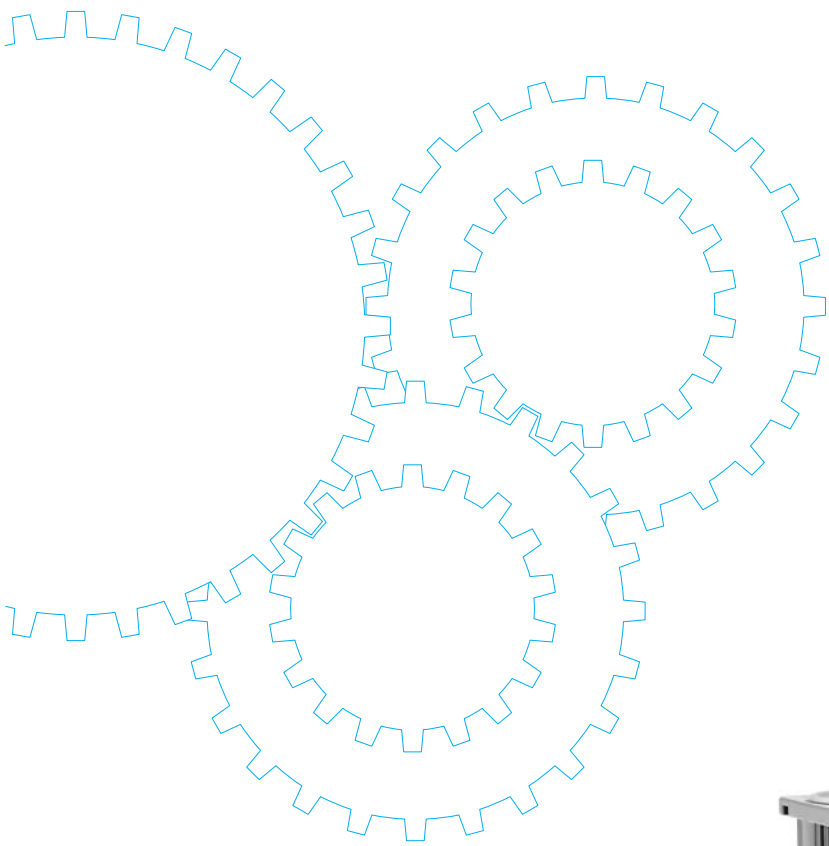


# Induction Motor

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## Contents

- Motor Overview B- 2
- Model list B- 4
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- Gear head combination dimensions B-58
- Round shaft motor dimensions B-61

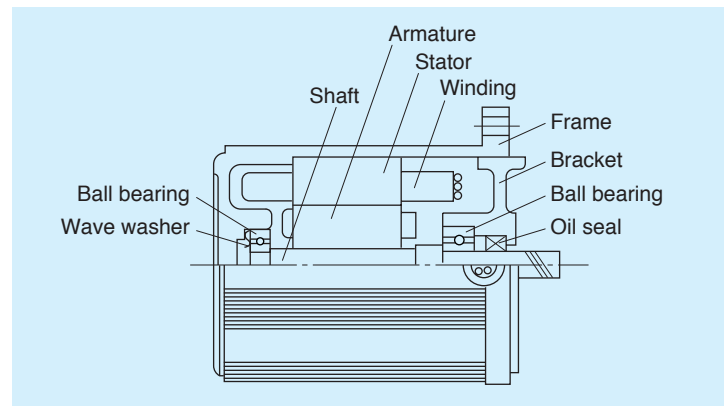
# Outline of induction motor

## Features

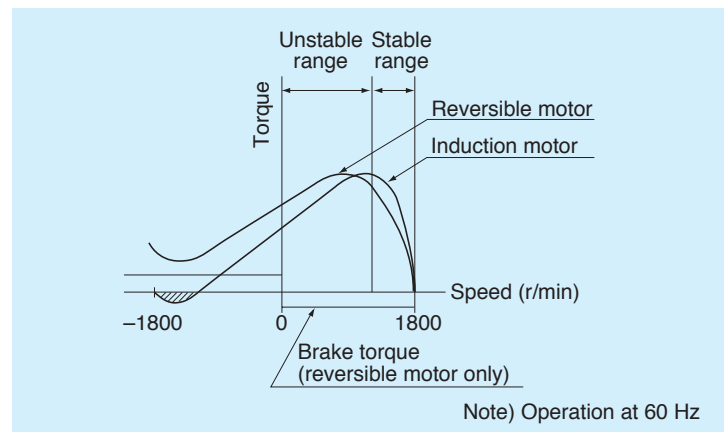
- It is fitted for continuous running in one direction. <Single-phase motor>
- Continuous time rating
- The motor with national specifications is of heatproof class 120 (E); the motor with specifications compliant with overseas standards is of heatproof class 130 (B).
- Because it is a capacitor-type induction motor, it has a high power factor and runs with a low noise level.

Note 1) The induction motor cannot make a quick-reversal run because of the torque acting in the opposite direction. Therefore stop the induction motor once, change the wire connections and make a reverse run.  
 Note 2) Induction motor start-stop operation must not exceed 6-cycles per minute or damage may occur.

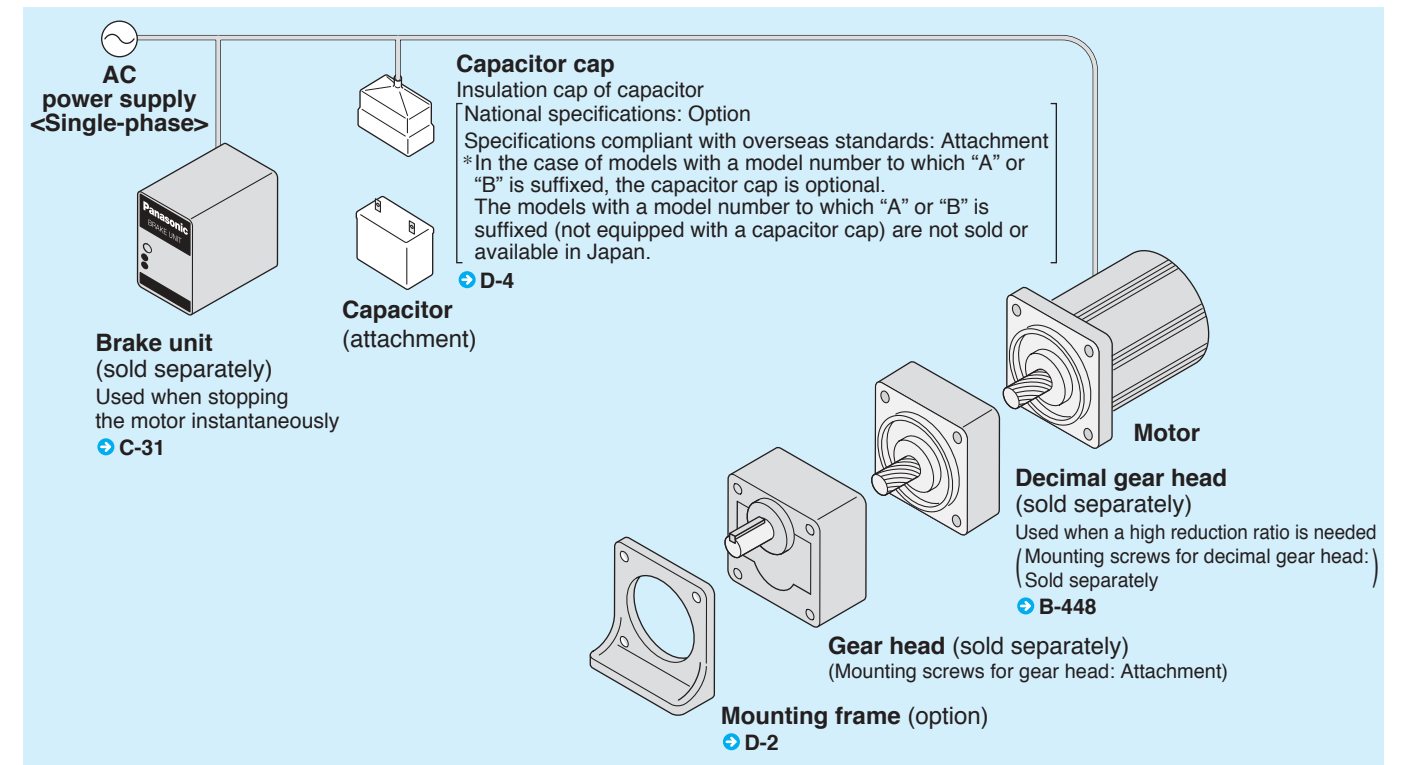
## Construction



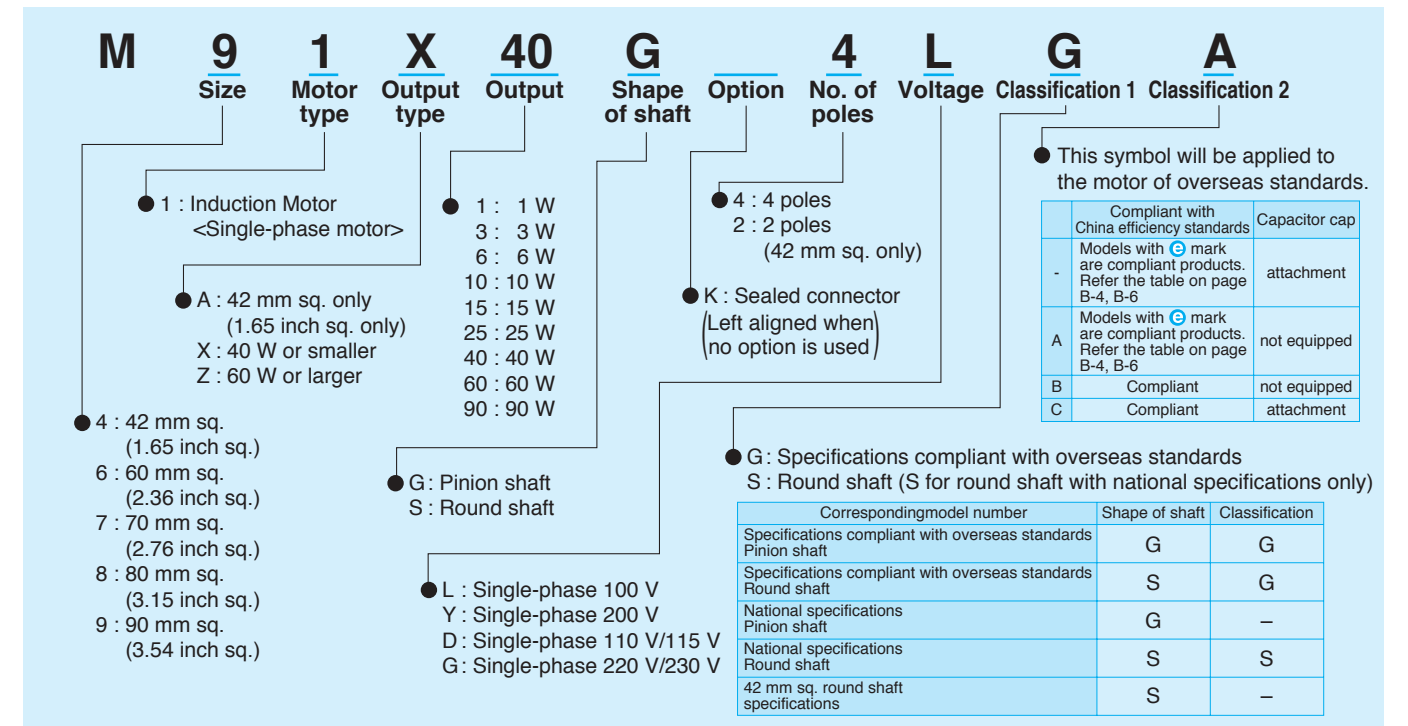
## Characteristics



## 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 induction motor

## Pinion shaft motor

## Applicable gear head

★ Motor compliant with overseas standards    Ⓜ Motor compliant with China efficiency standards    

 Hinge attached

Size	Output (W)	Leadwire type			Sealed connector type		
		Model number	Specifications	Page	Model number	Specifications	Page
42 mm sq. (1.65 inch sq.)	3	M41A3G2L	100 V	B- 8			
	1	M41A1G4L	100 V	B-10			
60 mm sq. (2.36 inch sq.)	3	M61X3G4L	100 V	B-12			
	6	M61X6G4L	100 V	B-14			
		M61X6G4Y	200 V	B-14			
		M61X6G4LG(A)	100 V ★	B-16			
		M61X6G4DG(A)	110 V/115 V ★	B-16			
		M61X6G4YG(A)	200 V ★	B-16			
		M61X6G4GG(A)	220 V/230 V ★	B-16			
70 mm sq. (2.76 inch sq.)	10	M71X10G4L	100 V	B-18			
		M71X10G4Y	200 V	B-18			
	15	M71X15G4L	100 V	B-20			
		M71X15G4Y	200 V	B-20			
		M71X15G4LG(A)	100 V ★	B-22			
		M71X15G4DG(A)	110 V/115 V ★	B-22			
		M71X15G4YG(A)	200 V ★	B-22			
M71X15G4GG(A)	220 V/230 V ★ Ⓜ	B-22					
80 mm sq. (3.15 inch sq.)	15	M81X15G4L	100 V	B-24			
		M81X15G4Y	200 V	B-24			
	25	M81X25G4L	100 V	B-26	M81X25GK4L	100 V	B-42
		M81X25G4Y	200 V	B-26	M81X25GK4Y	200 V	B-42
		M81X25G4LG(A)	100 V ★	B-28	M81X25GK4LG(A)	100 V ★	B-44
		M81X25G4DG(A)	110 V/115 V ★	B-28	M81X25GK4DG(A)	110 V/115 V ★	B-44
		M81X25G4YG(A)	200 V ★	B-28	M81X25GK4YG(A)	200 V ★	B-44
M81X25G4GG(A)	220 V/230 V ★ Ⓜ	B-28	M81X25GK4GG(A)	220 V/230 V ★ Ⓜ	B-44		
90 mm sq. (3.54 inch sq.)	40	M91X40G4L	100 V	B-30	M91X40GK4L	100 V	B-46
		M91X40G4Y	200 V	B-30	M91X40GK4Y	200 V	B-46
		M91X40G4LG(A)	100 V ★	B-32	M91X40GK4LG(A)	100 V ★	B-48
		M91X40G4DG(A)	110 V/115 V ★	B-32	M91X40GK4DG(A)	110 V/115 V ★	B-48
		M91X40G4YG(A)	200 V ★	B-32	M91X40GK4YG(A)	200 V ★	B-48
		M91X40G4GG(A)	220 V/230 V ★ Ⓜ	B-32	M91X40GK4GG(A)	220 V/230 V ★ Ⓜ	B-48
	60	M91Z60G4L	100 V	B-34	M91Z60GK4L	100 V	B-50
		M91Z60G4Y	200 V	B-34	M91Z60GK4Y	200 V	B-50
		M91Z60G4LG(A)	100 V ★	B-36	M91Z60GK4LG(A)	100 V ★	B-52
		M91Z60G4DG(A)	110 V/115 V ★	B-36	M91Z60GK4DG(A)	110 V/115 V ★	B-52
		M91Z60G4YG(A)	200 V ★	B-36	M91Z60GK4YG(A)	200 V ★	B-52
		M91Z60G4GG(A)	220 V/230 V ★	B-36	M91Z60GK4GG(A)	220 V/230 V ★	B-52
		M91Z60G4GGB	220 V/230 V ★ Ⓜ	B-36	M91Z60GK4GGB	220 V/230 V ★ Ⓜ	B-52
		M91Z60G4GGC	220 V/230 V ★ Ⓜ	B-36	M91Z60GK4GGC	220 V/230 V ★ Ⓜ	B-52
	90	M91Z90G4L	100 V	B-38	M91Z90GK4L	100 V	B-54
M91Z90G4Y		200 V	B-38	M91Z90GK4Y	200 V	B-54	
M91Z90G4LG(A)		100 V ★	B-40	M91Z90GK4LG(A)	100 V ★	B-56	
M91Z90G4DG(A)		110 V/115 V ★	B-40	M91Z90GK4DG(A)	110 V/115 V ★	B-56	
M91Z90G4YG(A)		200 V ★	B-40	M91Z90GK4YG(A)	200 V ★	B-56	
M91Z90G4GG(A)		220 V/230 V ★	B-40	M91Z90GK4GG(A)	220 V/230 V ★	B-56	
M91Z90G4GGB		220 V/230 V ★ Ⓜ	B-40	M91Z90GK4GGB	220 V/230 V ★ Ⓜ	B-56	
M91Z90G4GGC		220 V/230 V ★ Ⓜ	B-40	M91Z90GK4GGC	220 V/230 V ★ Ⓜ	B-56	

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

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

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

# Model list of induction motor

## Round shaft motor

★ Motor compliant with overseas standards 
 Ⓜ Motor compliant with China efficiency standards 
 c RU us CE ©

Ⓟ Electrical Appliance and Material Safety Law

Size	Output (W)	Leadwire type		Sealed connector type					
		Model number	Specifications	Model number	Specifications				
42 mm sq. (1.65 inch sq.)	3	M41A3S2L	100 V						
	1	M41A1S4L	100 V						
60 mm sq. (2.36 inch sq.)	3	M61X3S4LS	100 V						
	6	M61X6S4LS	100 V						
		M61X6S4YS	200 V						
		M61X6S4LG(A)	100 V	★					
		M61X6S4DG(A)	110 V/115 V	★					
		M61X6S4YG(A)	200 V	★					
		M61X6S4GG(A)	220 V/230 V	★					
70 mm sq. (2.76 inch sq.)	10	M71X10S4LS	100 V						
		M71X10S4YS	200 V						
	15	M71X15S4LS	100 V						
		M71X15S4YS	200 V						
		M71X15S4LG(A)	100 V	★					
		M71X15S4DG(A)	110 V/115 V	★					
		M71X15S4YG(A)	200 V	★					
		M71X15S4GG(A)	220 V/230 V	★	Ⓜ				
80 mm sq. (3.15 inch sq.)	15	M81X15S4LS	100 V						
		M81X15S4YS	200 V						
	25	M81X25S4LS	100 V		M81X25SK4LS	100 V	Ⓟ		
		M81X25S4YS	200 V		M81X25SK4YS	200 V	Ⓟ		
		M81X25S4LG(A)	100 V	★	M81X25SK4LG(A)	100 V	★	Ⓟ	
		M81X25S4DG(A)	110 V/115 V	★	M81X25SK4DG(A)	110 V/115 V	★		
		M81X25S4YG(A)	200 V	★	M81X25SK4YG(A)	200 V	★	Ⓟ	
		M81X25S4GG(A)	220 V/230 V	★	M81X25SK4GG(A)	220 V/230 V	★	Ⓜ	
		90 mm sq. (3.54 inch sq.)	40	M91X40S4LS	100 V		M91X40SK4LS	100 V	Ⓟ
				M91X40S4YS	200 V		M91X40SK4YS	200 V	Ⓟ
M91X40S4LG(A)	100 V			★	M91X40SK4LG(A)	100 V	★	Ⓟ	
M91X40S4DG(A)	110 V/115 V			★	M91X40SK4DG(A)	110 V/115 V	★		
M91X40S4YG(A)	200 V			★	M91X40SK4YG(A)	200 V	★	Ⓟ	
M91X40S4GG(A)	220 V/230 V			★	M91X40SK4GG(A)	220 V/230 V	★	Ⓜ	
60	M91Z60S4LS		100 V		M91Z60SK4LS	100 V	Ⓟ		
	M91Z60S4YS		200 V		M91Z60SK4YS	200 V	Ⓟ		
	M91Z60S4LG(A)	100 V	★	M91Z60SK4LG(A)	100 V	★	Ⓟ		
	M91Z60S4DG(A)	110 V/115 V	★	M91Z60SK4DG(A)	110 V/115 V	★			
	M91Z60S4YG(A)	200 V	★	M91Z60SK4YG(A)	200 V	★	Ⓟ		
	M91Z60S4GG(A)	220 V/230 V	★	M91Z60SK4GG(A)	220 V/230 V	★			
	M91Z60S4GGB	220 V/230 V	★	M91Z60SK4GGB	220 V/230 V	★	Ⓜ		
	M91Z60S4GGC	220 V/230 V	★	M91Z60SK4GGC	220 V/230 V	★	Ⓜ		
	90	M91Z90S4LS	100 V		M91Z90SK4LS	100 V	Ⓟ		
		M91Z90S4YS	200 V		M91Z90SK4YS	200 V	Ⓟ		
		M91Z90S4LG(A)	100 V	★	M91Z90SK4LG(A)	100 V	★	Ⓟ	
		M91Z90S4DG(A)	110 V/115 V	★	M91Z90SK4DG(A)	110 V/115 V	★		
		M91Z90S4YG(A)	200 V	★	M91Z90SK4YG(A)	200 V	★	Ⓟ	
		M91Z90S4GG(A)	220 V/230 V	★	M91Z90SK4GG(A)	220 V/230 V	★		
M91Z90S4GGB		220 V/230 V	★	M91Z90SK4GGB	220 V/230 V	★	Ⓜ		
M91Z90S4GGC		220 V/230 V	★	M91Z90SK4GGC	220 V/230 V	★	Ⓜ		

\* 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-61.

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

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
42 mm sq.	M41A3G2L	2	3	100	50	Cont.	10	0.10	2625	0.011 (1.6)	0.15	0.011 (1.6)	1.5 (200 V)
					60		9	0.10	3250	0.009 (1.3)	0.15	0.011 (1.6)	

\* 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-61.

