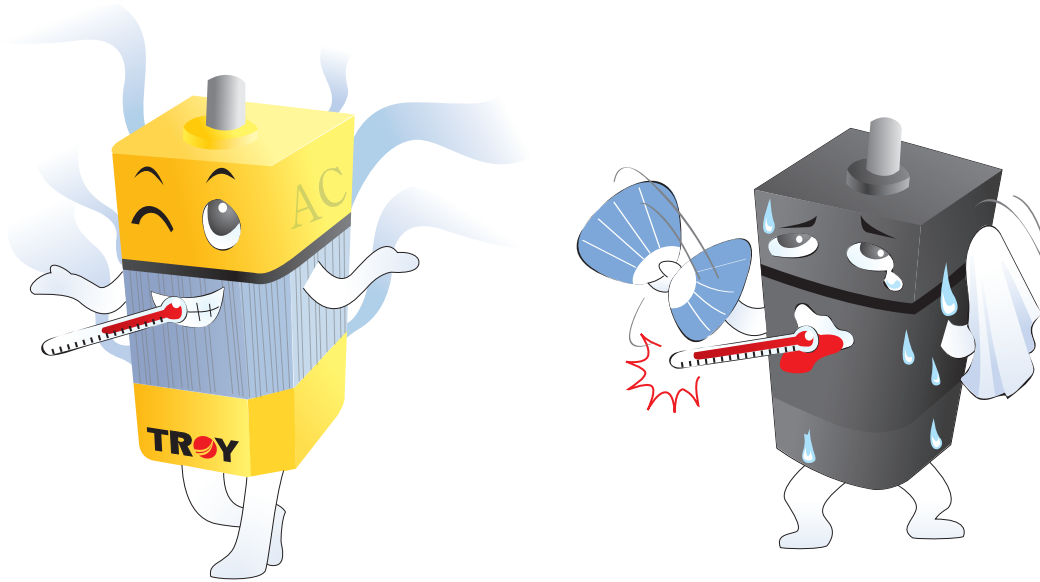


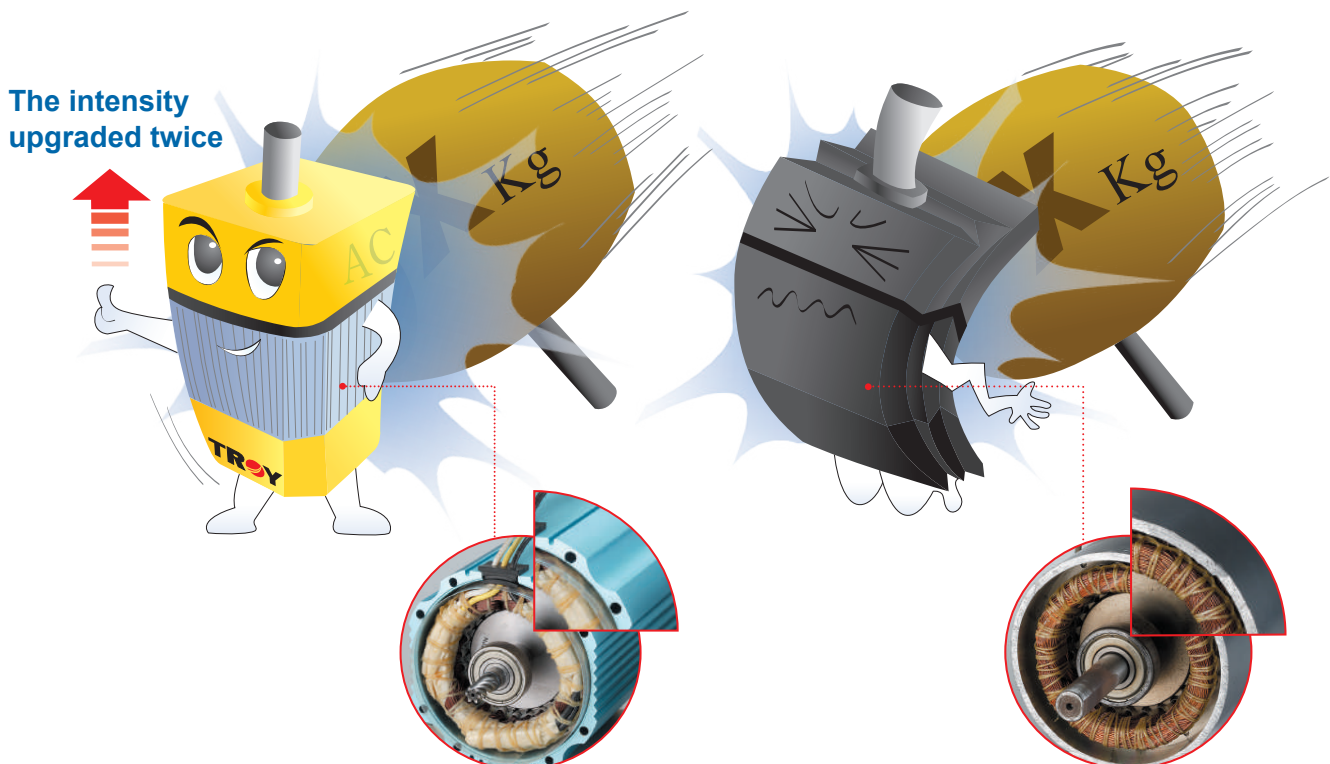
Certificate

Features 1 Excellent Heat Dissipation Effect



- Unique case design and special surface treatment to accelerate heat dissipation.

Features 2 The Intensity of Construction Upgraded Double



- Intensifying design of **TROY** motor and the intensity upgraded double.

Features 3

The Maximum Permissible Torque Can Reach to 40 Nm



- The maximum permissible 40Nm when 9A high intensity Gearbox is attached.

Features 4

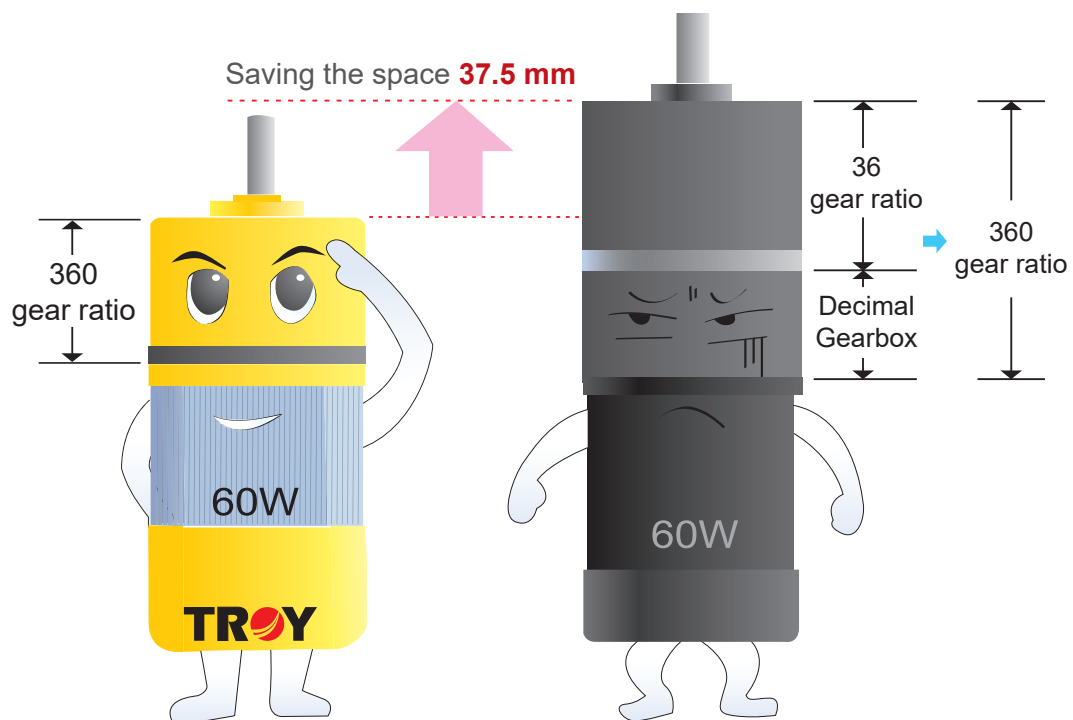
Greaseproof, Watertight, Dust-Resistance



- The AC Induction Motor conform to the IEC standard IP54. They are ideal for applications which need high performance with safety.

Features 5

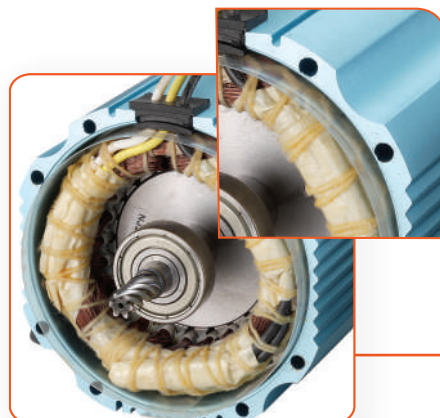
Saving the Spaces



- The innovative design of Gearbox with high gear ratio which can save the space that middle Gearbox attached.

Innovation

We have professional experience in making brushless motor. At the same time we aimed at the shortcomings of AC induction motor in the market. What we want you to be surprised by the various purposes from AC induction motor is our reforming and designing with innovation.

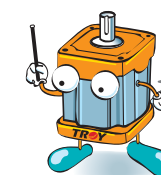


Motor Construction of Intensifying Type

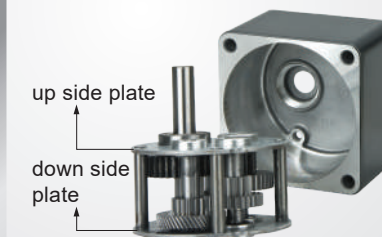
The motor case and the housing of motor rear made by aluminum which strengthened. The intensity of structure of the motor could be upgrade double. We can meet Your needs for high output torque and high intensity of construction.

New Color

Our color of motor is different from the common color-black and gray. We introduced the color of Europe products and we want to break through the traditional appearance and bring a colorful new vision to you.



Traditional Gearbox



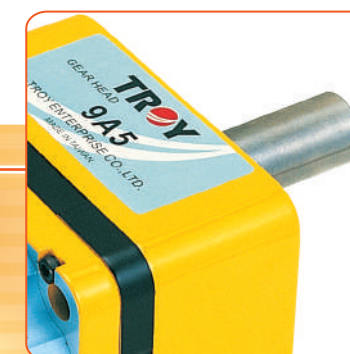
The plate connected by rivet X 4pcs and the intensity of structure fragile.

The Gearbox of High Intensity Type

All series of gearbox case and bearing are made by aluminum. The load structure of gear wheel was strengthened and attached with the powerful gear wheel. The max permissible torque can achieve to 40 Nm which can fit your needs – High output torque and high permissible intensity of the gearbox.

