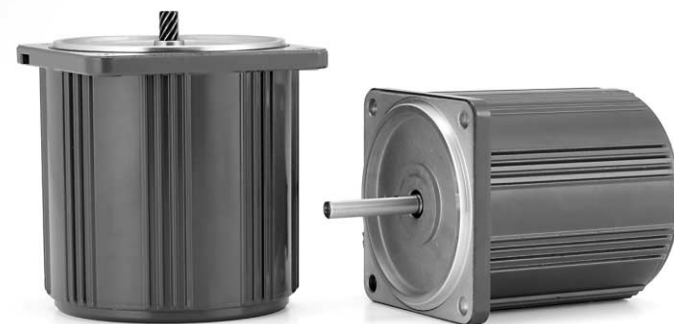
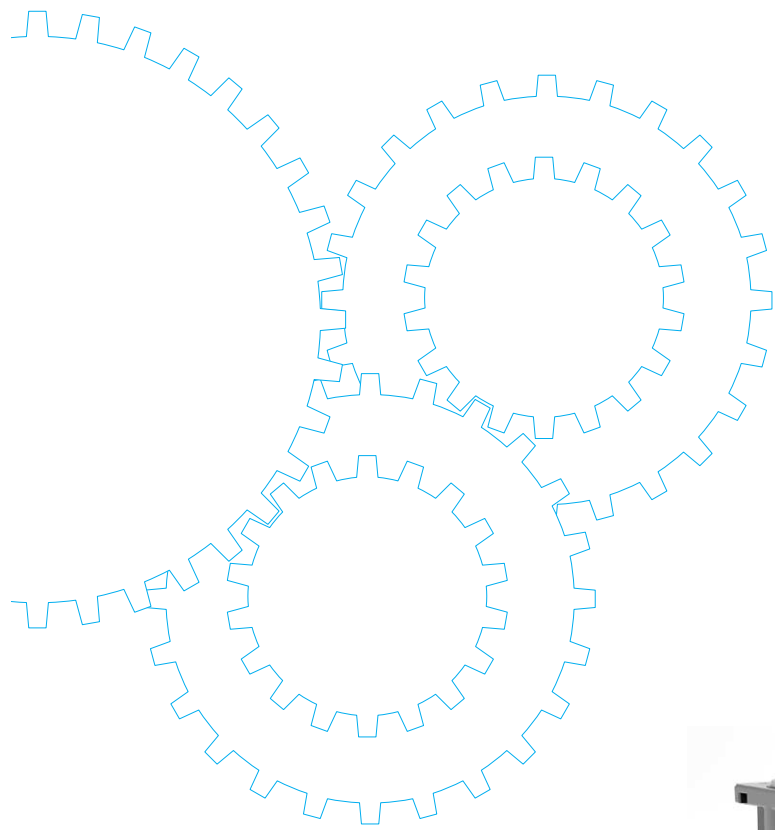


# Reversible Motor



## Contents

- Motor Overview B-64
- Model list B-68
- Product information for each model B-72
- Gear head combination dimensions B-120
- Round shaft motor dimensions B-123

# Outline of reversible motor

## Features

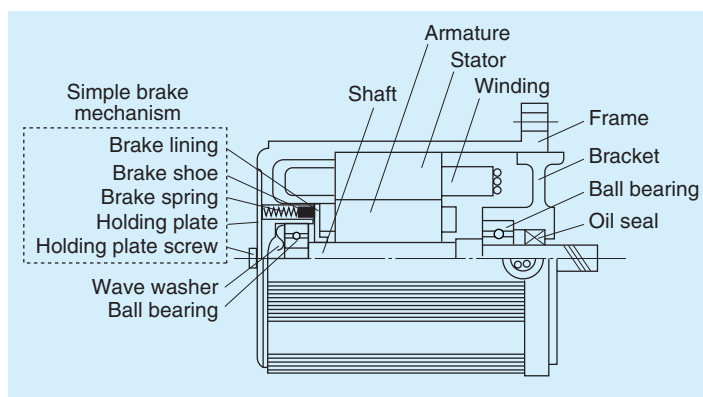
- A quick-reversal run is possible.
- Because of balanced winding, it offers the same performance at both normal and reverse runs.
- The built-in simple brake mechanism makes the overrun small as compared with the induction motor, enabling a quick-reversal run.
- The time rating is 30 minutes.

Difference between induction motor and reversible motor: The reversible motor can make a quick-reversal run. In the case of the induction motor, even if the wire connections are changed for a reverse run, it is not possible to reverse the load instantaneously because the torque (shaded area in the figure below) acting in a direction opposite to the rotating magnetic field is produced. Therefore you need to stop the induction motor once, change the wire connections and make a reverse run.

(Note) • Limit the frequency of reversal operation to 6 cycles per minute.

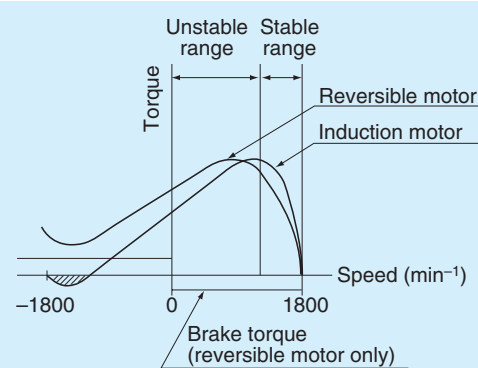
- If it is necessary that the frequency of reversal operation be 7 to 100 cycles per minute, use the C&B motor. (For running in one direction only)
- For applications that need holding, use the electromagnetic brake motor.

## Construction



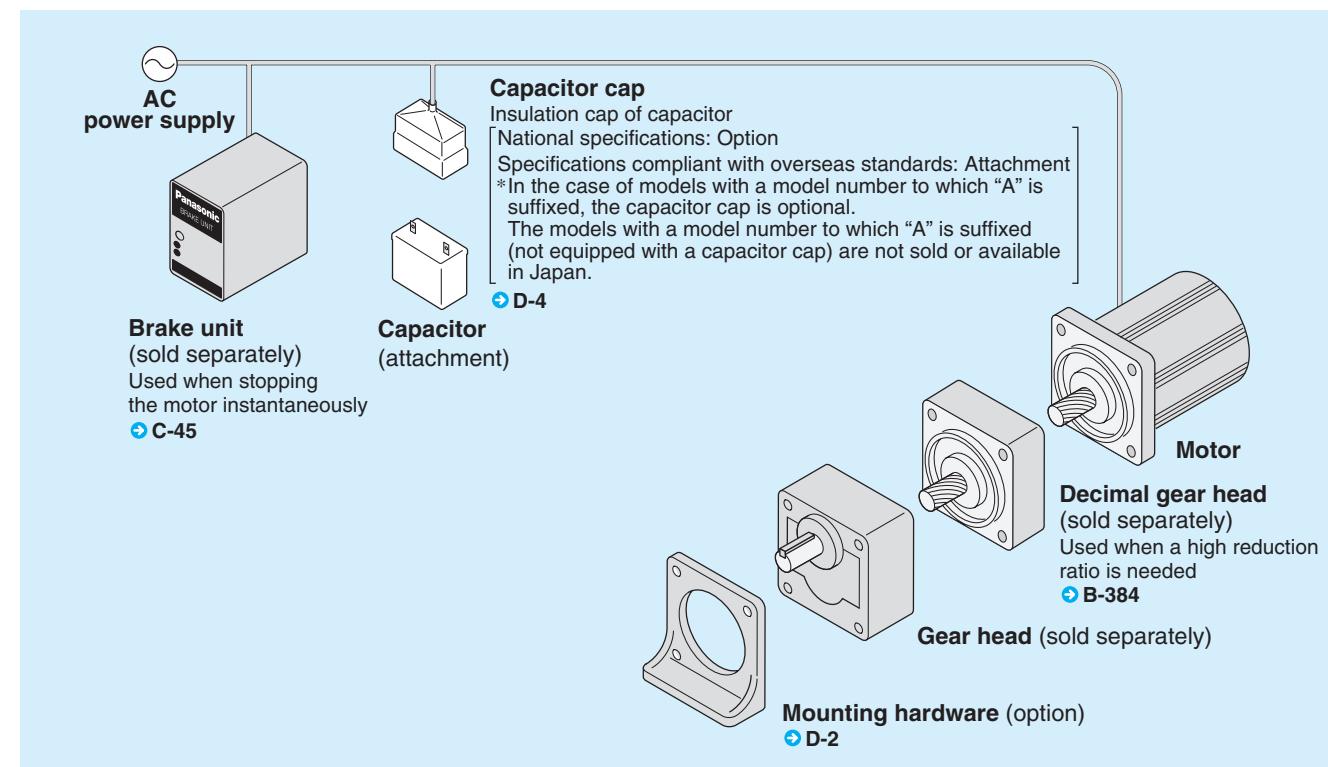
## Characteristics

### Speed-torque characteristics

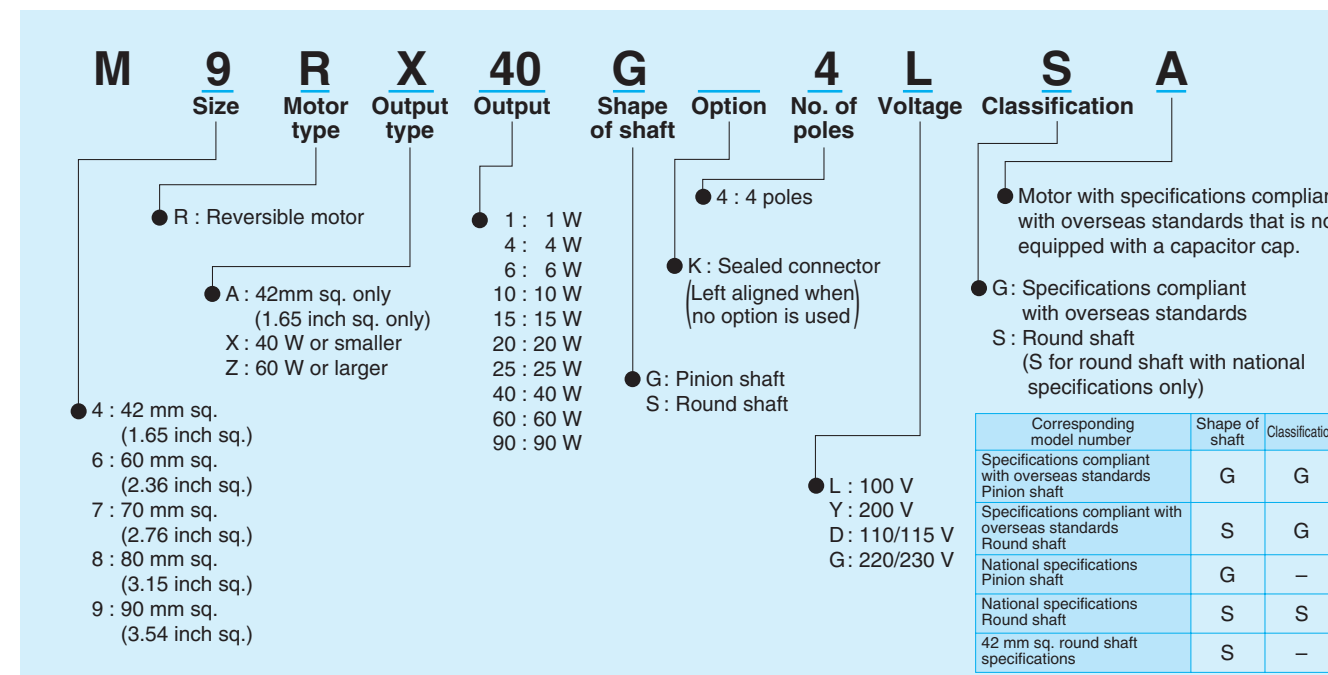


Note) Operation at 60 Hz

## System configuration diagram



## Coding system



## Fit tolerance

Fit tolerance symbol is used in the outside dimension diagram of motor and gear head. For further information, see "Fit tolerance" on page A-33.

# Outline of reversible motor

## Overrun

In the case of the reversible motor, braking power is applied by the simple brake mechanism when the power is turned off. An overrun is defined as a revolution which the motor makes when the power is turned off. The overrun and brake torque (motor not loaded, reference value) of the reversible motor are shown in the table below.

### List of overruns of reversible motor

Size	42 mm sq. (1.65 inch sq.)		60 mm sq. (2.36 inch sq.)		70 mm sq. (2.76 inch sq.)		80 mm sq. (3.15 inch sq.)		90 mm sq. (3.54 inch sq.)		
Output	1W	4W	6W	10W	15W	20W	25W	40W	60W	90W	
Motor model	M4RA1G4L	M6RX4G4L	M6RX6G4L M6RX6G4Y M6RX6G4LG(A) M6RX6G4DG(A) M6RX6G4YG(A) M6RX6G4GG(A)	M7RX10G4L M7RX10G4Y	M7RX15G4L M7RX15G4Y M7RX15G4LG(A) M7RX15G4DG(A) M7RX15G4YG(A) M7RX15G4GG(A)	M8RX20G4L M8RX20G4Y	M8RX25G4L M8RX25G4Y M8RX25G4LG(A) M8RX25G4DG(A) M8RX25G4YG(A) M8RX25G4GG(A)	M9RX40G4L M9RX40G4Y M9RX40G4LG(A) M9RX40G4DG(A) M9RX40G4YG(A) M9RX40G4GG(A)	M9RZ60G4L M9RZ60G4Y M9RZ60G4LG(A) M9RZ60G4DG(A) M9RZ60G4YG(A) M9RZ60G4GG(A)	M9RZ90G4L M9RZ90G4Y M9RZ90G4LG(A) M9RZ90G4DG(A) M9RZ90G4YG(A) M9RZ90G4GG(A)	
Brake torque $\times 10^{-2}$ N·m (oz-in)	0.196 (0.28)	0.588 (0.83)	0.588 (0.83)	1.27 (1.8)	1.27 (1.8)	1.47 (2.08)	1.47 (2.08)	3.92 (5.5)	3.92 (5.5)	3.92 (5.5)	
Overrun (revolution)	5.0	5.0	5.0	4.5	4.5	5.5	5.5	6.0	6.0	6.0	

(Note) The simple brake mechanism of the reversible motor cannot be used for positioning.  
The simple brake mechanism of the reversible motor cannot be used for holding.

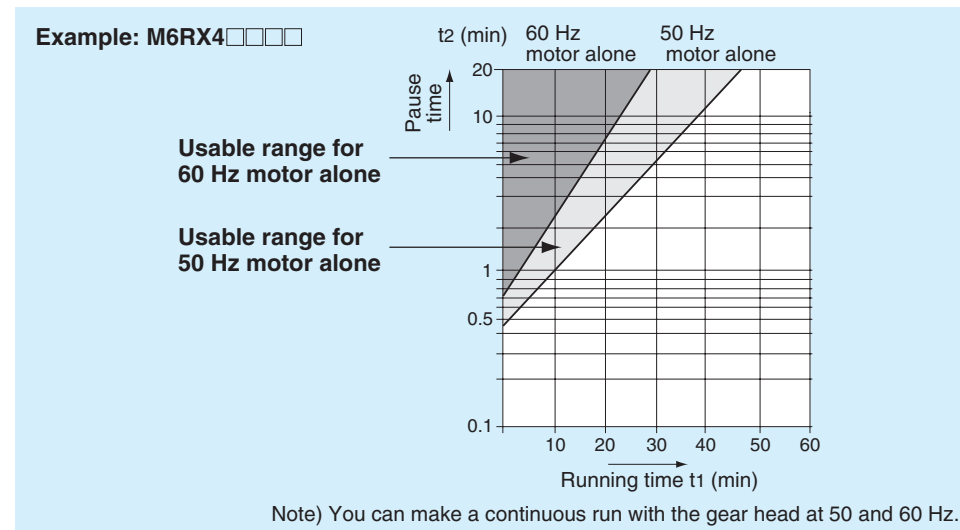
The brake torque of the reversible motor varies and changes over time.  
When selecting a motor, do so allowing for such variations and changes.

## Temperature rise of reversible motor

The reversible motor is of 30-minute rating when you run the motor alone, however, when you run it with the gear head or equipment, the continuous running time will be extended thanks to heat radiation effect. When you run the motor intermittently, the temperature rise will be saturated at a certain value depending on the cycle of intermittent running.

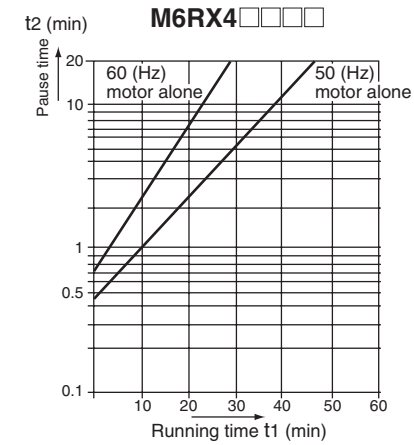
The limit of intermittent run of the reversible motor is shown in the table below.

### How to read the limit of intermittent run of reversible motor

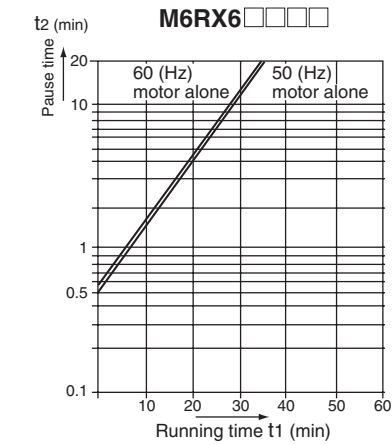


\* You can run the motor in the range above the running limit line.

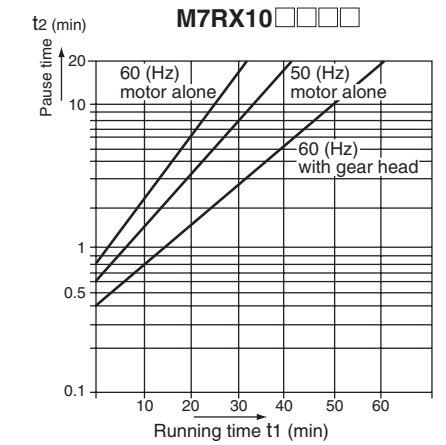
## Limit of intermittent run of reversible motor



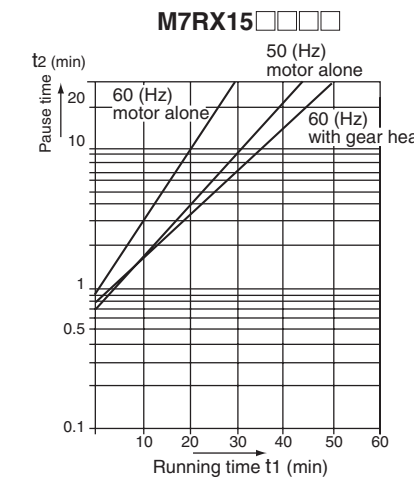
Note) You can make a continuous run with the gear head at 50 and 60 Hz.



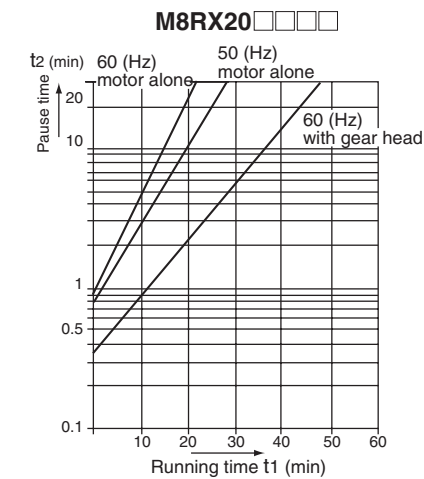
Note) You can make a continuous run with the gear head at 50 and 60 Hz.



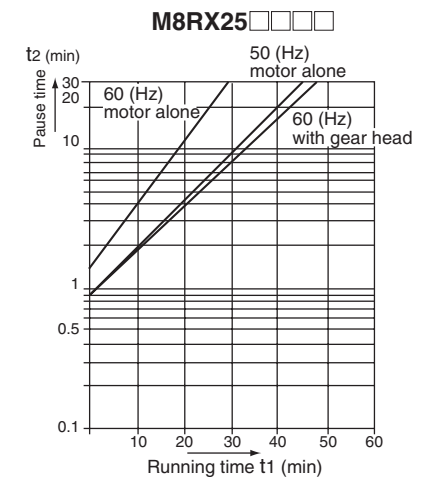
Note) You can make a continuous run with the gear head at 50.



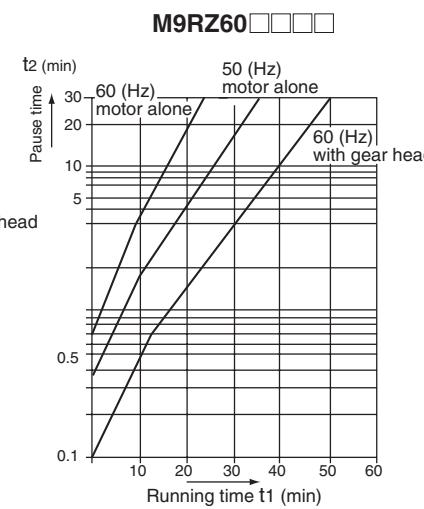
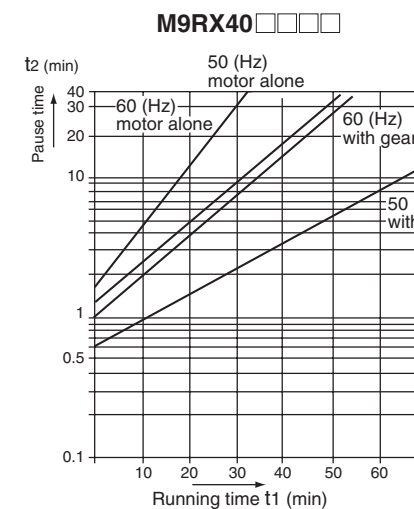
Note) You can make a continuous run with the gear head at 50.



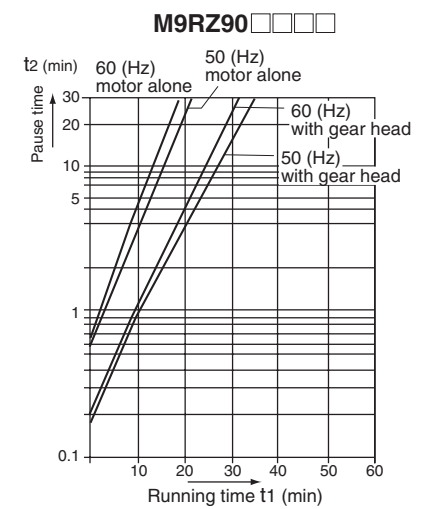
Note) You can make a continuous run with the gear head at 50.



Note) You can make a continuous run with the gear head at 50.



Note) You can make a continuous run with the gear head at 50.




# Model list of reversible motor

## Pinion shaft motor

## Applicable gear head

★ Motor compliant with overseas standards c   

 Hinge attached

Size	Output (W)	Leadwire type			Sealed connector type			
		Model number	Specifications	Page	Model number	Specifications	Page	
42 mm sq. (1.65 inch sq.)	1	M4RA1G4L	100V	B-72				
60 mm sq. (2.36 inch sq.)	4	M6RX4G4L	100V	B-74				
		6	M6RX6G4L	100V	B-76			
		M6RX6G4Y	200V	B-76				
		M6RX6G4LG(A)	100V ★	B-78				
		M6RX6G4DG(A)	110/115V ★	B-78				
		M6RX6G4YG(A)	200V ★	B-78				
		M6RX6G4GG(A)	220/230V ★	B-78				
70 mm sq. (2.76 inch sq.)	10	M7RX10G4L	100V	B-80				
		M7RX10G4Y	200V	B-80				
	15	M7RX15G4L	100V	B-82				
		M7RX15G4Y	200V	B-82				
		M7RX15G4LG(A)	100V ★	B-84				
		M7RX15G4DG(A)	110/115V ★	B-84				
		M7RX15G4YG(A)	200V ★	B-84				
		M7RX15G4GG(A)	220/230V ★	B-84				
80 mm sq. (3.15 inch sq.)	20	M8RX20G4L	100V	B-86				
		M8RX20G4Y	200V	B-86				
	25	M8RX25G4L	100V	B-88	M8RX25GK4L	100V	B-104	
		M8RX25G4Y	200V	B-88	M8RX25GK4Y	200V	B-104	
		M8RX25G4LG(A)	100V ★	B-90	M8RX25GK4LG(A)	100V ★	B-106	
		M8RX25G4DG(A)	110/115V ★	B-90	M8RX25GK4DG(A)	110/115V ★	B-106	
		M8RX25G4YG(A)	200V ★	B-90	M8RX25GK4YG(A)	200V ★	B-106	
		M8RX25G4GG(A)	220/230V ★	B-90	M8RX25GK4GG(A)	220/230V ★	B-106	
90 mm sq. (3.54 inch sq.)	40	M9RX40G4L	100V	B-92	M9RX40GK4L	100V	B-108	
		M9RX40G4Y	200V	B-92	M9RX40GK4Y	200V	B-108	
		M9RX40G4LG(A)	100V ★	B-94	M9RX40GK4LG(A)	100V ★	B-110	
		M9RX40G4DG(A)	110/115V ★	B-94	M9RX40GK4DG(A)	110/115V ★	B-110	
		M9RX40G4YG(A)	200V ★	B-94	M9RX40GK4YG(A)	200V ★	B-110	
		M9RX40G4GG(A)	220/230V ★	B-94	M9RX40GK4GG(A)	220/230V ★	B-110	
	60	M9RZ60G4L	100V	B-96	M9RZ60GK4L	100V	B-112	
		M9RZ60G4Y	200V	B-96	M9RZ60GK4Y	200V	B-112	
		M9RZ60G4LG(A)	100V ★	B-98	M9RZ60GK4LG(A)	100V ★	B-114	
		M9RZ60G4DG(A)	110/115V ★	B-98	M9RZ60GK4DG(A)	110/115V ★	B-114	
		M9RZ60G4YG(A)	200V ★	B-98	M9RZ60GK4YG(A)	200V ★	B-114	
		M9RZ60G4GG(A)	220/230V ★	B-98	M9RZ60GK4GG(A)	220/230V ★	B-114	
		90	M9RZ90G4L	100V	B-100	M9RZ90GK4L	100V	B-116
			M9RZ90G4Y	200V	B-100	M9RZ90GK4Y	200V	B-116
M9RZ90G4LG(A)	100V ★		B-102	M9RZ90GK4LG(A)	100V ★	B-118		
M9RZ90G4DG(A)	110/115V ★		B-102	M9RZ90GK4DG(A)	110/115V ★	B-118		
M9RZ90G4YG(A)	200V ★		B-102	M9RZ90GK4YG(A)	200V ★	B-118		
M9RZ90G4GG(A)	220/230V ★		B-102	M9RZ90GK4GG(A)	220/230V ★	B-118		




\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

Standard gear head			High torque gear head	Right-angle gear head	Gear head -Inch (U.S.A.)	Decimal gear head
Ball bearing	Metal bearing	Ball and metal bearing				
—	—	M4G□F	—	—	—	—
MX6G□BA MX6G□B	MX6G□MA MX6G□M	—	—	—	MX6G□BU	MX6G10XB
MX7G□BA MX7G□B	MX7G□MA MX7G□M	—	—	—	MX7G□BU	MX7G10XB
MX8G□B	MX8G□M	—	—	—	MX8G□BU	MX8G10XB
MX9G□B	MX9G□M	—	—	MX9G□R	MX9G□BU	MX9G10XB
MZ9G□B	—	—	MR9G□B	—	—	—
MY9G□B	—	—	MP9G□B	MZ9G□R	MZ9G□BU	MZ9G10XB

\* Refer to page B-444 for dimensions and permissible torque of high torque gear head.  
Refer to page B-446 for dimensions and permissible torque of right-angle gear head.  
Refer to page B-451 for dimensions and permissible torque of gear head -Inch (U.S.A.).  
Refer to page B-448 for dimensions of decimal gear head.