## Permissible torque at output shaft of gear head

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

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

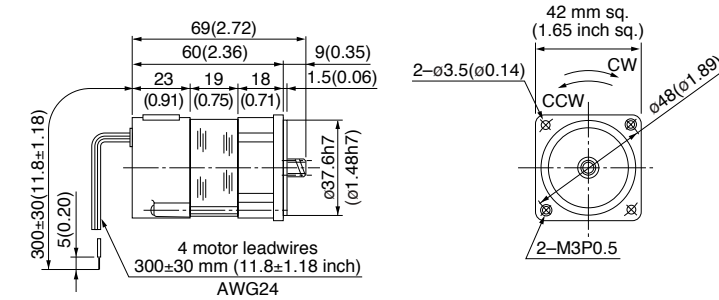
Reduction ratio	Unit of permissible torque: upper (mN·m) / lower (lb-in)																				
	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
Speed (r/min)	50 Hz	1000	833	600	500	400	333	240	200	167	120	100	83.3	60	50	40	33.3	30	25	20	16.7
	60 Hz	1200	1000	720	600	480	400	288	240	200	144	120	100	72	60	48	40	36	30	24	20
Applicable gear head	M4GA3F to M4GA180F (metal+ball bearing)	50 Hz	28 (0.248)	34 (0.301)	47 (0.416)	57 (0.504)	71 (0.628)	84 (0.743)	98 (0.867)	127 (1.12)	157 (1.39)	186 (1.65)	225 (1.99)	274 (2.43)	382 (3.38)	461 (4.08)	490 (4.34)				
		60 Hz	24 (0.212)	28 (0.248)	39 (0.345)	47 (0.416)	59 (0.522)	71 (0.628)	81 (0.717)	98 (0.867)	127 (1.12)	176 (1.56)	186 (1.65)	225 (1.99)	313 (2.77)	382 (3.38)	490 (4.34)				
Rotational direction		Same as motor rotational direction			Reverse to motor rotational direction			Same as motor rotational direction			Reverse to motor rotational direction										

## Motor (dimensions)

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

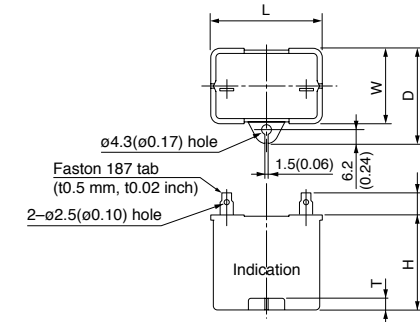
M41A3G2L 2P 3 W 100 V

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



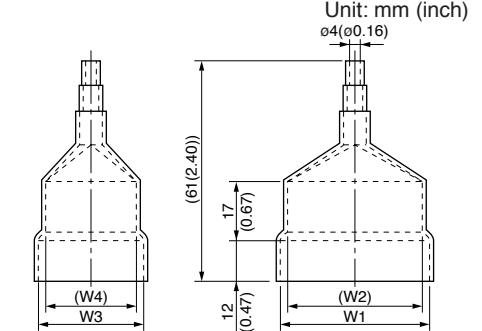
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [option]

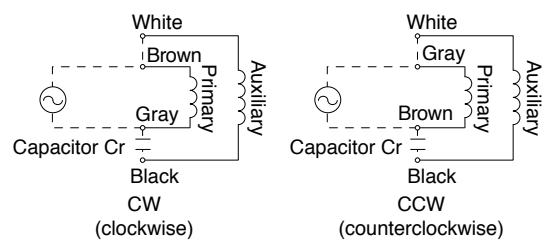
Unit: mm (inch)



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

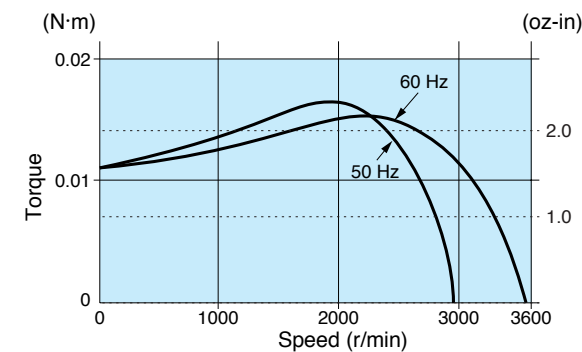
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M41A3G2L	M0PC1.5M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)

## Connection diagram



## Speed-torque characteristics

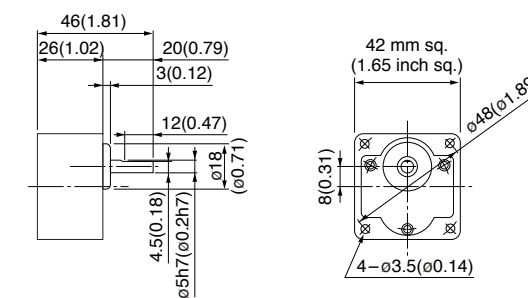
M41A3G2L



## Gear head (dimensions)

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

M4GA□F (ball + metal bearing) Mass 0.2 kg (0.44 lb): Output shaft D cut  
\* In the case of 42 mm sq. (1.65 inch sq.), a ball bearing is used for the output shaft only.



## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
42 mm sq.	M41A1G4L	4	1	100	50	Cont.	10	0.11	1175	0.0078 (1.10)	0.11	0.015 (2.12)	1.3 (200 V)
					60		10	0.11	1575	0.0059 (0.84)	0.11	0.016 (2.27)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-61.

## Permissible torque at output shaft of gear head

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

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

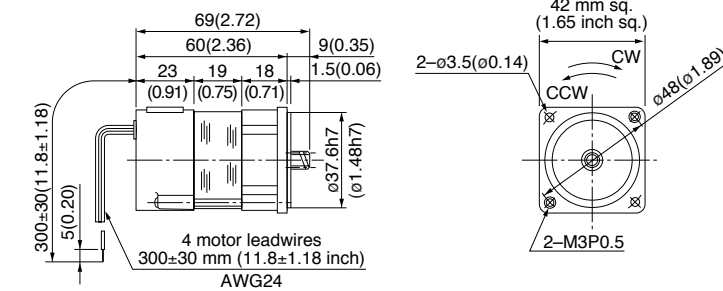
Reduction ratio	Speed (r/min)																						
	50 Hz	60 Hz	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
Speed (r/min)	50 Hz	60 Hz	500	416.7	300	250	200	166.7	120	100	83.3	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	
Applicable gear head	M4GA3F to M4GA180F (metal+ball bearing)	50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

## Motor (dimensions)

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

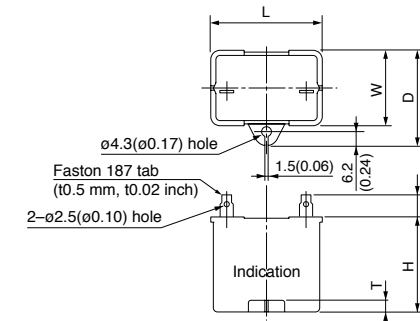
M41A1G4L 4P 1 W 100 V

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



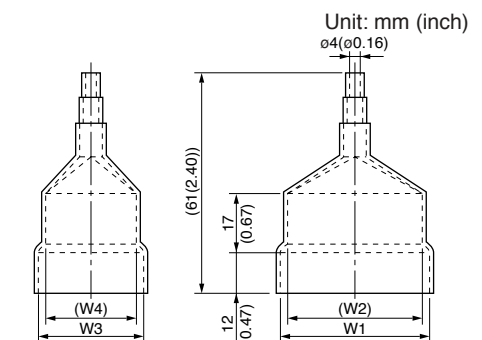
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [option]

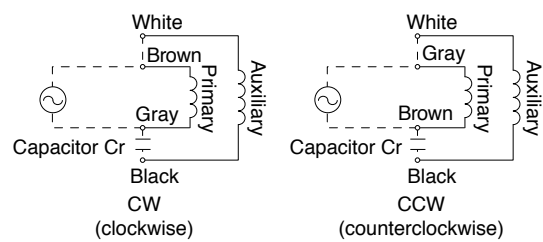
Unit: mm (inch)



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

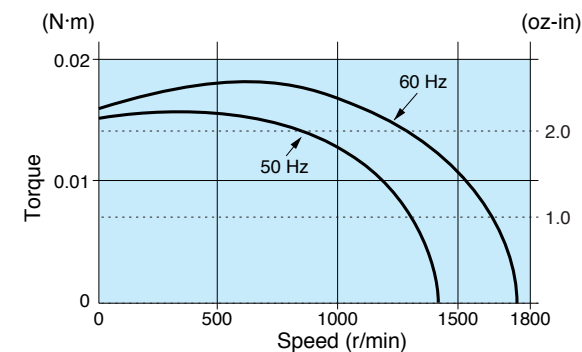
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M41A1G4L	M0PC1.3M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)

## Connection diagram



## Speed-torque characteristics

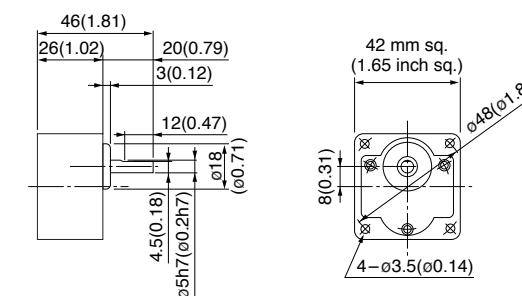
M41A1G4L



## Gear head (dimensions)

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

M4GA□F (ball + metal bearing) Mass 0.2 kg (0.44 lb); Output shaft D cut  
\* In the case of 42 mm sq. (1.65 inch sq.), a ball bearing is used for the output shaft only.



## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N·m (oz-in)			
60 mm sq.	M61X3G4L	4	3	100	50	Cont.	15	0.15	1250	0.022 (3.1)	0.18	0.031 (4.4)	2.0 (200 V)
					60		15	0.15	1575	0.018 (2.5)	0.19	0.031 (4.4)	

\* 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-61.

## Permissible torque at output shaft of gear head

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

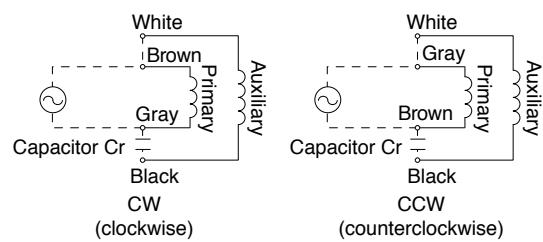
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	Unit of permissible torque: upper (N·m) / lower (lb-in)																							
	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180		
Speed (r/min)	50 Hz 600	416.7 500	300 360	250 300	200 240	166.7 200	150 180	120 144	100 120	83.3 100	75 90	60 72	50 60	41.7 50	30 36	25 30	20 24	16.7 20	15 18	12.5 15	10 12	8.3 10		
Applicable gear head	MX6G3BA to MX6G180B (ball bearing)	50 Hz	0.048 (0.42)	0.058 (0.51)	0.079 (0.70)	0.095 (0.84)	0.12 (1.1)	0.14 (1.2)	0.16 (1.4)	0.20 (1.8)	0.24 (2.1)	0.28 (2.5)	0.31 (2.7)	0.38 (3.4)	0.46 (4.1)	0.55 (4.9)	0.76 (6.7)	0.92 (8.1)	1.08 (9.6)	1.27 (11.2)	1.47 (13.0)	1.76 (15.6)	2.16 (19.1)	2.45 (21.7)
		60 Hz	0.040 (0.35)	0.048 (0.42)	0.067 (0.59)	0.079 (0.86)	0.098 (0.87)	0.12 (1.1)	0.13 (1.2)	0.17 (1.5)	0.20 (1.8)	0.24 (2.1)	0.25 (2.2)	0.32 (2.8)	0.38 (3.4)	0.46 (4.1)	0.64 (5.7)	0.76 (6.7)	0.90 (8.0)	1.08 (9.6)	1.27 (11.2)	1.47 (13.0)	1.76 (15.6)	2.16 (19.1)
Rotational direction	Same as motor rotational direction											Reverse to motor rotational direction												

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

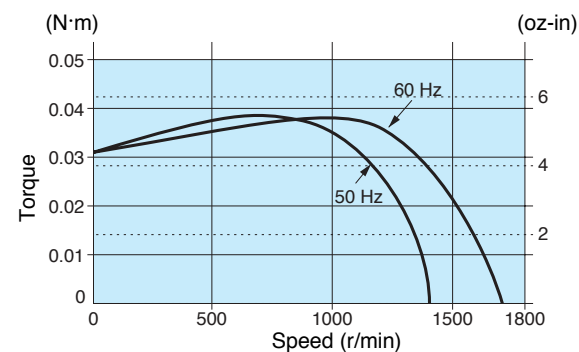
Applicable gear head		Reduction ratio	Unit of permissible torque: upper (N·m) / lower (lb-in)													
Bearing	Decimal gear head		Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
MX6G□BA (ball bearing)	MX6G10XB	Permissible torque	N·m (lb-in)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)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

## Connection diagram



## Speed-torque characteristics

### M61X3G4L

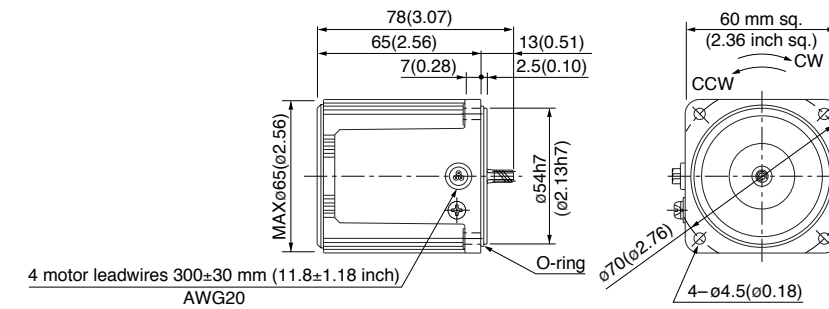


## Motor (dimensions)

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

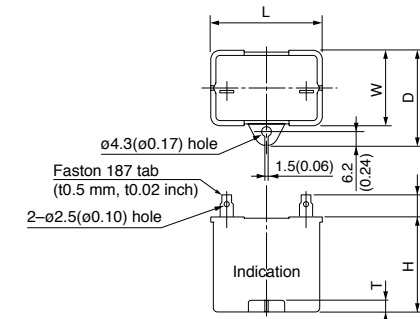
M61X3G4L 4P 3 W 100 V

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



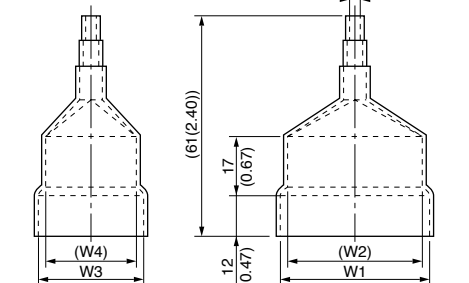
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [option]

Unit: mm (inch)



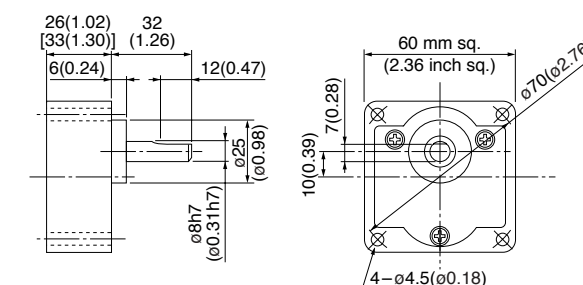
## Capacitor dimension list Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M61X3G4L	M0PC2M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)

## Gear head (dimensions)

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

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

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

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
60 mm sq.	M61X6G4L	4	6	100	50	Cont.	20	0.21	1250	0.048 (6.80)	0.30	0.049 (6.94)	2.5 (200 V)
					60		20	0.20	1575	0.038 (5.38)	0.30	0.049 (6.94)	
	M61X6G4Y	4	6	200	50	Cont.	20	0.11	1250	0.048 (6.80)	0.15	0.049 (6.94)	0.7 (400 V)
					60		20	0.10	1600	0.037 (5.24)	0.15	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-61.

## Permissible torque at output shaft of gear head

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

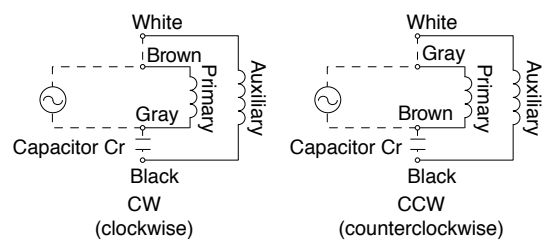
Unit of permissible torque: upper (N·m) / lower (lb·in)

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

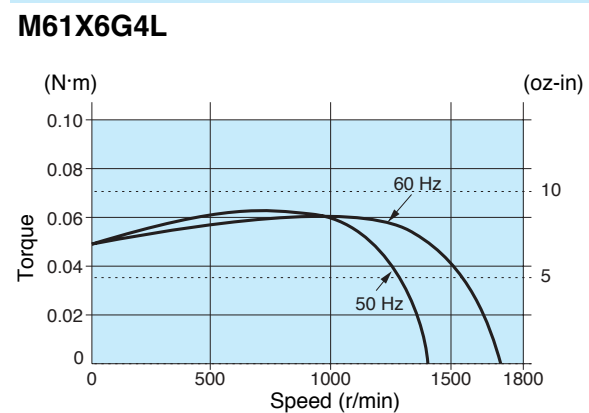
## Permissible torque at output shaft of gear head using decimal gear head

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

## Connection diagram



## Speed-torque characteristics

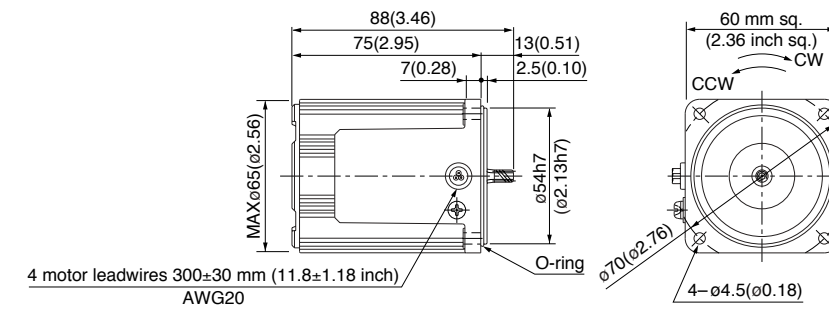


## Motor (dimensions)

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

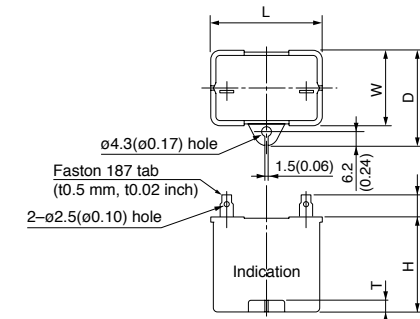
M61X6G4L	4P 6 W 100 V
M61X6G4Y	4P 6 W 200 V

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



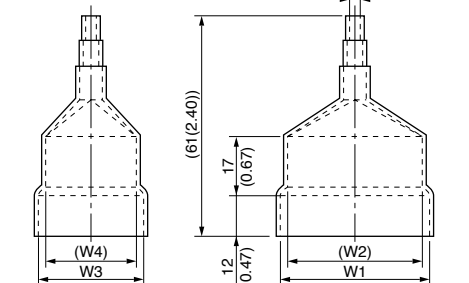
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [option]

Unit: mm (inch)



## Capacitor dimension list

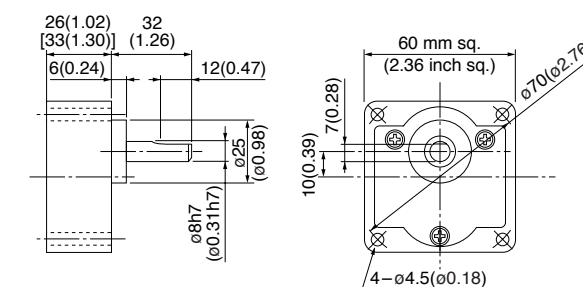
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M61X6G4L	M0PC2.5M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)
M61X6G4Y	M0PC0.7M40	39.5 (1.56)	16.2 (0.64)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)

## Gear head (dimensions)

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

MX6G□BA (ball bearing)	Mass 0.24 kg (0.53 lb): Output shaft D cut	MX6G□B (ball bearing)	Mass 0.3 kg (0.66 lb): Output shaft D cut
MX6G□MA (metal bearing)	Mass 0.24 kg (0.53 lb): Output shaft D cut	MX6G□M (metal bearing)	Mass 0.3 kg (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)	Rating				Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)	
							Input (W)	Current (A)	Speed (r/min)	Torque N·m (oz-in)				
60 mm sq.	M61X6G4LG M61X6G4LGA	4	6	100	50	Cont.	22	0.23	1275	0.045 (6.37)	0.32	0.051 (7.22)	3.5 (250 V)	
							23	0.23	1600	0.036 (5.10)	0.33	0.051 (7.22)		
	M61X6G4DG M61X6G4DGA	4	6	110	60	Cont.	21	0.20	1600	0.036 (5.10)	0.33	0.047 (6.66)	2.5 (250 V)	
							23	0.21	1625	0.035 (4.96)	0.34	0.051 (7.22)		
	M61X6G4YG M61X6G4YGA	4	6	200	50	Cont.	21	0.11	1225	0.047 (6.66)	0.14	0.051 (7.22)	0.8 (450 V)	
							22	0.11	1550	0.037 (5.24)	0.14	0.051 (7.22)		
	M61X6G4GG M61X6G4GGA	4	6	220	50	Cont.	22	0.11	1200	0.048 (6.80)	0.14	0.045 (6.37)	0.6 (450 V)	
							21	0.10	1550	0.037 (5.24)	0.14	0.045 (6.37)		
					230	50	Cont.	23	0.11	1250	0.046 (6.51)	0.15		0.050 (7.08)
								22	0.10	1575	0.036 (5.10)	0.15		0.051 (7.22)

• 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-61.  
 • The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
 • The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

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

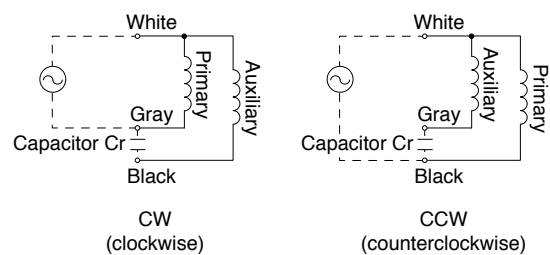
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	Unit of permissible torque: upper (N·m) / lower (lb-in)																							
	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180		
Speed (r/min)	[Data omitted for brevity]																							
Applicable gear head	MX6G3BA to MX6G180B (ball bearing)												MX6G3MA to MX6G180M (metal bearing)											
Rotational direction	Same as motor rotational direction												Reverse to motor rotational direction											

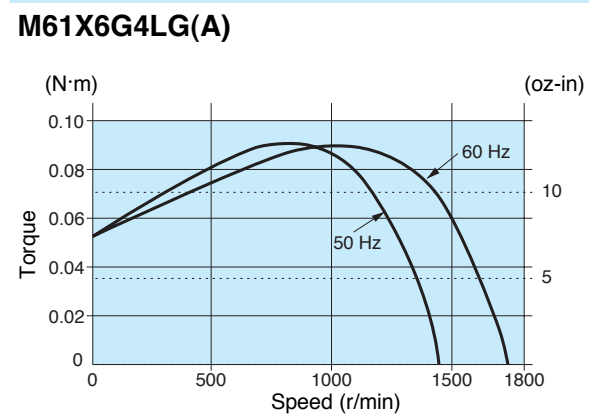
## Permissible torque at output shaft of gear head using decimal gear head

Applicable gear head	Reduction ratio	Permissible torque																
		200	250	300	360	500	600	750	900	1000	1200	1500	1800					
MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing)	MX6G10XB	Speed (r/min)	[Data omitted]															
		Rotational direction	Same as motor rotational direction								Reverse to motor rotational direction							

