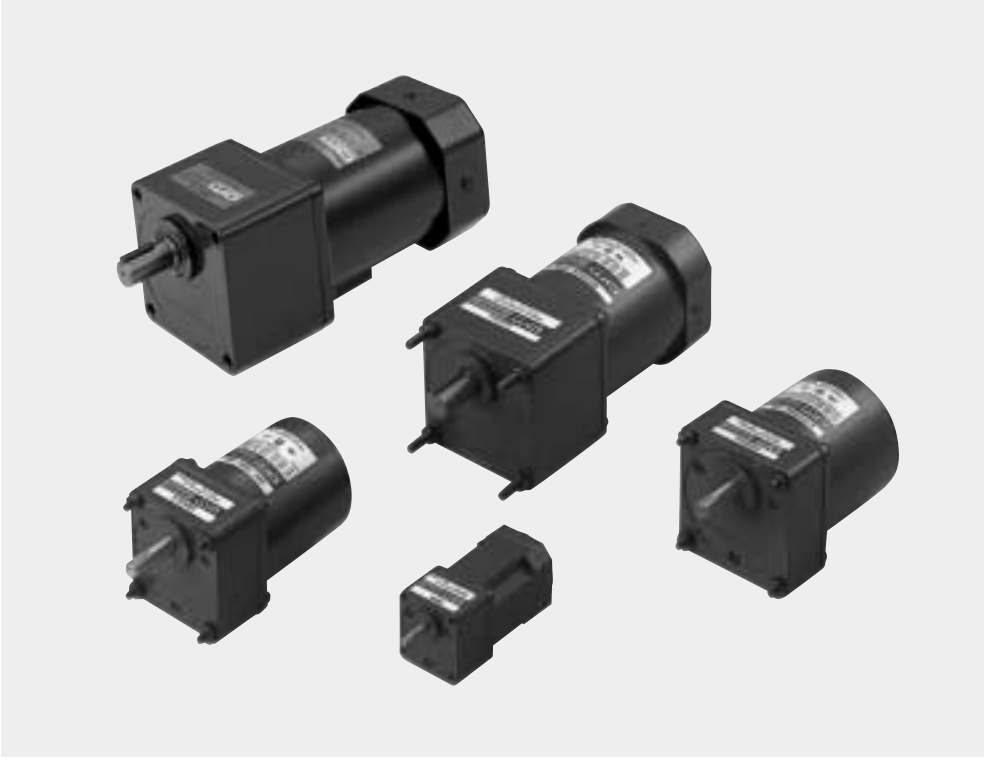
ORIENTAL MOTOR GENERAL CATALOG

A



Induction Motors
Reversible Motors
Synchronous Motors
Torque Motors

Product Number Code

■ Motor

5 I K 40 GN - AW T U

Motor Frame Size
2: 2.36 inch sq.(60mm sq.)
3: 2.76 inch sq.(70mm sq.)
4: 3.15 inch sq.(80mm sq.)
5: 3.54 inch sq.(90mm sq.)

Motor Type
I : Induction motor
R: Reversible motor

Motor Series
K: K series

Output Power
Example
40: 40W

Motor Shaft Type
GN: Pinion shaft
(for use with **GN**-type gearhead)
GU: Pinion shaft
(for use with **GU**-type gearhead)
A : Round shaft

Voltage and No. of Poles
AW: Single-Phase 100V/110V/115V, 4 Poles
CW: Single-Phase 200V/220V/230V, 4 Poles
SW: Three-Phase 200V/220V/230V, 4 Poles

T: Terminal Box Type

U: With capacitor for 110V/115V
E: With capacitor for 220V/230V
None: Three-Phase type

Note : The "**U**" and "**E**" at the end of the model name (ordering name)indicate that the unit includes a capacitor. These two letters are not inscribed on the motor nameplate.

■ Gearhead

5 GN 50 KA

Gearhead Frame Size
0: 1.67 inch sq.(42mm sq.)
2: 2.36 inch sq.(60mm sq.)
3: 2.76 inch sq.(70mm sq.)
4: 3.15 inch sq.(80mm sq.)
5: 3.54 inch sq.(90mm sq.)

Gearhead Type
GN: **GN** type
(for use with **GN**-type pinion shaft motor)
GB: **GB** type
(for use with **GB**-type pinion shaft motor)
GU: **GU** type
(for use with **GU**-type pinion shaft motor)

Gear Ratio
Example
50: Gear ratio of 50:1
10X denotes the decimal gearhead of gear ratio 10:1

RH: Hollow shaft

Type of Bearings and Shaft Size etc.
KA: Ball bearing type and inch-sized output shaft
RAA: Right angle gearhead and inch-sized output shaft

5 I K 60 R GU - A F UL

Motor Frame Size
0: 1.67 inch sq.(42mm sq.)
2: 2.36 inch sq.(60mm sq.)
3: 2.76 inch sq.(70mm sq.)
4: 3.15 inch sq.(80mm sq.)
5: 3.54 inch sq.(90mm sq.)

Motor Type
I: Induction motor
R: Reversible motor
S: Reaction synchronous motor
T: Torque motor

Motor Series
K: K series
J: J series

Output Power
Example
60: 60W

Letter "**R**" is inserted for speed control motor used with component package type.

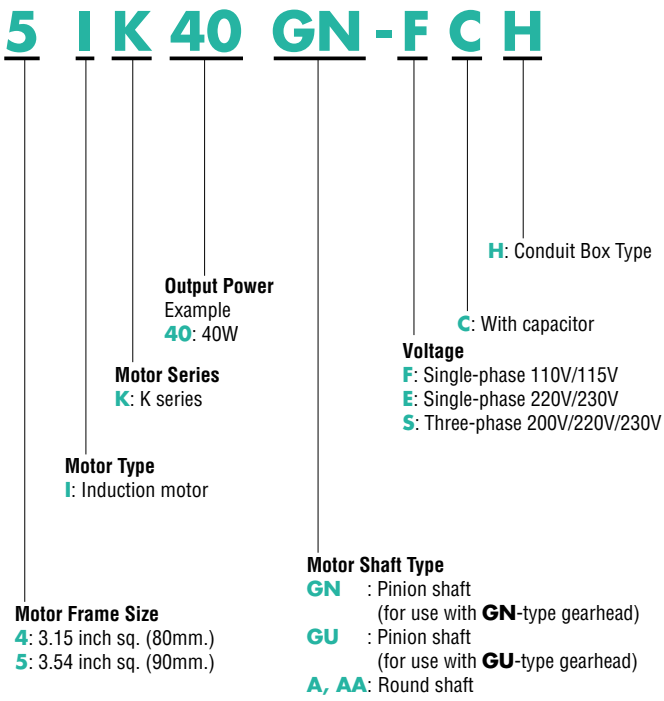
Motor Shaft Type
GN: Pinion shaft
(for use with **GN**-type gearhead)
GB: Pinion shaft
(for use with **GB**-type gearhead)
GU: Pinion shaft
(for use with **GU**-type gearhead)
A: Round shaft

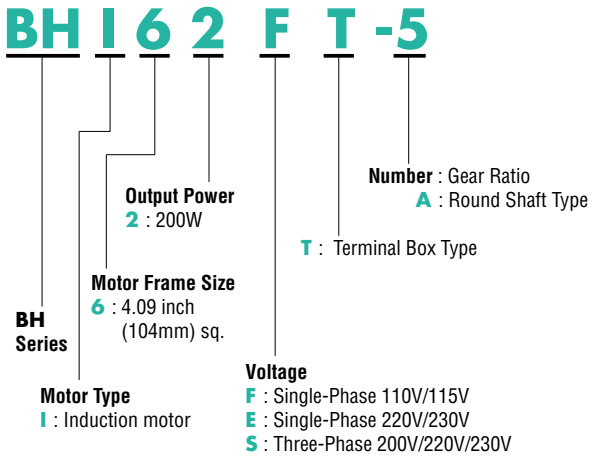
Voltage and No. of Poles
A: Single-Phase 115V, 4 Poles
B: Single-Phase 115V, 2 Poles

F: With built-in cooling fan

UL: UL recognized and CSA, VDE certified

■ Motor


5 I K 40 GN - F C H
H: Conduit Box Type
Output Power
Example
40: 40W
C: With capacitor
Motor Series
K: K series
Voltage
F: Single-phase 110V/115V
E: Single-phase 220V/230V
S: Three-phase 200V/220V/230V
Motor Type
I: Induction motor
Motor Shaft Type
GN : Pinion shaft
(for use with GN-type gearhead)
GU : Pinion shaft
(for use with GU-type gearhead)
A, AA: Round shaft
Motor Frame Size
4: 3.15 inch sq. (80mm.)
5: 3.54 inch sq. (90mm.)


BH I 6 2 F T -5
Number : Gear Ratio
A : Round Shaft Type
Output Power
2 : 200W
T : Terminal Box Type
Motor Frame Size
6 : 4.09 inch
(104mm) sq.
BH
Series
Voltage
F : Single-Phase 110V/115V
E : Single-Phase 220V/230V
S : Three-Phase 200V/220V/230V
Motor Type
I : Induction motor

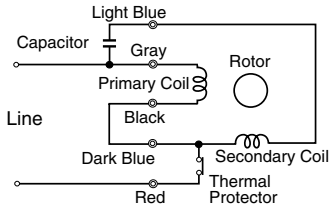
Features of Induction Motors

The speed of induction motors varies with the load. They are used in applications where speed control is not required. Both capacitor-run single-phase motors and three-phase motors are available.

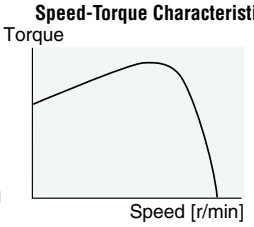
●Capacitor-Run Single-Phase Motors

Most compact single-phase induction motors are capacitor-run. They use a constant secondary coil winding and a capacitor for both starting and normal operation. Starting torque is generally smaller than operating torque, but the structure is simple and reliable, so efficiency is high. Note that a capacitor must be used when operating a single-phase induction motor.

Wiring Diagram (CW direction)



Speed-Torque Characteristic



●2-Pole High-Speed Motors

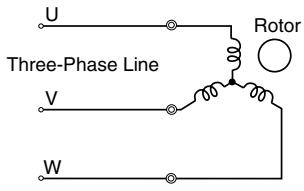
In principle, this is a single-phase, capacitor-run induction motor except that the speed is twice that of the base model. As opposed to the basic four-pole model with its synchronous speed of 1800r/min at 60Hz, the two-pole version synchronous speed is 3600r/min at 60Hz. This model only comes with a round shaft.

- When using a capacitor with the motor, make sure that the rated capacitance and voltage as indicated on the capacitor correspond to the specifications on the motor.
- Change the direction of 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 of rotation after some delay.

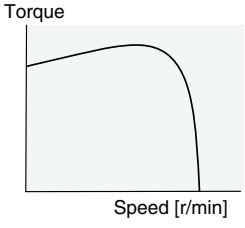
●Three-Phase Motors

These are induction motors driven by three-phase electric power. They are very efficient, have a comparatively large starting torque and are very reliable. They are most commonly used for general drive applications.

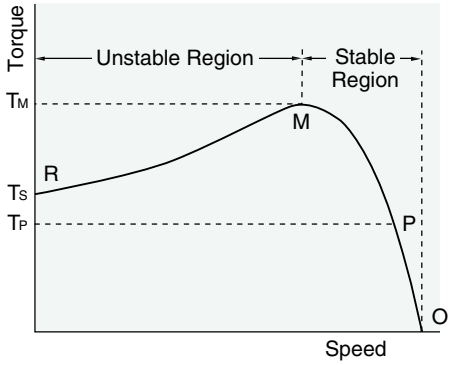
Wiring Diagram



Speed-Torque Characteristics

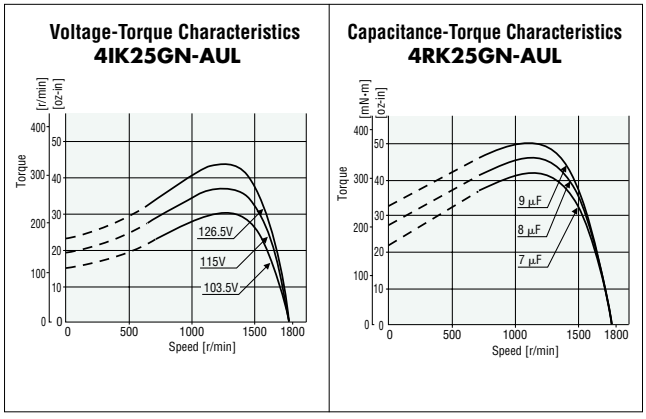


●Speed-Torque Characteristics



The figure above shows the relationship between the motor speed and torque characteristics when the power supply voltage is maintained at a constant level. Under conditions of no load, the motor rotates at a speed close to synchronous rotation, but as load increases the motor speed drops to a speed (P), where a balance is achieved between load and motor torque (Tp).
If load is further increased and reaches point M, the motor can generate no greater torque, and stops at point R. In other words, the motor can be operated in a stable range of between M and O, while the range between R and M represents an unstable area.

●Voltage Characteristics and Capacitor Characteristics



The voltage characteristics curve shows the changes in torque characteristics as the voltage applied to the motor is varied. Torque of induction motors is generally in proportion to the square of the voltage. Torque characteristics also vary greatly according to the value of the capacitor. If the capacitor value is increased, both starting and stopping torque increases, but once it reaches 2.5 ~ 3 times the rated value, operating torque begins to decrease and start-up torque levels off.

If an induction motor does not have sufficient torque, a simple method of boosting torque is to increase input voltage or capacitor value. Such methods, however, cause an increase in power loss and a rise in motor temperature. Therefore, it would be advisable to avoid these methods. However in cases where there is no other way to increase torque, it is recommended to take adequate precautions to dissipate motor heat and always keep the temperature of motor case at 194˚F (90˚C) or less.

Product Specifications

Induction Motors-4Pole

Output Power HP	Output Power W	Model: Lead Wire Type	Model: Terminal Box Type	Model: Conduit Box Type	Voltage V	Frequency Hz	Starting Torque oz-in	Starting Torque mN·m	Rated Torque oz-in	Rated Torque mN·m	Rated Speed r/min	Page
1/746	1	**0IK1GN-AUL**	—	—	Single-Phase 115	60	1.1	8	1.1	8	1200	A-38
1/249	3	**2IJ3GB-AUL**	—	—	Single-Phase 115	60	3.5	25	2.9	21	1450	A-40
1/124	6	**2IK6GN-AWU**	**2IK6GN-AWTU**	—	Single-Phase 110	60	5.6	40	5.7	41	1450	A-42
					Single-Phase 115	60						
		2IK6GN-CWE	**2IK6GN-CWTE**	—	Single-Phase 220	60	5.6	40	5.7	41	1450	
					Single-Phase 230	50	6.2	45	6.8	49	1200	
					Single-Phase 230	60	5.6	40	5.7	41	1450	
		2IK6GN-SW	**2IK6GN-SWT**	—	Three-Phase 200	50	6.8	49	6.8	49	1200	
					Three-Phase 200	60					1450	
					Three-Phase 220	60	5.7	41	5.7	41	1500	
					Three-Phase 230	60					1500	
		2IK6GN-AUL	—	—	Single-Phase 115	60	5.6	40	5.6	40	1500	
1/50	15	**3IK15GN-AWU**	—	—	Single-Phase 110	60	9	65	14.6	105	1450	A-45
					Single-Phase 115	60						
		3IK15GN-CWE	—	—	Single-Phase 220	60	9	65	14.6	105	1450	
					Single-Phase 230	50	10	75	17.4	125	1200	
					Single-Phase 230	60	9	65	14.6	105	1450	
		3IK15GN-AUL	—	—	Single-Phase 115	60	10.4	75	13.9	100	1500	
		4IJ15GB-AUL	—	—	Single-Phase 115	60	10.4	75	13.2	95	1550	
1/30	25	**4IK25GN-AWU**	**4IK25GN-AWTU**	**4IK25GN-FCH**	Single-Phase 110	60	16.7	120	23.6	170	1450	A-48
					Single-Phase 115	60						
		4IK25GN-CWE	**4IK25GN-CWTE**	**4IK25GN-ECH**	Single-Phase 220	60			23.6	170	1450	
					Single-Phase 230	50	16.7	120	28.5	205	1200	
					Single-Phase 230	60			23.6	170	1450	
		4IK25GN-SW	**4IK25GN-SWT**	**4IK25GN-SH**	Three-Phase 200	50	33.3	240	26.4	190	1300	
					Three-Phase 200	60					1550	
					Three-Phase 220	60	22.2	160	22.2	160	1600	
					Three-Phase 230	60					1600	
		4IK25GN-AUL	—	—	Single-Phase 115	60	15.3	110	22.9	165	1500	
1/18.5	40	**5IK40GN-AWU**	**5IK40GN-AWTU**	**5IK40GN-FCH**	Single-Phase 110	60	27.8	200	36.1	260	1500	A-53
					Single-Phase 115	60						
		5IK40GN-CWE	**5IK40GN-CWTE**	**5IK40GN-ECH**	Single-Phase 220	60			36.1	260	1500	
					Single-Phase 230	50	27.8	200	41.7	300	1300	
					Single-Phase 230	60			36.1	260	1500	
		5IK40GN-SW	**5IK40GN-SWT**	**5IK40GN-SH**	Three-Phase 200	50	55.5	400	41.7	300	1300	
					Three-Phase 200	60					1550	
					Three-Phase 220	60	36.1	260	36.1	260	1600	
					Three-Phase 230	60					1600	
		5IK40GN-AUL	—	—	Single-Phase 115	60	27.8	200	36.1	260	1550	
1/12.5	60	**5IK60GU-AWU**	**5IK60GU-AWTU**	**5IK60GU-FCH**	Single-Phase 110	60	44.4	320	56.2	405	1450	A-58
					Single-Phase 115	60						
		5IK60GU-CWE	**5IK60GU-CWTE**	**5IK60GU-ECH**	Single-Phase 220	60			56.2	405	1450	
					Single-Phase 230	50	44.4	320	68	490	1200	
					Single-Phase 230	60			56.2	405	1450	
		5IK60GU-SW	**5IK60GU-SWT**	**5IK60GU-SH**	Three-Phase 200	50	83.3	600	62.5	450	1300	
					Three-Phase 200	60					1550	
					Three-Phase 220	60	69.4	500	52.8	380	1600	
					Three-Phase 230	60					1600	
		5IK60GU-AFUL	—	—	Single-Phase 115	60	41.7	300	52.8	380	1550	
1/8	90	**5IK90GU-AWU**	**5IK90GU-AWTU**	**5IK90GU-FCH**	Single-Phase 110	60	62.5	450	81.2	585	1500	A-63
					Single-Phase 115	60						
		5IK90GU-CWE	**5IK90GU-CWTE**	**5IK90GU-ECH**	Single-Phase 220	60			84	605	1450	
					Single-Phase 230	50	62.5	450	101.4	730	1200	
					Single-Phase 230	60			84	605	1450	
		5IK90GU-SW	**5IK90GU-SWT**	**5IK90GU-SH**	Three-Phase 200	50	118	850	94.4	680	1300	
					Three-Phase 200	60					1550	
					Three-Phase 220	60	97.2	700	79.2	570	1600	
					Three-Phase 230	60					1600	
		5IK90GU-AFUL	—	—	Single-Phase 115	60	62.5	450	79.2	570	1550	
1/3.73	200	**BHI62F-□**	**BHI62FT-□**	—	Single-Phase 110	60	125	900	181	1300	1500	A-68
					Single-Phase 115	60	139	1000				
		—	**BHI62ET-□**	—	Single-Phase 220	60			181	1300	1500	
					Single-Phase 230	50	139	1000	215	1550	1250	
					Single-Phase 230	60			181	1300	1500	
		—	**BHI62ST-□**	—	Three-Phase 200	50	215	1550	215	1550	1250	
					Three-Phase 200	60	181	1300	181	1300	1500	
					Three-Phase 220	60	174	1250	174	1250	1550	
					Three-Phase 230	60	167	1200	167	1200	1600	

●The "**U**" and "**E**" at the end of the model name indicate that the unit includes a capacitor. These two letters are not listed on the motor nameplate.