# Model list of reversible motor

## Round shaft motor

★ Motor compliant with overseas standards c     
 Ⓟ Electrical Appliance and Material Safety Law

Size	Output (W)	Leadwire type		Sealed connector type					
		Model number	Specifications	Model number	Specifications				
42 mm sq. (1.65 inch sq.)	1	M4RA1S4L	100V						
60 mm sq. (2.36 inch sq.)	4	M6RX4S4LS	100V						
		M6RX6S4LS	100V						
	6	M6RX6S4YS	200V						
		M6RX6S4LG(A)	100V	★					
		M6RX6S4DG(A)	110/115V	★					
		M6RX6S4YG(A)	200V	★					
		M6RX6S4GG(A)	220/230V	★					
70 mm sq. (2.76 inch sq.)	10	M7RX10S4LS	100V						
		M7RX10S4YS	200V						
	15	M7RX15S4LS	100V						
		M7RX15S4YS	200V						
		M7RX15S4LG(A)	100V	★					
		M7RX15S4DG(A)	110/115V	★					
		M7RX15S4YG(A)	200V	★					
		M7RX15S4GG(A)	220/230V	★					
80 mm sq. (3.15 inch sq.)	20	M8RX20S4LS	100V						
		M8RX20S4YS	200V						
	25	M8RX25S4LS	100V		M8RX25SK4LS	100V	Ⓟ		
		M8RX25S4YS	200V		M8RX25SK4YS	200V	Ⓟ		
		M8RX25S4LG(A)	100V	★	M8RX25SK4LG(A)	100V	★	Ⓟ	
		M8RX25S4DG(A)	110/115V	★	M8RX25SK4DG(A)	110/115V	★		
		M8RX25S4YG(A)	200V	★	M8RX25SK4YG(A)	200V	★	Ⓟ	
		M8RX25S4GG(A)	220/230V	★	M8RX25SK4GG(A)	220/230V	★		
		90 mm sq. (3.54 inch sq.)	40	M9RX40S4LS	100V		M9RX40SK4LS	100V	Ⓟ
				M9RX40S4YS	200V		M9RX40SK4YS	200V	Ⓟ
M9RX40S4LG(A)	100V			★	M9RX40SK4LG(A)	100V	★	Ⓟ	
M9RX40S4DG(A)	110/115V			★	M9RX40SK4DG(A)	110/115V	★		
M9RX40S4YG(A)	200V			★	M9RX40SK4YG(A)	200V	★	Ⓟ	
M9RX40S4GG(A)	220/230V			★	M9RX40SK4GG(A)	220/230V	★		
60	M9RZ60S4LS		100V		M9RZ60SK4LS	100V	Ⓟ		
	M9RZ60S4YS		200V		M9RZ60SK4YS	200V	Ⓟ		
	M9RZ60S4LG(A)		100V	★	M9RZ60SK4LG(A)	100V	★	Ⓟ	
	M9RZ60S4DG(A)		110/115V	★	M9RZ60SK4DG(A)	110/115V	★		
	M9RZ60S4YG(A)		200V	★	M9RZ60SK4YG(A)	200V	★	Ⓟ	
	M9RZ60S4GG(A)		220/230V	★	M9RZ60SK4GG(A)	220/230V	★		
90	M9RZ90S4LS	100V		M9RZ90SK4LS	100V	Ⓟ			
	M9RZ90S4YS	200V		M9RZ90SK4YS	200V	Ⓟ			
	M9RZ90S4LG(A)	100V	★	M9RZ90SK4LG(A)	100V	★	Ⓟ		
	M9RZ90S4DG(A)	110/115V	★	M9RZ90SK4DG(A)	110/115V	★			
	M9RZ90S4YG(A)	200V	★	M9RZ90SK4YG(A)	200V	★	Ⓟ		
	M9RZ90S4GG(A)	220/230V	★	M9RZ90SK4GG(A)	220/230V	★			

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft motor.  
 Dimensional outline drawing → Page B-123.

\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
 The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
42 mm sq.	M4RA1G4L	4	1	100	50	30	11	0.12	1125	0.0083 (1.18)	0.12	0.016 (2.27)	1.5 (200V)
					60		12	0.12	1550	0.0062 (0.88)	0.12	0.016 (2.27)	

The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-123.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

Unit of permissible torque: upper (mN·m) / lower (lb-in)

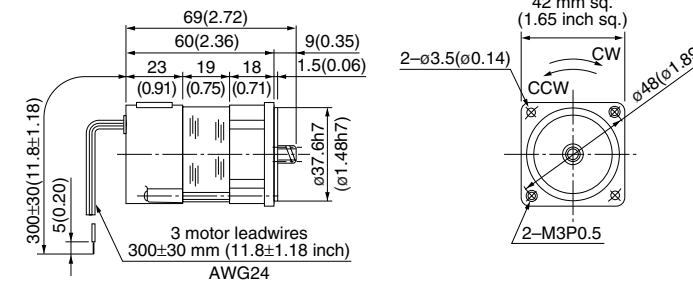
Reduction ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	120	100	83.3	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	60Hz	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head M4GA3F to M4GA180F (metal+ball bearing)	50Hz	23 (0.20)	27 (0.24)	37 (0.33)	45 (0.40)	56 (0.50)	67 (0.59)	84 (0.74)	98 (0.87)	118 (1.04)	147 (1.30)	176 (1.56)	216 (1.91)	303 (2.68)	363 (3.21)	411 (3.64)	490 (4.34)				
	60Hz	19 (0.17)	23 (0.20)	31 (0.27)	37 (0.33)	47 (0.42)	56 (0.50)	77 (0.68)	84 (0.74)	98 (0.87)	137 (1.21)	147 (1.30)	176 (1.56)	245 (2.17)	303 (2.68)	382 (3.39)	411 (3.64)	490 (4.34)			
Rotational direction	Same as motor rotational direction						Reverse to motor rotational direction			Same as motor rotational direction						Reverse to motor rotational direction					

## Motor (dimensions)

M4RA1G4L 4P 1 W 100 V

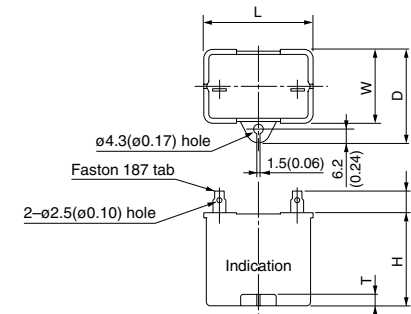
Scale: 1/3, Unit: mm (inch)

Mass 0.3 kg 0.66 lb	Spur gear	Module 0.4	Number of teeth 10
---------------------------	-----------	---------------	-----------------------



## Capacitor (dimensions) [attachment]

Unit: mm (inch)

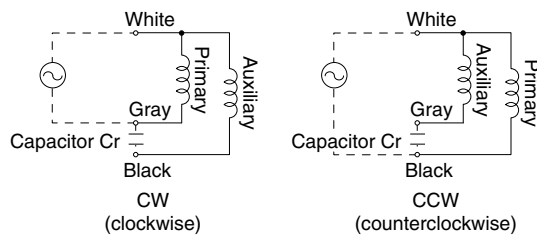


## Capacitor dimension list

Unit: upper (mm) / lower (inch)

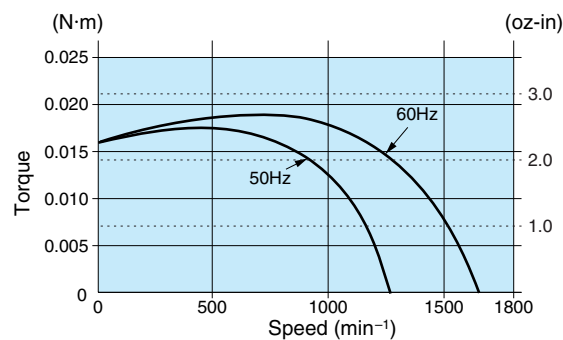
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M4RA1G4L	M0PC1.5M20	50.2 (1.98)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917

## Connection diagram



## Speed-torque characteristics

M4RA1G4L

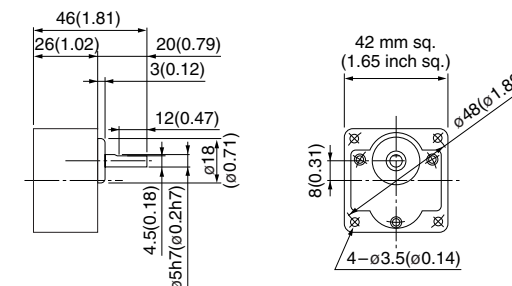


## Gear head (dimensions)

Scale: 1/3, Unit: mm (inch)

M4GA□F (ball + metal bearing) Mass 0.2 kg (0.44 lb): Output shaft D cut

\* In the case of 42 mm sq. (1.65 inch sq.), a ball bearing is used for the output shaft only.



\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
60 mm sq.	M6RX4G4L	4	4	100	50	30	18	0.19	1200	0.030 (4.25)	0.23	0.039 (5.52)	3.0 (200V)
					60		19	0.20	1550	0.023 (3.26)	0.24	0.040 (5.66)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-123.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

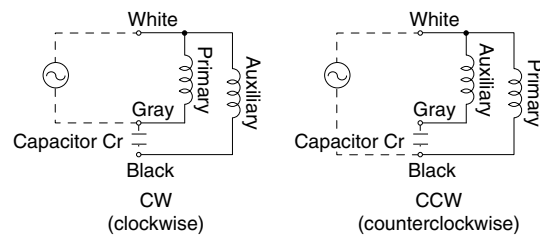
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	Unit of permissible torque: upper (N·m) / lower (lb-in)																						
	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	MX6G3BA to MX6G180B (ball bearing)	50Hz	0.059 (0.52)	0.071 (0.63)	0.11 (0.97)	0.13 (1.15)	0.16 (1.42)	0.19 (1.68)	0.23 (2.04)	0.27 (2.39)	0.32 (2.83)	0.39 (3.45)	0.44 (3.89)	0.53 (4.69)	0.64 (5.66)	0.76 (6.73)	0.98 (8.67)	1.18 (10.4)	1.47 (13.0)	1.76 (15.6)	2.06 (18.2)	2.45 (21.7)	2.45 (21.7)
		60Hz	0.049 (0.43)	0.059 (0.52)	0.090 (0.80)	0.11 (0.97)	0.13 (1.15)	0.16 (1.42)	0.18 (1.60)	0.23 (2.04)	0.27 (2.39)	0.32 (2.83)	0.35 (3.10)	0.44 (3.89)	0.53 (4.69)	0.64 (5.66)	0.81 (7.17)	0.98 (8.67)	1.27 (11.2)	1.47 (13.0)	1.76 (15.6)	2.06 (18.2)	2.45 (21.7)
Rotational direction		Same as motor rotational direction											Reverse to motor rotational direction										

## Permissible torque at output shaft of gear head using decimal gear head

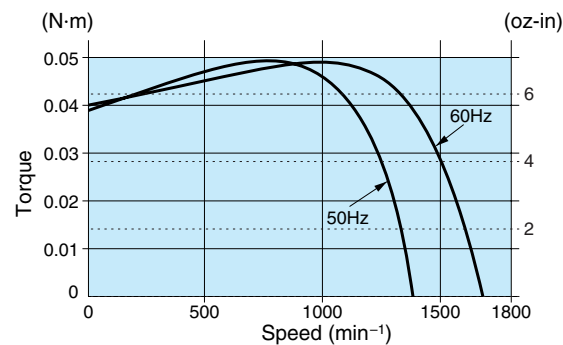
Applicable gear head		Reduction ratio	Unit of permissible torque: upper (N·m) / lower (lb-in)														
Bearing	Decimal gear head		Speed (min <sup>-1</sup> )	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8	
MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing)	MX6G10XB	Permissible torque	N·m (lb-in)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	
		Rotational direction		Same as motor rotational direction			Reverse to motor rotational direction										

## Connection diagram



## Speed-torque characteristics

### M6RX4G4L



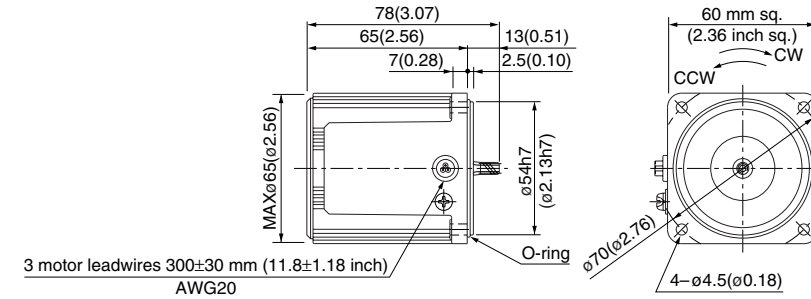
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

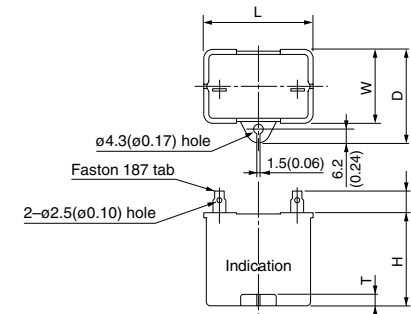
M6RX4G4L 4P 4 W 100 V

Mass	Helical gear	Module	Number of teeth
0.56 kg 1.23 lb		0.5	6



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

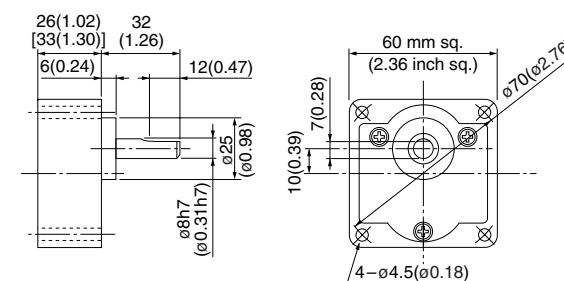
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M6RX4G4L	M0PC3M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917

## Gear head (dimensions)

Scale: 1/3, Unit: mm (inch)

MX6G□BA (ball bearing) / MX6G□B (ball bearing) Mass 0.24/0.3 kg (0.53/0.66 lb): Output shaft D cut  
MX6G□MA (metal bearing) / MX6G□M (metal bearing) Mass 0.24/0.3 kg (0.53/0.66 lb): Output shaft D cut



\* Figures in [ ] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).

(The model number of the gear head with a reduction ratio of 1/25 or smaller is MX6G□BA (MA).)

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

Induction motor  
Reversible motor  
3-phase motor  
Electromagnetic brake motor  
Variable speed induction motor  
Variable speed reversible motor  
Variable speed electromagnetic brake single-phase motor  
Variable speed unit motor  
C&B motor  
2-pole round shaft motor  
Gear head  
Gear head -inch (U.S.A.)

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
60 mm sq.	M6RX6G4L	4	6	100	50	30	22	0.23	1250	0.047 (6.66)	0.30	0.050 (7.08)	3.5 (200V)
					60		22	0.22	1575	0.037 (5.24)	0.31	0.052 (7.36)	
	M6RX6G4Y	4	6	200	50	30	22	0.11	1275	0.045 (6.37)	0.16	0.053 (7.50)	0.9 (400V)
					60		22	0.12	1600	0.036 (5.10)	0.16	0.053 (7.50)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-123.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

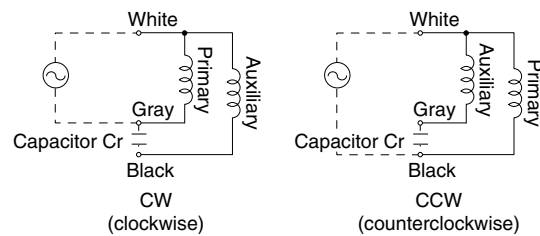
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	MX6G3BA to MX6G180B (ball bearing)	50Hz	0.098 (0.87)	0.12 (1.06)	0.16 (1.42)	0.19 (1.68)	0.25 (2.21)	0.29 (2.57)	0.33 (2.92)	0.40 (3.54)	0.49 (4.34)	0.59 (5.22)	0.66 (5.84)	0.79 (6.99)	0.95 (8.41)	1.18 (10.4)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	2.45 (21.7)			2.45 (21.7)
	MX6G3MA to MX6G180M (metal bearing)	60Hz	0.081 (0.72)	0.098 (0.87)	0.13 (1.15)	0.16 (1.42)	0.21 (1.86)	0.25 (2.21)	0.26 (2.30)	0.33 (2.92)	0.40 (3.54)	0.49 (4.34)	0.53 (4.69)	0.66 (5.84)	0.79 (6.99)	0.95 (8.41)	1.27 (11.2)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)			2.45 (21.7)
Rotational direction		Same as motor rotational direction											Reverse to motor rotational direction										

## Permissible torque at output shaft of gear head using decimal gear head

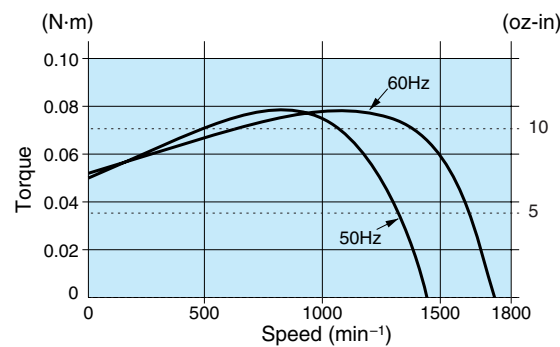
Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min <sup>-1</sup> )	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MX6G□BA (ball bearing)	MX6G10XB	Permissible torque	N·m	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45
MX6G□B (bearing)			lb-in	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)
MX6G□MA (metal bearing)	MX6G10XB	Rotational direction	Same as motor rotational direction												
MX6G□M (bearing)			Reverse to motor rotational direction												

## Connection diagram



## Speed-torque characteristics

### M6RX6G4L



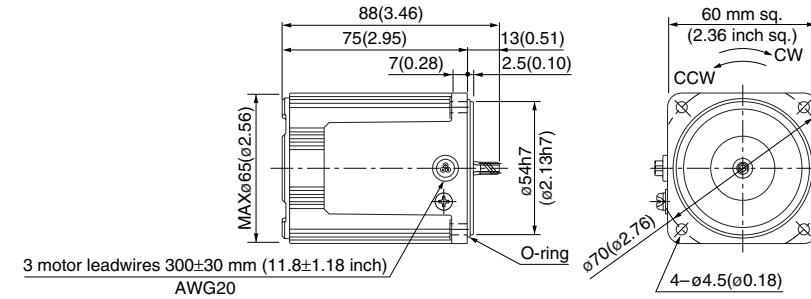
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

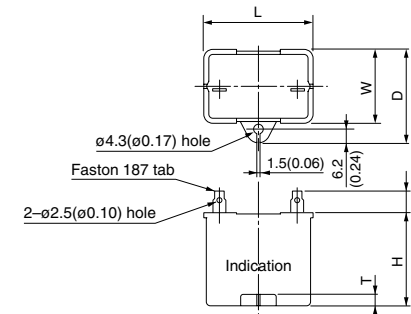
M6RX6G4L	4P 6 W 100 V
M6RX6G4Y	4P 6 W 200 V

Mass	Helical gear	Module	Number of teeth
0.67 kg 1.48 lb		0.5	6



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

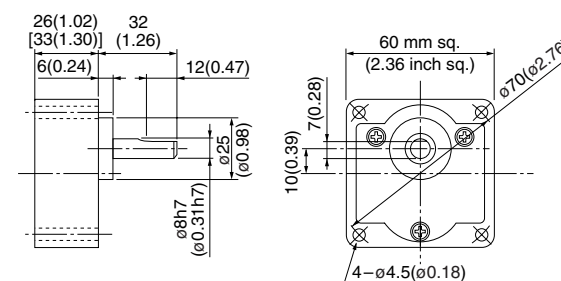
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M6RX6G4L	M0PC3.5M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917
M6RX6G4Y	M0PC0.9M40	39.5 (1.56)	16.2 (0.64)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3917

## Gear head (dimensions)

Scale: 1/3, Unit: mm (inch)

MX6G□BA (ball bearing) / MX6G□B (ball bearing)	Mass 0.24/0.3 kg (0.53/0.66 lb)	Output shaft D cut
MX6G□MA (metal bearing) / MX6G□M (metal bearing)	Mass 0.24/0.3 kg (0.53/0.66 lb)	Output shaft D cut



\* Figures in [ ] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).

(The model number of the gear head with a reduction ratio of 1/25 or smaller is MX6G□BA (MA).)

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

Induction motor  
Reversible motor  
3-phase motor  
Electromagnetic brake motor  
Variable speed induction motor  
Variable speed reversible motor  
Variable speed electromagnetic brake single-phase motor  
Variable speed unit motor  
G&B motor  
2-pole round shaft motor  
Gear head  
Gear head -inch (U.S.A.)

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
60 mm sq.	M6RX6G4LG M6RX6G4LGA	4	6	100	50	30	24	0.24	1300	0.044 (6.23)	0.33	0.060 (8.50)	4 (250V)
					60		26	0.26	1600	0.036 (5.10)	0.35	0.060 (8.50)	
	M6RX6G4DG M6RX6G4DGA	4	6	110	30	24	0.22	1600	0.036 (5.10)	0.34	0.056 (7.93)	3 (250V)	
				60		26	0.23	1625	0.035 (4.96)	0.35	0.060 (8.50)		
	M6RX6G4YG M6RX6G4YGA	4	6	200	30	24	0.12	1250	0.046 (6.51)	0.15	0.060 (8.50)	1 (450V)	
				60		28	0.14	1550	0.037 (5.24)	0.16	0.060 (8.50)		
	M6RX6G4GG M6RX6G4GGA	4	6	220	30	24	0.11	1275	0.045 (6.37)	0.15	0.056 (7.93)	0.8 (450V)	
				60		26	0.12	1575	0.036 (5.10)	0.15	0.056 (7.93)		
				50		26	0.12	1300	0.044 (6.23)	0.15	0.060 (8.50)		
				60		28	0.12	1600	0.036 (5.10)	0.16	0.060 (8.50)		
				50									
				230									

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-123.  
 • The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
 • The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

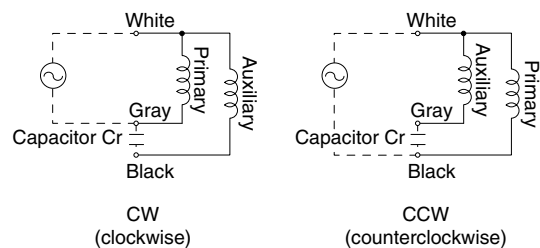
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180		
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	
Applicable gear head	MX6G3BA to MX6G180B (ball bearing) MX6G3MA to MX6G180M (metal bearing)	50Hz	0.098 (0.87)	0.12 (1.06)	0.16 (1.42)	0.19 (1.68)	0.25 (2.21)	0.29 (2.57)	0.33 (2.92)	0.40 (3.54)	0.49 (4.34)	0.59 (5.22)	0.66 (5.84)	0.79 (6.99)	0.95 (8.41)	1.18 (10.4)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	2.45 (21.7)				
		60Hz	0.081 (0.72)	0.098 (0.87)	0.13 (1.15)	0.16 (1.42)	0.21 (1.86)	0.25 (2.21)	0.26 (2.30)	0.33 (2.92)	0.40 (3.54)	0.49 (4.34)	0.53 (4.69)	0.66 (5.84)	0.79 (6.99)	0.95 (8.41)	1.27 (11.2)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	2.45 (21.7)			
Rotational direction		Same as motor rotational direction											Reverse to motor rotational direction											

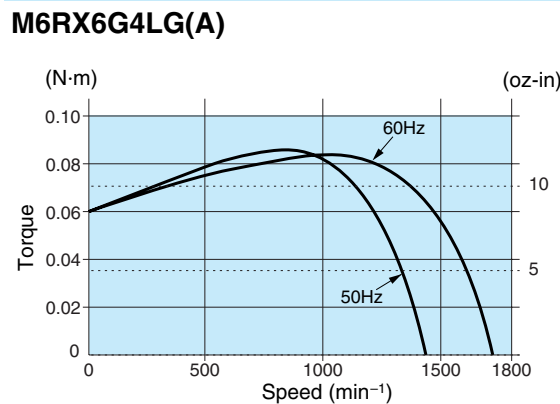
## Permissible torque at output shaft of gear head using decimal gear head

Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800		
Bearing	Decimal gear head	Speed (min <sup>-1</sup> )	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8	
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1		
MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing)	MX6G10XB	Permissible torque	N-m	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	2.45	
		(lb-in)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	(21.7)	
Rotational direction			Same as motor rotational direction						Reverse to motor rotational direction							

## Connection diagram



## Speed-torque characteristics



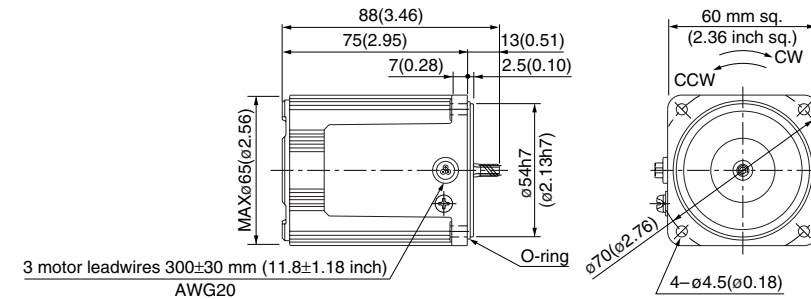
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

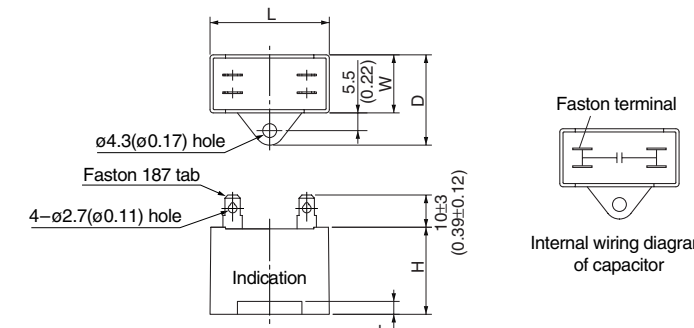
M6RX6G4LG(A)	4P 6 W 100 V
M6RX6G4DG(A)	4P 6 W 110 V / 115 V
M6RX6G4YG(A)	4P 6 W 200 V
M6RX6G4GG(A)	4P 6 W 220 V / 230 V

Mass	0.67 kg	Helical gear	Module	0.5	Number of teeth	6
	1.48 lb					



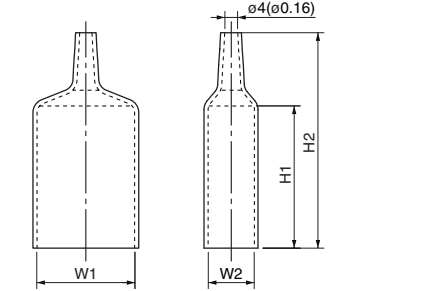
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions)

Unit: mm (inch)



## Capacitor dimension list

Unit: upper (mm) / lower (inch)

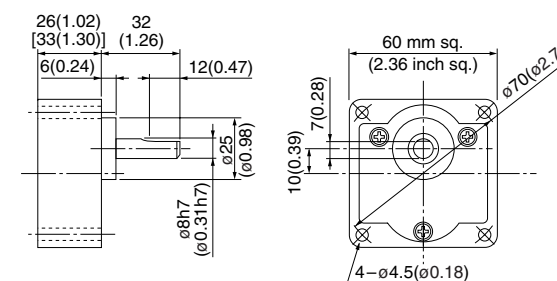
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M6RX6G4LG(A)	M0PC4M25G	37 (1.46)	18 (0.71)	28 (1.10)	27 (1.06)	4 (0.16)	M0PC3718G	37 (1.46)	18 (0.71)	50 (1.97)	73 (2.87)
M6RX6G4DG(A)	M0PC3M25G	31 (1.22)	17 (0.67)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3117G	31 (1.22)	17 (0.67)	50 (1.97)	73 (2.87)
M6RX6G4YG(A)	M0PC1M45G	37 (1.46)	18 (0.71)	28 (1.10)	27 (1.06)	4 (0.16)	M0PC3718G	37 (1.46)	18 (0.71)	50 (1.97)	73 (2.87)
M6RX6G4GG(A)	M0PC0.8M45G	31 (1.22)	17 (0.67)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3117G	31 (1.22)	17 (0.67)	50 (1.97)	73 (2.87)

\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

## Gear head (dimensions)

Scale: 1/3, Unit: mm (inch)

MX6G□BA (ball bearing) / MX6G□B (ball bearing) Mass 0.24/0.3 kg (0.53/0.66 lb): Output shaft D cut  
 MX6G□MA (metal bearing) / MX6G□M (metal bearing) Mass 0.24/0.3 kg (0.53/0.66 lb): Output shaft D cut



\* Figures in [ ] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).

(The model number of the gear head with a reduction ratio of 1/25 or smaller is MX6G□BA (MA).)

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

Induction motor  
 Reversible motor  
 3-phase motor  
 Electromagnetic brake motor  
 Variable speed induction motor  
 Variable speed reversible motor  
 Variable speed electromagnetic brake single-phase motor  
 Variable speed unit motor  
 C&B motor  
 2-pole round shaft motor  
 Gear head  
 Gear head -inch (U.S.A.)