## Connection diagram



## Speed-torque characteristics

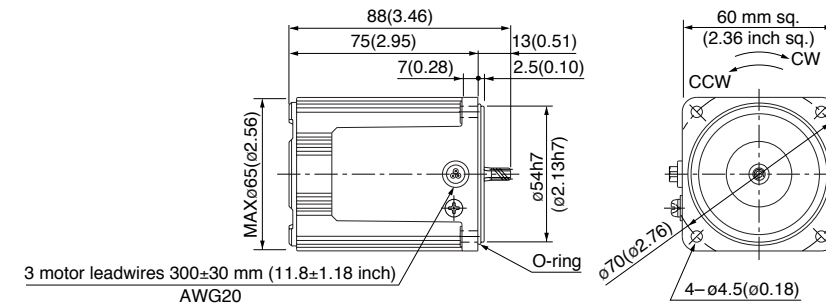


## Motor (dimensions)

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

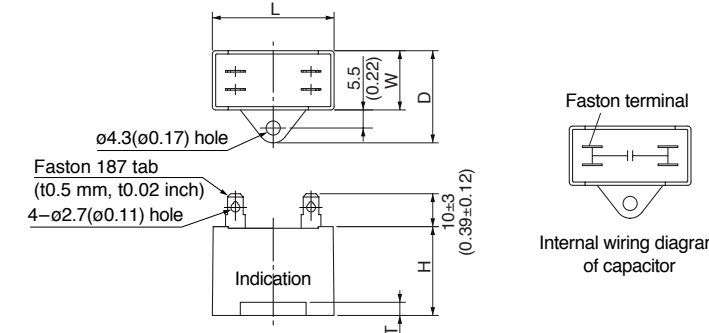
M61X6G4LG(A)	4P 6 W 100 V
M61X6G4DG(A)	4P 6 W 110 V / 115 V
M61X6G4YG(A)	4P 6 W 200 V
M61X6G4GG(A)	4P 6 W 220 V / 230 V

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



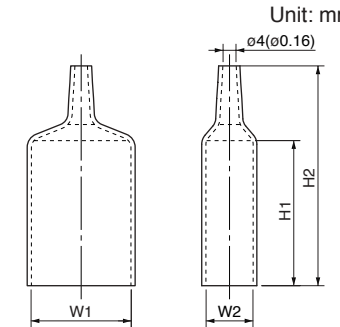
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

Unit: upper (mm) / lower (inch)

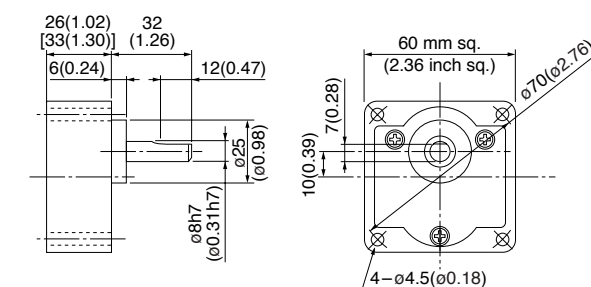
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M61X6G4LG(A)	M0PC3.5M25G	31 (1.22)	17 (0.67)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3117G	31 (1.22)	17 (0.67)	50 (1.97)	73 (2.87)
M61X6G4DG(A)	M0PC2.5M25G	31 (1.22)	17 (0.67)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3117G	31 (1.22)	17 (0.67)	50 (1.97)	73 (2.87)
M61X6G4YG(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)
M61X6G4GG(A)	M0PC0.6M45G	31 (1.22)	14.5 (0.57)	24.5 (0.96)	23.5 (0.93)	4 (0.16)	M0PC3114G	31 (1.22)	14.5 (0.57)	45 (1.77)	68 (2.68)

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

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

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
70 mm sq.	M71X10G4L	4	10	100	50	Cont.	26	0.27	1250	0.074 (10.48)	0.42	0.062 (8.78)	3 (200 V)
							26	0.26	1575	0.059 (8.36)	0.40	0.062 (8.78)	
	M71X10G4Y	4	10	200	50	Cont.	27	0.14	1250	0.075 (10.62)	0.20	0.064 (9.06)	1 (400 V)
							27	0.13	1575	0.060 (8.50)	0.20	0.064 (9.06)	

\* 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-61.

## Permissible torque at output shaft of gear head

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

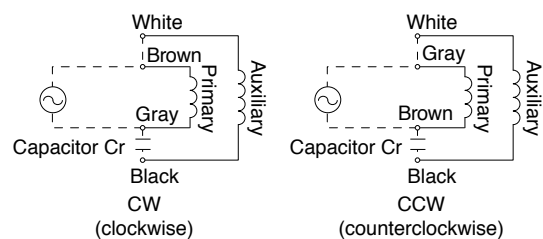
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

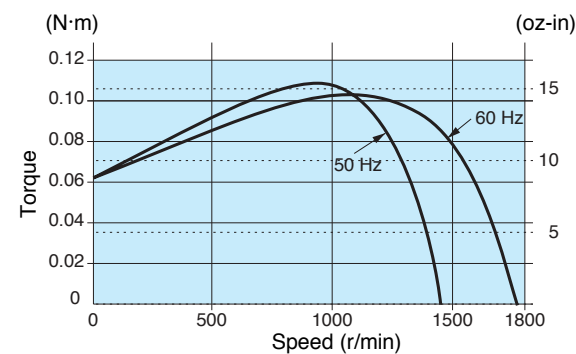
Applicable gear head		Reduction ratio	Reduction ratio											
Bearing	Decimal gear head		Speed (r/min)	200	250	300	360	500	600	750	900	1000	1200	1500
MX7G□BA (ball bearing)	MX7G□B (ball bearing)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX7G□MA (metal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

## Connection diagram



## Speed-torque characteristics

### M71X10G4L



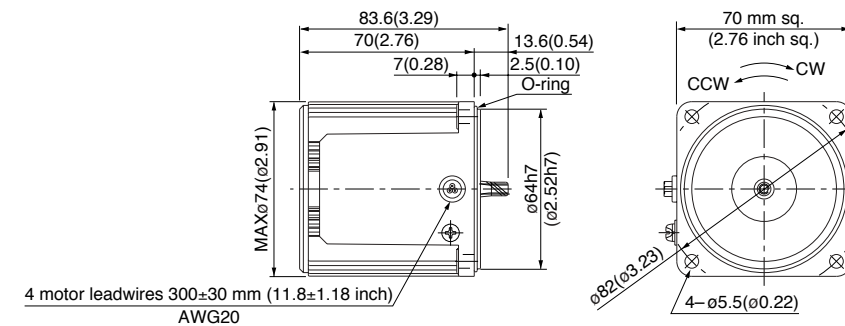
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

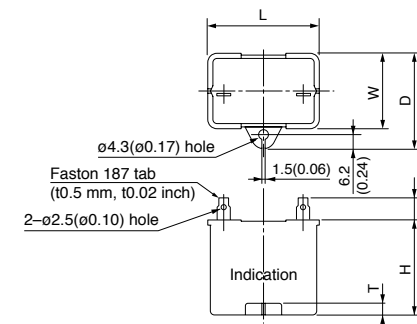
M71X10G4L	4P 10 W 100 V
M71X10G4Y	4P 10 W 200 V

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



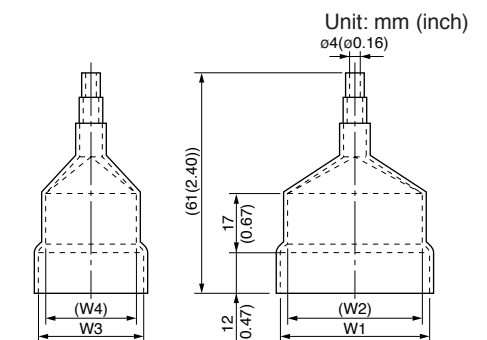
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [option]

Unit: mm (inch)

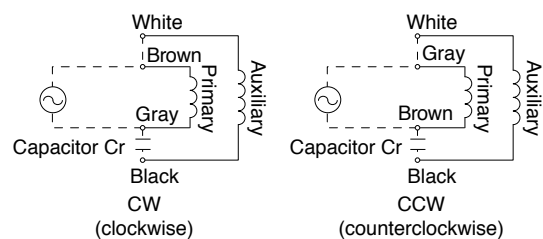


## Capacitor dimension list

Unit: upper (mm) / lower (inch)

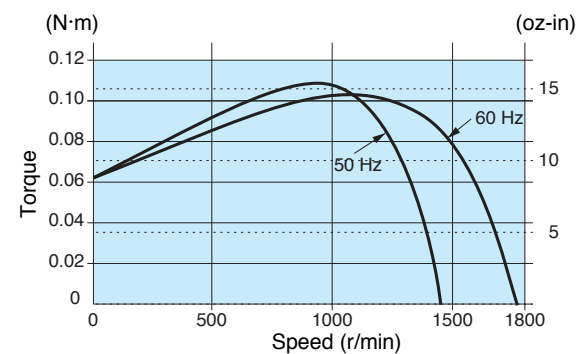
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M71X10G4L	M0PC3M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)
M71X10G4Y	M0PC1M40	39.5 (1.56)	16.2 (0.64)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)

## Connection diagram



## Speed-torque characteristics

### M71X10G4L



## Gear head (dimensions)

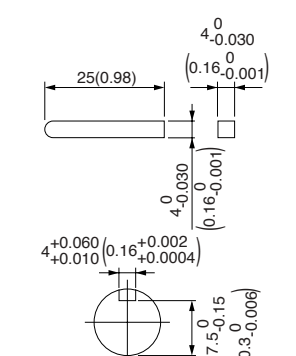
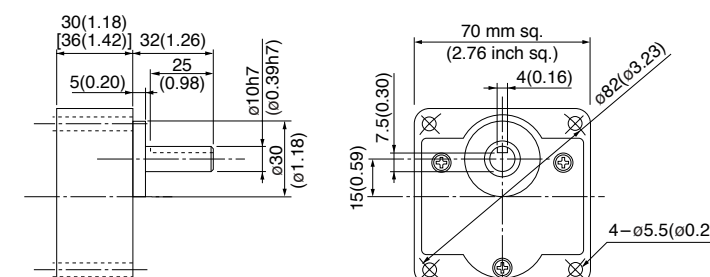
Scale: 1/3, Unit: mm (inch)

MX7G□BA (ball bearing)	Mass 0.38 kg (0.84 lb)
MX7G□MA (metal bearing)	Mass 0.38 kg (0.84 lb)

MX7G□B (ball bearing)	Mass 0.45 kg (0.99 lb)
MX7G□M (metal bearing)	Mass 0.45 kg (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)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
70 mm sq.	M71X15G4L	4	15	100	50	Cont.	34	0.37	1250	0.11 (15.6)	0.61	0.077 (10.9)	4 (200 V)
							33	0.33	1575	0.088 (12.5)	0.57	0.077 (10.9)	
	M71X15G4Y	4	15	200	50	Cont.	33	0.18	1300	0.11 (15.6)	0.30	0.077 (10.9)	1 (400 V)
							34	0.17	1600	0.088 (12.5)	0.29	0.077 (10.9)	

\* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-61.

## Permissible torque at output shaft of gear head

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

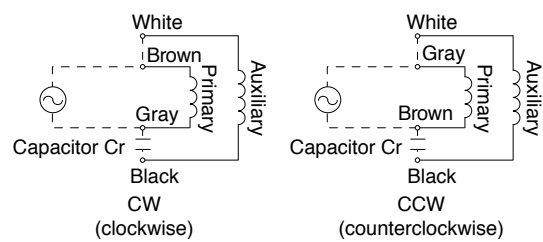
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

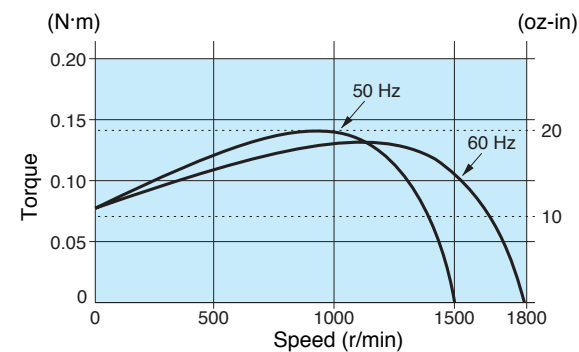
Applicable gear head		Reduction ratio	Reduction ratio													
Bearing	Decimal gear head		Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
MX7G□BA (ball bearing) MX7G□B (ball bearing) MX7G□MA (metal bearing) MX7G□M (metal bearing)	MX7G10XB	Permissible torque	N-m (lb-in)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
		Rotational direction		Same as motor rotational direction	Reverse to motor rotational direction											

## Connection diagram



## Speed-torque characteristics

### M71X15G4L



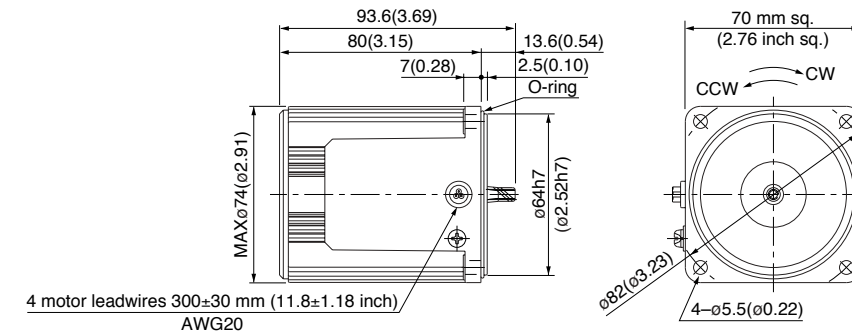
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

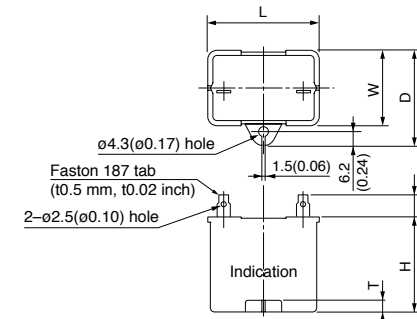
M71X15G4L	4P 15 W 100 V
M71X15G4Y	4P 15 W 200 V

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



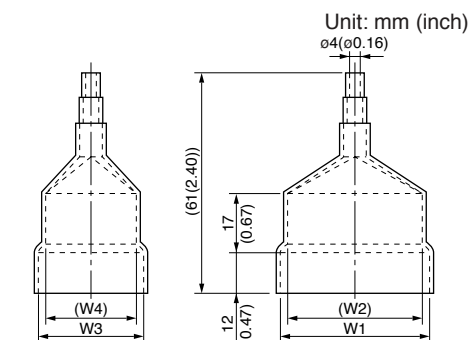
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [option]

Unit: mm (inch)



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

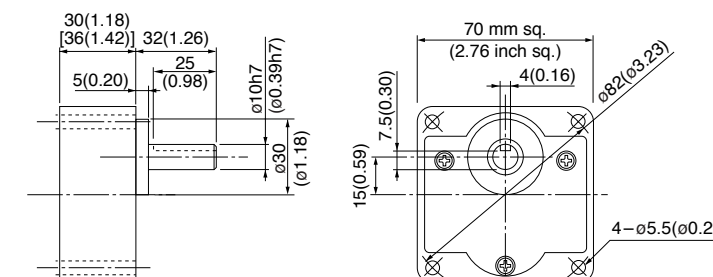
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M71X15G4L	M0PC4M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)
M71X15G4Y	M0PC1M40	39.5 (1.56)	16.2 (0.64)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)

## Gear head (dimensions)

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

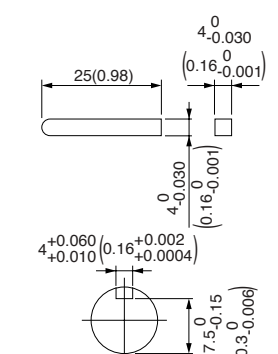
MX7G□BA (ball bearing)	Mass 0.38 kg (0.84 lb)
MX7G□MA (metal bearing)	Mass 0.38 kg (0.84 lb)

MX7G□B (ball bearing)	Mass 0.45 kg (0.99 lb)
MX7G□M (metal bearing)	Mass 0.45 kg (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)	Rating				Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N·m (oz-in)			
70 mm sq.	M71X15G4LG M71X15G4LGA	4	15	100	50	Cont.	34	0.35	1250	0.11 (15.6)	0.57	0.090 (12.7)	5.5 (250 V)
					60		35	0.35	1600	0.090 (12.7)	0.56	0.090 (12.7)	
	M71X15G4DG M71X15G4DGA	4	15	110	60	Cont.	34	0.31	1600	0.090 (12.7)	0.58	0.090 (12.7)	4.5 (250 V)
					60		36	0.32	1625	0.088 (12.5)	0.61	0.10 (14.2)	
	M71X15G4YG M71X15G4YGA	4	15	200	50	Cont.	34	0.17	1175	0.12 (17.0)	0.24	0.090 (12.7)	1.3 (450 V)
					60		35	0.18	1550	0.092 (13.0)	0.24	0.090 (12.7)	
	M71X15G4GG M71X15G4GGA	4	15	220	50	Cont.	35	0.16	1275	0.11 (15.6)	0.27	0.10 (14.2)	1.2 (450 V)
					60		37	0.17	1600	0.090 (12.7)	0.26	0.10 (14.2)	
				230	50	Cont.	36	0.16	1300	0.11 (15.6)	0.28	0.11 (15.6)	
					60		38	0.17	1625	0.088 (12.5)	0.27	0.11 (15.6)	

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-61.

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

## Permissible torque at output shaft of gear head

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

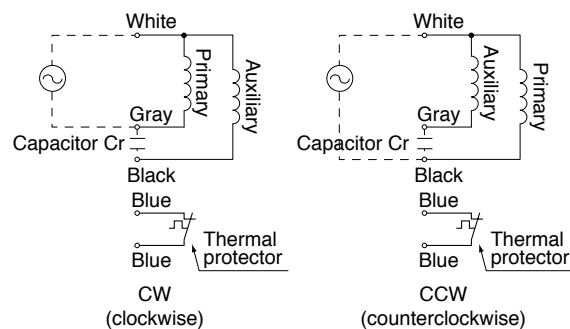
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

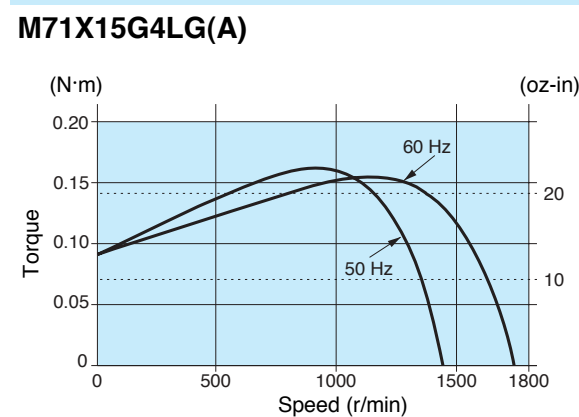
Applicable gear head		Reduction ratio	Permissible torque															
Bearing	Decimal gear head		Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8		
MX7G□BA (ball bearing) MX7G□B (bearing) MX7G□MA (metal bearing) MX7G□M (bearing)	MX7G10XB	Permissible torque	N·m (lb-in)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)		
			Rotational direction	Same as motor rotational direction			Reverse to motor rotational direction											

## Connection diagram



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

## Speed-torque characteristics

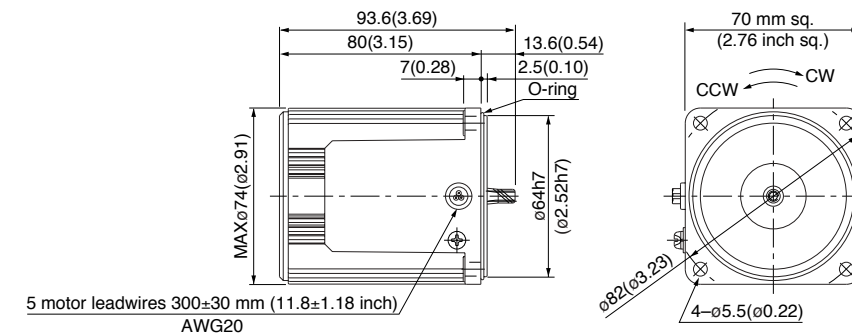


## Motor (dimensions)

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

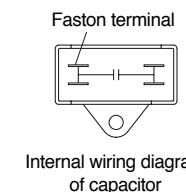
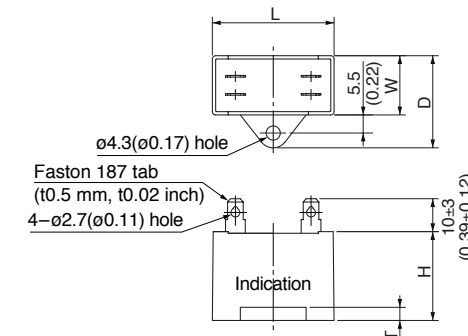
M71X15G4LG(A)	4P	15W	100 V
M71X15G4DG(A)	4P	15W	110 V / 115 V
M71X15G4YG(A)	4P	15W	200 V
M71X15G4GG(A)	4P	15W	220 V / 230 V

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



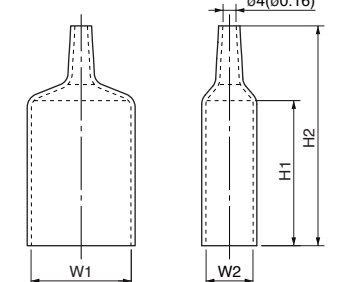
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [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 (attachment)	W1	W2	H1	H2
M71X15G4LG(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)
M71X15G4DG(A)	M0PC4.5M25G	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)
M71X15G4YG(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)
M71X15G4GG(A)	M0PC1.2M45G	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)

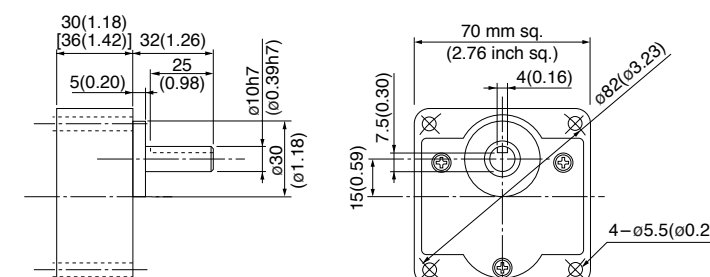
\* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

## Gear head (dimensions)

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

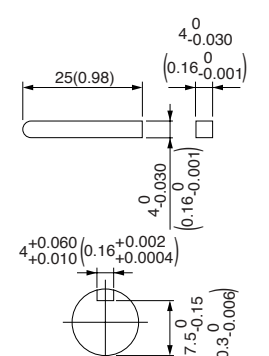
MX7G□BA (ball bearing) Mass 0.38 kg (0.84 lb)  
MX7G□MA (metal bearing) Mass 0.38 kg (0.84 lb)

MX7G□B (ball bearing) Mass 0.45 kg (0.99 lb)  
MX7G□M (metal bearing) Mass 0.45 kg (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)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
80 mm sq.	M81X15G4L	4	15	100	50	Cont.	36	0.39	1225	0.12 (17.0)	0.62	0.10 (14.2)	4 (200 V)
					60		35	0.35	1550	0.09 (12.7)	0.60	0.10 (14.2)	
	M81X15G4Y	4	15	200	50	Cont.	36	0.19	1225	0.12 (17.0)	0.30	0.10 (14.2)	1 (400 V)
					60		35	0.18	1550	0.09 (12.7)	0.30	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-61.

