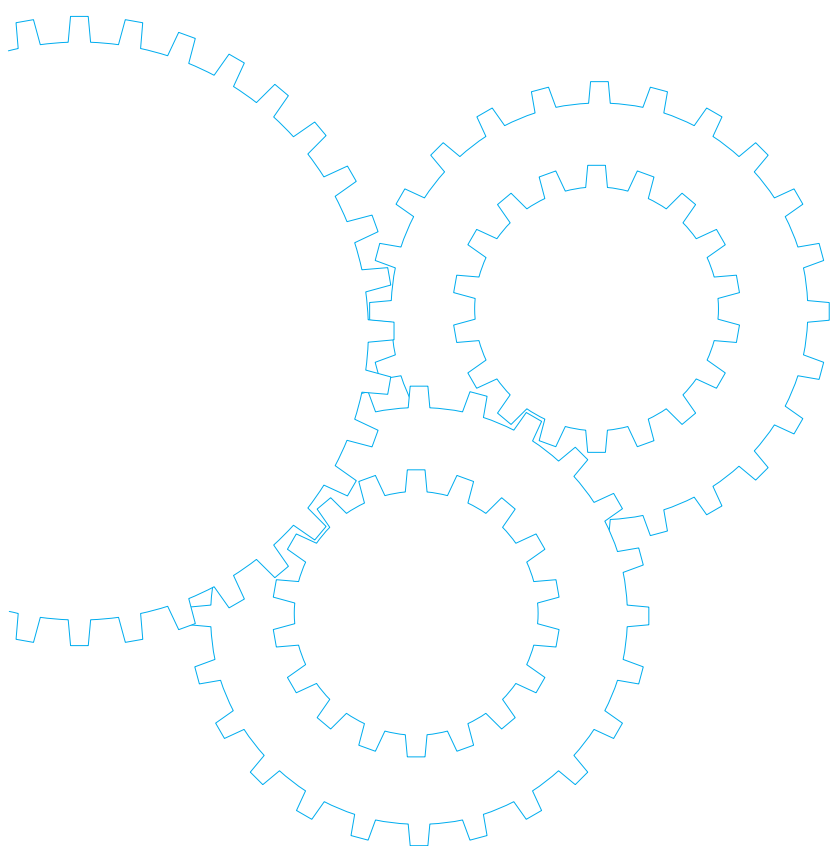


# Variable Speed Reversible Motor

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## Contents

- Motor Overview B-268
- Model list B-270
- Product information for each model B-274
- Gear head combination dimensions B-304
- Round shaft motor dimensions B-306

## Features

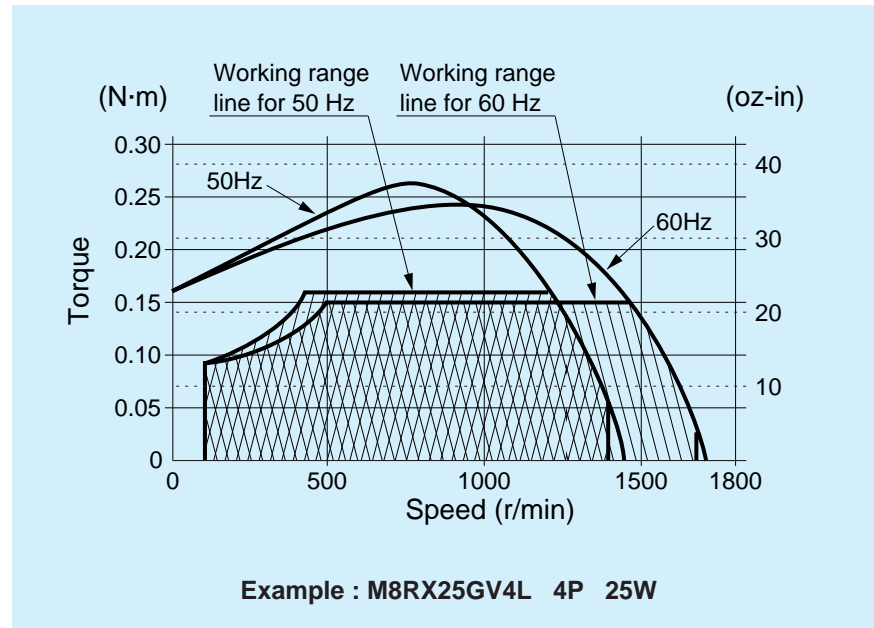
- It is a variable speed motor containing a simple brake mechanism.
- The built-in simple brake mechanism makes the overrun small as compared with the induction motor, enabling a quick-reversal run.
- The time rating is 30 minutes.
- By using it together with a speed controller, you can vary the speed over a wider range (90 to 1400 r/min for 50 Hz and 90 to 1700 r/min for 60 Hz).
- Various functions such as variable speed, braking, normal/reverse run and soft-start/soft-stop are available.
- Feedback control with the built-in tachogenerator gives a constant speed despite of frequency change.
- The motor output is 4 W to 90 W.

## Working range

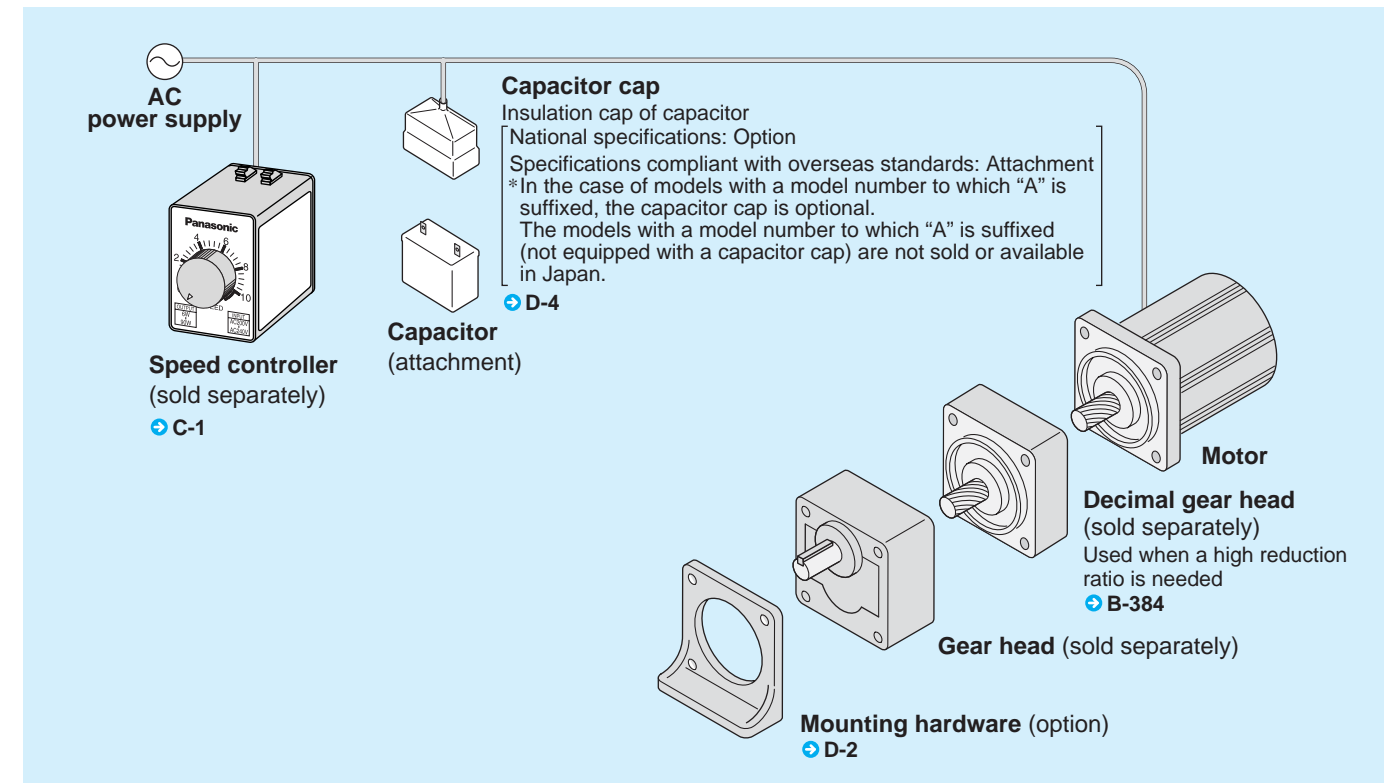
The working range line shows the working limit for the variable speed motor. (The time rating is 30 minutes.) The permissible torque should fall within the shaded portion.

If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

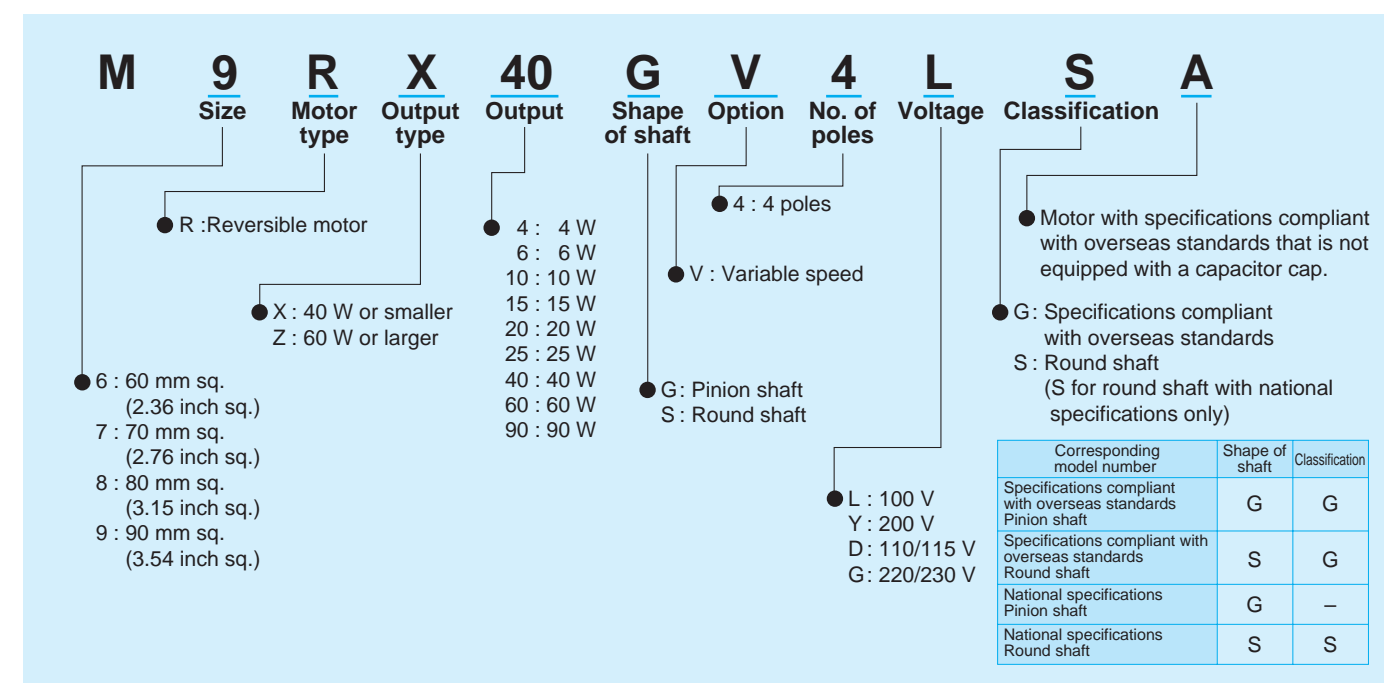
### Working range line



## 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.

# Model list of variable speed reversible motor

## Pinion shaft motor

## Applicable gear head

★ Motor compliant with overseas standards  

 Hinge attached

Size	Output (W)	Leadwire type		
		Model number	Specifications	Page
60 mm sq. (2.36 inch sq.)	4	M6RX4GV4L	100V	B-274
	6	M6RX6GV4L	100V	B-276
		M6RX6GV4Y	200V	B-276
		M6RX6GV4LG(A)	100V	★ B-278
		M6RX6GV4DG(A)	110/115V	★ B-278
		M6RX6GV4YG(A)	200V	★ B-278
		M6RX6GV4GG(A)	220/230V	★ B-278
70 mm sq. (2.76 inch sq.)	10	M7RX10GV4L	100V	B-280
	15	M7RX10GV4Y	200V	B-280
		M7RX15GV4L	100V	B-282
		M7RX15GV4Y	200V	B-282
		M7RX15GV4LG(A)	100V	★ B-284
		M7RX15GV4DG(A)	110/115V	★ B-284
		M7RX15GV4YG(A)	200V	★ B-284
M7RX15GV4GG(A)	220/230V	★ B-284		
80 mm sq. (3.15 inch sq.)	20	M8RX20GV4L	100V	B-286
	25	M8RX20GV4Y	200V	B-286
		M8RX25GV4L	100V	B-288
		M8RX25GV4Y	200V	B-288
		M8RX25GV4LG(A)	100V	★ B-290
		M8RX25GV4DG(A)	110/115V	★ B-290
		M8RX25GV4YG(A)	200V	★ B-290
M8RX25GV4GG(A)	220/230V	★ B-290		
90 mm sq. (3.54 inch sq.)	40	M9RX40GV4L	100V	B-292
		M9RX40GV4Y	200V	B-292
		M9RX40GV4LG(A)	100V	★ B-294
		M9RX40GV4DG(A)	110/115V	★ B-294
		M9RX40GV4YG(A)	200V	★ B-294
		M9RX40GV4GG(A)	220/230V	★ B-294
	60	M9RZ60GV4L	100V	B-296
		M9RZ60GV4Y	200V	B-296
		M9RZ60GV4LG(A)	100V	★ B-298
		M9RZ60GV4DG(A)	110/115V	★ B-298
		M9RZ60GV4YG(A)	200V	★ B-298
		M9RZ60GV4GG(A)	220/230V	★ B-298
		90	M9RZ90GV4L	100V
M9RZ90GV4Y	200V		B-300	
M9RZ90GV4LG(A)	100V		★ B-302	
M9RZ90GV4DG(A)	110/115V		★ B-302	
M9RZ90GV4YG(A)	200V		★ B-302	
M9RZ90GV4GG(A)	220/230V		★ B-302	

Standard gear head		High torque gear head	Right-angle gear head	Gear head -Inch (U.S.A.)	Decimal gear head
Ball bearing	metal bearing				
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	MZ9G□R	MZ9G□BU	MZ9G10XB
MY9G□B	—	MP9G□B			

\* 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.

## Round shaft motor

## Possible combination of speed controller and motor

★ Motor compliant with overseas standards   

Size	Output (W)	Leadwire type	
		Model number	Specifications
60 mm sq. (2.36 inch sq.)	4	M6RX4SV4LS	100V
		M6RX4SV4YS	200V
	6	M6RX6SV4LS	100V
		M6RX6SV4YS	200V
		M6RX6SV4LG(A)	100V ★
		M6RX6SV4DG(A)	110/115V ★
		M6RX6SV4YG(A)	200V ★
M6RX6SV4GG(A)	220/230V ★		
70 mm sq. (2.76 inch sq.)	10	M7RX10SV4LS	100V
		M7RX10SV4YS	200V
	15	M7RX15SV4LS	100V
		M7RX15SV4YS	200V
		M7RX15SV4LG(A)	100V ★
		M7RX15SV4DG(A)	110/115V ★
		M7RX15SV4YG(A)	200V ★
M7RX15SV4GG(A)	220/230V ★		
80 mm sq. (3.15 inch sq.)	20	M8RX20SV4LS	100V
		M8RX20SV4YS	200V
	25	M8RX25SV4LS	100V
		M8RX25SV4YS	200V
		M8RX25SV4LG(A)	100V ★
		M8RX25SV4DG(A)	110/115V ★
		M8RX25SV4YG(A)	200V ★
M8RX25SV4GG(A)	220/230V ★		
90 mm sq. (3.54 inch sq.)	40	M9RX40SV4LS	100V
		M9RX40SV4YS	200V
		M9RX40SV4LG(A)	100V ★
		M9RX40SV4DG(A)	110/115V ★
		M9RX40SV4YG(A)	200V ★
		M9RX40SV4GG(A)	220/230V ★
	60	M9RZ60SV4LS	100V
		M9RZ60SV4YS	200V
		M9RZ60SV4LG(A)	100V ★
		M9RZ60SV4DG(A)	110/115V ★
		M9RZ60SV4YG(A)	200V ★
		M9RZ60SV4GG(A)	220/230V ★
	90	M9RZ90SV4LS	100V
		M9RZ90SV4YS	200V
M9RZ90SV4LG(A)		100V ★	
M9RZ90SV4DG(A)		110/115V ★	
M9RZ90SV4YG(A)		200V ★	
M9RZ90SV4GG(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-306.



\* 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.

Size	Output (W)	Motor			Speed controller			
		Certified	Part No.	Voltage (V)	MGSD type	EX type	SD48 type	EX48 type
60 mm sq. (2.36 inch sq.)	3	----	M6RX4GV4L	100	MGSDA1 ★	DV1131	DVSD48AL	DVEX48AL
		6	----	M6RX6GV4L	100	MGSDA1 ★	DV1131	DVSD48AL
	6	----	M6RX6GV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
		★	M6RX6GV4LG(A)	100	MGSDA1 ★	----	----	----
		★	M6RX6GV4DG(A)	110/115	MGSDA1 ★	----	----	----
		★	M6RX6GV4YG(A)	200	MGSDB2 ★	----	----	----
		★	M6RX6GV4GG(A)	220/230	MGSDB2 ★	----	----	----
70 mm sq. (2.76 inch sq.)	10	----	M7RX10GV4L	100	MGSDA1 ★	DV1131	DVSD48AL	DVEX48AL
		----	M7RX10GV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
	15	----	M7RX15GV4L	100	MGSDA1 ★	DV1132	DVSD48AL	DVEX48AL
		----	M7RX15GV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
		★	M7RX15GV4LG(A)	100	MGSDA1 ★	----	----	----
		★	M7RX15GV4DG(A)	110/115	MGSDA1 ★	----	----	----
		★	M7RX15GV4YG(A)	200	MGSDB2 ★	----	----	----
★	M7RX15GV4GG(A)	220/230	MGSDB2 ★	----	----	----		
80 mm sq. (3.15 inch sq.)	15	----	M8RX20GV4L	100	MGSDA1 ★	DV1132	DVSD48AL	DVEX48AL
		----	M8RX20GV4Y	200	MGSDB2 ★	DV1231	DVSD48AY	DVEX48AY
	25	----	M8RX25GV4L	100	MGSDA1 ★	DV1132	DVSD48BL	DVEX48BL
		----	M8RX25GV4Y	200	MGSDB2 ★	DV1234	DVSD48BY	DVEX48BY
		★	M8RX25GV4LG(A)	100	MGSDA1 ★	----	----	----
		★	M8RX25GV4DG(A)	110/115	MGSDA1 ★	----	----	----
		★	M8RX25GV4YG(A)	200	MGSDB2 ★	----	----	----
★	M8RX25GV4GG(A)	220/230	MGSDB2 ★	----	----	----		
90 mm sq. (3.54 inch sq.)	40	----	M9RX40GV4L	100	MGSDA1 ★	DV1132	DVSD48BL	DVEX48BL
		----	M9RX40GV4Y	200	MGSDB2 ★	DV1234	DVSD48BY	DVEX48BY
		★	M9RX40GV4LG(A)	100	MGSDA1 ★	----	----	----
		★	M9RX40GV4DG(A)	110/115	MGSDA1 ★	----	----	----
		★	M9RX40GV4YG(A)	200	MGSDB2 ★	----	----	----
		★	M9RX40GV4GG(A)	220/230	MGSDB2 ★	----	----	----
	60	----	M9RZ60GV4L	100	MGSDB1 ★	DV1134	DVSD48CL	DVEX48CL
		----	M9RZ60GV4Y	200	MGSDB2 ★	DV1234	DVSD48CY	DVEX48CY
		★	M9RZ60GV4LG(A)	100	MGSDB1 ★	----	----	----
		★	M9RZ60GV4DG(A)	110/115	MGSDB1 ★	----	----	----
		★	M9RZ60GV4YG(A)	200	MGSDB2 ★	----	----	----
		★	M9RZ60GV4GG(A)	220/230	MGSDB2 ★	----	----	----
	90	----	M9RZ90GV4L	100	MGSDB1 ★	DV1134	DVSD48CL	DVEX48CL
		----	M9RZ90GV4Y	200	MGSDB2 ★	DV1234	DVSD48CY	DVEX48CY
★		M9RZ90GV4LG(A)	100	MGSDB1 ★	----	----	----	
★		M9RZ90GV4DG(A)	110/115	MGSDB1 ★	----	----	----	
★		M9RZ90GV4YG(A)	200	MGSDB2 ★	----	----	----	
★		M9RZ90GV4GG(A)	220/230	MGSDB2 ★	----	----	----	

\* When using a speed controller operative under a wide range of supply voltage (MGSD, SD48, EX48), the mating motor should be selected according to the voltage of the power supply to be used.