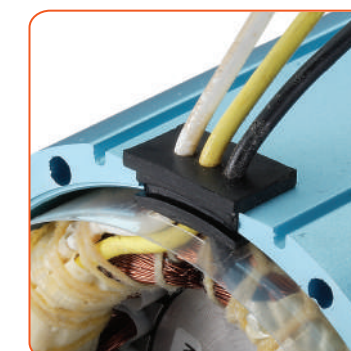
Low Temperature

- ◆ The motor case adopts all-wrapped wavy type with thermal solution key groove and anodizing which can help the thermal solution more quickly.
- ◆ The blades of motor 60W/90W designed specially. Not only increase the flow of air, but also decrease the noise and temperature.

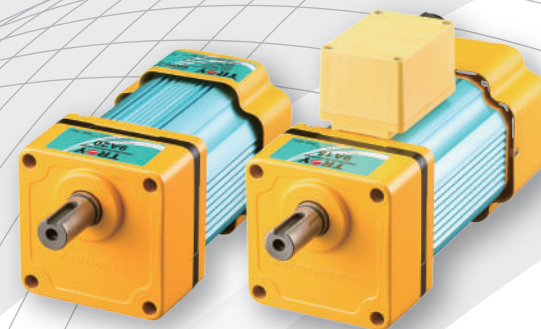


Excellent Design - Watertight Greaseproof, Dust-Resistant

O-ring employed at joint of motor case / shaft. The motor lead wires part we used a clip to seal, which can prevent the grease and water permeate.



... Quality, Technic, Service



AC Induction Motor
Lead Wire Type · Terminal Box Type



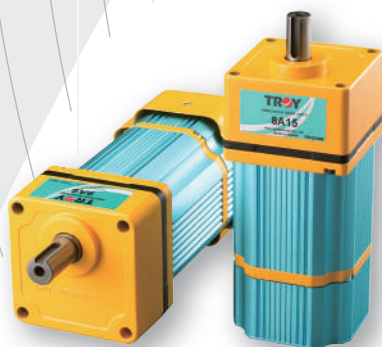
AC Reversible Motor
Lead Wire Type · Terminal Box Type



Torque Motor



Electromagnetic Brake Motor



Speed Control Motor
Separated Type



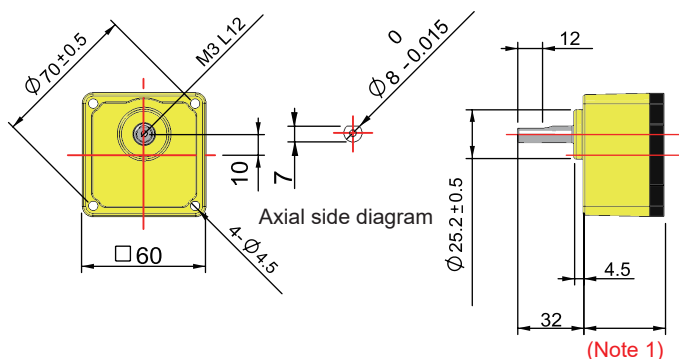
Speed Control Motor
Component Package Type



■ Dimension of Shaft Ø8, Ø10, Ø12, Ø15

Model: 6A□N with Shaft NØ8

Unit : mm

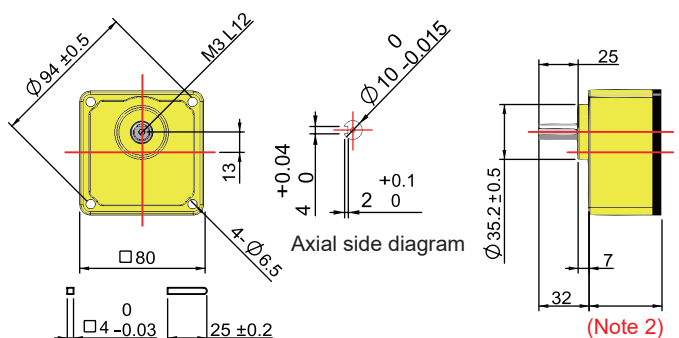


*(Note 1)

6A□N Gearbox Length/Weight		
Gearbox's Model	Length (mm)	Weight (g)
6A3N~6A100N	39.5±0.5	400
6A120N~6A360N	43.5±0.5	440

Model: 8A□N with Shaft NØ10

Unit : mm

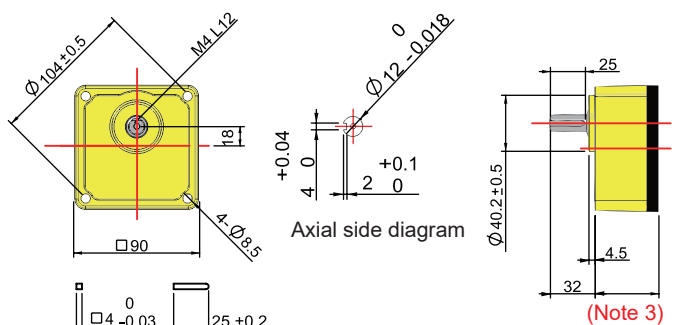


*(Note 2)

8A□N Gearbox Length/Weight		
Gearbox's Model	Length (mm)	Weight (g)
8A3N~8A100N	46.5±0.5	830
8A120N~8A360N	50.5±0.5	890

Model: 9A□N with Shaft NØ12

Unit : mm

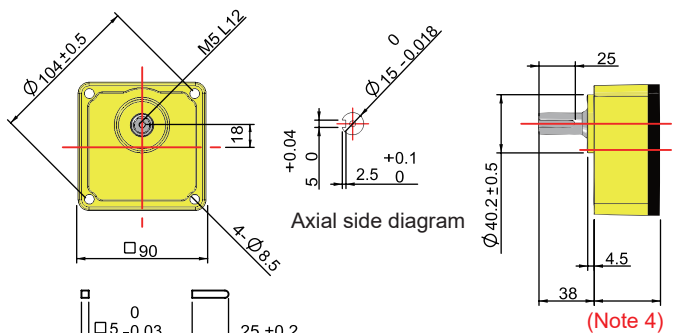


*(Note 3)

9A□N Gearbox Length/Weight		
Gearbox's Model	Length (mm)	Weight (g)
9A3N~9A20N	45.5±0.5	1120
9A25N~9A100N	58.5±0.5	1470
9A120N~9A360N	64.5±0.5	1560

Model: 9A□U with Shaft NØ15

Unit : mm



*(Note 4)

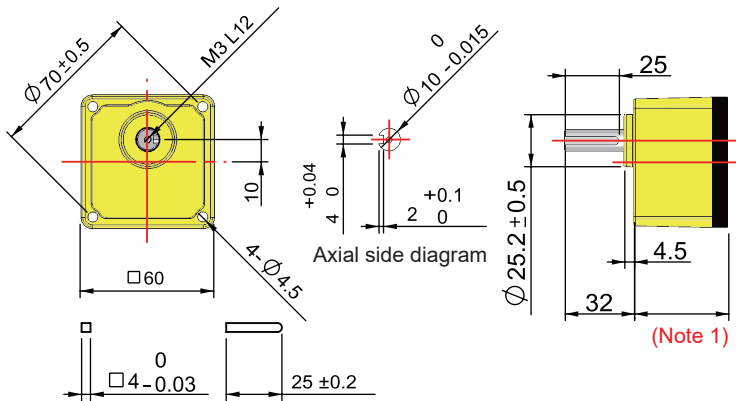
9A□U Gearbox Length/Weight		
Gearbox's Model	Length (mm)	Weight (g)
9A3U~9A20U	45.5±0.5	1150
9A25U~9A100U	58.5±0.5	1500
9A120U~9A360U	64.5±0.5	1590

* The figure above dimension tolerance values are not labeled a general machining tolerances, the control mode, refer to P.8, others have marked tolerance values according to the drawing labeled based.

■ Dimension of Shaft Ø10, Ø15, Ø18

Model: 6A□ with Shaft Ø10

Unit : mm



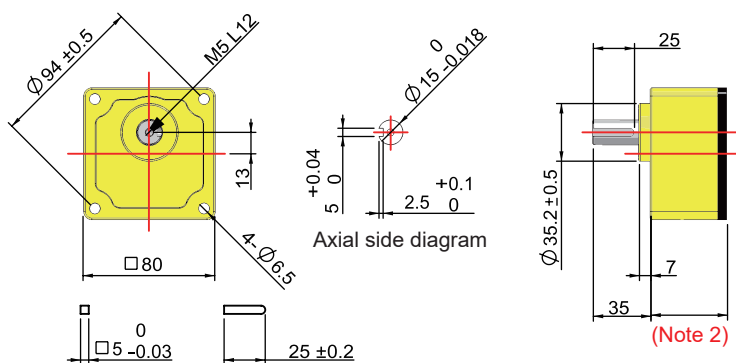
*(Note 1)

6A□ Gearbox Length/Weight

Gearbox's Model	Length (mm)	Weight (g)
6A3~6A100	39.5	400
6A120~6A360	43.5	440

Model: 8A□ with Shaft Ø15

Unit : mm



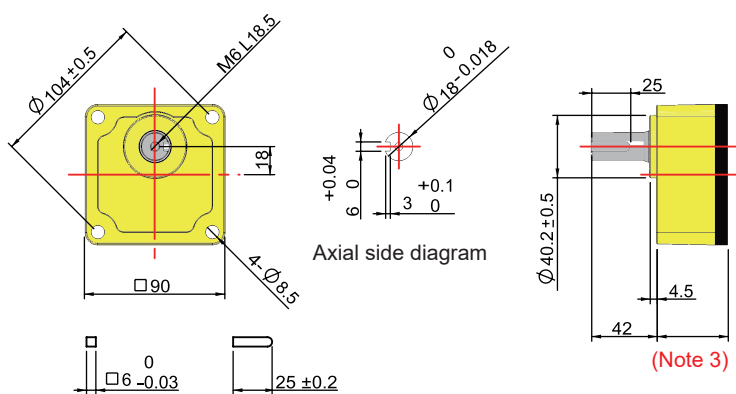
*(Note 2)

8A□ Gearbox Length/Weight

Gearbox's Model	Length (mm)	Weight (g)
8A3~8A100	46.5	880
8A120~8A360	50.5	940

Model: 9A□ with Shaft Ø18

Unit : mm



*(Note 3)

9A□ Gearbox Length/Weight

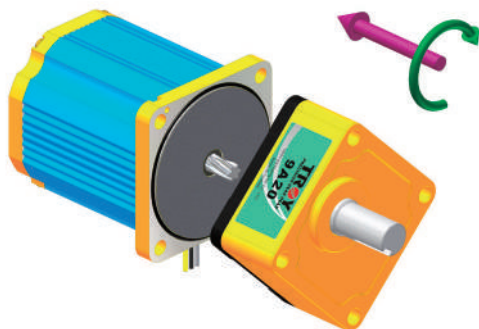
Gearbox's Model	Length (mm)	Weight (g)
9A3~9A20	45.5	1170
9A25~9A100	58.5	1520
9A120~9A360	64.5	1610

* The figure above dimension tolerance values are not labeled a general machining tolerances, the control mode, refer to P.8, others have marked tolerance values according to the drawing labeled based.