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
70 mm sq.	M7RX10G4L	4	10	100	50	30	30	0.30	1150	0.084 (11.9)	0.41	0.061 (8.64)	4.5 (200V)
					60		30	0.30	1525	0.063 (8.92)	0.40	0.063 (8.92)	
	M7RX10G4Y	4	10	200	50	30	30	0.15	1200	0.082 (11.6)	0.20	0.061 (8.64)	1.2 (400V)
					60		32	0.16	1550	0.063 (8.92)	0.21	0.063 (8.92)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-123.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

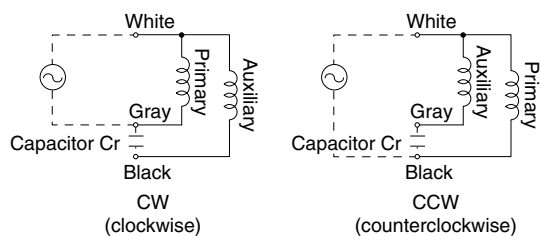
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	MX7G3BA to MX7G180B (ball bearing)	0.16 (1.42)	0.19 (1.68)	0.25 (2.21)	0.30 (2.66)	0.38 (3.36)	0.46 (4.07)	0.51 (4.51)	0.64 (5.66)	0.77 (6.82)	0.93 (8.23)	0.98 (8.67)	1.27 (11.2)	1.47 (13.0)	1.76 (15.6)	2.55 (22.6)	3.04 (26.9)	3.63 (32.1)	4.31 (38.1)	4.80 (42.5)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
	MX7G3MA to MX7G180M (metal bearing)	0.13 (1.15)	0.16 (1.42)	0.22 (1.95)	0.25 (2.21)	0.32 (2.83)	0.38 (3.36)	0.44 (3.89)	0.53 (4.69)	0.64 (5.66)	0.77 (6.82)	0.85 (7.52)	1.08 (9.56)	1.27 (11.2)	1.47 (13.0)	2.16 (19.1)	2.55 (22.6)	3.04 (26.9)	3.63 (32.1)	4.03 (35.7)	4.80 (42.5)	4.90 (43.4)	4.90 (43.4)
Rotational direction		Same as motor rotational direction											Reverse to motor rotational direction										

## Permissible torque at output shaft of gear head using decimal gear head

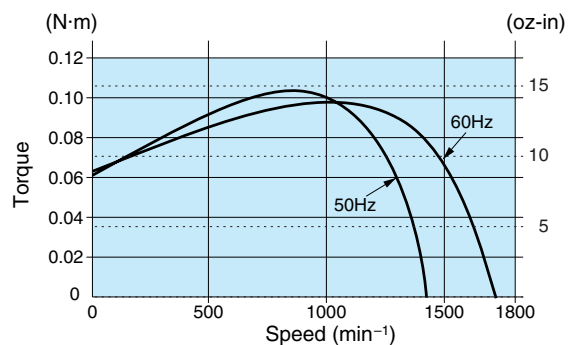
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (min <sup>-1</sup> )	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX7G□BA (ball bearing)	MX7G10XB	Permissible torque	N·m	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
MX7G□B (bearing)			4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
MX7G□MA (metal bearing)			4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
MX7G□M (bearing)	Rotational direction	Same as motor rotational direction													
		Reverse to motor rotational direction													

## Connection diagram



## Speed-torque characteristics

### M7RX10G4L



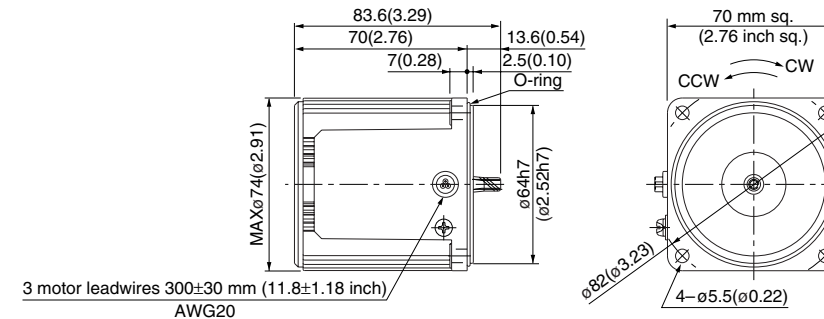
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

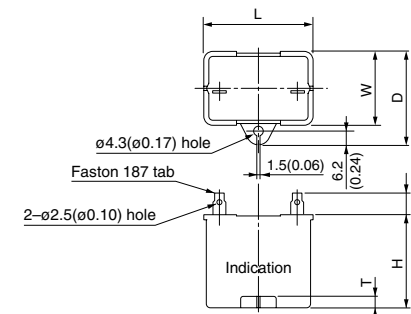
M7RX10G4L	4P 10 W 100 V
M7RX10G4Y	4P 10 W 200 V

Mass	Helical gear	Module	Number of teeth
0.84 kg 1.85 lb	0.5	7	



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

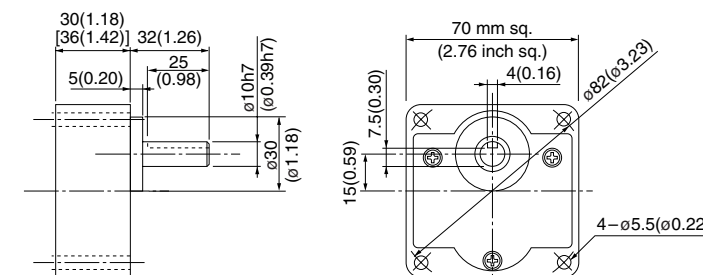
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M7RX10G4L	M0PC4.5M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917
M7RX10G4Y	M0PC1.2M40	39.5 (1.56)	18.3 (0.72)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC3922

## Gear head (dimensions)

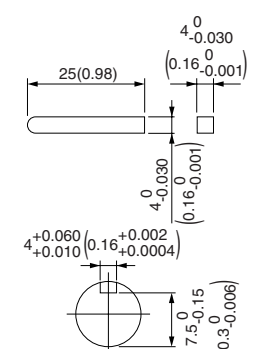
Scale: 1/3, Unit: mm (inch)

MX7G□BA (ball bearing) / MX7G□B (ball bearing)	Mass 0.38/0.45 kg (0.84/0.99 lb)
MX7G□MA (metal bearing) / MX7G□M (metal bearing)	Mass 0.38/0.45 kg (0.84/0.99 lb)



## Key and keyway (dimensions) [attachment]

MX7G□BA(B)	4 <sup>+0.030</sup> 0.16 <sup>-0.001</sup>
MX7G□MA(M)	4 <sup>+0.030</sup> 0.16 <sup>-0.001</sup>



\* Figures in [ ] represent the dimensions of MX7G□B (M) (1/30 or larger reduction ratio).

(The model number of the gear head with a reduction ratio of 1/25 or smaller is MX7G□BA (MA).)

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

## • Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
70 mm sq.	M7RX15G4L	4	15	100	50	30	36	0.37	1275	0.110 (15.6)	0.59	0.085 (12.0)	6 (200V)
					60		37	0.38	1575	0.088 (12.5)	0.57	0.085 (12.0)	
	M7RX15G4Y	4	15	200	50	30	36	0.19	1275	0.110 (15.6)	0.30	0.078 (11.0)	1.5 (400V)
					60		37	0.19	1575	0.088 (12.5)	0.29	0.078 (11.0)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-123.

## • Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

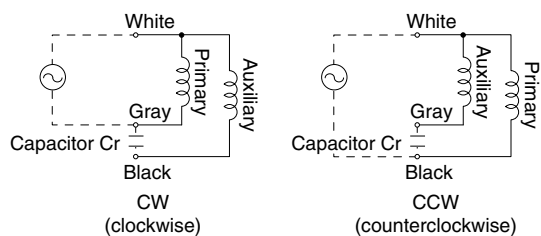
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	MX7G3BA to MX7G180B (ball bearing)	50Hz	0.24 (2.12)	0.28 (2.48)	0.39 (3.45)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.80 (7.08)	0.98 (8.67)	1.18 (10.4)	1.37 (12.1)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	2.74 (24.3)	3.82 (33.8)	4.61 (40.8)	4.90 (43.4)				
	MX7G3MA to MX7G180M (metal bearing)	60Hz	0.20 (1.77)	0.24 (2.12)	0.32 (2.83)	0.39 (3.45)	0.49 (4.34)	0.59 (5.22)	0.66 (5.84)	0.81 (7.17)	0.98 (8.67)	1.18 (10.4)	1.27 (11.2)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	3.23 (28.6)	3.82 (33.8)	4.80 (42.5)				
Rotational direction	Same as motor rotational direction											Reverse to motor rotational direction											

## • Permissible torque at output shaft of gear head using decimal gear head

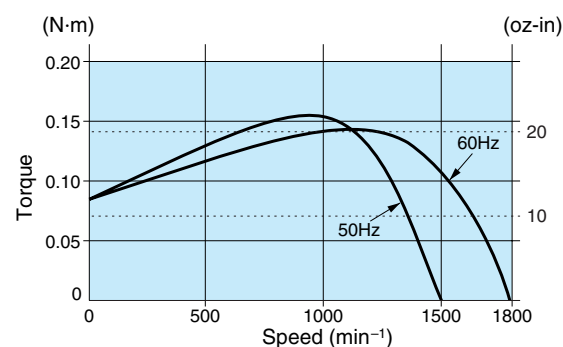
Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min <sup>-1</sup> )	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MX7G□BA (ball bearing)	MX7G10XB	Permissible torque	N-m	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	
(lb-in)			(43.4)	(43.4)	(43.4)	(43.4)	(43.4)	(43.4)	(43.4)	(43.4)	(43.4)	(43.4)	(43.4)	(43.4)	
MX7G□B (bearing)		Rotational direction	Same as motor rotational direction												
MX7G□MA (metal bearing)			Reverse to motor rotational direction												

## Connection diagram



## Speed-torque characteristics

### M7RX15G4L



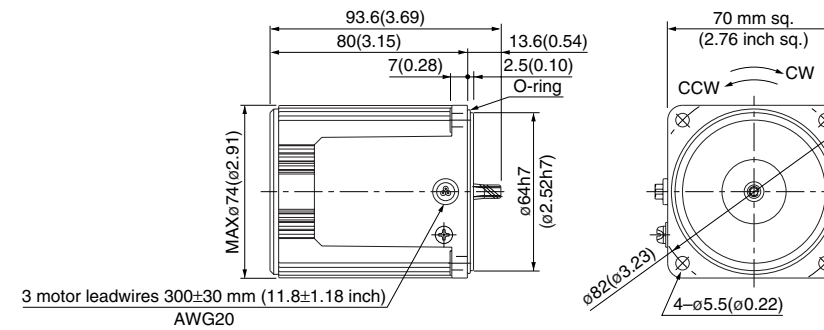
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

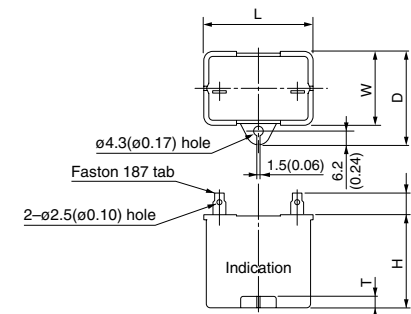
M7RX15G4L	4P 15 W 100 V
M7RX15G4Y	4P 15 W 200 V

Mass	Helical gear	Module	Number of teeth
1.1 kg (2.43 lb)	0.5	7	



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## • Capacitor dimension list

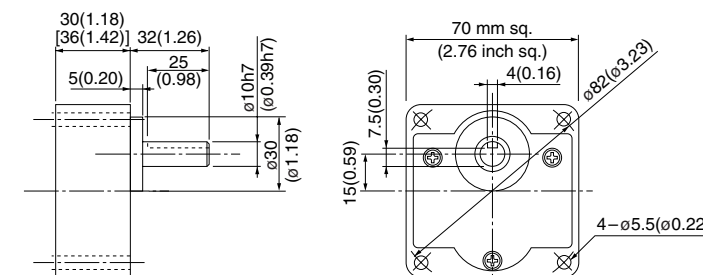
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M7RX15G4L	M0PC6M20	39.5 (1.56)	17.5 (0.69)	28 (1.10)	30.5 (1.20)	4 (0.16)	M0PC3917
M7RX15G4Y	M0PC1.5M40	39.5 (1.56)	22 (0.87)	32.5 (1.28)	32.5 (1.28)	4 (0.16)	M0PC3922

## Gear head (dimensions)

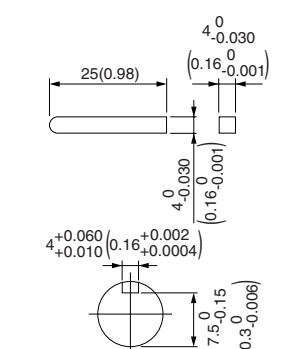
Scale: 1/3, Unit: mm (inch)

MX7G□BA (ball bearing) / MX7G□B (ball bearing)	Mass 0.38/0.45 kg (0.84/0.99 lb)
MX7G□MA (metal bearing) / MX7G□M (metal bearing)	Mass 0.38/0.45 kg (0.84/0.99 lb)



## Key and keyway (dimensions) [attachment]

MX7G□BA(B)	4 <sup>+0.030</sup> <sub>-0.001</sub>
MX7G□MA(M)	4 <sup>+0.030</sup> <sub>-0.001</sub>



\* Figures in [ ] represent the dimensions of MX7G□B (M) (1/30 or larger reduction ratio).

(The model number of the gear head with a reduction ratio of 1/25 or smaller is MX7G□BA (MA).)

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

# Reversible motor (leadwire)

US CE 70 mm (2.76 inch) sq. 15 W

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
70 mm sq.	M7RX15G4LG	4	15	100	50	30	39	0.39	1250	0.12 (17.0)	0.58	0.10 (14.2)	6.5 (250V)
	60				43		0.44	1575	0.092 (13.0)	0.58	0.10 (14.2)		
	M7RX15G4DG	4	15	110	60	30	42	0.38	1600	0.090 (12.7)	0.60	0.10 (14.2)	5.5 (250V)
	60				44		0.38	1625	0.088 (12.5)	0.63	0.11 (15.6)		
	M7RX15G4YG	4	15	200	50	30	40	0.20	1225	0.12 (17.0)	0.27	0.10 (14.2)	1.7 (450V)
	60				50		0.25	1525	0.094 (13.3)	0.28	0.10 (14.2)		
	M7RX15G4GG	4	15	220	50	30	39	0.18	1225	0.12 (17.0)	0.27	0.086 (12.2)	1.3 (450V)
	60				41		0.19	1550	0.092 (13.0)	0.26	0.086 (12.2)		
	50				40		0.18	1275	0.11 (15.6)	0.28	0.094 (13.3)		
	60				43		0.19	1575	0.091 (12.9)	0.28	0.094 (13.3)		

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-123.  
 • The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
 • The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

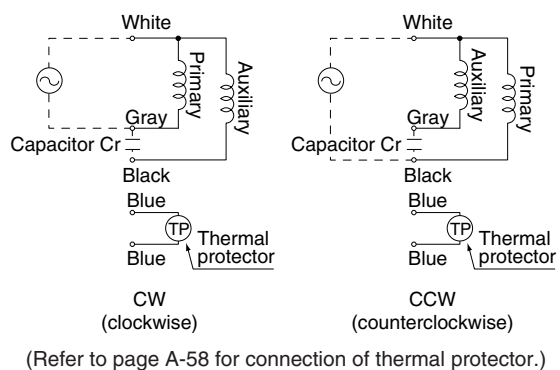
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	Speed (min <sup>-1</sup> )																						
	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	
60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	
Applicable gear head	MX7G3BA to MX7G180B (ball bearing)	50Hz	0.24 (2.12)	0.28 (2.48)	0.39 (3.45)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.80 (7.08)	0.98 (8.67)	1.18 (10.4)	1.37 (12.1)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	2.74 (24.3)	3.82 (33.8)	4.61 (40.8)	4.90 (43.4)				
		60Hz	0.20 (1.77)	0.24 (2.12)	0.32 (2.83)	0.39 (3.45)	0.49 (4.34)	0.59 (5.22)	0.66 (5.84)	0.81 (7.17)	0.98 (8.67)	1.18 (10.4)	1.27 (11.2)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	3.23 (28.6)	3.82 (33.8)	4.80 (42.5)	4.90 (43.4)			
Rotational direction	Same as motor rotational direction											Reverse to motor rotational direction											

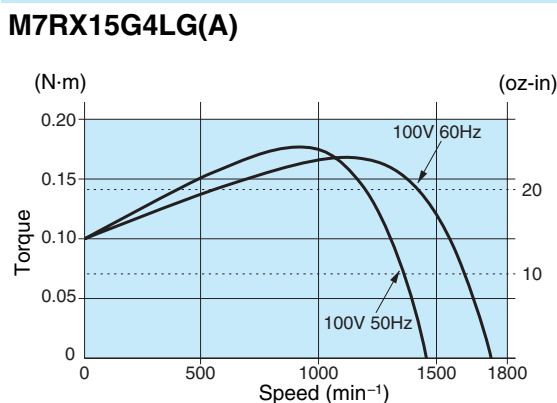
## Permissible torque at output shaft of gear head using decimal gear head

Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min <sup>-1</sup> )	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8	
				60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX7G□BA (ball bearing)	MX7G10XB	Permissible torque	N-m (lb-in)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	
MX7G□B (bearing)				4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
MX7G□MA (metal bearing)				4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
MX7G□M (bearing)	Rotational direction	Same as motor rotational direction				Reverse to motor rotational direction										

## Connection diagram



## Speed-torque characteristics

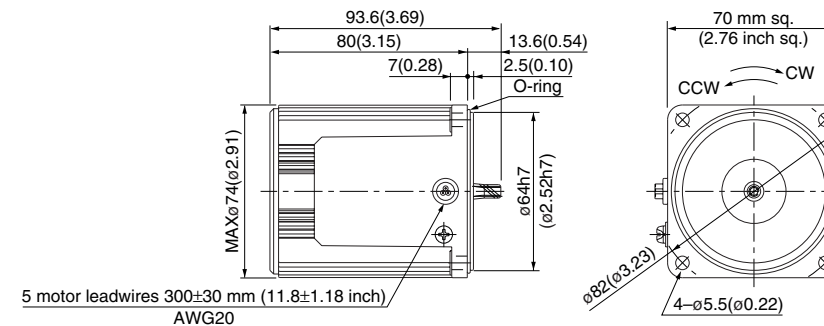


## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

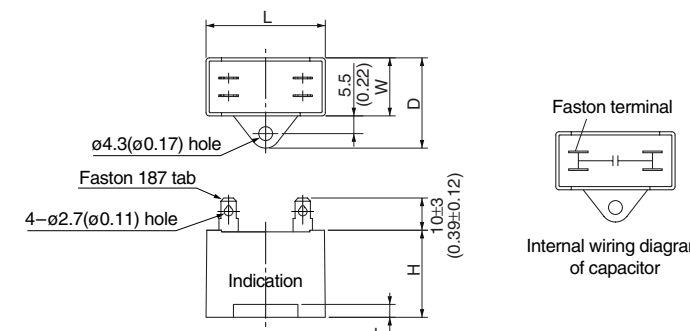
M7RX15G4LG(A)	4P 15 W 100 V
M7RX15G4DG(A)	4P 15 W 110 V / 115 V
M7RX15G4YG(A)	4P 15 W 200 V
M7RX15G4GG(A)	4P 15 W 220 V / 230 V

Mass	1.1 kg (2.43 lb)
Helical gear	Module 0.5, Number of teeth 7



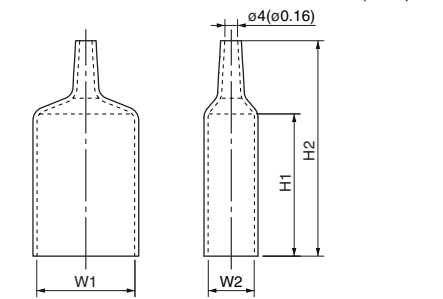
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions)

Unit: mm (inch)



## Capacitor dimension list

Unit: upper (mm) / lower (inch)

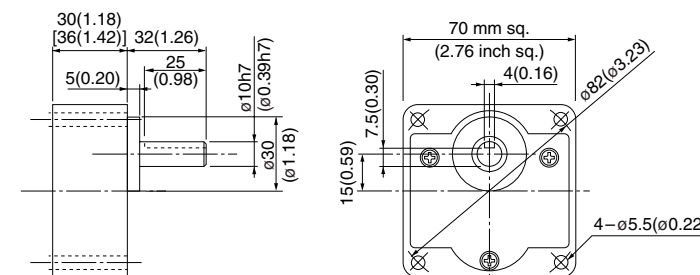
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M7RX15G4LG(A)	M0PC6.5M25G	48 (1.89)	19 (0.75)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC4819G	48 (1.89)	19 (0.75)	55 (2.17)	78 (3.07)
M7RX15G4DG(A)	M0PC5.5M25G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC3821G	38 (1.50)	21 (0.83)	55 (2.17)	78 (3.07)
M7RX15G4YG(A)	M0PC1.7M45G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC3821G	38 (1.50)	21 (0.83)	55 (2.17)	78 (3.07)
M7RX15G4GG(A)	M0PC1.3M45G	38 (1.50)	19 (0.75)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC3819G	38 (1.50)	19 (0.75)	50 (1.97)	73 (2.87)

• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

## Gear head (dimensions)

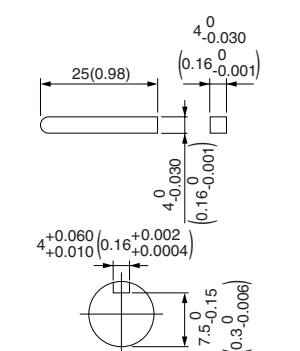
Scale: 1/3, Unit: mm (inch)

MX7G□BA (ball bearing) / MX7G□B (ball bearing) Mass 0.38/0.45 kg (0.84/0.99 lb)  
 MX7G□MA (metal bearing) / MX7G□M (metal bearing) Mass 0.38/0.45 kg (0.84/0.99 lb)



## Key and keyway (dimensions) [attachment]

MX7G□BA(B)  
 MX7G□MA(M)



\* Figures in [ ] represent the dimensions of MX7G□B (M) (1/30 or larger reduction ratio).

(The model number of the gear head with a reduction ratio of 1/25 or smaller is MX7G□BA (MA).)

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
80 mm sq.	M8RX20G4L	4	20	100	50	30	51	0.52	1100	0.17 (24.1)	0.73	0.12 (17.0)	7 (200V)
					60		48	0.47	1475	0.13 (18.4)	0.71	0.12 (17.0)	
	M8RX20G4Y	4	20	200	50	30	52	0.26	1100	0.17 (24.1)	0.37	0.13 (18.4)	1.8 (400V)
					60		48	0.24	1475	0.13 (18.4)	0.36	0.13 (18.4)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-123.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

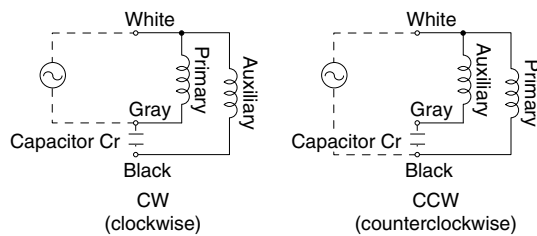
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180		
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	
Applicable gear head	50Hz	0.34 (3.01)	0.41 (3.63)	0.57 (5.04)	0.69 (6.11)	0.85 (7.52)	0.98 (8.67)	1.18 (10.4)	1.37 (12.1)	1.67 (14.8)	1.96 (17.3)	2.25 (19.9)	2.74 (24.3)	3.33 (29.5)	4.02 (35.6)	5.49 (48.6)	6.57 (58.1)	7.84 (69.4)						
	60Hz	0.28 (2.48)	0.34 (3.01)	0.47 (4.16)	0.57 (5.04)	0.72 (6.37)	0.85 (7.52)	0.95 (8.41)	1.18 (10.4)	1.37 (12.1)	1.67 (14.8)	1.86 (16.5)	2.25 (19.9)	2.74 (24.3)	3.33 (29.5)	4.61 (40.8)	5.49 (48.6)	6.86 (60.7)						
Rotational direction	Same as motor rotational direction											Reverse to motor rotational direction												

## Permissible torque at output shaft of gear head using decimal gear head

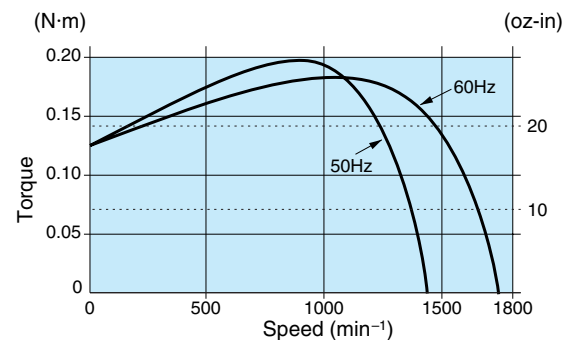
Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (min <sup>-1</sup> )	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N-m	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
		Rotational direction	Same as motor rotational direction			Reverse to motor rotational direction								

## Connection diagram



## Speed-torque characteristics

### M8RX20G4L



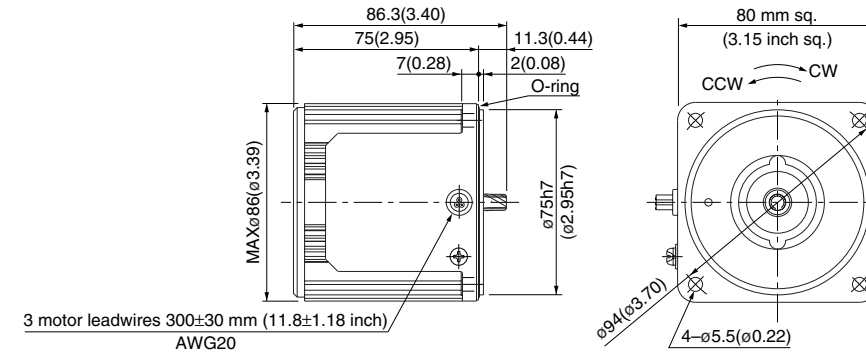
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

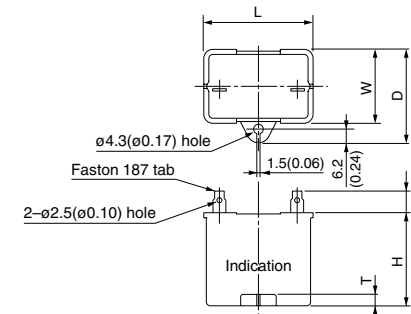
M8RX20G4L	4P	20 W	100 V
M8RX20G4Y	4P	20 W	200 V

Mass	Helical gear	Module	Number of teeth
1.2 kg (2.65 lb)		0.5	9



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

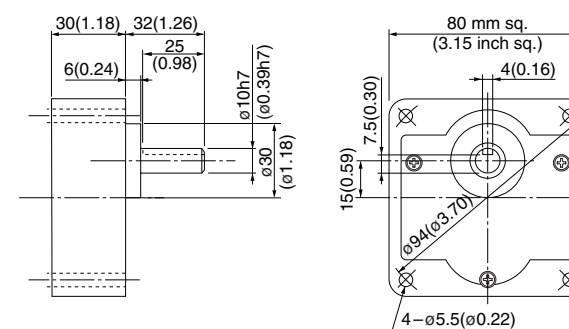
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M8RX20G4L	M0PC7M20	39.5 (1.56)	22 (0.87)	32.5 (1.28)	30.5 (1.20)	4 (0.16)	M0PC3922
M8RX20G4Y	M0PC1.8M40	39.5 (1.56)	22 (0.87)	32.5 (1.28)	30.5 (1.20)	4 (0.16)	M0PC3922

## Gear head (dimensions)

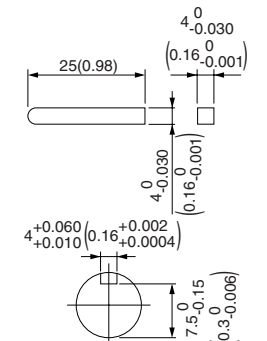
Scale: 1/3, Unit: mm (inch)

MX8G□B (ball bearing) / MX8G□M (metal bearing) Mass 0.6 kg (1.32 lb)



## Key and keyway (dimensions) [attachment]

MX8G□B(M)



(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
80 mm sq.	M8RX25G4L	4	25	100	50	30	58	0.59	1275	0.19 (26.9)	1.0	0.17 (24.1)	9.5 (200V)
					60		57	0.59	1575	0.16 (22.7)	1.0	0.17 (24.1)	
	M8RX25G4Y	4	25	200	50	30	57	0.29	1275	0.19 (26.9)	0.52	0.19 (26.9)	2.4 (400V)
					60		57	0.29	1575	0.16 (22.7)	0.50	0.19 (26.9)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-123.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