★ Conforming to international standards :   

★ MGSD speed controllers are compliant with  and .

\* 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)	Variable speed range		Permissible Torque N·m (oz·in)		Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Speed (r/min)	at 1200 r/min	at 90 r/min	at 1200 r/min			
60 mm sq.	<b>M6RX4GV4L</b>	4	4	100	50	30	90 to 1400	0.019 (2.69)	0.019 (2.69)	0.22	0.028 (3.97)	2.5 (200V)	
					60		90 to 1700	0.019 (2.69)	0.019 (2.69)	0.23	0.028 (3.97)		

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-306.

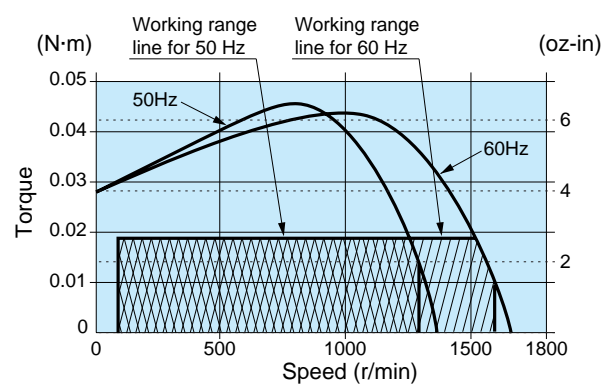
## Permissible torque at output shaft of gear head

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

Applicable gear head Bearing	Speed	Reduction ratio	Permissible Torque											
			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25
MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing)	1200r/min	50Hz	0.046 (0.41)	0.055 (0.49)	0.077 (0.68)	0.092 (0.81)	0.11 (0.97)	0.13 (1.15)	0.15 (1.33)	0.19 (1.68)	0.23 (2.04)	0.27 (2.39)	0.30 (2.66)	0.38 (3.36)
		60Hz	0.046 (0.41)	0.055 (0.49)	0.077 (0.68)	0.092 (0.81)	0.11 (0.97)	0.13 (1.15)	0.15 (1.33)	0.19 (1.68)	0.23 (2.04)	0.27 (2.39)	0.30 (2.66)	0.38 (3.36)
	90r/min	0.046 (0.41)	0.055 (0.49)	0.077 (0.68)	0.092 (0.81)	0.11 (0.97)	0.13 (1.15)	0.15 (1.33)	0.19 (1.68)	0.23 (2.04)	0.27 (2.39)	0.30 (2.66)	0.38 (3.36)	
Rotational direction		Same as motor rotational direction												

Applicable gear head Bearing	Speed	Reduction ratio	Permissible Torque											Applicable decimal gear head
			30	36	50	60	75	90	100	120	150	180		
MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing)	1200r/min	50Hz	0.41 (3.63)	0.49 (4.34)	0.69 (6.11)	0.82 (7.26)	1.03 (9.12)	1.24 (11.0)	1.38 (12.2)	1.65 (14.6)	2.07 (18.3)	2.45 (21.7)	MX6G10XB	
		60Hz	0.41 (3.63)	0.49 (4.34)	0.69 (6.11)	0.82 (7.26)	1.03 (9.12)	1.24 (11.0)	1.38 (12.2)	1.65 (14.6)	2.07 (18.3)	2.45 (21.7)		
	90r/min	0.41 (3.63)	0.49 (4.34)	0.69 (6.11)	0.82 (7.26)	1.03 (9.12)	1.24 (11.0)	1.38 (12.2)	1.65 (14.6)	2.07 (18.3)	2.45 (21.7)			
Rotational direction		Reverse to motor rotational direction												

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

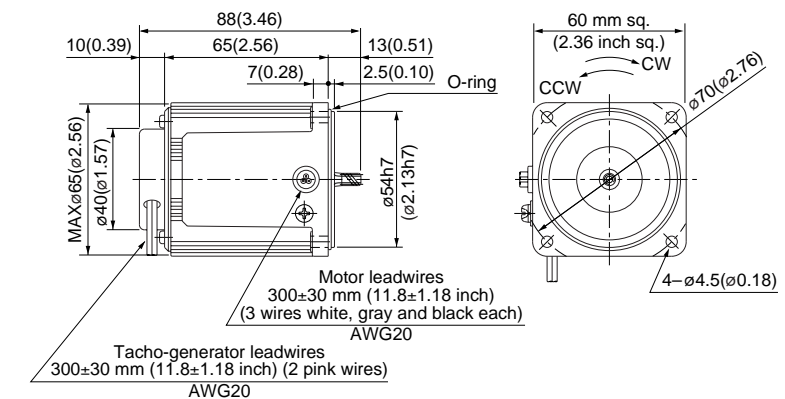
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

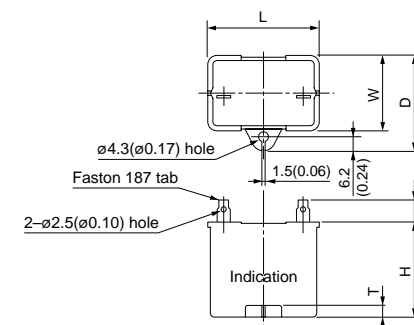
**M6RX4GV4L** 4P 4 W 100 V

Mass	Helical gear	Module	Number of teeth
0.60 kg 1.32 lb		0.5	6



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

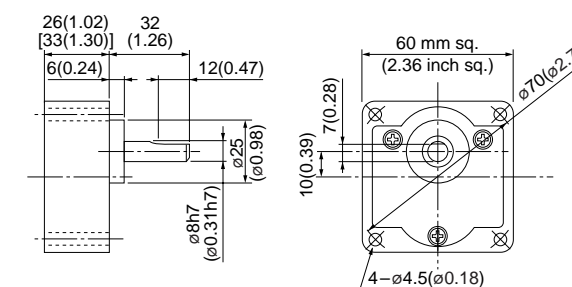
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M6RX4GV4L	M0PC2.5M20	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.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Variable speed range		Permissible Torque N·m (oz·in)		Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Speed (r/min)	at 1200 r/min	at 90 r/min	at 1200 r/min			
60 mm sq.	M6RX6GV4L	4	6	100	50	30	90 to 1400	0.030 (4.25)	0.030 (4.25)	0.31	0.038 (5.38)	3 (200V)	
					60		90 to 1700	0.030 (4.25)	0.030 (4.25)	0.31	0.038 (5.38)		
	M6RX6GV4Y	4	6	200	50	30	90 to 1400	0.030 (4.25)	0.030 (4.25)	0.16	0.038 (5.38)	0.8 (400V)	
					60		90 to 1700	0.030 (4.25)	0.030 (4.25)	0.16	0.038 (5.38)		

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-306.

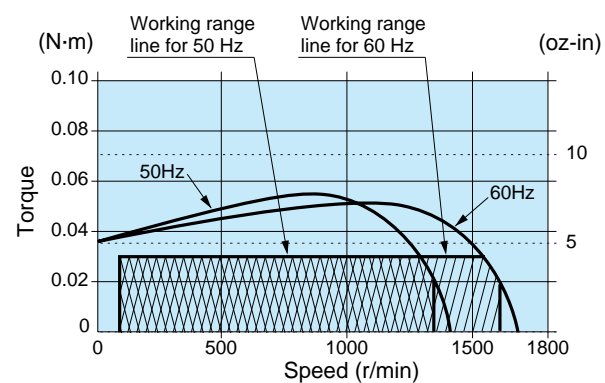
## Permissible torque at output shaft of gear head

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

Applicable gear head Bearing	Speed	Reduction ratio	Reduction ratio											
			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25
MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing)	1200r/min	50Hz	0.072 (0.64)	0.087 (0.77)	0.12 (1.06)	0.14 (1.24)	0.18 (1.59)	0.21 (1.86)	0.24 (2.12)	0.29 (2.57)	0.36 (3.19)	0.43 (3.81)	0.48 (4.25)	0.60 (5.31)
		60Hz	0.072 (0.64)	0.087 (0.77)	0.12 (1.06)	0.14 (1.24)	0.18 (1.59)	0.21 (1.86)	0.24 (2.12)	0.29 (2.57)	0.36 (3.19)	0.43 (3.81)	0.48 (4.25)	0.60 (5.31)
	90r/min	0.072 (0.64)	0.087 (0.77)	0.12 (1.06)	0.14 (1.24)	0.18 (1.59)	0.21 (1.86)	0.24 (2.12)	0.29 (2.57)	0.36 (3.19)	0.43 (3.81)	0.48 (4.25)	0.60 (5.31)	
	Rotational direction		Same as motor rotational direction											

Applicable gear head Bearing	Speed	Reduction ratio	Reduction ratio										Applicable decimal gear head
			30	36	50	60	75	90	100	120	150	180	
MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing)	1200r/min	50Hz	0.65 (5.75)	0.78 (6.90)	1.09 (9.65)	1.30 (11.5)	1.63 (14.4)	1.98 (17.5)	2.18 (19.3)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	MX6G10XB
		60Hz	0.65 (5.75)	0.78 (6.90)	1.09 (9.65)	1.30 (11.5)	1.63 (14.4)	1.98 (17.5)	2.18 (19.3)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	
	90r/min	0.65 (5.75)	0.78 (6.90)	1.09 (9.65)	1.30 (11.5)	1.63 (14.4)	1.98 (17.5)	2.18 (19.3)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)		
	Rotational direction		Reverse to motor rotational direction										

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

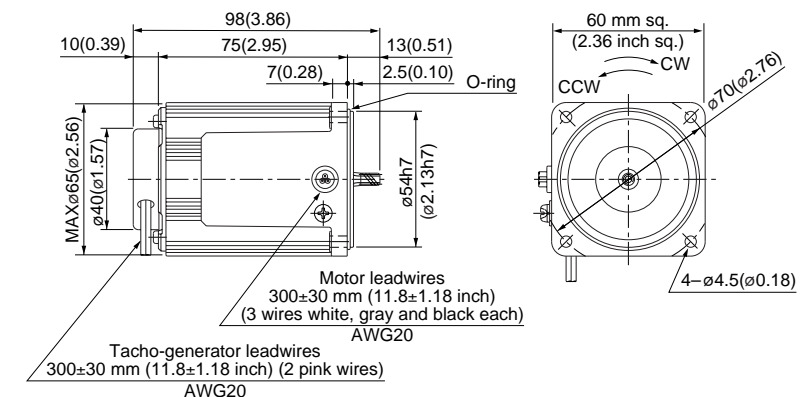
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

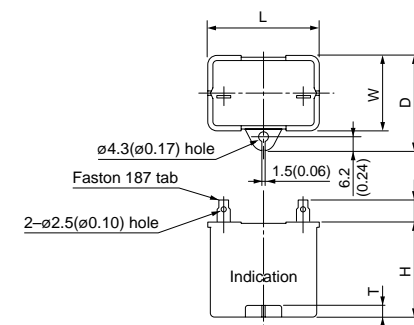
M6RX6GV4L	4P 6 W 100 V
M6RX6GV4Y	4P 6 W 200 V

Mass	Helical gear	Module	Number of teeth
0.71 kg 1.57 lb		0.5	6



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



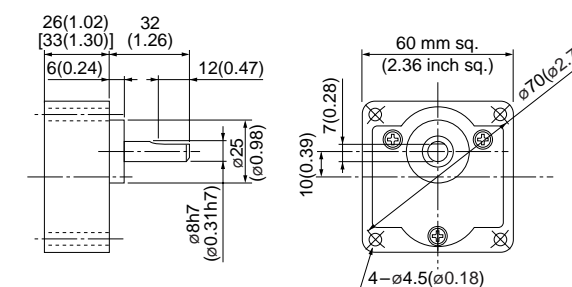
## Capacitor dimension list Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M6RX6GV4L	M0PC3M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917
M6RX6GV4Y	M0PC0.8M40	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.

# Variable speed reversible motor (leadwire)

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

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Variable speed range		Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)	
							Speed (r/min)	Permissible Torque N-m (oz-in) at				
60 mm sq.	M6RX6GV4LG M6RX6GV4LGA	4	6	100	50	30	90 to 1400	0.044 (6.23)	0.044 (6.23)	0.33	0.057 (8.07)	4 (250V)
					60		90 to 1700	0.034 (4.81)	0.034 (4.81)	0.35	0.057 (8.07)	
	M6RX6GV4DG M6RX6GV4DGA	4	6	110	30	90 to 1700	0.034 (4.81)	0.034 (4.81)	0.34	0.051 (7.22)	3 (250V)	
				115		90 to 1700	0.034 (4.81)	0.034 (4.81)	0.35	0.057 (8.07)		
	M6RX6GV4YG M6RX6GV4YGA	4	6	200	50	30	90 to 1400	0.044 (6.23)	0.044 (6.23)	0.15	0.057 (8.07)	1 (450V)
					60		90 to 1700	0.034 (4.81)	0.034 (4.81)	0.16	0.057 (8.07)	
	M6RX6GV4GG M6RX6GV4GGA	4	6	220	30	90 to 1400	0.044 (6.23)	0.044 (6.23)	0.15	0.056 (7.93)	0.8 (450V)	
				60		90 to 1700	0.034 (4.81)	0.034 (4.81)	0.15	0.056 (7.93)		
					230	30	90 to 1400	0.044 (6.23)	0.044 (6.23)	0.15	0.057 (8.07)	
					60		90 to 1700	0.034 (4.81)	0.034 (4.81)	0.16	0.057 (8.07)	

• 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-306.  
 • 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.

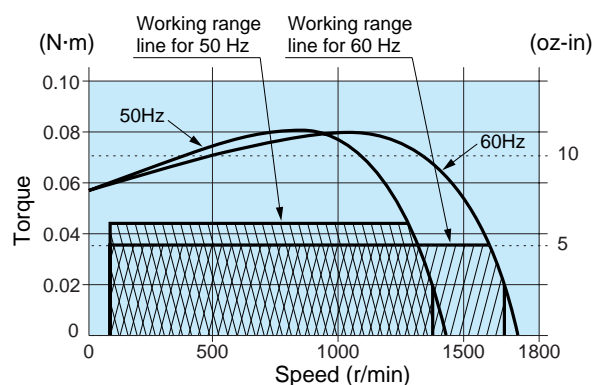
## Permissible torque at output shaft of gear head

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

Applicable gear head Bearing	Speed	Reduction ratio	Permissible Torque											
			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25
MX6G□BA (ball bearing) MX6G□B (bearing)	1200r/min	50Hz	0.11 (0.97)	0.13 (1.15)	0.18 (1.59)	0.21 (1.86)	0.27 (2.39)	0.32 (2.83)	0.36 (3.19)	0.45 (3.98)	0.53 (4.69)	0.64 (5.66)	0.71 (6.28)	0.89 (7.88)
		60Hz	0.083 (0.73)	0.10 (0.89)	0.14 (1.24)	0.17 (1.5)	0.21 (1.86)	0.25 (2.21)	0.28 (2.48)	0.34 (3.01)	0.41 (3.63)	0.50 (4.43)	0.55 (4.87)	0.69 (6.10)
	90r/min	50Hz	0.08 (0.71)	0.10 (0.89)	0.14 (1.24)	0.17 (1.5)	0.21 (1.86)	0.25 (2.21)	0.28 (2.48)	0.34 (3.01)	0.41 (3.63)	0.50 (4.43)	0.55 (4.87)	0.69 (6.10)
		60Hz	0.083 (0.73)	0.10 (0.89)	0.14 (1.24)	0.17 (1.5)	0.21 (1.86)	0.25 (2.21)	0.28 (2.48)	0.34 (3.01)	0.41 (3.63)	0.50 (4.43)	0.55 (4.87)	0.69 (6.10)
Rotational direction			Same as motor rotational direction											

Applicable gear head Bearing	Speed	Reduction ratio	Permissible Torque										Applicable decimal gear head		
			30	36	50	60	75	90	100	120	150	180			
MX6G□BA (ball bearing) MX6G□B (bearing)	1200r/min	50Hz	0.96 (8.50)	1.15 (10.2)	1.60 (14.2)	1.92 (17.0)	2.41 (21.3)	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)	MX6G10XB
		60Hz	0.74 (6.55)	0.89 (7.88)	1.24 (11.0)	1.49 (13.2)	1.86 (16.5)	2.23 (19.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	
	90r/min	50Hz	0.74 (6.55)	0.89 (7.88)	1.24 (11.0)	1.49 (13.2)	1.86 (16.5)	2.23 (19.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	
		60Hz	0.74 (6.55)	0.89 (7.88)	1.24 (11.0)	1.49 (13.2)	1.86 (16.5)	2.23 (19.7)	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			Reverse to motor rotational direction												

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

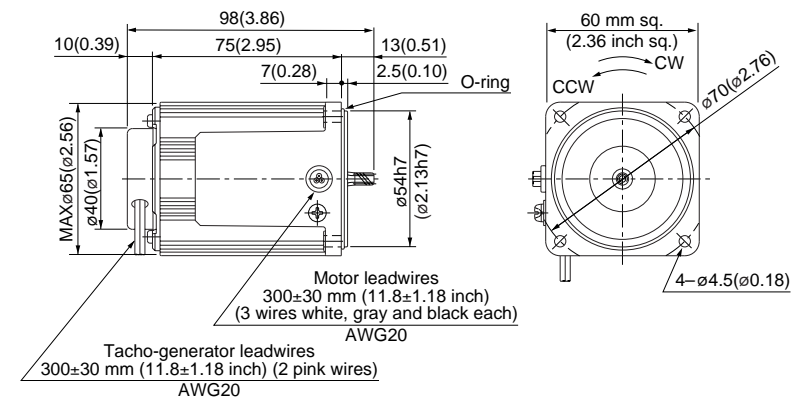
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