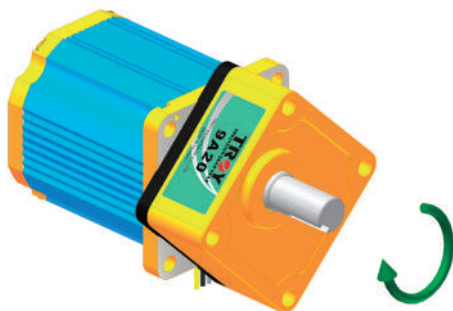
Connection of Motor and Gearbox

- Please install the Motor and Gearbox as the following diagram. When installing the Motor with Gearbox, please avoid the gear part of Motor shaft to collided the metal plate or gear.

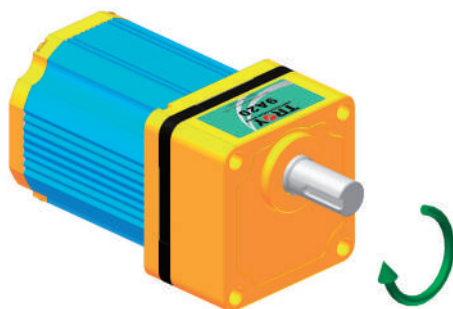
(Step 1) The distance between the motor and Gearbox around 35mm, 45°included angle.



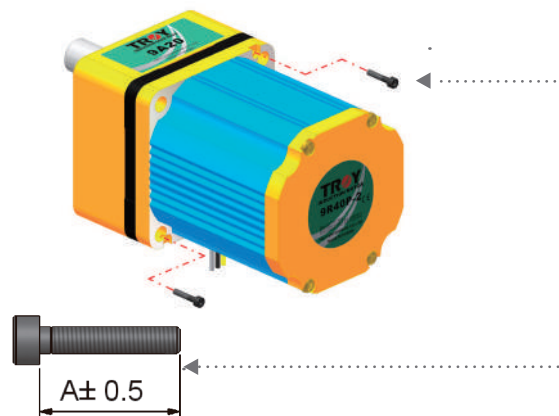
(Step 2) Gearbox connected with Motor in clockwise direction, 35°included angle.



(Step 3) Gearbox face to the Motor flange and rotated in clockwise direction and make sure that Motor and Gearbox connected already.



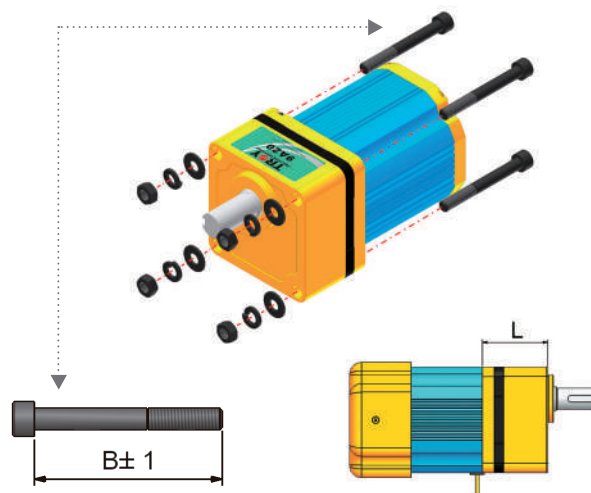
(Step 4) Using screws x 2 pcs(attachment) to secure the Motor and Gearbox.



Model	Screw Specs	Length (A) mm
6A□(N)	M2P0.4	8
8A□(N)	M3P0.5	8
9A□(N)	M3P0.5	12

© Mounting small screws are included with gearbox.

(Step 5) "Installation of mounting plate": Securing the Motor and Gearbox with screws x 4pcs.



Model	Screw Specs	Screw Length	Gearbox+ Motor Bracket
		(B)mm	(L)mm
6A3(N)~6A100(N)	M4P0.7	60	47.5
6A120(N)~6A360(N)		70	51.5
8A3(N)~8A100(N)	M6P1.0	70	54.5
8A120(N)~8A360(N)		75	58.5
9A3(N)~9A20(N)	M8P1.25	75	55.5
9A25(N)~9A100(N)		90	68.5
9A120(N)~9A360(N)		95	74.5

© Mounting screws are included with gearbox.

1. **CE** : Europe Safety Certification



The machine selling to the Europe must accordance with Europe safety standards and mark on the CE or TÜV.

2. **△_{US}** : USA and Canadian Safety Certification



Regconized by cTÜVus Rheinland and indicated the product meets American & Canadian safety requirements. The product that can selling to the USA and CANADA .

3. **CCC** : China Compulsory Certification System Certificated



All the products import / export to the China for selling or producing. They must accordance with CCC certificated and marked on CCC.

4. **RoHS** : Restriction of Hazardous Substances



RoHS, the European Union Directive 2002/95/EC, on the restriction of the use of certain hazardous substance apply to any equipment for use or import into an EU member state beginning July 2006. The restricted substance include: Lead(Pb), Mercury(Hg), Cadmium(Cd), hexavalent Chromium Cr(VI), Polybrominated biphenyls(PBBs) and Polybrominated diphenyl ethers(PBDEs) must conform to the maximum concentration value.
(Request for the RoHS certification, please contact with the local seller.)

5. **IP54** : IP(Ingress Protection) : ratings are defined as levels of sealing effectiveness of electrical enclosures against intrusion from foreign bodies (tools, dirt etc) and moisture. **IP5X** : Protected against dust under normal condition that may harm equipment. **IPX4** : Describes the level of protection from liquids, distance of 300-500mm and the direction of the turn on the water speed of 10 liters / min for 10 minutes.

6. **TP** : Built-in Overheat Protection Device (Auto Return Type)

Overheat protection ON : $120^{\circ}\text{C} \pm 8^{\circ}\text{C}$
Overheat protection OFF : $71.5^{\circ}\text{C} \pm 4^{\circ}\text{C}$

When Motor because of some reason to caused the overheat. The protection device activated and Motor stop run. After the temperature drop, the protect device off and Motor return to run. Please turn off the power before inspection.



(1)



(2)



(3)



(4)



(5)

■ Precaution for Motor Use and Install

1. Motor: Ambient tempertaure -10~+50°C (Single phase and 3 phase 220V / 230V: -10~+40°C), ambient humidity 85% or less. Controller: Ambient temperature 0~+40°C, ambient humidity 85% or less.
2. Area not exposed to direct sun and free from excessive water, oil, dust.
3. Area not subject to continuous vibration or excessive shocks and free from excessive corrosive gas, flammable gas.
4. Installation: Motor can install at horizontal or vertical direction.
5. When connecting a load to the Motor, align the centers of the Motor's output shaft and load shaft. The improper align will cause the vibration and shorten the life time of both Motor and Gearbox. More further will cause the mechanical fatigue and damage.
6. When install the coupling, pulley, gear onto the shaft of Motor or Gearbox. Don't apply excessive force by using a hammer or similar tool.
7. Connection with Load
 Motor shaft: Securing it with 2 screws through the mounting holes provided and become 90° then t secure the machinery on the shaft tightly.
 Gearbox shaft: It tightened by key slot and designed by tolerance h7. When installing the machinery please reserve the "Parallel Key" for assemble and secure the machinery with screws on the shaft.
8. The dimensions which are not marked tolerance values belong to general tolerance. The reference guideline figure of processing general tolerance is as below :

Standard Tolerance Grades IT14

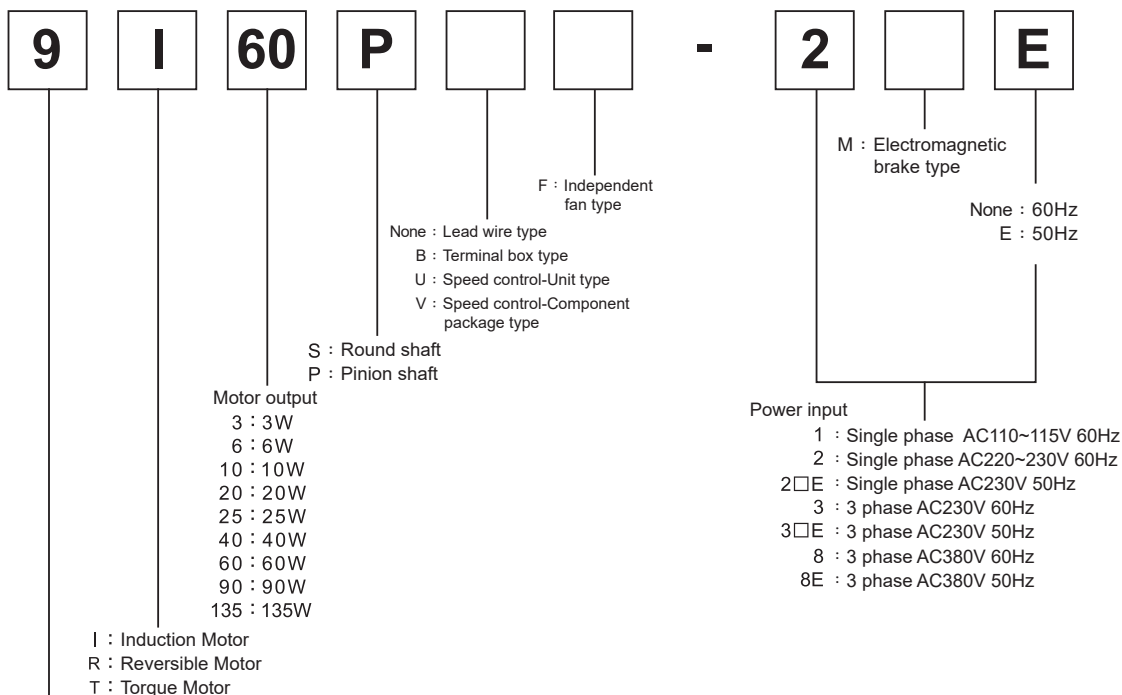
Dimension	Tolerance Value
>0	0.3
>6	0.5
>30	0.7
>80	0.9
>120	1.0
>180	1.2
>250	1.3
>315	1.4
>400	1.6
>1000	2.0

Unit : mm

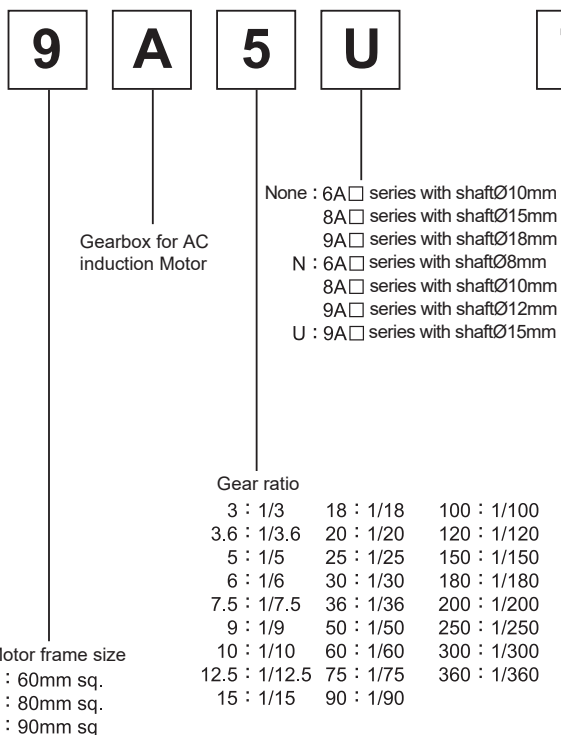
*For more details please refer to the "Motor Dimension".