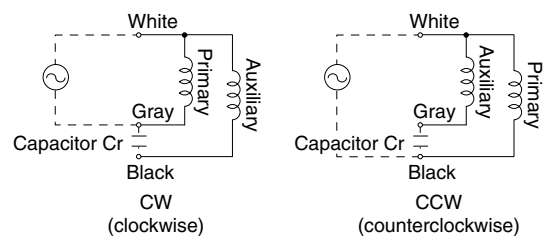
Unit of permissible torque: upper (N·m) / lower (lb·in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180		
<b>Speed (min<sup>-1</sup>)</b>	<b>50Hz</b>	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	
	<b>60Hz</b>	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	
Applicable gear head	MX8G3B to MX8G180B (ball bearing)	50Hz	0.39 (3.45)	0.47 (4.16)	0.66 (5.84)	0.78 (6.90)	0.98 (8.67)	1.18 (10.4)	1.27 (11.2)	1.57 (13.9)	1.96 (17.3)	2.35 (20.8)	2.55 (22.6)	3.14 (27.8)	4.61 (40.8)	6.37 (56.4)	7.64 (67.6)							7.84 (69.4)
	MX8G3M to MX8G180M (metal bearing)	60Hz	0.32 (2.83)	0.39 (3.45)	0.55 (4.87)	0.66 (5.84)	0.81 (7.17)	0.98 (8.67)	1.08 (9.56)	1.27 (11.2)	1.57 (13.9)	1.96 (17.3)	2.06 (18.2)	2.65 (23.5)	3.14 (27.8)	3.82 (33.8)	5.29 (46.8)	6.37 (56.4)						
<b>Rotational direction</b>	Same as motor rotational direction											Reverse to motor rotational direction												

## Permissible torque at output shaft of gear head using decimal gear head

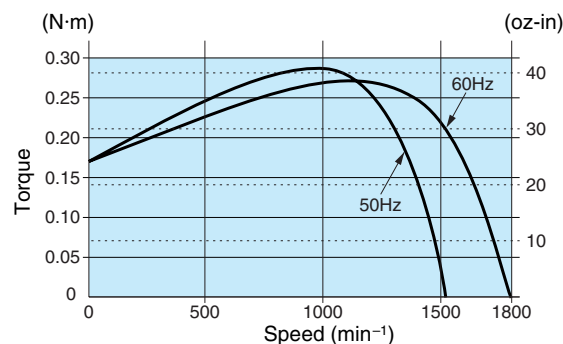
Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min <sup>-1</sup> )	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N·m	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
		Rotational direction	Same as motor rotational direction			Reverse to motor rotational direction									

## Connection diagram



## Speed-torque characteristics

### M8RX25G4L



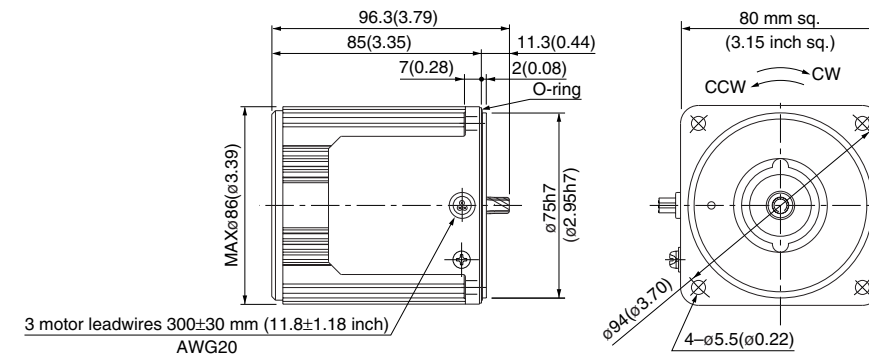
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

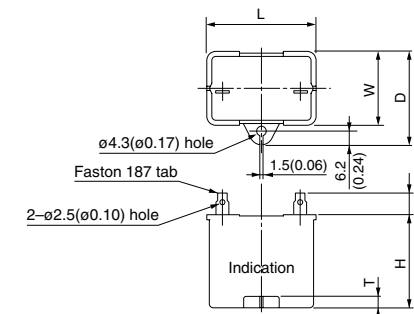
M8RX25G4L	4P 25 W 100 V
M8RX25G4Y	4P 25 W 200 V

Mass	Helical gear	Module	Number of teeth
1.5 kg (3.31 lb)		0.5	9



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

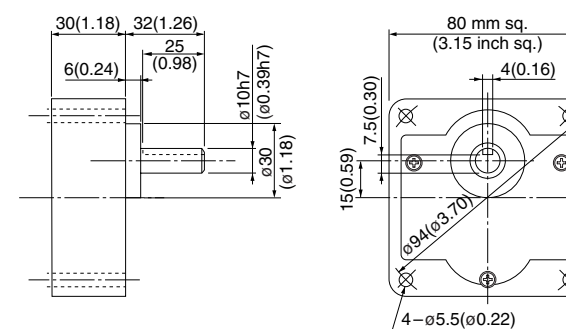
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M8RX25G4L	M0PC9.5M20	39.5 (1.56)	22 (0.87)	32.5 (1.28)	30.5 (1.20)	4 (0.16)	M0PC3922
M8RX25G4Y	M0PC2.4M40	49.7 (1.96)	24 (0.94)	34.5 (1.36)	34.5 (1.36)	4 (0.16)	M0PC5026

## Gear head (dimensions)

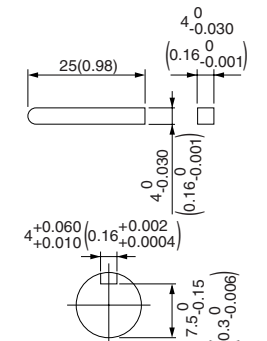
Scale: 1/3, Unit: mm (inch)

MX8G□B (ball bearing) / MX8G□M (metal bearing) Mass 0.6 kg (1.32 lb)



## Key and keyway (dimensions) [attachment]

MX8G□B(M)



(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
80 mm sq.	M8RX25G4LG M8RX25G4LGA	4	25	100	50	30	59	0.60	1250	0.19 (26.9)	1.1	0.19 (26.9)	10 (250V)
					60		61	0.61	1550	0.15 (21.2)	1.1	0.19 (26.9)	8 (250V)
	M8RX25G4DG M8RX25G4DGA	4	25	110	60	30	58	0.53	1575	0.15 (21.2)	1.1	0.17 (24.1)	8 (250V)
					60		61	0.53	1600	0.15 (21.2)	1.2	0.19 (26.9)	8 (250V)
	M8RX25G4YG M8RX25G4YGA	4	25	200	50	30	59	0.30	1200	0.20 (28.3)	0.45	0.19 (26.9)	2.5 (450V)
					60		66	0.34	1525	0.16 (22.7)	0.46	0.19 (26.9)	2.5 (450V)
	M8RX25G4GG M8RX25G4GGA	4	25	220	50	30	60	0.28	1225	0.19 (26.9)	0.47	0.18 (25.5)	2 (450V)
					60		60	0.27	1550	0.15 (21.2)	0.46	0.18 (25.5)	
					50		62	0.28	1275	0.19 (26.9)	0.49	0.19 (26.9)	
					60		62	0.27	1575	0.15 (21.2)	0.48	0.19 (26.9)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-123.  
 • The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
 • The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

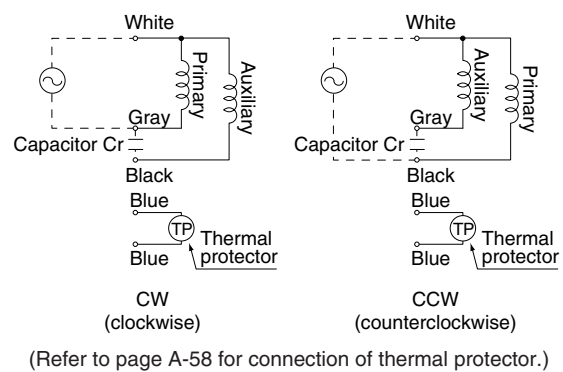
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	MX8G3B to MX8G180B (ball bearing)	50Hz	0.39 (3.45)	0.47 (4.16)	0.66 (5.84)	0.78 (6.90)	0.98 (8.67)	1.18 (10.4)	1.27 (11.2)	1.57 (13.9)	1.96 (17.3)	2.35 (20.8)	2.55 (22.6)	3.14 (27.8)	4.61 (40.8)	6.37 (56.4)	7.64 (67.6)						7.84 (69.4)
	MX8G3M to MX8G180M (metal bearing)	60Hz	0.32 (2.83)	0.39 (3.45)	0.55 (4.87)	0.66 (5.84)	0.81 (7.17)	0.98 (8.67)	1.08 (9.56)	1.27 (11.2)	1.57 (13.9)	1.96 (17.3)	2.06 (18.2)	2.65 (23.5)	3.14 (27.8)	3.82 (33.8)	5.29 (46.8)	6.37 (56.4)					
Rotational direction		Same as motor rotational direction											Reverse to motor rotational direction										

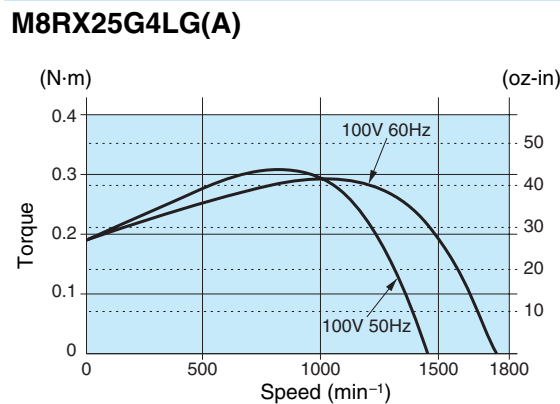
## Permissible torque at output shaft of gear head using decimal gear head

Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min <sup>-1</sup> )	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N-m	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	
		Rotational direction		Same as motor rotational direction					Reverse to motor rotational direction						

## Connection diagram



## Speed-torque characteristics

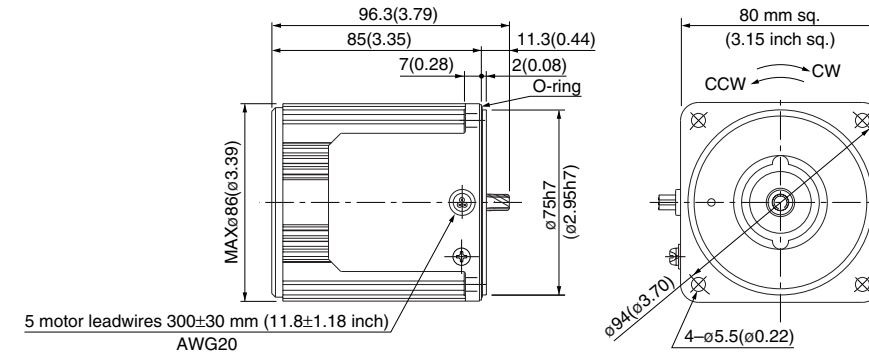


## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

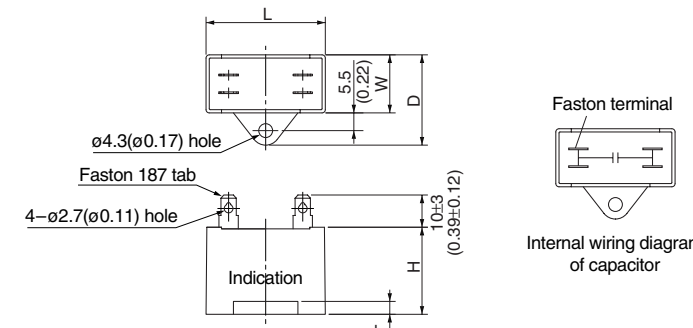
M8RX25G4LG(A)	4P 25 W 100 V
M8RX25G4DG(A)	4P 25 W 110 V / 115 V
M8RX25G4YG(A)	4P 25 W 200 V
M8RX25G4GG(A)	4P 25 W 220 V / 230 V

Mass	1.5 kg (3.31 lb)
Helical gear	Module 0.5, Number of teeth 9



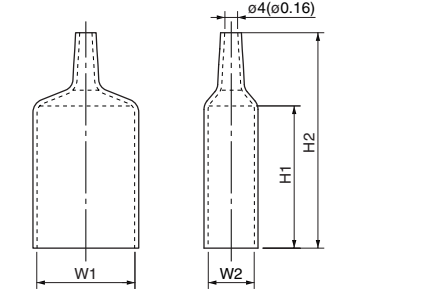
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions)

Unit: mm (inch)



## Capacitor dimension list

Unit: upper (mm) / lower (inch)

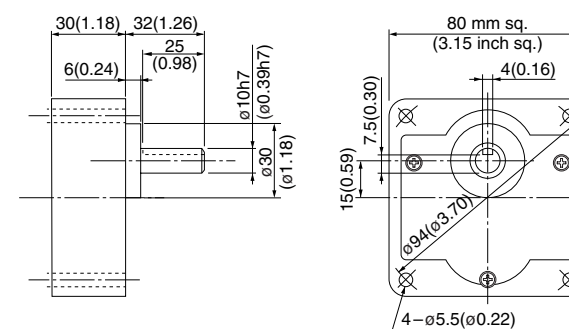
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M8RX25G4LG(A)	M0PC10M25G	58 (2.28)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC5821G	58 (2.28)	21 (0.83)	55 (2.17)	78 (3.07)
M8RX25G4DG(A)	M0PC8M25G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC4821G	48 (1.89)	21 (0.83)	55 (2.17)	78 (3.07)
M8RX25G4YG(A)	M0PC2.5M45G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC4821G	48 (1.89)	21 (0.83)	55 (2.17)	78 (3.07)
M8RX25G4GG(A)	M0PC2M45G	48 (1.89)	19 (0.75)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC4819G	48 (1.89)	19 (0.75)	55 (2.17)	78 (3.07)

\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

## Gear head (dimensions)

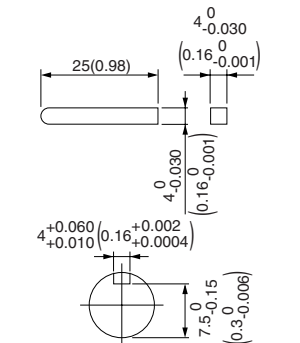
Scale: 1/3, Unit: mm (inch)

MX8G□B (ball bearing) / MX8G□M (metal bearing) Mass 0.6 kg (1.32 lb)



## Key and keyway (dimensions) [attachment]

MX8G□B(M)



\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

## • Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
90 mm sq.	M9RX40G4L	4	40	100	50	30	94	0.96	1200	0.32 (45.3)	1.6	0.27 (38.2)	15 (210V)
					60		93	0.93	1525	0.25 (35.4)	1.5	0.26 (36.8)	
	M9RX40G4Y	4	40	200	50	30	92	0.48	1200	0.32 (45.3)	0.81	0.28 (39.7)	3.8 (400V)
					60		93	0.46	1525	0.25 (35.4)	0.77	0.29 (41.1)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-123.

## • Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

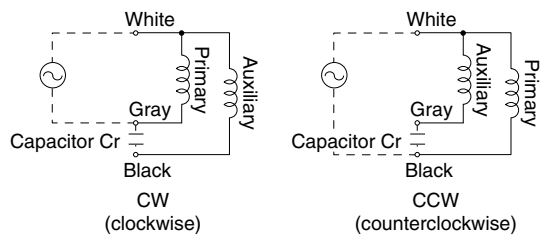
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
<b>Speed (min<sup>-1</sup>)</b>	<b>50Hz</b>	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	<b>60Hz</b>	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	MX9G3B to MX9G180B (ball bearing)	50Hz	0.66 (5.84)	0.78 (6.90)	1.08 (9.56)	1.27 (11.2)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	2.74 (24.3)	3.23 (28.6)	3.92 (34.7)	4.41 (39.0)	5.29 (46.8)	6.37 (56.4)	7.94 (70.3)	9.80 (86.7)						
	MX9G3M to MX9G180M (metal bearing)	60Hz	0.55 (4.87)	0.66 (5.84)	0.90 (7.97)	1.08 (9.56)	1.27 (11.2)	1.57 (13.9)	1.76 (15.6)	2.25 (19.9)	2.74 (24.3)	3.23 (28.6)	3.53 (31.2)	4.41 (39.0)	5.29 (46.8)	6.37 (56.4)	8.82 (78.1)						
<b>Rotational direction</b>		Same as motor rotational direction											Reverse to motor rotational direction										

## • Permissible torque at output shaft of gear head using decimal gear head

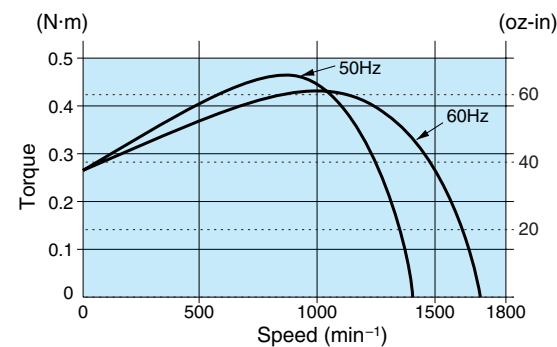
Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min <sup>-1</sup> )	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	Permissible torque	N-m	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	
		Rotational direction		Same as motor rotational direction											

## Connection diagram



## Speed-torque characteristics

### M9RX40G4L



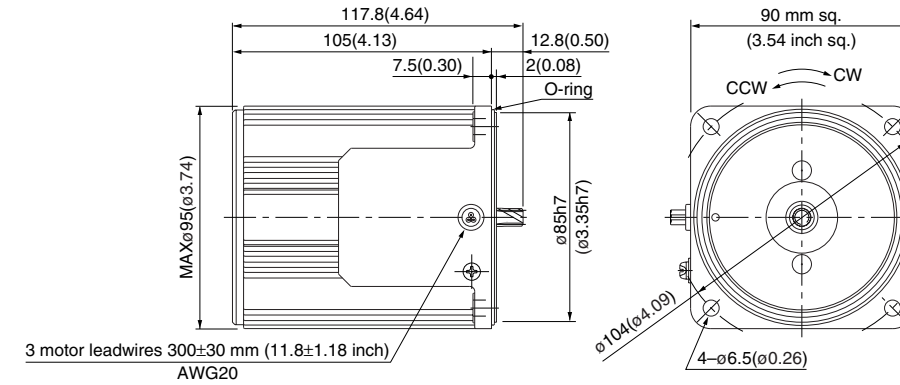
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

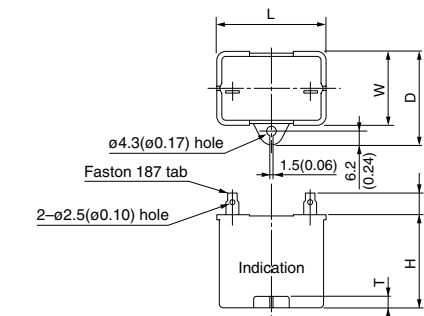
M9RX40G4L	4P 40 W 100 V
M9RX40G4Y	4P 40 W 200 V

Mass	Helical gear	Module	Number of teeth
2.4 kg (5.29 lb)	0.55	9	



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



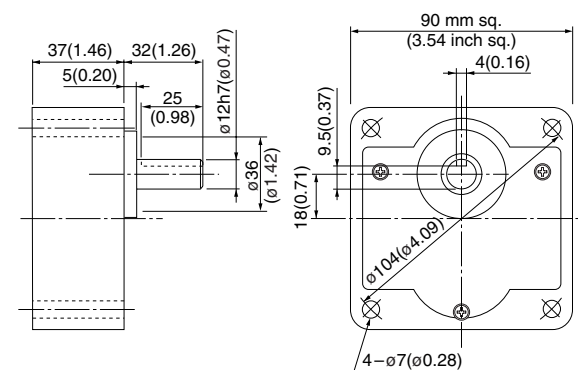
## • Capacitor dimension list

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M9RX40G4L	M0PC15M21	39.5 (1.56)	26.7 (1.05)	37 (1.46)	41 (1.61)	4 (0.16)	M0PC3926
M9RX40G4Y	M0PC3.8M40	50 (1.97)	26.7 (1.05)	37.5 (1.48)	38 (1.50)	4 (0.16)	M0PC5026

## Gear head (dimensions)

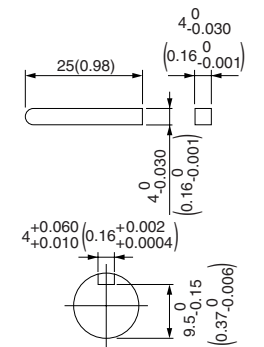
Scale: 1/3, Unit: mm (inch)

MX9G□B (ball bearing) / MX9G□M (metal bearing) Mass 0.8 kg (1.76 lb)



## Key and keyway (dimensions) [attachment]

MX9G□B(M)



(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

Induction motor  
Reversible motor  
3-phase motor  
Electromagnetic brake motor  
Variable speed induction motor  
Variable speed reversible motor  
Variable speed electromagnetic brake single-phase motor  
Variable speed unit motor  
G&B motor  
2-pole round shaft motor  
Gear head  
Gear head -inch (U.S.A.)

# Reversible motor (leadwire)

**90 mm (3.54 inch) sq. 40 W**

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
90 mm sq.	M9RX40G4LG	4	40	100	50	30	86	0.87	1275	0.30 (42.5)	1.7	0.30 (42.5)	16 (250V)
	60				93		0.95	1575	0.24 (34.0)	1.6	0.30 (42.5)	12 (250V)	
	M9RX40G4DG	4	40	110	60	30	91	0.83	1550	0.25 (35.4)	1.7	0.25 (35.4)	12 (250V)
	M9RX40G4DGA						94	0.82	1575	0.24 (34.0)	1.8	0.29 (41.1)	12 (250V)
	M9RX40G4YG	4	40	200	50	30	91	0.45	1200	0.32 (45.3)	0.67	0.30 (42.5)	4 (450V)
	M9RX40G4YGA						109	0.57	1500	0.25 (35.4)	0.70	0.30 (42.5)	4 (450V)
	M9RX40G4GG	4	40	220	50	30	88	0.40	1250	0.31 (43.9)	0.71	0.30 (42.5)	3.5 (450V)
	M9RX40G4GGA						104	0.49	1550	0.25 (35.4)	0.71	0.30 (42.5)	
	60				92		0.40	1300	0.29 (41.1)	0.74	0.33 (46.7)	3.5 (450V)	
	230				110		0.50	1575	0.24 (34.0)	0.74	0.33 (46.7)		

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-123.  
 • The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
 • The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

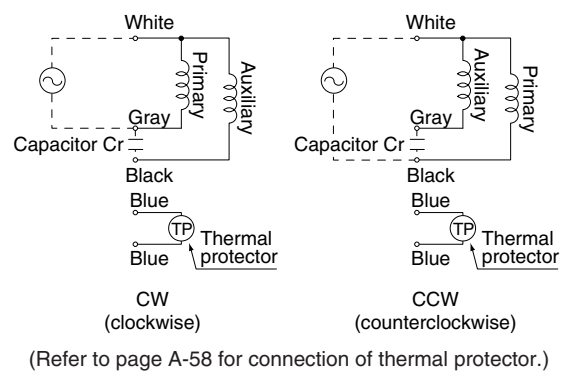
Unit of permissible torque: upper (N·m) / lower (lb·in)

Reduction ratio	Speed (min <sup>-1</sup> )																							
	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180		
50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3		
60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10		
Applicable gear head	MX9G3B to MX9G180B (ball bearing)	50Hz	0.66 (5.84)	0.78 (6.90)	1.08 (9.56)	1.27 (11.2)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	2.74 (24.3)	3.23 (28.6)	3.92 (34.7)	4.41 (39.0)	5.29 (46.8)	6.37 (56.4)	7.94 (70.3)	9.80 (86.7)							9.80 (86.7)
		60Hz	0.55 (4.87)	0.66 (5.84)	0.90 (7.97)	1.08 (9.56)	1.27 (11.2)	1.57 (13.9)	1.76 (15.6)	2.25 (19.9)	2.74 (24.3)	3.23 (28.6)	3.53 (31.2)	4.41 (39.0)	5.29 (46.8)	6.37 (56.4)	8.82 (78.1)							9.80 (86.7)
Rotational direction	Same as motor rotational direction											Reverse to motor rotational direction												

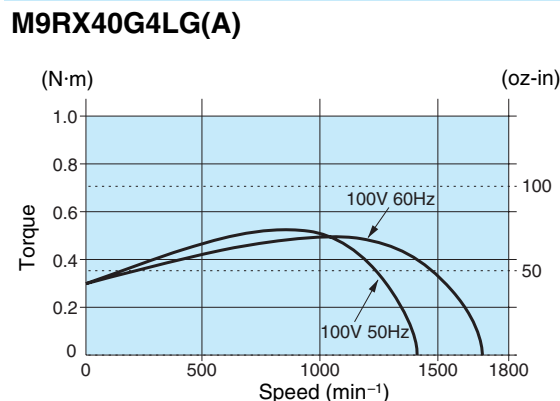
## Permissible torque at output shaft of gear head using decimal gear head

Applicable gear head	Reduction ratio	Speed (min <sup>-1</sup> )												
		200	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	MX9G10XB	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX9G□B (ball bearing) MX9G□M (metal bearing)	Permissible torque	N-m (lb-in)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)
		Rotational direction	Same as motor rotational direction						Reverse to motor rotational direction					

## Connection diagram



## Speed-torque characteristics

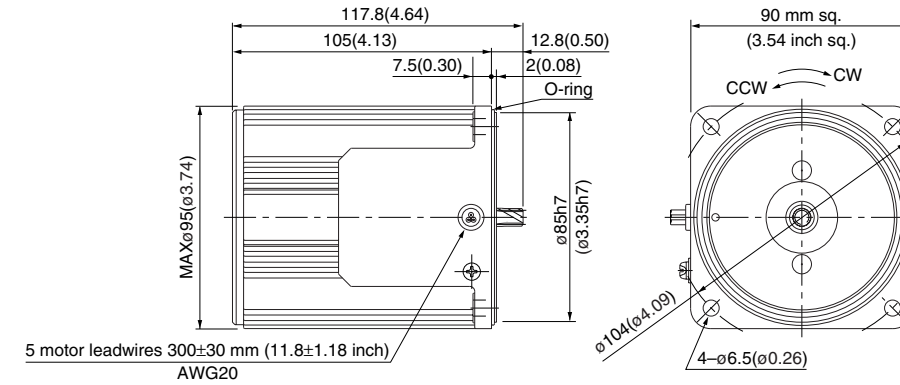


## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

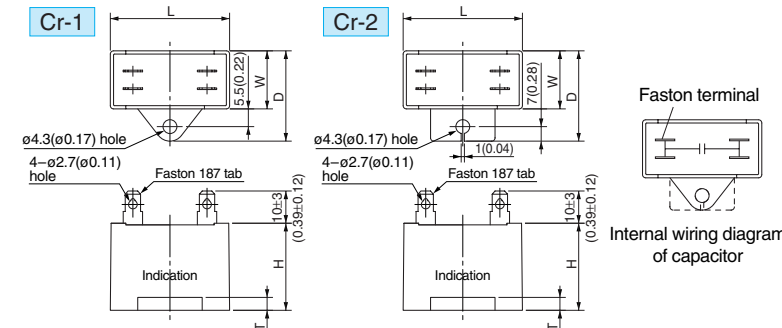
M9RX40G4LG(A)	4P 40 W 100 V
M9RX40G4DG(A)	4P 40 W 110 V / 115 V
M9RX40G4YG(A)	4P 40 W 200 V
M9RX40G4GG(A)	4P 40 W 220 V / 230 V

Mass **2.4 kg** (5.29 lb)  
 Helical gear  
 Module **0.55**  
 Number of teeth **9**



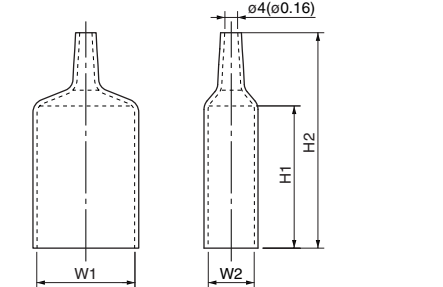
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions)

Unit: mm (inch)



## Capacitor dimension list

Unit: upper (mm) / lower (inch)