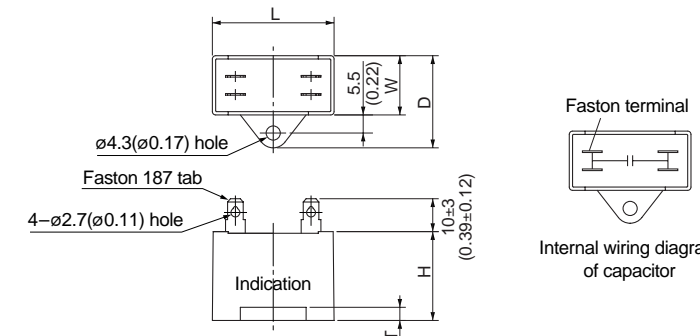
M6RX6GV4LG(A)	4P 6 W 100 V
M6RX6GV4DG(A)	4P 6 W 110 V / 115 V
M6RX6GV4YG(A)	4P 6 W 200 V
M6RX6GV4GG(A)	4P 6 W 220 V / 230 V

Mass	Helical gear	Module	Number of teeth
0.71 kg 1.57 lb		0.5	6



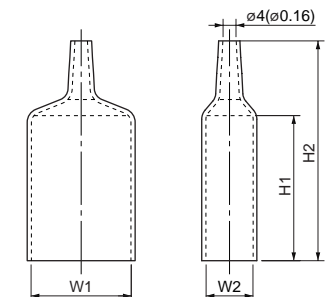
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions)

Unit: mm (inch)



## Capacitor dimension list

Unit: upper (mm) / lower (inch)

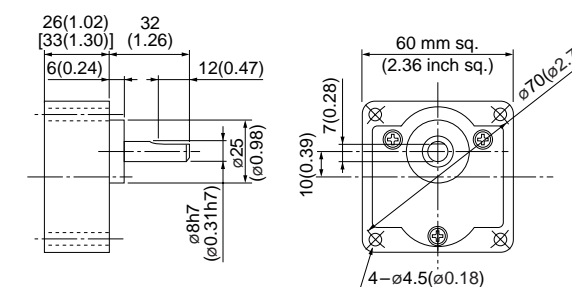
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M6RX6GV4LG(A)	M0PC4M25G	37 (1.46)	18 (0.71)	28 (1.10)	27 (1.06)	4 (0.16)	M0PC3718G	37 (1.46)	18 (0.71)	50 (1.97)	73 (2.87)
M6RX6GV4DG(A)	M0PC3M25G	31 (1.22)	17 (0.67)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3117G	31 (1.22)	17 (0.67)	50 (1.97)	73 (2.87)
M6RX6GV4YG(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)
M6RX6GV4GG(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.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Variable speed range		Permissible Torque N·m (oz·in)		Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Speed (r/min)	at 1200 r/min	at 90 r/min	at 1200 r/min			
70 mm sq.	M7RX10GV4L	4	10	100	50	30	90 to 1400	0.059 (8.36)	0.034 (4.81)	0.41	0.049 (6.94)	4.5 (200V)	
					60		90 to 1700	0.059 (8.36)	0.034 (4.81)	0.40	0.049 (6.94)		
	M7RX10GV4Y	4	10	200	50	30	90 to 1400	0.059 (8.36)	0.034 (4.81)	0.20	0.049 (6.94)	1.2 (400V)	
					60		90 to 1700	0.059 (8.36)	0.034 (4.81)	0.21	0.049 (6.94)		

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-306.

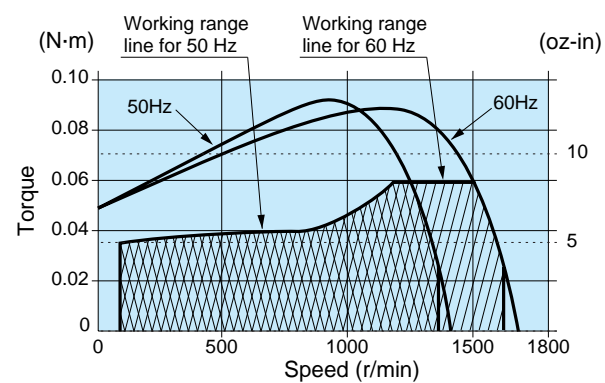
## Permissible torque at output shaft of gear head

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

Applicable gear head Bearing	Speed	Reduction ratio	Permissible Torque											
			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25
MX7G□BA (ball bearing) MX7G□B (bearing) MX7G□MA (metal bearing) MX7G□M (bearing)	1200r/min	50Hz	0.14 (1.24)	0.17 (1.50)	0.23 (2.04)	0.28 (2.48)	0.35 (3.10)	0.43 (3.81)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.86 (7.61)	0.95 (8.41)	1.19 (10.5)
		60Hz	0.14 (1.24)	0.17 (1.50)	0.23 (2.04)	0.28 (2.48)	0.35 (3.10)	0.43 (3.81)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.86 (7.61)	0.95 (8.41)	1.19 (10.5)
	90r/min		0.082 (0.73)	0.099 (0.88)	0.13 (1.15)	0.16 (1.42)	0.20 (1.77)	0.24 (2.12)	0.27 (2.39)	0.34 (3.01)	0.41 (3.63)	0.49 (4.34)	0.55 (4.87)	0.68 (6.02)
	Rotational direction		Same as motor rotational direction											

Applicable gear head Bearing	Speed	Reduction ratio	Permissible Torque											Applicable decimal gear head
			30	36	50	60	75	90	100	120	150	180		
MX7G□BA (ball bearing) MX7G□B (bearing) MX7G□MA (metal bearing) MX7G□M (bearing)	1200r/min	50Hz	1.29 (11.4)	1.54 (13.6)	2.15 (19.0)	2.58 (22.8)	3.22 (28.5)	3.87 (34.2)	4.30 (38.1)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	MX7G10XB
		60Hz	1.29 (11.4)	1.54 (13.6)	2.15 (19.0)	2.58 (22.8)	3.22 (28.5)	3.87 (34.2)	4.30 (38.1)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	
	90r/min		0.74 (6.55)	0.98 (8.67)	1.23 (10.9)	1.48 (13.1)	1.85 (16.4)	2.22 (19.6)	2.47 (21.9)	2.96 (26.2)	3.70 (32.7)	4.44 (39.3)		
	Rotational direction		Reverse to motor rotational direction											

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

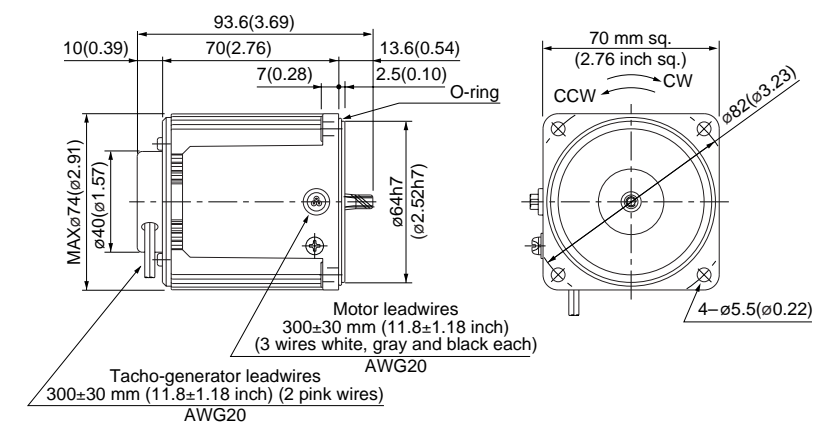
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

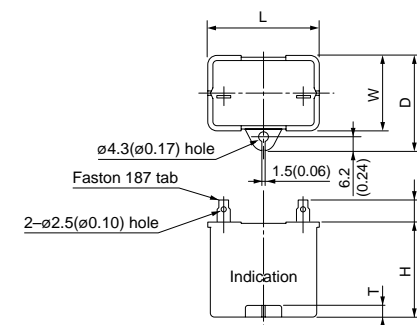
M7RX10GV4L	4P 10 W 100 V
M7RX10GV4Y	4P 10 W 200 V

Mass	Helical gear	Module	Number of teeth
0.88 kg 1.94 lb		0.5	7



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



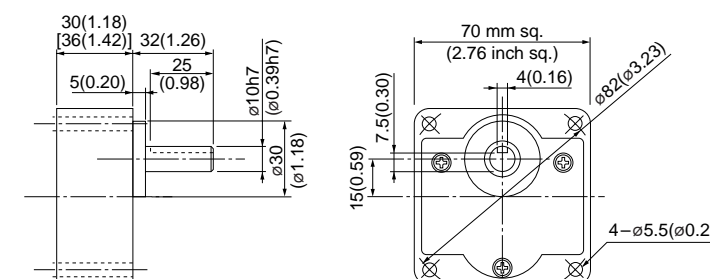
## Capacitor dimension list Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M7RX10GV4L	M0PC4.5M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917
M7RX10GV4Y	M0PC1.2M40	39.5 (1.56)	18.3 (0.72)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC3922

## Gear head (dimensions)

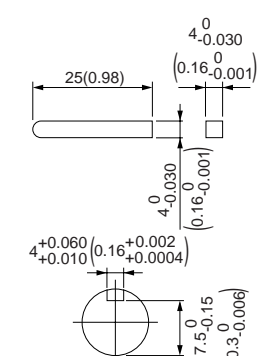
Scale: 1/3, Unit: mm (inch)

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)	MX7G□MA(M)
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\* 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)	Variable speed range		Permissible Torque N·m (oz·in)		Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Speed (r/min)	at 1200 r/min	at 90 r/min	at 1200 r/min			
70 mm sq.	M7RX15GV4L	4	15	100	50	30	90 to 1400	0.098 (13.9)	0.046 (6.51)	0.59	0.080 (11.3)	6 (200V)	
					60		90 to 1700	0.098 (13.9)	0.046 (6.51)	0.57	0.080 (11.3)		
	M7RX15GV4Y	4	15	200	50	30	90 to 1400	0.098 (13.9)	0.046 (6.51)	0.30	0.080 (11.3)	1.5 (400V)	
					60		90 to 1700	0.098 (13.9)	0.046 (6.51)	0.30	0.080 (11.3)		

\* 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-306.

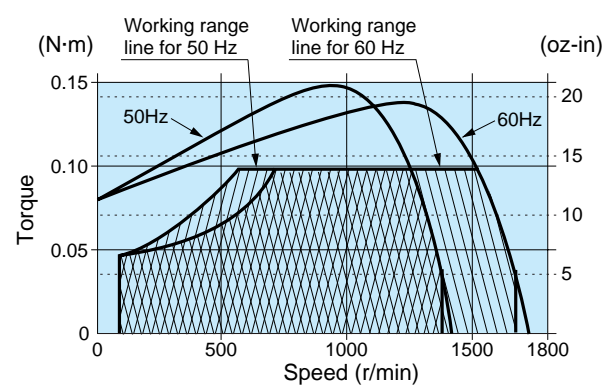
## Permissible torque at output shaft of gear head

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

Applicable gear head Bearing	Speed	Reduction ratio	Reduction ratio											
			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25
MX7G□BA (ball bearing) MX7G□B (bearing) MX7G□MA (metal bearing) MX7G□M (bearing)	1200r/min	50Hz	0.23 (2.04)	0.28 (2.48)	0.39 (3.45)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.79 (6.99)	0.99 (8.76)	1.19 (10.5)	1.42 (12.6)	1.58 (14.0)	1.98 (17.5)
		60Hz	0.23 (2.04)	0.28 (2.48)	0.39 (3.45)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.79 (6.99)	0.99 (8.76)	1.19 (10.5)	1.42 (12.6)	1.58 (14.0)	1.98 (17.5)
	90r/min	0.11 (0.97)	0.13 (1.15)	0.18 (1.59)	0.22 (1.95)	0.27 (2.39)	0.33 (2.92)	0.37 (3.27)	0.46 (4.07)	0.55 (4.87)	0.66 (5.84)	0.74 (6.55)	0.93 (8.23)	
	Rotational direction	Same as motor rotational direction												

Applicable gear head Bearing	Speed	Reduction ratio	Reduction ratio											Applicable decimal gear head
			30	36	50	60	75	90	100	120	150	180		
MX7G□BA (ball bearing) MX7G□B (bearing) MX7G□MA (metal bearing) MX7G□M (bearing)	1200r/min	50Hz	2.13 (18.9)	2.56 (22.7)	3.56 (31.5)	4.27 (37.8)	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)	MX7G10XB
		60Hz	2.13 (18.9)	2.56 (22.7)	3.56 (31.5)	4.27 (37.8)	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)	
	90r/min	1.00 (8.85)	1.20 (10.6)	1.67 (14.8)	2.00 (17.7)	2.50 (22.1)	3.00 (26.6)	3.34 (29.6)	4.00 (35.4)	4.90 (43.4)	4.90 (43.4)			
	Rotational direction	Reverse to motor rotational direction												

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

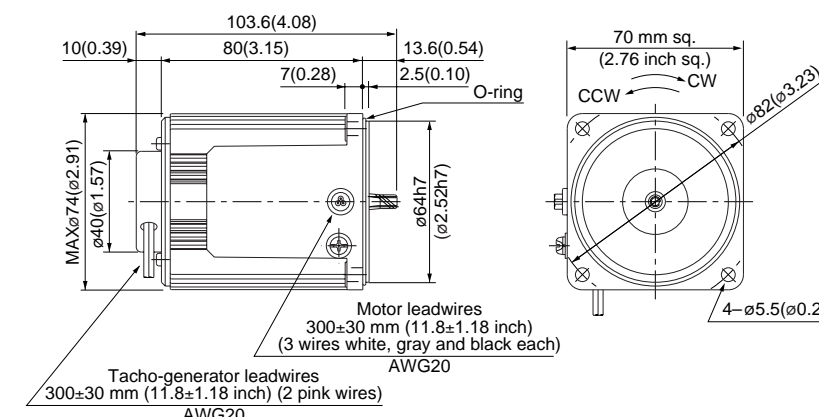
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

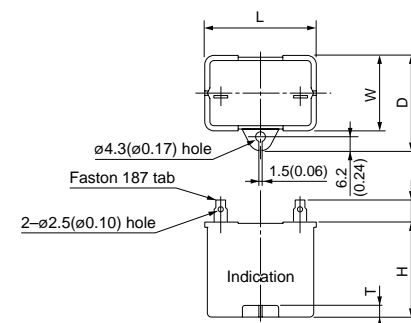
M7RX15GV4L	4P 15 W 100 V
M7RX15GV4Y	4P 15 W 200 V

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



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



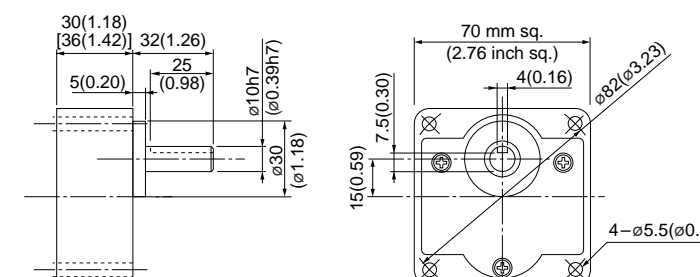
## Capacitor dimension list Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M7RX15GV4L	M0PC6M20	39.5 (1.56)	17.5 (0.69)	28 (1.10)	30.5 (1.20)	4 (0.16)	M0PC3917
M7RX15GV4Y	M0PC1.5M40	39.5 (1.56)	22 (0.87)	32.5 (1.28)	32.5 (1.28)	4 (0.16)	M0PC3922

## Gear head (dimensions)

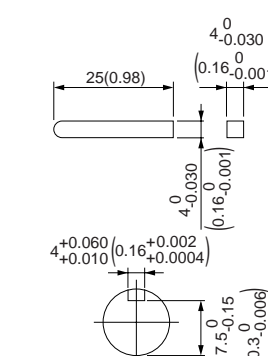
Scale: 1/3, Unit: mm (inch)

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)	MX7G□MA(M)
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\* 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.