## Permissible torque at output shaft of gear head

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

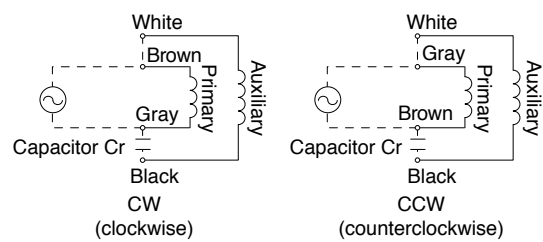
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	Unit of permissible torque: upper (N·m) / lower (lb-in)																						
	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
Speed (r/min)	50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	MX8G3B to MX8G180B (ball bearing)	50 Hz	0.24 (2.12)	0.28 (2.48)	0.39 (3.45)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.80 (7.08)	0.98 (8.67)	1.18 (10.4)	1.37 (12.1)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	2.74 (24.3)	3.82 (33.8)	4.61 (40.8)	5.49 (48.6)	6.57 (58.1)	7.35 (65.1)	7.84 (69.4)	7.84 (69.4)
		60 Hz	0.20 (1.77)	0.24 (2.12)	0.32 (2.83)	0.39 (3.45)	0.49 (4.34)	0.59 (5.22)	0.66 (5.84)	0.81 (7.17)	0.98 (8.67)	1.18 (10.4)	1.27 (11.2)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	3.23 (28.6)	3.82 (33.8)	4.61 (40.8)	5.49 (48.6)	6.17 (54.6)	7.35 (65.1)	7.84 (69.4)
Rotational direction		Same as motor rotational direction											Reverse to motor rotational direction										

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

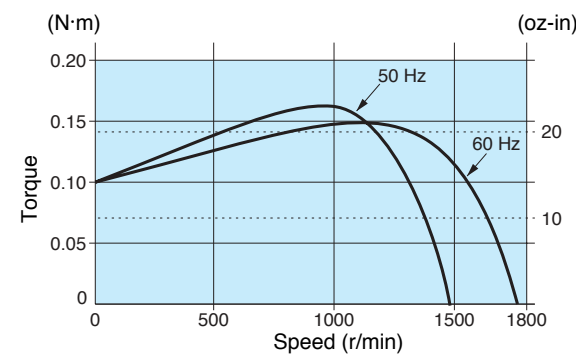
Applicable gear head		Reduction ratio	Reduction ratio																									
Bearing	Decimal gear head		Speed (r/min)	50 Hz		7.5		6		5		4.2		3		2.5		2		1.7		1.5		1.3		1		0.8
		MX8G□B (ball bearing) MX8G□M (metal bearing)		MX8G10XB	Permissible torque	N-m (lb-in)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84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

## Connection diagram



## Speed-torque characteristics

### M81X15G4L



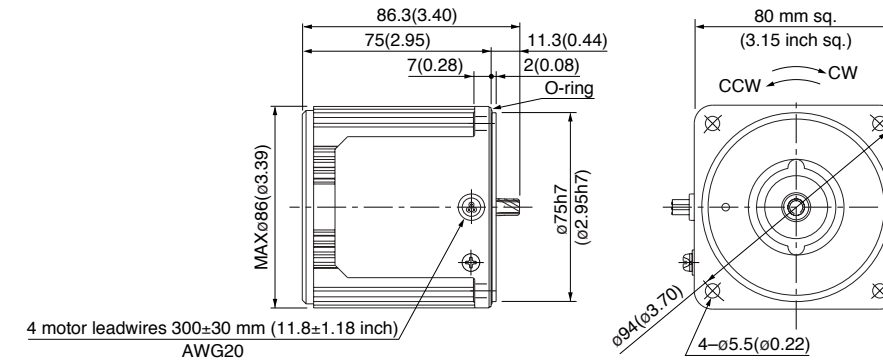
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

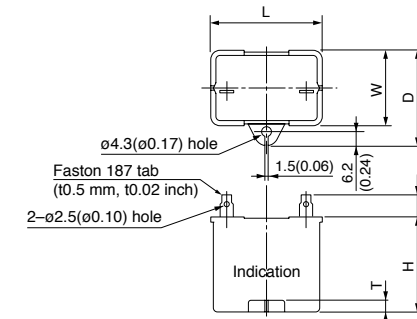
M81X15G4L 4P 15 W 100 V  
M81X15G4Y 4P 15 W 200 V

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



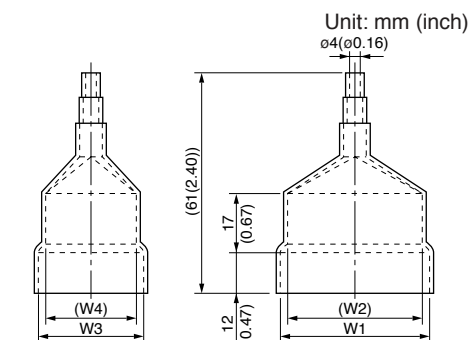
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [option]

Unit: mm (inch)



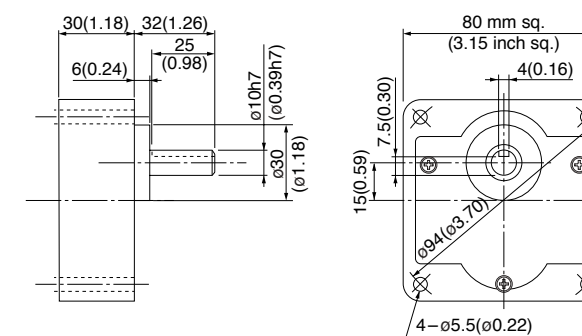
## Capacitor dimension list Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M81X15G4L	M0PC4M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)
M81X15G4Y	M0PC1M40	39.5 (1.56)	16.2 (0.64)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)

## Gear head (dimensions)

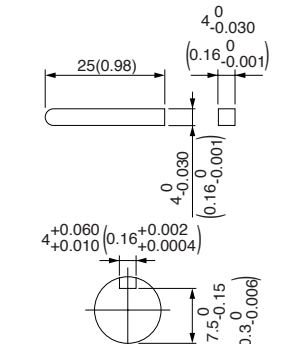
Scale: 1/3, Unit: mm (inch)

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



## Key and keyway (dimensions) [attachment]

MX8G□B(M)



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

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
80 mm sq.	M81X25G4L	4	25	100	50	Cont.	51	0.55	1250	0.19 (26.9)	0.98	0.16 (22.7)	6 (200 V)
							49	0.48	1550	0.15 (21.2)	0.94	0.16 (22.7)	
	M81X25G4Y	4	25	200	50	Cont.	51	0.27	1250	0.19 (26.9)	0.50	0.16 (22.7)	1.5 (400 V)
							49	0.24	1575	0.15 (21.2)	0.47	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-61.

## Permissible torque at output shaft of gear head

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

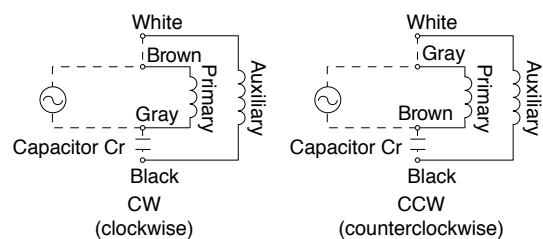
Unit of permissible torque: upper (N·m) / lower (lb·in)

Reduction ratio	Speed (r/min)																							
	50 Hz	60 Hz	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Applicable gear head	MX8G3B to MX8G180B (ball bearing)												MX8G3M to MX8G180M (metal bearing)											
Rotational direction	Same as motor rotational direction												Reverse to motor rotational direction											

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

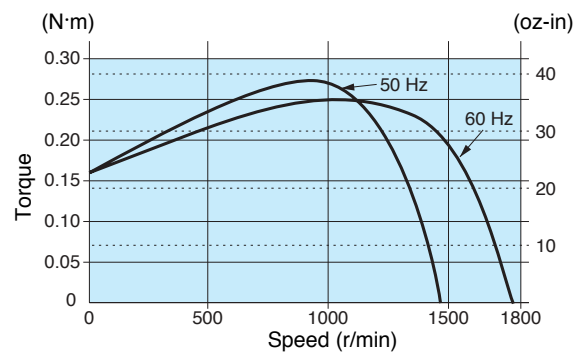
Applicable gear head	Reduction ratio	Speed (r/min)															
		50 Hz	60 Hz	200	250	300	360	500	600	750	900	1000	1200	1500	1800		
Bearing	Decimal gear head	Speed (r/min)	50 Hz	60 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8	
MX8G□B (ball bearing)	MX8G10XB	Permissible torque	N-m (lb-in)	7.84 (69.4)	7.84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

## Connection diagram



## Speed-torque characteristics

### M81X25G4L



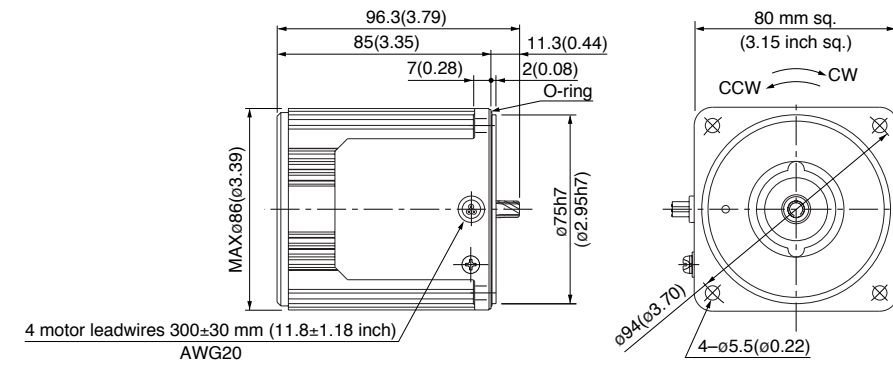
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

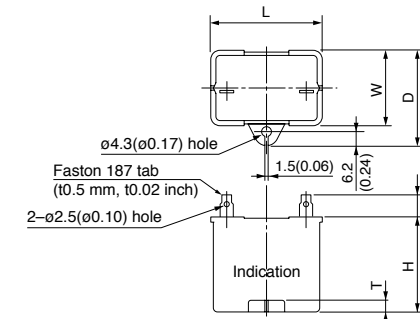
M81X25G4L	4P 25 W 100 V
M81X25G4Y	4P 25 W 200 V

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



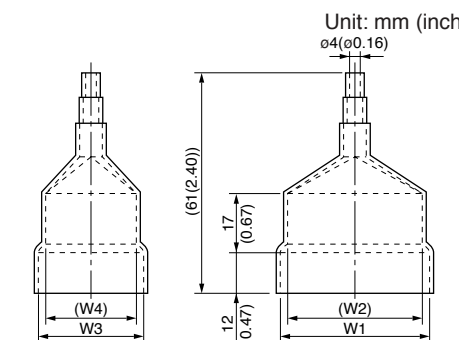
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [option]

Unit: mm (inch)



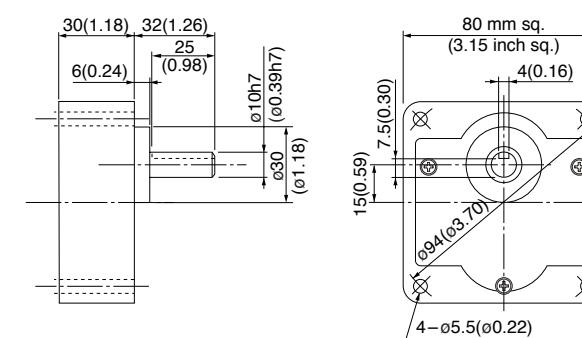
## Capacitor dimension list Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M81X25G4L	M0PC6M20	39.5 (1.56)	17.5 (0.69)	28 (1.10)	30.5 (1.20)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)
M81X25G4Y	M0PC1.5M40	39.5 (1.56)	22 (0.87)	32.5 (1.28)	32.5 (1.28)	4 (0.16)	M0PC3922	39.5 (1.56)	37.5 (1.48)	22 (0.87)	20 (0.79)

## Gear head (dimensions)

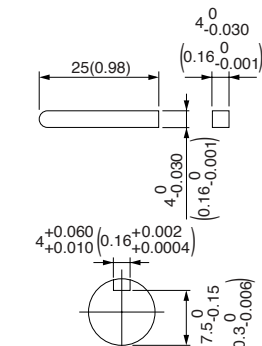
Scale: 1/3, Unit: mm (inch)

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



## Key and keyway (dimensions) [attachment]

### MX8G□B(M)



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

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N·m (oz-in)			
80 mm sq.	M81X25G4LG M81X25G4LGA	4	25	100	50	Cont.	55	0.59	1250	0.19 (26.9)	1.1	0.16 (22.7)	8 (250 V)
							50	0.50	1575	0.15 (21.2)	1.0	0.16 (22.7)	6 (250 V)
	M81X25G4DG M81X25G4DGA	4	25	110	60	Cont.	52	0.50	1575	0.15 (21.2)	1.1	0.14 (19.8)	6 (250 V)
							53	0.50	1600	0.15 (21.2)	1.1	0.15 (21.2)	2.1 (450 V)
	M81X25G4YG M81X25G4YGA	4	25	200	50	Cont.	54	0.27	1200	0.20 (28.3)	0.43	0.16 (22.7)	2.1 (450 V)
							54	0.27	1550	0.15 (21.2)	0.42	0.16 (22.7)	1.5 (450 V)
	M81X25G4GG M81X25G4GGA	4	25	220	60	Cont.	59	0.29	1200	0.20 (28.3)	0.46	0.15 (21.2)	1.5 (450 V)
							51	0.23	1550	0.15 (21.2)	0.44	0.15 (21.2)	1.5 (450 V)
	M81X25G4GG M81X25G4GGA	4	25	230	50	Cont.	59	0.28	1250	0.19 (26.9)	0.48	0.16 (22.7)	1.5 (450 V)
							52	0.23	1575	0.15 (21.2)	0.45	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-61.  
 • The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.  
 • The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

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

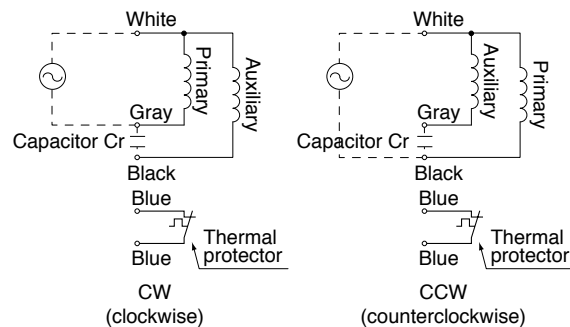
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

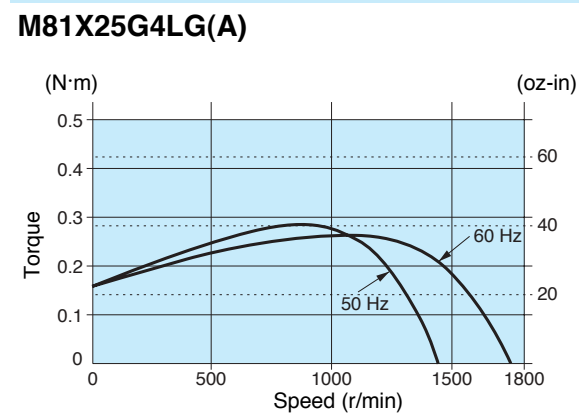
Applicable gear head		Reduction ratio	Speed (r/min)																				
Bearing	Decimal gear head		50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8								
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N·m (lb-in)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84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

## Connection diagram



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

## Speed-torque characteristics

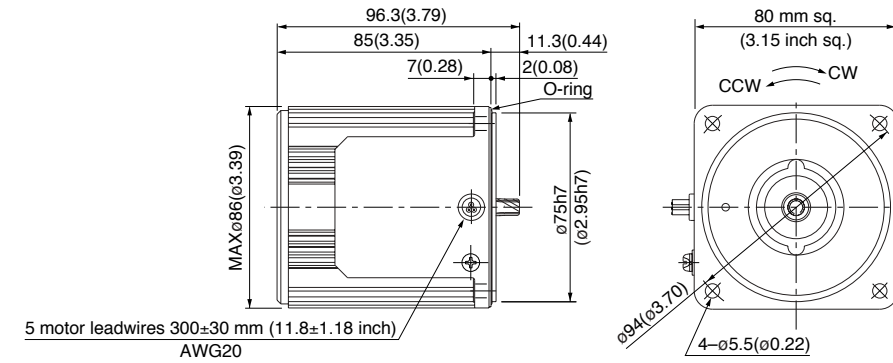


## Motor (dimensions)

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

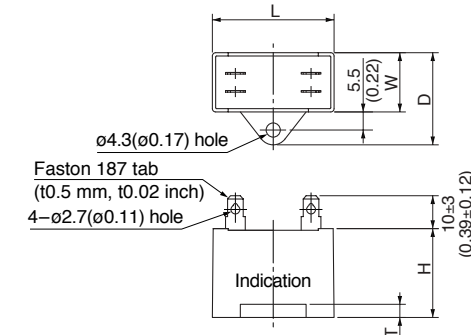
M81X25G4LG(A)	4P	25 W	100 V
M81X25G4DG(A)	4P	25 W	110 V / 115 V
M81X25G4YG(A)	4P	25 W	200 V
M81X25G4GG(A)	4P	25 W	220 V / 230 V

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



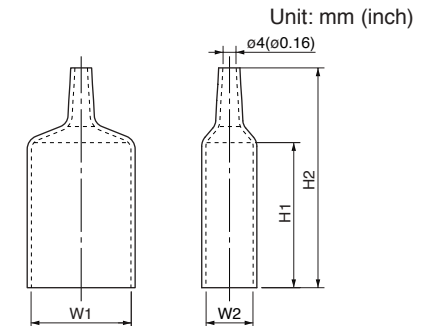
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

Unit: upper (mm) / lower (inch)

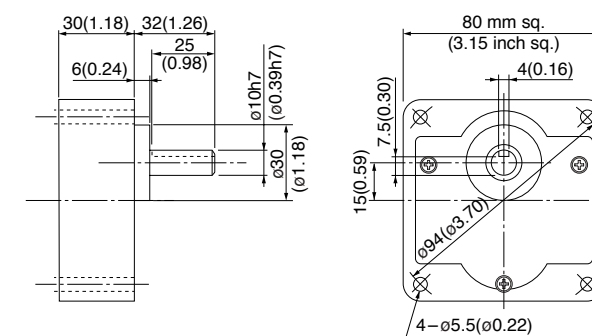
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M81X25G4LG(A)	M0PC8M25G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC4821G	48 (1.89)	21 (0.83)	55 (2.17)	78 (3.07)
M81X25G4DG(A)	M0PC6M25G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC3821G	38 (1.50)	21 (0.83)	55 (2.17)	78 (3.07)
M81X25G4YG(A)	M0PC2.1M45G	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)
M81X25G4GG(A)	M0PC1.5M45G	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)

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

## Gear head (dimensions)

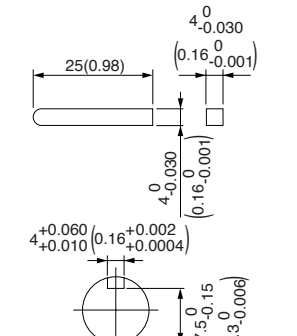
Scale: 1/3, Unit: mm (inch)

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



## Key and keyway (dimensions) [attachment]

MX8G□B(M)



## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
90 mm sq.	M91X40G4L	4	40	100	50	Cont.	78	0.86	1225	0.30 (42.5)	1.5	0.24 (34.0)	10 (200 V)
							72	0.72	1550	0.25 (35.4)	1.5	0.25 (35.4)	
	M91X40G4Y	4	40	200	50	Cont.	79	0.43	1250	0.30 (42.5)	0.83	0.25 (35.4)	2.5 (400 V)
							72	0.36	1575	0.24 (34.0)	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-61.

## Permissible torque at output shaft of gear head

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

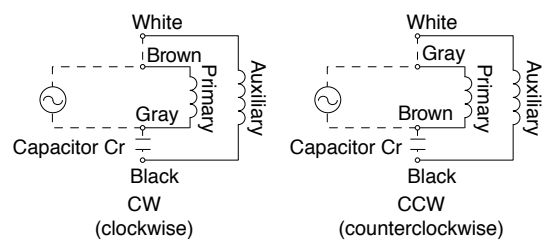
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

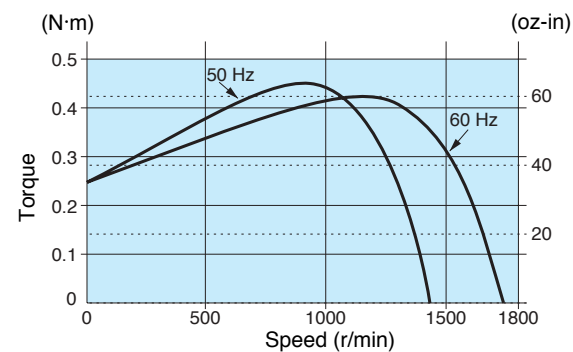
Applicable gear head		Reduction ratio	Reduction ratio													
Bearing	Decimal gear head		Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	Permissible torque	N-m (lb-in)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)
		Rotational direction		Same as motor rotational direction			Reverse to motor rotational direction									

## Connection diagram



## Speed-torque characteristics

### M91X40G4L



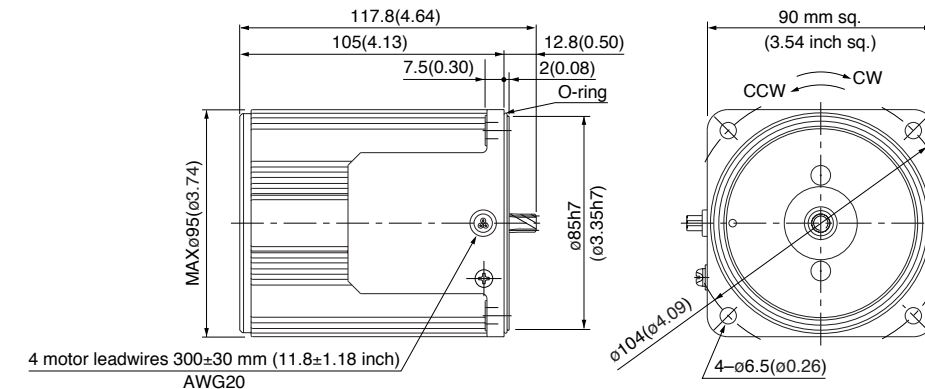
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

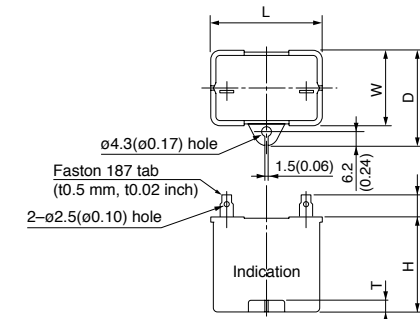
M91X40G4L	4P	40 W	100 V
M91X40G4Y	4P	40 W	200 V

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



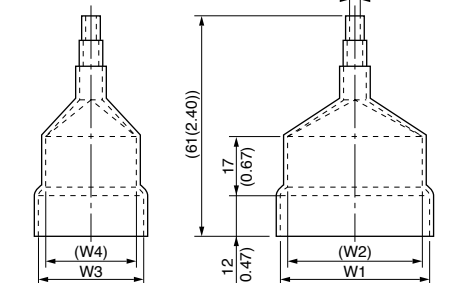
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [option]

Unit: mm (inch)



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

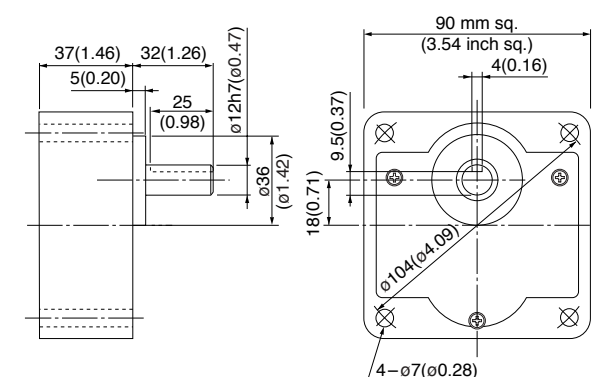
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M91X40G4L	M0PC10M20	39.5 (1.56)	26.7 (1.05)	37 (1.46)	32 (1.26)	4 (0.16)	M0PC3926	39.5 (1.56)	37.5 (1.48)	26 (1.02)	25 (0.98)
M91X40G4Y	M0PC2.5M40	49.7 (1.96)	24 (0.94)	34.5 (1.36)	34.5 (1.36)	4 (0.16)	M0PC5026	50 (1.97)	48 (1.89)	26 (1.02)	22 (0.87)

## Connection diagram

## Gear head (dimensions)

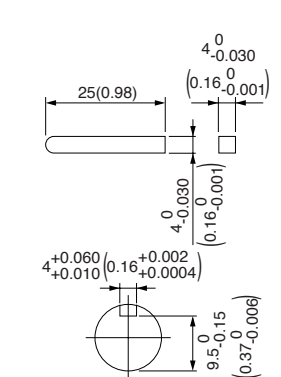
Scale: 1/3, Unit: mm (inch)

MX9G□B (ball bearing)	Mass 0.8 kg (1.76 lb)	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.







## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
90 mm sq.	M91Z60G4LG M91Z60G4LGA	4	60	100	50	Cont.	119	1.3	1250	0.46 (65.1)	2.4	0.44 (62.3)	20
							112	1.2	1575	0.36 (51.0)	2.3	0.44 (62.3)	(250 V)
	M91Z60G4DG M91Z60G4DGA	4	60	110	60	Cont.	120	1.1	1625	0.35 (49.6)	2.5	0.49 (69.4)	18
							127	1.2	1625	0.35 (49.6)	2.6	0.53 (75.1)	(250 V)
	M91Z60G4YG M91Z60G4YGA	4	60	200	50	Cont.	114	0.57	1225	0.47 (66.6)	1.0	0.44 (62.3)	5
							122	0.62	1550	0.37 (52.4)	1.0	0.44 (62.3)	(450 V)
	M91Z60G4GG M91Z60G4GGA	4	60	220	60	Cont.	121	0.58	1275	0.45 (63.7)	1.1	0.49 (69.4)	4.5
							120	0.55	1600	0.36 (51.0)	1.1	0.49 (69.4)	
	M91Z60G4GGB M91Z60G4GGC	4	60	230	60	Cont.	129	0.61	1300	0.44 (62.3)	1.1	0.53 (75.0)	4.5
							126	0.55	1625	0.35 (49.6)	1.1	0.53 (75.1)	
	M91Z60G4GGB M91Z60G4GGC	4	60	220	50	Cont.	106	0.48	1350	0.42 (4.3)	1.0	0.40 (4.0)	4.5
							123	0.59	1650	0.34 (3.5)	0.97	0.40 (4.0)	
M91Z60G4GGB M91Z60G4GGC	4	60	230	50	Cont.	112	0.49	1375	0.42 (4.3)	1.1	0.43 (4.4)	4.5	
						128	0.59	1675	0.34 (3.5)	1.0	0.43 (4.4)		

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-62.  
 The models with a motor model number to which "A" or "B" is suffixed are not equipped with a capacitor cap.  
 The models with a motor model number to which "A" or "B" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

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

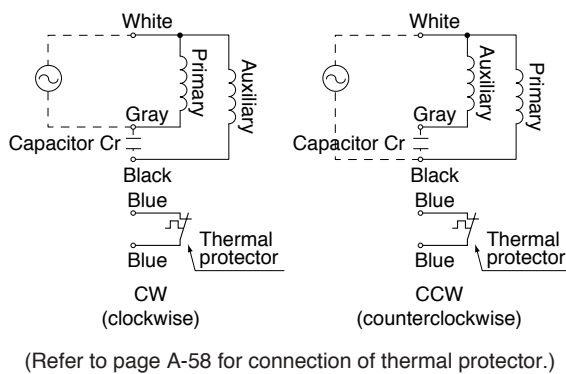
Unit of permissible torque: upper (N-m) / lower (lb-in)

Reduction ratio	Unit of permissible torque: upper (N-m) / lower (lb-in)																							
	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
Speed (r/min)	[Values for 50 Hz and 60 Hz]																							
Applicable gear head	MZ9G3B to MZ9G200B (ball bearing / hinge not attached)												MY9G3B to MY9G200B (ball bearing / hinge attached)											
Rotational direction	Same as motor rotational direction												Reverse to motor rotational direction											

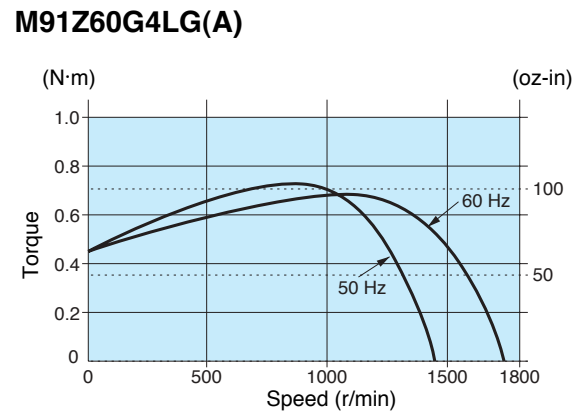
## Permissible torque at output shaft of gear head using decimal gear head

Applicable gear head		Reduction ratio	Reduction ratio													
Bearing	Decimal gear head		Speed (r/min)	50 Hz	60 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
MZ9G□B (ball bearing / hinge not attached)	MZ9G10XB	Permissible torque	N-m (lb-in)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
MY9G□B (ball bearing / hinge attached)				Rotational direction	Reverse to motor rotational direction	Same as motor rotational direction										

## Connection diagram



## Speed-torque characteristics

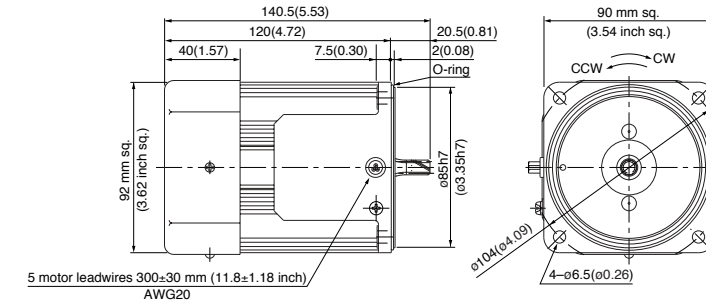


## Motor (dimensions)

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

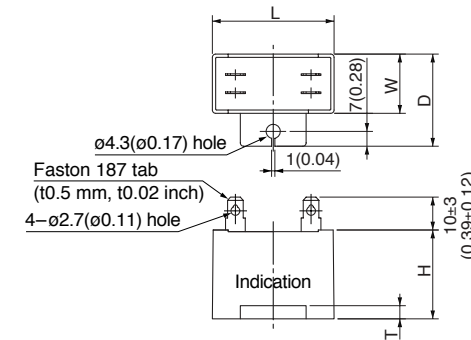
M91Z60G4LG(A)	4P 60 W 100 V (with fan)
M91Z60G4DG(A)	4P 60 W 110 V / 115 V (with fan)
M91Z60G4YG(A)	4P 60 W 200 V (with fan)
M91Z60G4GG(A)	4P 60 W 220 V / 230 V (with fan)
M91Z60G4GGB	4P 60 W 220 V / 230 V (with fan)
M91Z60G4GGC	4P 60 W 220 V / 230 V (with fan)

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



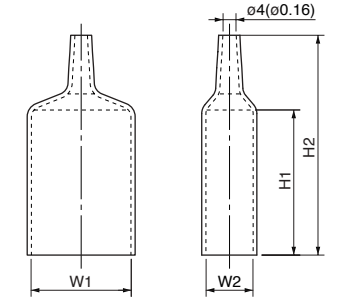
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M91Z60G4LG(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)
M91Z60G4DG(A)	M0PC18M25G	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)
M91Z60G4YG(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)
M91Z60G4GG(A)	M0PC4.5M45G	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)
M91Z60G4GGB											
M91Z60G4GGC											

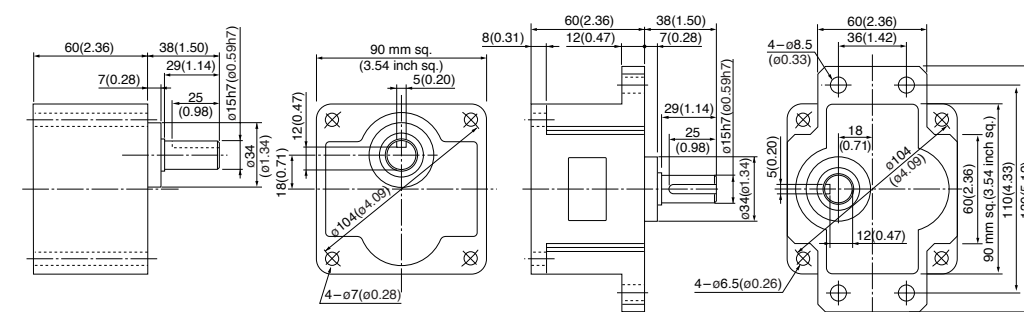
The models with a motor model number to which "A" or "B" is suffixed are not equipped with a capacitor cap.

## Gear head (dimensions)

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

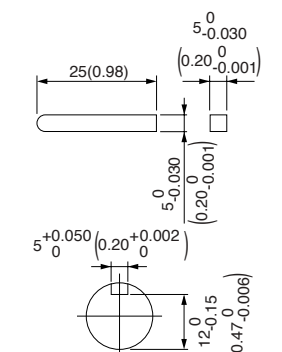
MZ9G□B (ball bearing / hinge not attached)  
Mass 1.4 kg (3.09 lb)

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.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
90 mm sq.	M91Z90G4L	4	90	100	50	Cont.	153	1.6	1325	0.65 (92.0)	3.3	0.47 (66.6)	25 (200 V)
							160	1.6	1625	0.53 (75.1)	3.0	0.47 (66.6)	
	M91Z90G4Y	4	90	200	50	Cont.	150	0.75	1325	0.62 (87.8)	1.7	0.47 (66.6)	5.8 (400 V)
							160	0.80	1650	0.51 (72.2)	1.5	0.47 (66.6)	

\* 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-62.

## Permissible torque at output shaft of gear head

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

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

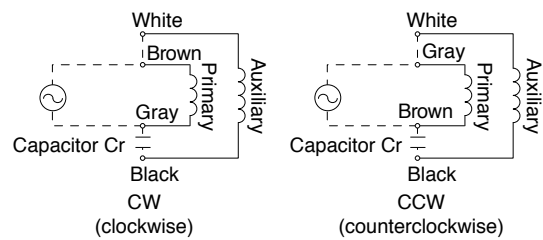
Reduction ratio	Speed (r/min)																								
	50 Hz	60 Hz	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
50 Hz	1.37 (12.1)	1.67 (14.8)	2.25 (19.9)	2.74 (24.3)	3.43 (30.4)	4.12 (36.5)	4.51 (39.9)	5.68 (50.3)	6.76 (59.8)	8.04 (71.2)	9.02 (79.8)	10.9 (96.5)	13.0 (115)	15.7 (139)	19.6 (173)										
60 Hz	1.18 (10.4)	1.37 (12.1)	1.86 (16.5)	2.25 (19.9)	2.84 (25.1)	3.43 (30.4)	3.72 (32.9)	4.70 (41.6)	5.68 (50.3)	6.76 (59.8)	7.55 (66.8)	9.21 (81.5)	10.9 (96.5)	13.0 (115)	18.3 (162)										

Rotational direction: Same as motor rotational direction / Reverse to motor rotational direction / Same as motor rotational direction

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

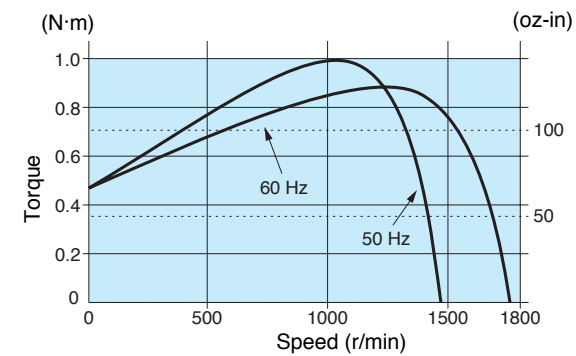
Applicable gear head	Reduction ratio	Speed (r/min)													
		50 Hz	60 Hz	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (r/min)	50 Hz	60 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
MZ9G□B (ball bearing / hinge not attached)	MZ9G10XB	Permissible torque	N-m (lb-in)	19.6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

## Connection diagram



## Speed-torque characteristics

### M91Z90G4L

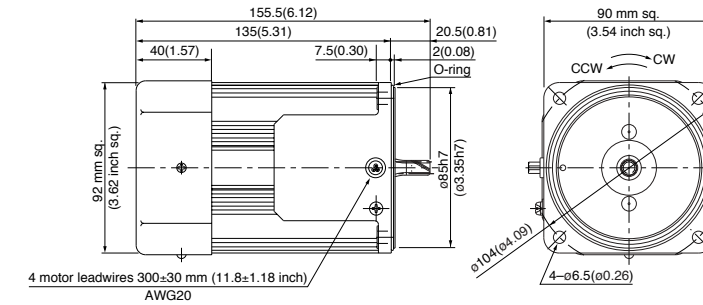


## Motor (dimensions)

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

M91Z90G4L 4P 90 W 100 V (with fan)  
M91Z90G4Y 4P 90 W 200 V (with fan)

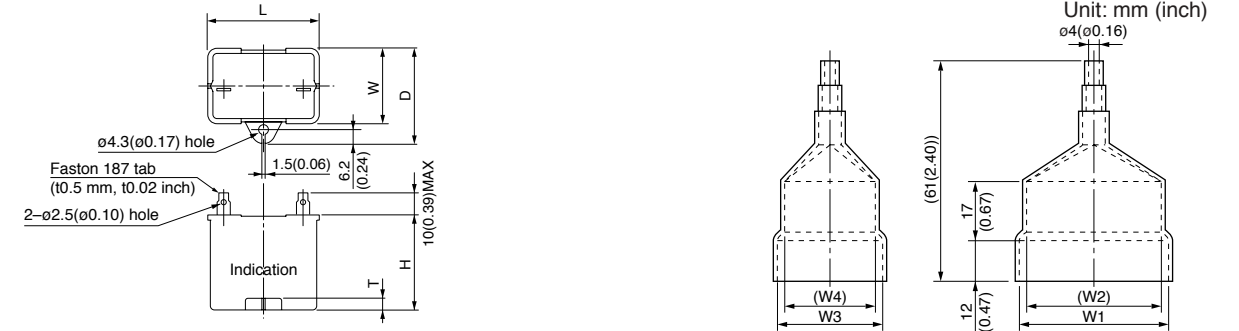
Mass 3.2 kg (7.05 lb)  
Helical gear  
Module 0.6  
Number of teeth 9



## Capacitor (dimensions) [attachment]

Unit: mm (inch)

## Capacitor cap (dimensions) [option]



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

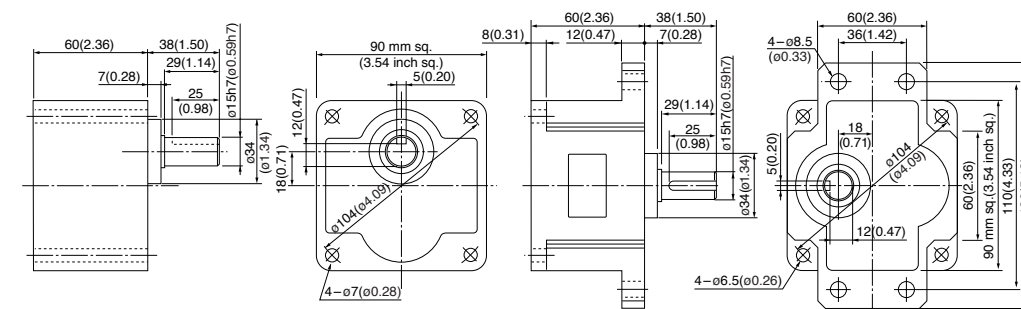
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M91Z90G4L	M0PC25M20	50.2 (1.98)	31 (1.22)	41 (1.61)	42 (1.65)	5 (0.20)	M0PC5032	50 (1.97)	48 (1.89)	32.5 (1.28)	29.5 (1.16)
M91Z90G4Y	M0PC5.8M40	50 (1.97)	30.5 (1.20)	41 (1.61)	41.5 (1.63)	4 (0.16)	M0PC5032	50 (1.97)	48 (1.89)	32.5 (1.28)	29.5 (1.16)

## Gear head (dimensions)

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

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

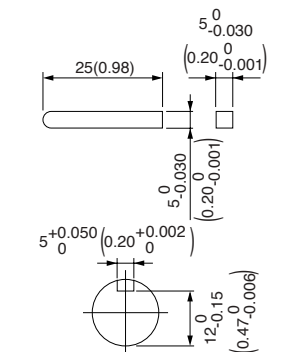
MY9G□B (ball bearing / hinge attached)  
Mass 1.4 kg (3.09 lb)



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

## Key and keyway (dimensions) [attachment]

MZ9G□B  
MY9G□B



## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
90 mm sq.	M91Z90G4LG M91Z90G4LGA	4	90	100	50	Cont.	172	1.8	1250	0.69 (97.7)	3.0	0.65 (92.0)	30 (250 V)
							177	1.8	1575	0.55 (77.9)	2.8	0.65 (92.0)	
	M91Z90G4DG M91Z90G4DGA	4	90	110	60	Cont.	168	1.6	1600	0.54 (76.5)	3.0	0.65 (92.0)	25 (250 V)
							176	1.6	1600	0.54 (76.5)	3.1	0.72 (102.0)	
	M91Z90G4YG M91Z90G4YGA	4	90	200	50	Cont.	170	0.85	1225	0.70 (99.1)	1.4	0.65 (92.0)	7.5 (450 V)
							188	0.97	1550	0.55 (77.9)	1.4	0.65 (92.0)	
	M91Z90G4GG M91Z90G4GGA	4	90	220	60	Cont.	176	0.85	1225	0.70 (99.1)	1.5	0.63 (89.2)	6 (450 V)
							167	0.76	1575	0.55 (77.9)	1.4	0.65 (92.0)	
	M91Z90G4GG M91Z90G4GGA	4	90	230	60	Cont.	185	0.89	1250	0.69 (97.7)	1.5	0.68 (96.3)	6 (450 V)
							173	0.76	1600	0.54 (76.5)	1.5	0.72 (102.0)	
	M91Z90G4GGB M91Z90G4GGC	4	90	220	50	Cont.	153	0.70	1325	0.65 (92.0)	1.4	0.55 (77.9)	6 (450 V)
							169	0.81	1625	0.53 (75.1)	1.3	0.56 (79.3)	
M91Z90G4GGB M91Z90G4GGC	4	90	230	50	Cont.	159	0.70	1350	0.64 (90.6)	1.5	0.61 (86.4)	6 (450 V)	
						176	0.81	1650	0.52 (73.6)	1.4	0.63 (89.2)		

• 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-62.  
 • The models with a motor model number to which "A" or "B" is suffixed are not equipped with a capacitor cap.  
 • The models with a motor model number to which "A" or "B" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

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

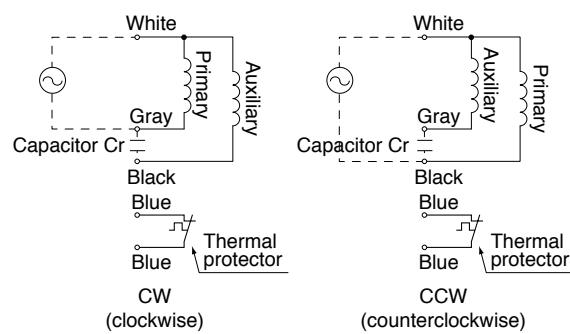
Unit of permissible torque: upper (N-m) / lower (lb-in)

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

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

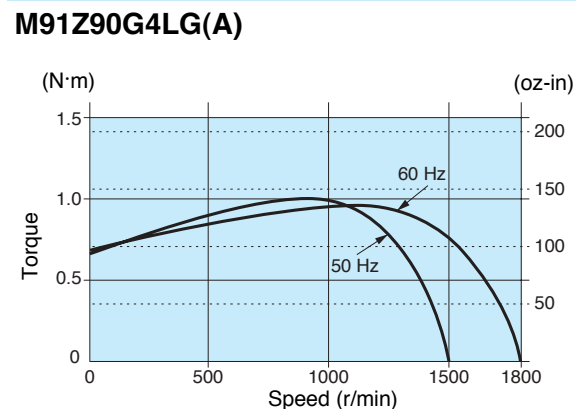
Applicable gear head		Reduction ratio		250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MZ9G□B (ball bearing / hinge not attached)	MZ9G10XB	Permissible torque	N-m (lb-in)	19.6 (173)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

## Connection diagram



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

## Speed-torque characteristics

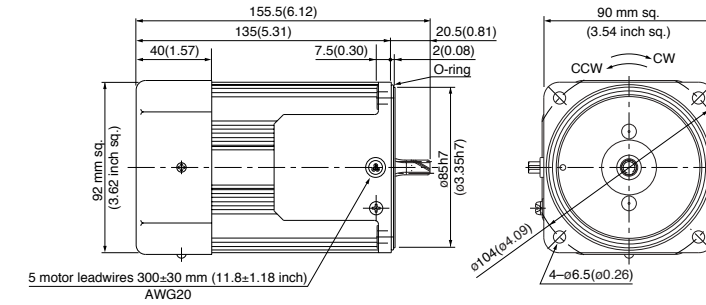


## Motor (dimensions)

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

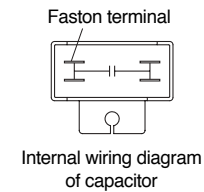
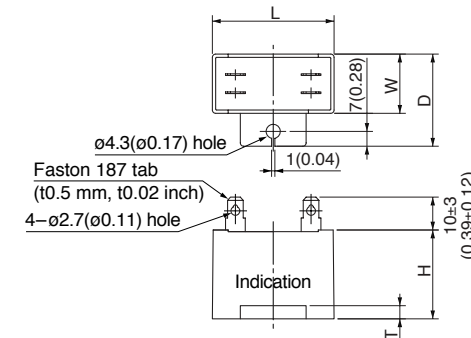
M91Z90G4LG(A)	4P 90 W 100 V (with fan)
M91Z90G4DG(A)	4P 90 W 110 V / 115 V (with fan)
M91Z90G4YG(A)	4P 90 W 200 V (with fan)
M91Z90G4GG(A)	4P 90 W 220 V / 230 V (with fan)
M91Z90G4GGB	4P 90 W 220 V / 230 V (with fan)
M91Z90G4GGC	4P 90 W 220 V / 230 V (with fan)

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



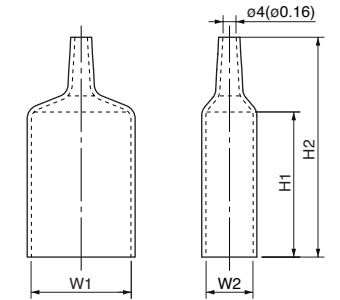
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M91Z90G4LG(A)	M0PC30M25G	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)
M91Z90G4DG(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)
M91Z90G4YG(A)	M0PC7.5M45G	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)
M91Z90G4GG(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)
M91Z90G4GGB											
M91Z90G4GGC											

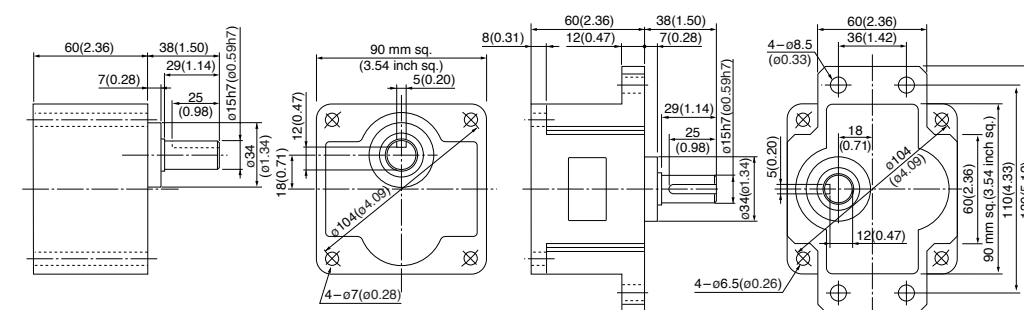
\* The models with a motor model number to which "A" or "B" is suffixed are not equipped with a capacitor cap.