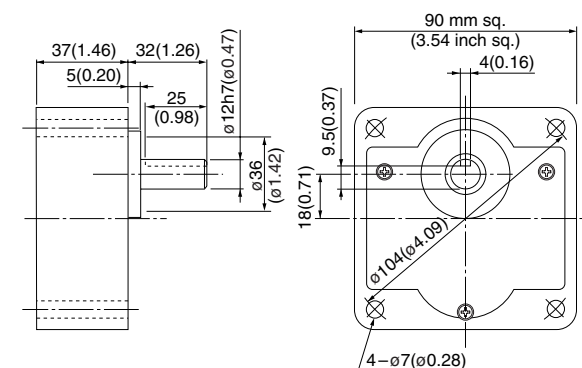
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	dimension No.	Capacitor cap	W1	W2	H1	H2
M9RX40G4LG(A)	M0PC16M25G	58 (2.28)	23.5 (0.93)	38.5 (1.52)	37 (1.46)	4 (0.16)	Cr-2	M0PC5823G	58 (2.28)	23.5 (0.93)	55 (2.17)	78 (3.07)
M9RX40G4DG(A)	M0PC12M25G	58 (2.28)	22 (0.87)	32 (1.26)	35 (1.38)	4 (0.16)	Cr-1	M0PC5822G	58 (2.28)	22 (0.87)	55 (2.17)	78 (3.07)
M9RX40G4YG(A)	M0PC4M45G	58 (2.28)	23.5 (0.93)	38.5 (1.52)	37 (1.46)	4 (0.16)	Cr-2	M0PC5823G	58 (2.28)	23.5 (0.93)	55 (2.17)	78 (3.07)
M9RX40G4GG(A)	M0PC3.5M45G	58 (2.28)	22 (0.87)	32 (1.26)	35 (1.38)	4 (0.16)	Cr-1	M0PC5822G	58 (2.28)	22 (0.87)	55 (2.17)	78 (3.07)

\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

## Gear head (dimensions)

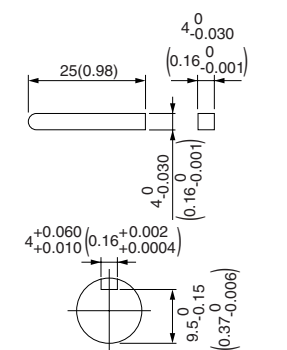
Scale: 1/3, Unit: mm (inch)

MX9G□B (ball bearing) / MX9G□M (metal bearing) Mass 0.8 kg (1.76 lb)



## Key and keyway (dimensions) [attachment]

MX9G□B(M)



\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
90 mm sq.	M9RZ60G4L	4	60	100	50	30	144	1.5	1200	0.46 (65.1)	2.4	0.50 (70.8)	25 (200V)
					60		163	1.5	1500	0.39 (55.2)	2.3	0.53 (75.1)	
	M9RZ60G4Y	4	60	200	50	30	146	0.74	1225	0.46 (65.1)	1.2	0.53 (75.1)	6.2 (375V)
					60		153	0.77	1525	0.39 (55.2)	1.3	0.55 (77.9)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-124.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

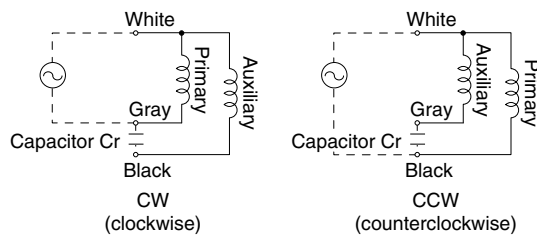
Unit of permissible torque: upper (N·m) / lower (lb·in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200				
<b>Speed (min<sup>-1</sup>)</b>	<b>50Hz</b>	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5			
	<b>60Hz</b>	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9			
<b>Applicable gear head</b>	<b>MZ9G3B to MZ9G200B</b> (ball bearing / hinge not attached)	0.98 (8.7)	1.18 (10.4)	1.57 (13.9)	1.96 (17.3)	2.35 (20.8)	2.94 (26.0)	3.14 (27.8)	3.92 (34.7)	4.70 (41.6)	5.59 (49.5)	6.27 (55.5)	7.55 (66.8)	9.11 (80.6)	11.0 (97.4)	15.2 (135)	17.8 (158)							19.6 (173)			
	<b>MY9G3B to MY9G200B</b> (ball bearing / hinge attached)	0.78 (6.9)	0.98 (8.7)	1.37 (12.1)	1.57 (13.9)	1.96 (17.3)	2.35 (20.8)	2.65 (23.5)	3.33 (29.5)	3.92 (34.7)	4.70 (41.6)	5.29 (46.8)	6.47 (57.3)	7.55 (66.8)	9.11 (80.6)	12.6 (112)	15.2 (135)							19.6 (173)			
<b>Rotational direction</b>	Same as motor rotational direction						Reverse to motor rotational direction						Same as motor rotational direction														

## Permissible torque at output shaft of gear head using decimal gear head

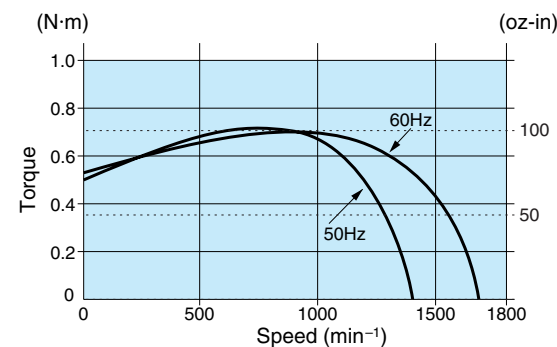
Applicable gear head		Reduction ratio	250	300	360	500	600	750	900	1000	1200	1500	1800	
<b>Bearing</b>	<b>Decimal gear head</b>	<b>Speed (min<sup>-1</sup>)</b>	<b>50Hz</b>	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		<b>60Hz</b>	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
<b>MZ9G□B</b> (ball bearing / Hinge not attached)	<b>MZ9G10XB</b>	<b>Permissible torque</b>	<b>N·m</b>	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
		<b>(lb-in)</b>	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)
<b>Rotational direction</b>		Reverse to motor rotational direction			Same as motor rotational direction									

## Connection diagram



## Speed-torque characteristics

### M9RZ60G4L



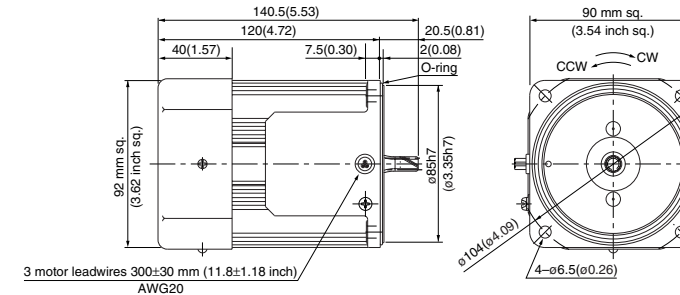
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/4, Unit: mm (inch)

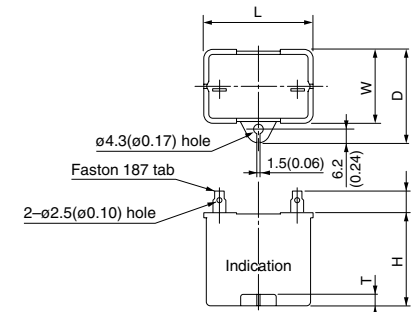
M9RZ60G4L 4P 60 W 100 V (with fan)  
M9RZ60G4Y 4P 60 W 200 V (with fan)

Mass 2.7 kg 5.95 lb  
Helical gear  
Module 0.6  
Number of teeth 9



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



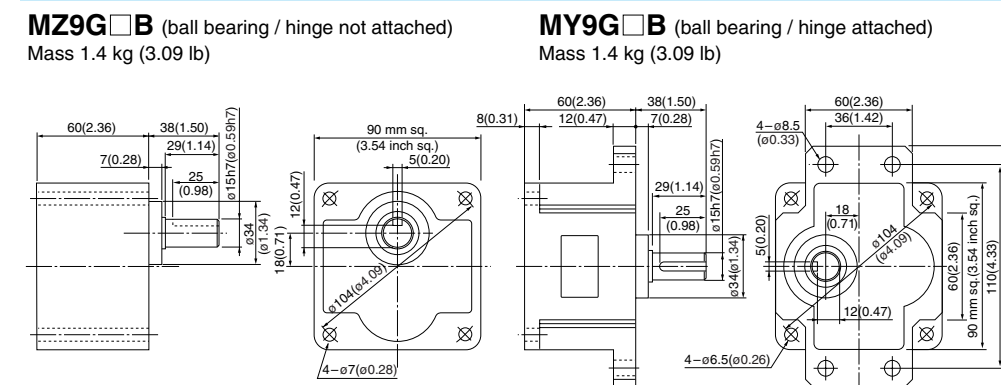
## Capacitor dimension list

Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M9RZ60G4L	M0PC25M20	50.2 (1.98)	31 (1.22)	41 (1.61)	42 (1.65)	5 (0.20)	M0PC5032
M9RZ60G4Y	M0PC6.2M38	50 (1.97)	30.5 (1.20)	41 (1.61)	41.5 (1.63)	4 (0.16)	M0PC5032

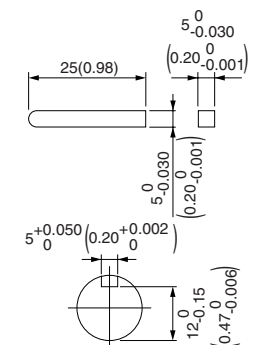
## Gear head (dimensions)

Scale: 1/4, Unit: mm (inch)



## Key and keyway (dimensions) [attachment]

MZ9G□B  
MY9G□B



Note) MZ / MY is available for a gear head of either type.

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
90 mm sq.	M9RZ60G4LG	4	60	100	50	30	137	1.4	1250	0.46 (65.1)	2.4	0.51 (72.2)	25 (250V)
	60				147		1.5	1550	0.37 (52.4)	2.4	0.53 (75.1)	20 (250V)	
	M9RZ60G4DG	4	60	110	30	138	1.3	1575	0.36 (51.0)	2.5	0.50 (70.8)	20 (250V)	
	115			144		1.3	1600	0.36 (51.0)	2.6	0.55 (77.9)	20 (250V)		
	M9RZ60G4YG	4	60	200	50	30	135	0.67	1200	0.48 (68.0)	1.0	0.51 (72.2)	6 (450V)
	60				158		0.81	1500	0.38 (53.8)	1.1	0.53 (75.1)	6 (450V)	
	M9RZ60G4GG	4	60	220	50	30	137	0.64	1225	0.47 (66.6)	1.1	0.50 (70.8)	5 (450V)
	60				145		0.67	1550	0.37 (52.4)	1.1	0.52 (73.6)	5 (450V)	
	50				145	0.66	1275	0.45 (63.7)	1.1	0.57 (80.7)	5 (450V)		
	60				151	0.67	1575	0.36 (51.0)	1.1	0.57 (80.7)	5 (450V)		

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-124.  
 • The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
 • The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

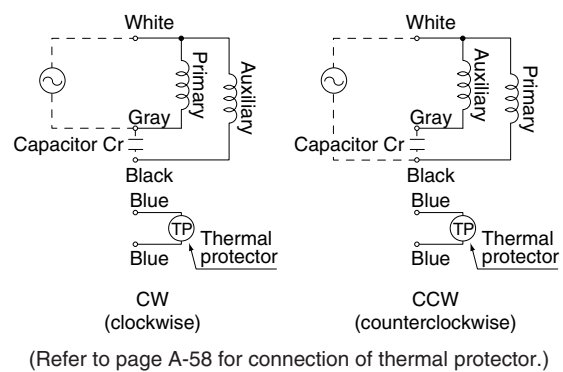
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable gear head	MZ9G3B to MZ9G200B (ball bearing hinge not attached)	0.98 (8.7)	1.18 (10.4)	1.57 (13.9)	1.96 (17.3)	2.35 (20.8)	2.94 (26.0)	3.14 (27.8)	3.92 (34.7)	4.70 (41.6)	5.59 (49.5)	6.27 (55.5)	7.55 (66.8)	9.11 (80.6)	11.0 (97.4)	15.2 (135)	17.8 (158)							19.6 (173)
	MY9G3B to MY9G200B (ball bearing hinge attached)	0.78 (6.9)	0.98 (8.7)	1.37 (12.1)	1.57 (13.9)	1.96 (17.3)	2.35 (20.8)	2.65 (23.5)	3.33 (29.5)	3.92 (34.7)	4.70 (41.6)	5.29 (46.8)	6.47 (57.3)	7.55 (66.8)	9.11 (80.6)	12.6 (112)	15.2 (135)							19.6 (173)
Rotational direction	Same as motor rotational direction											Reverse to motor rotational direction												

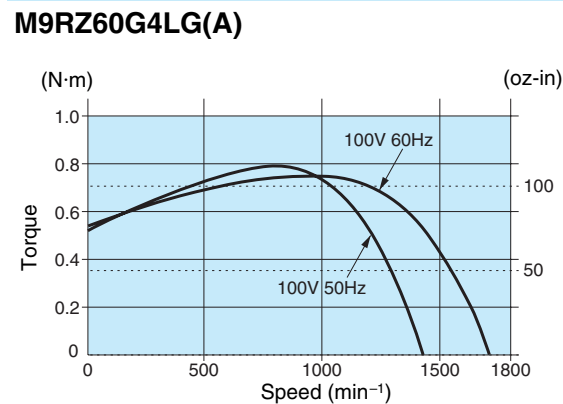
## Permissible torque at output shaft of gear head using decimal gear head

Applicable gear head	Reduction ratio	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Speed (min <sup>-1</sup> )	50Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
	60Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MZ9G□B (ball bearing / hinge not attached)	Permissible torque	N·m	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	
MY9G□B (ball bearing / hinge attached)	Rotational direction	Reverse to motor rotational direction											

## Connection diagram



## Speed-torque characteristics



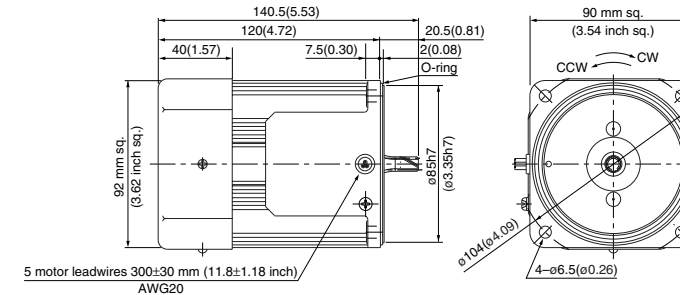
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/4, Unit: mm (inch)

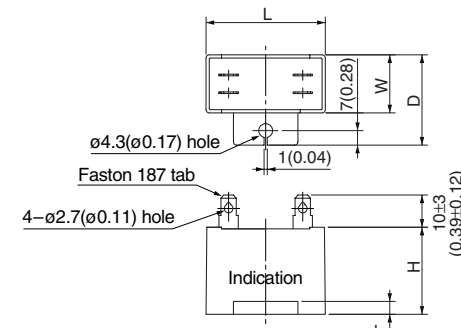
M9RZ60G4LG(A)	4P 60 W 100 V (with fan)
M9RZ60G4DG(A)	4P 60 W 110 V / 115 V (with fan)
M9RZ60G4YG(A)	4P 60 W 200 V (with fan)
M9RZ60G4GG(A)	4P 60 W 220 V / 230V (with fan)

Mass	2.7 kg	5.95 lb
Helical gear	Module	0.6
Number of teeth	9	



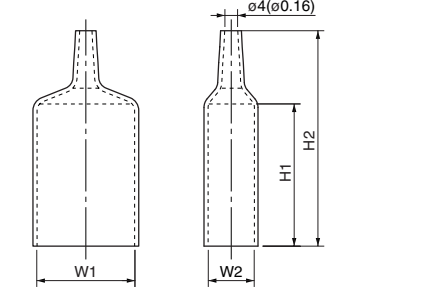
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions)

Unit: mm (inch)



## Capacitor dimension list

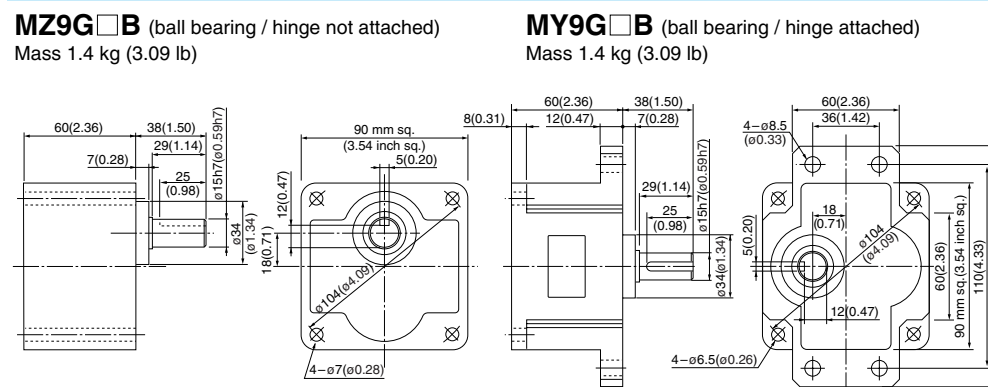
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M9RZ60G4LG(A)	M0PC25M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ60G4DG(A)	M0PC20M25G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)
M9RZ60G4YG(A)	M0PC6M45G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)
M9RZ60G4GG(A)	M0PC5M45G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)

\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

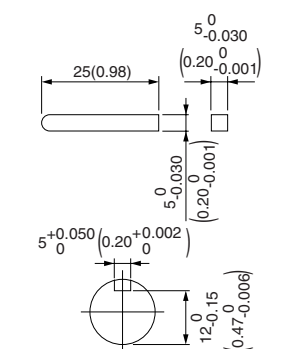
## Gear head (dimensions)

Scale: 1/4, Unit: mm (inch)



## Key and keyway (dimensions) [attachment]

MZ9G□B  
MY9G□B



Note) MZ / MY is available for a gear head of either type.

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
90 mm sq.	M9RZ90G4L	4	90	100	50	30	171	1.7	1225	0.70 (99.1)	2.8	0.63 (89.2)	30 (200V)
					60		181	1.9	1525	0.56 (79.3)	2.7	0.64 (90.6)	
	M9RZ90G4Y	4	90	200	50	30	184	0.93	1150	0.72 (102)	1.4	0.64 (90.6)	7.5 (370V)
					60		170	0.96	1475	0.57 (80.7)	1.4	0.66 (93.5)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-124.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

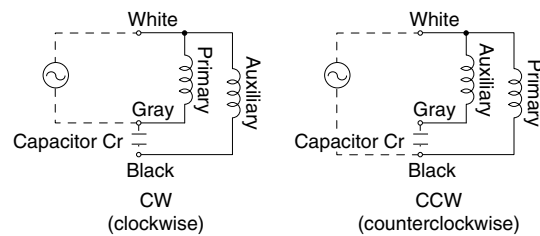
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200									
<b>Speed (min<sup>-1</sup>)</b>	50Hz 500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5									
	60Hz 600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9									
Applicable gear head	MZ9G3B to MZ9G200B (ball bearing / hinge not attached)	50Hz	1.37 (12.1)	1.67 (14.8)	2.25 (19.9)	2.74 (24.3)	3.43 (30.4)	4.12 (36.5)	4.51 (39.9)	5.68 (50.3)	6.76 (59.8)	8.04 (71.2)	9.02 (79.8)	10.9 (96.5)	13.0 (115)	15.7 (139)	19.6 (173)															
		60Hz	1.18 (10.4)	1.37 (12.1)	1.86 (16.5)	2.25 (19.9)	2.84 (25.1)	3.43 (30.4)	3.72 (32.9)	4.70 (41.6)	5.68 (50.3)	6.76 (59.8)	7.55 (66.8)	9.21 (81.5)	10.9 (96.5)	13.0 (115)	18.3 (162)	19.6 (173)														
Rotational direction	Same as motor rotational direction											Reverse to motor rotational direction					Same as motor rotational direction															

## Permissible torque at output shaft of gear head using decimal gear head

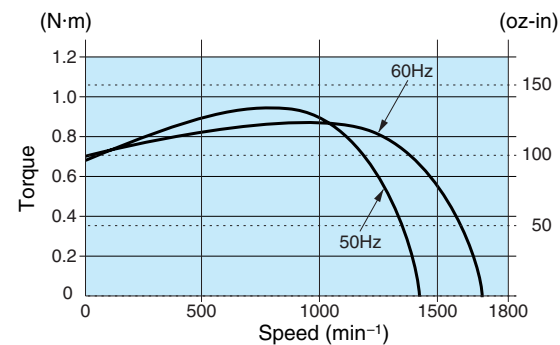
Applicable gear head		Reduction ratio	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (min <sup>-1</sup> )	50Hz 6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz 7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	MZ9G10XB	Permissible torque	N·m 19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		Rotational direction	Reverse to motor rotational direction			Same as motor rotational direction							

## Connection diagram



## Speed-torque characteristics

### M9RZ90G4L



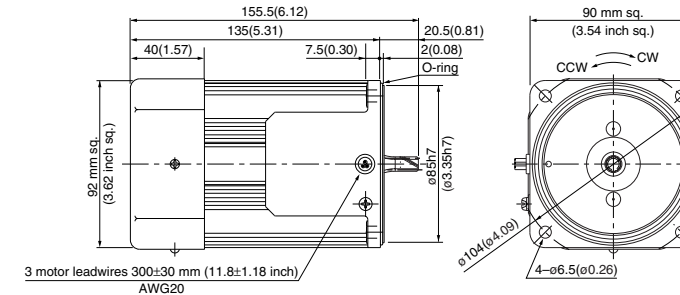
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/4, Unit: mm (inch)

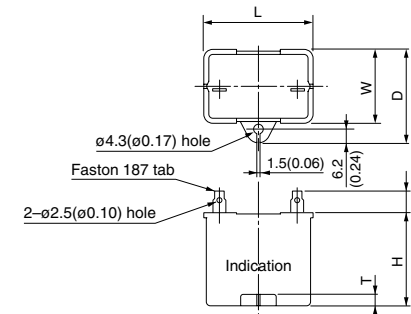
M9RZ90G4L 4P 90 W 100 V (with fan)  
M9RZ90G4Y 4P 90 W 200 V (with fan)

Mass 3.2 kg 7.05 lb  
Helical gear  
Module 0.6  
Number of teeth 9



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

Unit: upper (mm) / lower (inch)

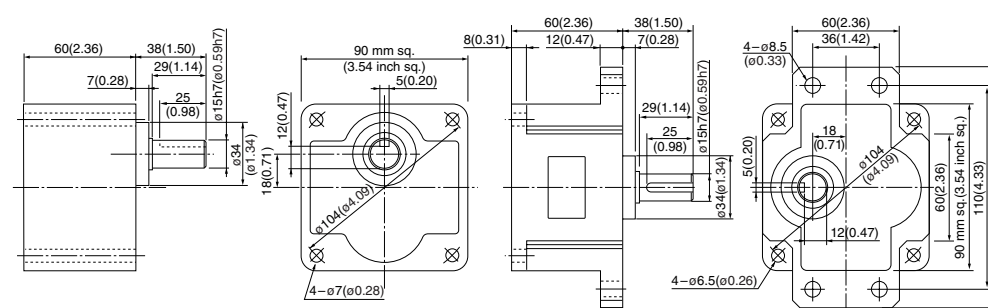
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M9RZ90G4L	M0PC30M20	50.2 (1.98)	31 (1.22)	41 (1.61)	42 (1.65)	5 (0.20)	M0PC5032
M9RZ90G4Y	M0PC7.5M37	50 (1.97)	34 (1.34)	45 (1.77)	45 (1.77)	6 (0.24)	—

## Gear head (dimensions)

Scale: 1/4, Unit: mm (inch)

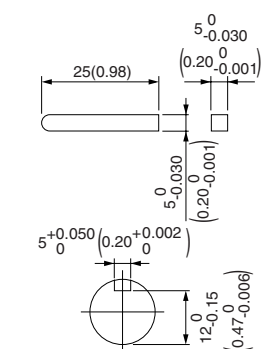
MZ9G□B (ball bearing / hinge not attached)  
Mass 1.4 kg (3.09 lb)

MY9G□B (ball bearing / hinge attached)  
Mass 1.4 kg (3.09 lb)



## Key and keyway (dimensions) [attachment]

MZ9G□B  
MY9G□B



Note) MZ / MY is available for a gear head of either type.

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

Induction motor  
Reversible motor  
3-phase motor  
Electromagnetic brake motor  
Variable speed induction motor  
Variable speed reversible motor  
Variable speed electromagnetic brake single-phase motor  
Variable speed unit motor  
C&B motor  
2-pole round shaft motor  
Gear head  
Gear head -inch (U.S.A.)

# Reversible motor (leadwire)

US CE CCC 90 mm (3.54 inch) sq. 90 W

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque (N·m) (oz·in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N·m (oz·in)			
90 mm sq.	M9RZ90G4LG	4	90	100	50	30	195	2.0	1175	0.73 (104)	3.0	0.68 (96.3)	32
	60				203		2.0	1525	0.57 (80.7)	2.9	0.68 (96.3)	(250V)	
	M9RZ90G4DG	4	90	110	60	30	201	1.8	1550	0.55 (77.9)	3.1	0.72 (102)	28
	115						209	1.8	1575	0.55 (77.9)	3.2	0.79 (112)	(250V)
	M9RZ90G4YG	4	90	200	50	30	185	0.93	1175	0.73 (104)	1.4	0.68 (96.3)	8
	60						206	1.1	1500	0.57 (80.7)	1.4	0.68 (96.3)	(450V)
	M9RZ90G4YGA	4	90	220	50	30	191	0.89	1225	0.70 (99.1)	1.5	0.72 (102)	7
	60						197	0.90	1550	0.55 (77.9)	1.4	0.72 (102)	(450V)
	M9RZ90G4GG	4	90	230	50	30	202	0.92	1250	0.69 (97.7)	1.6	0.79 (112)	7
	60						204	0.88	1575	0.55 (77.9)	1.5	0.79 (112)	(450V)

The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-124.  
 The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
 The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

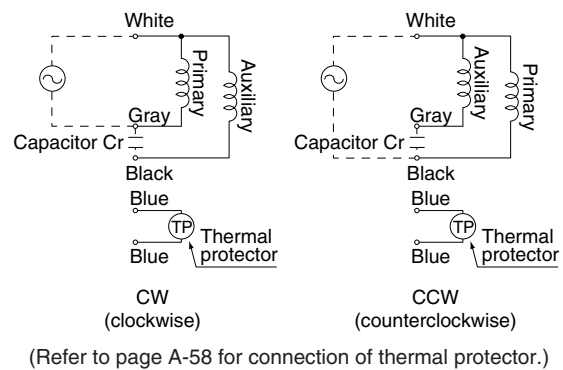
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	Speed (min <sup>-1</sup> )																							
	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5	
60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9	
Applicable gear head	50Hz	MZ9G3B to MZ9G200B (ball bearing / hinge not attached)	1.37	1.67	2.25	2.74	3.43	4.12	4.51	5.68	6.76	8.04	9.02	10.9	13.0	15.7	19.6							19.6
		MY9G3B to MY9G200B (ball bearing / hinge attached)	(12.1)	(14.8)	(19.9)	(24.3)	(30.4)	(36.5)	(39.9)	(50.3)	(59.8)	(71.2)	(79.8)	(96.5)	(115)	(139)	(173)							(173)
60Hz	MZ9G3B to MZ9G200B (ball bearing / hinge not attached)	1.18	1.37	1.86	2.25	2.84	3.43	3.72	4.70	5.68	6.76	7.55	9.21	10.9	13.0	18.3							19.6	
	MY9G3B to MY9G200B (ball bearing / hinge attached)	(10.4)	(12.1)	(16.5)	(19.9)	(25.1)	(30.4)	(32.9)	(41.6)	(50.3)	(59.8)	(66.8)	(81.5)	(96.5)	(115)	(162)							(173)	
Rotational direction	Same as motor rotational direction											Reverse to motor rotational direction						Same as motor rotational direction						

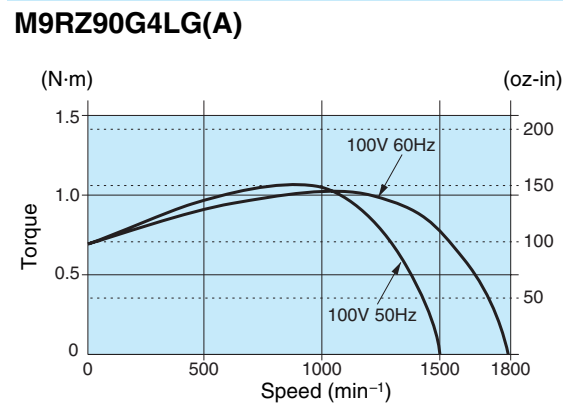
## Permissible torque at output shaft of gear head using decimal gear head

Applicable gear head	Reduction ratio	Speed (min <sup>-1</sup> )													
		250	300	360	500	600	750	900	1000	1200	1500	1800			
Bearing	50Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8			
		60Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1		
MZ9G□B (ball bearing / hinge not attached)	MZ9G10XB	Permissible torque	N·m	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
		(lb-in)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)
MY9G□B (ball bearing / hinge attached)	MZ9G10XB	Rotational direction	Reverse to motor rotational direction		Same as motor rotational direction										

## Connection diagram



## Speed-torque characteristics



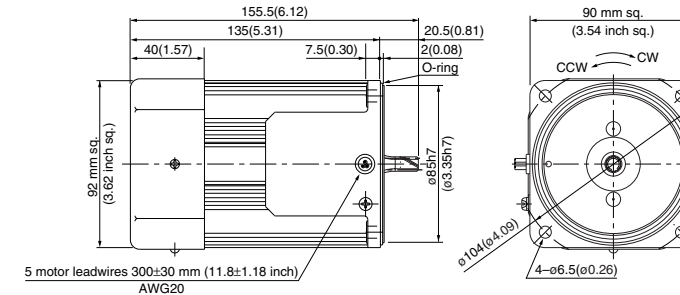
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/4, Unit: mm (inch)

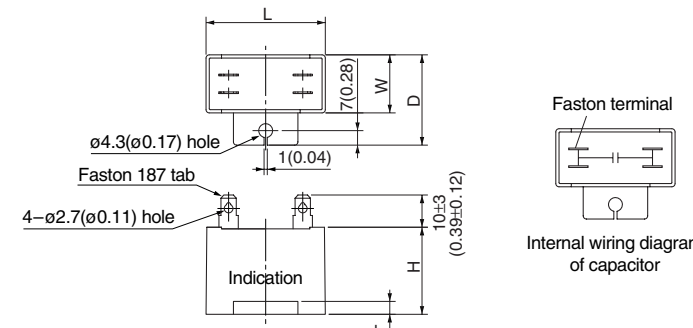
M9RZ90G4LG(A)	4P 90 W 100 V (with fan)
M9RZ90G4DG(A)	4P 90 W 110 V / 115 V (with fan)
M9RZ90G4YG(A)	4P 90 W 200 V (with fan)
M9RZ90G4GG(A)	4P 90 W 220 V / 230V (with fan)

Mass	Helical gear	Module	Number of teeth
3.2 kg 7.05 lb	0.6	9	



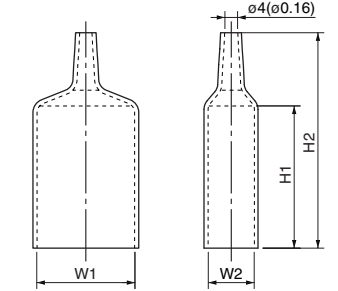
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions)

Unit: mm (inch)



## Capacitor dimension list

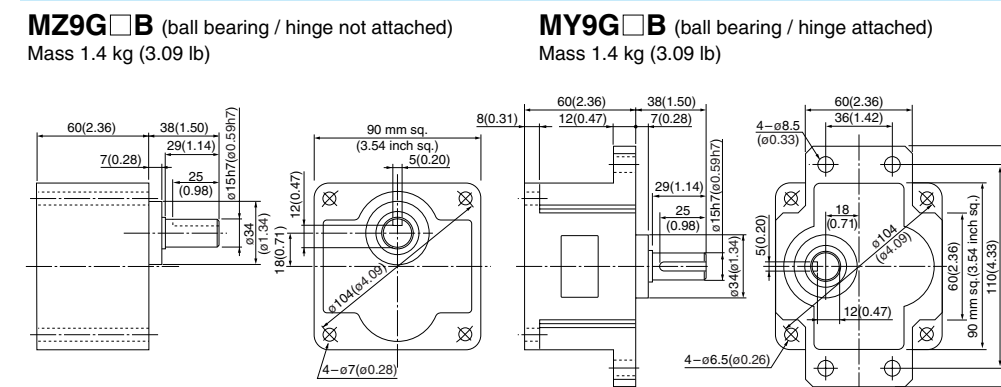
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M9RZ90G4LG(A)	M0PC32M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90G4DG(A)	M0PC28M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90G4YG(A)	M0PC8M45G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90G4GG(A)	M0PC7M45G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)

\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

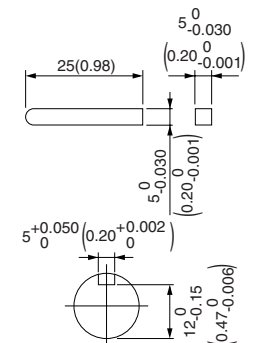
## Gear head (dimensions)

Scale: 1/4, Unit: mm (inch)



## Key and keyway (dimensions) [attachment]

MZ9G□B  
MY9G□B



Note) MZ / MY is available for a gear head of either type.