Induction Motors - 2 Pole (Round shaft type only)

Output Power HP	Output Power W	Model	Voltage V	Frequency Hz	Starting Torque oz-in	Starting Torque mN·m	Rated Torque oz-in	Rated Torque mN·m	Rated Speed r/min	Page
1/18.5	40	**4IK40A-BA**	Single-Phase 115	60	13.2	95	18	130	3000	A-72
1/12.5	60	**5IK60A-BA**	Single-Phase 115	60	16.7	120	25.7	185	3200	
1/8	90	**5IK90A-BFUL**	Single-Phase 115	60	30.6	220	38.9	280	3200	

General Specifications

For **-AW**, **-CW** and **-SW** Type

Item	Specifications
Insulation Resistance	100M ohms or more when 500V DC is applied between the windings and the frame.
Dielectric Strength	Sufficient to withstand 1.5kV at 50Hz and 60Hz applied between the windings and the frame.
Temperature Rise	144˚F (80˚C) or less measured by the resistance change method after rated motor operation with connecting a gearhead or equivalent heat radiation plate.
Insulation Class	Class B (266˚F [130˚C])
Overheat Protection	**2IK** have impedance protection. All others have built-in thermal protector (Automatic return type) Operating temperature, open : 266˚F±9˚F (130˚C±5˚C) close: 179.6˚F±27˚F (82˚C±15˚C)
Ambient Temperature Range	14˚F~104˚F (−10˚C~+40˚C) [Three-phase 200V : 14˚F~122˚F (−10˚C~+50˚C)]
Ambient Humidity	85% maximum (noncondensing)

Equivalent heat radiation plate (material : Aluminum)

Type (output)	Size inch (mm)	Thickness inch (mm)
2IK Type (6W)	4.53x4.53 (115x115)	0.20 (5)
3IK Type (15W)	4.92x4.92 (125x125)	
4IK Type (25W)	5.31x5.31 (135x135)	
5IK40 Type (40W)	6.50x6.50 (165x165)	
5IK60 Type (60W)	7.87x7.87 (200x200)	
5IK90 Type (90W)	7.87x7.87 (200x200)	

For **BHI** Type

Item	Specifications
Insulation Resistance	100M ohms or more when 500V DC is applied between the windings and the frame.
Dielectric Strength	Sufficient to withstand 1.5kV at 50Hz and 60Hz applied between the windings and the frame.
Temperature Rise	144˚F (80˚C) or less measured by the resistance change method after rated motor operation with connecting a gearhead or equivalent heat radiation plate. [Three-Phase type : 126˚F (70˚C)]
Insulation Class	Class B (202˚F [130˚C])
Overheat Protection	Built-in thermal protector (Automatic return type) Operating temperature, open : 302˚F±9˚F (150˚C±5˚C) close : 204.8˚F±27˚F (96˚C±15˚C)
Ambient Temperature Range	14˚F~104˚F (−10˚C~+40˚C) [Three-Phase 200V : 14˚F~122˚F (−10˚C~+50˚C)]
Ambient Humidity	85% maximum (noncondensing)

Equivalent heat radiation plate (material: Aluminum)

Type (output)	Size inch (mm)	Thickness inch (mm)
BHI Type (200W)	9.06x9.06 (230x230)	0.20 (5)

For **-AUL**, **-AULA**, **-AFUL**, **-BA** and **-BFUL** Type

Item	Specifications
Insulation Resistance	100M ohms or more when 500V DC 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 after rated motor operation under normal ambient temperature and humidity.
Temperature Rise	135˚F (75˚C) or less measured by the resistance change method after the temperature of the coil has stabilized under normal operation at the rated voltage and frequency.
Insulation Class	Class A (221˚F [105˚C])
Overheat Protection	**0IK** and **2IK** have impedance protection. All others have built-in thermal protector (Automatic return type) Operating temperature, open : 248˚F±9˚F (120˚C±5˚C) close: 170.6˚F±27˚F (77˚C±15˚C)
Ambient Temperature Range	14˚F~104˚F (−10˚C~+40˚C)
Ambient Humidity	85% maximum (noncondensing)

■ Safety standard and CE Marking

For **-AW(T)U**, **-CW(T)E** and **-SW(T)** Type

Standards	Certification Body	Standards File No.	CE Marking
UL1004 UL519 (6W Type) UL547 (15W~90W) CAN/CSA C22.2 No.100 CAN/CSA C22.2 No.77	UL	E64199 (6W) E64197 (15W～90W)	Low Voltage Directives
EN60950 *	VDE	114919ÜG (Single-Phase 6W Lead wire type) 6751ÜG (15W～90W)	
	DEMKO	124234/DK99-00431 (Three-Phase 90w type)	
EN60034-1 EN60034-5 IEC60034-11	Conform to EN/IEC Standards (EN/IEC certifications are scheduled.)		

* Excluding conduit box types.
For installation for EN/IEC standards, see page D-2.

For **BHI** Type

Standards	Certification Body	CE Marking
UL1004 UL2111 CAN/CSA C22.2 No.100 CAN/CSA C22.2 No.77	Conform to UL/CSA standards (UL/CSA certifications are scheduled)	Low Voltage Directives
EN60950 EN60034-1 EN60034-5 IEC60034-11		

For installation for EN/IEC standards, see page D-2.

For **-AUL**, **-AULA**, **-AFUL**, **-BA** and **-BFUL** Type

Standards	Certification Body	Standards File No.	CE Marking
UL1004 UL519 (6W Type) UL547 (15W～90W Type)	UL	E64199(1W～6W) E64197(15W～90W)	Low Voltage Directives
CAN/CSA C22.2 No.100 CAN/CSA C22.2 No.77	CSA	LR47296	
EN60950	VDE	5876ÜG(1W～6W) 5877ÜG(15W～90W)	

NOTE: UL Mark only for **4IK40A-BA**, **5IK60A-BA**
UL Mark, VDE Mark and CE Mark for **5IK90A-BFUL**
For installation for EN/IEC standards, see page D-2.

INDUCTION MOTORS

Single-Phase

1W (1/746 HP)

Frame Size 1.65 in.sq.(42mm sq.)

GEAR SAFETY STD.

■ Specifications — Continuous Rating

Model		Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
Pinion Shaft Type	Round Shaft Type	HP	W	V AC	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
0IK1GN-AUL	**0IK1A-AUL**	1/746	1	115	60	0.08	1.1	8	1.1	8	1200	1.0

●products listed above are impedance protected.

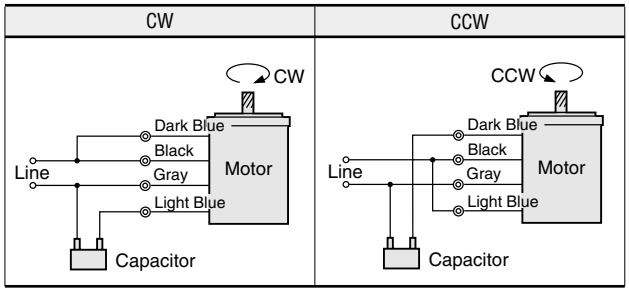
■ Gearmotor — Torque Table

Unit = Upper values: lb-in / Lower values: N·m

Model	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
0IK1GN-AUL / 0GN□KA		0.17	0.20	0.28	0.33	0.42	0.50	0.63	0.75	0.90	1.1	1.4	1.6	2.3	2.7	3.0	3.7	4.1	4.9	6.1	7.3
		0.019	0.023	0.032	0.039	0.049	0.058	0.073	0.088	0.11	0.13	0.16	0.19	0.26	0.32	0.35	0.42	0.47	0.57	0.71	0.85

●Gearheads are sold separately. Decimal gearhead is not available for **0GN** type.
●Enter the gear ratio in the box (□) within the model number. A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
●The speed is calculated by dividing the motor's synchronous speed (60 Hz : 1800 r/min) by the gear ratio. The actual speed is 2 ～ 20% less than the displayed value, depending on the size of the load.

■ Wiring Diagrams



The direction of motor rotation is as viewed from the shaft end of the motor.

Change the direction of 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 of rotation after some delay.

Dimensions Scale 1/4, Unit =**inch** (mm)

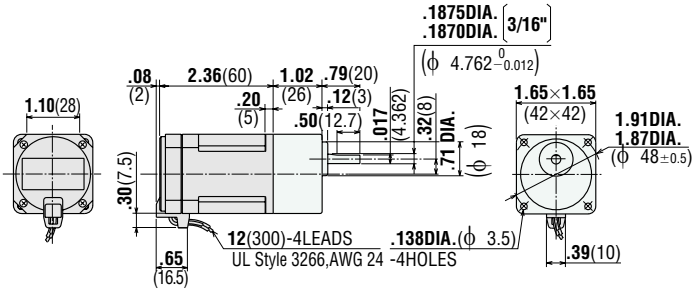
Motor

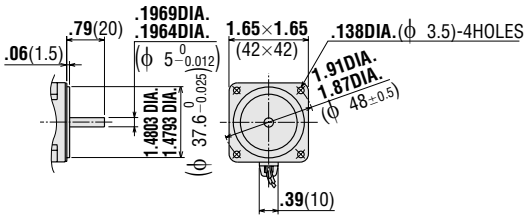
0IK1GN-AUL
Weight (Mass): 0.7 lb. (0.3 kg)

Gearhead

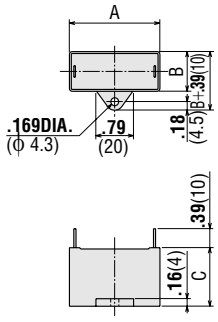
0GN□KA
Weight (Mass): 0.44 lb. (0.2 kg)

0IK1A-AUL Round Shaft Type
Weight (Mass): 0.7 lb.(0.3 kg)





●Capacitor (included with the motor)



Motor Model	Capacitor Model	Dimensions inch (mm) A	B	C	Weight oz (g)
0IK1GN-AUL **0IK1A-AUL**	CH10UL	1.22 (31)	.57 (14.5)	.93 (23.5)	0.60 (17)

Capacitor cap is provided with the capacitor.

Accessories

●Motor Mounting Brackets

Optional die-cast aluminum mounting brackets are available. They can be used to install motors with or without gearheads. See page [A-266] for the dimensions.
Model name **SOL0U04**

●Flexible Coupling

Optional clamping couplings are available. See page [A-260] for the dimensions.

INDUCTION MOTORS
Single-Phase
3W (1/249 HP)

Frame Size 2.36 in.sq.(60mm sq.)

GEAR SAFETY STD.

■ Specifications — Continuous Rating

Model		Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
Pinion Shaft Type	Round Shaft Type	HP	W	V AC	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
2IJ3GB-AUL	**2IJ3A-AULA**	1/249	3	115	60	0.14	3.5	25	2.9	21	1450	1.5

●These products are impedance protected.

■ Gearmotor — Torque Table

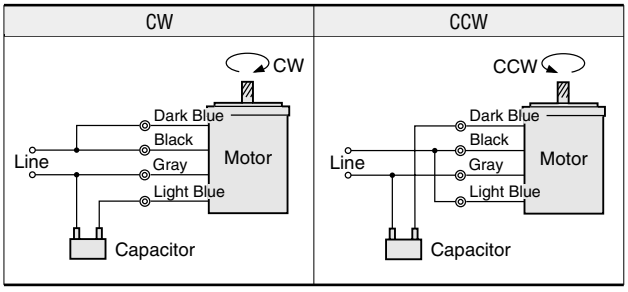
The maximum permissible torque with a decimal gearhead with a gear ratio of 10 is 13 lb-in (1.5 N·m)

Unit = Upper values: lb-in / Lower values: N·m

Model	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	7.2	6	5
	Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**	**250**	**300**	**360**
2IJ3GB-AUL / 2GB□KA		0.44	0.53	0.73	0.88	1.1	1.3	1.8	2.2	2.6	3.3	4.0	4.8	6.0	7.2	9.0	11	12	13	13	13	13	13	13
		0.051	0.061	0.085	0.11	0.13	0.15	0.21	0.26	0.31	0.38	0.46	0.55	0.69	0.83	1.0	1.2	1.4	1.5	1.5	1.5	1.5	1.5	1.5

●Gearheads are sold separately.
●Enter the gear ratio in the box (□) within the model number. A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
●The speed is calculated by dividing the motor's synchronous speed (60 Hz : 1800 r/min) by the gear ratio. The actual speed is 2 ～ 20% less than the displayed value, depending on the size of the load.

■ Wiring Diagrams



The direction of motor rotation is as viewed from the shaft end of the motor.

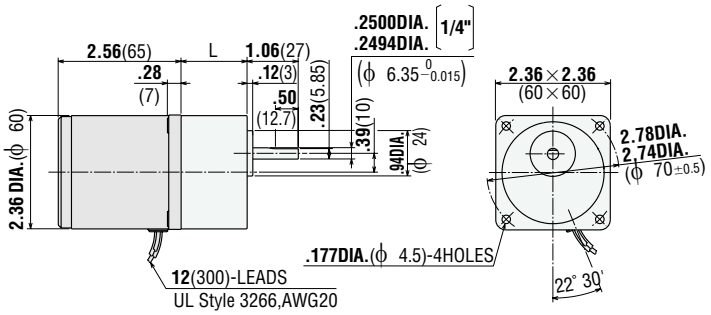
Change the direction of motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction of rotation after some delay.

■ Dimensions Scale 1/4, Unit = **inch** (mm)

●Motor/Gearhead

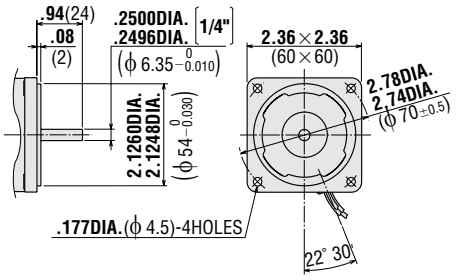
2IJ3GB-AUL
Weight (Mass): 1.3 lb.(0.6 kg)

2GB□KA
Weight (Mass): 0.66 lb.(0.3 kg)



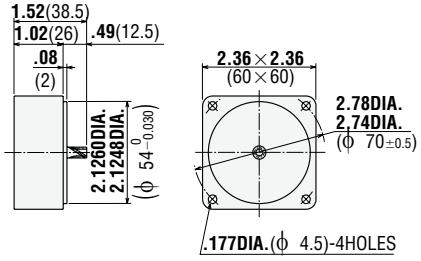
L = **1.02** (26) **2GB3KA**～**18KA**
L = **1.38** (35) **2GB25KA**～**360KA**

2IJ3A-AULA Round Shaft Type
Weight (Mass): 1.3 lb.(0.6 kg)

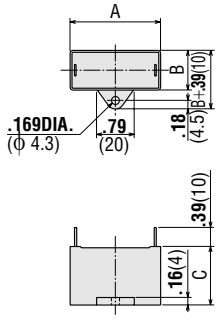


●Decimal Gearhead

2GB10XK Weight (Mass): 0.44 lb.(0.2 kg)



●Capacitor (included with the motor)



Motor Model	Capacitor Model	Dimensions inch (mm) A	B	C	Weight oz (g)
2IJ3GB-AUL **2IJ3A-AULA**	CH15BUL	1.46 (37)	.71 (18)	1.06 (27)	0.81 (23)

Capacitor cap is provided with the capacitor.

■ Accessories

●Motor Mounting Brackets

Optional die-cast aluminum mounting brackets are available. They can be used to install motors with or without gearheads. See page [A-266] for the dimensions.
Model name **SOL2U08**

●Flexible Coupling

Optional clamping couplings are available. See page [A-260] for the dimensions.

INDUCTION MOTORS

Single-Phase, Three-Phase

6W (1/124 HP)

Frame Size 2.36 in.sq.(60mm sq.)

GEAR SAFETY STD.

■ Specifications — Continuous Rating

Model Upper Model Name:Pinion Shaft Type Lower Model Name( ):Round Shaft Type		Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
Lead Wire Type Dimension ①	Terminal Box Type Dimension ②	HP	W	V	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
2IK6GN-AWU **(2IK6A-AWU)**	**2IK6GN-AWTU** **(2IK6A-AWTU)**	1/124	6	Single-Phase 110 Single-Phase 115	60 60	0.2	5.6	40	5.7	41	1450	2.5
2IK6GN-CWE **(2IK6A-CWE)**	**2IK6GN-CWTE** **(2IK6A-CWTE)**			Single-Phase 220 Single-Phase 230 Single-Phase 230	60 50 60	0.09 0.11 0.1	5.6 6.2 5.6	40 45 40	5.7 6.8 5.7	41 49 41	1450 1200 1450	0.6
2IK6GN-SW **(2IK6A-SW)**	**2IK6GN-SWT** **(2IK6A-SWT)**			Three-Phase 200 Three-Phase 200 Three-Phase 220 Three-Phase 230	50 60 60 60	0.09 0.08 0.09 0.09	6.8 5.7	49 41	6.8 5.7	49 41	1200 1450 1500 1500	—
2IK6GN-AUL **(2IK6A-AULA)**	—			Single-Phase 115	60	0.18	5.6	40	5.6	40	1500	2

- These products are impedance protected.
- The "**U**" and "**E**" at the end of the model name indicate that the unit includes a capacitor. These two letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the nameplate is adopted.
- The terminal box type of the motors are not VDE approved.

■ Gearmotor — Torque Table

The maximum permissible torque with a decimal gearhead with a gear ratio of 10 is 26 lb-in (3N·m).