*The product is subject to design modification for performance improvement without prior notice.
 For more details please contact with your local seller.

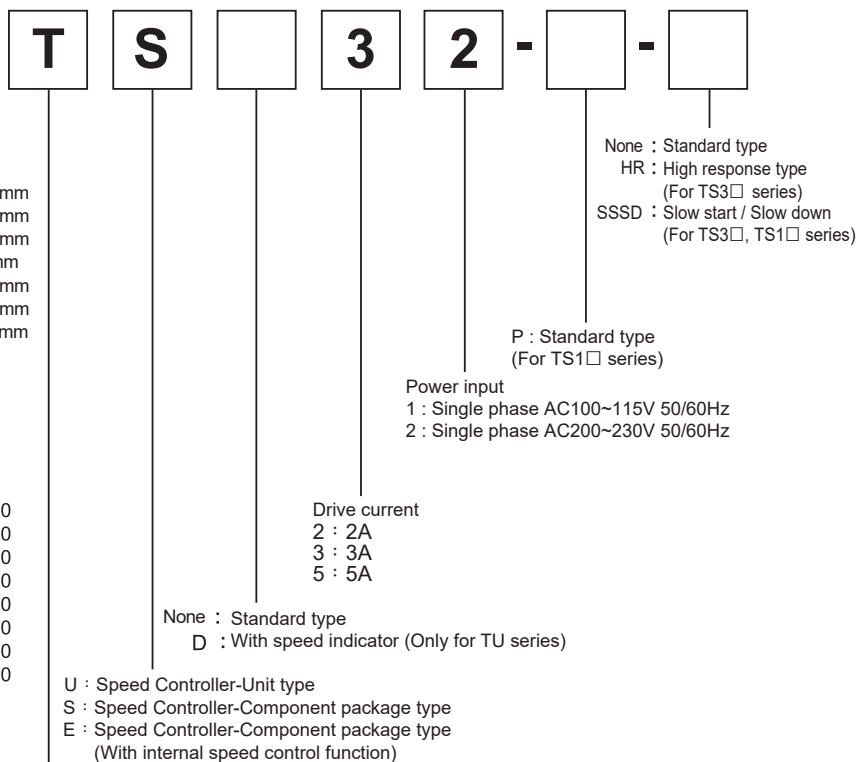
Motor



Gearbox



Controller





■ Specs

Motor Output	6W				
Round Shaft Type	6R6S-1		6R6S-2		6R6S-2E
Pinion Shaft Type	6R6P-1		6R6P-2		6R6P-2E
Specification Certification					
Capacity of Capacitor (μF)	3.5		0.8		0.6
Power Input (V)	Single phase 110	Single phase 115	Single phase 220	Single phase 230	Single phase 230
Power Frequency (Hz)	60				50
Rated Current (A)	0.29	0.30	0.13	0.14	0.15
Starting Torque (Nm)	0.04		0.04		0.05
Rated Torque(Nm)	0.04		0.04		0.05
Rated Speed (r/min)	1450		1550		1200
Permissible Inertia (GD ²)	0.25 kgcm ²				
Ambient Temperature	Single phase 110V/115V : -10~+50℃ ; Single phase 220V/230V: -10~+40℃				
Ambient Humidity	Max.85%RH				

Note1: That values shown for rated torque and starting torque of reversible Motors are reference data measured for operation without the brake applied.

Note2: The brake attached with Motor which can shorten the time for starting/ stopping and clockwise/ counterclockwise rotation. The holding force provided by Motor is not the safety brake using.

※ 6R6□-□ holding torque is 50gcm.(But at the initial the holding torque may lower than 50gcm); over rotation around 4 rev/min (Reference value).

※ 1 Nm = 10.19716 Kgcm

※ Reversing Motor can adapt to frequent start and stop, or the occasion forward reverse stop switch; therefore, it has 30 minutes limit (panel records "30 min").

■ 6R6P-□+6A□Series Gearbox Specs & Permissible Torque / Permissible Inertial Load(GD²)When Gearbox Attached

Gear Ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
60 Hz	Rotation Speed (r/min)		600	500	360	300	240	200	180	144	120	100	90	72	60
	Permissible Torque(Nm)	-1,-2 Type	0.11	0.14	0.19	0.23	0.28	0.34	0.38	0.47	0.57	0.68	0.8	0.9	1.1
50 Hz	Rotation Speed (r/min)		500	417	300	250	200	167	150	120	100	83	75	60	50
	Permissible Torque(Nm)	-2E Type	0.14	0.17	0.23	0.28	0.34	0.41	0.46	0.57	0.69	0.83	0.9	1.1	1.3
Permissible Inertia Load GD ² (kgcm ²)			2.3	3.3	6.3	9	14	20.3	25	39	56.3	81	100	156	225

Gear Ratio			36	50	60	75	90	100	120	150	180	200	250	300	360
60 Hz	Rotation Speed (r/min)		50	36	30	24	20	18	15	12	10	9	7	6	5
	Permissible Torque(Nm)	-1,-2 Type	1.3	1.8	2.2	2.7	3.3	3.6	4.1	5.1	6				
50 Hz	Rotation Speed (r/min)		42	30	25	20	17	15	13	10	8	8	6	5	4
	Permissible Torque(Nm)	-2E Type	1.6	2.2	2.6	3.3	3.9	4.4	5	6					
Permissible Inertia Load GD ² (kgcm ²)			324	625					625						

※1 : Gearbox 6A□series, please enter the gear ratio 3~360 in the box□.

※2 : 60Hz: The max synchronous speed is 1800r/min; 50Hz: The max synchronous speed is 1500r/min.

※3 : "Permissible torque" It refers to the value of load torque driven by the Gearbox's output. -1 type: It indicates 6R6P-□ is single phase 110V/115V 60Hz; -2 type:Single phase 220V/230V 60Hz; -2E type: Single phase 230V 50Hz; the other types please refer to the above table.

※4 : A colored background indicates gear shaft rotation in the opposite direction as the motor shaft. No marking indicates rotation in the same direction.

※5 : 1 Nm = 10.19716 Kgcm

※6 : The Gearboxes of all series have certification.

■ Permissible Overhung Load / Permissible Thrust Load

Round Shaft Type

Model	Permissible Overhung Load(Unit : kg f)		Permissible Thrust Load (Unit : kg f)
	10mm from shaft end	20mm from shaft end	
6R6S-□	5	11	Permissible thrust load do not exceed the weight of Motor 1/2. If exceed the rated weight will decrease the service life of Motor. Please using indirect transmission machinery such as coupling, belt, chain. As the applications which will need the thrust load.

Pinion Shaft Type(Gearbox Attached)

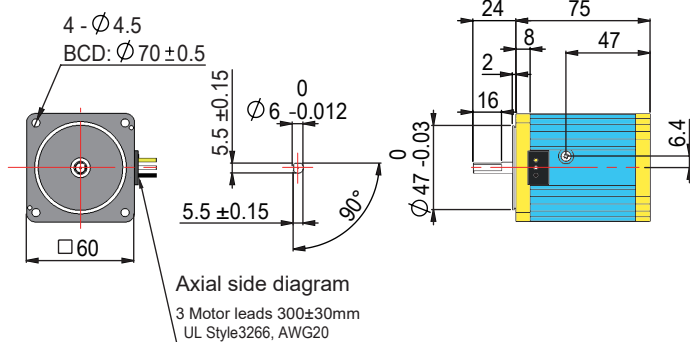
Model	Gear Ratio	Permissible Overhung Load(Unit : kg f)		Permissible Thrust Load (Unit : kg f)
		10mm from shaft end	20mm from shaft end	
6R6P-□	3, 3.6, 5	10	15	3
	6, 7.5, 9, 10, 12.5, 15, 18, 20	15	20	
	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	20	30	

■ Dimensions

◆ Lead Wire Type

Round Shaft 6R6S-□

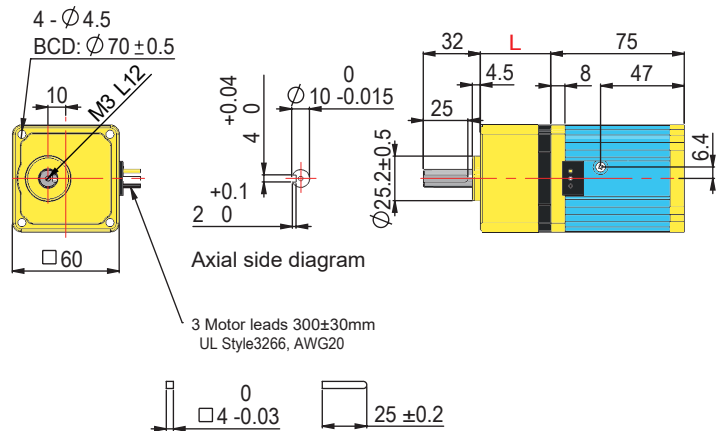
Motor Weight : 1010g



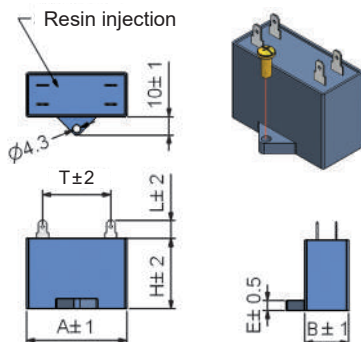
Pinion Shaft Type 6R6P-□+6A□

Motor Weight : 1000g+W

Unit : mm



■ Capacitor Dimensions (Single phase motors only)



* 6A pinion shaft type 6A3~360, the spec of Gearbox "L" length and weight "W" as following :

6A□Gearbox	Length/Weight	
Model	Length (mm)	Weight (g)
6A3~6A100	39.5	400
6A120~6A360	43.5	440

※ We also have Gearbox 6A□N with shaft $\varnothing 8$. For details please refer to the P.4.

Capacity of Capacitor (μ F/VAC)	A	B	H	L	T	E
3.5/250	37	14	23	10	24	4
0.8/450	37	14	23	8	24	4
0.6/450	37	14	23	7	24	4

* The figure above dimension tolerance values are not labeled a general machining tolerances, the control mode, refer to P.8, others have marked tolerance values according to the drawing labeled based.