# Variable speed 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)	Variable speed range		Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)	
							Speed (r/min)	Permissible Torque N-m (oz-in) at				
70 mm sq.	M7RX15GV4LG M7RX15GV4LGA	4	15	100	50	30	90 to 1400	0.11 (15.6)	0.069 (9.77)	0.58	0.088 (12.5)	6.5 (250V)
					60		90 to 1700	0.088 (12.5)	0.069 (9.77)	0.58	0.088 (12.5)	
	M7RX15GV4DG M7RX15GV4DGA	4	15	110	60	30	90 to 1700	0.088 (12.5)	0.069 (9.77)	0.60	0.088 (12.5)	5.5 (250V)
					60		90 to 1700	0.088 (12.5)	0.069 (9.77)	0.63	0.10 (14.2)	
	M7RX15GV4YG M7RX15GV4YGA	4	15	200	50	30	90 to 1400	0.11 (15.6)	0.069 (9.77)	0.27	0.088 (12.5)	1.7 (450V)
					60		90 to 1700	0.088 (12.5)	0.069 (9.77)	0.28	0.088 (12.5)	
	M7RX15GV4GG M7RX15GV4GGA	4	15	220	50	30	90 to 1400	0.11 (15.6)	0.069 (9.77)	0.27	0.082 (11.6)	1.3 (450V)
					60		90 to 1700	0.088 (12.5)	0.069 (9.77)	0.26	0.082 (11.6)	
				230	50	30	90 to 1400	0.11 (15.6)	0.069 (9.77)	0.28	0.10 (14.2)	
					60		90 to 1700	0.088 (12.5)	0.069 (9.77)	0.28	0.10 (14.2)	

- 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-306.
- 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

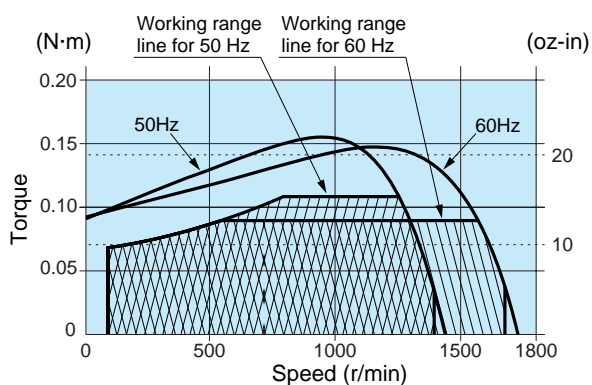
Unit of permissible torque: upper (N·m) / lower (lb·in)

Applicable gear head Bearing	Speed	Reduction ratio	Permissible torque											
			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25
MX7G□BA (ball bearing) MX7G□B (bearing)	1200r/min	50Hz	0.27 (2.39)	0.32 (2.83)	0.45 (3.98)	0.53 (4.69)	0.67 (5.93)	0.80 (7.08)	0.89 (7.88)	1.11 (9.82)	1.34 (11.9)	1.60 (14.2)	1.78 (15.8)	2.23 (19.7)
		60Hz	0.21 (1.86)	0.26 (2.30)	0.36 (3.19)	0.43 (3.81)	0.53 (4.69)	0.64 (5.66)	0.71 (6.28)	0.89 (7.88)	1.07 (9.47)	1.28 (11.3)	1.43 (12.7)	1.78 (15.8)
MX7G□MA (metal bearing) MX7G□M (bearing)	90r/min		0.17 (1.50)	0.20 (1.77)	0.28 (2.48)	0.34 (3.01)	0.42 (3.72)	0.50 (4.43)	0.56 (4.96)	0.70 (6.20)	0.84 (7.43)	1.01 (8.94)	1.12 (9.91)	1.40 (12.4)
		Rotational direction: Same as motor rotational direction												

Applicable gear head Bearing	Speed	Reduction ratio	Permissible torque										Applicable decimal gear head	
			30	36	50	60	75	90	100	120	150	180		
MX7G□BA (ball bearing) MX7G□B (bearing)	1200r/min	50Hz	2.41 (21.3)	2.89 (25.6)	4.01 (35.5)	4.81 (42.6)	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)	MX7G10XB
		60Hz	1.92 (17.0)	2.31 (20.4)	3.21 (28.4)	3.85 (34.1)	4.81 (42.6)	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) MX7G□M (bearing)	90r/min		1.51 (13.4)	1.81 (16.0)	2.52 (22.3)	3.02 (26.7)	3.77 (33.4)	4.53 (40.1)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)		
		Rotational direction: Reverse to motor rotational direction												

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

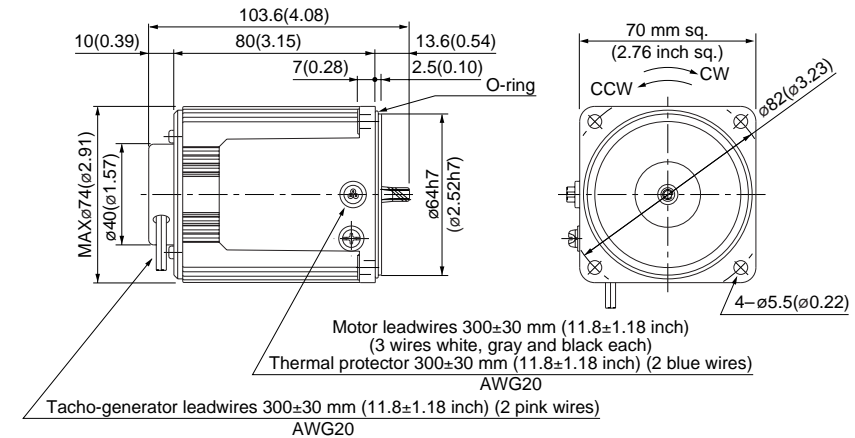
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

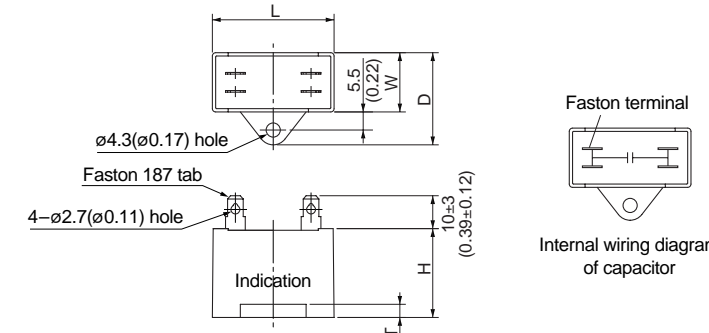
M7RX15GV4LG(A)	4P 15 W 100 V
M7RX15GV4DG(A)	4P 15 W 110 V / 115 V
M7RX15GV4YG(A)	4P 15 W 200 V
M7RX15GV4GG(A)	4P 15 W 220 V / 230 V

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



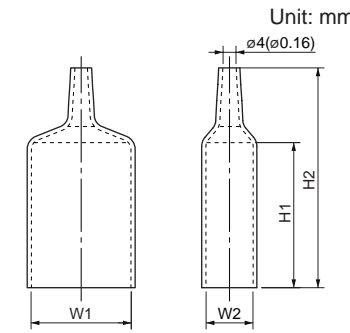
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions)

Unit: mm (inch)



## Capacitor dimension list

Unit: upper (mm) / lower (inch)

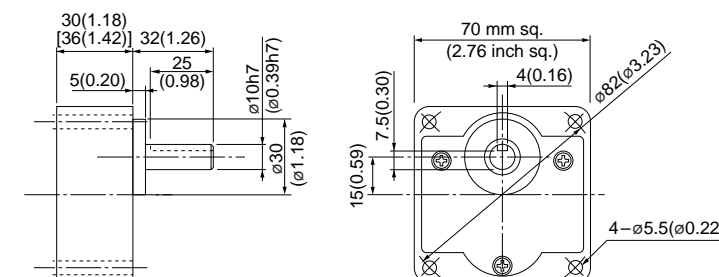
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M7RX15GV4LG(A)	M0PC6.5M25G	48 (1.89)	19 (0.75)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC4819G	48 (1.89)	19 (0.75)	55 (2.17)	78 (3.07)
M7RX15GV4DG(A)	M0PC5.5M25G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC3821G	38 (1.50)	21 (0.83)	55 (2.17)	78 (3.07)
M7RX15GV4YG(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)
M7RX15GV4GG(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)

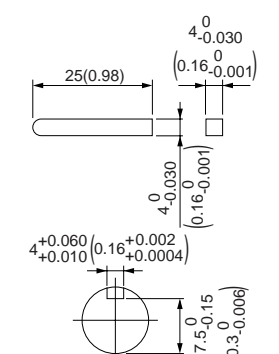
Scale: 1/3, Unit: mm (inch)

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.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Variable speed range		Permissible Torque N·m (oz·in)		Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Speed (r/min)	at 1200 r/min	at 90 r/min				
80 mm sq.	M8RX20GV4L	4	20	100	50	30	90 to 1400	0.12 (17.0)	0.049 (6.94)	0.73	0.12 (17.0)	7 (200V)	
					60		90 to 1700	0.12 (17.0)	0.049 (6.94)	0.71	0.12 (17.0)		
	M8RX20GV4Y	4	20	200	50	30	90 to 1400	0.12 (17.0)	0.049 (6.94)	0.36	0.12 (17.0)	1.8 (400V)	
					60		90 to 1700	0.12 (17.0)	0.049 (6.94)	0.36	0.12 (17.0)		

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-306.

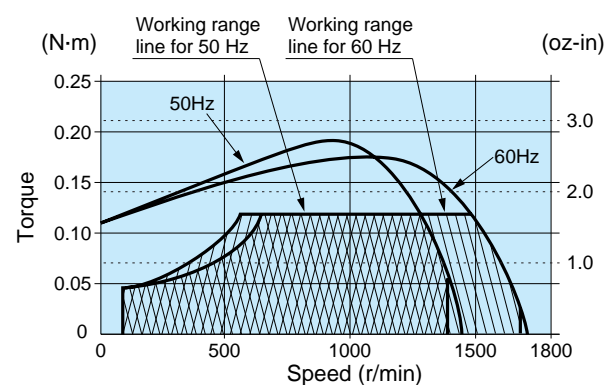
## Permissible torque at output shaft of gear head

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

Applicable gear head	Bearing	Speed	Reduction ratio	Reduction ratio											
				3	3.6	5	6	7.5	9	10	12.5	15	18	20	25
MX8G□B (ball bearing)		1200r/min	50Hz	0.29 (2.57)	0.34 (3.01)	0.48 (4.25)	0.58 (5.13)	0.72 (6.37)	0.87 (7.70)	0.97 (8.59)	1.21 (10.7)	1.45 (12.8)	1.74 (15.4)	1.94 (17.2)	2.43 (21.5)
			60Hz	0.29 (2.57)	0.34 (3.01)	0.48 (4.25)	0.58 (5.13)	0.72 (6.37)	0.87 (7.70)	0.97 (8.59)	1.21 (10.7)	1.45 (12.8)	1.74 (15.4)	1.94 (17.2)	2.43 (21.5)
		90r/min		0.11 (0.97)	0.14 (1.24)	0.19 (1.68)	0.23 (2.04)	0.29 (2.57)	0.35 (3.10)	0.39 (3.45)	0.49 (4.34)	0.59 (5.22)	0.71 (6.28)	0.79 (6.99)	0.99 (8.76)
			Rotational direction	Same as motor rotational direction											

Applicable gear head	Bearing	Speed	Reduction ratio	Reduction ratio											Applicable decimal gear head
				30	36	50	60	75	90	100	120	150	180		
MX8G□B (ball bearing)		1200r/min	50Hz	2.62 (23.2)	3.14 (27.8)	4.37 (38.7)	5.24 (46.4)	6.55 (58.0)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	MX8G10XB
			60Hz	2.62 (23.2)	3.14 (27.8)	4.37 (38.7)	5.24 (46.4)	6.55 (58.0)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	
		90r/min		1.19 (10.5)	1.42 (12.6)	1.98 (17.5)	2.38 (21.1)	2.97 (26.3)	3.57 (31.6)	3.97 (35.1)	4.76 (42.1)	5.95 (52.7)	7.14 (63.2)		
			Rotational direction	Reverse to motor rotational direction											

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

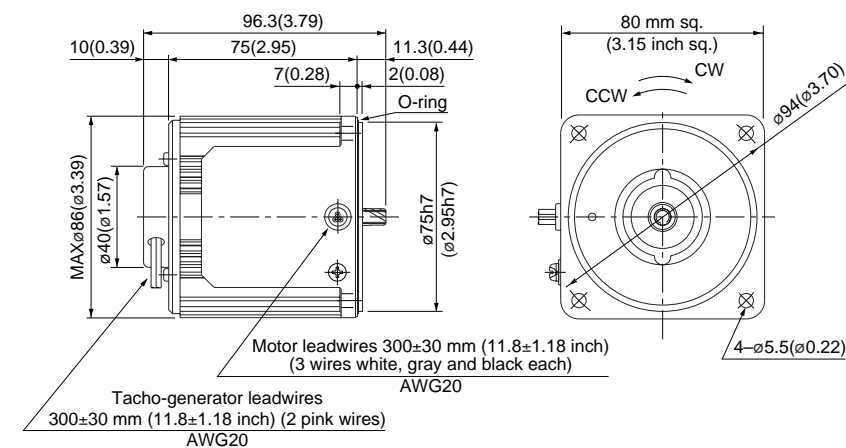
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

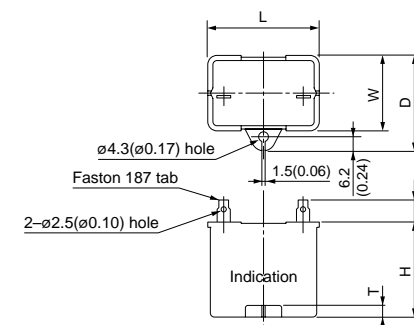
M8RX20GV4L	4P 20 W 100 V
M8RX20GV4Y	4P 20 W 200 V

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



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



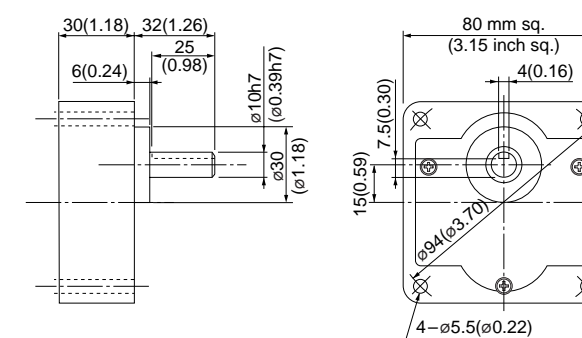
## Capacitor dimension list Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M8RX20GV4L	M0PC7M20	39.5 (1.56)	22 (0.87)	32.5 (1.28)	30.5 (1.20)	4 (0.16)	M0PC3922
M8RX20GV4Y	M0PC1.8M40	39.5 (1.56)	22 (0.87)	32.5 (1.28)	32.5 (1.28)	4 (0.16)	M0PC3922

## Gear head (dimensions)

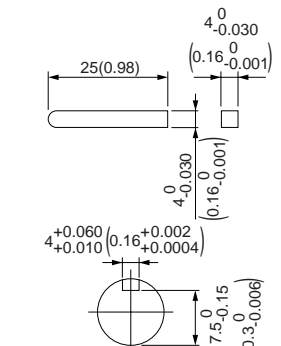
Scale: 1/3, Unit: mm (inch)

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)	Variable speed range		Permissible Torque N·m (oz·in)		Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Speed (r/min)	at 1200 r/min	at 90 r/min	at 1200 r/min			
80 mm sq.	M8RX25GV4L	4	25	100	50	30	90 to 1400	0.15 (21.2)	0.088 (12.5)	1.0	0.16 (22.7)	9.5 (200V)	
					60		90 to 1700	0.15 (21.2)	0.088 (12.5)	1.0	0.16 (22.7)		
	M8RX25GV4Y	4	25	200	50	30	90 to 1400	0.15 (21.2)	0.088 (12.5)	0.5	0.16 (22.7)	2.4 (400V)	
					60		90 to 1700	0.15 (21.2)	0.088 (12.5)	0.5	0.16 (22.7)		

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-306.

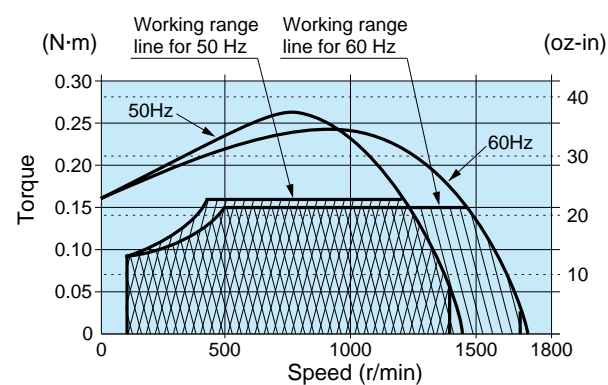
## Permissible torque at output shaft of gear head

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

Applicable gear head	Bearing	Speed	Reduction ratio	Permissible torque											
				3	3.6	5	6	7.5	9	10	12.5	15	18	20	25
MX8G□B (ball bearing)		1200r/min	50Hz	0.34 (3.01)	0.40 (3.54)	0.56 (4.96)	0.68 (6.02)	0.85 (7.52)	1.02 (9.03)	1.13 (10.0)	1.41 (12.5)	1.70 (15.0)	2.04 (18.1)	2.26 (20.0)	2.83 (25.1)
			60Hz	0.34 (3.01)	0.40 (3.54)	0.56 (4.96)	0.68 (6.02)	0.85 (7.52)	1.02 (9.03)	1.13 (10.0)	1.41 (12.5)	1.70 (15.0)	2.04 (18.1)	2.26 (20.0)	2.83 (25.1)
		90r/min		0.21 (1.86)	0.25 (2.21)	0.35 (3.10)	0.42 (3.72)	0.53 (4.69)	0.64 (5.66)	0.71 (6.28)	0.89 (7.88)	1.06 (9.38)	1.28 (11.3)	1.42 (12.6)	1.78 (15.8)
			Rotational direction	Same as motor rotational direction											

Applicable gear head	Bearing	Speed	Reduction ratio	Permissible torque												Applicable decimal gear head
				30	36	50	60	75	90	100	120	150	180			
MX8G□B (ball bearing)		1200r/min	50Hz	3.06 (27.1)	3.67 (32.5)	5.10 (45.1)	6.12 (54.2)	7.65 (67.7)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	MX8G10XB	
			60Hz	3.06 (27.1)	3.67 (32.5)	5.10 (45.1)	6.12 (54.2)	7.65 (67.7)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)		
		90r/min		2.13 (18.9)	2.56 (22.7)	3.56 (31.5)	4.27 (37.8)	5.34 (47.3)	6.41 (56.7)	7.12 (63.0)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)		
			Rotational direction	Reverse to motor rotational direction												

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

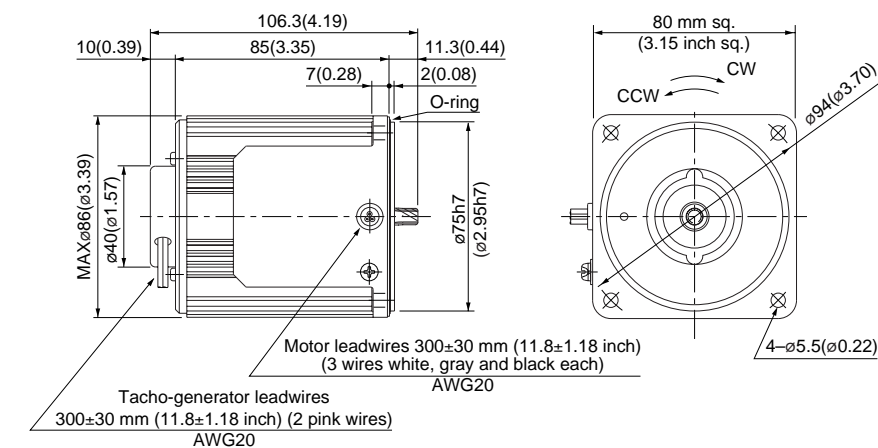
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

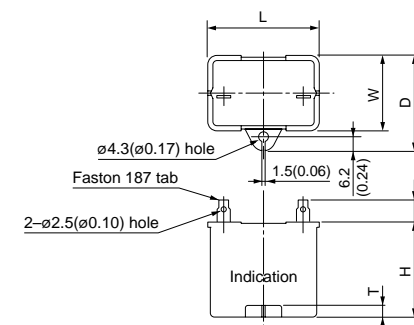
M8RX25GV4L	4P 25 W 100 V
M8RX25GV4Y	4P 25 W 200 V

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



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



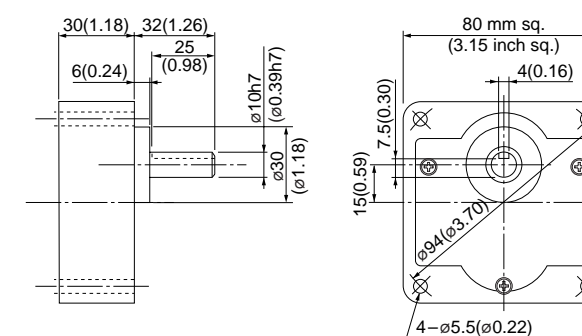
## Capacitor dimension list Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M8RX25GV4L	M0PC9.5M20	39.5 (1.56)	22 (0.87)	32.5 (1.28)	30.5 (1.20)	4 (0.16)	M0PC3922
M8RX25GV4Y	M0PC2.4M40	49.7 (1.96)	24 (0.94)	34.5 (1.36)	34.5 (1.36)	4 (0.16)	M0PC5026

## Gear head (dimensions)

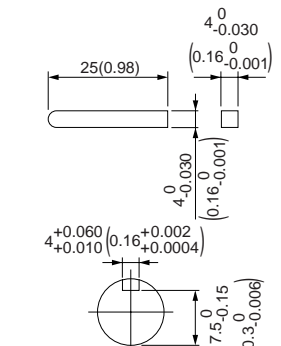
Scale: 1/3, Unit: mm (inch)

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.