●Single-Phase 115V/230V, Three-Phase 230V 60Hz

Unit = Upper values: lb-in / Lower values: N·m

Model	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
2IK6GN-AWU **2IK6GN-AWTU** **2IK6GN-CWE** **2IK6GN-CWTE** **2IK6GN-SW** **2IK6GN-SWT** / **2GN□KA**		0.87 0.10	1.0 0.12	1.4 0.17	1.7 0.20	2.2 0.25	2.6 0.30	3.6 0.42	4.3 0.50	5.2 0.60	6.5 0.75	7.8 0.90	9.4 1.1	12 1.4	14 1.6	18 2.0	21 2.4	24 2.7	26 3	26 3	26 3
2IK6GN-AUL / **2GN□KA**		0.85 0.097	1.0 0.12	1.4 0.16	1.7 0.19	2.1 0.24	2.6 0.29	3.5 0.41	4.3 0.49	5.1 0.58	6.4 0.73	7.7 0.88	9.2 1.1	12 1.3	14 1.6	17 2.0	21 2.4	23 2.6	26 3	26 3	26 3

●Single-Phase 230V 50Hz

Unit = Upper values: lb-in / Lower values: N·m

Model	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
2IK6GN-CWE **2IK6GN-CWTE** / **2GN□KA**		1.0 0.12	1.2 0.14	1.7 0.20	2.1 0.24	2.6 0.30	3.1 0.36	4.3 0.50	5.2 0.60	6.2 0.71	7.8 0.89	9.3 1.1	11 1.3	14 1.6	17 1.9	21 2.4	25 2.9	26 3	26 3	26 3	26 3

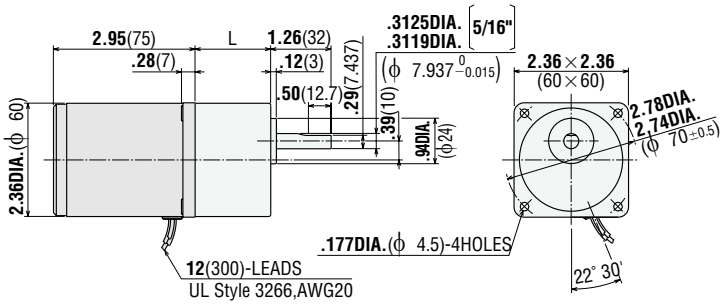
- Gearheads are sold separately.
- Enter the gear ratio in the box (□) within the model number. A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 ~ 20% less than the displayed value, depending on the size of the load.

■ Dimensions Scale 1/4, Unit = **inch** (mm)

①Motor/Gearhead

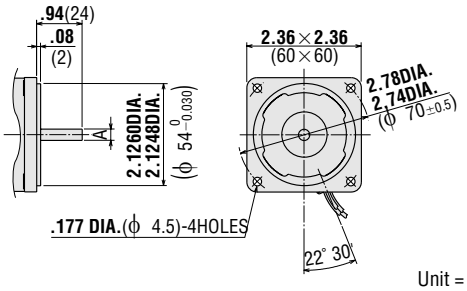
2IK6GN-AWU
2IK6GN-CWE
2IK6GN-SW
2IK6GN-AUL
Weight (Mass): 1.5 lb.(0.7 kg)

2GN□KA
Weight (Mass): 0.88 lb.(0.4 kg)



L=**1.18** (30) **2GN3KA**~**18KA**
L=**1.57** (40) **2GN25KA**~**180KA**

2IK6A-AWU Round Shaft Type
2IK6A-CWE
2IK6A-SW
2IK6A-AULA
Weight (Mass): 1.5 lb.(0.7 kg)



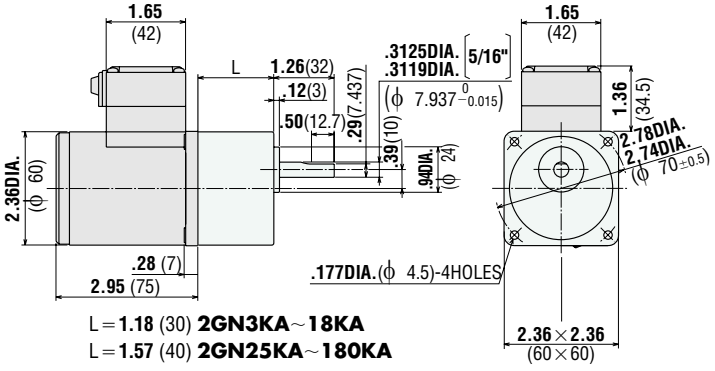
Unit = **inch** (mm)

Model	Shaft diameter A
2IK6A-AWU **2IK6A-CWE** **2IK6A-SW**	**.2362DIA.** **.2357DIA.** (ϕ 6 0 −0.012)
2IK6A-AULA	**.2500DIA.** **[1/4"]**(ϕ 6.35 0 −0.010) **.2496DIA.**

②Motor/Gearhead

2IK6GN-AWTU
2IK6GN-CWTE
2IK6GN-SWT
Weight (Mass): 1.7 lb.(0.75 kg)

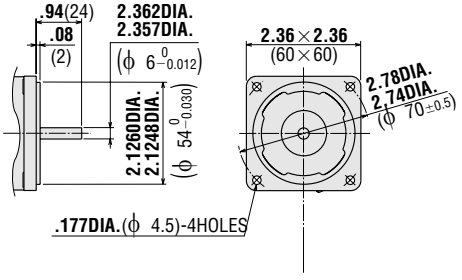
2GN□KA
Weight (Mass): 0.88 lb.(0.4 kg)



L=**1.18** (30) **2GN3KA**~**18KA**
L=**1.57** (40) **2GN25KA**~**180KA**

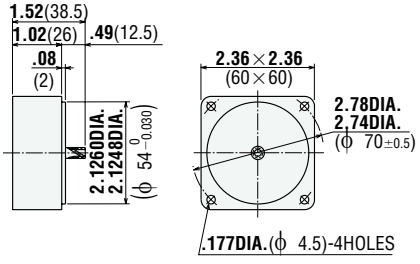
Use cabtyre cable with the diameter of .27DIA.(ϕ 6.8)~.34DIA.(ϕ8.6).

2IK6A-AWTU Round Shaft Type
2IK6A-CWTE
2IK6A-SWT
Weight (Mass): 1.7 lb.(0.75 kg)

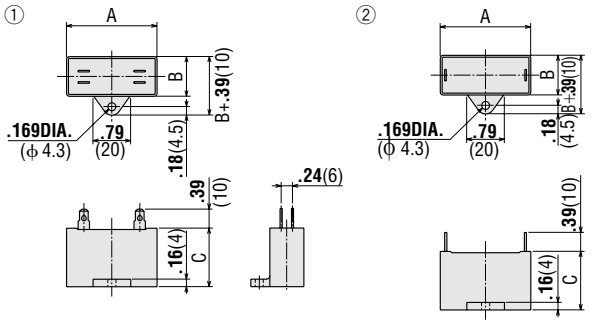


●Decimal Gearhead

2GN10XK Weight (Mass): 0.44 lb.(0.2 kg)



●Capacitor (included with the motor)

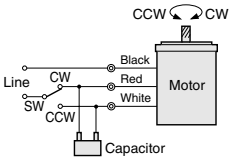
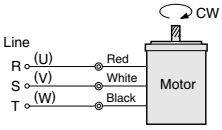
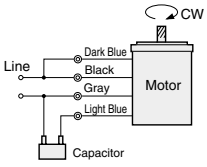
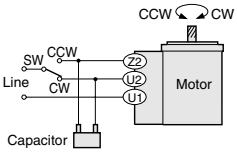
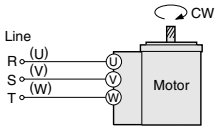
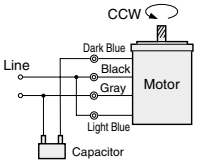


Motor Model	Capacitor Model	Dimensions in. (mm) A	B	C	Weight (Mass) oz (g)	Dimension No.
2IK6GN-AW□U **2IK6A-AW□U**	CH25FAUL	1.22 (31)	.67 (17)	1.06 (27)	0.71 (20)	①
2IK6GN-CW□E **2IK6A-CW□E**	CH06BFAUL	1.22 (31)	.57 (14.5)	.93 (23.5)	0.53 (15)	①
2IK6GN-AUL **2IK6A-AULA**	CH20UL	1.22 (31)	.57 (14.5)	.93 (23.5)	0.53 (15)	②

If you need to order a capacitor without a motor, add "-C" to the capacitor model number shown. A capacitor cap is always included with a capacitor.

■ Wiring Diagrams

The direction of motor rotation is as viewed from the shaft end of the motor.

Direction \ Model	Lead Wire Type			Terminal Box Type	
	2IK6GN-AWU **2IK6GN-CWE**	**2IK6GN-SW**	**2IK6GN-AUL**	**2IK6GN-AWTU** **2IK6GN-CWTE**	**2IK6GN-SWT**
CW					
CCW	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.		To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.

Change the direction of 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 of rotation after some delay.

■ Accessories

●Motor Mounting Brackets

Optional die-cast aluminum mounting brackets are available. They can be used to install motors with or without gearheads. See page [A-266] for the dimensions.

Model name **SOL2U08**

●Flexible Coupling

Optional clamping couplings are available. See page [A-260] for the dimensions.

INDUCTION MOTORS
Single-Phase
15W (1/50 HP)

Frame Size 2.76 in.sq.(□70mm) or 3.15 in.sq.(□80mm)

GEAR SAFETY STD.

■ Specifications — Continuous Rating

Model Upper Model Name:Pinion Shaft Type Lower Model Name( ):Round Shaft Type		Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
Lead Wire Type Dimension ①	Lead Wire Type Dimension ②	HP	W	V	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
3IK15GN-AWU **(3IK15A-AWU)**	—	1/50	15	Single-Phase 110 Single-Phase 115	60 60	0.33 0.34	9	65	14.6	105	1450	4.5
3IK15GN-CWE **(3IK15A-CWE)**	—			Single-Phase 220 Single-Phase 230 Single-Phase 230	60 50 60	0.16 0.19 0.16	9 10 9	65 75 65	14.6 17.4 14.6	105 125 105	1450 1200 1450	1
3IK15GN-AUL **(3IK15A-AULA)**	—			Single-Phase 115	60	0.33	10.4	75	13.9	100	1500	4
—	**4IJ15GB-AUL** **(4IJ15A-AULA)**			Single-Phase 115	60	0.35	10.4	75	13.2	95	1550	3

- The product contains a built-in thermal protector. When a motor overheats for any reason, the thermal protector is opened and the motor stops. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- The "**U**" and "**E**" at the end of the model name indicate that the unit includes a capacitor. These two letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the nameplate is adopted.

■ Gearmotor — Torque Table

The maximum permissible torque with a decimal gearhead with a gear ratio of 10 is 43 lb-in (5N·m).

●Single-Phase 115V/230V, 60Hz

Unit = Upper values: lb-in / Lower values: N·m

Model \ Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10	7.2	6	5
Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**	**250**	**300**	**360**
3IK15GN-AWU / **3IK15GN-CWE** / **3GN□KA**	2.2 0.26	2.7 0.31	3.7 0.43	4.4 0.51	5.5 0.64	6.7 0.77	9.2 1.1	11 1.3	13 1.5	17 1.9	20 2.3	24 2.8	30 3.5	36 4.2	43 5	43 5	43 5	43 5	43 5	43 5	— —	— —	— —
3IK15GN-AUL / **3GN□KA**	2.1 0.24	2.5 0.29	3.5 0.41	4.2 0.49	5.3 0.61	6.3 0.73	8.8 1.0	11 1.2	13 1.5	16 1.8	19 2.2	23 2.6	29 3.3	34 4	43 5	43 5	43 5	43 5	43 5	43 5	— —	— —	— —
4IJ15GB-AUL / **4GB□KA**	2.0 0.23	2.4 0.28	3.3 0.38	4.0 0.46	5.0 0.58	6.0 0.69	8.3 0.96	9.9 1.2	12 1.4	15 1.7	18 2.1	22 2.5	27 3.1	32 3.8	41 4.7	43 5	43 5	43 5	43 5	43 5	43 5	43 5	43 5

●Single-Phase 230V 50Hz

Unit = Upper values: lb-in / Lower values: N·m

Model \ Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
3IK15GN-CWE / **3GN□KA**	2.6 0.30	3.2 0.36	4.4 0.51	5.3 0.61	6.6 0.76	7.9 0.91	11 1.3	13 1.5	16 1.8	20 2.3	24 2.7	29 3.3	36 4.1	43 5	43 5	43 5	43 5	43 5	43 5	43 5

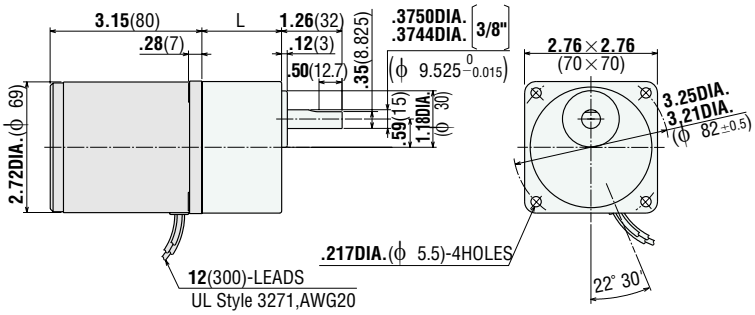
- Gearheads are sold separately.
- Enter the gear ratio in the box (□) within the model number. A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 ~ 20% less than the displayed value, depending on the size of the load.

■ Dimensions Scale 1/4, Unit = **inch** (mm)

①Motor/Gearhead

3IK15GN-AWU
3IK15GN-CWE
3IK15GN-AUL
Weight (Mass): 2.4 lb.(1.1 kg)

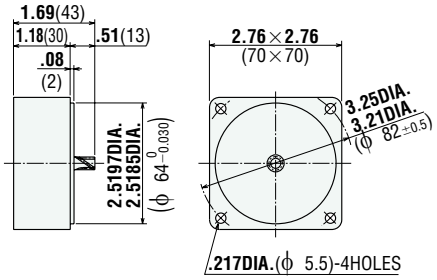
3GN□KA
Weight (Mass): 1.21 lb.(0.55 kg)



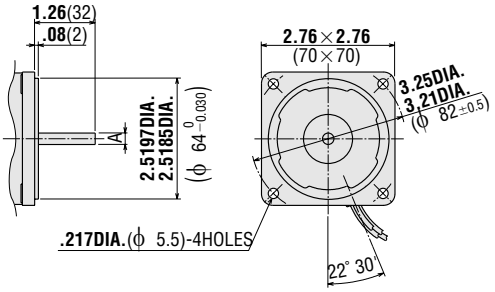
L=**1.26** (32) **3GN3KA**~**18KA**
L=**1.65** (42) **3GN25KA**~**180KA**

●Decimal Gearhead

3GN10XK Weight (Mass): 0.66 lb.(0.3 kg)



3IK15A-AWU Round Shaft Type
3IK15A-CWE
3IK15A-AULA
Weight (Mass): 2.4 lb.(1.1 kg)



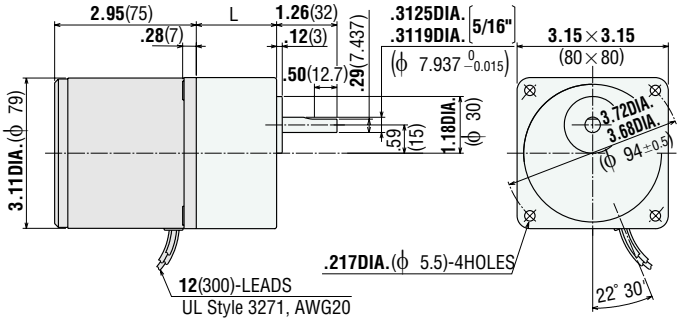
Unit = **inch** (mm)

Model	Shaft Diameter A
3IK15A-AWU	.2362DIA. (ϕ 6 0 -0.012)
3IK15A-CWE	.2357DIA.
3IK15A-AULA	.2500DIA. [1/4"](ϕ 6.350 0 -0.010)
	.2496DIA.

②Motor/Gearhead

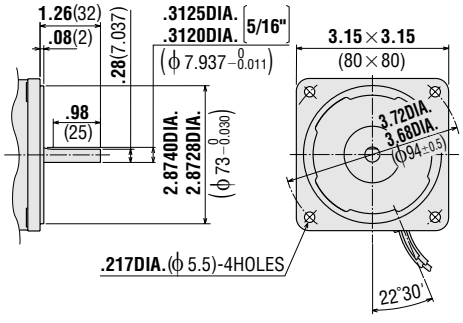
4IJ15GB-AUL
Weight (Mass): 3.1 lb.(1.4 kg)

4GB□KA
Weight (Mass): 1.43 lb.(0.65 kg)



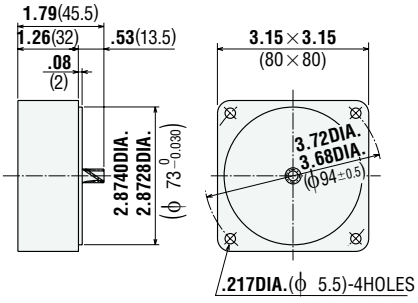
L=**1.26** (32) **4GB3KA**~**18KA**
L=**1.67** (42.5) **4GB25KA**~**360KA**

4IJ15A-AULA Round Shaft Type
Weight (Mass): 3.1 lb.(1.4 kg)

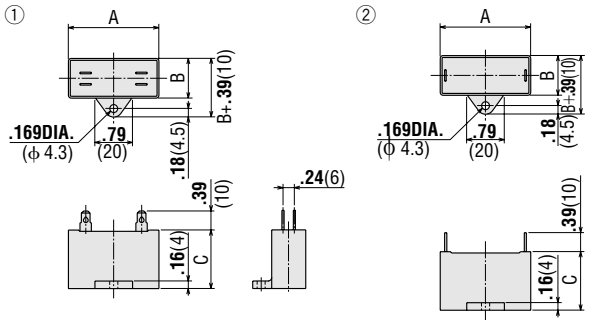


●Decimal Gearhead

4GB10XK Weight (Mass): 0.77 lb.(0.35 kg)



●Capacitor (included with the motor)

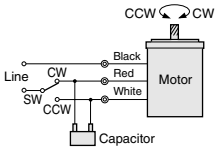
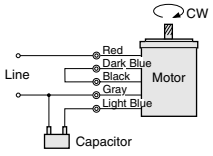
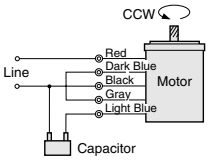


Motor Model	Capacitor Model	Dimensions inch (mm) A	B	C	Weight (Mass) oz (g)	Dimension No.
3IK15GN-AW□U **3IK15A-AW□U**	CH45FAUL	1.46 (37)	.71 (18)	1.06 (27)	1.06 (30)	①
3IK15GN-CW□E **3IK15A-CW□E**	CH10BFAUL	1.46 (37)	.71 (18)	1.06 (27)	1.06 (30)	①
3IK15GN-AUL **3IK15A-AULA**	CH40UL	1.46 (37)	.71 (18)	1.06 (27)	0.92 (26)	②
4IJ15GB-AUL **4IJ15A-AULA**	CH30UL	1.22 (31)	.67 (17)	1.06 (27)	0.71 (20)	②

If you need to order a capacitor without a motor, add "-C" to the capacitor model number shown. A capacitor cap is always included with a capacitor.

■ Wiring Diagrams

The direction of motor rotation is as viewed from the shaft end of the motor.

Model / Direction	Lead Wire Type **3IK15GN-AWU** **3IK15GN-CWE**	Lead Wire Type **3IK15GN-AUL** **4IJ15GB-AUL**
CW		
CCW	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	

Change the direction of 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 of rotation after some delay.

