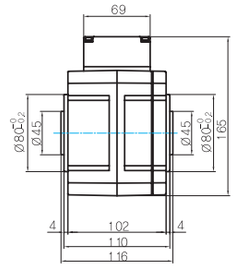
B AC Motors

Brake Motor 400W (□104mm)

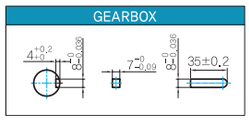
● GEARBOX MODEL:
10BDG6-400FHC-T (GENERAL FAN)



● GEARBOX MODEL:
10HC(80 ~ 240□)



● KEY SPEC



WEIGHT

PART		WEIGHT(Kg)
MOTOR		7.1
GEAR BOX	10UBK3BH ~ 10UBK9BH	2.0
	10UBK10BH ~ 10UBK15BH	2.15
	10UBK20BH ~ 10UBK60BH	2.3
	10UBK90BH ~ 10UBK180BH	2.5
	10WHD□-040	2.2
	10HC15□	5.5
	10HC20□ ~ 10HC60□	5.6
	10HC80□ ~ 10HC240□	6.4

* The output flange and shaft are sold separately

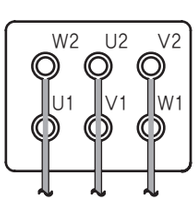
Motor Images

10BDK6-400F-T	10BDG6-400FU-T + 10UBK□BH	10BDK6-400F-T + 10WHD□-040	10BDG6-400FHC-T+10HC□□
			

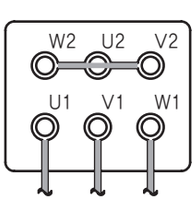
Connection Diagrams

Terminal Box

1ø 220~240V
3ø 220V, 230V, 440V

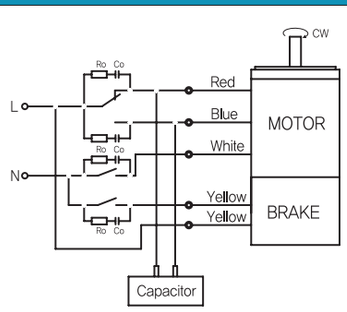


3ø 380V, 400V

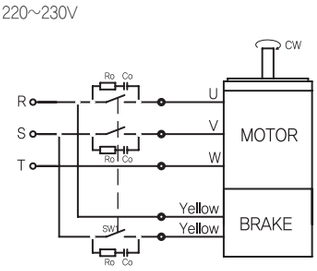


Brake Motor

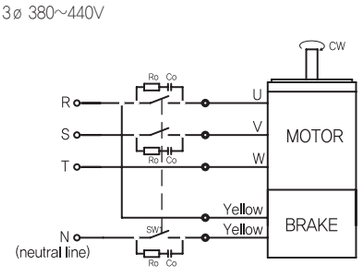
1ø



3ø 220~230V



3ø 380~440V



1) The direction of motor rotation is as viewed from the shaft end of the motor.
2) CW represents the clockwise direction, while CCW represents the counterclockwise direction.
3) The supply voltage for brakes is 220V.

Ott Antriebstechnik
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Damit können komplette Systemlösungen nach Ihren Aufgabenstellungen projektiert und gefertigt werden. Um die optimale Lösung für jedes Projekt zu erarbeiten, stehen unsere erfahrenen und langjährigen Vertriebsingenieure mit kompetentem Fachwissen jederzeit zur Verfügung.

Unser Vorgehen: Wir informieren uns über Ihre Anforderungen, wählen mit Ihrer Entwicklungsabteilung die passenden Antriebe und Steuerungen aus und erarbeiten wirtschaftliche Systemlösungen.

Gemäß dem Slogan „Standardisierte Individualität" wird wo möglich eine Standard- und wo nötig eine individuelle Lösung erarbeitet.

Kataloge entdecken

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