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.)

# Variable speed reversible motor (leadwire)

US CE 80 mm (3.15 inch) sq. 25 W

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Variable speed range		Permissible Torque N·m (oz·in)		Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Speed (r/min)	at 1200 r/min	at 90 r/min	at 1200 r/min			
80 mm sq.	M8RX25GV4LG M8RX25GV4LGA	4	25	100	50	30	90 to 1400	0.19 (26.9)	0.11 (15.6)	1.1	0.17 (24.1)	10 (250V)	
					60		90 to 1700	0.15 (21.2)	0.11 (15.6)	1.1	0.17 (24.1)	8 (250V)	
	M8RX25GV4DG M8RX25GV4DGA	4	25	110	60	30	90 to 1700	0.15 (21.2)	0.11 (15.6)	1.1	0.16 (22.7)	8 (250V)	
					60		90 to 1700	0.15 (21.2)	0.11 (15.6)	1.2	0.17 (24.1)	2.5 (450V)	
	M8RX25GV4YG M8RX25GV4YGA	4	25	200	50	30	90 to 1400	0.19 (26.9)	0.11 (15.6)	0.45	0.17 (24.1)	2.5 (450V)	
					60		90 to 1700	0.15 (21.2)	0.11 (15.6)	0.46	0.17 (24.1)	2 (450V)	
	M8RX25GV4GG M8RX25GV4GGA	4	25	220	50	30	90 to 1400	0.19 (26.9)	0.11 (15.6)	0.47	0.16 (22.7)	2 (450V)	
					60		90 to 1700	0.15 (21.2)	0.11 (15.6)	0.46	0.16 (22.7)	2 (450V)	
	M8RX25GV4GG M8RX25GV4GGA	4	25	230	50	30	90 to 1400	0.19 (26.9)	0.11 (15.6)	0.49	0.17 (24.1)	2 (450V)	
					60		90 to 1700	0.15 (21.2)	0.11 (15.6)	0.48	0.17 (24.1)	2 (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-306.  
 • 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.

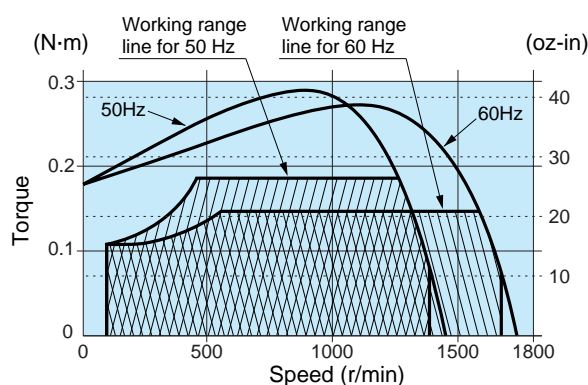
## Permissible torque at output shaft of gear head

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

Applicable gear head Bearing	Speed	Reduction ratio	Reduction ratio											
			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25
MX8G□B (ball bearing)	1200r/min	50Hz	0.46 (4.07)	0.55 (4.87)	0.77 (6.82)	0.92 (8.14)	1.15 (10.2)	1.39 (12.3)	1.54 (13.6)	1.92 (17.0)	2.31 (20.4)	2.77 (24.5)	3.08 (27.3)	3.85 (34.1)
		60Hz	0.36 (3.19)	0.44 (3.89)	0.61 (5.40)	0.73 (6.46)	0.91 (8.05)	1.09 (9.65)	1.22 (10.8)	1.52 (13.5)	1.82 (16.1)	2.19 (19.4)	2.43 (21.5)	3.04 (26.9)
MX8G□M (metal bearing)	90r/min		0.27 (2.39)	0.32 (2.83)	0.45 (3.98)	0.53 (4.69)	0.67 (5.93)	0.80 (7.08)	0.89 (7.88)	1.11 (9.82)	1.34 (11.9)	1.60 (14.2)	1.78 (15.8)	2.23 (19.7)
		Rotational direction	Same as motor rotational direction											

Applicable gear head Bearing	Speed	Reduction ratio	Reduction ratio											Applicable decimal gear head	
			30	36	50	60	75	90	100	120	150	180			
MX8G□B (ball bearing)	1200r/min	50Hz	4.16 (36.8)	4.99 (44.2)	6.93 (61.3)	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)	MX8G10XB
		60Hz	3.28 (29.0)	3.94 (34.9)	5.47 (48.4)	6.56 (58.1)	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)	
MX8G□M (metal bearing)	90r/min		2.41 (21.3)	2.89 (25.6)	4.01 (35.5)	4.81 (42.6)	6.01 (53.2)	7.22 (63.9)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	MX8G10XB	
		Rotational direction	Reverse to motor rotational direction												

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

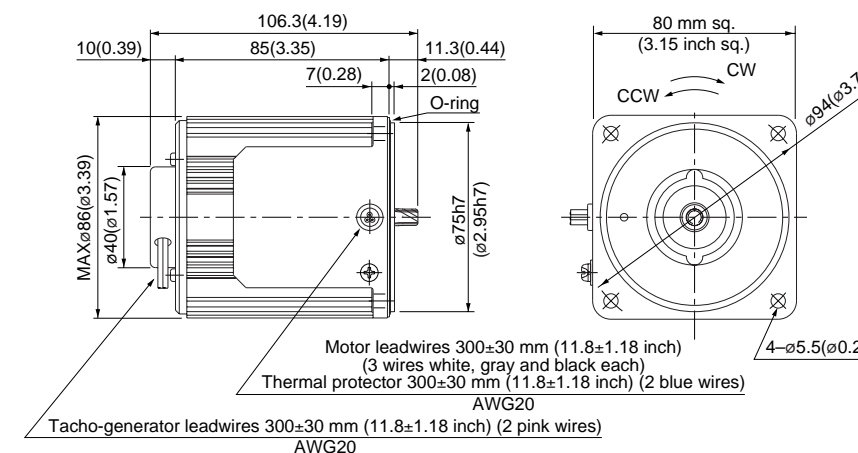
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

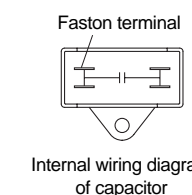
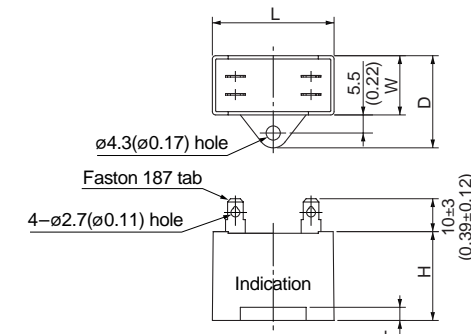
M8RX25GV4LG(A)	4P 25 W 100 V
M8RX25GV4DG(A)	4P 25 W 110 V / 115 V
M8RX25GV4YG(A)	4P 25 W 200 V
M8RX25GV4GG(A)	4P 25 W 220 V / 230 V

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



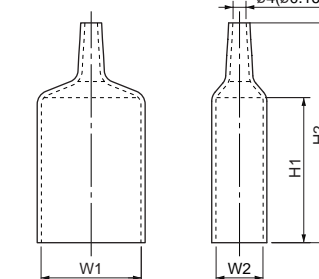
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions)

Unit: mm (inch)



## Capacitor dimension list Unit: upper (mm) / lower (inch)

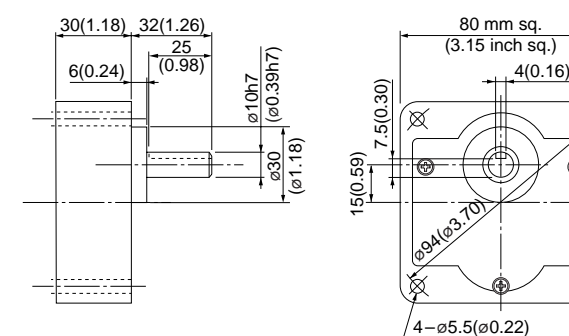
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M8RX25GV4LG(A)	M0PC10M25G	58 (2.28)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC5821G	58 (2.28)	21 (0.83)	55 (2.17)	78 (3.07)
M8RX25GV4DG(A)	M0PC8M25G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC4821G	48 (1.89)	21 (0.83)	55 (2.17)	78 (3.07)
M8RX25GV4YG(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)
M8RX25GV4GG(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)

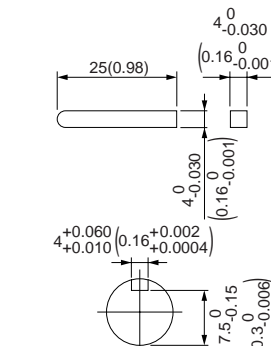
Scale: 1/3, Unit: mm (inch)

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



## Key and keyway (dimensions) [attachment]

MX8G□B(M)



(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)	Variable speed range		Permissible Torque N·m (oz·in)		Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Speed (r/min)	at 1200 r/min	at 90 r/min	at 1200 r/min			
90 mm sq.	M9RX40GV4L	4	40	100	50	30	90 to 1400	0.30 (42.5)	0.098 (13.9)	1.60	0.25 (35.4)	15 (210V)	
					60		90 to 1700	0.24 (34.0)	0.098 (13.9)	1.60	0.25 (35.4)		
	M9RX40GV4Y	4	40	200	50	30	90 to 1400	0.30 (42.5)	0.098 (13.9)	0.80	0.25 (35.4)	3.8 (400V)	
					60		90 to 1700	0.24 (34.0)	0.098 (13.9)	0.76	0.25 (35.4)		

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-307.

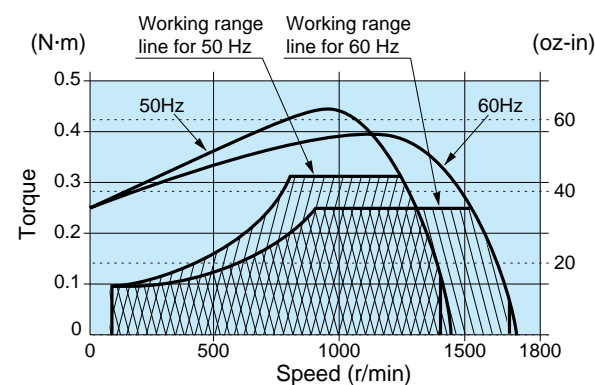
## Permissible torque at output shaft of gear head

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

Applicable gear head	Bearing	Speed	Reduction ratio	Permissible Torque											
				3	3.6	5	6	7.5	9	10	12.5	15	18	20	25
MX9G□B (ball bearing)		1200r/min	50Hz	0.66 (5.84)	0.84 (7.43)	1.08 (9.56)	1.38 (12.2)	1.57 (13.9)	2.00 (17.7)	2.25 (19.9)	2.74 (24.3)	3.23 (28.6)	4.13 (36.6)	4.41 (39.0)	5.29 (46.8)
			60Hz	0.51 (4.51)	0.66 (5.84)	0.84 (7.43)	1.08 (9.56)	1.22 (10.8)	1.57 (13.9)	1.76 (15.6)	2.14 (18.9)	2.74 (24.3)	3.23 (28.6)	3.53 (31.2)	4.13 (36.6)
		90r/min		0.23 (2.04)	0.28 (2.48)	0.39 (3.45)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.79 (6.99)	0.99 (8.76)	1.19 (10.5)	1.42 (12.6)	1.58 (14.0)	1.98 (17.5)
			Rotational direction	Same as motor rotational direction											

Applicable gear head	Bearing	Speed	Reduction ratio	Permissible Torque												Applicable decimal gear head
				30	36	50	60	75	90	100	120	150	180			
MX9G□B (ball bearing)		1200r/min	50Hz	6.37 (56.4)	8.15 (72.1)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	MX9G10XB
			60Hz	5.29 (46.8)	6.37 (56.4)	8.8 (77.9)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	
		90r/min		2.38 (21.1)	2.85 (25.2)	3.96 (35.0)	4.76 (42.1)	5.95 (52.7)	7.14 (63.2)	7.93 (70.2)	9.52 (84.3)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)		
			Rotational direction	Reverse to motor rotational direction												

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

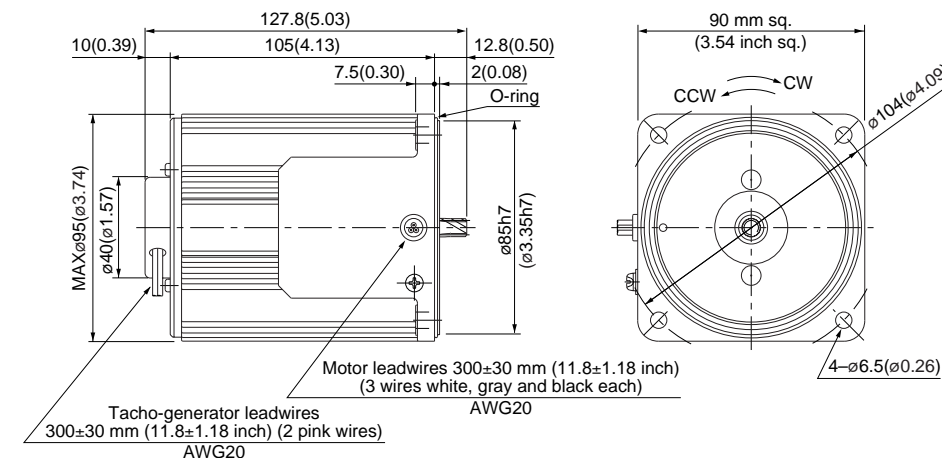
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

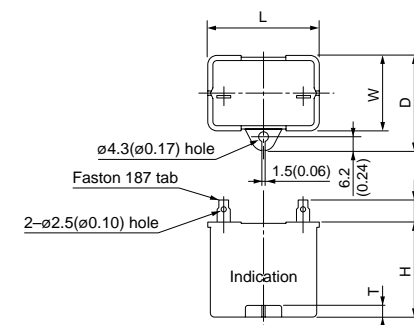
M9RX40GV4L	4P 40 W 100 V
M9RX40GV4Y	4P 40 W 200 V

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



## Capacitor (dimensions) [attachment]

Unit: mm (inch)



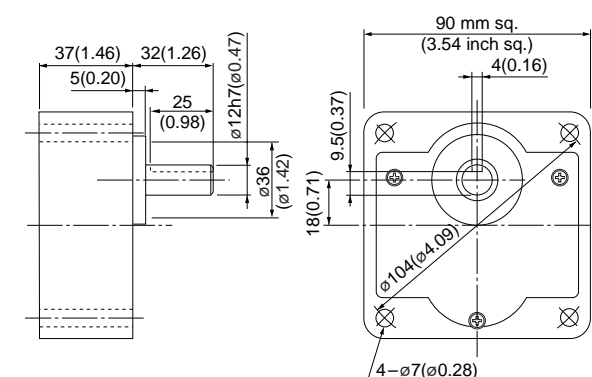
## Capacitor dimension list Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M9RX40GV4L	M0PC15M20	39.5 (1.56)	26.7 (1.05)	37 (1.46)	41 (1.61)	4 (0.16)	M0PC3926
M9RX40GV4Y	M0PC3.8M40	50 (1.97)	26.7 (1.05)	37.5 (1.48)	38 (1.50)	4 (0.16)	M0PC5026

## Gear head (dimensions)

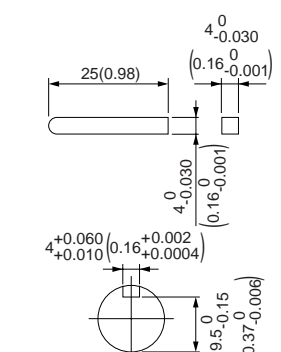
Scale: 1/3, Unit: mm (inch)

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.

# Variable speed reversible motor (leadwire)

US CE 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)	Variable speed range		Permissible Torque N·m (oz·in)		Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Speed (r/min)	at 1200 r/min	at 90 r/min	at 1200 r/min			
90 mm sq.	M9RX40GV4LG M9RX40GV4LGA	4	40	100	50	30	90 to 1400	0.30 (42.5)	0.12 (17.0)	1.7	0.27 (38.2)	16 (250V)	
					60		90 to 1700	0.25 (35.4)	0.12 (17.0)	1.6	0.27 (38.2)		
	M9RX40GV4DG M9RX40GV4DGA	4	40	110	30	90 to 1700	0.25 (35.4)	0.12 (17.0)	1.7	0.23 (32.6)	12 (250V)		
				60		90 to 1700	0.25 (35.4)	0.12 (17.0)	1.8	0.25 (35.4)			
	M9RX40GV4YG M9RX40GV4YGA	4	40	200	30	90 to 1400	0.30 (42.5)	0.12 (17.0)	0.67	0.27 (38.2)	4 (450V)		
				60		90 to 1700	0.25 (35.4)	0.12 (17.0)	0.70	0.27 (38.2)			
	M9RX40GV4GG M9RX40GV4GGA	4	40	220	30	90 to 1400	0.30 (42.5)	0.12 (17.0)	0.71	0.27 (38.2)	3.5 (450V)		
				60		90 to 1700	0.25 (35.4)	0.12 (17.0)	0.71	0.27 (38.2)			
				230	30	90 to 1400	0.30 (42.5)	0.12 (17.0)	0.74	0.30 (42.5)			
				60		90 to 1700	0.25 (35.4)	0.12 (17.0)	0.74	0.30 (42.5)			

- 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-307.
- 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

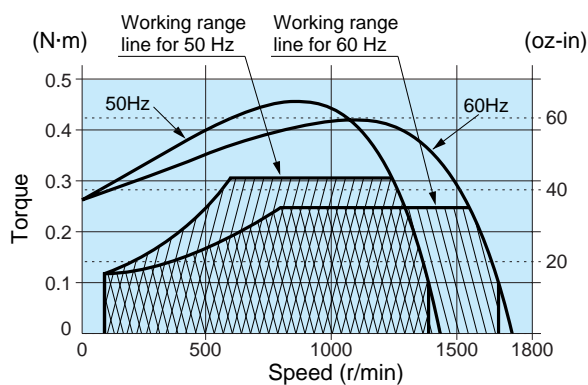
Unit of permissible torque: upper (N·m) / lower (lb·in)