■ Accessories

●Motor Mounting Brackets

Optional die-cast aluminum mounting brackets are available. They can be used to install motors with or without gearheads. See page [A-266] for the dimensions.

Model name **SOL3U10**
SOL4U10

●Flexible Coupling

Optional clamping couplings are available. See page [A-260] for the dimensions.

INDUCTION MOTORS

Single-Phase, Three-Phase

25W (1/30 HP)

Frame Size 3.15 in.sq.(80mm sq.)

GEAR SAFETY STD.

■ Specifications — Continuous Rating

Model Upper Model Name:Pinion Shaft Type Lower Model Name( ):Round Shaft Type			Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
Lead Wire Type Dimension ①	Terminal Box Type Dimension ②	Conduit Box Type Dimension ③	HP	W	V	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
4IK25GN-AWU (4IK25A-AWU)	4IK25GN-AWTU (4IK25A-AWTU)	4IK25GN-FCH (4IK25AA-FCH)	1/30	25	Single-Phase 110 Single-Phase 115	60 60	0.46	16.7	120	23.6	170	1450	6.5
4IK25GN-CWE (4IK25A-CWE)	4IK25GN-CWTE (4IK25A-CWTE)	4IK25GN-ECH (4IK25AA-ECH)			Single-Phase 220 Single-Phase 230 Single-Phase 230	60 50 60	0.22 0.24 0.22	16.7	120	23.6 28.5 23.6	170 205 170	1450 1200 1450	1.5
4IK25GN-SW (4IK25A-SW)	4IK25GN-SWT (4IK25A-SWT)	4IK25GN-SH (4IK25AA-SH)			Three-Phase 200 Three-Phase 200 Three-Phase 220 Three-Phase 230	50 60 60 60	0.23 0.21 0.21 0.22	33.3 22.2 22.2 22.2	240 160 160 160	26.4 22.2 22.2 22.2	190 160 160 160	1300 1550 1600 1600	—
4IK25GN-AUL (4IK25A-AULA)	—	—			Single-Phase 115	60	0.49	15.3	110	22.9	165	1500	4.5

- The product contains a built-in thermal protector. When a motor overheats for any reason, the thermal protector is opened and the motor stops. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- The "**U**" and "**E**" at the end of the model name indicate that the unit includes a capacitor. These two letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the nameplate is adopted.
- The conduit box type of the motors are not VDE approved.

■ Gearmotor — Torque Table

The maximum permissible torque with a decimal gearhead with a gear ratio of 10 is 69 lb-in (8N·m). The value is 52 lb-in (6N·m) when 25:1～36:1 gearheads are connected.

- Right-Angle gearhead may be connected. See page [A-216] for more information on the right-angle gearheads.

●Single-Phase 115V/230V, Three-Phase 230V 60Hz

Unit = Upper values: lb-in / Lower values: N·m

Model	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
4IK25GN-AWU 4IK25GN-AWTU 4IK25GN-CWE 4IK25GN-CWTE 4IK25GN-FCH 4IK25GN-ECH / 4GN□KA		3.6 0.41	4.3 0.50	6.0 0.69	7.2 0.83	9.0 1.0	11 1.2	15 1.7	18 2.1	22 2.5	27 3.1	32 3.7	39 4.5	49 5.6	58 6.7	69 8	69 8	69 8	69 8	69 8	69 8
4IK25GN-SW 4IK25GN-SWT 4IK25GN-SH / 4GN□KA		3.4 0.39	4.0 0.47	5.6 0.65	6.7 0.78	8.4 0.97	10 1.2	14 1.6	17 1.9	20 2.3	25 2.9	30 3.5	36 4.2	46 5.3	55 6.3	69 7.9	69 8	69 8	69 8	69 8	69 8
4IK25GN-AUL / 4GN□KA		3.5 0.40	4.2 0.48	5.8 0.67	7.0 0.80	8.7 1.0	10 1.2	14 1.7	17 2.0	21 2.4	26 3.0	31 3.6	38 4.3	47 5.4	57 6.5	69 8	69 8	69 8	69 8	69 8	69 8

●Single-Phase 230V 50Hz

Unit = Upper values: lb-in / Lower values: N·m

Model	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
4IK25GN-CWE 4IK25GN-CWTE 4IK25GN-ECH / 4GN□KA		4.3 0.50	5.2 0.60	7.2 0.83	8.7 1.0	11 1.2	13 1.5	18 2.1	22 2.5	26 3.0	33 3.7	39 4.5	47 5.4	59 6.8	69 8	69 8	69 8	69 8	69 8	69 8	69 8

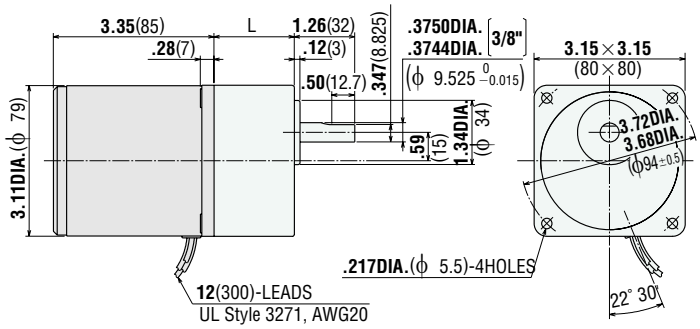
- Gearheads are sold separately.
- Enter the gear ratio in the box (□) within the model number. A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 ～ 20% less than the displayed value, depending on the size of the load.

■ Dimensions Scale 1/4, Unit = **inch** (mm)

①Motor/Gearhead

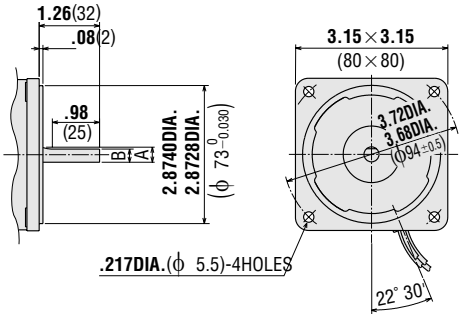
4IK25GN-AWU
4IK25GN-CWE
4IK25GN-SW
4IK25GN-AUL
Weight (Mass): 3.3 lb.(1.5 kg)

4GN□KA
Weight (Mass): 1.43 lb.(0.65 kg)



L=**1.26** (32) **4GN3KA**~**18KA**
L=**1.67** (42.5) **4GN25KA**~**180KA**

4IK25A-AWU Round Shaft Type
4IK25A-CWE
4IK25A-SW
4IK25A-AULA
Weight (Mass): 3.3 lb.(1.5 kg)



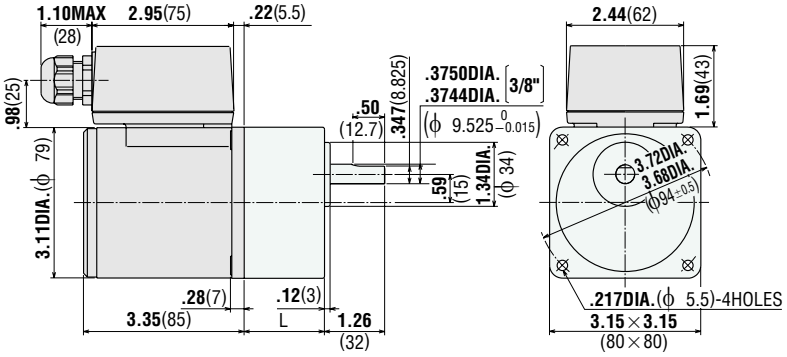
Unit = **inch** (mm)

Model	Shaft Diameter A	B
4IK25A-AWU **4IK25A-CWE** **4IK25A-SW**	.3150DIA. .3144DIA. (ϕ 8 0 −0.015)	.28(7)
4IK25A-AULA	.3125DIA. .3120DIA. [**5/16"**](ϕ 7.937 0 −0.011)	.28(7.037)

②Motor/Gearhead

4IK25GN-AWTU
4IK25GN-CWTE
4IK25GN-SWT
Weight (Mass): 3.7 lb.(1.7 kg)

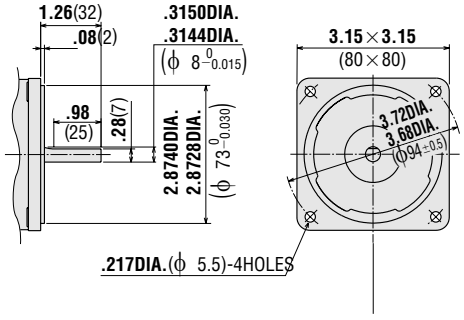
4GN□KA
Weight (Mass): 1.43 lb.(0.65 kg)



L=**1.26** (32) **4GN3KA**~**18KA**
L=**1.67** (42.5) **4GN25KA**~**180KA**

Use cabtyre cable with the diameter of .24DIA.(ϕ 6)~.47DIA.(ϕ 12).

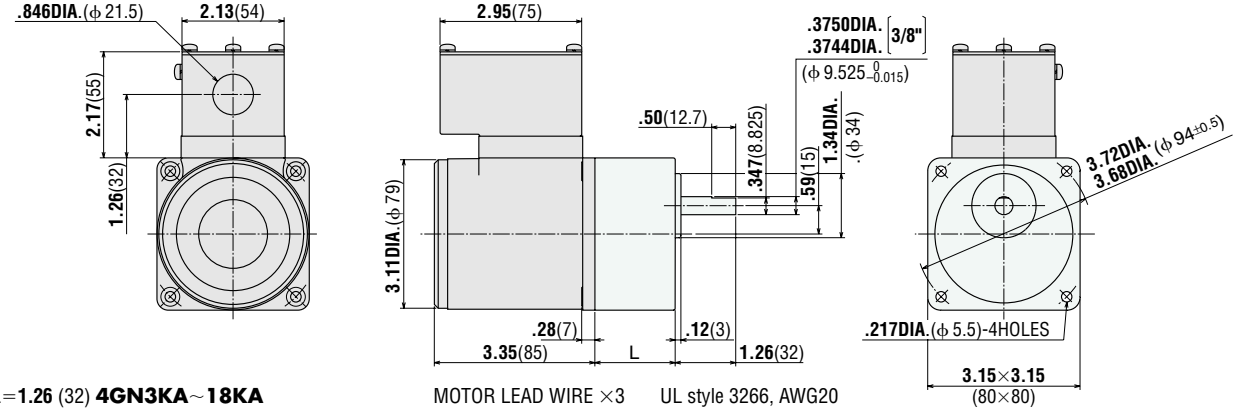
4IK25A-AWTU Round Shaft Type
4IK25A-CWTE
4IK25A-SWT
Weight (Mass): 3.7 lb.(1.7 kg)



③Motor/Gearhead

4IK25GN-FCH
4IK25GN-ECH
Weight (Mass): 4.2 lb.(1.9 kg)

4GN□KA
Weight (Mass): 1.43 lb.(0.65 kg)

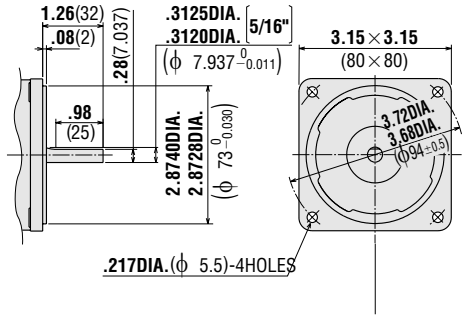


L=**1.26** (32) **4GN3KA**~**18KA**
L=**1.67** (42.5) **4GN25KA**~**180KA**

MOTOR LEAD WIRE ×3 UL style 3266, AWG20
GROUND LEAD WIRE ×1 UL style 3266, AWG18

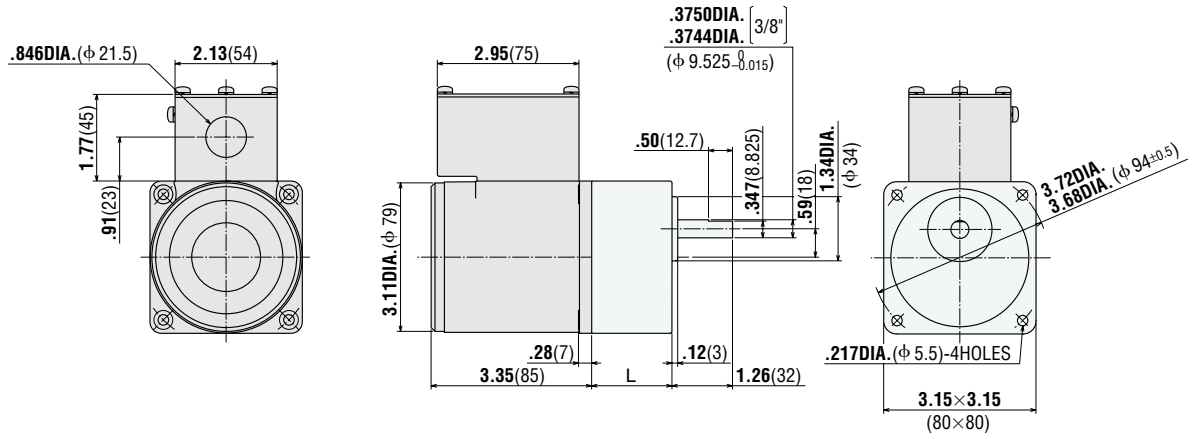
4IK25AA-FCH Round Shaft Type
4IK25AA-ECH

Weight (Mass): 4.2 lb.(1.9 kg)



4IK25GN-SH / **4GN□KA**

Weight (Mass): 3.7 lb.(1.7 kg) / Weight (Mass): 1.43 lb.(0.65 kg)

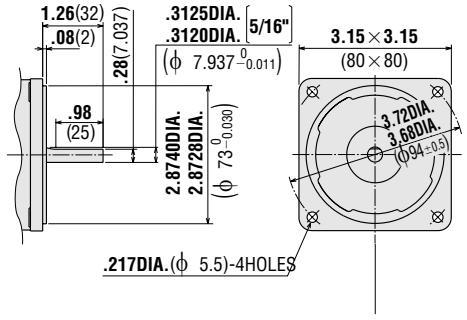


L=**1.26** (32) **4GN3KA**~**18KA**
L=**1.67** (42.5) **4GN25KA**~**180KA**

MOTOR LEAD WIRE ×3 UL style 3266, AWG20
GROUND LEAD WIRE ×1 UL style 3266, AWG18

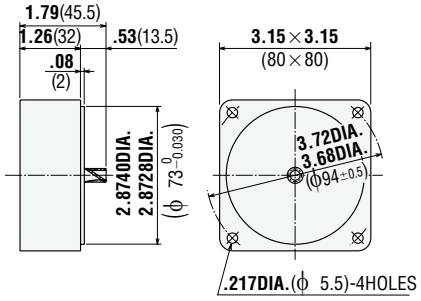
4IK25AA-SH Round Shaft Type

Weight (Mass): 3.7 lb.(1.7 kg)

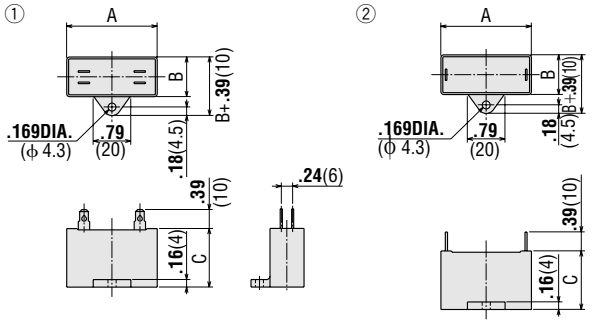


●Decimal Gearhead

4GN10XK Weight (Mass): 0.88 lb.(0.4 kg)



●Capacitor (included with the motor)



Motor Model	Capacitor Model	Dimensions in. (mm) A	B	C	Weight (Mass) oz (g)	Dimension No.
4IK25GN-AW□U **4IK25A-AW□U**	CH65CFAUL	1.50 (38)	0.83 (21)	1.22 (31)	1.23 (35)	①
4IK25GN-CW□E **4IK25A-CW□E**	CH15BFAUL	1.50 (38)	0.83 (21)	1.22 (31)	1.23 (35)	①
4IK25GN-AUL **4IK25A-AULA**	CH45UL	1.46 (37)	0.71 (18)	1.06 (27)	0.92 (26)	②

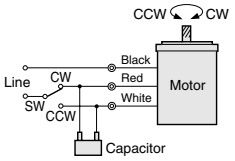
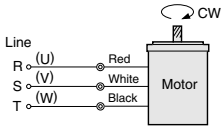
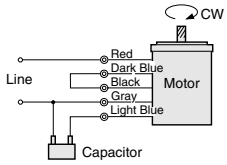
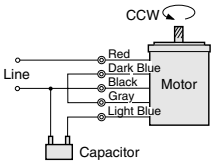
If you need to order a capacitor without a motor, add "-C" to the capacitor model number shown. A capacitor cap is always included with a capacitor.

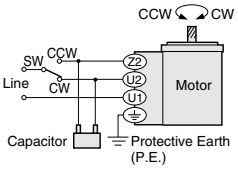
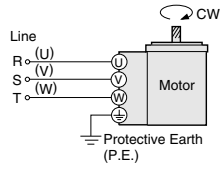
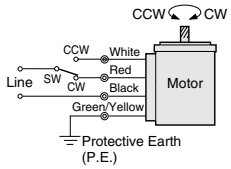
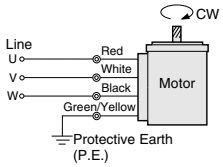
■ Right-Angle Gearheads

The right-angle gearhead provides an output shaft that is at a right angle to the motor's output shaft. See page [A-216] for specifications and other information.

Wiring Diagrams

The direction of motor rotation is as viewed from the shaft end of the motor.

Model / Direction	Lead Wire Type		
	4IK25GN-AWU **4IK25GN-CWE**	**4IK25GN-SW**	**4IK25GN-AUL**
CW			
CCW	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.	

Model / Direction	Terminal Box Type		Conduit Box Type	
	4IK25GN-AWTU **4IK25GN-CWTE**	**4IK25GN-SWT**	**4IK25GN-FCH** **4IK25GN-ECH**	**4IK25GN-SH**
CW				
CCW	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.

Change the direction of 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 of rotation after some delay.

Accessories

Motor Mounting Brackets

Optional die-cast aluminum mounting brackets are available. They can be used to install motors with or without gearheads. See page [A-266] for the dimensions.

Model name **SOL4U10**

Flexible Coupling

Optional clamping couplings are available. See page [A-260] for the dimensions.

INDUCTION MOTORS
Single-Phase,Three-Phase
40W (1/18.5 HP)
Frame Size 3.54 in.sq.(90mm sq.)

GEAR SAFETY STD.