## Gear head (dimensions)

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

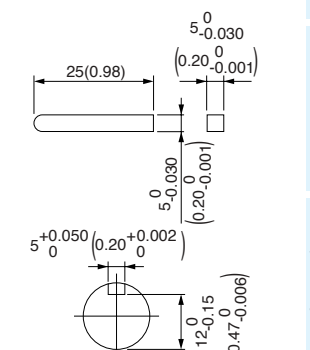
MZ9G□B (ball bearing / hinge not attached)  
Mass 1.4 kg (3.09 lb)

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.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
80 mm sq.	M81X25GK4L	4	25	100	50	Cont.	51	0.55	1250	0.19 (26.9)	0.98	0.16 (22.7)	6 (200 V)
					60		49	0.48	1550	0.15 (21.2)	0.94	0.16 (22.7)	
	M81X25GK4Y	4	25	200	50	Cont.	51	0.27	1250	0.19 (26.9)	0.50	0.16 (22.7)	1.5 (400 V)
					60		49	0.24	1575	0.15 (21.2)	0.47	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-62.

## Permissible torque at output shaft of gear head

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

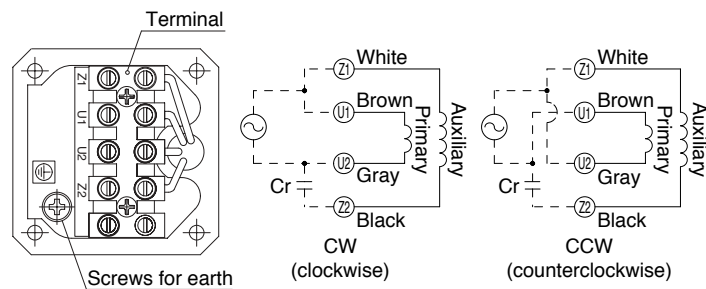
Unit of permissible torque: upper (N·m) / lower (lb·in)

Reduction ratio	Speed (r/min)																						
	50 Hz	60 Hz	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150
Applicable gear head	Same as motor rotational direction												Reverse to motor rotational direction										
Rotational direction	Same as motor rotational direction												Reverse to motor rotational direction										

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

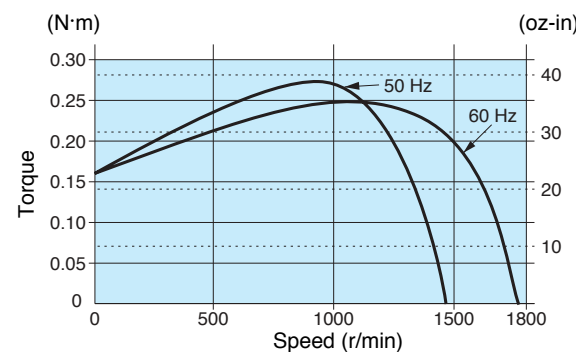
Applicable gear head	Reduction ratio	Speed (r/min)													
		200	250	300	360	500	600	750	900	1000	1200	1500	1800		
Bearing	Decimal gear head	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8	
MX8G□B (ball bearing)	MX8G10XB	60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MX8G□M (metal bearing)		Permissible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

## Connection diagram



## Speed-torque characteristics

### M81X25GK4L



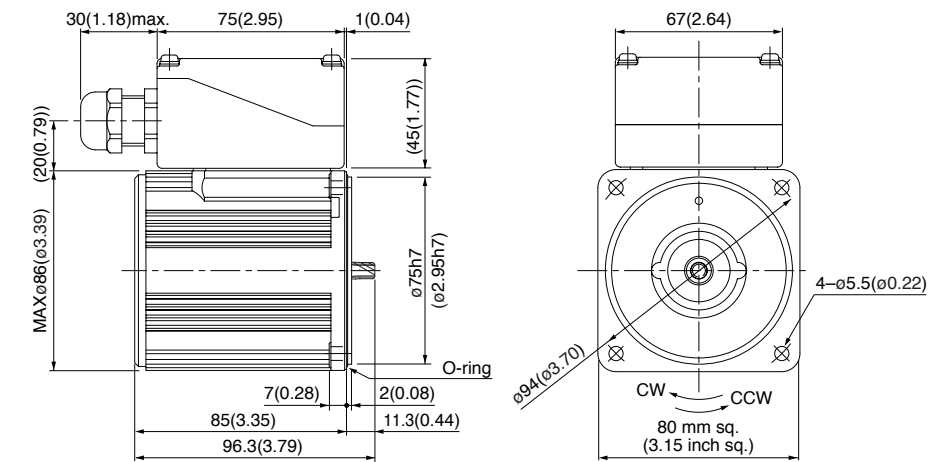
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

M81X25GK4L	4P 25 W 100 V
M81X25GK4Y	4P 25 W 200 V

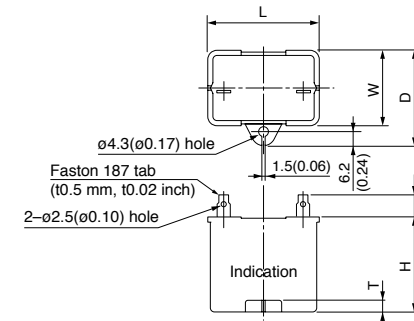
Mass	Helical gear	Module	Number of teeth
1.8 kg 3.97 lb		0.5	9



\* Diameter of applicable cable to be ø8(ø0.31) to ø12(ø0.47).

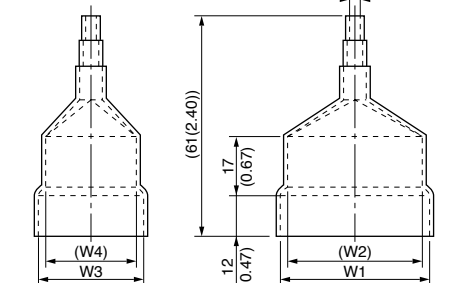
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [option]

Unit: mm (inch)



## Capacitor dimension list

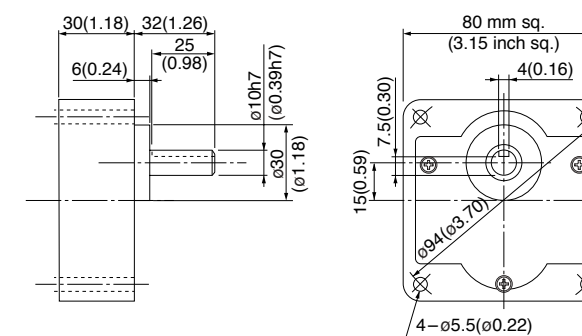
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M81X25GK4L	M0PC6M20	39.5 (1.56)	17.5 (0.69)	28 (1.10)	30.5 (1.20)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)
M81X25GK4Y	M0PC1.5M40	39.5 (1.56)	22 (0.87)	32.5 (1.28)	32.5 (1.28)	4 (0.16)	M0PC3922	39.5 (1.56)	37.5 (1.48)	22 (0.87)	20 (0.79)

## Gear head (dimensions)

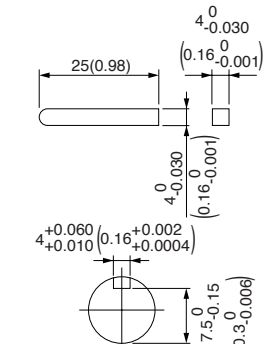
Scale: 1/3, Unit: mm (inch)

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



## Key and keyway (dimensions) [attachment]

### MX8G□B(M)



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

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N·m (oz·in)			
80 mm sq.	M81X25GK4LG M81X25GK4LGA	4	25	100	50	Cont.	55	0.59	1250	0.19 (26.9)	1.1	0.16 (22.7)	8 (250 V)
					60		50	0.50	1575	0.15 (21.2)	1.0	0.16 (22.7)	
	M81X25GK4DG M81X25GK4DGA	4	25	110	60	Cont.	52	0.50	1575	0.15 (21.2)	1.1	0.14 (19.8)	6 (250 V)
					60		53	0.50	1600	0.15 (21.2)	1.1	0.15 (21.2)	
	M81X25GK4YG M81X25GK4YGA	4	25	200	50	Cont.	54	0.27	1200	0.20 (28.3)	0.43	0.16 (22.7)	2.1 (450 V)
					60		54	0.27	1550	0.15 (21.2)	0.42	0.16 (22.7)	
	M81X25GK4GG M81X25GK4GGA	4	25	220	50	Cont.	59	0.29	1200	0.20 (28.3)	0.46	0.15 (21.2)	1.5 (450 V)
					60		51	0.23	1550	0.15 (21.2)	0.44	0.15 (21.2)	
					230	Cont.	59	0.28	1250	0.19 (26.9)	0.48	0.16 (22.7)	
							60	52	0.23	1575	0.15 (21.2)	0.45	

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-62.

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

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

## Permissible torque at output shaft of gear head

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

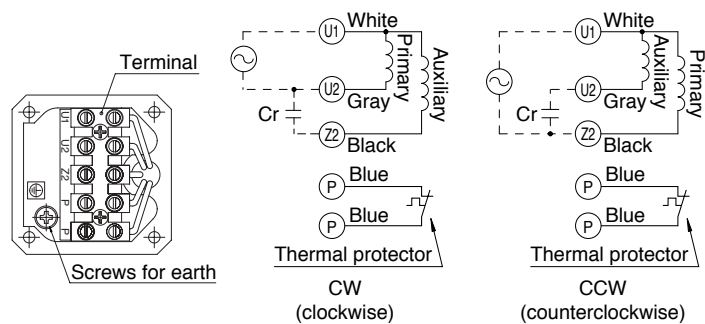
Unit of permissible torque: upper (N·m) / lower (lb·in)

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

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

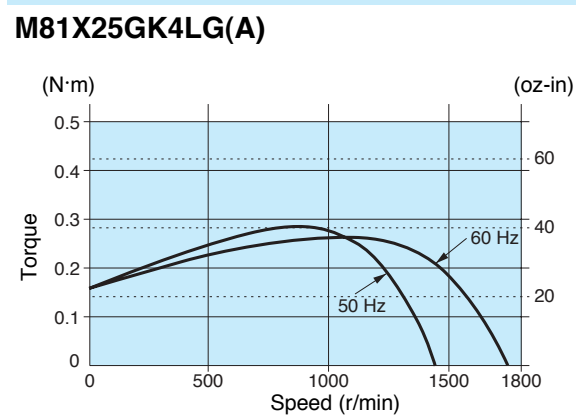
Applicable gear head	Reduction ratio	Speed (r/min)															
		200	250	300	360	500	600	750	900	1000	1200	1500	1800				
Bearing	Decimal gear head	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8			
		60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1			
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible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

## Connection diagram



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

## Speed-torque characteristics

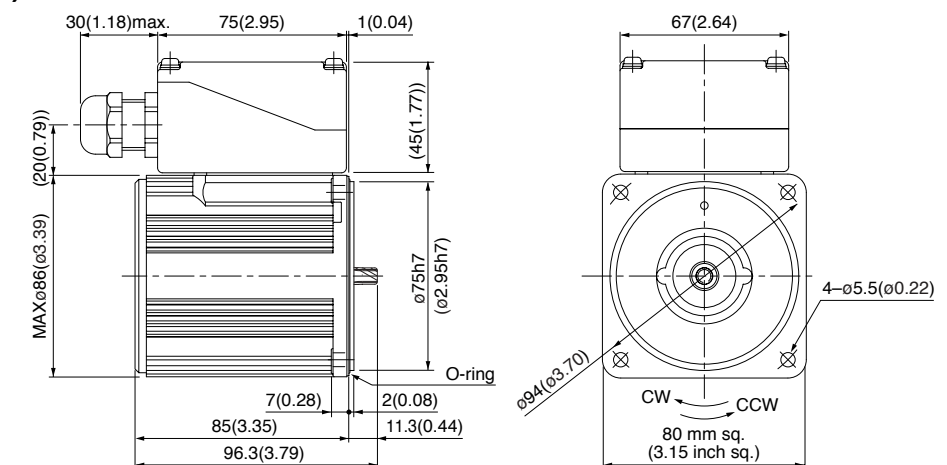


## Motor (dimensions)

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

M81X25GK4LG(A)	4P	25 W	100 V
M81X25GK4DG(A)	4P	25 W	110 V / 115 V
M81X25GK4YG(A)	4P	25 W	200 V
M81X25GK4GG(A)	4P	25 W	220 V / 230 V

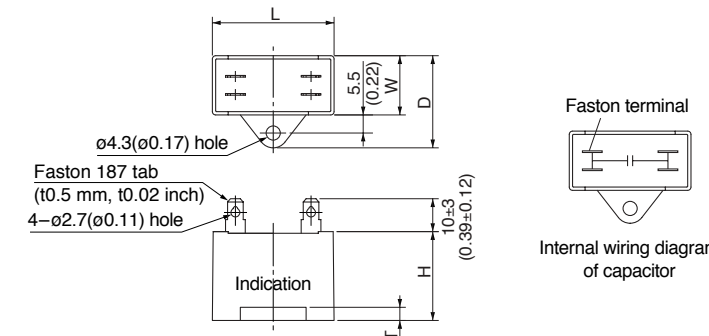
Mass	Helical gear	Module	Number of teeth
1.8 kg 3.97 lb		0.5	9



\* Diameter of applicable cable to be ø8(ø0.31) to ø12(ø0.47).

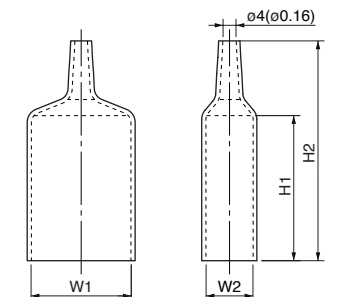
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

Unit: upper (mm) / lower (inch)

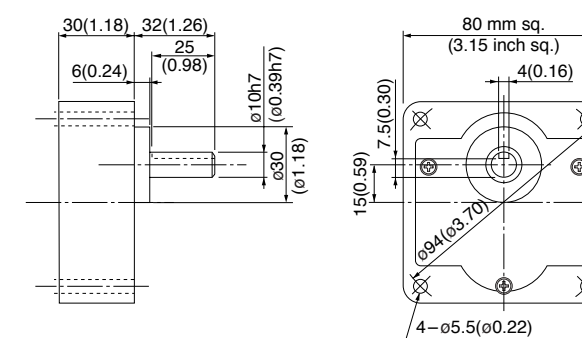
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M81X25GK4LG(A)	M0PC8M25G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC4821G	48 (1.89)	21 (0.83)	55 (2.17)	78 (3.07)
M81X25GK4DG(A)	M0PC6M25G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC3821G	38 (1.50)	21 (0.83)	55 (2.17)	78 (3.07)
M81X25GK4YG(A)	M0PC2.1M45G	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)
M81X25GK4GG(A)	M0PC1.5M45G	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)

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

## Gear head (dimensions)

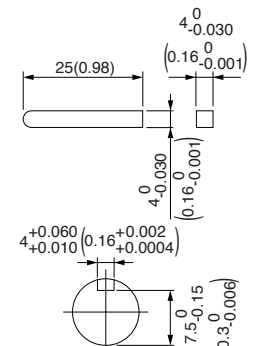
Scale: 1/3, Unit: mm (inch)

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



## Key and keyway (dimensions) [attachment]

MX8G□B(M)



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

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

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
90 mm sq.	M91X40GK4L	4	40	100	50	Cont.	78	0.86	1225	0.30 (42.5)	1.5	0.24 (34.0)	10 (200 V)
					60		72	0.72	1550	0.25 (35.4)	1.5	0.25 (35.4)	
	M91X40GK4Y	4	40	200	50	Cont.	79	0.43	1250	0.30 (42.5)	0.83	0.25 (35.4)	2.5 (400 V)
					60		72	0.36	1575	0.24 (34.0)	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-62.

## Permissible torque at output shaft of gear head

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

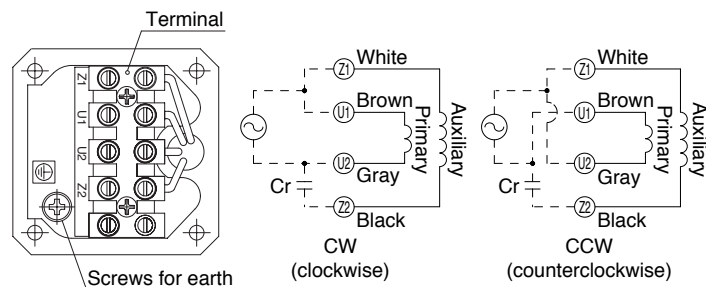
Unit of permissible torque: upper (N-m) / lower (lb-in)

Reduction ratio	Speed (r/min)																							
	50 Hz	60 Hz	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Applicable gear head	MX9G3B to MX9G180B (ball bearing)												MX9G3M to MX9G180M (metal bearing)											
Rotational direction	Same as motor rotational direction												Reverse to motor rotational direction											

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

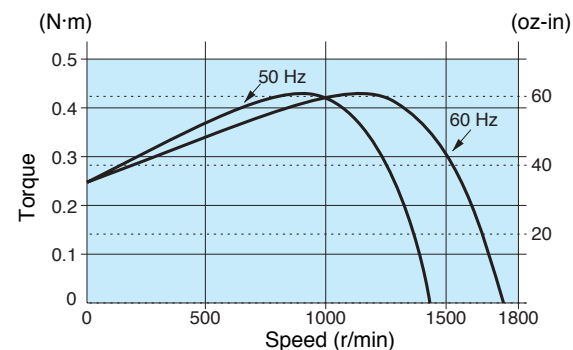
Applicable gear head	Reduction ratio	Speed (r/min)														
		50 Hz	60 Hz	200	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (r/min)	50 Hz	60 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
MX9G□B (ball bearing)	MX9G10XB	Permissible torque	N-m (lb-in)	9.80 (86.7)	9.80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

## Connection diagram



## Speed-torque characteristics

### M91X40GK4L



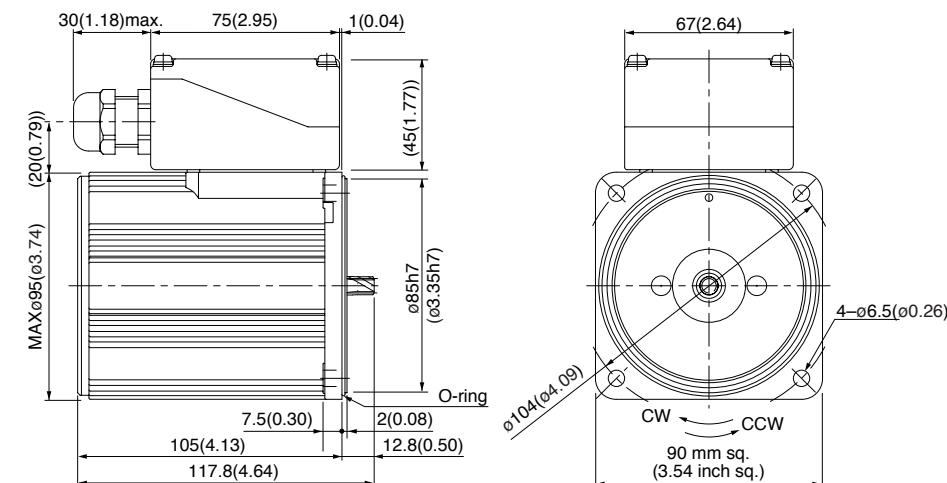
\* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

## Motor (dimensions)

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

M91X40GK4L	4P 40 W 100 V
M91X40GK4Y	4P 40 W 200 V

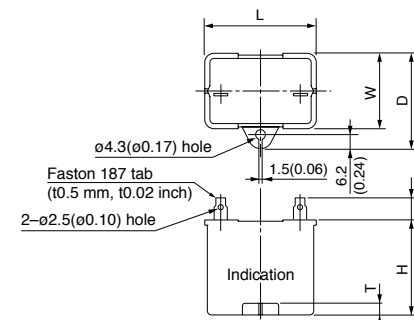
Mass	Helical gear	Module	Number of teeth
2.8 kg 6.17 lb		0.55	9



\* Diameter of applicable cable to be ø8(ø0.31) to ø12(ø0.47).