Applicable gear head	Bearing	Speed	Reduction ratio	Reduction ratio													Applicable decimal gear head	
				3	3.6	5	6	7.5	9	10	12.5	15	18	20	25			
MX9G□B (ball bearing)		1200r/min	50Hz	0.73 (6.46)	0.87 (7.7)	1.22 (10.8)	1.46 (12.9)	1.82 (16.1)	2.19 (19.4)	2.43 (21.5)	3.04 (26.9)	3.65 (32.3)	4.37 (38.7)	4.86 (43.0)	6.08 (53.8)	MX9G10XB		
			60Hz	0.61 (5.40)	0.73 (6.46)	1.01 (8.94)	1.22 (10.8)	1.52 (13.5)	1.82 (16.1)	2.03 (18.0)	2.53 (22.4)	3.04 (26.9)	3.65 (32.3)	4.05 (35.8)	5.06 (44.8)			
MX9G□M (metal bearing)		90r/min	50Hz	0.29 (2.57)	0.35 (3.10)	0.49 (4.34)	0.58 (5.13)	0.73 (6.46)	0.87 (7.70)	0.97 (8.59)	1.22 (10.8)	1.46 (12.9)	1.75 (15.5)	1.94 (17.2)				
			60Hz	0.29 (2.57)	0.35 (3.10)	0.49 (4.34)	0.58 (5.13)	0.73 (6.46)	0.87 (7.70)	0.97 (8.59)	1.22 (10.8)	1.46 (12.9)	1.75 (15.5)	1.94 (17.2)				
Rotational direction				Same as motor rotational direction														

Applicable gear head	Bearing	Speed	Reduction ratio	Reduction ratio													Applicable decimal gear head	
				30	36	50	60	75	90	100	120	150	180					
MX9G□B (ball bearing)		1200r/min	50Hz	6.56 (58.1)	7.87 (69.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	MX9G10XB		
			60Hz	5.47 (48.4)	6.56 (58.1)	9.11 (80.6)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)			
MX9G□M (metal bearing)		90r/min	50Hz	2.62 (23.2)	3.15 (27.9)	4.37 (38.7)	5.25 (46.5)	6.56 (58.1)	7.87 (69.7)	8.75 (77.4)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)				
			60Hz	2.62 (23.2)	3.15 (27.9)	4.37 (38.7)	5.25 (46.5)	6.56 (58.1)	7.87 (69.7)	8.75 (77.4)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)	9.8 (86.7)				
Rotational direction				Reverse to motor rotational direction														

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

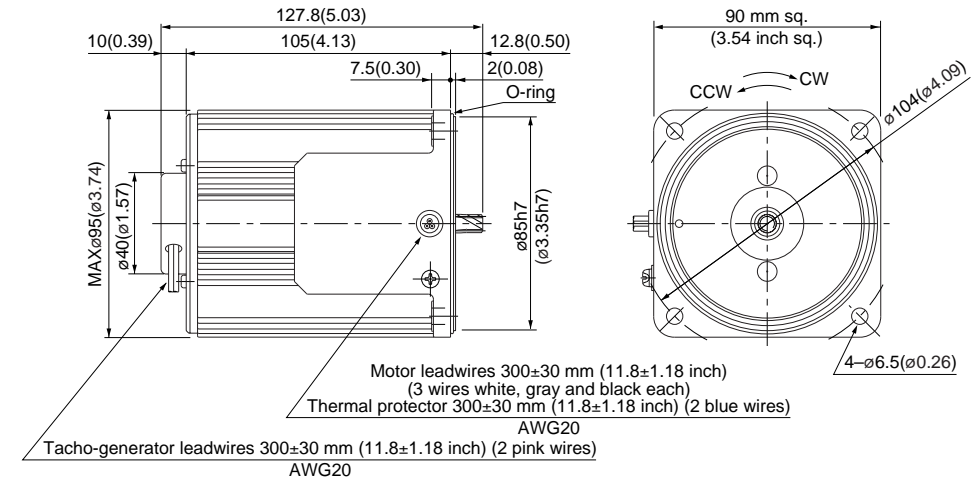
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

M9RX40GV4LG(A)	4P 40 W 100 V
M9RX40GV4DG(A)	4P 40 W 110 V / 115 V
M9RX40GV4YG(A)	4P 40 W 200 V
M9RX40GV4GG(A)	4P 40 W 220 V / 230 V

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

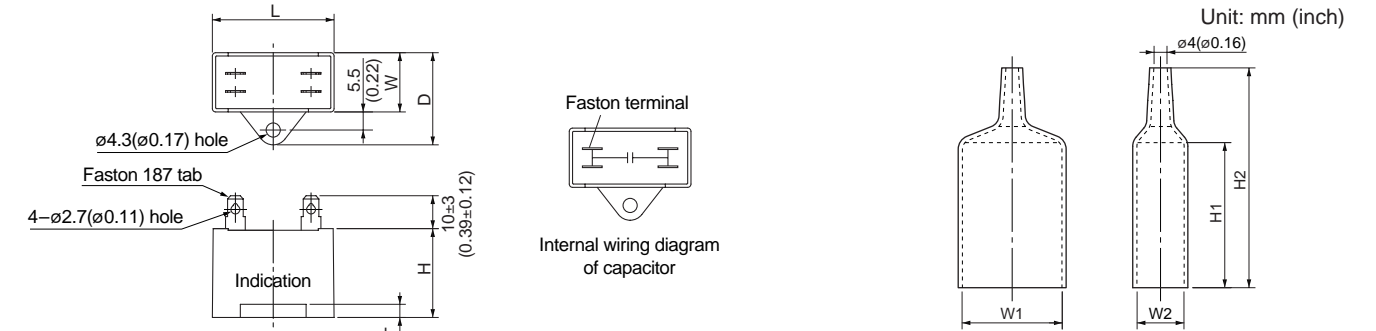


## Capacitor (dimensions) [attachment]

Unit: mm (inch)

## Capacitor cap (dimensions)

Unit: mm (inch)



## Capacitor dimension list Unit: upper (mm) / lower (inch)

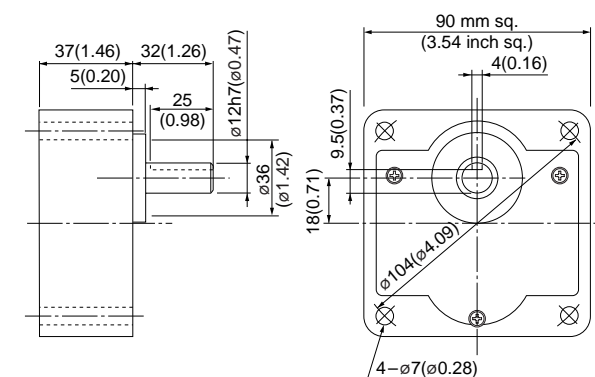
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M9RX40GV4LG(A)	M0PC16M25G	58 (2.28)	23.5 (0.93)	38.5 (1.52)	37 (1.46)	4 (0.16)	M0PC5823G	58 (2.28)	23.5 (0.93)	55 (2.17)	78 (3.07)
M9RX40GV4DG(A)	M0PC12M25G	58 (2.28)	22 (0.87)	32 (1.26)	35 (1.38)	4 (0.16)	M0PC5822G	58 (2.28)	22 (0.87)	55 (2.17)	78 (3.07)
M9RX40GV4YG(A)	M0PC4M45G	58 (2.28)	23.5 (0.93)	38.5 (1.52)	37 (1.46)	4 (0.16)	M0PC5823G	58 (2.28)	23.5 (0.93)	55 (2.17)	78 (3.07)
M9RX40GV4GG(A)	M0PC3.5M45G	58 (2.28)	22 (0.87)	32 (1.26)	35 (1.38)	4 (0.16)	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)

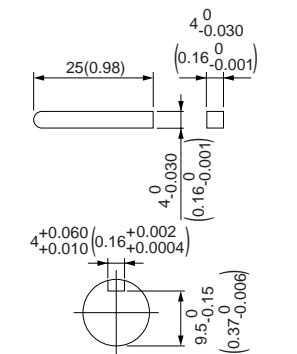
Scale: 1/3, Unit: mm (inch)

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



## Key and keyway (dimensions) [attachment]

MX9G□B(M)



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

# Variable speed reversible motor (leadwire)

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)	Variable speed range		Permissible Torque N·m (oz·in)		Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Speed (r/min)	at 1200 r/min	at 90 r/min				
90 mm sq.	M9RZ60GV4L	4	60	100	50	30	90 to 1400	0.43 (60.9)	0.12 (17.0)	3.0	0.46 (65.1)	25 (200V)	
					60		90 to 1700	0.36 (51.0)	0.12 (17.0)	2.8	0.46 (65.1)		
	M9RZ60GV4Y	4	60	200	50	30	90 to 1400	0.43 (60.9)	0.12 (17.0)	1.4	0.46 (65.1)	6.2 (375V)	
					60		90 to 1700	0.36 (51.0)	0.12 (17.0)	1.3	0.46 (65.1)		

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-307.

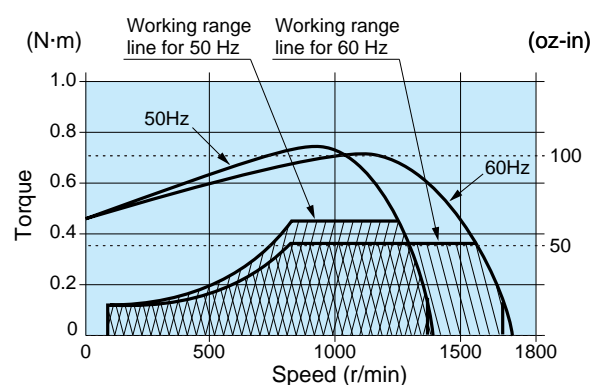
## Permissible torque at output shaft of gear head

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

Applicable gear head	Bearing	Speed	Reduction ratio	Permissible Torque												
				3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
MZ9G□B (ball bearing hinge not attached)	MZ9G□B	1200r/min	50Hz	1.04 (9.20)	1.25 (11.1)	1.74 (15.4)	2.08 (18.4)	2.61 (23.1)	3.13 (27.7)	3.48 (30.8)	3.91 (34.6)	4.69 (41.5)	5.63 (49.8)	6.26 (55.4)	7.82 (69.2)	9.39 (83.1)
			60Hz	0.87 (7.70)	1.04 (9.20)	1.45 (12.8)	1.74 (15.4)	2.18 (19.3)	2.61 (23.1)	2.91 (25.8)	3.27 (28.9)	3.91 (34.6)	4.69 (41.5)	5.22 (46.2)	6.52 (57.7)	7.83 (69.3)
		90r/min	50Hz	0.29 (2.57)	0.34 (3.01)	0.48 (4.25)	0.58 (5.13)	0.72 (6.37)	0.87 (7.70)	0.97 (8.58)	1.12 (9.91)	1.35 (11.9)	1.62 (14.3)	1.80 (15.9)	2.25 (19.9)	2.70 (23.9)
			60Hz	0.29 (2.57)	0.34 (3.01)	0.48 (4.25)	0.58 (5.13)	0.72 (6.37)	0.87 (7.70)	0.97 (8.58)	1.12 (9.91)	1.35 (11.9)	1.62 (14.3)	1.80 (15.9)	2.25 (19.9)	2.70 (23.9)
Rotational direction		Same as motor rotational direction						Reverse to motor rotational direction								

Applicable gear head	Bearing	Speed	Reduction ratio	Permissible Torque											Applicable decimal gear head	
				36	50	60	75	90	100	120	150	180	200			
MZ9G□B (ball bearing hinge not attached)	MZ9G□B	1200r/min	50Hz	10.1 (89.4)	14.0 (124)	16.8 (149)	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)	MZ9G10XB
			60Hz	8.42 (74.5)	11.7 (104)	14.0 (124)	17.5 (155)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	
		90r/min	50Hz	3.02 (26.7)	4.20 (37.2)	5.04 (44.6)	6.30 (55.8)	7.56 (66.9)	8.40 (74.3)	10 (88.5)	12.6 (112)	15.1 (134)	16.8 (149)			
			60Hz	3.02 (26.7)	4.20 (37.2)	5.04 (44.6)	6.30 (55.8)	7.56 (66.9)	8.40 (74.3)	10 (88.5)	12.6 (112)	15.1 (134)	16.8 (149)			
Rotational direction		Same as motor rotational direction														

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

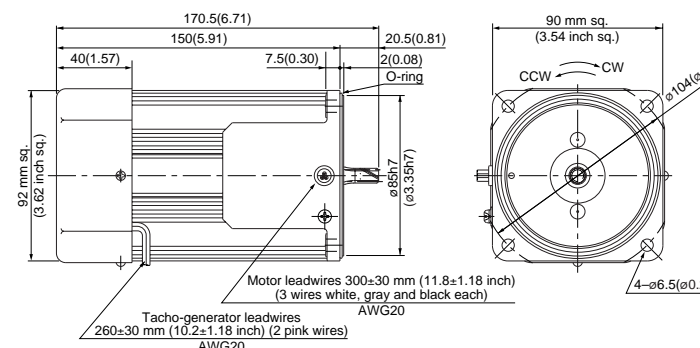
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

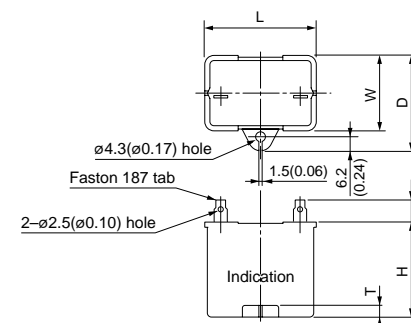
M9RZ60GV4L 4P 60 W 100 V (with fan)  
M9RZ60GV4Y 4P 60 W 200 V (with fan)

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)

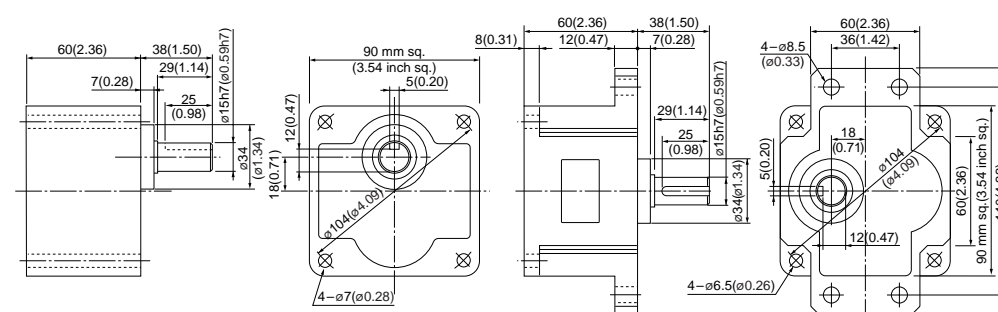
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M9RZ60GV4L	M0PC25M20	50.2 (1.98)	31 (1.22)	41 (1.61)	42 (1.65)	5 (0.20)	M0PC5032
M9RZ60GV4Y	M0PC6.2M38	50 (1.97)	30.5 (1.20)	41 (1.61)	41.5 (1.63)	4 (0.16)	M0PC5032

## Gear head (dimensions)

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

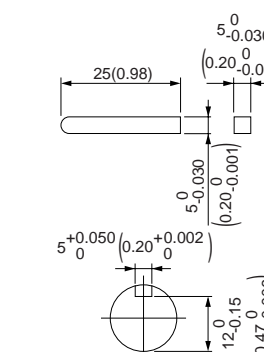
MZ9G□B (ball bearing / hinge not attached)  
Mass 1.4 kg (3.09 lb)

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.



# Variable speed reversible motor (leadwire)

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)	Variable speed range		Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)	
							Speed (r/min)	Permissible Torque N-m (oz-in) at				
90 mm sq.	M9RZ60GV4LG M9RZ60GV4LGA	4	60	100	50	30	90 to 1400	0.45 (63.7)	0.14 (19.8)	3.0	0.46 (65.1)	25 (250V)
					60		90 to 1700	0.36 (51.0)	0.14 (19.8)	2.8	0.48 (68.0)	
	M9RZ60GV4DG M9RZ60GV4DGA	4	60	110	60	30	90 to 1700	0.36 (51.0)	0.14 (19.8)	3.0	0.43 (60.9)	20 (250V)
					60		90 to 1700	0.36 (51.0)	0.14 (19.8)	3.1	0.48 (68.0)	
	M9RZ60GV4YG M9RZ60GV4YGA	4	60	200	50	30	90 to 1400	0.45 (63.7)	0.14 (19.8)	1.3	0.46 (65.1)	6 (450V)
					60		90 to 1700	0.36 (51.0)	0.14 (19.8)	1.2	0.48 (68.0)	
	M9RZ60GV4GG M9RZ60GV4GGA	4	60	220	50	30	90 to 1400	0.45 (63.7)	0.14 (19.8)	1.4	0.43 (60.9)	5 (450V)
					60		90 to 1700	0.36 (51.0)	0.14 (19.8)	1.3	0.43 (60.9)	
					230	30	90 to 1400	0.45 (63.7)	0.14 (19.8)	1.5	0.48 (68.0)	
							90 to 1700	0.36 (51.0)	0.14 (19.8)	1.4	0.48 (68.0)	

• 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-307.  
 • 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.