■ Specifications — Continuous Rating

Model Upper Model Name:Pinion Shaft Type Lower Model Name( ):Round Shaft Type			Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
Lead Wire Type Dimension ①	Terminal Box Type Dimension ②	Conduit Box Type Dimension ③	HP	W	V	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
5IK40GN-AWU (5IK40A-AWU)	5IK40GN-AWTU (5IK40A-AWTU)	5IK40GN-FCH (5IK40AA-FCH)	1/18.5	40	Single-Phase 110	60	0.68	27.8	200	36.1	260	1500	9
					Single-Phase 115	60	0.67						
5IK40GN-CWE (5IK40A-CWE)	5IK40GN-CWTE (5IK40A-CWTE)	5IK40GN-ECH (5IK40AA-ECH)			Single-Phase 220	60	0.35			36.1	260	1500	
					Single-Phase 230	50	0.39	27.8	200	41.7	300	1300	2.3
					Single-Phase 230	60	0.34			36.1	260	1500	
5IK40GN-SW (5IK40A-SW)	5IK40GN-SWT (5IK40A-SWT)	5IK40GN-SH (5IK40AA-SH)			Three-Phase 200	50	0.32	55.5	400	41.7	300	1300	—
					Three-Phase 200	60	0.3	36.1	260	36.1	260	1550	
					Three-Phase 220	60	0.3	36.1	260	36.1	260	1600	
					Three-Phase 230	60	0.31	36.1	260	36.1	260	1600	
5IK40GN-AUL (5IK40A-AULA)	—	—			Single-Phase 115	60	0.75	27.8	200	36.1	260	1550	8

- The product contains a built-in thermal protector. When a motor overheats for any reason, the thermal protector is opened and the motor stops. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- The "**U**" and "**E**" at the end of the model name indicate that the unit includes a capacitor. These two letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the nameplate is adopted.
- The conduit box type of the motors are not VDE approved.

■ Gearmotor — Torque Table

The maximum permissible torque with a decimal gearhead with a gear ratio of 10 is 87 lb-in (10N·m).

- Right-Angle gearhead may be connected. See page [A-216] for more information on the right-angle gearheads.

●Single-Phase 115V/230V, Three-Phase 230V 60Hz

Unit = Upper values: lb-in / Lower values: N·m

Model	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
5IK40GN-AWU 5IK40GN-AWTU 5IK40GN-CWE 5IK40GN-CWTE 5IK40GN-SW 5IK40GN-SWT 5IK40GN-FCH 5IK40GN-ECH 5IK40GN-SH 5IK40GN-AUL	5GN□KA	5.5	6.6	9.,1	11	14	16	23	27	33	41	49	59	74	87	87	87	87	87	87	87
		0.63	0.76	1.1	1.3	1.6	1.9	2.6	3.2	3.8	4.7	5.7	6.8	8.6	10	10	10	10	10	10	10

●Single-Phase 230V/50Hz

Unit = Upper values: lb-in / Lower values: N·m

Model	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
5IK40GN-CWE 5IK40GN-CWTE 5IK40GN-ECH	5GN□KA	6.3	7.6	11	13	16	19	26	32	38	48	57	68	86	87	87	87	87	87	87	87
		0.73	0.87	1.2	1.5	1.8	2.2	3.0	3.6	4.4	5.5	6.6	7.9	9.9	10	10	10	10	10	10	10

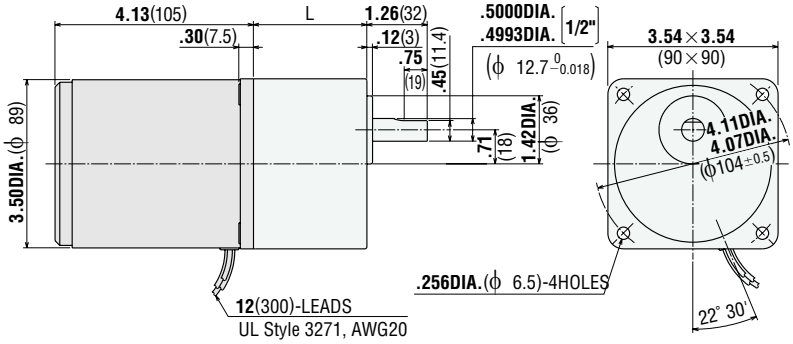
- Gearheads are sold separately.
- Enter the gear ratio in the box (□) within the model number. A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 ~ 20% less than the displayed value, depending on the size of the load.

Dimensions Scale 1/4, Unit = **inch** (mm)

①Motor/Gearhead

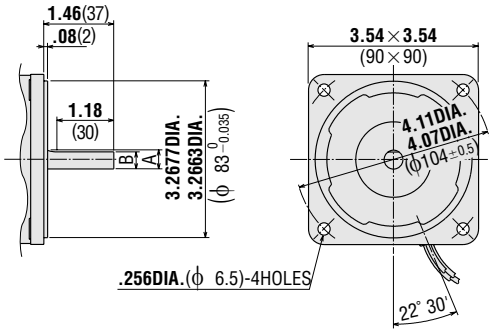
5IK40GN-AWU
5IK40GN-CWE
5IK40GN-SW
5IK40GN-AUL
Weight (Mass): 5.5 lb.(2.5 kg)

5GN□KA
Weight (Mass): 3.3 lb.(1.5 kg)



L=**1.65** (42) **5GN3KA**~**18KA**
L=**2.36** (60) **5GN25KA**~**180KA**

5IK40A-AWU Round Shaft Type
5IK40A-CWE
5IK40A-SW
5IK40A-AULA
Weight (Mass): 5.5 lb.(2.5 kg)



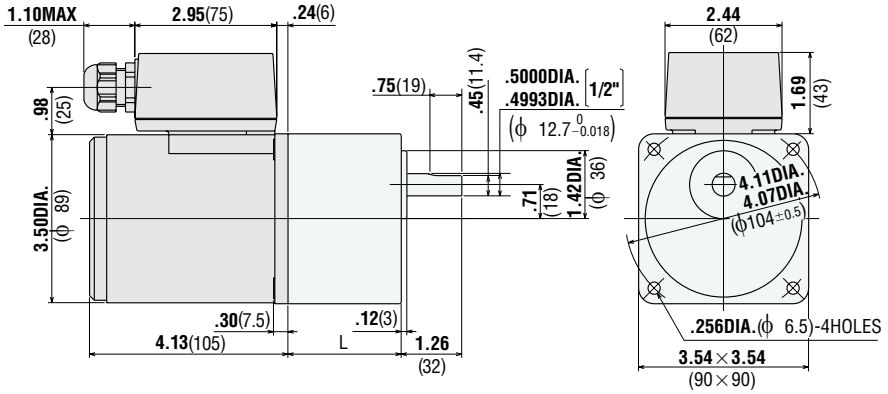
Unit = **inch** (mm)

Model	Shaft Diameter A	B
5IK40A-AWU **5IK40A-CWE** **5IK40A-SW**	**.3937DIA.** **.3931DIA.** (ϕ 10 0 −0.015)	**.35**(9)
5IK40A-AULA	**.3750DIA.** **.3744DIA.**	**[3/8"]**(ϕ 9.525 0 −0.011) **.35**(8.825)

②Motor/Gearhead

5IK40GN-AWTU
5IK40GN-CWTE
5IK40GN-SWT
Weight (Mass): 5.7 lb.(2.6 kg)

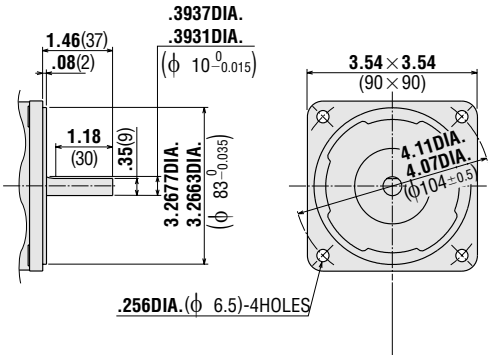
5GN□KA
Weight (Mass): 3.3 lb.(1.5 kg)



L=**1.65** (42) **5GN3KA**~**18KA**
L=**2.36** (60) **5GN25KA**~**180KA**

Use cabtyre cable with the diameter of
.24DIA.(ϕ 6)~**.47DIA.**(ϕ 12).

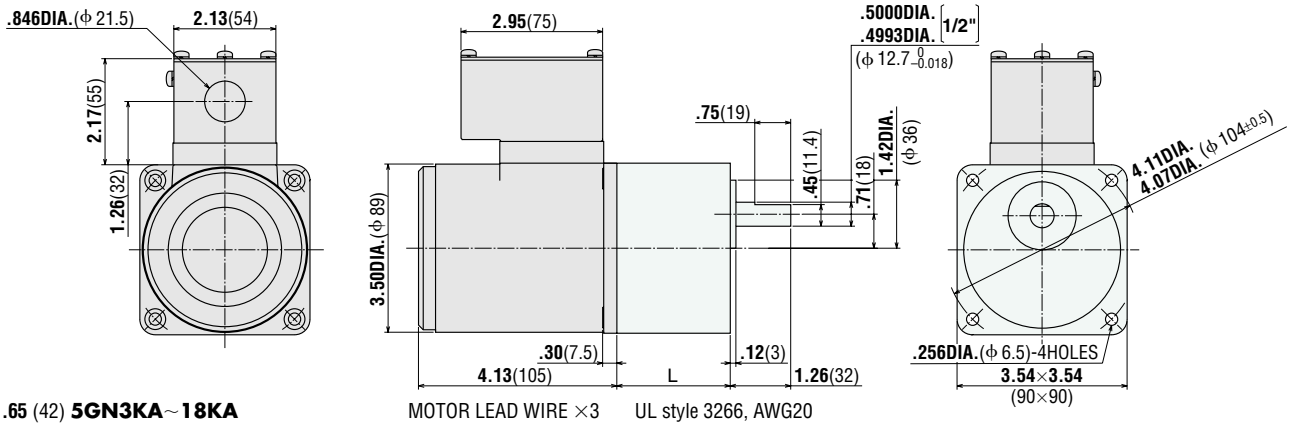
5IK40A-AWTU Round Shaft Type
5IK40A-CWTE
5IK40A-SWT
Weight (Mass): 5.7 lb.(2.6 kg)



③Motor/Gearhead

5IK40GN-FCH
5IK40GN-ECH
Weight (Mass): 6.0 lb.(2.7 kg)

5GN□KA
Weight (Mass): 3.3 lb.(1.5 kg)

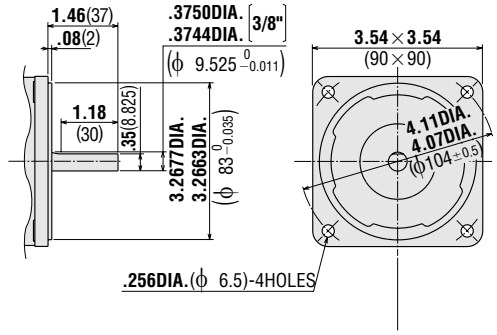


L=**1.65** (42) **5GN3KA**~**18KA**
L=**2.36** (60) **5GN25KA**~**180KA**

MOTOR LEAD WIRE ×3 UL style 3266, AWG20
GROUND LEAD WIRE ×1 UL style 3266, AWG18

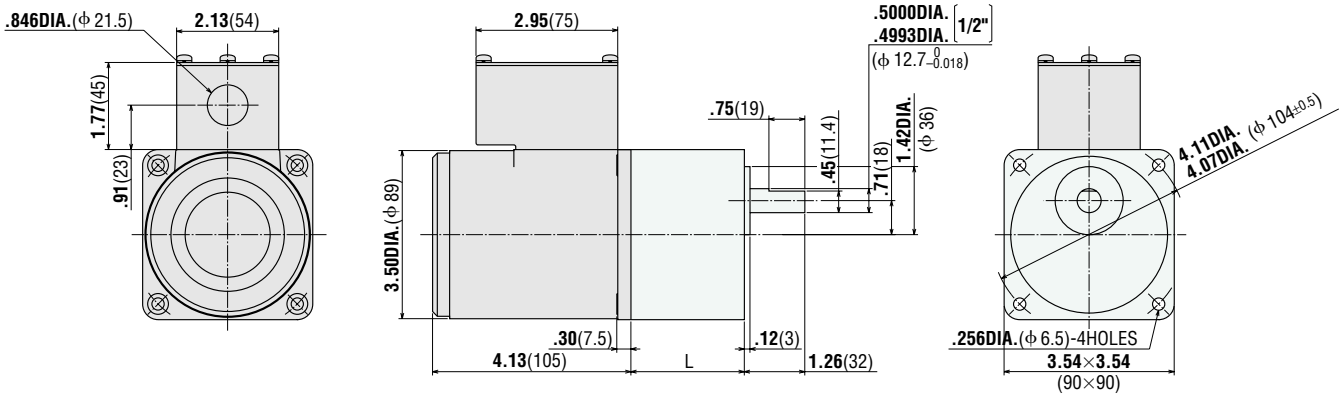
5IK40AA-FCH Round Shaft Type
5IK40AA-ECH

Weight (Mass): 6.0 lb.(2.7 kg)



5IK40GN-SH / **5GN□KA**

Weight (Mass): 5.5 lb.(2.5 kg) / Weight (Mass): 3.31 lb.(1.5 kg)

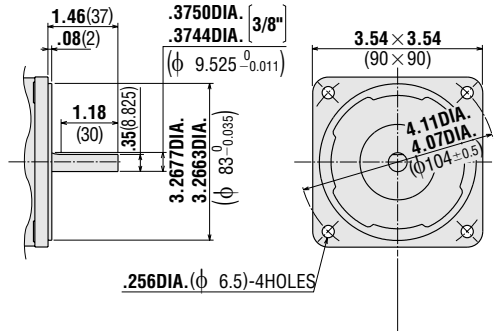


L=**1.65** (42) **5GN3KA**~**18KA**
L=**2.36** (60) **5GN25KA**~**180KA**

MOTOR LEAD WIRE ×3 UL style 3266, AWG20
GROUND LEAD WIRE ×1 UL style 3266, AWG18

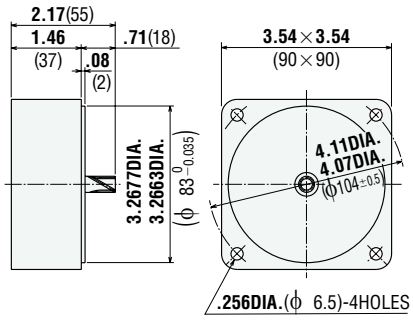
5IK40AA-SH Round Shaft Type

Weight (Mass): 5.5 lb.(2.5 kg)

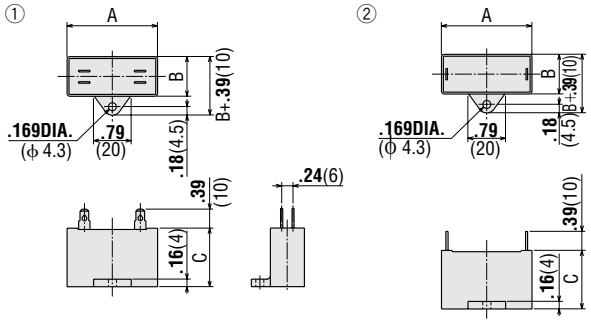


●Decimal Gearhead

5GN10XK Weight: 1.32 lb.(0.6 kg)



●Capacitor (included with the motor)



Motor Model	Capacitor Model	Dimensions in. (mm) A	B	C	Weight (Mass) oz (g)	Dimension No.
5IK40GN-AW□U **5IK40A-AW□U**	CH90CFAUL	1.89 (48)	0.83 (21)	1.22 (31)	1.41 (40)	①
5IK40GN-CW□E **5IK40A-CW□E**	CH23BFAUL	1.89 (48)	0.83 (21)	1.22 (31)	1.41 (40)	①
5IK40GN-AUL **5IK40A-AULA**	CH80UL	1.50 (38)	0.83 (21)	1.22 (31)	1.23 (35)	②

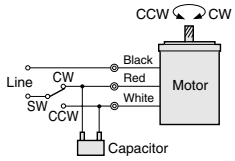
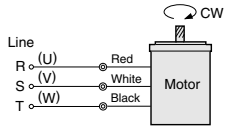
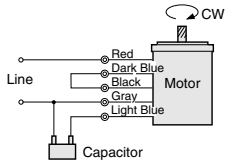
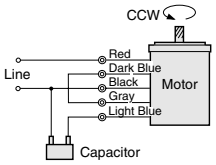
If you need to order a capacitor without a motor, add "-C" to the capacitor model number shown. A capacitor cap is always included with a capacitor.

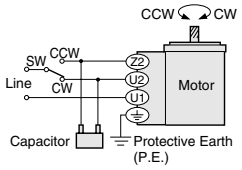
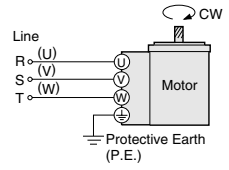
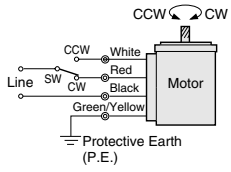
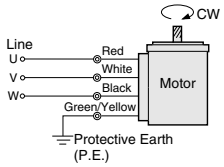
■ Right-Angle Gearheads

The right-angle gearhead provides an output shaft that is at a right angle to the motor's output shaft. See page [A-216] for specifications and other information.

Wiring Diagrams

The direction of motor rotation is as viewed from the shaft end of the motor.

Model / Direction	Lead Wire Type		
	5IK40GN-AWU 5IK40GN-CWE	**5IK40GN-SW**	**5IK40GN-AUL**
CW			
CCW	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.	

Model / Direction	Terminal Box Type		Conduit Box Type	
	5IK40GN-AWTU 5IK40GN-CWTE	**5IK40GN-SWT**	**5IK40GN-FCH 5IK40GN-ECH**	**5IK40GN-SH**
CW				
CCW	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.

Change the direction of 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 of rotation after some delay.

Accessories

Motor Mounting Brackets

Optional die-cast aluminum mounting brackets are available. They can be used to install motors with or without gearheads. See page [A-266] for the dimensions.

Model name **SOL5UA**

Flexible Coupling

Optional clamping couplings are available. See page [A-260] for the dimensions.

INDUCTION MOTORS

Single-Phase, Three-Phase

60W (1/12.5 HP)

Frame Size 3.54 in.sq.(90mm sq.)

GEAR SAFETY STD.

■ Specifications — Continuous Rating

Model Upper Model Name:Pinion Shaft Type Lower Model Name( ):Round Shaft Type			Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
Lead Wire Type Dimension ①	Terminal Box Type Dimension ②	Conduit Box Type Dimension ③	HP	W	V	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
5IK60GU-AWU (5IK60A-AWU)	5IK60GU-AWTU (5IK60A-AWTU)	5IK60GU-FCH (5IK60A-FCH)	1/12.5	60	Single-Phase 110	60	1.09	44.4	320	56.2	405	1450	18
					Single-Phase 115	60	1.1						
5IK60GU-CWE (5IK60A-CWE)	5IK60GU-CWTE (5IK60A-CWTE)	5IK60GU-ECH (5IK60A-ECH)			Single-Phase 220	60	0.54	44.4	320	56.2	405	1450	4
					Single-Phase 230	50	0.57			68	490	1200	
					Single-Phase 230	60	0.54			56.2	405	1450	
5IK60GU-SW (5IK60A-SW)	5IK60GU-SWT (5IK60A-SWT)	5IK60GU-SH (5IK60A-SH)			Three-Phase 200	50	0.5	83.3	600	62.5	450	1300	—
					Three-Phase 200	60	0.43	69.4	500	52.8	380	1550	
					Three-Phase 220	60	0.45	69.4	500	52.8	380	1600	
					Three-Phase 230	60	0.46	69.4	500	52.8	380	1600	
5IK60GU-AFUL (5IK60A-AFUL)	—	—			Single-Phase 115	60	0.96	41.7	300	52.8	380	1550	12

- The product contains a built-in thermal protector. When a motor overheats for any reason, the thermal protector is opened and the motor stops. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- The "**U**" and "**E**" at the end of the model name indicate that the unit includes a capacitor. These two letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the nameplate is adopted.
- The conduit box type of the motors are not VDE approved.