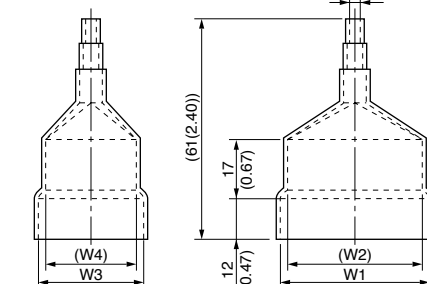
## Capacitor (dimensions) [attachment]

Unit: mm (inch)



## Capacitor cap (dimensions) [option]

Unit: mm (inch)



## Capacitor dimension list

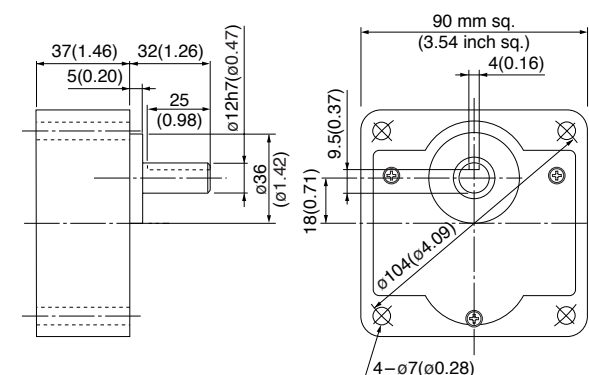
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M91X40GK4L	M0PC10M20	39.5 (1.56)	26.7 (1.05)	37 (1.46)	32 (1.26)	4 (0.16)	M0PC3926	39.5 (1.56)	37.5 (1.48)	26 (1.02)	25 (0.98)
M91X40GK4Y	M0PC2.5M40	49.7 (1.96)	24 (0.94)	34.5 (1.36)	34.5 (1.36)	4 (0.16)	M0PC5026	50 (1.97)	48 (1.89)	26 (1.02)	22 (0.87)

## Gear head (dimensions)

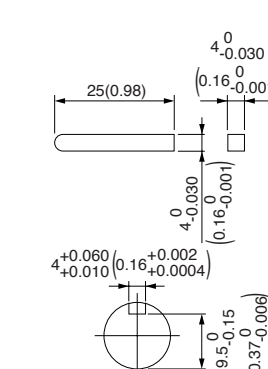
Scale: 1/3, Unit: mm (inch)

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



## Key and keyway (dimensions) [attachment]

### MX9G□B(M)



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



# Induction motor (sealed connector)

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)	Rating				Starting current (A)	Starting torque N·m (oz·in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N·m (oz·in)			
90 mm sq.	M91X40GK4LG M91X40GK4LGA	4	40	100	50	Cont.	76	0.83	1250	0.31 (43.9)	1.7	0.26 (36.8)	12 (250 V)
					60		70	0.70	1600	0.24 (34.0)	1.5	0.26 (36.8)	10 (250 V)
	M91X40GK4DG M91X40GK4DGA	4	40	110	Cont.	72	0.67	1625	0.24 (34.0)	1.7	0.26 (36.8)	10 (250 V)	
				115		74	0.68	1625	0.24 (34.0)	1.8	0.27 (38.2)	3 (450 V)	
	M91X40GK4YG M91X40GK4YGA	4	40	200	Cont.	77	0.39	1175	0.33 (46.7)	0.64	0.26 (36.8)	3 (450 V)	
				60		77	0.39	1525	0.25 (35.4)	0.62	0.26 (36.8)	2.5 (450 V)	
	M91X40GK4GG M91X40GK4GGA	4	40	220	Cont.	78	0.37	1250	0.31 (43.9)	0.69	0.26 (36.8)	2.5 (450 V)	
				60		74	0.34	1575	0.24 (34.0)	0.65	0.26 (36.8)	2.5 (450 V)	
				230		79	0.37	1275	0.30 (42.5)	0.72	0.28 (39.6)	2.5 (450 V)	
				60		77	0.33	1600	0.24 (34.0)	0.68	0.28 (39.6)	2.5 (450 V)	

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-62.

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

## Permissible torque at output shaft of gear head

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

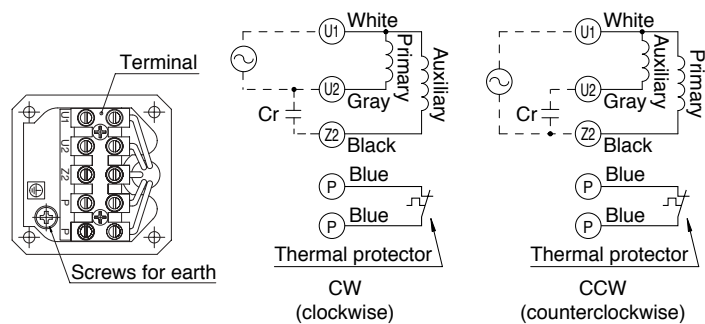
Unit of permissible torque: upper (N·m) / lower (lb·in)

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

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

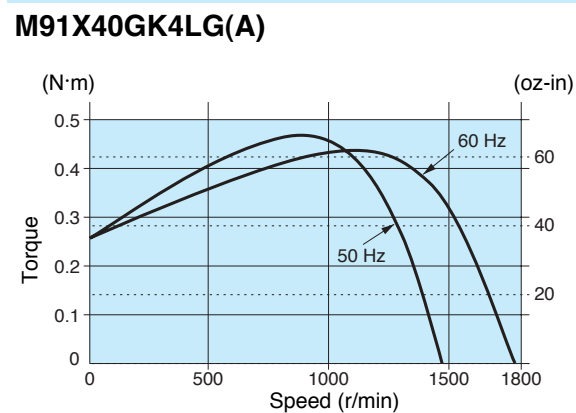
Applicable gear head		Reduction ratio	Permissible torque															
Bearing	Decimal gear head		Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8		
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	Permissible torque	N·m (lb·in)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)		
			Rotational direction	Same as motor rotational direction			Reverse to motor rotational direction											

## Connection diagram



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

## Speed-torque characteristics

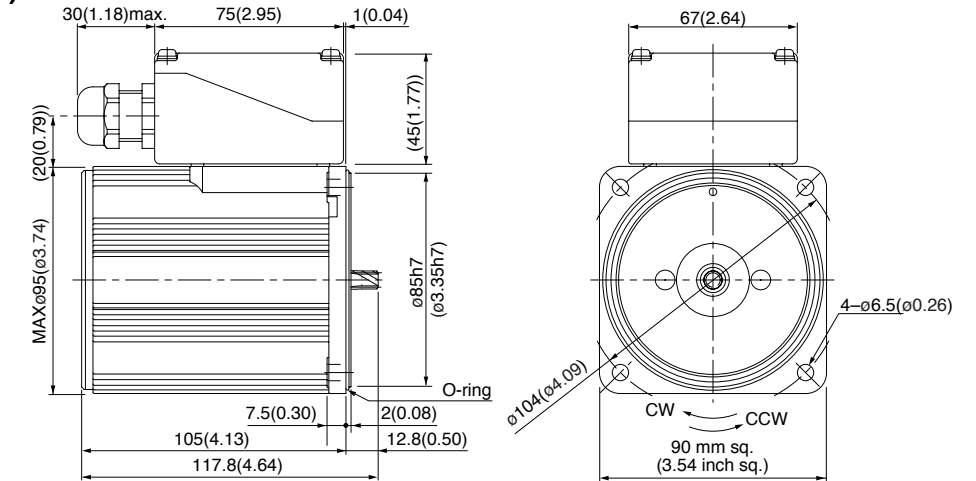


## Motor (dimensions)

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

M91X40GK4LG(A)	4P	40 W	100 V
M91X40GK4DG(A)	4P	40 W	110 V / 115 V
M91X40GK4YG(A)	4P	40 W	200 V
M91X40GK4GG(A)	4P	40 W	220 V / 230 V

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



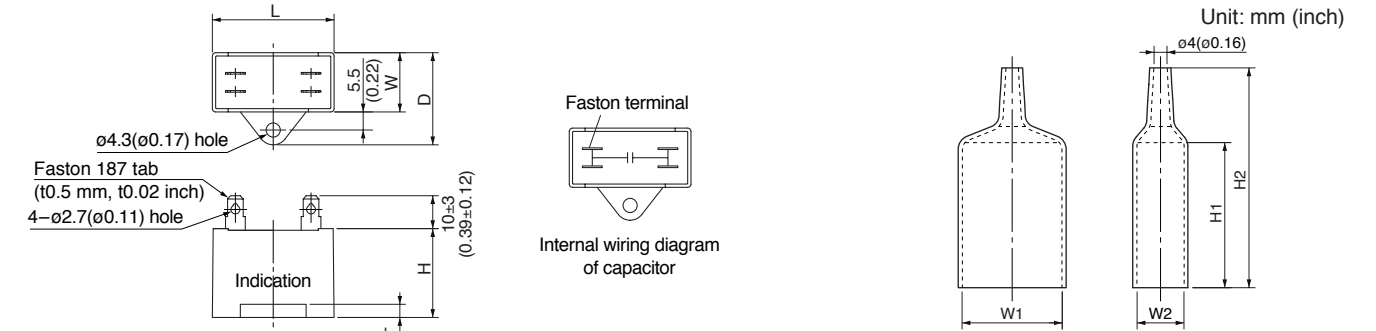
\* Diameter of applicable cable to be ø8(ø0.31) to ø12(ø0.47).

## Capacitor (dimensions) [attachment]

Unit: mm (inch)

## Capacitor cap (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 (attachment)	W1	W2	H1	H2
M91X40GK4LG(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)
M91X40GK4DG(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)
M91X40GK4YG(A)	M0PC3M45G	58 (2.28)	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)
M91X40GK4GG(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)

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

## Gear head (dimensions)

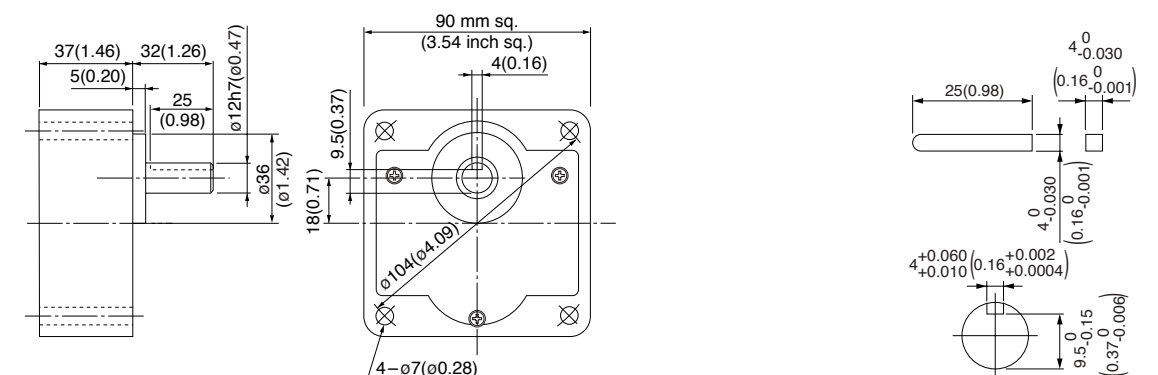
Scale: 1/3, Unit: mm (inch)

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

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.



## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
90 mm sq.	M91Z60GK4LG M91Z60GK4LGA	4	60	100	50	Cont.	119	1.3	1250	0.46 (65.1)	2.4	0.44 (62.3)	20 (250 V)
					60		112	1.2	1575	0.36 (51.0)	2.3	0.44 (62.3)	18 (250 V)
	M91Z60GK4DG M91Z60GK4DGA	4	60	110	60	Cont.	120	1.1	1625	0.35 (49.6)	2.5	0.49 (69.4)	18 (250 V)
					60		127	1.2	1625	0.35 (49.6)	2.6	0.53 (75.1)	5 (450 V)
	M91Z60GK4YG M91Z60GK4YGA	4	60	200	50	Cont.	114	0.57	1225	0.47 (66.6)	1.0	0.44 (62.3)	5 (450 V)
					60		122	0.62	1550	0.37 (52.4)	1.0	0.44 (62.3)	4.5 (450 V)
	M91Z60GK4GG M91Z60GK4GGA	4	60	220	50	Cont.	121	0.58	1275	0.45 (63.7)	1.1	0.49 (69.4)	4.5 (450 V)
					60		120	0.55	1600	0.36 (51.0)	1.1	0.49 (69.4)	4.5 (450 V)
	M91Z60GK4GGB M91Z60GK4GGC	4	60	230	50	Cont.	129	0.61	1300	0.44 (62.3)	1.1	0.53 (75.1)	4.5 (450 V)
					60		126	0.55	1625	0.35 (49.6)	1.1	0.53 (75.1)	4.5 (450 V)
					220	Cont.	106	0.48	1350	0.42 (4.3)	1.0	0.40 (4.0)	4.5 (450 V)
							60	123	0.59	1650	0.34 (3.5)	0.97	0.40 (4.0)
				230	Cont.	112	0.49	1375	0.42 (4.3)	1.1	0.43 (4.4)	4.5 (450 V)	
						60	128	0.59	1675	0.34 (3.5)	1.0	0.43 (4.4)	4.5 (450 V)

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-62.  
 The models with a motor model number to which "A" or "B" is suffixed are not equipped with a capacitor cap.  
 The models with a motor model number to which "A" or "B" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

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

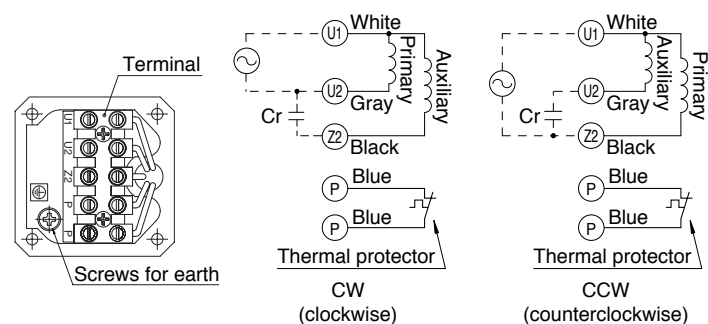
Unit of permissible torque: upper (N-m) / lower (lb-in)

Reduction ratio	Unit of permissible torque: upper (N-m) / lower (lb-in)																							
	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
Speed (r/min)	[Data omitted for brevity]																							
Applicable gear head	MZ9G3B to MZ9G200B (ball bearing / hinge not attached)												MY9G3B to MY9G200B (ball bearing / hinge attached)											
Rotational direction	Same as motor rotational direction												Reverse to motor rotational direction											

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

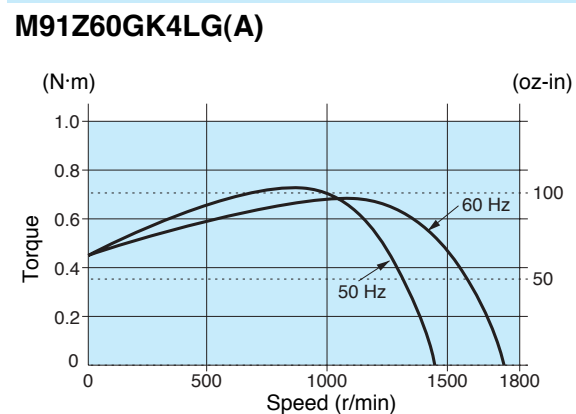
Applicable gear head		Reduction ratio	Reduction ratio													
Bearing	Decimal gear head		Speed (r/min)	50 Hz	60 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
MZ9G□B (ball bearing / hinge not attached)	MZ9G10XB	Permissible torque	N-m (lb-in)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
MY9G□B (ball bearing / hinge attached)				Rotational direction	Reverse to motor rotational direction	Same as motor rotational direction										

## Connection diagram



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

## Speed-torque characteristics

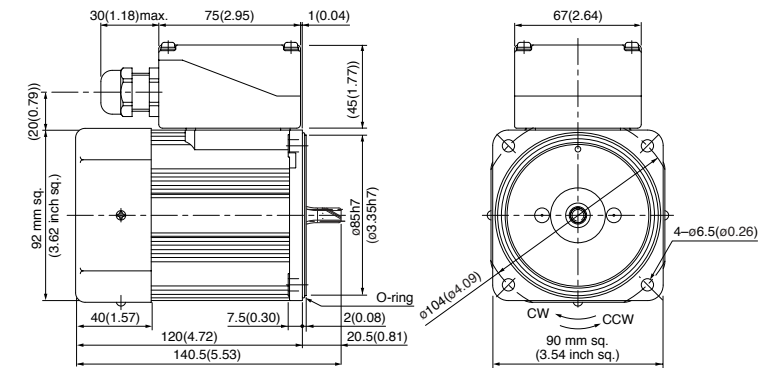


## Motor (dimensions)

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

- M91Z60GK4LG(A) 4P 60 W 100 V (with fan)
- M91Z60GK4DG(A) 4P 60 W 110 V / 115 V (with fan)
- M91Z60GK4YG(A) 4P 60 W 200 V (with fan)
- M91Z60GK4GG(A) 4P 60 W 220 V / 230 V (with fan)
- M91Z60GK4GGB 4P 60 W 220 V / 230 V (with fan)
- M91Z60GK4GGC 4P 60 W 220 V / 230 V (with fan)

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



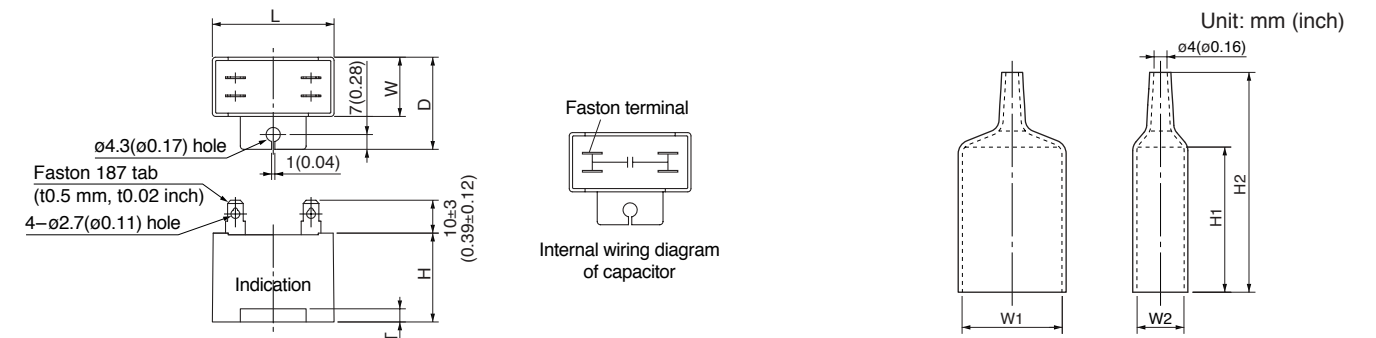
\* Diameter of applicable cable to be ø8(ø0.31) to ø12(ø0.47).

## Capacitor (dimensions) [attachment]

Unit: mm (inch)

## Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M91Z60GK4LG(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)
M91Z60GK4DG(A)	M0PC18M25G	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)
M91Z60GK4YG(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)
M91Z60GK4GG(A)	M0PC4.5M45G	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)
M91Z60GK4GGB											
M91Z60GK4GGC											

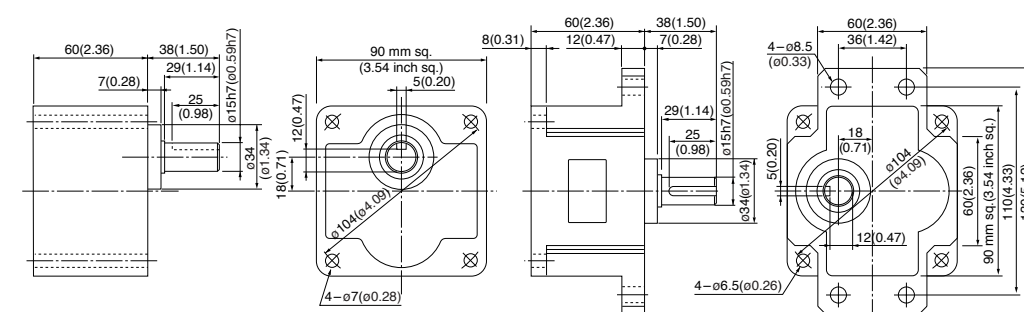
The models with a motor model number to which "A" or "B" is suffixed are not equipped with a capacitor cap.

## Gear head (dimensions)

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

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

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

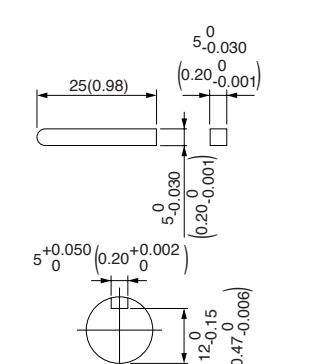


Note) MZ / MY is available for a gear head of either type.

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

## Key and keyway (dimensions) [attachment]

MZ9G□B  
MY9G□B



## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
90mm sq.	M91Z90GK4L	4	90	100	50	Cont.	153	1.6	1325	0.65 (92.0)	3.3	0.47 (66.6)	25 (200 V)
							160	1.6	1625	0.53 (75.1)	3.0	0.47 (66.6)	
	M91Z90GK4Y	4	90	200	50	Cont.	150	0.75	1325	0.62 (87.8)	1.7	0.47 (66.6)	5.8 (400 V)
							160	0.80	1650	0.51 (72.2)	1.5	0.47 (66.6)	

\* 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-62.