AC Reversible Motor Lead Wire Type & Terminal Box Type 25W



■ Specs

Motor Output	25W				
Round Shaft Type	8R25S(B)-1		8R25S(B)-2		8R25S(B)-2E
Pinion Shaft Type	8R25P(B)-1		8R25P(B)-2		8R25P(B)-2E
Specification Certification	 IP54		 IP54		 IP54
Capacity of Capacitor (μF)	8		2		1.5
Power Input (V)	Single phase 110	Single phase 115	Single phase 220	Single phase 230	Single phase 230
Power Frequency (Hz)	60				50
Rated Current (A)	0.69	0.70	0.32	0.33	0.26
Starting Torque (Nm)	0.14		0.14		0.16
Rated Torque(Nm)	0.17		0.17		0.21
Rated Speed (r/min)	1500		1500		1250
Permissible Inertia (GD ²)	1.2 kgcm ²				
Ambient Temperature	Single phase 110V/115V : -10~+50℃ ; Single phase 220V/230V: -10~+40℃				
Ambient Humidity	Max.85%RH				

※ 8R25S-□/ 8R25P-□are lead wire type, 8R25SB-□/ 8R25PB-□are terminal box type.

Note1: That values shown for rated torque and starting torque of reversible Motors are reference data measured for operation without the brake applied.

Note2: The brake attached with Motor which can shorten the time for starting/ stopping and clockwise/ counterclockwise rotation. The holding force provided by Motor is not the safety brake using.

※ 8R25□(B)-□ holding torque is 150gcm.(But at the initial the holding torque may lower than 150gcm); over rotation around 5 rev/min (Reference value).

※ 1 Nm = 10.19716 Kgcm

※ Reversing Motor can adapt to frequent start and stop, or the occasion forward reverse stop switch; therefore, it has 30 minutes limit (panel records "30 min").

■ 8R25P(B)-□+8A□Series Gearbox Specs & Permissible Torque / Permissible Inertial Load(GD²)When Gearbox Attached

Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
60 Hz	Rotation Speed (r/min)	600	500	360	300	240	200	180	144	120	100	90	72	60
	Permissible Torque(Nm)	-1,-2 Type	0.46	0.55	0.77	0.92	1.15	1.38	1.53	1.91	2.3	2.75	3.1	3.7
50 Hz	Rotation Speed (r/min)	500	417	300	250	200	167	150	120	100	83	75	60	50
	Permissible Torque(Nm)	-2E Type	0.56	0.67	0.93	1.11	1.39	1.67	1.85	2.32	2.78	3.34	3.7	4.4
Permissible Inertia Load GD ² (kgcm ²)		10.8	15.6	30	43.2	67.5	97.2	120	187.5	270	389	480	750	1080

Gear Ratio		36	50	60	75	90	100	120	150	180	200	250	300	360
60 Hz	Rotation Speed (r/min)	50	36	30	24	20	18	15	12	10	9	7	6	5
	Permissible Torque(Nm)	-1,-2 Type	5.3	7.3	8.8	11	13.2	14.6	15					
50 Hz	Rotation Speed (r/min)	42	30	25	20	17	15	13	10	8	8	6	5	4
	Permissible Torque(Nm)	-2E Type	6.4	8.9	10.6	13.3	15	15						
Permissible Inertia Load GD ² (kgcm ²)		1555	3000						3000					

※1 : Gearbox 8A□series, please enter the gear ratio 3~360 in the box□.

※2 : 60Hz: The max synchronous speed is 1800r/min; 50Hz: The max synchronous speed is 1500r/min.

※3 : "Permissible torque" It refers to the value of load torque driven by the Gearbox's output. -1 type: It indicates 8R25P(B)-□ is single phase 110V/115V 60Hz; -2 type:Single phase 220V/230V 60Hz; -2E type: Single phase 230V 50Hz; the other types please refer to the above table.

※4 : A colored background indicates gear shaft rotation in the opposite direction as the motor shaft. No marking indicates rotation in the same direction.

※5 : 1 Nm = 10.19716 Kgcm

※6 : The Gearboxs of all series have certification.

■ Permissible Overhung Load / Permissible Thrust Load

Round Shaft Type

Model	Permissible Overhung Load(Unit : kg f)		Permissible Thrust Load (Unit : kg f)
	10mm from shaft end	20mm from shaft end	
8R25S(B)-□	9	14	Permissible thrust load do not exceed the weight of Motor 1/2. If exceed the rated weight will decrease the service life of Motor. Please using indirect transmission machinery such as coupling, belt, chain. As the applications which will need the thrust load.

Pinion Shaft Type(Gearbox Attached)

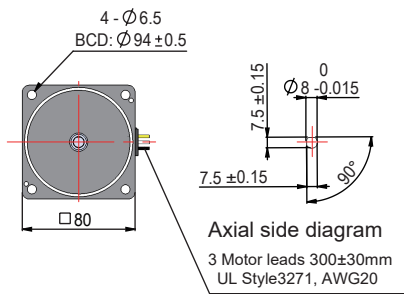
Model	Gear Ratio	Permissible Overhung Load(Unit : kg f)		Permissible Thrust Load (Unit : kg f)
		10mm from shaft end	20mm from shaft end	
8R25P(B)-□	3, 3.6, 5	20	25	5
	6, 7.5, 9, 10, 12.5, 15, 18, 20	30	35	
	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	45	55	

■ Dimensions

◆ Lead Wire Type

Round Shaft 8R25S-□

Motor Weight : 2020g

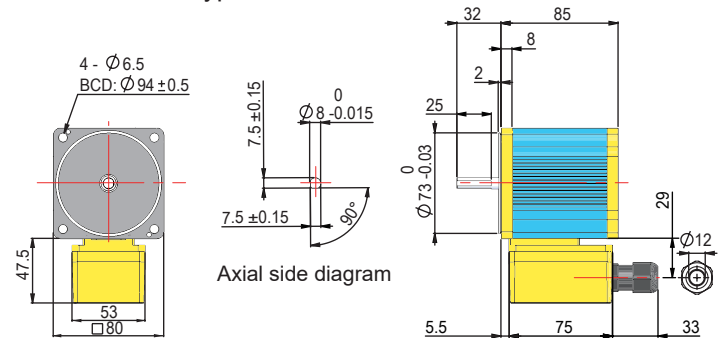


◆ Terminal Box Type

Round Shaft Type 8R25SB-□

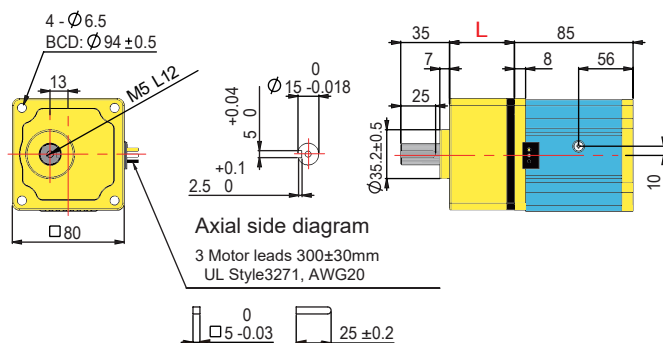
Unit : mm

Motor Weight : 2220g



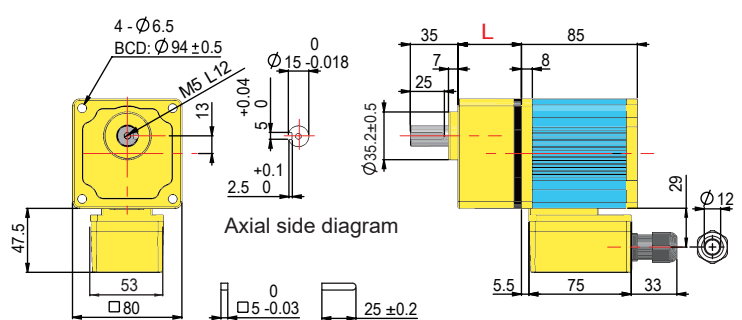
Pinion Shaft 8R25P-□+8A□

Motor Weight : 2000g+W

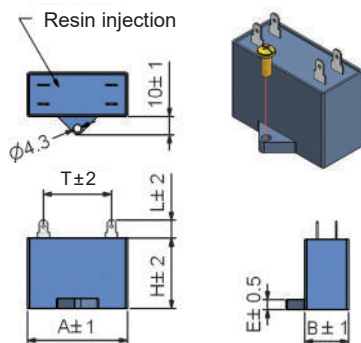


Pinion Shaft Type 8R25PB-□+8A□

Motor Weight : 2200g+W



■ Capacitor Dimensions (Single phase motors only)



* The figure above dimension tolerance values are not labeled a general machining tolerances, the control mode, refer to P.8, others have marked tolerance values according to the drawing labeled based.

* 8A pinion shaft type 8A3~360, the spec of Gearbox "L" length and weight "W" as following :

8A□Gearbox		Length/Weight	
Model	Length (mm)	Weight (g)	
8A3~8A100	46.5	880	
8A120~8A360	50.5	940	

※ We also have Gearbox 8A□N with shaft Ø10. For details please refer to the P.4.

Capacity of capacitor (μF/VAC)	A	B	H	L	T	E
8/250	48	19	29	10	34	5
2/450	38	20	29	8	24	4.5
1.5/450	38	17	26	9	24	5

AC Reversible Motor Lead Wire Type & Terminal Box Type 40W



Specs

Motor Output	40W				
Round Shaft Type	9R40S(B)-1		9R40S(B)-2		9R40S(B)-2E
Pinion Shaft Type	9R40P(B)-1		9R40P(B)-2		9R40P(B)-2E
Specification Certification					
Capacity of Capacitor (μF)	12		3.5		2.5
Power Input (V)	Single phase 110	Single phase 115	Single phase 220	Single phase 230	Single phase 230
Power Frequency (Hz)	60				50
Rated Current (A)	0.97	1.00	0.59	0.61	0.38
Starting Torque (Nm)	0.27		0.27		0.32
Rated Torque(Nm)	0.28		0.28		0.33
Rated Speed (r/min)	1450		1450		1250
Permissible Inertia (GD ²)	3 kgcm ²				
Ambient Temperature	Single phase 110V/115V : -10~+50℃ ; Single phase 220V/230V: -10~+40℃				
Ambient Humidity	Max.85%RH				

※ 9R40S-□/ 9R40P-□ are lead wire type, 9R40SB-□/ 9R40PB-□ are terminal box type.

Note1: That values shown for rated torque and starting torque of reversible Motors are reference data measured for operation without the brake applied.

Note2: The brake attached with Motor which can shorten the time for starting/ stopping and clockwise/ counterclockwise rotation. The holding force provided by Motor is not the safety brake using.

※ 9R40□(B)-□ holding torque is 400gcm.(But at the initial the holding torque may lower than 400gcm); over rotation around 6 rev/min (Reference value).