■ Gearmotor — Torque Table

The maximum permissible torque with a decimal gearhead with a gear ratio of 10 is 174 lb-in (20N·m).

- Right-Angle gearhead may be connected. See page [A-216] for more information on the right-angle gearheads.

●Single-Phase 115V/230V, Three-Phase 230V 60Hz

Unit = Upper values: lb-in / Lower values: N·m

Model	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
5IK60GU-AWU 5IK60GU-AWTU 5IK60GU-CWE 5IK60GU-CWTE 5IK60GU-FCH 5IK60GU-ECH	5GU□KA	8.5	10	14	17	21	26	32	38	46	58	70	83	116	139	155	174	174	174	174	174
		0.98	1.2	1.6	2.0	2.5	3.0	3.7	4.4	5.3	6.7	8.0	9.6	13	16	18	20	20	20	20	20
5IK60GU-SW 5IK60GU-SWT 5IK60GU-SH 5IK60GU-AFUL	5GU□KA	8	9.6	13	16	20	24	30	36	43	54	65	78	109	131	146	174	174	174	174	174
		0.92	1.1	1.5	1.8	2.3	2.8	3.5	4.2	5	6.3	7.5	9	13	15	17	20	20	20	20	20

●Single-Phase 230V/50Hz

Unit = Upper values: lb-in / Lower values: N·m

Model	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
5IK60GU-CWE 5IK60GU-CWTE 5IK60GU-ECH	5GU□KA	10	12	17	21	26	31	39	47	56	70	84	101	140	168	174	174	174	174	174	174
		1.2	1.4	2.0	2.4	3.0	3.6	4.5	5.4	6.4	8.1	9.7	12	16	19	20	20	20	20	20	20

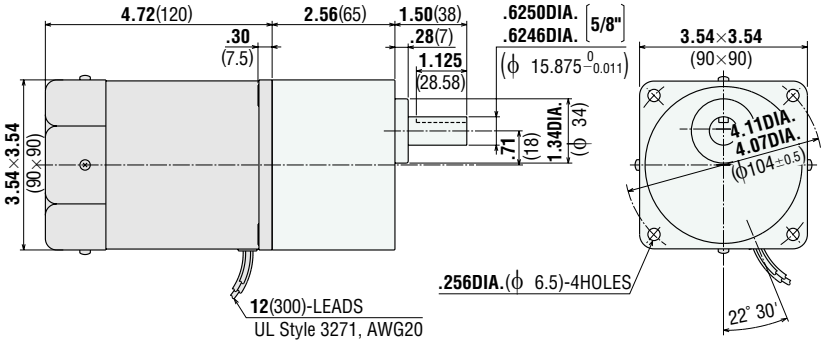
- Gearheads are sold separately.
- Enter the gear ratio in the box (□) within the model number. A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 ~ 20% less than the displayed value, depending on the size of the load.

■ Dimensions Scale 1/4, Unit = **inch** (mm)

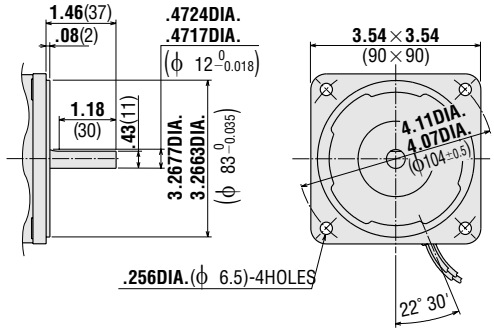
①Motor/Gearhead

5IK60GU-AWU
5IK60GU-CWE
5IK60GU-SW
5IK60GU-AFUL
Weight (Mass): 6.0 lb.(2.7 kg)

5GU□KA
Weight (Mass): 3.3 lb.(1.5 kg)



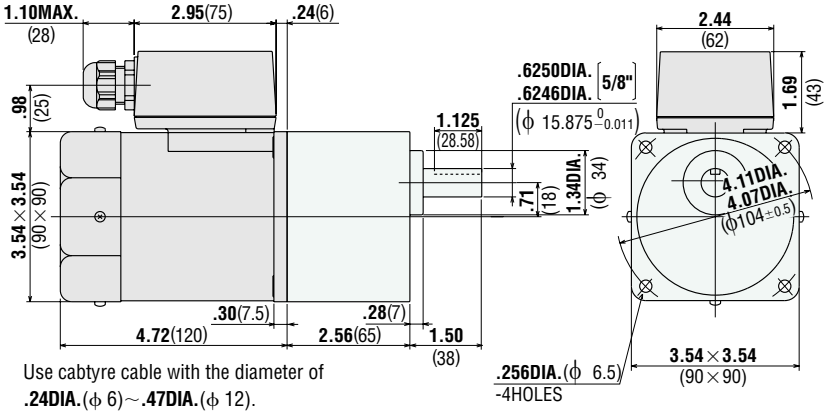
5IK60A-AWU Round Shaft Type
5IK60A-CWE
5IK60A-SW
5IK60A-AFUL
Weight (Mass): 6.0 lb.(2.7 kg)



②Motor/Gearhead

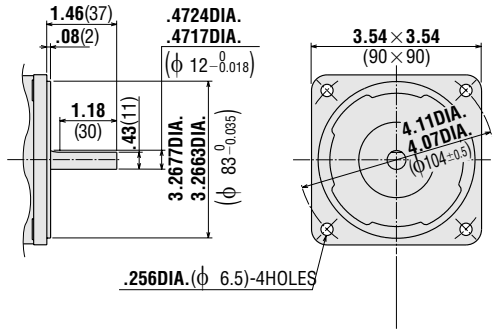
5IK60GU-AWTU
5IK60GU-CWTE
5IK60GU-SWT
Weight (Mass): 6.2 lb.(2.8 kg)

5GU□KA
Weight (Mass): 3.3 lb.(1.5 kg)



Use cabtyre cable with the diameter of **.24DIA.**(ϕ 6)～**.47DIA.**(ϕ 12).

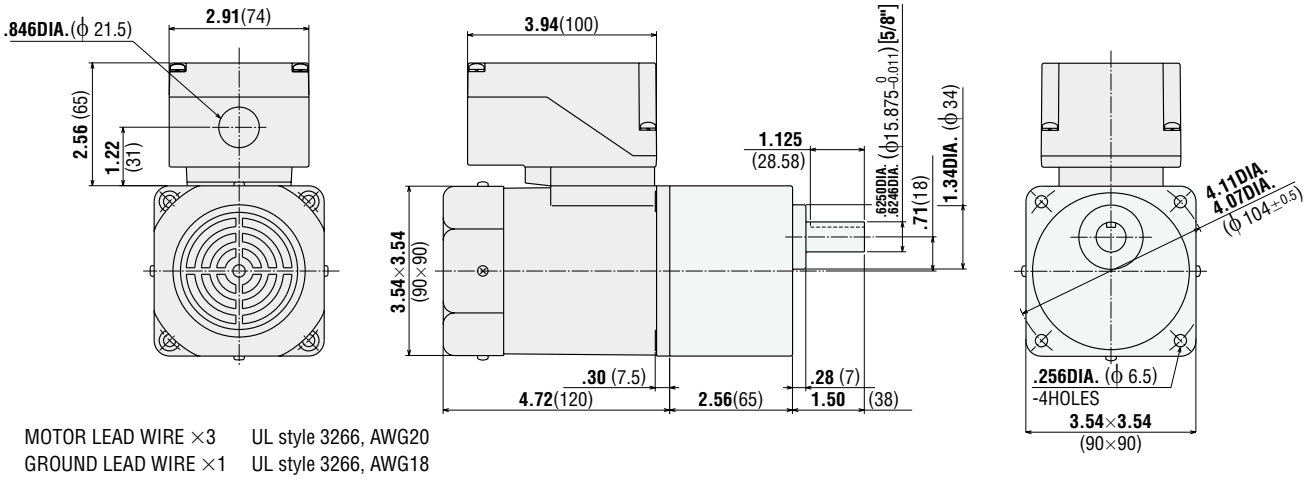
5IK60A-AWTU Round Shaft Type
5IK60A-CWTE
5IK60A-SWT
Weight (Mass): 6.2 lb.(2.8 kg)



③Motor/Gearhead

5IK60GU-FCH
5IK60GU-ECH
Weight (Mass): 7.1 lb.(3.2 kg)

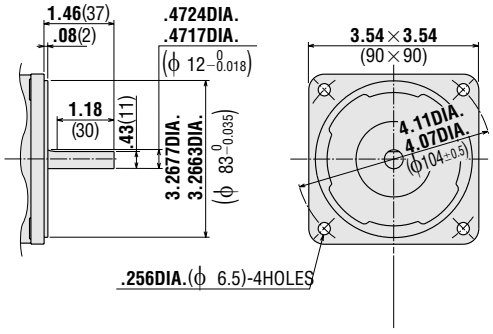
5GU□KA
Weight (Mass): 3.3 lb.(1.5 kg)



MOTOR LEAD WIRE ×3 UL style 3266, AWG20
GROUND LEAD WIRE ×1 UL style 3266, AWG18

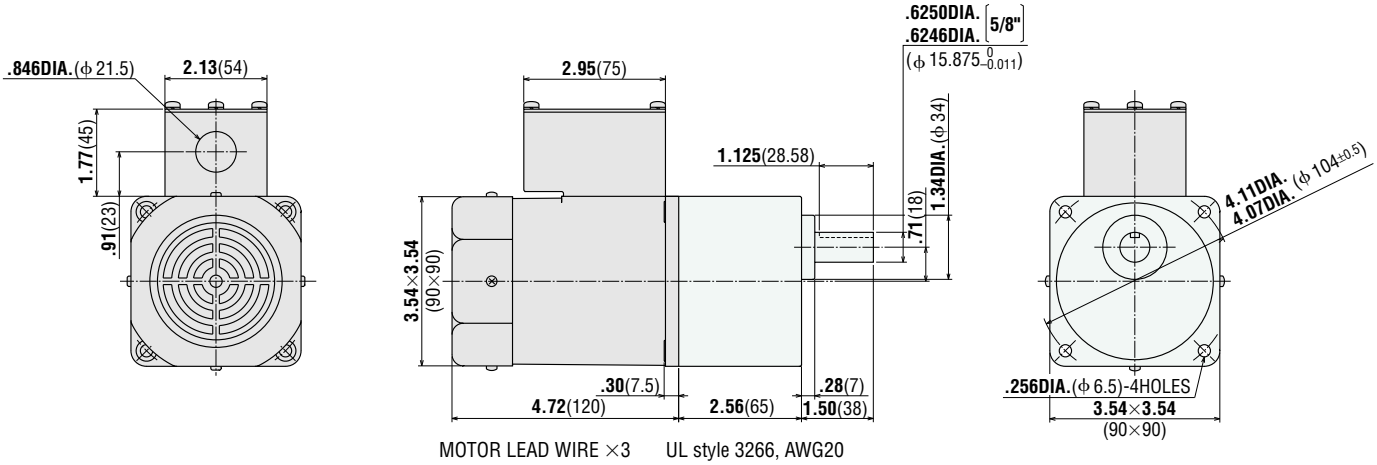
5IK60A-FCH
5IK60A-ECH

Weight (Mass): 7.1 lb.(3.2 kg)



5IK60GU-SH / **5GU□KA**

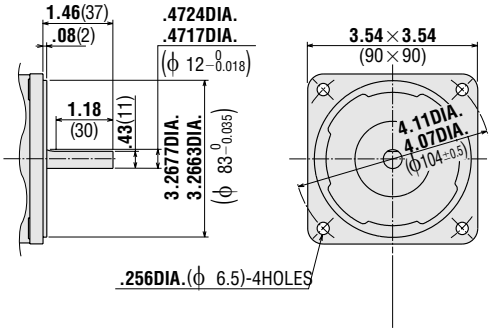
Weight (Mass): 6.2 lb.(2.8 kg) / Weight (Mass): 3.3 lb.(1.5 kg)



MOTOR LEAD WIRE ×3 UL style 3266, AWG20
GROUND LEAD WIRE ×1 UL style 3266, AWG18

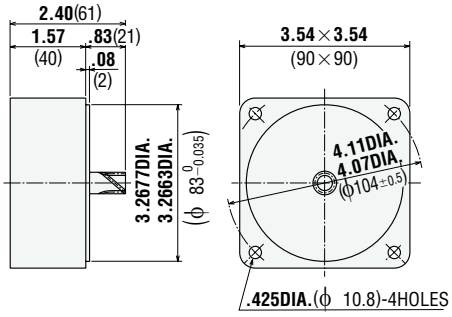
5IK60A-SH Round Shaft Type

Weight (Mass): 6.2 lb.(2.8 kg)



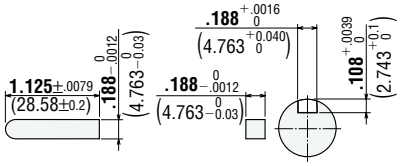
●Decimal Gearhead

5GU10XKB Weight (Mass): 1.32 lb.(0.6 kg)

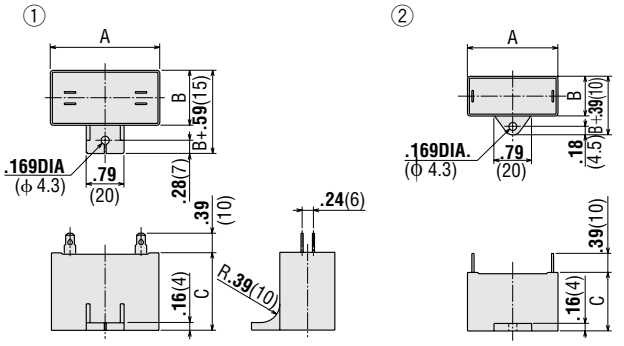


●Key and Key Slot Scale 1/2

(The key is provided with the gearhead)



●Capacitor (included with the motor)



Motor Model	Capacitor Model	Dimensions in. (mm) A	B	C	Weight oz (g)	Dimension No.
5IK60GU-AW□U	CH180CFAUL	2.28	0.93	1.46	2.47 (70)	①
5IK60A-AW□U		(58)	(23.5)	(37)		
5IK60GU-CW□E	CH40BFAUL	2.28	0.93	1.46	2.47 (70)	①
5IK60A-CW□E		(58)	(23.5)	(37)		
5IK60GU-AFUL	CH120CUL	2.28	0.83	1.22	1.76 (50)	②
5IK60A-AFUL		(58)	(21)	(31)		

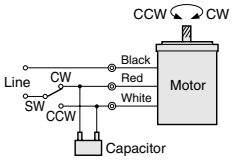
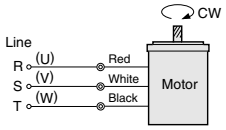
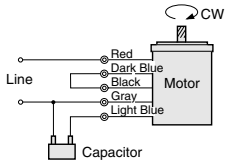
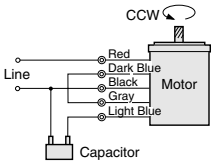
If you need to order a capacitor without a motor, add "-C" to the capacitor model number shown. A capacitor cap is always included with a capacitor.

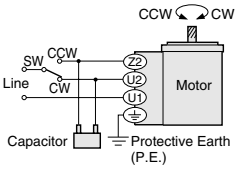
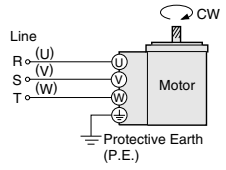
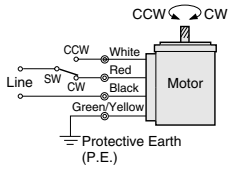
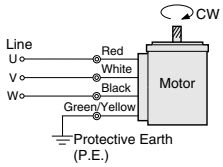
■ Right-Angle Gearheads

The right-angle gearhead provides an output shaft that is at a right angle to the motor's output shaft. See page [A-216] for specifications and other information.

Wiring Diagrams

The direction of motor rotation is as viewed from the shaft end of the motor.

Model / Direction	Lead Wire Type		
	5IK60GU-AWU 5IK60GU-CWE	**5IK60GU-SW**	**5IK60GU-AFUL**
CW			
CCW	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.	

Model / Direction	Terminal Box Type		Conduit Box Type	
	5IK60GU-AWTU 5IK60GU-CWTE	**5IK60GU-SWT**	**5IK60GU-FCH 5IK60GU-ECH**	**5IK60GU-SH**
CW				
CCW	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.

Change the direction of 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 of rotation after some delay.

Accessories

Motor Mounting Brackets

Optional die-cast aluminum mounting brackets are available. They can be used to install motors with or without gearheads. See page [A-266] for the dimensions.

Model name **SOL5UA**

Flexible Coupling

Optional clamping couplings are available. See page [A-260] for the dimensions.

INDUCTION MOTORS
Single-Phase, Three-Phase
90W (1/8 HP)

Frame Size 3.54 in.sq.(90mm sq.)

GEAR SAFETY STD.

■ Specifications — Continuous Rating

Model Upper Model Name:Pinion Shaft Type Lower Model Name( ):Round Shaft Type			Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
Lead Wire Type Dimension ①	Terminal Box Type Dimension ②	Conduit Box Type Dimension ③	HP	W	V	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
5IK90GU-AWU **(5IK90A-AWU)**	**5IK90GU-AWTU** **(5IK90A-AWTU)**	**5IK90GU-FCH** **(5IK90A-FCH)**	1/8	90	Single Phase 110	60	1.45	62.5	450	81.2	585	1500	20
					Single Phase 115	60	1.44						
5IK90GU-CWE **(5IK90A-CWE)**	**5IK90GU-CWTE** **(5IK90A-CWTE)**	**5IK90GU-ECH** **(5IK90A-ECH)**			Single Phase 220	60	0.82	62.5	450	84	605	1450	6
					Single Phase 230	50	0.76	62.5	450	101.4	730	1200	
					Single Phase 230	60	0.81	62.5	450	84	605	1450	
5IK90GU-SW **(5IK90A-SW)**	**5IK90GU-SWT** **(5IK90A-SWT)**	**5IK90GU-SH** **(5IK90A-SH)**			Three Phase 200	50	0.64	118	850	94.4	680	1300	—
					Three Phase 200	60	0.59	97.2	700	79.2	570	1550	
					Three Phase 220	60	0.6	97.2	700	79.2	570	1600	
					Three Phase 230	60	0.61	97.2	700	79.2	570	1600	
5IK90GU-AFUL **(5IK90A-AFUL)**	—	—			Single Phase 115	60	1.5	62.5	450	79.2	570	1550	20

- The product contains a built-in thermal protector. When a motor overheats for any reason, the thermal protector is opened and the motor stops. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- The "**U**" and "**E**" at the end of the model name indicate that the unit includes a capacitor. These two letters are not listed on the motor nameplate. When the motor is approved under various safety standards, the nameplate is adopted.
- The conduit box type of the motors are not VDE approved.