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
80 mm sq.	M8RX25GK4L	4	25	100	50	30	58	0.59	1275	0.19 (26.9)	1.0	0.17 (24.1)	9.5 (200V)
					60		57	0.59	1575	0.16 (22.7)	1.0	0.17 (24.1)	
	M8RX25GK4Y	4	25	200	50	30	57	0.29	1275	0.19 (26.9)	0.52	0.19 (26.9)	2.4 (400V)
					60		57	0.29	1575	0.16 (22.7)	0.50	0.19 (26.9)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-124.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

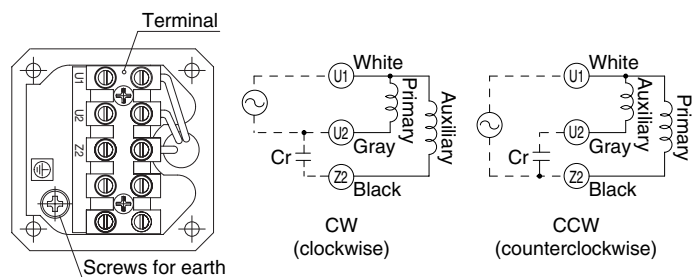
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
<b>Speed (min<sup>-1</sup>)</b>	<b>50Hz</b>	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	<b>60Hz</b>	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	MX8G3B to MX8G180B (ball bearing)	0.39 (3.45)	0.47 (4.16)	0.66 (5.84)	0.78 (6.90)	0.98 (8.67)	1.18 (10.4)	1.27 (11.2)	1.57 (13.9)	1.96 (17.3)	2.35 (20.8)	2.55 (22.6)	3.14 (27.8)	3.82 (33.8)	4.61 (40.8)	6.37 (56.4)	7.64 (67.6)						7.84 (69.4)
	MX8G3M to MX8G180M (metal bearing)	0.32 (2.83)	0.39 (3.45)	0.55 (4.87)	0.66 (5.84)	0.81 (7.17)	0.98 (8.67)	1.08 (9.56)	1.27 (11.2)	1.57 (13.9)	1.96 (17.3)	2.06 (18.2)	2.65 (23.5)	3.14 (27.8)	3.82 (33.8)	5.29 (46.8)	6.37 (56.4)						7.84 (69.4)
<b>Rotational direction</b>	Same as motor rotational direction											Reverse to motor rotational direction											

## Permissible torque at output shaft of gear head using decimal gear head

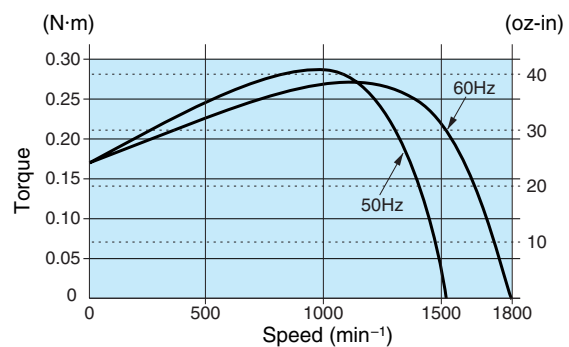
Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min <sup>-1</sup> )	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N·m	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	
		Rotational direction	Same as motor rotational direction	Reverse to motor rotational direction											

## Connection diagram



## Speed-torque characteristics

### M8RX25GK4L



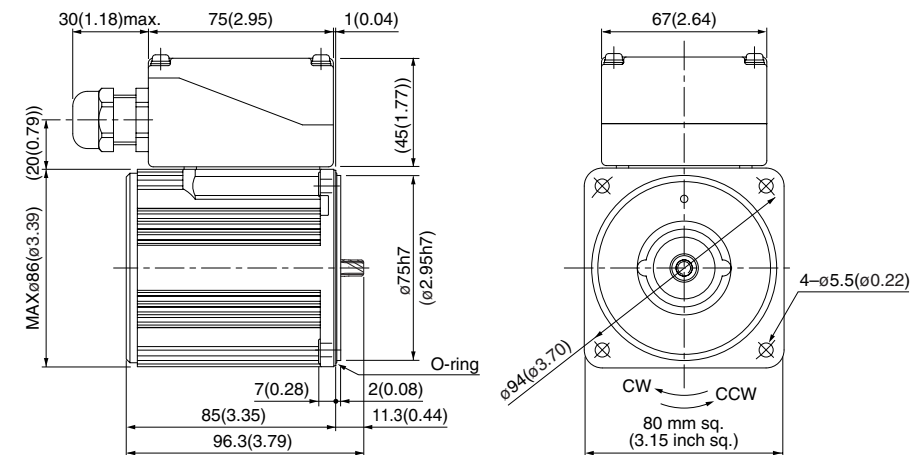
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

M8RX25GK4L	4P 25 W 100 V
M8RX25GK4Y	4P 25 W 200 V

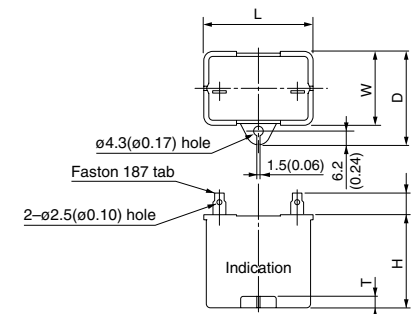
Mass	Helical gear	Module	Number of teeth
1.8 kg (3.97 lb)		0.5	9



\* Diameter of applicable cable to be ø8 to ø12.

## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

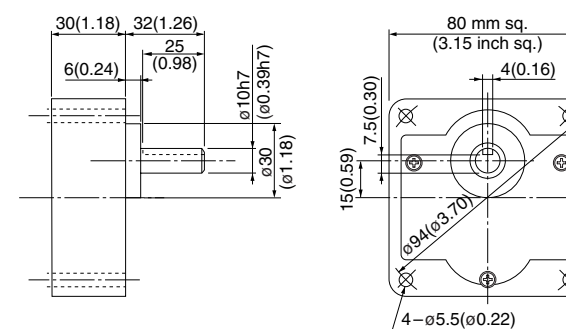
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M8RX25GK4L	M0PC9.5M20	39.5 (1.56)	22 (0.87)	32.5 (1.28)	30.5 (1.20)	4 (0.16)	M0PC3922
M8RX25GK4Y	M0PC2.4M40	49.7 (1.96)	24 (0.94)	34.5 (1.36)	34.5 (1.36)	4 (0.16)	M0PC5026

## Gear head (dimensions)

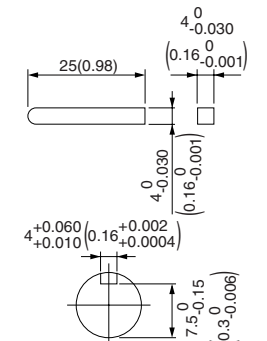
Scale: 1/3, Unit: mm (inch)

MX8G□B (ball bearing) / MX8G□M (metal bearing) Mass 0.6 kg (1.32 lb)



## Key and keyway (dimensions) [attachment]

MX8G□B(M)



(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
80 mm sq.	M8RX25GK4LG	4	25	100	50	30	59	0.60	1250	0.19 (26.9)	1.1	0.19 (26.9)	10 (250V)
	60				61		0.61	1550	0.15 (21.2)	1.1	0.19 (26.9)		
	M8RX25GK4DG	4	25	110	60	30	58	0.53	1575	0.15 (21.2)	1.1	0.17 (24.1)	8 (250V)
	60				61		0.53	1600	0.15 (21.2)	1.2	0.19 (26.9)		
	M8RX25GK4YG	4	25	200	50	30	59	0.30	1200	0.20 (28.3)	0.45	0.19 (26.9)	2.5 (450V)
	60				66		0.34	1525	0.16 (22.7)	0.46	0.19 (26.9)		
	M8RX25GK4GG	4	25	220	50	30	60	0.28	1225	0.19 (26.9)	0.47	0.18 (25.5)	2 (450V)
	60				60		0.27	1550	0.15 (21.2)	0.46	0.18 (25.5)		
	50				62		0.28	1275	0.19 (26.9)	0.49	0.19 (26.9)		
	60				62		0.27	1575	0.15 (21.2)	0.48	0.19 (26.9)		

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-124.  
 • The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
 • The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

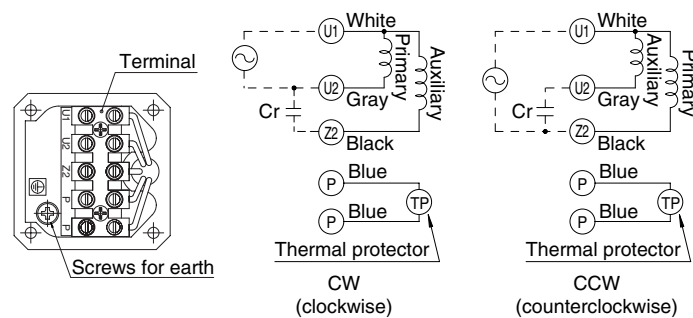
Unit of permissible torque: upper (N·m) / lower (lb·in)

Reduction ratio	Unit of permissible torque: upper (N·m) / lower (lb·in)																						
	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	50Hz	0.39 (3.45)	0.47 (4.16)	0.66 (5.84)	0.78 (6.90)	0.98 (8.67)	1.18 (10.4)	1.27 (11.2)	1.57 (13.9)	1.96 (17.3)	2.35 (20.8)	2.55 (22.6)	3.14 (27.8)	4.61 (40.8)	6.37 (56.4)	7.64 (67.6)							7.84 (69.4)
	60Hz	0.32 (2.83)	0.39 (3.45)	0.55 (4.87)	0.66 (5.84)	0.81 (7.17)	0.98 (8.67)	1.08 (9.56)	1.27 (11.2)	1.57 (13.9)	1.96 (17.3)	2.06 (18.2)	2.65 (23.5)	3.14 (27.8)	3.82 (33.8)	5.29 (46.8)	6.37 (56.4)						
Rotational direction	Same as motor rotational direction											Reverse to motor rotational direction											

## Permissible torque at output shaft of gear head using decimal gear head

Applicable gear head		Reduction ratio	Unit of permissible torque: upper (N·m) / lower (lb·in)														
Bearing	Decimal gear head		Speed (min <sup>-1</sup> )	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8	
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N-m	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	
		Rotational direction	Same as motor rotational direction	Reverse to motor rotational direction													

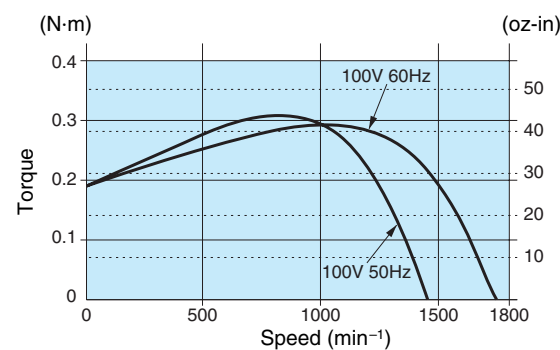
## Connection diagram



(Refer to page A-58 for connection of thermal protector.)

## Speed-torque characteristics

### M8RX25GK4LG(A)

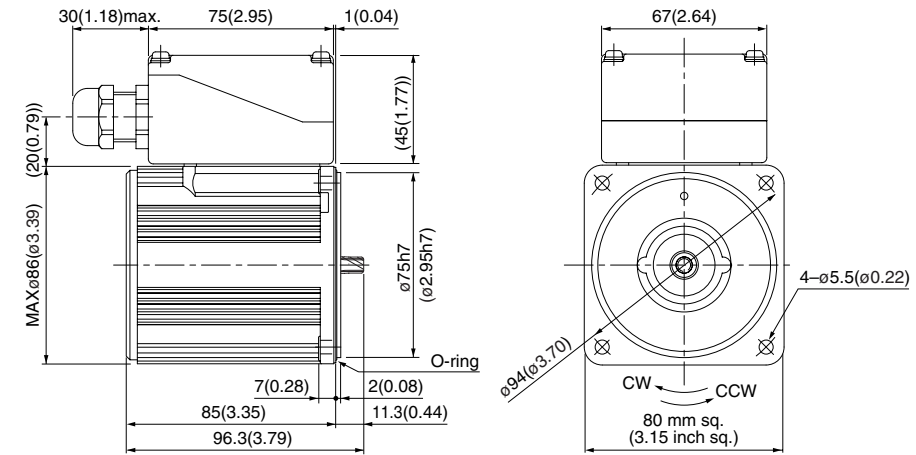


## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

M8RX25GK4LG(A)	4P 25 W 100 V
M8RX25GK4DG(A)	4P 25 W 110 V / 115 V
M8RX25GK4YG(A)	4P 25 W 200 V
M8RX25GK4GG(A)	4P 25 W 220 V / 230 V

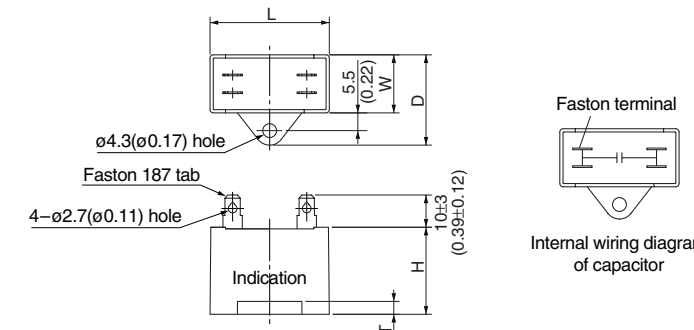
Mass	Helical gear	Module	Number of teeth
1.8 kg (3.97 lb)		0.5	9



\* Diameter of applicable cable to be ø8 to ø12.

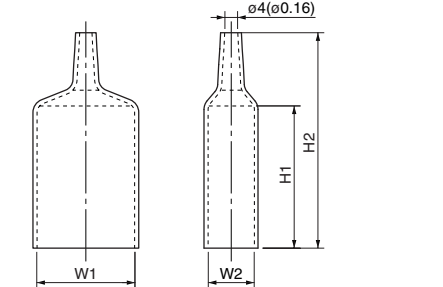
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions)

Unit: mm (inch)



## Capacitor dimension list

Unit: upper (mm) / lower (inch)

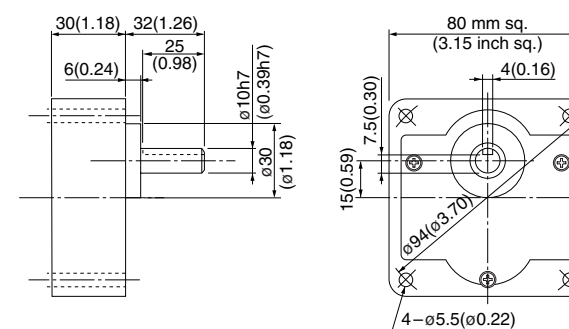
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M8RX25GK4LG(A)	M0PC10M25G	58 (2.28)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC5821G	58 (2.28)	21 (0.83)	55 (2.17)	78 (3.07)
M8RX25GK4DG(A)	M0PC8M25G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC4821G	48 (1.89)	21 (0.83)	55 (2.17)	78 (3.07)
M8RX25GK4YG(A)	M0PC2.5M45G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC4821G	48 (1.89)	21 (0.83)	55 (2.17)	78 (3.07)
M8RX25GK4GG(A)	M0PC2M45G	48 (1.89)	19 (0.75)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC4819G	48 (1.89)	19 (0.75)	55 (2.17)	78 (3.07)

\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

## Gear head (dimensions)

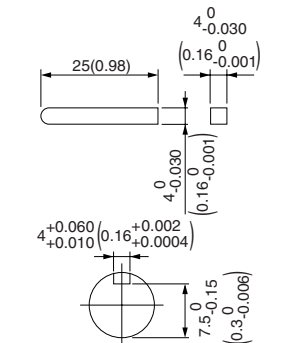
Scale: 1/3, Unit: mm (inch)

MX8G□B (ball bearing) / MX8G□M (metal bearing) Mass 0.6 kg (1.32 lb)



## Key and keyway (dimensions) [attachment]

MX8G□B(M)



\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

# Reversible motor (sealed connector)

90 mm (3.54 inch) sq. 40 W

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
90 mm sq.	M9RX40GK4L	4	40	100	50	30	94	0.96	1200	0.32 (45.3)	1.6	0.27 (38.2)	15 (210V)
					60		93	0.93	1525	0.25 (35.4)	1.5	0.26 (36.8)	
	M9RX40GK4Y	4	40	200	50	30	92	0.48	1200	0.32 (45.3)	0.81	0.28 (39.7)	3.8 (400V)
					60		93	0.46	1525	0.25 (35.4)	0.77	0.29 (41.1)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-124.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

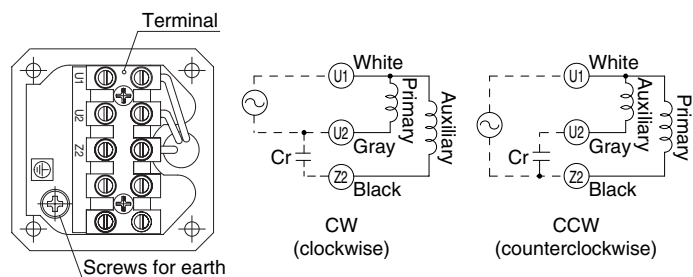
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
Applicable gear head	50Hz	MX9G3B to MX9G180B (ball bearing)	0.66 (5.84)	0.78 (6.90)	1.08 (9.56)	1.27 (11.2)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	2.74 (24.3)	3.23 (28.6)	3.92 (34.7)	4.41 (39.0)	5.29 (46.8)	6.37 (56.4)	7.94 (70.3)	9.80 (86.7)						
		MX9G3M to MX9G180M (metal bearing)	0.55 (4.87)	0.66 (5.84)	0.90 (7.97)	1.08 (9.56)	1.27 (11.2)	1.57 (13.9)	1.76 (15.6)	2.25 (19.9)	2.74 (24.3)	3.23 (28.6)	3.53 (31.2)	4.41 (39.0)	5.29 (46.8)	6.37 (56.4)	8.82 (78.1)	9.80 (86.7)					
Rotational direction	Same as motor rotational direction											Reverse to motor rotational direction											

## Permissible torque at output shaft of gear head using decimal gear head

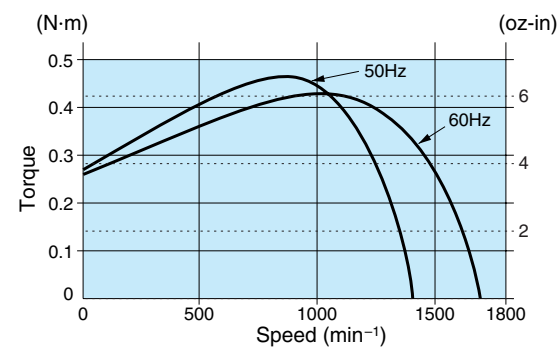
Applicable gear head	Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Speed (min <sup>-1</sup> )	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	Permissible torque	N·m (lb-in)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)
		Rotational direction	Same as motor rotational direction						Reverse to motor rotational direction				

## Connection diagram



## Speed-torque characteristics

M9RX40GK4L



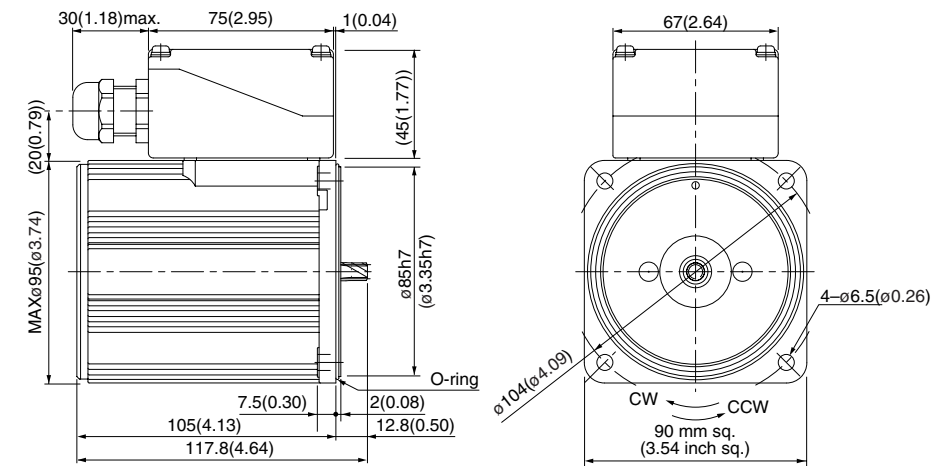
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/3, Unit: mm (inch)

M9RX40GK4L 4P 40 W 100 V  
M9RX40GK4Y 4P 40 W 200 V

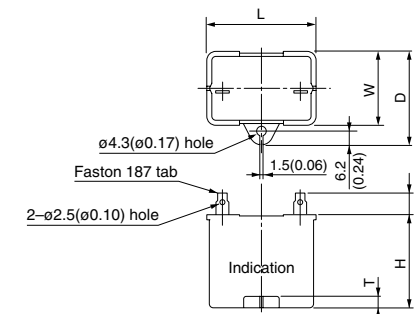
Mass 2.8 kg 6.17 lb  
Helical gear  
Module 0.55  
Number of teeth 9



\* Diameter of applicable cable to be ø8 to ø12.

## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

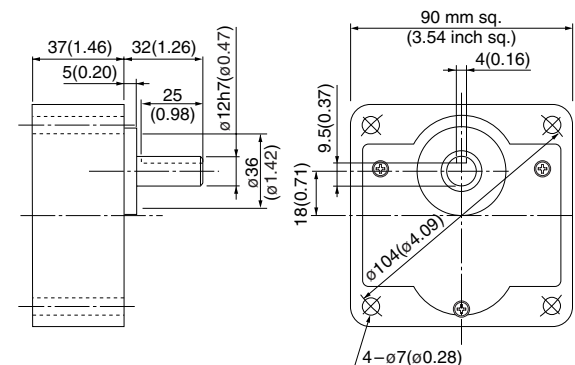
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M9RX40GK4L	M0PC15M20	39.5 (1.56)	26.7 (1.05)	37 (1.46)	41 (1.61)	4 (0.16)	M0PC3926
M9RX40GK4Y	M0PC3.8M40	50 (1.97)	26.7 (1.05)	37.5 (1.48)	38 (1.50)	4 (0.16)	M0PC5026

## Gear head (dimensions)

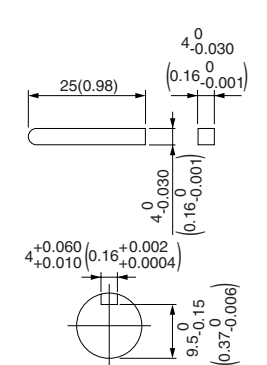
Scale: 1/3, Unit: mm (inch)

MX9G□B (ball bearing) / MX9G□M (metal bearing) Mass 0.8 kg (1.76 lb)



## Key and keyway (dimensions) [attachment]

MX9G□B(M)



(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

Induction motor  
Reversible motor  
3-phase motor  
Electromagnetic brake motor  
Variable speed induction motor  
Variable speed reversible motor  
Variable speed electromagnetic brake single-phase motor  
Variable speed unit motor  
G&B motor  
2-pole round shaft motor  
Gear head  
Gear head -inch (U.S.A.)



## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
90 mm sq.	M9RZ60GK4L	4	60	100	50	30	144	1.5	1200	0.46 (65.1)	2.4	0.50 (70.8)	25 (200V)
					60		163	1.5	1500	0.39 (55.2)	2.3	0.53 (75.1)	
	M9RZ60GK4Y	4	60	200	50	30	146	0.74	1225	0.46 (65.1)	1.2	0.53 (75.1)	6.2 (375V)
					60		153	0.77	1525	0.39 (55.2)	1.3	0.55 (77.9)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-124.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

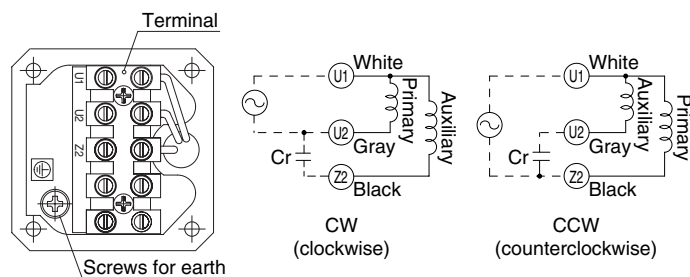
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable gear head (ball bearing / hinge not attached)	50Hz	0.98 (8.7)	1.18 (10.4)	1.57 (13.9)	1.96 (17.3)	2.35 (20.8)	2.94 (26.0)	3.14 (27.8)	3.92 (34.7)	4.70 (41.6)	5.59 (49.5)	6.27 (55.5)	7.55 (66.8)	9.11 (80.6)	11.0 (97.4)	15.2 (135)	17.8 (158)							19.6 (173)
	60Hz	0.78 (6.9)	0.98 (8.7)	1.37 (12.1)	1.57 (13.9)	1.96 (17.3)	2.65 (23.5)	3.33 (29.5)	3.92 (34.7)	4.70 (41.6)	5.29 (46.8)	6.47 (57.3)	7.55 (66.8)	9.11 (80.6)	12.6 (112)	15.2 (135)							19.6 (173)	
Rotational direction	Same as motor rotational direction						Reverse to motor rotational direction						Same as motor rotational direction											

## Permissible torque at output shaft of gear head using decimal gear head

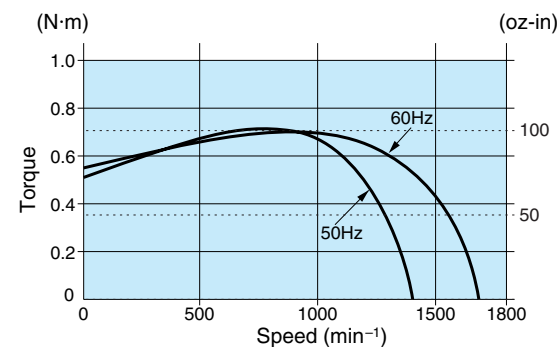
Applicable gear head		Reduction ratio	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min <sup>-1</sup> )	50Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MZ9G□B (ball bearing / Hinge not attached) MY9G□B (ball bearing / Hinge attached)	MZ9G10XB	Permissible torque	N·m (lb-in)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	
		Rotational direction	Reverse to motor rotational direction	Same as motor rotational direction										

## Connection diagram



## Speed-torque characteristics

### M9RZ60GK4L



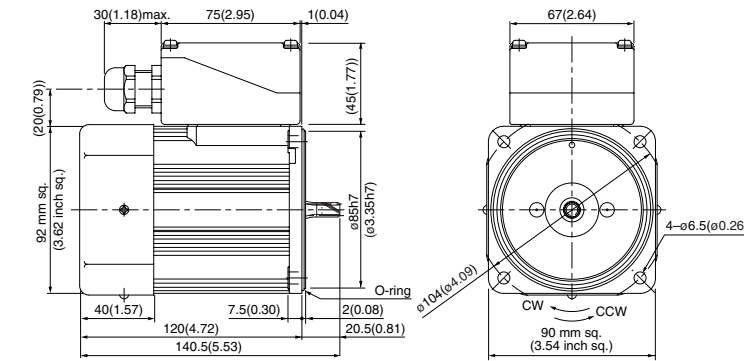
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/4, Unit: mm (inch)

M9RZ60GK4L 4P 60 W 100 V (with fan)  
M9RZ60GK4Y 4P 60 W 200 V (with fan)

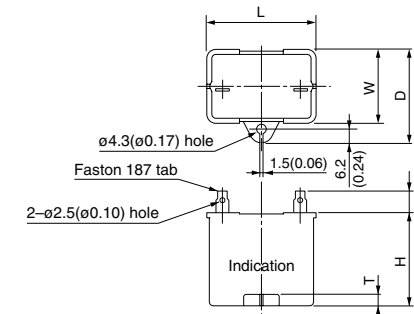
Mass 3.0 kg 6.61 lb  
Helical gear  
Module 0.5  
Number of teeth 9



\* Diameter of applicable cable to be ø8 to ø12.

## Capacitor (dimensions) [attachment]

Unit: mm (inch)



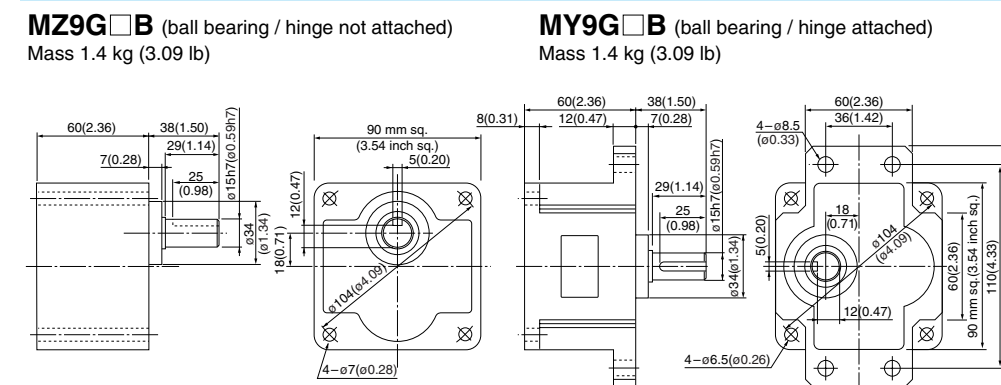
## Capacitor dimension list

Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M9RZ60GK4L	M0PC25M20	50.2 (1.98)	31 (1.22)	41 (1.61)	42 (1.65)	5 (0.20)	M0PC5032
M9RZ60GK4Y	M0PC6.2M38	50 (1.97)	30.5 (1.20)	41 (1.61)	41.5 (1.63)	4 (0.16)	M0PC5032

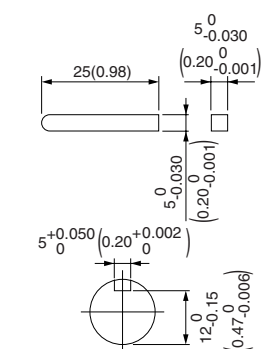
## Gear head (dimensions)

Scale: 1/4, Unit: mm (inch)



## Key and keyway (dimensions) [attachment]

MZ9G□B  
MY9G□B



Note) MZ / MY is available for a gear head of either type.

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

# Reversible motor (sealed connector)

US CE 90 mm (3.54 inch) sq. 60 W

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
90 mm sq.	M9RZ60GK4LG	4	60	100	50	30	137	1.4	1250	0.46 (65.1)	2.4	0.51 (72.2)	25 (250V)
	60				147		1.5	1550	0.37 (52.4)	2.4	0.53 (75.1)	20 (250V)	
	M9RZ60GK4DG	4	60	110	30	138	1.3	1575	0.36 (51.0)	2.5	0.50 (70.8)	20 (250V)	
	115					144	1.3	1600	0.36 (51.0)	2.6	0.55 (77.9)	20 (250V)	
	M9RZ60GK4YG	4	60	200	30	50	135	0.67	1200	0.48 (68.0)	1.0	0.51 (72.2)	6 (450V)
	60					158	0.81	1500	0.38 (53.8)	1.1	0.53 (75.1)	6 (450V)	
	M9RZ60GK4GG	4	60	220	30	50	137	0.64	1225	0.47 (66.6)	1.1	0.50 (70.8)	5 (450V)
	60					145	0.67	1550	0.37 (52.4)	1.1	0.52 (73.6)	5 (450V)	
	50					145	0.66	1275	0.45 (63.7)	1.1	0.57 (80.7)	5 (450V)	
	60					151	0.67	1575	0.36 (51.0)	1.1	0.57 (80.7)	5 (450V)	

The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-124.  
The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

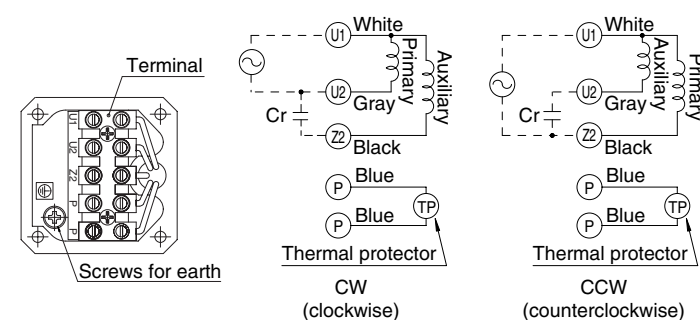
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable gear head	MZ9G3B to MZ9G200B (ball bearing / hinge not attached)	50Hz	0.98 (8.7)	1.18 (10.4)	1.57 (13.9)	1.96 (17.3)	2.35 (20.8)	2.94 (26.0)	3.14 (27.8)	3.92 (34.7)	4.70 (41.6)	5.59 (49.5)	6.27 (55.5)	7.55 (66.8)	9.11 (80.6)	11.0 (97.4)	15.2 (135)	17.8 (158)						19.6 (173)
	MY9G3B to MY9G200B (ball bearing / hinge attached)	60Hz	0.78 (6.9)	0.98 (8.7)	1.37 (12.1)	1.57 (13.9)	1.96 (17.3)	2.35 (20.8)	2.65 (23.5)	3.33 (29.5)	3.92 (34.7)	4.70 (41.6)	5.29 (46.8)	6.47 (57.3)	7.55 (66.8)	9.11 (80.6)	12.6 (112)	15.2 (135)						19.6 (173)
Rotational direction		Same as motor rotational direction						Reverse to motor rotational direction						Same as motor rotational direction										

## Permissible torque at output shaft of gear head using decimal gear head

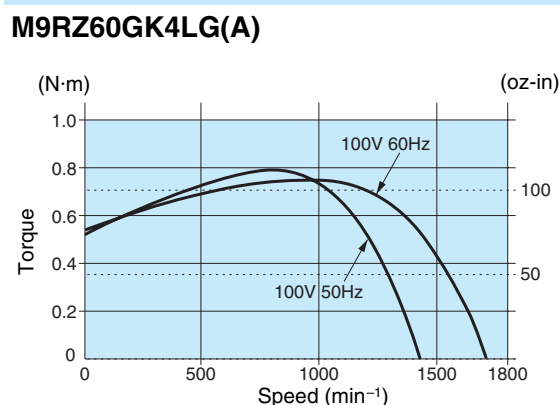
Applicable gear head	Reduction ratio	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Speed (min <sup>-1</sup> )	50Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
	60Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MZ9G□B (ball bearing / hinge not attached)	Permissible torque	N·m	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	
MY9G□B (ball bearing / hinge attached)	Rotational direction	Reverse to motor rotational direction		Same as motor rotational direction									

## Connection diagram



(Refer to page A-58 for connection of thermal protector.)

## Speed-torque characteristics

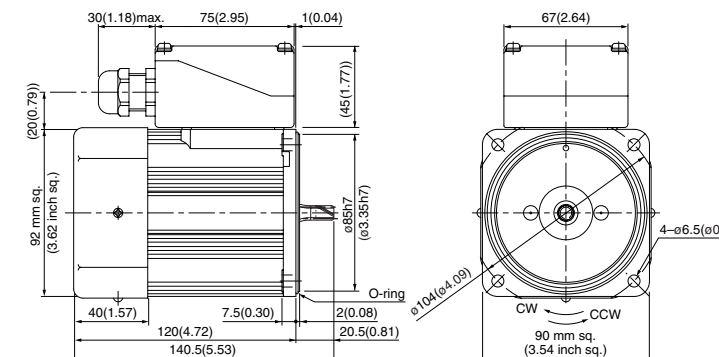


## Motor (dimensions)

Scale: 1/4, Unit: mm (inch)

M9RZ60GK4LG(A)	4P	60 W	100 V (with fan)
M9RZ60GK4DG(A)	4P	60 W	110 V / 115 V (with fan)
M9RZ60GK4YG(A)	4P	60 W	200 V (with fan)
M9RZ60GK4GG(A)	4P	60 W	220 V / 230 V (with fan)

Mass	Helical gear	Module	Number of teeth
3.0 kg 6.61 lb		0.6	9



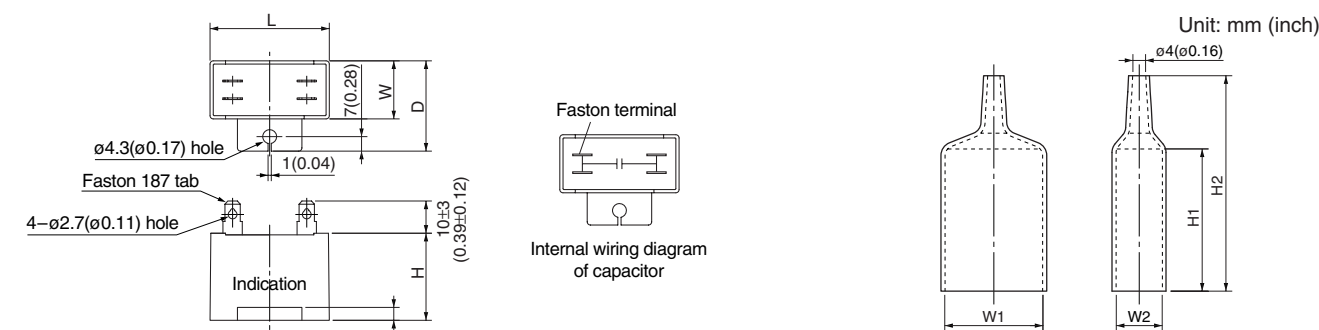
\* Diameter of applicable cable to be ø8 to ø12.

## Capacitor (dimensions) [attachment]

Unit: mm (inch)

## Capacitor cap (dimensions)

Unit: mm (inch)



## Capacitor dimension list

Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M9RZ60GK4LG(A)	M0PC25M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ60GK4DG(A)	M0PC20M25G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)
M9RZ60GK4YG(A)	M0PC6M45G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)
M9RZ60GK4GG(A)	M0PC5M45G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)

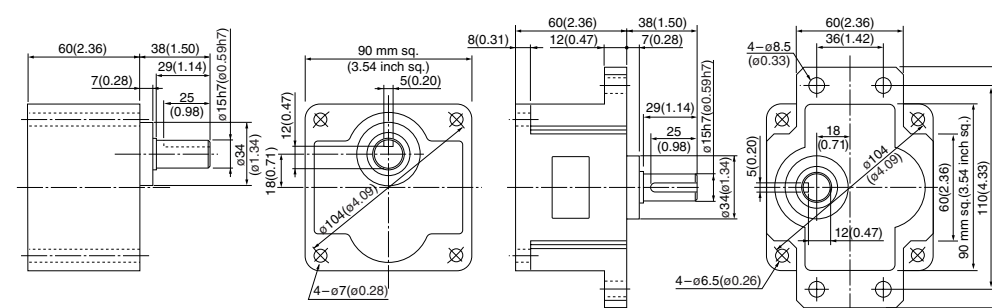
\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

## Gear head (dimensions)

Scale: 1/4, Unit: mm (inch)

MZ9G□B (ball bearing / hinge not attached)  
Mass 1.4 kg (3.09 lb)

MY9G□B (ball bearing / hinge attached)  
Mass 1.4 kg (3.09 lb)

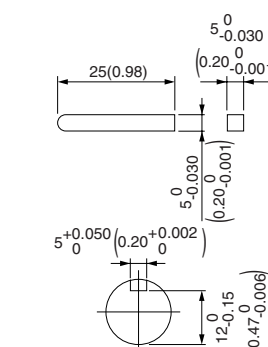


Note) MZ / MY is available for a gear head of either type.

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

## Key and keyway (dimensions) [attachment]

MZ9G□B  
MY9G□B



## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
90 mm sq.	M9RZ90GK4L	4	90	100	50	30	171	1.7	1225	0.70 (99.1)	2.8	0.63 (89.2)	30 (200V)
					60	30	181	1.9	1525	0.56 (79.3)	2.7	0.64 (90.6)	
	M9RZ90GK4Y	4	90	200	50	30	184	0.93	1150	0.72 (102)	1.4	0.64 (90.6)	7.5 (370V)
					60	30	190	0.96	1475	0.57 (80.7)	1.4	0.66 (93.5)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-124.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

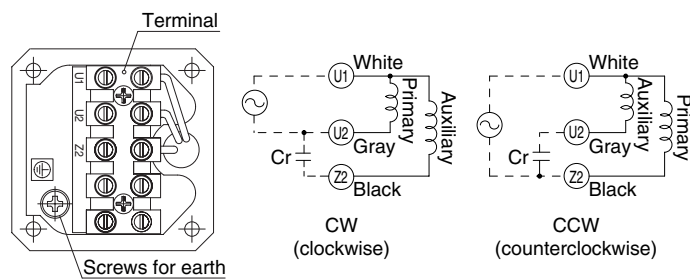
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
<b>Speed (min<sup>-1</sup>)</b>	<b>50Hz</b>	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
	<b>60Hz</b>	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
<b>Applicable gear head</b>	<b>MZ9G3B to MZ9G200B</b> (ball bearing / hinge not attached)	50Hz	1.37 (12.1)	1.67 (14.8)	2.25 (19.9)	2.74 (24.3)	3.43 (30.4)	4.12 (36.5)	4.51 (39.9)	5.68 (50.3)	6.76 (59.8)	8.04 (71.2)	9.02 (79.8)	10.9 (96.5)	13.0 (115)	15.7 (139)	19.6 (173)							19.6 (173)
	<b>MY9G3B to MY9G200B</b> (ball bearing / hinge attached)	60Hz	1.18 (10.4)	1.37 (12.1)	1.86 (16.5)	2.25 (19.9)	2.84 (25.1)	3.43 (30.4)	3.72 (32.9)	4.70 (41.6)	5.68 (50.3)	6.76 (59.8)	7.55 (66.8)	9.21 (81.5)	10.9 (96.5)	13.0 (115)	18.3 (162)							19.6 (173)
<b>Rotational direction</b>	Same as motor rotational direction						Reverse to motor rotational direction						Same as motor rotational direction											

## Permissible torque at output shaft of gear head using decimal gear head

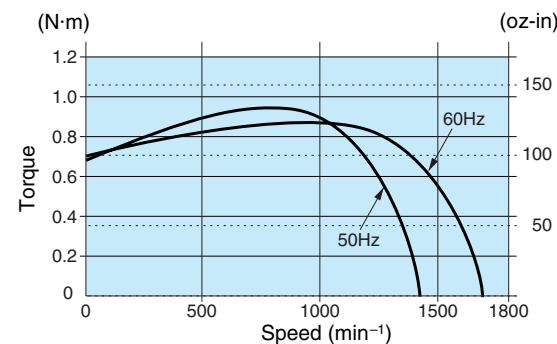
Applicable gear head		Reduction ratio	250	300	360	500	600	750	900	1000	1200	1500	1800
<b>Bearing</b>	<b>Decimal gear head</b>	<b>Speed (min<sup>-1</sup>)</b>	<b>50Hz</b>	6	5	4.2	3	2.5	2	1.7	1.5	1.3	0.8
		<b>60Hz</b>	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
<b>MZ9G□B</b> (ball bearing / hinge not attached)	<b>MZ9G10XB</b>	<b>Permissible torque</b>	<b>N·m</b>	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		<b>Rotational direction</b>	Reverse to motor rotational direction	Same as motor rotational direction									

## Connection diagram



## Speed-torque characteristics

### M9RZ90GK4L



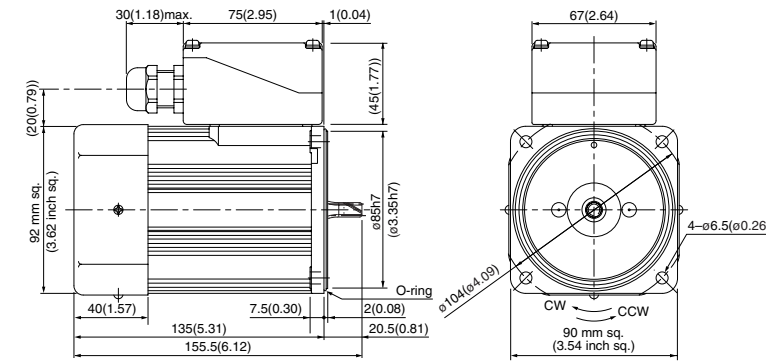
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

Scale: 1/4, Unit: mm (inch)

<b>M9RZ90GK4L</b>	4P 90W 100V (with fan)
<b>M9RZ90GK4Y</b>	4P 90W 200V (with fan)

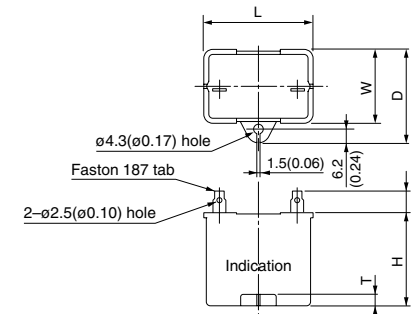
<b>Mass</b>	<b>Helical gear</b>	<b>Module</b>	<b>Number of teeth</b>
3.3 kg (7.28 lb)		0.5	9



\* Diameter of applicable cable to be ø8 to ø12.

## Capacitor (dimensions) [attachment]

Unit: mm (inch)



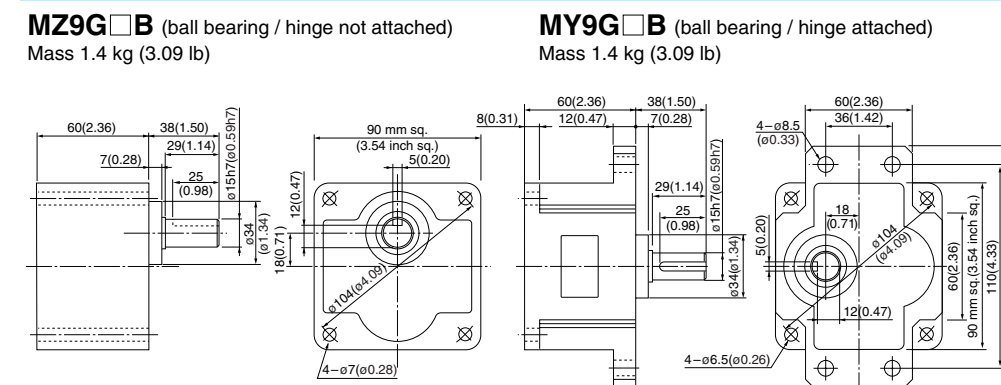
## Capacitor dimension list

Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M9RZ90GK4L	M0PC30M20	50.2 (1.98)	31 (1.22)	41 (1.61)	42 (1.65)	5 (0.20)	M0PC5032
M9RZ90GK4Y	M0PC7.5M37	50 (1.97)	34 (1.34)	45 (1.77)	45 (1.77)	6 (0.24)	—

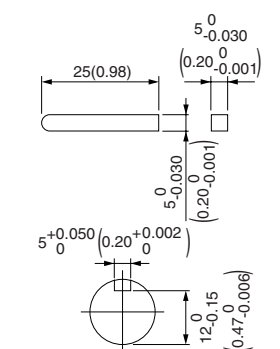
## Gear head (dimensions)

Scale: 1/4, Unit: mm (inch)



## Key and keyway (dimensions) [attachment]

**MZ9G□B**  
**MY9G□B**



Note) MZ / MY is available for a gear head of either type.

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

Induction motor  
Reversible motor  
3-phase motor  
Electromagnetic brake motor  
Variable speed induction motor  
Variable speed reversible motor  
Variable speed electromagnetic brake single-phase motor  
Variable speed unit motor  
C&B motor  
2-pole round shaft motor  
Gear head  
Gear head -inch (U.S.A.)

# Reversible motor (sealed connector)

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque (N-m)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min <sup>-1</sup> )	Torque N-m (oz-in)			
90 mm sq.	M9RZ90GK4LG	4	90	100	50	30	195	2.0	1175	0.73 (103)	3.0	0.68 (96.3)	32 (250V)
	60				203		2.0	1525	0.57 (80.7)	2.9			
	M9RZ90GK4DG	4	90	110	60	30	201	1.8	1550	0.55 (77.9)	3.1	0.72 (102)	28 (250V)
	60				209		1.8	1575	0.55 (77.9)	3.2			
	M9RZ90GK4YG	4	90	200	50	30	185	0.93	1175	0.73 (103)	1.4	0.68 (96.3)	8 (450V)
	60				206		1.1	1500	0.57 (80.7)	1.4			
	M9RZ90GK4YGA	4	90	220	50	30	191	0.89	1225	0.70 (99.1)	1.5	0.72 (102)	7 (450V)
	60				197		0.90	1550	0.55 (77.9)	1.4			
	M9RZ90GK4GG	4	90	230	50	30	202	0.92	1250	0.69 (97.7)	1.6	0.79 (112)	7 (450V)
	60				204		0.88	1575	0.55 (77.9)	1.5			

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-124.  
 • The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
 • The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

\* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 to 20%.

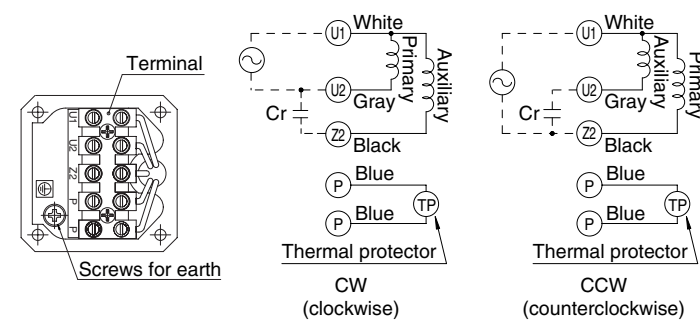
Unit of permissible torque: upper (N-m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
Speed (min <sup>-1</sup> )	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable gear head	MZ9G3B to MZ9G200B (ball bearing / hinge not attached)	50Hz	1.37 (12.1)	1.67 (14.8)	2.25 (19.9)	2.74 (24.3)	3.43 (30.4)	4.12 (36.5)	4.51 (39.9)	5.68 (50.3)	6.76 (59.8)	8.04 (71.2)	9.02 (79.8)	10.9 (96.5)	13.0 (115)	15.7 (139)	19.6 (173)							19.6 (173)
	MY9G3B to MY9G200B (ball bearing / hinge attached)	60Hz	1.18 (10.4)	1.37 (12.1)	1.86 (16.5)	2.25 (19.9)	2.84 (25.1)	3.43 (30.4)	3.72 (32.9)	4.70 (41.6)	5.68 (50.3)	6.76 (59.8)	7.55 (66.8)	9.21 (81.5)	10.9 (96.5)	13.0 (115)	18.3 (162)							19.6 (173)
Rotational direction		Same as motor rotational direction						Reverse to motor rotational direction						Same as motor rotational direction										

## Permissible torque at output shaft of gear head using decimal gear head

Applicable gear head		Reduction ratio	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min <sup>-1</sup> )	50Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MZ9G□B (ball bearing / hinge not attached)	MZ9G10XB	Permissible torque	N-m	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
		(lb-in)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)	(173)
Rotational direction			Reverse to motor rotational direction						Same as motor rotational direction					

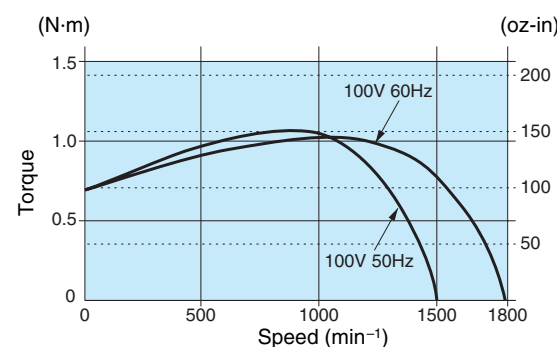
## Connection diagram



(Refer to page A-58 for connection of thermal protector.)

## Speed-torque characteristics

### M9RZ90GK4LG(A)

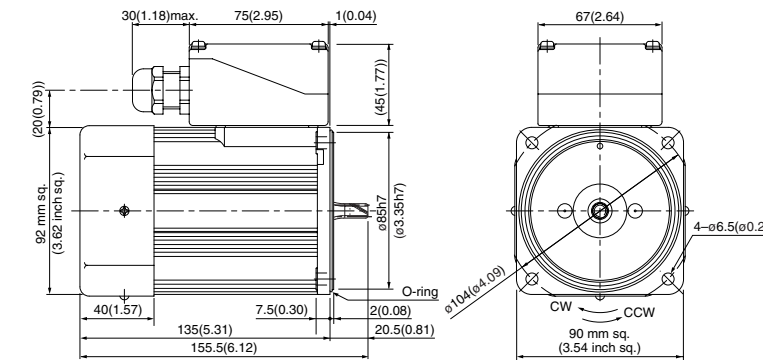


## Motor (dimensions)

Scale: 1/4, Unit: mm (inch)

M9RZ90GK4LG(A)	4P 90 W 100 V (with fan)
M9RZ90GK4DG(A)	4P 90 W 110 V / 115 V (with fan)
M9RZ90GK4YG(A)	4P 90 W 200 V (with fan)
M9RZ90GK4GG(A)	4P 90 W 220 V / 230 V (with fan)

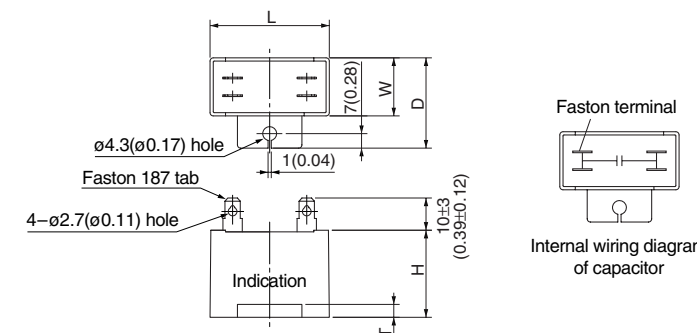
Mass	Helical gear	Module	Number of teeth
3.3 kg 7.28 lb		0.6	9



\* Diameter of applicable cable to be ø8 to ø12.