※ 1 Nm = 10.19716 Kgcm

※ Reversing Motor can adapt to frequent start and stop, or the occasion forward reverse stop switch; therefore, it has 30 minutes limit (panel records "30 min").

9R40P(B)-□+9A□ Series Gearbox Specs & Permissible Torque / Permissible Inertial Load(GD²)When Gearbox Attached

Gear Ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
60 Hz	Rotation Speed (r/min)		600	500	360	300	240	200	180	144	120	100	90	72	60
	Permissible Torque(Nm)	-1,-2 Type	0.77	0.92	1.28	1.53	1.92	2.3	2.56	3.2	3.83	4.6	5.1	6.1	7.3
50 Hz	Rotation Speed (r/min)		500	417	300	250	200	167	150	120	100	83	75	60	50
	Permissible Torque(Nm)	-2E Type	0.89	1.07	1.49	1.78	2.23	2.67	2.97	3.71	4.46	5.35	5.9	7.1	8.5
Permissible Inertia Load GD² (kgcm²)			27	39	75	108	169	243	300	469	675	972	1200	1875	2700

Gear Ratio			36	50	60	75	90	100	120	150	180	200	250	300	360
60 Hz	Rotation Speed (r/min)		50	36	30	24	20	18	15	12	10	9	7	6	5
	Permissible Torque(Nm)	-1,-2 Type	8.8	12.2	14.7	18.3	22	24.4	27.6	34.5	40				
50 Hz	Rotation Speed (r/min)		42	30	25	20	17	15	13	10	8	8	6	5	4
	Permissible Torque(Nm)	-2E Type	10.2	14.2	17	21.3	25.5	28.4	32.1	40					
Permissible Inertia Load GD² (kgcm²)			3888	7500					7500						

※1 : Gearbox 9A□series, please enter the gear ratio 3~360 in the box□.

※2 : 60Hz: The max synchronous speed is 1800r/min; 50Hz: The max synchronous speed is 1500r/min.

※3 : "Permissible torque" It refers to the value of load torque driven by the Gearbox's output. -1 type: It indicates 9R40P(B)-□ is single phase 110V/115V 60Hz; -2 type:Single phase 220V/230V 60Hz; -2E type: Single phase 230V 50Hz; the other types please refer to the above table.

※4 : A colored background indicates gear shaft rotation in the opposite direction as the motor shaft. No marking indicates rotation in the same direction.

※5 : 1 Nm = 10.19716 Kgcm

※6 : The Gearboxes of all series have certification.

■ Permissible Overhung Load / Permissible Thrust Load

Round Shaft Type

Model	Permissible Overhung Load(Unit : kg f)		Permissible Thrust Load (Unit : kg f)
	10mm from shaft end	20mm from shaft end	
9R40S(B)-□	14	20	Permissible thrust load do not exceed the weight of Motor 1/2. If exceed the rated weight will decrease the service life of Motor. Please using indirect transmission machinery such as coupling, belt, chain. As the applications which will need the thrust load.

Pinion Shaft Type(Gearbox Attached)

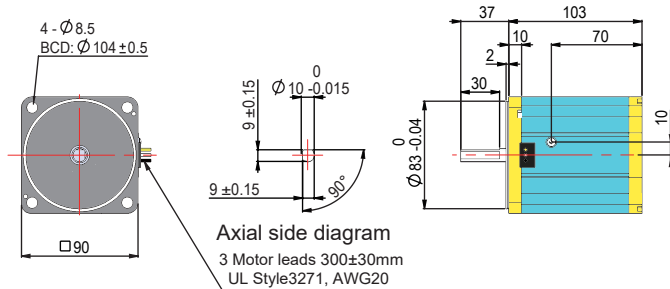
Model	Gear Ratio	Permissible Overhung Load(Unit : kg f)		Permissible Thrust Load (Unit : kg f)
		10mm from shaft end	20mm from shaft end	
9R40P(B)-□	3, 3.6, 5	50	60	15
	6, 7.5, 9, 10, 12.5, 15, 18, 20	60	70	
	25, 30, 36, 50, 60, 75, 90, 100, 120, 150, 180, 200, 250, 300, 360	70	80	

■ Dimensions

◆ Lead Wire Type

Round Shaft 9R40S-□

Motor Weight : 3050g

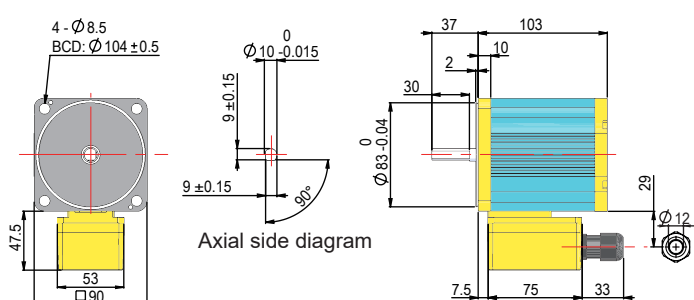


◆ Terminal Box Type

Round Shaft Type 9R40SB-□

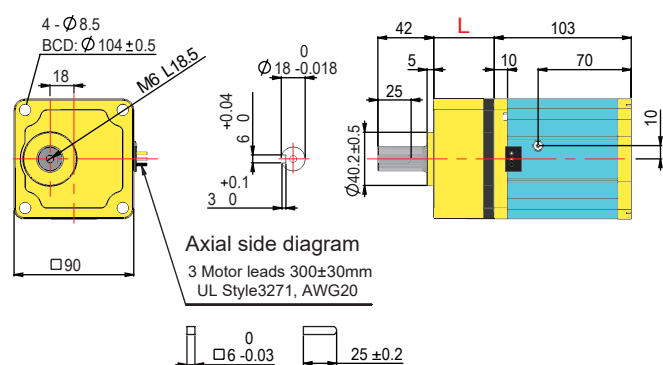
Unit : mm

Motor Weight : 3200g



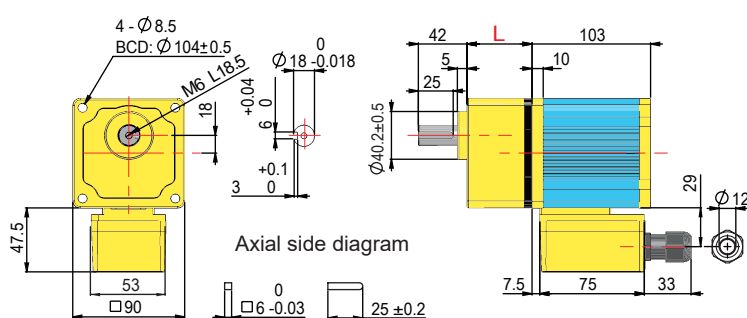
Pinion Shaft 9R40P-□+9A□

Motor Weight : 3030g+W



Pinion Shaft Type 9R40PB-□+9A□

Motor Weight : 3180g+W



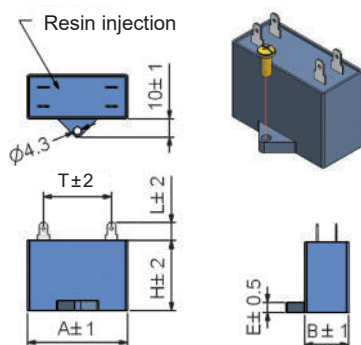
* 9A pinion shaft type 9A3~360, the spec of Gearbox "L" length and weight "W" as following :

9A□ Gearbox	Length/Weight	
Model	Length (mm)	Weight (g)
9A3~9A20	45.5	1170
9A25~9A100	58.5	1520
9A120~9A360	64.5	1610

* We also have Gearbox 9A□N with shaft Ø12. For details please refer to the P.4.

Capacity of capacitor (µF/VAC)	A	B	H	L	T	E
12/250	50	22	35	9	34	5
3.5/450	49	21	31.5	8	34	5
2.5/450	48	17	27	9	34	5

■ Capacitor Dimensions (Single phase motors only)



* The figure above dimension tolerance values are not labeled a general machining tolerances, the control mode, refer to P.8, others have marked tolerance values according to the drawing labeled based.

AC Reversible Motor Lead Wire Type & Terminal Box Type 60W



■ Specs

Motor Output	60W				
Round Shaft Type	9R60S(B)-1		9R60S(B)-2		9R60S(B)-2E
Pinion Shaft Type	9R60P(B)-1		9R60P(B)-2		9R60P(B)-2E
Specification Certification	    IP54		    IP54		    IP54
Capacity of Capacitor (μF)	20		5		4
Power Input (V)	Single phase 110	Single phase 115	Single phase 220	Single phase 230	Single phase 230
Power Frequency (Hz)	60				50
Rated Current (A)	1.49	1.53	0.75	0.78	0.83
Starting Torque (Nm)	0.4		0.4		0.47
Rated Torque(Nm)	0.42		0.42		0.51
Rated Speed (r/min)	1500		1500		1200
Permissible Inertia (GD ²)	4.6 kgcm ²				
Ambient Temperature	Single phase 110V/115V : -10~+50℃ ; Single phase 220V/230V: -10~+40℃				
Ambient Humidity	Max.85%RH				

※ 9R60S-□/ 9R60P-□ are lead wire type, 9R60SB-□/ 9R60PB-□ are terminal box type.

Note1: That values shown for rated torque and starting torque of reversible Motors are reference data measured for operation without the brake applied.

Note2: The brake attached with Motor which can shorten the time for starting/ stopping and clockwise/ counterclockwise rotation. The holding force provided by Motor is not the safety brake using.

※ 9R60□(B)-□ holding torque is 400gcm.(But at the initial the holding torque may lower than 400gcm); over rotation around 6 rev/min (Reference value).

※ 1 Nm = 10.19716 Kgcm

※ Reversing Motor can adapt to frequent start and stop, or the occasion forward reverse stop switch; therefore, it has 30 minutes limit (panel records "30 min").

■ 9R60P(B)-□+9A□ Series Gearbox Specs & Permissible Torque / Permissible Inertial Load(GD²)When Gearbox Attached

Gear Ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
60 Hz	Rotation Speed (r/min)		600	500	360	300	240	200	180	144	120	100	90	72	60
	Permissible Torque(Nm)	-1,-2 Type	1.13	1.36	1.89	2.27	2.84	3.4	3.78	4.73	5.67	6.8	7.6	9	10.8
50 Hz	Rotation Speed (r/min)		500	417	300	250	200	167	150	120	100	83	75	60	50
	Permissible Torque(Nm)	-2E Type	1.38	1.65	2.3	2.75	3.44	4.13	4.59	5.74	6.89	8.26	9.2	11	13.2
Permissible Inertia Load GD ² (kgcm ²)			41	60	115	166	259	373	460	719	1035	1490	1840	2875	4140

Gear Ratio			36	50	60	75	90	100	120	150	180	200	250	300	360
60 Hz	Rotation Speed (r/min)		50	36	30	24	20	18	15	12	10	9	7	6	5
	Permissible Torque(Nm)	-1,-2 Type	13	18.1	21.7	27.1	32.5	36.1	40						
50 Hz	Rotation Speed (r/min)		42	30	25	20	17	15	13	10	8	8	6	5	4
	Permissible Torque(Nm)	-2E Type	15.8	21.9	26.3	32.9	39.5	40	40						
Permissible Inertia Load GD ² (kgcm ²)			5962	11500					11500						

※1 : Gearbox 9A□series, please enter the gear ratio 3~360 in the box□.