■ Gearmotor — Torque Table

The maximum permissible torque with a decimal gearhead with a gear ratio of 10 is 174 lb-in (20N·m).

Right-Angle gearhead may be connected. See page [A-216] for more information on the right-angle gearheads.

●Single-Phase 115V/230V, Three-Phase 230V 60Hz

Unit = Upper values: lb-in / Lower values: N·m

Model	Speed r/min	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
	Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
5IK90GU-AWU **5IK90GU-AWTU** **5IK90GU-FCH** / **5GU□KA**		12 1.4	15 1.7	21 2.4	25 2.8	31 3.6	37 4.3	46 5.3	56 6.4	67 7.7	84 9.7	100 12	121 14	167 19	174 20	174 20	174 20	174 20	174 20	174 20	174 20
5IK90GU-CWE **5IK90GU-CWTE** **5IK90GU-ECH** / **5GU□KA**		13 1.5	15 1.8	21 2.5	26 2.9	32 3.7	38 4.4	48 5.5	57 6.6	69 7.9	87 10	104 12	125 14	173 20	174 20	174 20	174 20	174 20	174 20	174 20	174 20
5IK90GU-SW **5IK90GU-SWT** **5IK90GU-SH** **5IK90GU-AFUL** / **5GU□KA**		12 1.4	14 1.7	20 2.3	24 2.8	30 3.5	36 4.2	45 5.2	54 6.2	65 7.5	82 9.4	98 11	118 14	163 19	174 20	174 20	174 20	174 20	174 20	174 20	174 20

●Single-Phase 230V/50Hz

Unit = Upper values : lb-in / Lower values : N·m

Model	Speed r/min	500	416	300	250	200	166	120	100	83	60	50	41	30	25	20	16	15	12.5	10	8.3
	Gear Ratio	**3**	**3.6**	**5**	**6**	**7.5**	**9**	**12.5**	**15**	**18**	**25**	**30**	**36**	**50**	**60**	**75**	**90**	**100**	**120**	**150**	**180**
5IK90GU-CWE **5IK90GU-CWTE** **5IK90GU-ECH** / **5GU□KA**		15 1.8	18 2.1	26 3.0	31 3.5	39 4.4	46 5.3	58 6.7	69 8.0	83 9.6	105 12	125 14	151 17	174 20	174 20	174 20	174 20	174 20	174 20	174 20	174 20

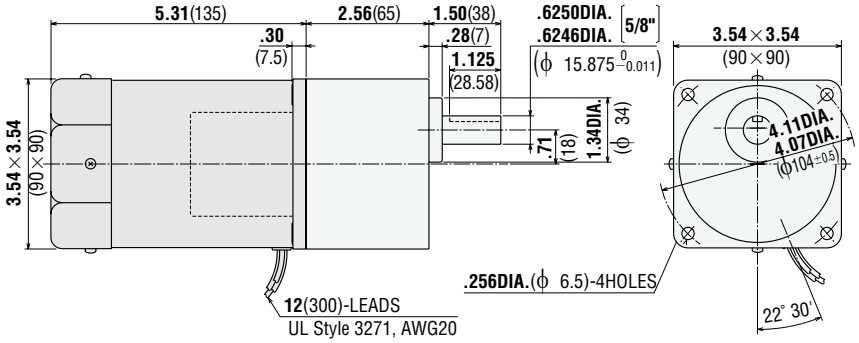
- Gearheads are sold separately.
- Enter the gear ratio in the box (□) within the model number. A colored background indicates gear shaft rotation in the same direction as the motor shaft; a white background indicates rotation in the opposite direction.
- The speed is calculated by dividing the motor's synchronous speed (50 Hz: 1500r/min, 60 Hz: 1800 r/min) by the gear ratio. The actual speed is 2 ~ 20% less than the displayed value, depending on the size of the load.

■ Dimensions Scale 1/4, Unit = **inch** (mm)

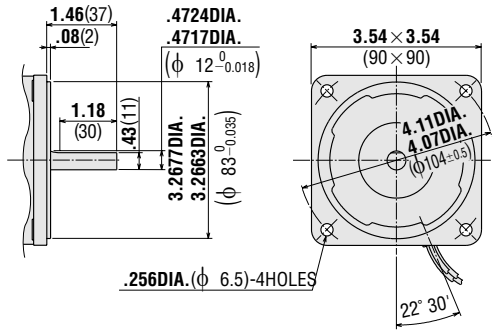
①Motor/Gearhead

5IK90GU-AWU
5IK90GU-CWE
5IK90GU-SW
5IK90GU-AFUL
Weight (Mass): 7.1 lb.(3.2 kg)

5GU□KA
Weight (Mass): 3.3 lb.(1.5 kg)



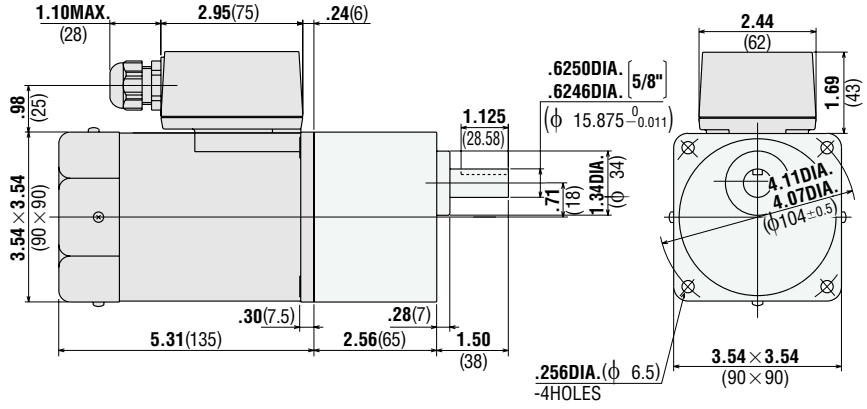
5IK90A-AWU
5IK90A-CWE
5IK90A-SW
5IK90A-AFUL
Weight (Mass): 7.1 lb.(3.2 kg)



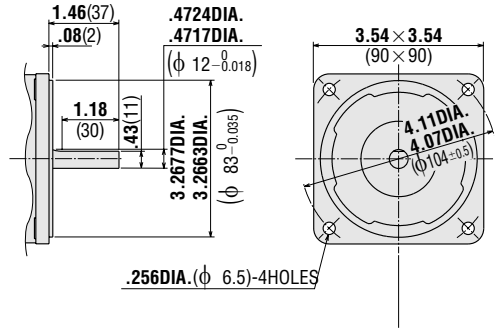
②Motor/Gearhead

5IK90GU-AWTU
5IK90GU-CWTE
5IK90GU-SWT
Weight (Mass): 7.3 lb.(3.3 kg)

5GU□KA
Weight (Mass): 3.3 lb.(1.5 kg)



5IK90A-AWTU
5IK90A-CWTE
5IK90A-SWT
Weight (Mass): 7.3 lb.(3.3 kg)

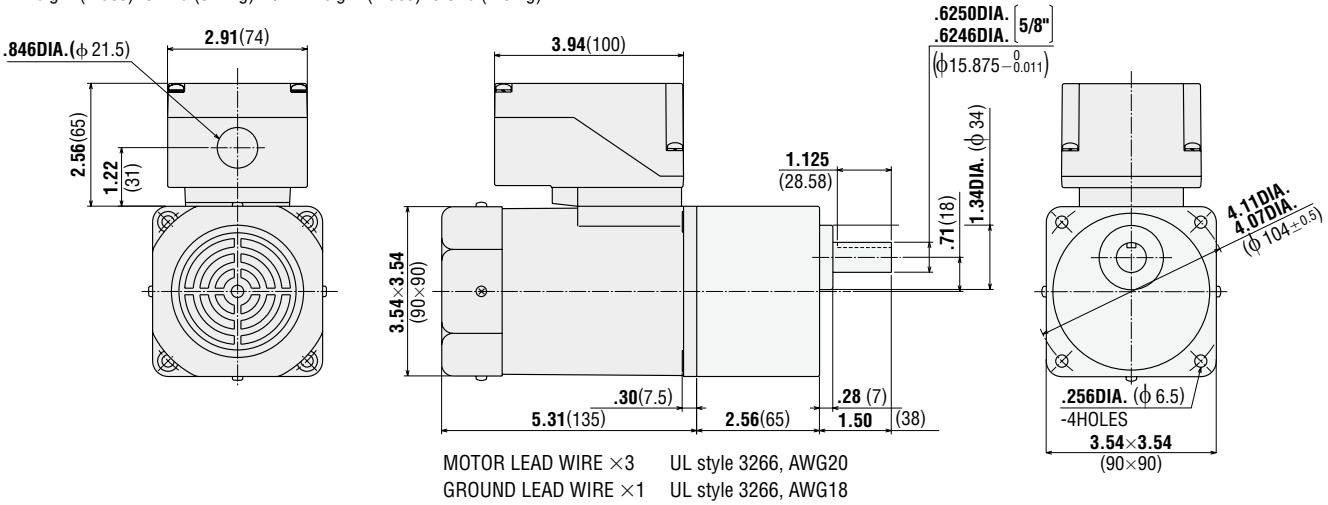


Use cabtyre cable with the diameter of
.24DIA.(ϕ 6)～**.47DIA.**(ϕ 12).

③Motor/Gearhead

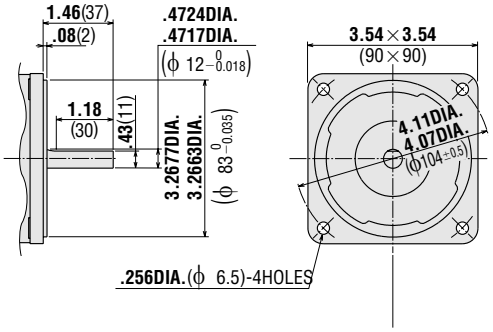
5IK90GU-FCH
5IK90GU-ECH
Weight (Mass): 8.2 lb.(3.7 kg)

5GU□KA
Weight (Mass): 3.3 lb.(1.5 kg)

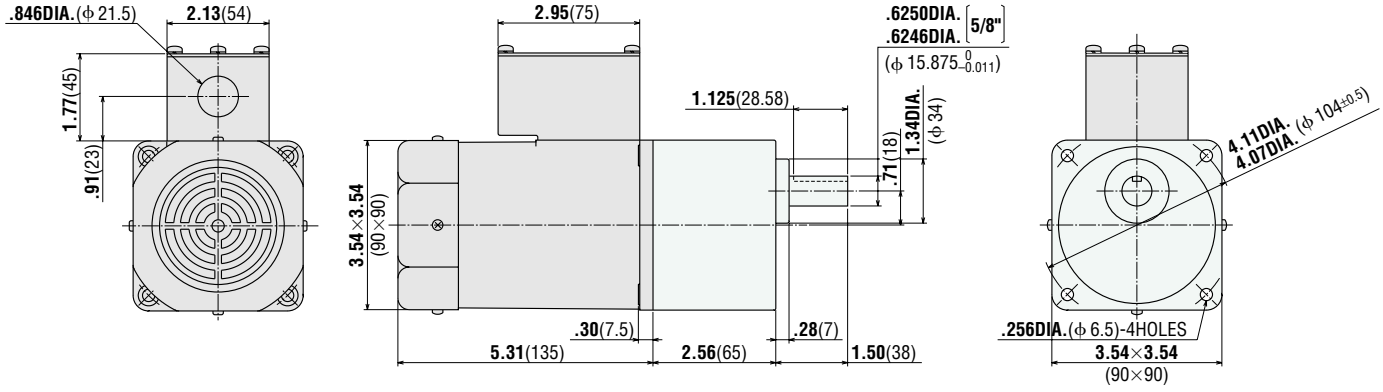


MOTOR LEAD WIRE ×3 UL style 3266, AWG20
GROUND LEAD WIRE ×1 UL style 3266, AWG18

5IK90A-FCH
5IK90A-ECH
Weight (Mass): 8.2 lb.(3.7 kg)

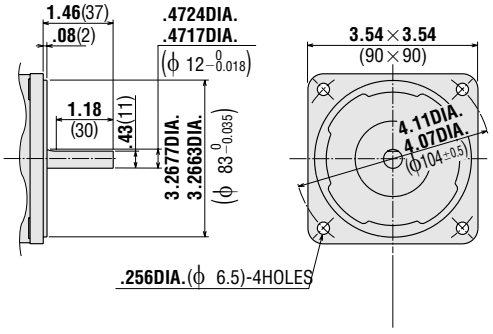


5IK90GU-SH / **5GU□KA**
Weight (Mass): 7.3 lb.(3.3 kg) / Weight (Mass): 3.3 lb.(1.5 kg)



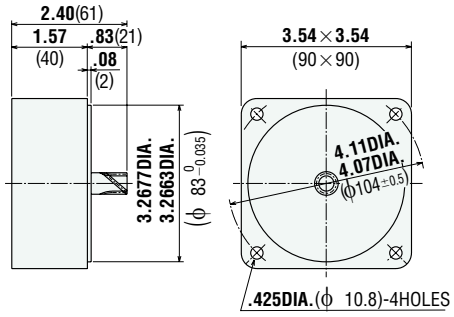
MOTOR LEAD WIRE ×3 UL style 3266, AWG20
GROUND LEAD WIRE ×1 UL style 3266, AWG18

5IK90A-SH Round Shaft Type
Weight (Mass): 7.3 lb.(3.3 kg)



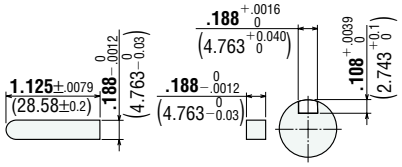
●Decimal Gearhead

5GU10XKB Weight (Mass): 1.32 lb.(0.6 kg)

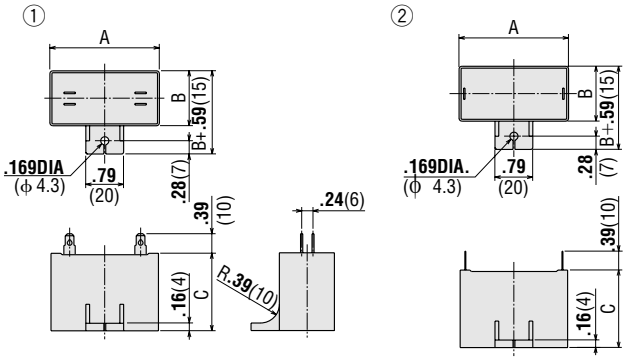


●Key and Key Slot Scale 1/2

(The key is provided with the gearhead)



●Capacitor (included with the motor)



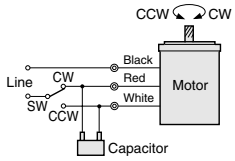
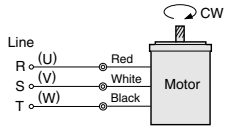
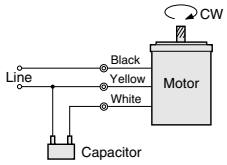
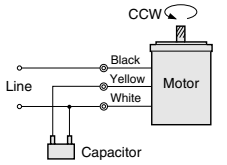
Motor Model	Capacitor Model	Dimensions in. (mm) A	B	C	Weight oz (g)	Dimension No.
5IK90GU-AW□U	CH200CFAUL	2.28	1.14	1.61	3.35 (95)	①
5IK90A-AW□U		(58)	(29)	(41)		
5IK90GU-CW□E	CH60BFAUL	2.28	1.14	1.61	3.00 (85)	①
5IK90A-CW□E		(58)	(29)	(41)		
5IK90GU-AFUL	CH200UL	2.28	0.91	1.46	2.29 (65)	②
5IK90A-AFUL		(58)	(23.5)	(37)		

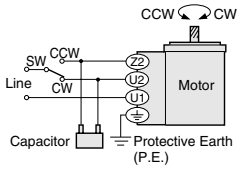
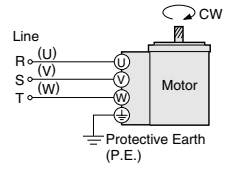
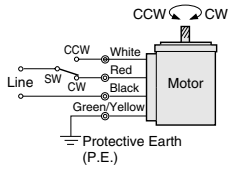
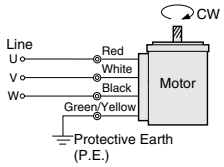
If you need to order a capacitor without a motor, add "-C" to the capacitor model number shown. A capacitor cap is always included with a capacitor.

■ Right-Angle Gearheads

The right-angle gearhead provides an output shaft that is at a right angle to the motor's output shaft. See page [A-216] for specifications and other information.

Wiring Diagrams The direction of motor rotation is as viewed from the shaft end of the motor.

Model / Direction	Lead Wire Type		
	5IK90GU-AWU 5IK90GU-CWE	**5IK90GU-SW**	**5IK90GU-AFUL**
CW			
CCW	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.	

Model / Direction	Terminal Box Type		Conduit Box Type	
	5IK90GU-AWTU 5IK90GU-CWTE	**5IK90GU-SWT**	**5IK90GU-FCH 5IK90GU-ECH**	**5IK90GU-SH**
CW				
CCW	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.	To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip switch SW to CCW.	To change the rotation, change any two connections between U, V and W.

Change the direction of 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 of rotation after some delay.

Accessories

Motor Mounting Brackets

Optional die-cast aluminum mounting brackets are available. They can be used to install motors with or without gearheads. See page [A-266] for the dimensions.

Model name **SOL5UA**

Flexible Coupling

Optional clamping couplings are available. See page [A-260] for the dimensions.

INDUCTION MOTORS **BH** Series

Single-Phase, Three-Phase

200W (1/3.73 HP)

Frame Size 4.09 in.sq.(104mm sq.)

GEAR SAFETY STD.

- **BH Series motors provide 200W output power and up to 347 lb-in (40 N·m) of torque in a compact 4.09"sq. mounting configuration.**
- **For easy installation, the BH Series motor and gearhead come pre-assembled. Motors and gearheads are also available separately so you can have them on hand to make changes or repairs.**

■ Specifications — Continuous Rating

Model Upper Model Name:Pinion Shaft Type Lower Model Name( ):Round Shaft Type		Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
Cable clamp Type Dimension ①	Terminal Box Type Dimension ②	HP	W	V	Hz	A	oz-in.	mN·m	oz-in.	mN·m	r/min.	μF
BHI62F-□ **(BHI62F-A)**	**BHI62FT-□** **(BHI62FT-A)**	1/3.73	200	Single Phase 110	60	3	125	900	181	1300	1500	40
				Single Phase 115	60		139	1000				
—	**BHI62ET-□** **(BHI62ET-A)**			Single Phase 220	60	1.5	139	1000	181	1300	1500	10
				Single Phase 230	50	1.5	139	1000	215	1550	1250	
				Single Phase 230	60	1.5	139	1000	181	1300	1500	
—	**BHI62ST-□** **(BHI62ST-A)**			Three Phase 200	50	1.1	215	1550	215	1550	1250	—
				Three Phase 200	60	1.1	181	1300	181	1300	1500	
				Three Phase 220	60	0.95	174	1250	174	1250	1550	
				Three Phase 230	60	0.95	167	1200	167	1200	1600	

- The product contains a built-in thermal protector. When a motor overheats for any reason, the thermal protector is opened and the motor stops. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.
- Enter the gear ratio in the box (□) within the model number.