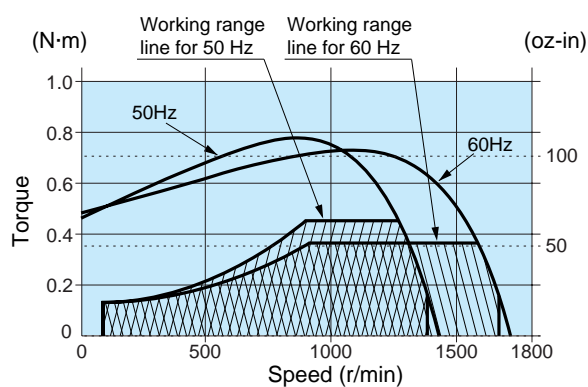
## Permissible torque at output shaft of gear head

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

Applicable gear head	Bearing	Speed	Reduction ratio	Permissible torque												
				3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
MZ9G□B (ball bearing hinge not attached)		1200r/min	50Hz	1.09 (9.65)	1.31 (11.6)	1.82 (16.1)	2.19 (19.4)	2.73 (24.2)	3.28 (29.0)	3.65 (32.3)	4.10 (36.3)	4.92 (43.5)	5.90 (52.2)	6.56 (58.1)	8.20 (72.6)	9.84 (87.1)
			60Hz	0.87 (7.70)	1.05 (9.29)	1.46 (12.9)	1.75 (15.5)	2.19 (19.4)	2.62 (23.2)	2.92 (25.8)	3.28 (29.0)	3.94 (34.9)	4.72 (41.8)	5.25 (46.5)	6.56 (58.1)	7.87 (69.7)
		90r/min	50Hz	0.34 (3.01)	0.41 (3.63)	0.57 (5.04)	0.68 (6.02)	0.85 (7.52)	1.02 (9.03)	1.13 (10.0)	1.28 (11.3)	1.53 (13.5)	1.84 (16.3)	2.04 (18.1)	2.55 (22.6)	3.06 (27.1)
			60Hz	0.34 (3.01)	0.41 (3.63)	0.57 (5.04)	0.68 (6.02)	0.85 (7.52)	1.02 (9.03)	1.13 (10.0)	1.28 (11.3)	1.53 (13.5)	1.84 (16.3)	2.04 (18.1)	2.55 (22.6)	3.06 (27.1)
		Rotational direction		Same as motor rotational direction						Reverse to motor rotational direction						

Applicable gear head	Bearing	Speed	Reduction ratio	Permissible torque										Applicable decimal gear head		
				36	50	60	75	90	100	120	150	180	200			
MZ9G□B (ball bearing hinge not attached)		1200r/min	50Hz	10.6 (93.8)	14.8 (131)	17.7 (157)	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)	MZ9G10XB
			60Hz	8.50 (75.2)	11.8 (104)	14.2 (126)	17.7 (157)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	
		90r/min	50Hz	3.31 (29.3)	4.59 (40.6)	5.51 (48.8)	6.89 (61.0)	8.27 (73.2)	9.19 (81.3)	11.0 (97.4)	13.8 (122)	16.5 (146)	18.4 (163)			
			60Hz	3.31 (29.3)	4.59 (40.6)	5.51 (48.8)	6.89 (61.0)	8.27 (73.2)	9.19 (81.3)	11.0 (97.4)	13.8 (122)	16.5 (146)	18.4 (163)			
		Rotational direction		Same as motor rotational direction												

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

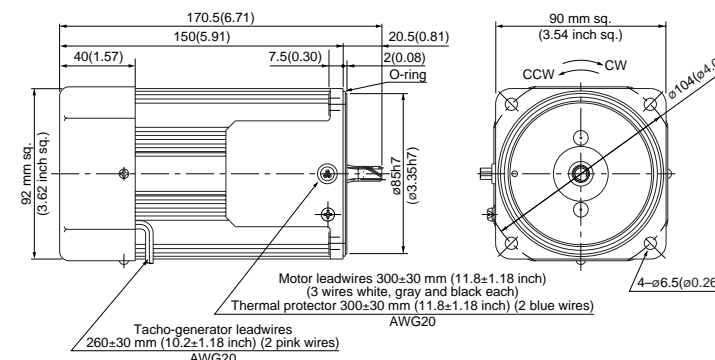
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

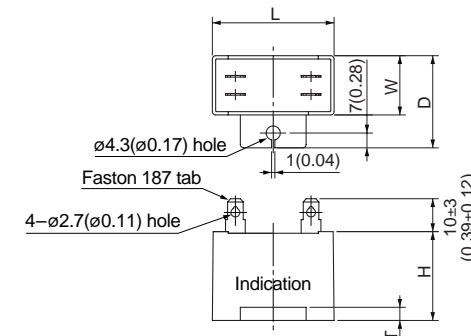
M9RZ60GV4LG(A)	4P 60 W 100 V (with fan)
M9RZ60GV4DG(A)	4P 60 W 110 V / 115 V (with fan)
M9RZ60GV4YG(A)	4P 60 W 200 V (with fan)
M9RZ60GV4GG(A)	4P 60 W 220 V / 230 V (with fan)

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



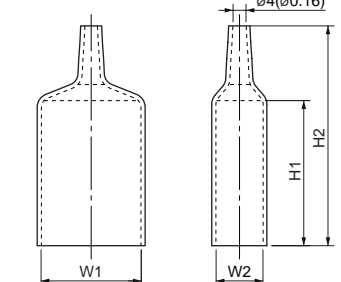
## Capacitor (dimensions) [attachment]

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
M9RZ60GV4LG(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)
M9RZ60GV4DG(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)
M9RZ60GV4YG(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)
M9RZ60GV4GG(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)

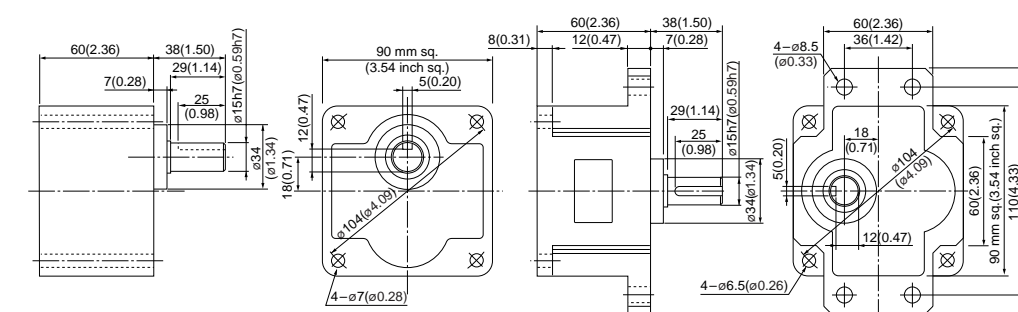
\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

## Gear head (dimensions)

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

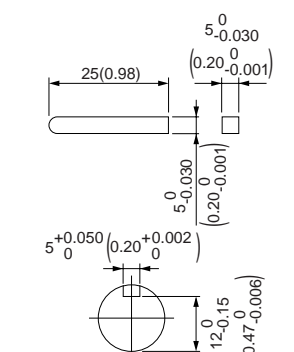
MZ9G□B (ball bearing / hinge not attached)  
Mass 1.4 kg (3.09 lb)

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



## 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.

# Variable speed reversible motor (leadwire)

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)	Variable speed range		Permissible Torque N·m (oz·in)		Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Speed (r/min)	at 1200 r/min	at 90 r/min				
90 mm sq.	M9RZ90GV4L	4	90	100	50	30	90 to 1400	0.59 (83.6)	0.25 (35.4)	2.9	0.61 (86.4)	30 (200V)	
					60		90 to 1700	0.54 (76.5)	0.25 (35.4)	2.9	0.61 (86.4)		
	M9RZ90GV4Y	4	90	200	50	30	90 to 1400	0.59 (83.6)	0.25 (35.4)	1.6	0.59 (83.6)	7.5 (370V)	
					60		90 to 1700	0.54 (76.5)	0.25 (35.4)	1.5	0.59 (83.6)		

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-307.

## Permissible torque at output shaft of gear head

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

Applicable gear head	Bearing	Speed	Reduction ratio	Permissible Torque												
				3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
MZ9G□B (ball bearing hinge not attached)	MY9G□B (ball bearing hinge attached)	1200r/min	50Hz	1.43 (12.7)	1.71 (15.1)	2.38 (21.1)	2.86 (25.3)	3.57 (31.6)	4.29 (38.0)	4.77 (42.2)	5.36 (47.4)	6.43 (56.9)	7.72 (68.3)	8.58 (75.9)	10.97 (97.1)	12.8 (113)
			60Hz	1.31 (11.6)	1.57 (13.9)	2.18 (19.3)	2.62 (23.2)	3.27 (28.9)	3.93 (34.8)	4.37 (38.7)	4.91 (43.5)	5.89 (52.1)	7.07 (62.6)	7.86 (69.6)	9.82 (86.9)	11.7 (104)
		90r/min	50Hz	0.60 (5.31)	0.72 (6.37)	1.01 (8.94)	1.21 (10.7)	1.51 (13.4)	1.81 (16.0)	2.02 (17.9)	2.27 (20.1)	2.70 (23.9)	2.89 (25.6)	3.62 (32.0)	4.52 (40.0)	5.43 (48.1)
			60Hz	0.60 (5.31)	0.72 (6.37)	1.01 (8.94)	1.21 (10.7)	1.51 (13.4)	1.81 (16.0)	2.02 (17.9)	2.27 (20.1)	2.70 (23.9)	2.89 (25.6)	3.62 (32.0)	4.52 (40.0)	5.43 (48.1)
Rotational direction		Same as motor rotational direction						Reverse to motor rotational direction								

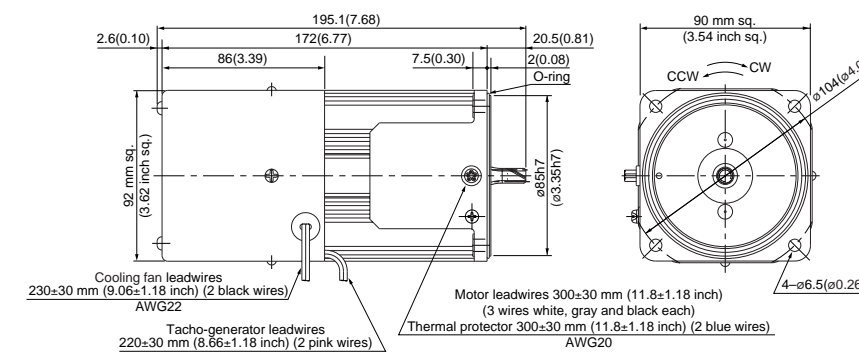
Applicable gear head	Bearing	Speed	Reduction ratio	Permissible Torque											Applicable decimal gear head	
				36	50	60	75	90	100	120	150	180	200			
MZ9G□B (ball bearing hinge not attached)	MY9G□B (ball bearing hinge attached)	1200r/min	50Hz	13.8 (122)	19.3 (171)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	MZ9G10XB
			60Hz	12.7 (112)	17.6 (156)	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)	
		90r/min	50Hz	5.86 (51.9)	8.10 (71.7)	9.72 (86.0)	12.1 (107)	14.5 (128)	16.2 (143)	19.4 (172)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	
			60Hz	5.86 (51.9)	8.10 (71.7)	9.72 (86.0)	12.1 (107)	14.5 (128)	16.2 (143)	19.4 (172)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	
Rotational direction		Same as motor rotational direction														

## Motor (dimensions)

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

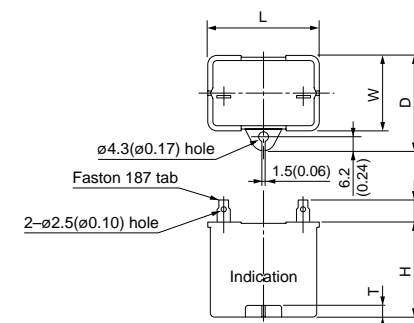
M9RZ90GV4L 4P 90 W 100 V (Forced cooling fan)  
M9RZ90GV4Y 4P 90 W 200 V (Forced cooling fan)

Mass 3.5 kg 7.72 lb  
Helical gear  
Module 0.6  
Number of teeth 9



## Capacitor (dimensions) [attachment]

Unit: mm (inch)

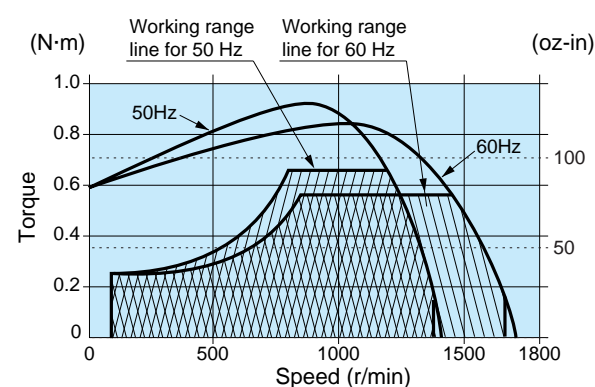


## Capacitor dimension list

Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M9RZ90GV4L	M0PC30M20	50.2 (1.98)	31 (1.22)	41 (1.61)	42 (1.65)	5 (0.20)	M0PC5032
M9RZ90GV4Y	M0PC7.5M37	50 (1.97)	34 (1.34)	45 (1.77)	45 (1.77)	6 (0.24)	—

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

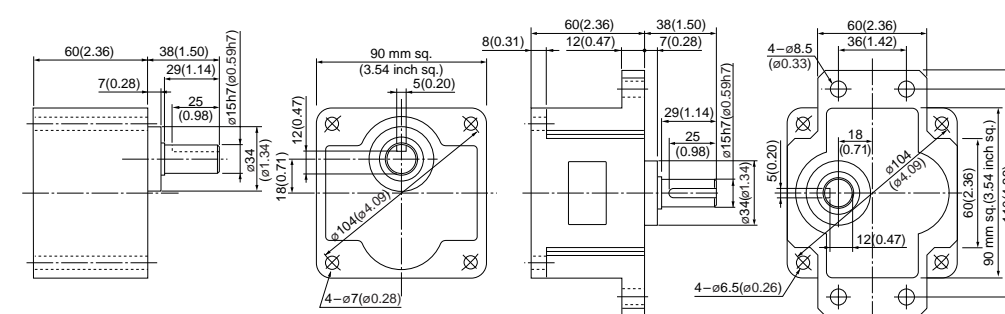
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## 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)

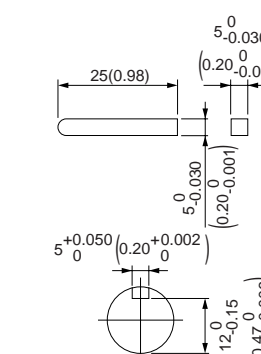


Note) MZ / MY is available for a gear head of either type.

(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



# Variable speed reversible motor (leadwire)

**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)	Variable speed range		Permissible Torque N·m (oz·in)		Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Speed (r/min)	at 1200 r/min	at 90 r/min				
90 mm sq.	M9RZ90GV4LG M9RZ90GV4LGA	4	90	100	50	30	90 to 1400	0.69 (97.7)	0.39 (55.2)	3.0	0.66 (93.5)	32 (250V)	
					60		90 to 1700	0.55 (77.9)	0.39 (55.2)	2.9	0.66 (93.5)		
	M9RZ90GV4DG M9RZ90GV4DGA	4	90	110	60	30	90 to 1700	0.55 (77.9)	0.39 (55.2)	3.1	0.66 (93.5)	28 (250V)	
					60		90 to 1700	0.55 (77.9)	0.39 (55.2)	3.2	0.72 (102)		
	M9RZ90GV4YG M9RZ90GV4YGA	4	90	200	50	30	90 to 1400	0.69 (97.7)	0.39 (55.2)	1.4	0.66 (93.5)	8 (450V)	
					60		90 to 1700	0.55 (77.9)	0.39 (55.2)	1.4	0.66 (93.5)		
	M9RZ90GV4GG M9RZ90GV4GGA	4	90	220	50	30	90 to 1400	0.69 (97.7)	0.39 (55.2)	1.5	0.66 (93.5)	7 (450V)	
					60		90 to 1700	0.55 (77.9)	0.39 (55.2)	1.4	0.66 (93.5)		
	M9RZ90GV4GG M9RZ90GV4GGA	4	90	230	50	30	90 to 1400	0.69 (97.7)	0.39 (55.2)	1.6	0.72 (102)	7 (450V)	
					60		90 to 1700	0.55 (77.9)	0.39 (55.2)	1.5	0.72 (102)		

- 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-307.
- 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.

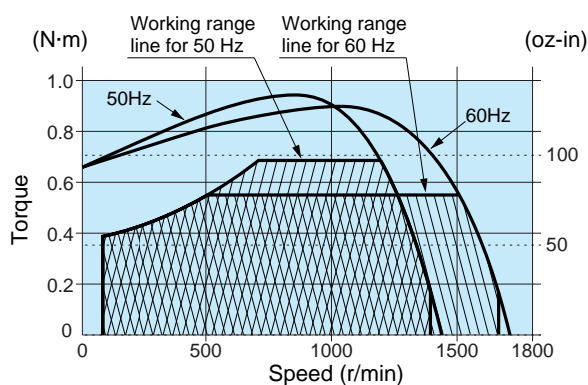
## Permissible torque at output shaft of gear head

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

Applicable gear head	Bearing	Speed	Reduction ratio	Permissible torque												
				3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30
MZ9G□B (ball bearing hinge not attached)		1200r/min	50Hz	1.68 (14.9)	2.01 (17.8)	2.79 (24.7)	3.35 (29.7)	4.19 (37.1)	5.03 (44.5)	5.59 (49.5)	6.29 (55.7)	7.55 (66.8)	9.05 (80.1)	10.1 (89.4)	12.6 (112)	15.1 (134)
			60Hz	1.34 (11.9)	1.60 (14.2)	2.23 (19.7)	2.67 (23.6)	3.34 (29.6)	4.01 (35.5)	4.46 (39.5)	5.01 (44.3)	6.01 (53.2)	7.22 (63.9)	8.02 (71.0)	10.0 (88.5)	12.0 (106)
		90r/min	0.95 (8.41)	1.14 (10.1)	1.58 (14.0)	1.90 (16.8)	2.37 (21.0)	2.84 (25.1)	3.16 (28.0)	3.55 (31.4)	4.26 (37.7)	5.12 (45.3)	5.69 (50.4)	7.11 (62.9)	8.53 (75.5)	
			Rotational direction	Same as motor rotational direction						Reverse to motor rotational direction						

Applicable gear head	Bearing	Speed	Reduction ratio	Permissible torque											Applicable decimal gear head	
				36	50	60	75	90	100	120	150	180	200			
MZ9G□B (ball bearing hinge not attached)		1200r/min	50Hz	16.3 (144)	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)	MZ9G10XB
			60Hz	13.0 (115)	18.0 (159)	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)	
		90r/min	9.21 (81.5)	12.8 (113)	15.4 (136)	19.2 (170)	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	Same as motor rotational direction												

## Speed-torque characteristics



## Connection diagram

\* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

### \* Working range line

The working range line shows the working limit for the variable speed motor. The permissible torque should fall within the shaded portion. If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

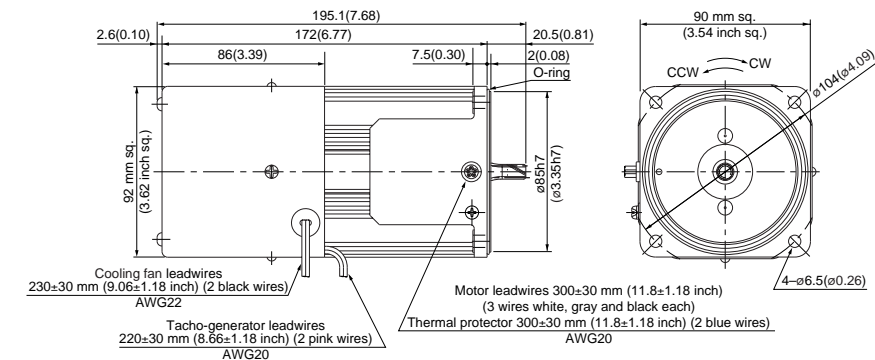
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

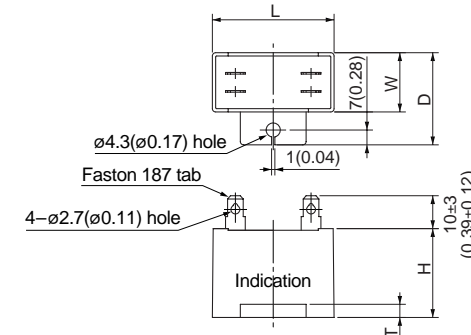
M9RZ90GV4LG(A)	4P 90 W 100 V (Forced cooling fan)
M9RZ90GV4DG(A)	4P 90 W 110 V / 115 V (Forced cooling fan)
M9RZ90GV4YG(A)	4P 90 W 200 V (Forced cooling fan)
M9RZ90GV4GG(A)	4P 90 W 220 V / 230 V (Forced cooling fan)

Mass	Helical gear	Module	Number of teeth
3.5 kg 7.72 lb		0.6	9



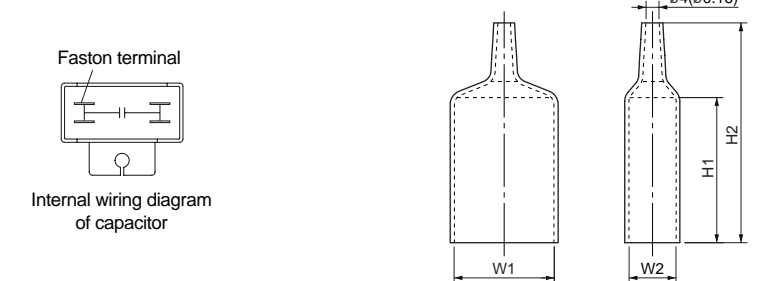
## Capacitor (dimensions) [attachment]

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
M9RZ90GV4LG(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)
M9RZ90GV4DG(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)
M9RZ90GV4YG(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)
M9RZ90GV4GG(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)

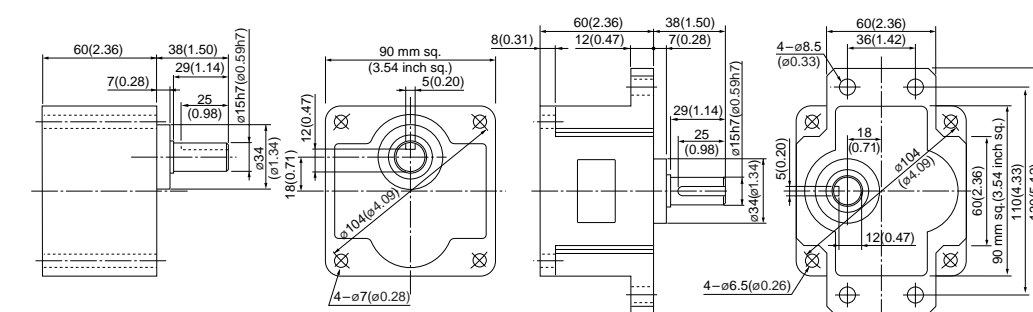
\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

## Gear head (dimensions)

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

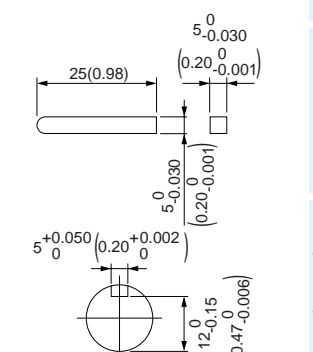
MZ9G□B (ball bearing / hinge not attached)  
Mass 1.4 kg (3.09 lb)

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



## Key and keyway (dimensions) [attachment]

MZ9G□B  
MY9G□B

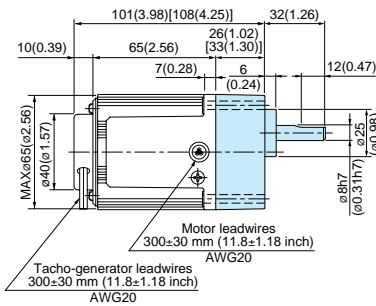


Note) MZ / MY is available for a gear head of either type.