※2 : 60Hz: The max synchronous speed is 1800r/min; 50Hz: The max synchronous speed is 1500r/min.

※3 : "Permissible torque" It refers to the value of load torque driven by the Gearbox's output. -1 type: It indicates 9R60P(B)-□ is single phase 110V/115V 60Hz; -2 type:Single phase 220V/230V 60Hz; -2E type: Single phase 230V 50Hz; the other types please refer to the above table.

※4 : A colored background indicates gear shaft rotation in the opposite direction as the motor shaft. No marking indicates rotation in the same direction.

※5 : 1 Nm = 10.19716 Kgcm

※6 : The Gearboxes of all series have certification.



■ Specs

Motor Output	90W				
Round Shaft Type	9R90S(B)-1		9R90S(B)-2		9R90S(B)-2E
Pinion Shaft Type	9R90P(B)-1		9R90P(B)-2		9R90P(B)-2E
Specification Certification	 IP54		 IP54		 IP54
Capacity of Capacitor (μF)	30		7		6
Power Input (V)	Single phase 110	Single phase 115	Single phase 220	Single phase 230	Single phase 230
Power Frequency (Hz)	60				50
Rated Current (A)	2.13	2.35	1.00	1.03	1.00
Starting Torque (Nm)	0.53		0.58		0.64
Rated Torque(Nm)	0.61		0.61		0.74
Rated Speed (r/min)	1500		1550		1250
Permissible Inertia (GD ²)	4.6 kgcm ²				
Ambient Temperature	Single phase 110V/115V : -10~+50℃ ; Single phase 220V/230V: -10~+40℃				
Ambient Humidity	Max.85%RH				

※ 9R90S-□/ 9R90P-□ are lead wire type, 9R90SB-□/ 9R90PB-□ are terminal box type.

Note1: That values shown for rated torque and starting torque of reversible Motors are reference data measured for operation without the brake applied.

Note2: The brake attached with Motor which can shorten the time for starting/ stopping and clockwise/ counterclockwise rotation. The holding force provided by Motor is not the safety brake using.

※ 9R90□(B)-□ holding torque is 400gcm.(But at the initial the holding torque may lower than 400gcm); over rotation around 6 rev/min (Reference value).

※ 1 Nm = 10.19716 Kgcm

※ Reversing Motor can adapt to frequent start and stop, or the occasion forward reverse stop switch; therefore, it has 30 minutes limit (panel records "30 min").

■ 9R90P(B)-□+9A□ Series Gearbox Specs & Permissible Torque / Permissible Inertial Load(GD²)When Gearbox Attached

Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
60 Hz	Rotation Speed (r/min)	600	500	360	300	240	200	180	144	120	100	90	72	60
	Permissible Torque(Nm) -1,-2 Type	1.65	1.98	2.75	3.3	4.12	4.94	5.5	6.86	8.24	9.88	11	13.1	15.7
50 Hz	Rotation Speed (r/min)	500	417	300	250	200	167	150	120	100	83	75	60	50
	Permissible Torque(Nm) -2E Type	2	2.4	3.33	4	5	6	6.66	8.33	10	12	13.3	15.9	19.1
Permissible Inertia Load GD ² (kgcm ²)		41	60	115	166	259	373	460	719	1035	1490	1840	2875	4140

Gear Ratio		36	50	60	75	90	100	120	150	180	200	250	300	360
60 Hz	Rotation Speed (r/min)	50	36	30	24	20	18	15	12	10	9	7	6	5
	Permissible Torque(Nm) -1,-2 Type	18.9	26.2	31.5	39.3	40	40	40	40	40	40	40	40	40
50 Hz	Rotation Speed (r/min)	42	30	25	20	17	15	13	10	8	8	6	5	4
	Permissible Torque(Nm) -2E Type	22.9	31.8	38.2	40	40	40	40	40	40	40	40	40	40
Permissible Inertia Load GD ² (kgcm ²)		5962	11500	11500	11500	11500	11500	11500	11500	11500	11500	11500	11500	11500

※1 : Gearbox 9A□series, please enter the gear ratio 3~360 in the box□.

※2 : 60Hz: The max synchronous speed is 1800r/min; 50Hz: The max synchronous speed is 1500r/min.

※3 : "Permissible torque" It refers to the value of load torque driven by the Gearbox's output. -1 type: It indicates 9R90P(B)-1 is single phase 110V/115V 60Hz; -2 type:Single phase 220V/230V 60Hz; -2E type: Single phase 230V 50Hz; the other types please refer to the above table.

※4 : A colored background indicates gear shaft rotation in the opposite direction as the motor shaft. No marking indicates rotation in the same direction.

※5 : 1 Nm = 10.19716 Kgcm

※6 : The Gearboxes of all series have certification.



Specs

Motor Output	135W				
Round Shaft Type	9R135S(B)-1		9R135S(B)-2		9R135S(B)-2E
Pinion Shaft Type	9R135P(B)-1		9R135P(B)-2		9R135P(B)-2E
Specification Certification					
Capacity of Capacitor (μF)	27		8		7
Power Input (V)	Single phase 110	Single phase 115	Single phase 220	Single phase 230	Single phase 230
Power Frequency (Hz)	60				50
Rated Current (A)	2.30	2.35	1.30	1.35	1.20
Starting Torque (Nm) Note1	0.6		0.6		0.6
Rated Torque(Nm) Note1	0.85	0.9	0.85	0.9	0.9
Rated Speed (r/min)	1500		1550		1250
Permissible Inertia (GD²) Note2	4.6 kgcm²				
Ambient Temperature	Single phase 110V/115V : -10~+50℃ ; Single phase 220V/230V: -10~+40℃				
Ambient Humidity	Max.85%RH				

※ 9R135S-□/ 9R135P-□ are lead wire type, 9R135SB-□/ 9R135PB-□ are terminal box type.

Note1: That values shown for rated torque and starting torque of reversible Motors are reference data measured for operation without the brake applied.

Note2: The brake attached with Motor which can shorten the time for starting/ stopping and clockwise/ counterclockwise rotation. The holding force provided by Motor is not the safety brake using.

※ 9R135□(B)-□ holding torque is 400gcm.(But at the initial the holding torque may lower than 400gcm); over rotation around 6 rev/min (Reference value).

※ 1 Nm = 10.19716 Kgcm

※ Reversing Motor can adapt to frequent start and stop, or the occasion forward reverse stop switch; therefore, it has 30 minutes limit (panel records "30 min").

9R135P(B)-□+9A□ Series Gearbox Specs & Permissible Torque / Permissible Inertial Load(GD²)When Gearbox Attached

Gear Ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
60 Hz	Rotation Speed (r/min)	600	500	360	300	240	200	180	144	120	100	90	72	60
	Permissible Torque(Nm) -1,-2 Type	2.4	2.9	4.1	4.9	6.1	7.3	8.1	10.2	12.2	14.6	16.3	19.3	23.2
50 Hz	Rotation Speed (r/min)	500	417	300	250	200	167	150	120	100	83	75	60	50
	Permissible Torque(Nm) -2E Type	2.4	2.9	4.1	4.9	6.1	7.3	8.1	10.2	12.2	14.6	16.3	19.3	23.2
Permissible Inertia Load GD ² (kgcm ²)		41	60	115	166	259	373	460	719	1035	1490	1840	2875	4140

Gear Ratio			36	50	60	75	90	100	120	150	180	200	250	300	360
60 Hz	Rotation Speed (r/min)		50	36	30	24	20	18	15	12	10	9	7	6	5
	Permissible Torque(Nm)	-1,-2 Type	27.8	38.6	40				40						
50 Hz	Rotation Speed (r/min)		42	30	25	20	17	15	13	10	8	8	6	5	4
	Permissible Torque(Nm)	-2E Type	27.8	38.6	40				40						
Permissible Inertia Load GD ² (kgcm ²)			5962	11500					11500						

※1 : Gearbox 9A□ series, please enter the gear ratio 3~360 in the box□.

※2 : 60Hz: The max synchronous speed is 1800r/min; 50Hz: The max synchronous speed is 1500r/min.

※3 : "Permissible torque" It refers to the value of load torque driven by the Gearbox's output. -1 type: It indicates 9R135P(B)-□ is single phase 110V/115V 60Hz; -2 type:Single phase 220V/230V 60Hz; -2E type: Single phase 230V 50Hz; the other types please refer to the above table.

※4 : A colored background indicates gear shaft rotation in the opposite direction as the motor shaft. No marking indicates rotation in the same direction.

※5 : 1 Nm = 10.19716 Kgcm

※6 : The Gearboxes of all series have certification.

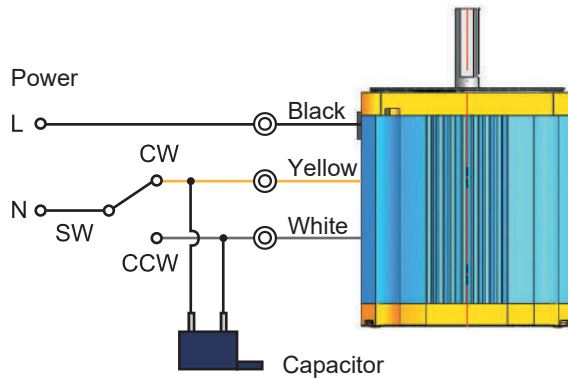
Reversible Motor Wiring Diagram

Lead Wire Type 6W · 25W · 40W · 60W · 90W · 135W
Terminal Box Type 25W · 40W · 60W · 90W · 135W

■ Lead Wire Type

Applicable Models : Single Phase Motor

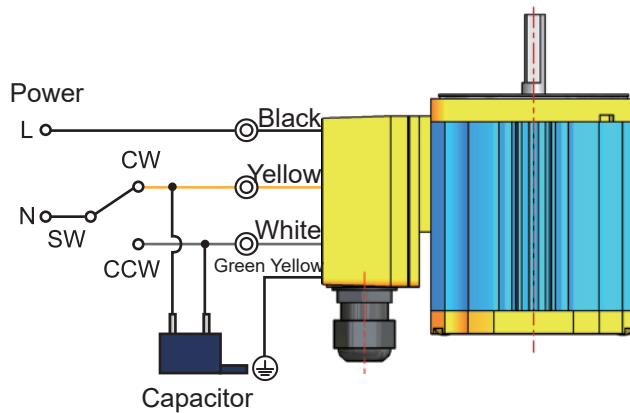
6R6□-1	6R6□-2	6R6□-2E
8R25□-1	8R25□-2	8R25□-2E
9R40□-1	9R40□-2	9R40□-2E
9R60□-1	9R60□-2	9R60□-2E
9R90□-1	9R90□-2	9R90□-2E
9R135□-1	9R135□-2	9R135□-2E