■ Gearmotor — Torque Table

●Single-Phase 115V/230V 60Hz, Three-Phase 230V 60Hz

Unit = Upper values: lb-in / Lower values: N·m

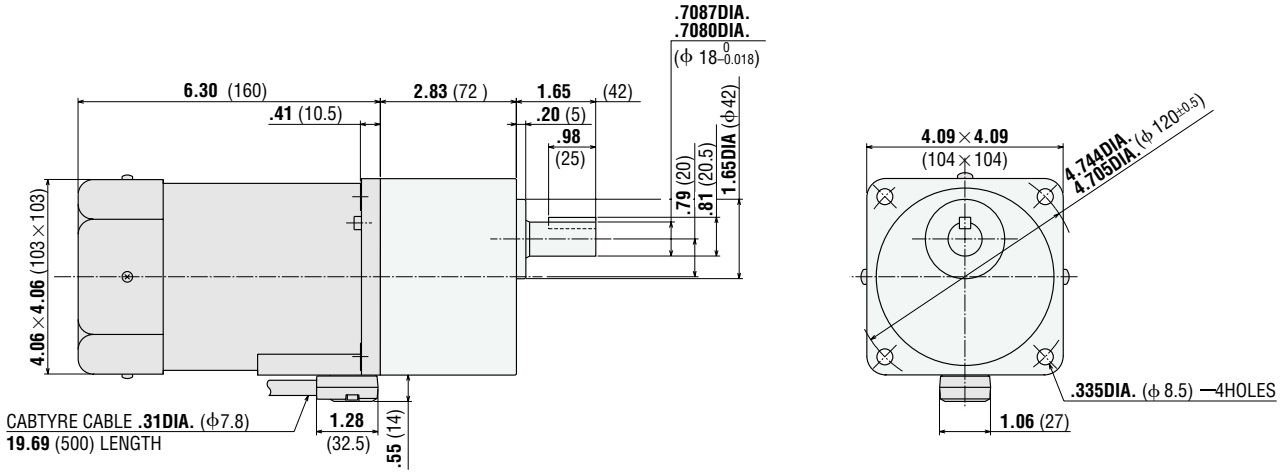
Model \ Speed r/min	500	300	200	120	100	60	50	30	20	15	10
Gear Ratio	**3.6**	**6**	**9**	**15**	**18**	**30**	**36**	**60**	**90**	**120**	**180**
BHI62F-□ **BHI62FT-□** **BHI62ET-□**	33 3.8	55 6.3	82 9.5	124 14	149 17	248 28	297 34	347 40	347 40	347 40	347 40
BHI62ST-□	3.0 3.5	51 5.8	76 8.7	114 13	137 16	229 26	274 32	347 40	347 40	347 40	347 40

- Enter the gear ratio in the box within the model number.
- The speed is calculated by dividing the motor's synchronous speed (60Hz: 1800 r/min) by the gear ratio. The actual speed is 2 ~ 20% less than the displayed value, depending on the size of the load.

Dimensions Scale 1/4, Unit = **inch** (mm)

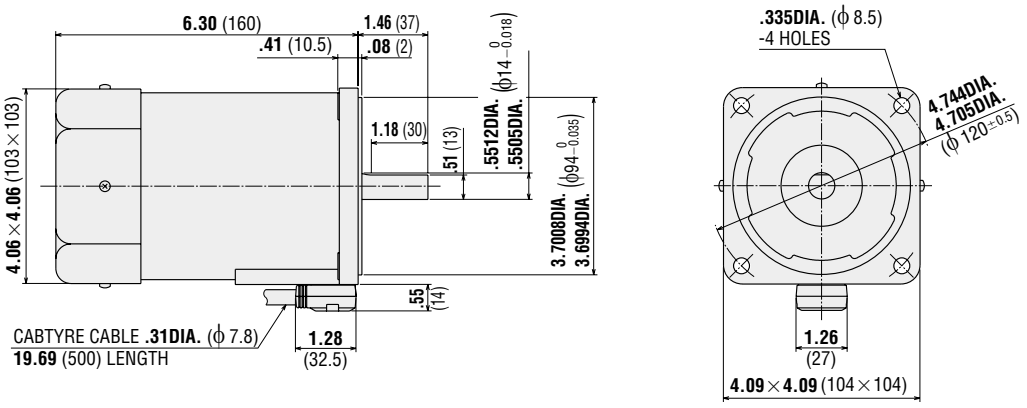
BHI62F-□

Weight (Mass): 18 lb.(8 kg)



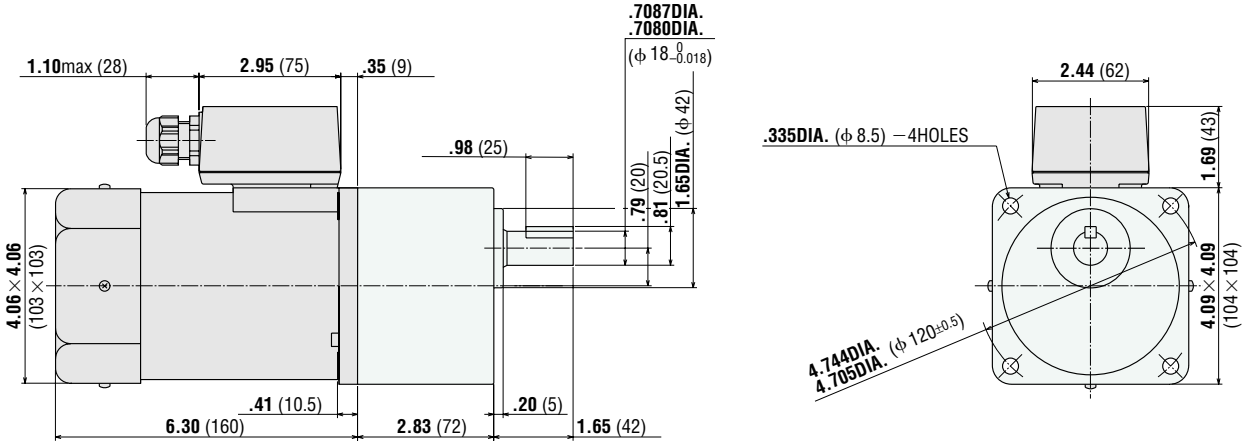
BHI62F-A

Weight (Mass): 11 lb.(5 kg)



BHI62FT-□
BHI62ET-□
BHI62ST-□

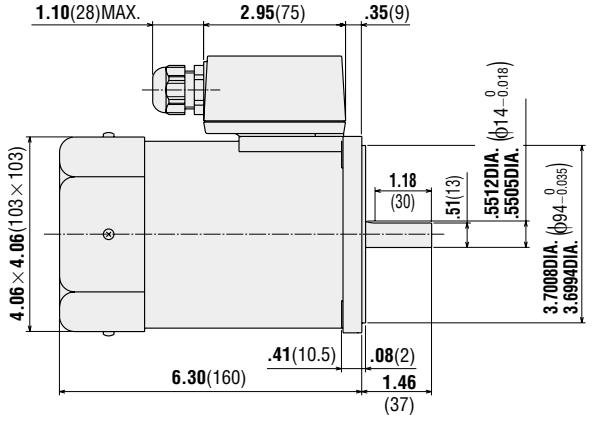
Weight (Mass): 18 lb.(8 kg)

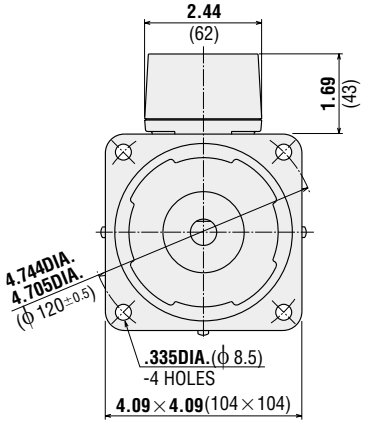


Use cabtyre cable with the diameter of
.24DIA.(ϕ 6)～**.47DIA.**(ϕ 12).

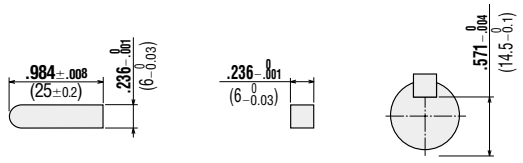
BHI62FT-A
BHI62ET-A
BHI62ST-A

Weight (Mass): 11 lb.(5kg)

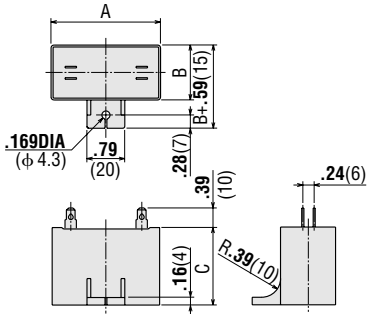




Use cabtyre cable with the diameter of **.24DIA.**(ϕ 6)～**.47DIA.**(ϕ 12).



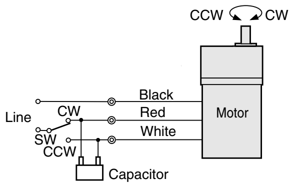
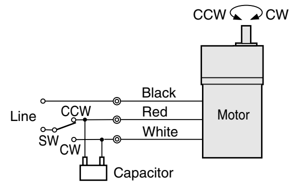
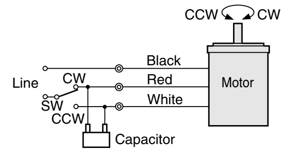
●Capacitor (included with the motor)

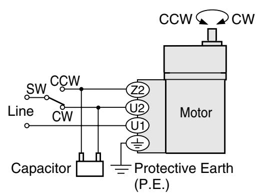
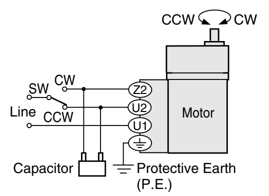
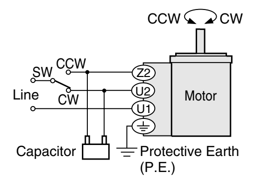


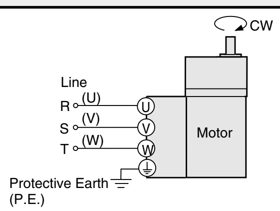
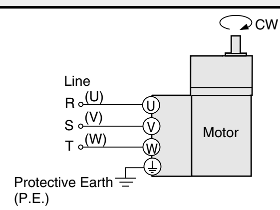
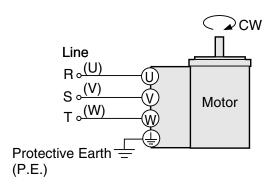
Motor Model	Capacitor Model	Dimensions in. (mm) A	B	C	Weight oz (g)
BHI62F-□ **BHI62F-A** **BHI62FT-□** **BHI62FT-A**	CH400CFAUL2	2.28 (58)	1.61 (41)	2.28 (58)	6.17 (175)
BHI62ET-□ **BHI62ET-A**	CH100BFAUL	2.28 (58)	1.38 (35)	1.97 (50)	4.66 (132)

Capacitor cap is provided with the capacitor.

Wiring Diagrams
The direction of motor rotation is as viewed from the shaft end of the motor.

Model / Direction	Cable Clamp Type		
	BHI62F-3.6~9 **BHI62F-60~180**	**BHI62F-15~36**	**BHI62F-A**
CW CCW	 To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip this switch to CCW.	 To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip this switch to CCW.	 To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip this switch to CCW.

Model / Direction	Terminal Box Type Single-Phase		
	BHI62FT-3.6~9 **BHI62ET-3.6~9** **BHI62FT-60~180** **BHI62ET-60~180**	**BHI62FT-15~36** **BHI62ET-15~36**	**BHI62FT-A** **BHI62ET-A**
CW CCW	 To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip this switch to CCW.	 To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip this switch to CCW.	 To rotate the motor in a clockwise (CW) direction, flip switch SW to CW. To rotate it in a counterclockwise (CCW) direction, flip this switch to CCW.

Model / Direction	Terminal Box Type Three-Phase		
	BHI62ST-3.6~9 **BHI62ST-60~180**	**BHI62ST-15~36**	**BHI62ST-A**
CW CCW	 To change the rotation, change any two connections between U, V and W.	 To change the rotation, change any two connections between U, V and W.	 To change the rotation, change any two connections between U, V and W.

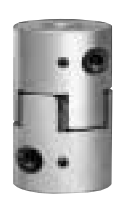
Change the direction of motor rotation only after bringing the motor to a stop.
If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction of rotation after some delay.

Accessories

●Motor Mounting Brackets
Optional die-cast aluminum mounting brackets are available. They can be used to install motors with or without gearheads. See page [A-266] for the dimensions.

Model name **SOL6M8**

●Flexible Coupling
Optional clamping couplings are available. See page [A-260] for the dimensions.



INDUCTION MOTORS 2-Pole, High Speed Type

Single-Phase

40W (1/18.5 HP) • 60W (1/12.5 HP) • 90W (1/8 HP)

Frame Size 3.15 in.sq.(80mm sq.), 3.54 in.sq.(90mm sq.)

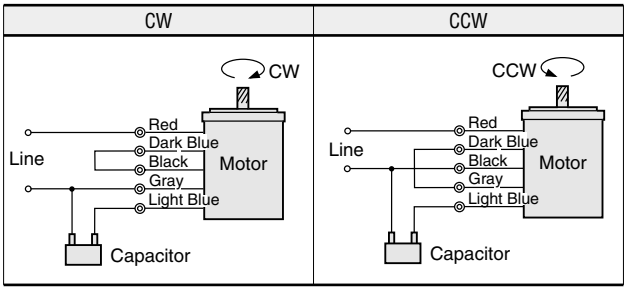
SAFETY STD.

Specifications — Continuous Rating

Model	Output Power		Voltage	Frequency	Current	Starting Torque		Rated Torque		Rated Speed	Capacitor
	HP	W	V AC	Hz	A	oz-in	mN·m	oz-in	mN·m	r/min	μF
4IK40A-BA	1/18.5	40	115	60	0.8	13.2	95	18	130	3000	8.0
5IK60A-BA	1/12.5	60	115	60	1.2	16.7	120	25.7	185	3200	12.0
5IK90A-BFUL	1/8	90	115	60	2.0	30.6	220	38.9	280	3200	20.0

●The product contains a built-in thermal protector. When a motor overheats for any reason, the thermal protector is opened and the motor stops. When the motor temperature drops, the thermal protector closes and the motor restarts. Be sure to turn the motor off before inspecting.

Wiring Diagrams

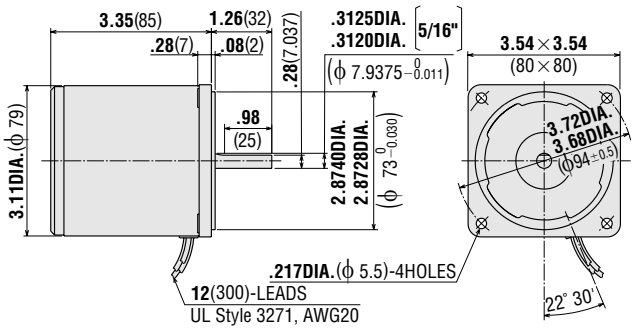


The direction of motor rotation is as viewed from the shaft end of the motor.

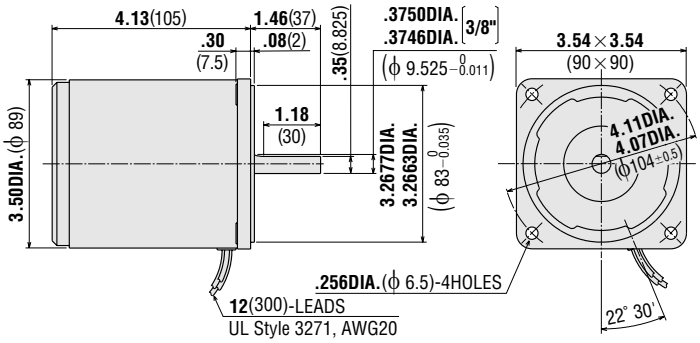
Change the direction of motor rotation only after bringing the motor to a stop. If an attempt is made to change the direction of rotation while the motor is rotating, the motor may ignore the reversing command or change its direction of rotation after some delay.

Dimensions Scale 1/4, Unit = **inch** (mm)

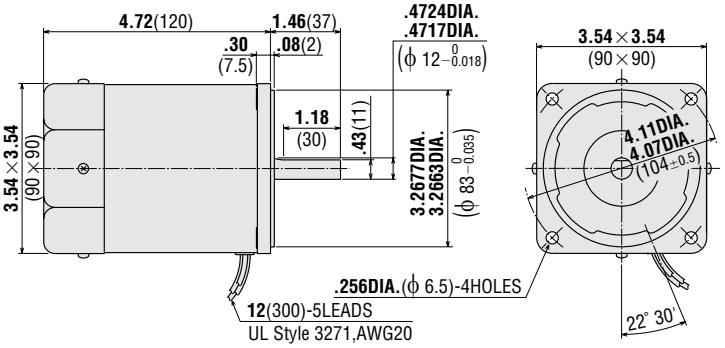
4IK40A-BA Weight (Mass): 3.3 lb.(1.5 kg)



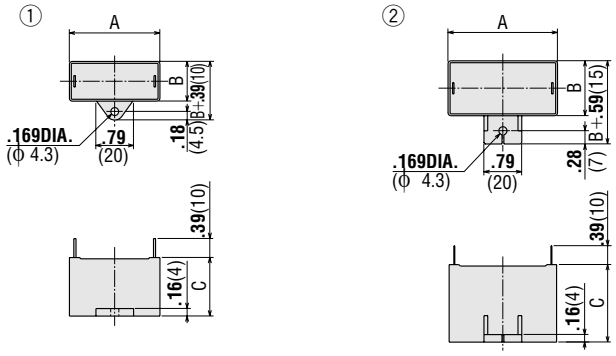
5IK60A-BA Weight (Mass): 5.5 lb.(2.5 kg)



5IK90A-BFUL Weight (Mass): 6.0 lb.(2.7 kg)



●Capacitor (included with the motor)



Motor Model	Capacitor Model	Dimensions inch (mm) A	B	C	Weight oz (g)	Dimensions Number
4IK40A-BA	CH80UL	1.50 (38)	.83 (21)	1.22 (31)	1.2 (35)	①
5IK60A-BA	CH120UL	1.89 (48)	.83 (21)	1.22 (31)	1.6 (44)	①
5IK90A-BFUL	CH200UL	2.28 (58)	.91 (23)	1.46 (37)	2.3 (65)	②

Capacitor cap is provided with the capacitor.