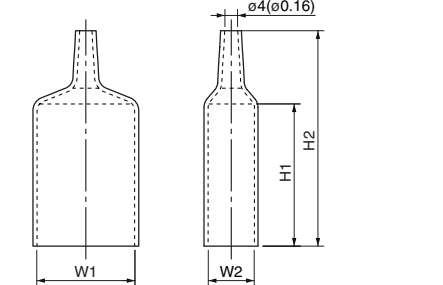
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions)

Unit: mm (inch)



## Capacitor dimension list

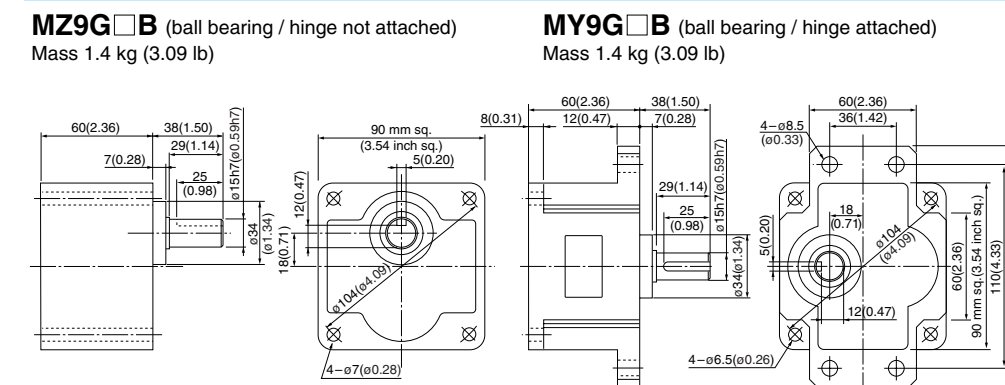
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M9RZ90GK4LG(A)	M0PC32M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90GK4DG(A)	M0PC28M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90GK4YG(A)	M0PC8M45G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90GK4GG(A)	M0PC7M45G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)

\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

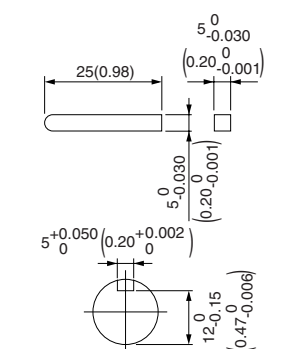
## Gear head (dimensions)

Scale: 1/4, Unit: mm (inch)



## Key and keyway (dimensions) [attachment]

MZ9G□B  
MY9G□B

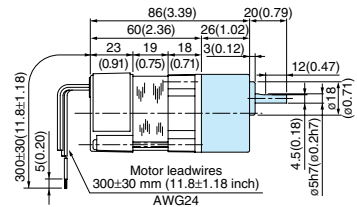


Note) MZ / MY is available for a gear head of either type.

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

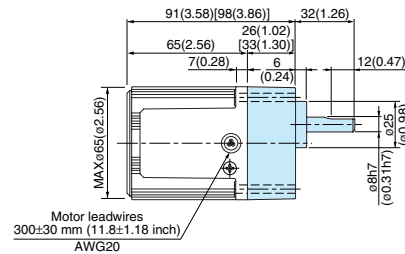
## 42 mm sq. (1.65 inch sq.) 1 W

M4RA1G4L + M4GA□F



## 60 mm sq. (2.36 inch sq.) 4 W

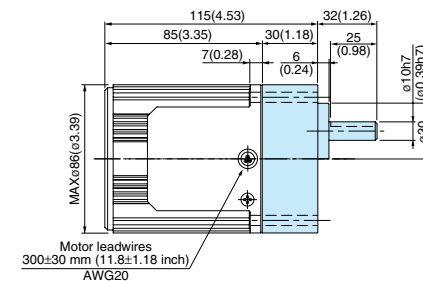
M6RX4G4L + MX6G□BA(MA) / MX6G□B(M)



\* Figures in [ ] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).  
The model number of the gear head with a reduction ratio of 1/25 or smaller is MX6G□BA (MA).

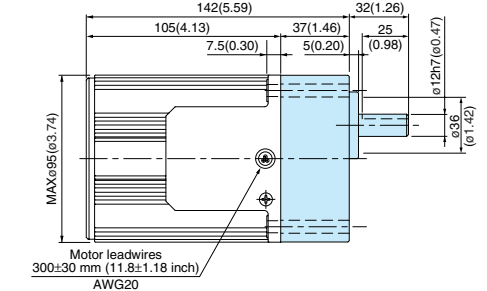
## 80 mm sq. (3.15 inch sq.) 25 W

M8RX25G4L + MX8G□B(M)  
M8RX25G4Y + MX8G□B(M)  
M8RX25G4LG(A) + MX8G□B(M)  
M8RX25G4DG(A) + MX8G□B(M)  
M8RX25G4YG(A) + MX8G□B(M)  
M8RX25G4GG(A) + MX8G□B(M)



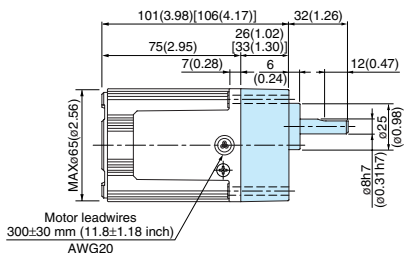
## 90 mm sq. (3.54 inch sq.) 40 W

M9RX40G4L + MX9G□B(M)  
M9RX40G4Y + MX9G□B(M)  
M9RX40G4LG(A) + MX9G□B(M)  
M9RX40G4DG(A) + MX9G□B(M)  
M9RX40G4YG(A) + MX9G□B(M)  
M9RX40G4GG(A) + MX9G□B(M)



## 60 mm sq. (2.36 inch sq.) 6 W

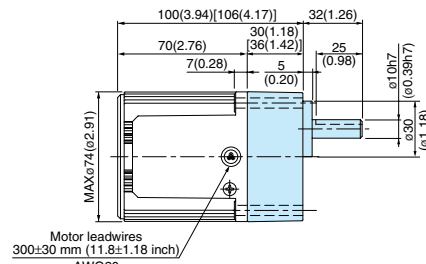
M6RX6G4L + MX6G□BA(MA) / MX6G□B(M)  
M6RX6G4Y + MX6G□BA(MA) / MX6G□B(M)  
M6RX6G4LG(A) + MX6G□BA(MA) / MX6G□B(M)  
M6RX6G4DG(A) + MX6G□BA(MA) / MX6G□B(M)  
M6RX6G4YG(A) + MX6G□BA(MA) / MX6G□B(M)  
M6RX6G4GG(A) + MX6G□BA(MA) / MX6G□B(M)



\* Figures in [ ] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).  
The model number of the gear head with a reduction ratio of 1/25 or smaller is MX6G□BA (MA).

## 70 mm sq. (2.76 inch sq.) 10 W

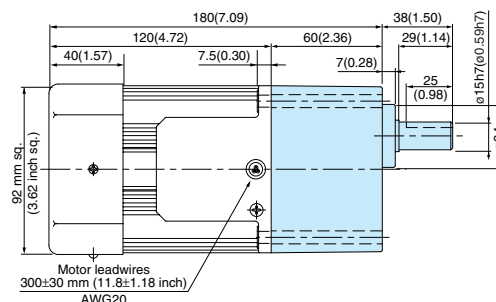
M7RX10G4L + MX7G□BA(MA) / MX7G□B(M)  
M7RX10G4Y + MX7G□BA(MA) / MX7G□B(M)



\* Figures in [ ] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).  
The model number of the gear head with a reduction ratio of 1/25 or smaller is MX7G□BA (MA).

## 90 mm sq. (3.54 inch sq.) 60 W

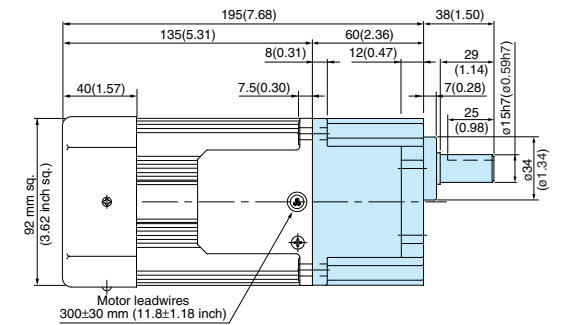
M9RZ60G4L + MZ9G□B (MY9G□B)  
M9RZ60G4Y + MZ9G□B (MY9G□B)  
M9RZ60G4LG(A) + MZ9G□B (MY9G□B)  
M9RZ60G4DG(A) + MZ9G□B (MY9G□B)  
M9RZ60G4YG(A) + MZ9G□B (MY9G□B)  
M9RZ60G4GG(A) + MZ9G□B (MY9G□B)



\* Refer to page B-444 for high torque gear head.

## 90 mm sq. (3.54 inch sq.) 90 W

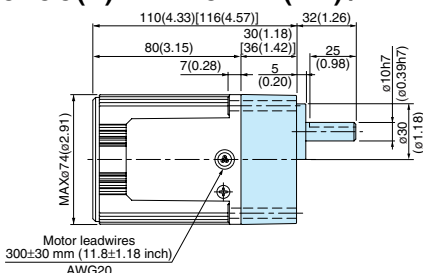
M9RZ90G4L + MY9G□B (MZ9G□B)  
M9RZ90G4Y + MY9G□B (MZ9G□B)  
M9RZ90G4LG(A) + MY9G□B (MZ9G□B)  
M9RZ90G4DG(A) + MY9G□B (MZ9G□B)  
M9RZ90G4YG(A) + MY9G□B (MZ9G□B)  
M9RZ90G4GG(A) + MY9G□B (MZ9G□B)



\* Refer to page B-444 for high torque gear head.

## 70 mm sq. (2.76 inch sq.) 15 W

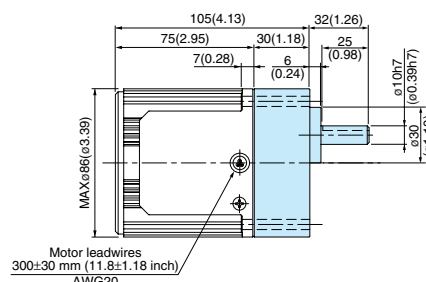
M7RX15G4L + MX7G□BA(MA) / MX7G□B(M)  
M7RX15G4Y + MX7G□BA(MA) / MX7G□B(M)  
M7RX15G4LG(A) + MX7G□BA(MA) / MX7G□B(M)  
M7RX15G4DG(A) + MX7G□BA(MA) / MX7G□B(M)  
M7RX15G4YG(A) + MX7G□BA(MA) / MX7G□B(M)  
M7RX15G4GG(A) + MX7G□BA(MA) / MX7G□B(M)



\* Figures in [ ] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).  
The model number of the gear head with a reduction ratio of 1/25 or smaller is MX7G□BA (MA).

## 80 mm sq. (3.15 inch sq.) 20 W

M8RX20G4L + MX8G□B(M)  
M8RX20G4Y + MX8G□B(M)



\*The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
\*The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

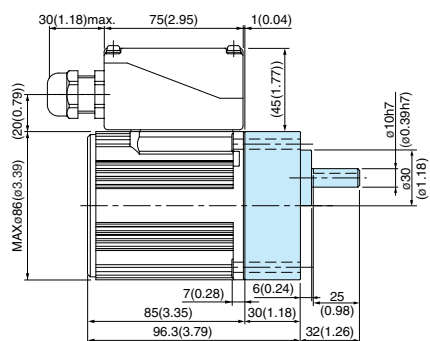
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

# Reversible motor (sealed connector) Gear head combination dimensions

Scale: 1/4, Unit: mm (inch)

## 80 mm sq. (3.15 inch sq.) 25 W

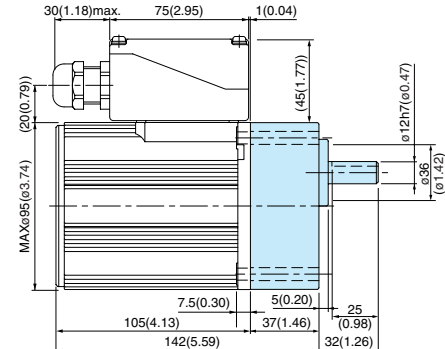
- M8RX25GK4L + MX8G□B(M)
- M8RX25GK4Y + MX8G□B(M)
- M8RX25GK4LG(A) + MX8G□B(M)
- M8RX25GK4DG(A) + MX8G□B(M)
- M8RX25GK4YG(A) + MX8G□B(M)
- M8RX25GK4GG(A) + MX8G□B(M)



\* Diameter of applicable cabtyre cable to be  $\phi 8(\phi 0.31)$  to  $\phi 12(\phi 0.47)$ .

## 90 mm sq. (3.54 inch sq.) 40 W

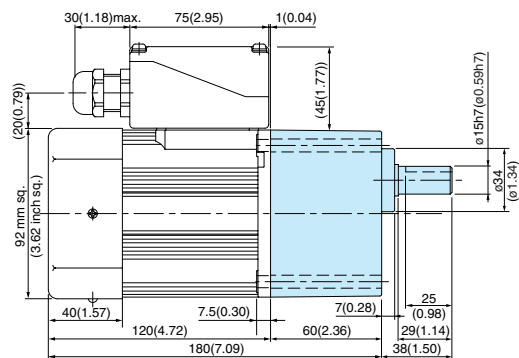
- M9RX40GK4L + MX9G□B(M)
- M9RX40GK4Y + MX9G□B(M)
- M9RX40GK4LG(A) + MX9G□B(M)
- M9RX40GK4DG(A) + MX9G□B(M)
- M9RX40GK4YG(A) + MX9G□B(M)
- M9RX40GK4GG(A) + MX9G□B(M)



\* Diameter of applicable cabtyre cable to be  $\phi 8(\phi 0.31)$  to  $\phi 12(\phi 0.47)$ .

## 90 mm sq. (3.54 inch sq.) 60 W

- M9RZ60GK4L + MZ9G□B (MY9G□B)
- M9RZ60GK4Y + MZ9G□B (MY9G□B)
- M9RZ60GK4LG(A) + MZ9G□B (MY9G□B)
- M9RZ60GK4DG(A) + MZ9G□B (MY9G□B)
- M9RZ60GK4YG(A) + MZ9G□B (MY9G□B)
- M9RZ60GK4GG(A) + MZ9G□B (MY9G□B)

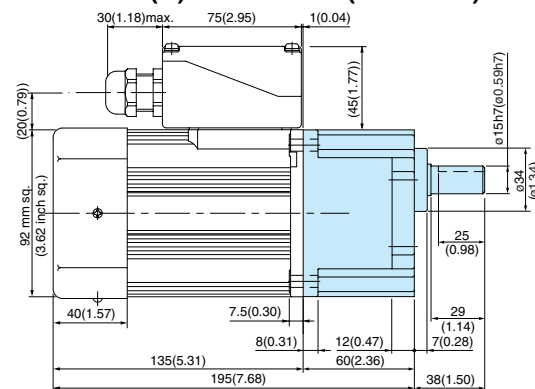


\* Diameter of applicable cabtyre cable to be  $\phi 8(\phi 0.31)$  to  $\phi 12(\phi 0.47)$ .

\* Refer to page B-444 for high torque gear head.

## 90 mm sq. (3.54 inch sq.) 90 W

- M9RZ90GK4L + MY9G□B (MZ9G□B)
- M9RZ90GK4Y + MY9G□B (MZ9G□B)
- M9RZ90GK4LG(A) + MY9G□B (MZ9G□B)
- M9RZ90GK4DG(A) + MY9G□B (MZ9G□B)
- M9RZ90GK4YG(A) + MY9G□B (MZ9G□B)
- M9RZ90GK4GG(A) + MY9G□B (MZ9G□B)



\* Diameter of applicable cabtyre cable to be  $\phi 8(\phi 0.31)$  to  $\phi 12(\phi 0.47)$ .

\* Refer to page B-444 for high torque gear head.

\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

\* The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

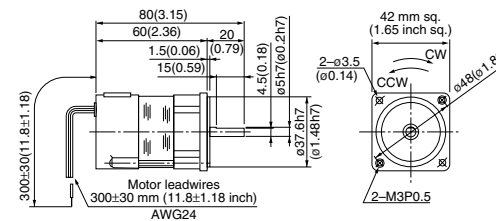
# Reversible motor (4-pole round shaft / leadwire) Dimensions

Scale: 1/4, Unit: mm (inch)

## 42 mm sq. (1.65 inch sq.) 1 W

Mass  
0.3 kg (0.66 lb)

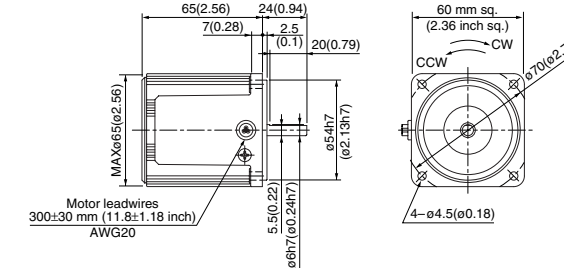
M4RA1S4L



## 60 mm sq. (2.36 inch sq.) 4 W

Mass  
0.56 kg (1.23 lb)

M6RX4S4LS



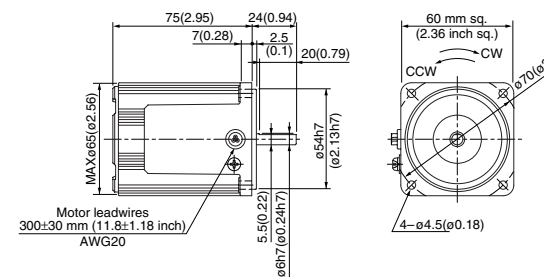
## 60 mm sq. (2.36 inch sq.) 6 W

Mass  
0.67 kg (1.48 lb)

M6RX6S4LS  
M6RX6S4YS

M6RX6S4LG(A)  
M6RX6S4DG(A)

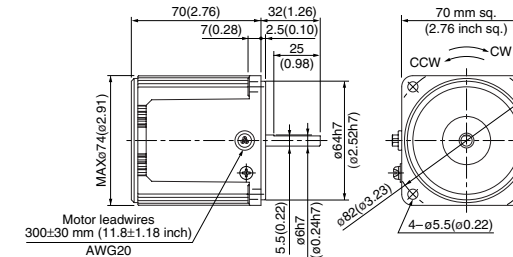
M6RX6S4YG(A)  
M6RX6S4GG(A)



## 70 mm sq. (2.76 inch sq.) 10 W

Mass  
0.84 kg (1.85 lb)

M7RX10S4LS  
M7RX10S4YS



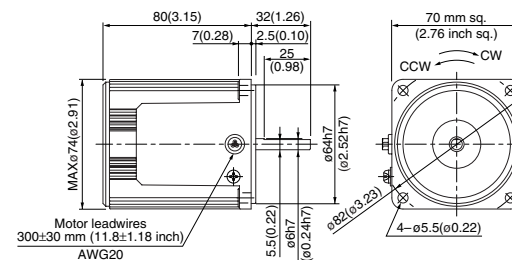
## 70 mm sq. (2.76 inch sq.) 15 W

Mass  
1.1 kg (2.43 lb)

M7RX15S4LS  
M7RX15S4YS

M7X15S4LG(A)  
M7X15S4DG(A)

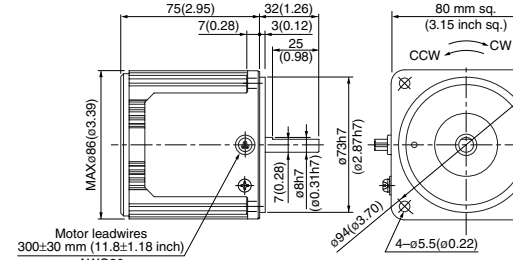
M7X15S4YG(A)  
M7X15S4GG(A)



## 80 mm sq. (3.15 inch sq.) 20 W

Mass  
1.2 kg (2.65 lb)

M8RX20S4LS  
M8RX20S4YS



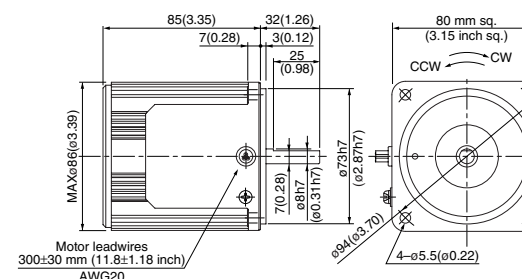
## 80 mm sq. (3.15 inch sq.) 25 W

Mass  
1.5 kg (3.31 lb)

M8RX25S4LS  
M8RX25S4YS

M8RX25S4LG(A)  
M8RX25S4DG(A)

M8RX25S4YG(A)  
M8RX25S4GG(A)



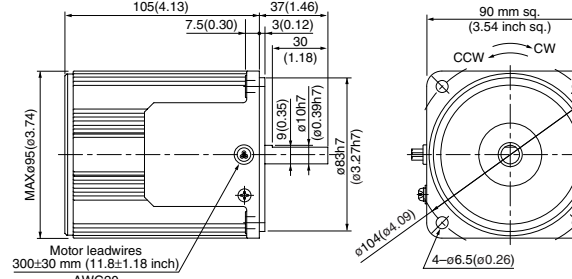
## 90 mm sq. (3.54 inch sq.) 40 W

Mass  
2.4 kg (5.29 lb)

M9RX40S4LS  
M9RX40S4YS

M9RX40S4LG(A)  
M9RX40S4DG(A)

M9RX40S4YG(A)  
M9RX40S4GG(A)



(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

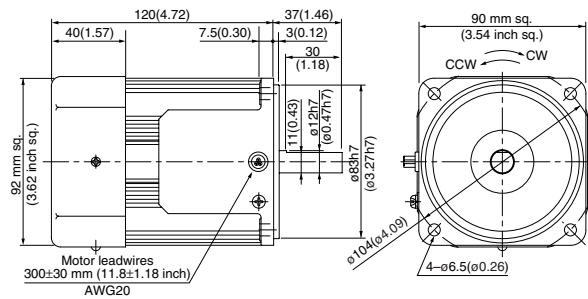
Induction motor  
Reversible motor  
3-phase motor  
Electromagnetic brake motor  
Variable speed induction motor  
Variable speed motor  
Variable speed electromagnetic brake single-phase motor  
Variable speed unit motor  
C&B motor  
2-pole round shaft motor  
Gear head  
Gear head -inch (U.S.A.)

## Reversible motor (4-pole round shaft / leadwire)

Dimensions  
Scale: 1/4, Unit: mm (inch)

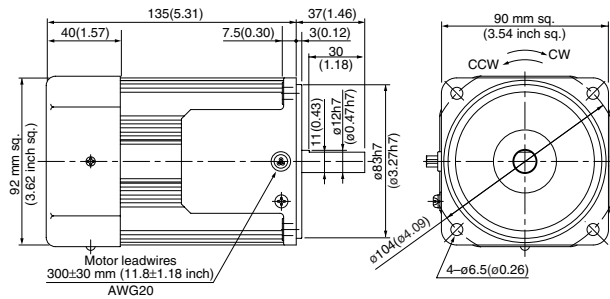
**90 mm sq. (3.54 inch sq.) 60 W** Mass 2.7 kg (5.95 lb)

M9RZ60S4LS (with fan) M9RZ60S4LG(A) (with fan)  
M9RZ60S4YS (with fan) M9RZ60S4DG(A) (with fan)  
M9RZ60S4YG(A) (with fan)  
M9RZ60S4GG(A) (with fan)



**90 mm sq. (3.54 inch sq.) 90 W** Mass 3.2 kg (7.05 lb)

M9RZ90S4LS (with fan) M9RZ90S4LG(A) (with fan)  
M9RZ90S4YS (with fan) M9RZ90S4DG(A) (with fan)  
M9RZ90S4YG(A) (with fan)  
M9RZ90S4GG(A) (with fan)

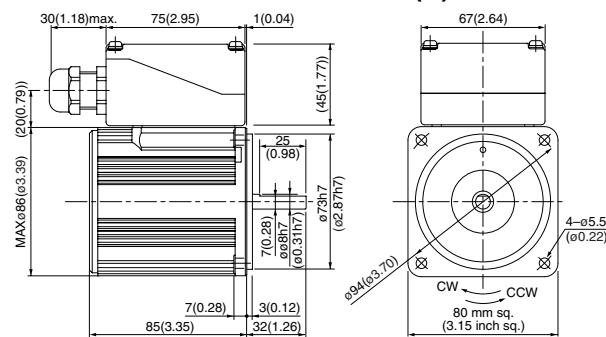


## Reversible motor (4-pole round shaft /sealed connector) Dimensions

Scale: 1/4, Unit: mm (inch)

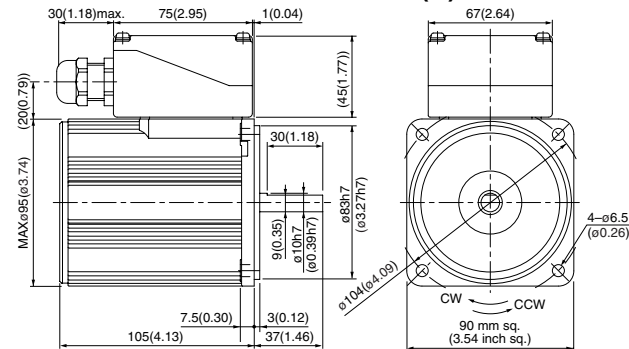
**80 mm sq. (3.15 inch sq.) 25 W** Mass 1.8 kg (3.97 lb)

M8RX25SK4LS M8RX25SK4LG(A)  
M8RX25SK4YS M8RX25SK4YG(A)  
M8RX25SK4DG(A)  
M8RX25SK4GG(A)



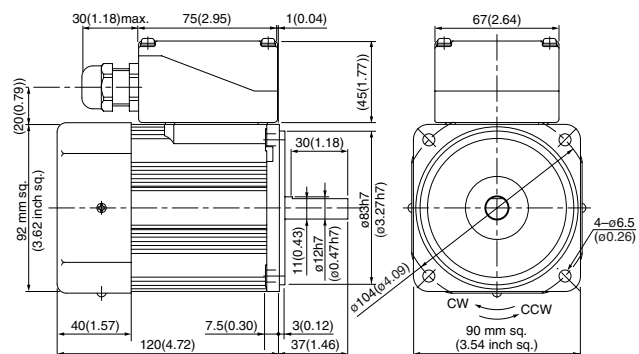
**90 mm sq. (3.54 inch sq.) 40 W** Mass 2.8 kg (6.17 lb)

M9RX40SK4LS M9RX40SK4LG(A)  
M9RX40SK4YS M9RX40SK4YG(A)  
M9RX40SK4DG(A)  
M9RX40SK4GG(A)



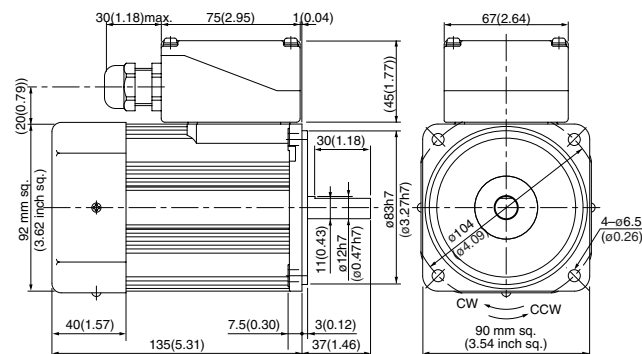
**90 mm sq. (3.54 inch sq.) 60 W** Mass 3.0 kg (6.61 lb)

M9RZ60SK4LS (with fan) M9RZ60SK4LG(A) (with fan)  
M9RZ60SK4YS (with fan) M9RZ60SK4DG(A) (with fan)  
M9RZ60SK4YG(A) (with fan)  
M9RZ60SK4GG(A) (with fan)



**90 mm sq. (3.54 inch sq.) 90 W** Mass 3.3 kg (7.28 lb)

M9RZ90SK4LS (with fan) M9RZ90SK4LG(A) (with fan)  
M9RZ90SK4YS (with fan) M9RZ90SK4DG(A) (with fan)  
M9RZ90SK4YG(A) (with fan)  
M9RZ90SK4GG(A) (with fan)



100 V/200 V round shaft motors with a sealed connector (with a terminal box) are covered by the Electrical Appliance and Material Safety Law. The indications on their nameplate are based on this law.

\*The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

\*The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.