■ Terminal Box Type

Applicable Models : Single Phase Motor

8R25□B-1	8R25□B-2	8R25□B-2E
9R40□B-1	9R40□B-2	9R40□B-2E
9R60□B-1	9R60□B-2	9R60□B-2E
9R90□B-1	9R90□B-2	9R90□B-2E
9R135□B-1	9R135□B-2	9R135□B-2E



Product Recommendation Sheet

■ Mechanism: Operation of Large Index Table

Date dd / mm / yy

Name:		Contact Person:		Department / Title:	
TEL:	FAX:	Application:		Area:	
Power Input: ☐ Single phase AC _____ V ☐ 3 phase AC _____ V ☐ DC _____ V					Frequency: _____ Hz

Activated mode:

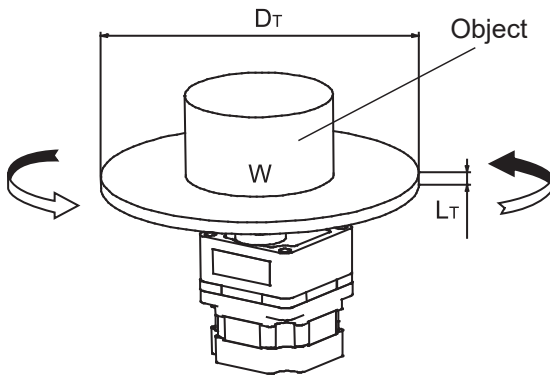
- ☐ Single direction operating continuously → ☐ Rated speed ☐ Regulated speed (Range: _____ rpm ~ _____ rpm)
☐ Single direction run, stop, run, stop → Activated time: _____ Second/Sequence, Stop time: _____ Second/Sequence; Run, stop total _____ Sequence/Minute
☐ Clockwise / counterclockwise repeated → CW: _____ Second/Sequence, Stop: _____ Second/Sequence : CCW: _____ Second/Sequence, Stop: _____ Sequence/Minute

Required motor: AC induction motor: ☐ Induction ☐ Reversible ☐ Speed control ☐ Magnetic brake ☐ Torque

DC brushless motor: ☐ BMS Series ☐ BS Series ☐ SBS Series ☐ UBS Series ☐ DBS Series ☐ Magnetic brake Series

Stepper motor: ☐ 2 phase ☐ 3 phase ☐ 5 phase

【Mechanism reference】



【Please sketch your actual transmission part of mechanism】

【Drive mechanism and operating data】

Object mass	W = _____ kg
Index table diameter	D _T = _____ cm
Width	L _T = _____ cm
Material	ρ = _____
Positioning angle *(Note)	θ = _____ deg
Positioning time *(Note)	T _O = _____ sec
Stopping accuracy	± _____ mm

*(Note): Please enter the max speed.

Recommendation products (Selected specs) :

※ Leave blank for any unclear items and send this form by fax, We will select the suitable products for you as soon as possible.

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Product Recommendation Sheet

■ Mechanism: Lead Screw

Date dd / mm / yy

Name:		Contact Person:		Department / Title:	
TEL:	FAX:	Application:		Area:	
Power Input: ☐ Single phase AC _____ V ☐ 3 phase AC _____ V ☐ DC _____ V					Frequency: _____ Hz

Activated mode:

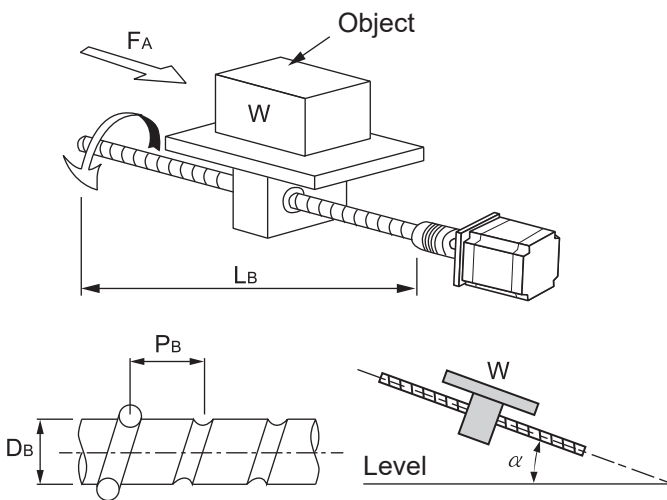
- ☐ Single direction operating continuously → ☐ Rated speed ☐ Regulated speed (Range: _____ rpm ~ _____ rpm)
☐ Single direction run, stop, run, stop → Activated time: _____ Second/Sequence, Stop time: _____ Second/Sequence; Run, stop total _____ Sequence/Minute
☐ Clockwise / counterclockwise repeated → CW: _____ Second/Sequence, Stop: _____ Second/Sequence : CCW: _____ Second/Sequence, Stop: _____ Sequence/Minute

Required motor: AC induction motor: ☐ Induction ☐ Reversible ☐ Speed control ☐ Magnetic brake ☐ Torque

DC brushless motor: ☐ BMS Series ☐ BS Series ☐ SBS Series ☐ UBS Series ☐ DBS Series ☐ Magnetic brake Series

Stepper motor: ☐ 2 phase ☐ 3 phase ☐ 5 phase

【Mechanism reference】



【Please sketch your actual transmission part of mechanism】

【Drive mechanism and operating data】

Work + Table mass	W = _____ kg	Frictional coefficient of sliding surfaces μ = _____
Screw angle	α = _____ deg	Positioning distance *(Note) L = _____ cm
Screw shaft diameter	DB = _____ cm	Positioning time *(Note) To = _____ sec
Screw length	LB = _____ cm	Push / Pull force FA = _____ kg
Screw pitch	PB = _____ cm	Stopping accuracy ± _____ mm
Material	ρ = _____	
Screw efficiency	η = _____	
Internal frictional coefficient of pilot pressure nut μ_0 = _____		

*(Note): Please enter the max speed.

Recommendation products (Selected specs) :

※ Leave blank for any unclear items and send this form by fax, We will select the suitable products for you as soon as possible.

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Product Recommendation Sheet

■ Mechanism: Belt and Pulley

Date dd / mm / yy

Name:		Contact Person:		Department / Title:	
TEL:	FAX:	Application:		Area:	
Power Input: ☐ Single phase AC _____ V ☐ 3 phase AC _____ V ☐ DC _____ V					Frequency: _____ Hz

Activated mode:

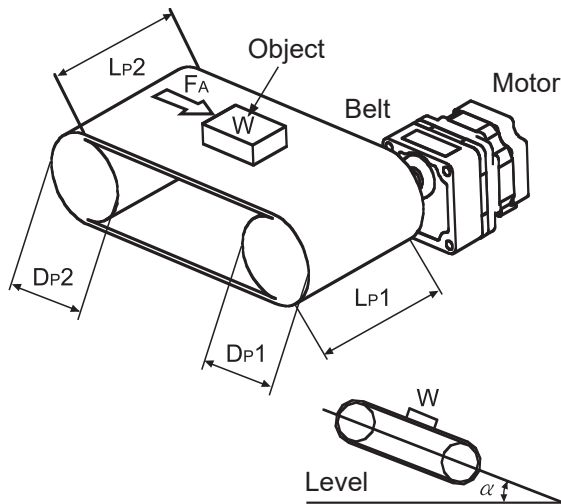
- ☐ Single direction operating continuously → ☐ Rated speed ☐ Regulated speed (Range: _____ rpm ~ _____ rpm)
- ☐ Single direction run, stop, run, stop → Activated time: _____ Second/Sequence, Stop time: _____ Second/Sequence; Run, stop total _____ Sequence/Minute
- ☐ Clockwise / counterclockwise repeated → CW: _____ Second/Sequence, Stop: _____ Second/Sequence : CCW: _____ Second/Sequence, Stop: _____ Sequence/Minute

Required motor: AC induction motor: ☐ Induction ☐ Reversible ☐ Speed control ☐ Magnetic brake ☐ Torque

DC brushless motor: ☐ BMS Series ☐ BS Series ☐ SBS Series ☐ UBS Series ☐ DBS Series ☐ Magnetic brake Series

Stepper motor: ☐ 2 phase ☐ 3 phase ☐ 5 phase

【Mechanism reference】



【Please sketch your actual transmission part of mechanism】

【Drive mechanism and operating data】

Work + Table + Pulley mass $W =$ _____ kg

Screw angle $\alpha =$ _____ deg

(Connecting to the motor)

Pulley diameter $Dp1 =$ _____ cm

Width $Lp1 =$ _____ cm

Material $\rho 1 =$ _____

Pulley diameter $Dp2 =$ _____ cm

Width $Lp2 =$ _____ cm

Material $\rho 2 =$ _____

Belt, pulley efficiency $\eta =$ _____

Frictional coefficient of sliding surfaces $\mu =$ _____

Positioning distance *(Note) $L =$ _____ cm

Positioning time *(Note) $T_0 =$ _____ sec

Push / Pull force $F_A =$ _____ kg

Stopping accuracy $\pm$ _____ mm

*(Note): Please enter the max speed.

Recommendation products (Selected specs) :

※ Leave blank for any unclear items and send this form by fax, We wil select the suitable products for you as soon as possible.

Product Recommendation Sheet

■ Mechanism: Others

Date dd / mm / yy

Name:		Contact Person:		Department / Title:	
TEL:	FAX:	Application:		Area:	
Power Input: ☐ Single phase AC _____V ☐ 3 phase AC _____V ☐ DC _____ V					Frequency: _____ Hz

Activated mode:

- ☐ Single direction operating continuously → ☐ Rated speed ☐ Regulated speed(Range: _____rpm~_____rpm)
- ☐ Single direction run, stop, run, stop → Activated time:____Second/Sequence, Stop time:____Second/Sequence; Run, stop total____Sequence/Minute
- ☐ Clockwise / counterclockwise repeated → CW:____Second/Sequence, Stop:____Second/Sequence :CCW:____Second/Sequence, Stop:____Sequence/Minute

Required motor: AC induction motor: ☐ Induction ☐ Reversible ☐ Speed control ☐ Magnetic brake ☐ Torque

DC brushless motor: ☐ BMS Series ☐ BS Series ☐ SBS Series ☐ UBS Series ☐ DBS Series ☐ Magnetic brake Series

Stepper motor: ☐ 2 phase ☐ 3phase ☐ 5phase

【Drive mechanism and operating data】

Use the space below to draw the outline of your drive mechanism and fill in the operating conditions required.

Recommendation products (Selected specs) :

※ Leave blank for any unclear items and send this form by fax, We will select the suitable products for you as soon as possible.

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