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

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

M6RX4GV4L + MX6G□BA(MA) / MX6G□B(M)

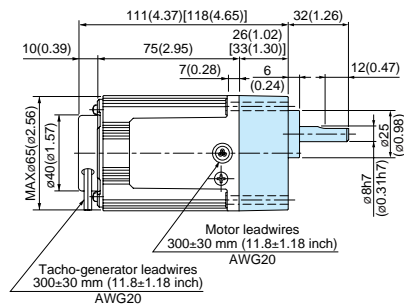


\* Figures in [ ] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).

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

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

M6RX6GV4L + MX6G□BA(MA) / MX6G□B(M)  
 M6RX6GV4Y + MX6G□BA(MA) / MX6G□B(M)  
 M6RX6GV4LG(A) + MX6G□BA(MA) / MX6G□B(M)  
 M6RX6GV4DG(A) + MX6G□BA(MA) / MX6G□B(M)  
 M6RX6GV4YG(A) + MX6G□BA(MA) / MX6G□B(M)  
 M6RX6GV4GG(A) + MX6G□BA(MA) / MX6G□B(M)

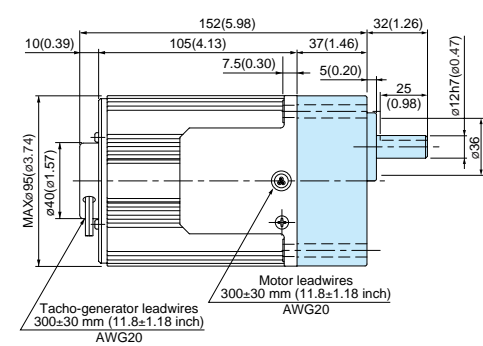


\* Figures in [ ] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).

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

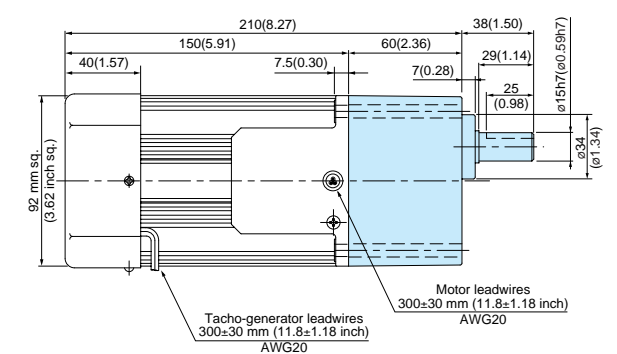
## 90 mm sq. (3.54 inch sq.) 40 W

M9RX40GV4L + MX9G□B(M)  
 M9RX40GV4Y + MX9G□B(M)  
 M9RX40GV4LG(A) + MX9G□B(M)  
 M9RX40GV4DG(A) + MX9G□B(M)  
 M9RX40GV4YG(A) + MX9G□B(M)  
 M9RX40GV4GG(A) + MX9G□B(M)



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

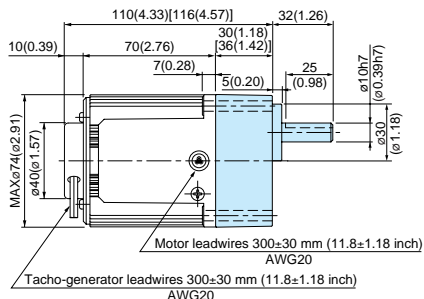
M9RZ60GV4L + MZ9G□B (MY9G□B)  
 M9RZ60GV4Y + MZ9G□B (MY9G□B)  
 M9RZ60GV4LG(A) + MZ9G□B (MY9G□B)  
 M9RZ60GV4DG(A) + MZ9G□B (MY9G□B)  
 M9RZ60GV4YG(A) + MZ9G□B (MY9G□B)  
 M9RZ60GV4GG(A) + MZ9G□B (MY9G□B)



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

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

M7RX10GV4L + MX7G□BA(MA) / MX7G□B(M)  
 M7RX10GV4Y + MX7G□BA(MA) / MX7G□B(M)

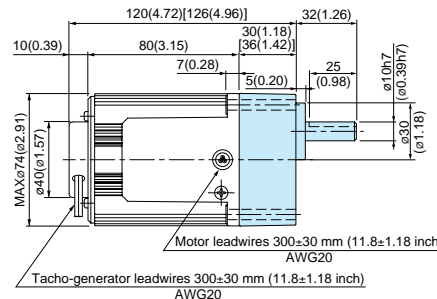


\* Figures in [ ] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).

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

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

M7RX15GV4L + MX7G□BA(MA) / MX7G□B(M)  
 M7RX15GV4Y + MX7G□BA(MA) / MX7G□B(M)  
 M7RX15GV4LG(A) + MX7G□BA(MA) / MX7G□B(M)  
 M7RX15GV4DG(A) + MX7G□BA(MA) / MX7G□B(M)  
 M7RX15GV4YG(A) + MX7G□BA(MA) / MX7G□B(M)  
 M7RX15GV4GG(A) + MX7G□BA(MA) / MX7G□B(M)

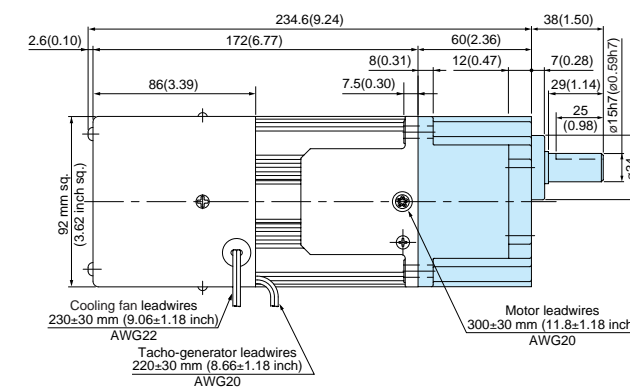


\* Figures in [ ] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).

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

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

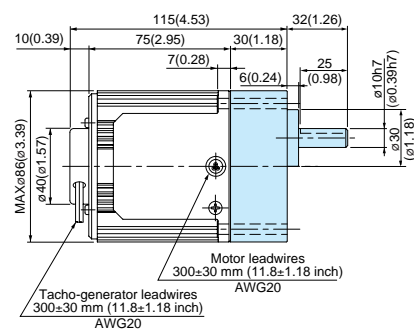
M9RZ90GV4L + MY9G□B (MZ9G□B)  
 M9RZ90GV4Y + MY9G□B (MZ9G□B)  
 M9RZ90GV4LG(A) + MY9G□B (MZ9G□B)  
 M9RZ90GV4DG(A) + MY9G□B (MZ9G□B)  
 M9RZ90GV4YG(A) + MY9G□B (MZ9G□B)  
 M9RZ90GV4GG(A) + MY9G□B (MZ9G□B)



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

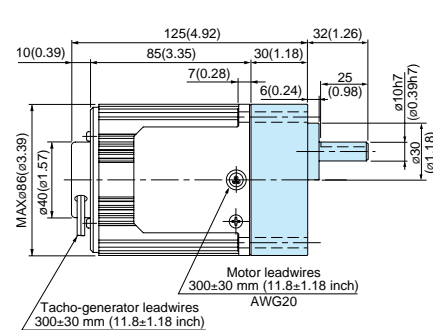
## 80 mm sq. (3.15 inch sq.) 20 W

M8RX20GV4L + MX8G□B(M)  
 M8RX20GV4Y + MX8G□B(M)



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

M8RX25GV4L + MX8G□B(M)  
 M8RX25GV4Y + MX8G□B(M)  
 M8RX25GV4LG(A) + MX8G□B(M)  
 M8RX25GV4DG(A) + MX8G□B(M)  
 M8RX25GV4YG(A) + MX8G□B(M)  
 M8RX25GV4GG(A) + 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.

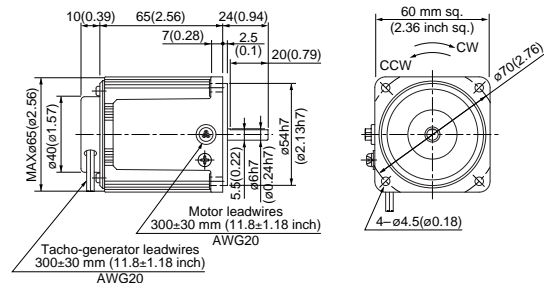
(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

# Variable speed reversible motor (4-pole round shaft / leadwire)

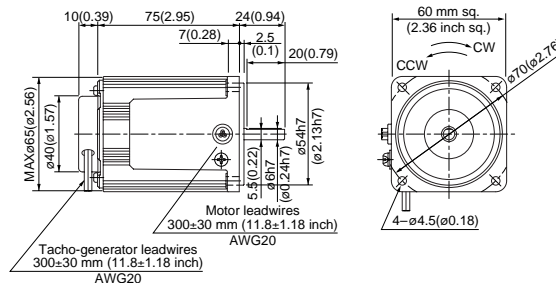
## Dimensions

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

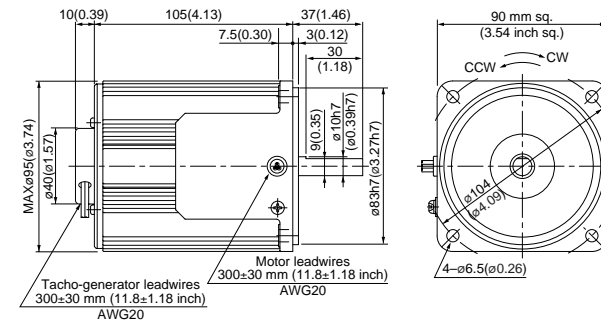
**60 mm sq. (2.36 inch sq.) 4 W** Mass 0.6 kg (1.32 lb)  
**M6RX4SV4LS**



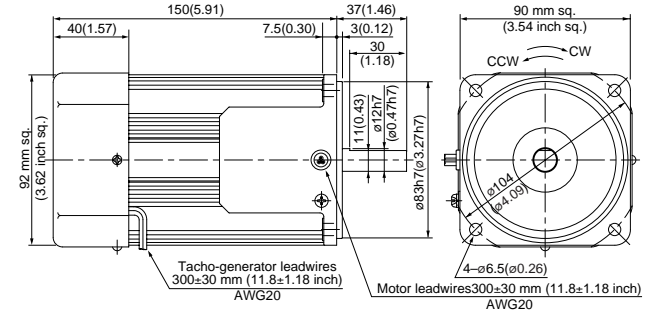
**60 mm sq. (2.36 inch sq.) 6 W** Mass 0.71 kg (1.57 lb)  
**M6RX6SV4LS**  
**M6RX6SV4YS**  
**M6RX6SV4LG(A)**  
**M6RX6SV4YG(A)**  
**M6RX6SV4DG(A)**  
**M6RX6SV4GG(A)**



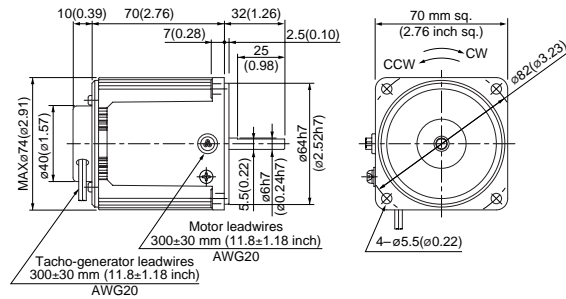
**90 mm sq. (3.54 inch sq.) 40 W** Mass 2.4 kg (5.29 lb)  
**M9RX40SV4LS**  
**M9RX40SV4YS**  
**M9RX40SV4LG(A)**  
**M9RX40SV4YG(A)**  
**M9RX40SV4DG(A)**  
**M9RX40SV4GG(A)**



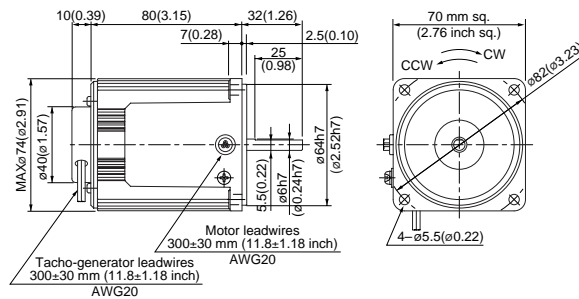
**90 mm sq. (3.54 inch sq.) 60 W** Mass 2.7 kg (5.95 lb)  
**M9RZ60SV4LS (with fan)**  
**M9RZ60SV4YS (with fan)**  
**M9RZ60SV4LG(A) (with fan)**  
**M9RZ60SV4DG(A) (with fan)**  
**M9RZ60SV4YG(A) (with fan)**  
**M9RZ60SV4GG(A) (with fan)**



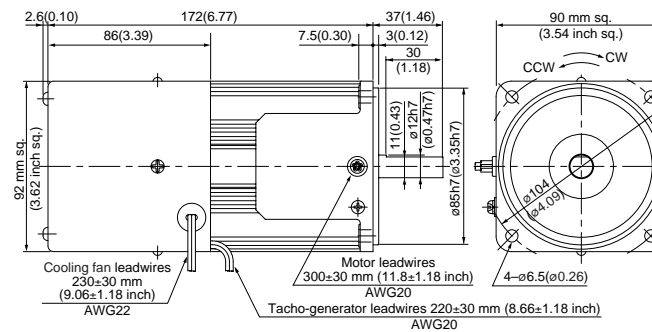
**70 mm sq. (2.76 inch sq.) 10 W** Mass 0.88 kg (1.94 lb)  
**M7RX10SV4LS**  
**M7RX10SV4YS**



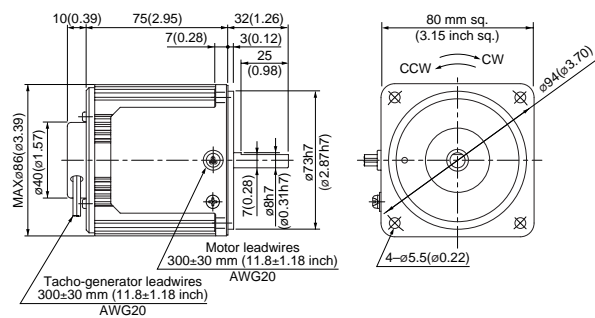
**70 mm sq. (2.76 inch sq.) 15 W** Mass 1.1 kg (2.43 lb)  
**M7RX15SV4LS**  
**M7RX15SV4YS**  
**M7RX15SV4LG(A)**  
**M7RX15SV4YG(A)**  
**M7RX15SV4DG(A)**  
**M7RX15SV4GG(A)**



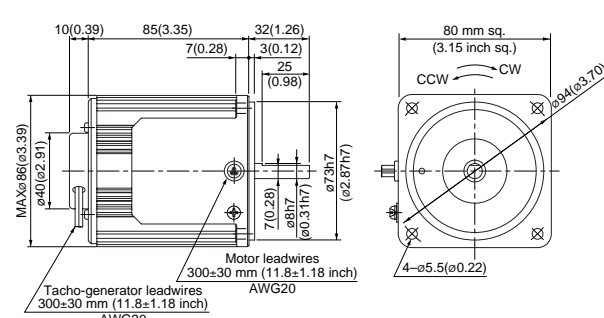
**90 mm sq. (3.54 inch sq.) 90 W** Mass 3.5 kg (7.72 lb)  
**M9RZ90SV4LS (Forced cooling fan)**  
**M9RZ90SV4YS (Forced cooling fan)**  
**M9RZ90SV4LG(A) (Forced cooling fan)**  
**M9RZ90SV4DG(A) (Forced cooling fan)**  
**M9RZ90SV4YG(A) (Forced cooling fan)**  
**M9RZ90SV4GG(A) (Forced cooling fan)**



**80 mm sq. (3.15 inch sq.) 20 W** Mass 1.2 kg (2.65 lb)  
**M8RX20SV4LS**  
**M8RX20SV4YS**



**80 mm sq. (3.15 inch sq.) 25 W** Mass 1.5 kg (3.31 lb)  
**M8RX25SV4LS**  
**M8RX25SV4YS**  
**M8RX25SV4LG(A)**  
**M8RX25SV4YG(A)**  
**M8RX25SV4DG(A)**  
**M8RX25SV4GG(A)**



\* 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.

Induction motor  
 Reversible motor  
 3-phase motor  
 Electro magnetic brake motor  
 Variable speed  
 Variable speed reversible motor  
 Variable speed electro magnetic brake single-phase motor  
 Variable speed unit motor  
 C&B motor  
 2-pole round shaft  
 Gear head  
 Gear head (U.S.A.)