## Permissible torque at output shaft of gear head

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

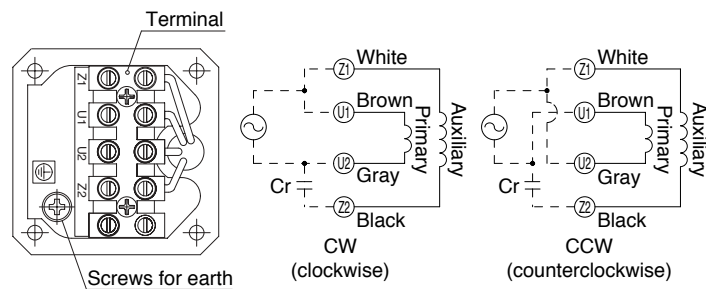
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	Speed (r/min)																																																																																																																							
	50 Hz	60 Hz	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200																																																																																															
Applicable gear head	<table border="1"> <tr> <td rowspan="2">MZ9G3B to MZ9G200B (ball bearing / hinge not attached)</td> <td>50 Hz</td><td>1.37 (12.1)</td><td>1.67 (14.8)</td><td>2.25 (19.9)</td><td>2.74 (24.3)</td><td>3.43 (30.4)</td><td>4.12 (36.5)</td><td>4.51 (39.9)</td><td>5.68 (50.3)</td><td>6.76 (59.8)</td><td>8.04 (71.2)</td><td>9.02 (79.8)</td><td>10.9 (96.5)</td><td>13.0 (115)</td><td>15.7 (139)</td><td>19.6 (173)</td><td colspan="8"></td> </tr> <tr> <td>60 Hz</td><td>1.18 (10.4)</td><td>1.37 (12.1)</td><td>1.86 (16.5)</td><td>2.25 (19.9)</td><td>2.84 (25.1)</td><td>3.43 (30.4)</td><td>3.72 (32.9)</td><td>4.70 (41.6)</td><td>5.68 (50.3)</td><td>6.76 (59.8)</td><td>7.55 (66.8)</td><td>9.21 (81.5)</td><td>10.9 (96.5)</td><td>13.0 (115)</td><td>18.3 (162)</td><td>19.6 (173)</td><td colspan="8"></td> </tr> <tr> <td>MY9G3B to MY9G200B (ball bearing / hinge attached)</td> <td>50 Hz</td><td>1.37 (12.1)</td><td>1.67 (14.8)</td><td>2.25 (19.9)</td><td>2.74 (24.3)</td><td>3.43 (30.4)</td><td>4.12 (36.5)</td><td>4.51 (39.9)</td><td>5.68 (50.3)</td><td>6.76 (59.8)</td><td>8.04 (71.2)</td><td>9.02 (79.8)</td><td>10.9 (96.5)</td><td>13.0 (115)</td><td>15.7 (139)</td><td>19.6 (173)</td><td colspan="8"></td> </tr> <tr> <td>60 Hz</td><td>1.18 (10.4)</td><td>1.37 (12.1)</td><td>1.86 (16.5)</td><td>2.25 (19.9)</td><td>2.84 (25.1)</td><td>3.43 (30.4)</td><td>3.72 (32.9)</td><td>4.70 (41.6)</td><td>5.68 (50.3)</td><td>6.76 (59.8)</td><td>7.55 (66.8)</td><td>9.21 (81.5)</td><td>10.9 (96.5)</td><td>13.0 (115)</td><td>18.3 (162)</td><td>19.6 (173)</td><td colspan="8"></td> </tr> </table>																				MZ9G3B to MZ9G200B (ball bearing / hinge not attached)	50 Hz	1.37 (12.1)	1.67 (14.8)	2.25 (19.9)	2.74 (24.3)	3.43 (30.4)	4.12 (36.5)	4.51 (39.9)	5.68 (50.3)	6.76 (59.8)	8.04 (71.2)	9.02 (79.8)	10.9 (96.5)	13.0 (115)	15.7 (139)	19.6 (173)									60 Hz	1.18 (10.4)	1.37 (12.1)	1.86 (16.5)	2.25 (19.9)	2.84 (25.1)	3.43 (30.4)	3.72 (32.9)	4.70 (41.6)	5.68 (50.3)	6.76 (59.8)	7.55 (66.8)	9.21 (81.5)	10.9 (96.5)	13.0 (115)	18.3 (162)	19.6 (173)									MY9G3B to MY9G200B (ball bearing / hinge attached)	50 Hz	1.37 (12.1)	1.67 (14.8)	2.25 (19.9)	2.74 (24.3)	3.43 (30.4)	4.12 (36.5)	4.51 (39.9)	5.68 (50.3)	6.76 (59.8)	8.04 (71.2)	9.02 (79.8)	10.9 (96.5)	13.0 (115)	15.7 (139)	19.6 (173)									60 Hz	1.18 (10.4)	1.37 (12.1)	1.86 (16.5)	2.25 (19.9)	2.84 (25.1)	3.43 (30.4)	3.72 (32.9)	4.70 (41.6)	5.68 (50.3)	6.76 (59.8)	7.55 (66.8)	9.21 (81.5)	10.9 (96.5)	13.0 (115)	18.3 (162)	19.6 (173)								
MZ9G3B to MZ9G200B (ball bearing / hinge not attached)	50 Hz	1.37 (12.1)	1.67 (14.8)	2.25 (19.9)	2.74 (24.3)	3.43 (30.4)	4.12 (36.5)	4.51 (39.9)	5.68 (50.3)	6.76 (59.8)	8.04 (71.2)	9.02 (79.8)	10.9 (96.5)	13.0 (115)	15.7 (139)	19.6 (173)																																																																																																								
	60 Hz	1.18 (10.4)	1.37 (12.1)	1.86 (16.5)	2.25 (19.9)	2.84 (25.1)	3.43 (30.4)	3.72 (32.9)	4.70 (41.6)	5.68 (50.3)	6.76 (59.8)	7.55 (66.8)	9.21 (81.5)	10.9 (96.5)	13.0 (115)	18.3 (162)	19.6 (173)																																																																																																							
MY9G3B to MY9G200B (ball bearing / hinge attached)	50 Hz	1.37 (12.1)	1.67 (14.8)	2.25 (19.9)	2.74 (24.3)	3.43 (30.4)	4.12 (36.5)	4.51 (39.9)	5.68 (50.3)	6.76 (59.8)	8.04 (71.2)	9.02 (79.8)	10.9 (96.5)	13.0 (115)	15.7 (139)	19.6 (173)																																																																																																								
60 Hz	1.18 (10.4)	1.37 (12.1)	1.86 (16.5)	2.25 (19.9)	2.84 (25.1)	3.43 (30.4)	3.72 (32.9)	4.70 (41.6)	5.68 (50.3)	6.76 (59.8)	7.55 (66.8)	9.21 (81.5)	10.9 (96.5)	13.0 (115)	18.3 (162)	19.6 (173)																																																																																																								
Rotational direction	Same as motor rotational direction										Reverse to motor rotational direction					Same as motor rotational direction																																																																																																								

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

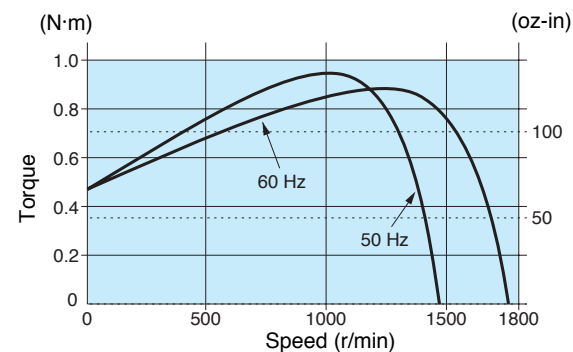
Applicable gear head		Reduction ratio	Speed (r/min)															
Bearing	Decimal gear head		50 Hz	60 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8			
MZ9G□B (ball bearing / hinge not attached)	MZ9G10XB	Permissible torque	N-m (lb-in)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)			
MY9G□B (ball bearing / hinge attached)			Rotational direction	Reverse to motor rotational direction	Same as motor rotational direction													

## Connection diagram



## Speed-torque characteristics

### M91Z90GK4L

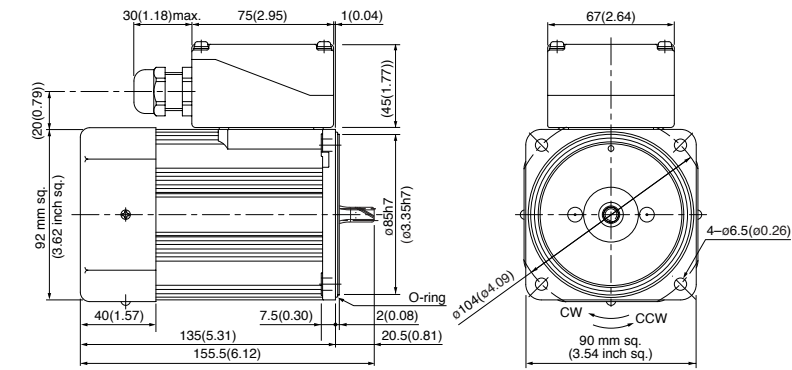


## Motor (dimensions)

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

M91Z90GK4L 4P 90 W 100 V (with fan)  
M91Z90GK4Y 4P 90 W 200 V (with fan)

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



\* Diameter of applicable cable to be ø8(ø0.31) to ø12(ø0.47).

## Capacitor (dimensions) [attachment]

Unit: mm (inch)

## Capacitor cap (dimensions) [option]

Unit: mm (inch)



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

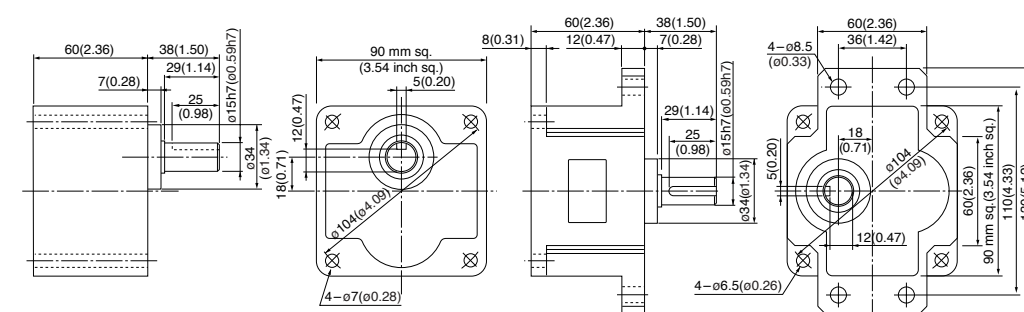
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M91Z90GK4L	M0PC25M20	50.2 (1.98)	31 (1.22)	41 (1.61)	42 (1.65)	5 (0.20)	M0PC5032	50 (1.97)	48 (1.89)	32.5 (1.28)	29.5 (1.16)
M91Z90GK4Y	M0PC5.8M40	50 (1.97)	30.5 (1.20)	41 (1.61)	41.5 (1.63)	4 (0.16)	M0PC5032	50 (1.97)	48 (1.89)	32.5 (1.28)	29.5 (1.16)

## Gear head (dimensions)

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

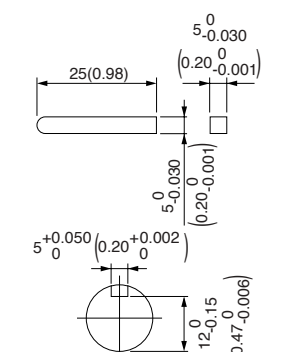
MZ9G□B (ball bearing / hinge not attached)  
Mass 1.4 kg (3.09 lb)

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.

## Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (r/min)	Torque N-m (oz-in)			
90 mm sq.	M91Z90GK4LG M91Z90GK4LGA	4	90	100	50	Cont.	172	1.8	1250	0.69(97.7)	3.0	0.65(92.0)	30
					60		177	1.8	1575	0.55(77.9)	2.8	0.65(92.0)	(250 V)
	M91Z90GK4DG M91Z90GK4DGA	4	90	110	60	Cont.	168	1.6	1600	0.54(76.5)	3.0	0.65(92.0)	25
					115		60	176	1.6	1600	0.54(76.5)	3.1	0.72(102)
	M91Z90GK4YG M91Z90GK4YGA	4	90	200	50	Cont.	170	0.85	1225	0.70(99.1)	1.4	0.65(92.0)	7.5
					60		188	0.97	1550	0.55(77.9)	1.4	0.65(92.0)	(450 V)
	M91Z90GK4GG M91Z90GK4GGA	4	90	220	50	Cont.	176	0.85	1225	0.70(99.1)	1.5	0.63(89.2)	6
					60		167	0.76	1575	0.55(77.9)	1.4	0.65(92.0)	(450 V)
	M91Z90GK4GGB M91Z90GK4GGC	4	90	230	50	Cont.	185	0.89	1250	0.69(97.7)	1.5	0.68(96.3)	6
					60		173	0.76	1600	0.54(76.5)	1.5	0.72(102)	(450 V)
	M91Z90GK4GGB M91Z90GK4GGC	4	90	220	50	Cont.	153	0.70	1325	0.65(92.0)	1.4	0.55(77.9)	6
					60		169	0.81	1625	0.53(75.1)	1.3	0.56(79.3)	(450 V)
M91Z90GK4GGB M91Z90GK4GGC	4	90	230	50	Cont.	159	0.70	1350	0.64(90.6)	1.5	0.61(86.4)	6	
				60		176	0.81	1650	0.52(73.6)	1.4	0.63(89.2)	(450 V)	

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-62.  
 The models with a motor model number to which "A" or "B" is suffixed are not equipped with a capacitor cap.  
 The models with a motor model number to which "A" or "B" is suffixed are not sold or available in Japan.

## Permissible torque at output shaft of gear head

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

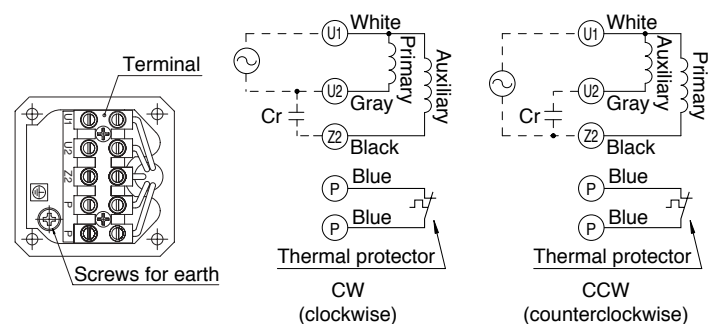
Unit of permissible torque: upper (N-m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
Speed (r/min)	50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
Applicable gear head	50 Hz	1.37	1.67	2.25	2.74	3.43	4.12	4.51	5.68	6.76	8.04	9.02	10.9	13.0	15.7	19.6								19.6
	60 Hz	1.18	1.37	1.86	2.25	2.84	3.43	3.72	4.70	5.68	6.76	7.55	9.21	10.9	13.0	18.3								19.6
Rotational direction	Same as motor rotational direction											Reverse to motor rotational direction					Same as motor rotational direction							

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

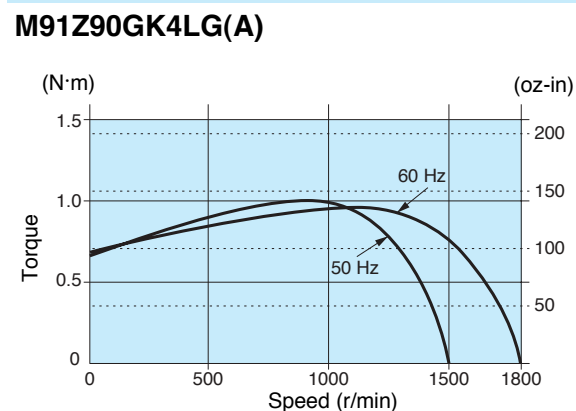
Applicable gear head		Reduction ratio	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1
		60 Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	MZ9G10XB	Permissible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

## Connection diagram



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

## Speed-torque characteristics

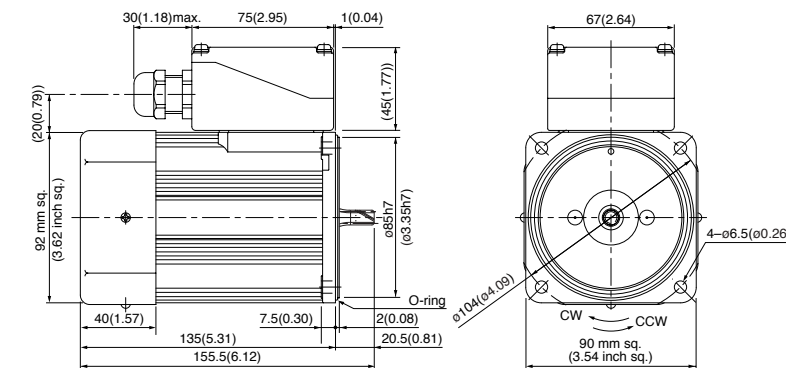


## Motor (dimensions)

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

- M91Z90GK4LG(A) 4P 90 W 100 V (with fan)
- M91Z90GK4DG(A) 4P 90 W 110 V / 115 V (with fan)
- M91Z90GK4YG(A) 4P 90 W 200 V (with fan)
- M91Z90GK4GG(A) 4P 90 W 220 V / 230 V (with fan)
- M91Z90GK4GGB 4P 90 W 220 V / 230 V (with fan)
- M91Z90GK4GGC 4P 90 W 220 V / 230 V (with fan)

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



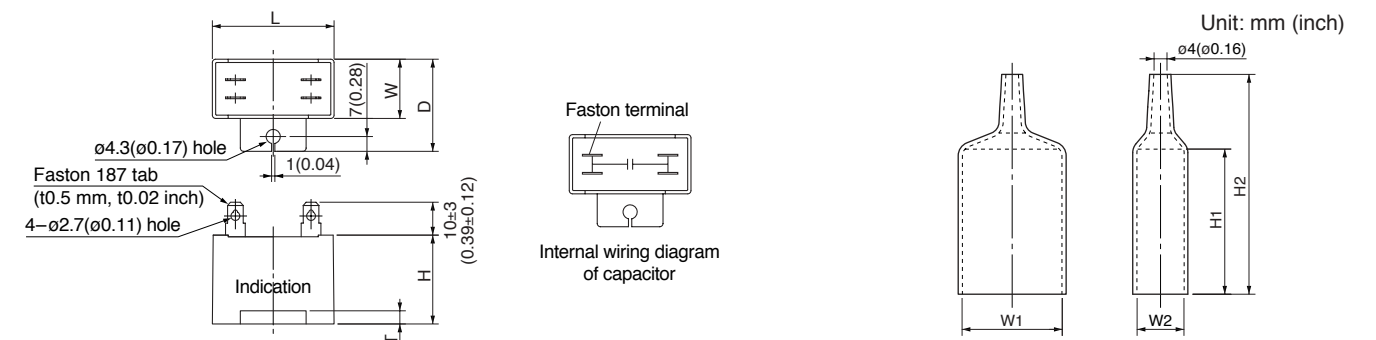
\* Diameter of applicable cable to be ø8(ø0.31) to ø12(ø0.47).

## Capacitor (dimensions) [attachment]

Unit: mm (inch)

## Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



## Capacitor dimension list

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M91Z90GK4LG(A)	M0PC30M25G	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)
M91Z90GK4DG(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)
M91Z90GK4YG(A)	M0PC7.5M45G	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)
M91Z90GK4GG(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)
M91Z90GK4GGB											
M91Z90GK4GGC											

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

## Gear head (dimensions)

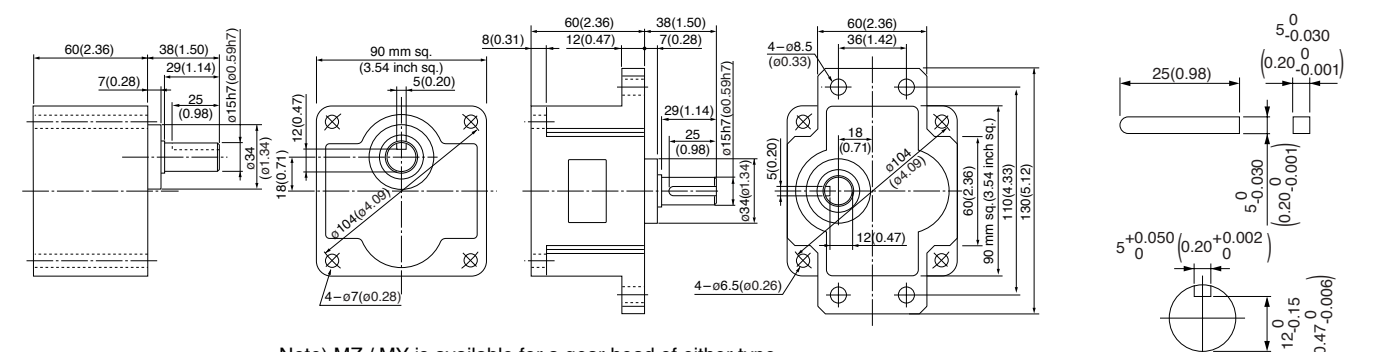
Scale: 1/4, Unit: mm (inch)

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



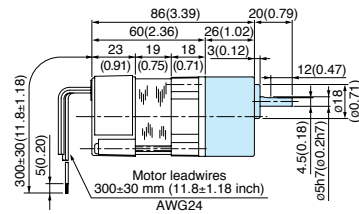
Note) MZ / MY is available for a gear head of either type.

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

\* Gear head is sold separately.

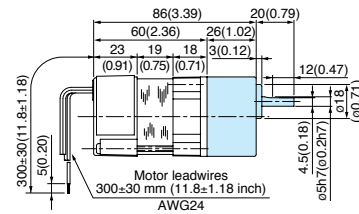
## 42 mm sq. (1.65 inch sq.) 3 W

M41A3G2L + M4GA□F



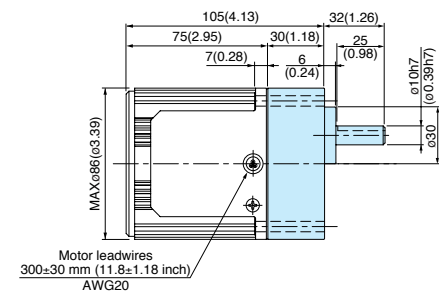
## 42 mm sq. (1.65 inch sq.) 1 W

M41A1G4L + M4GA□F



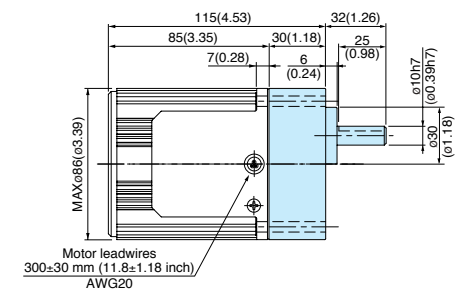
## 80 mm sq. (3.15 inch sq.) 15 W

M81X15G4L + MX8G□B(M)  
M81X15G4Y + MX8G□B(M)



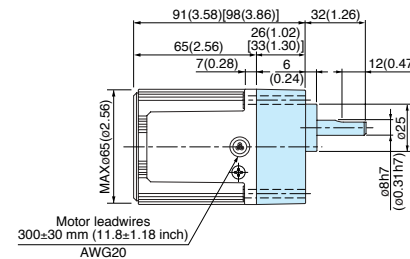
## 80 mm sq. (3.15 inch sq.) 25 W

M81X25G4L + MX8G□B(M)  
M81X25G4Y + MX8G□B(M)  
M81X25G4LG(A) + MX8G□B(M)  
M81X25G4DG(A) + MX8G□B(M)  
M81X25G4YG(A) + MX8G□B(M)  
M81X25G4GG(A) + MX8G□B(M)



## 60 mm sq. (2.36 inch sq.) 3 W

M61X3G4L + MX6G□BA(MA) / MX6G□B(M)

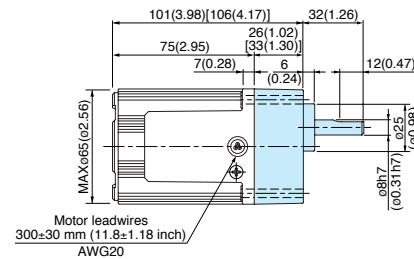


\* Figures in [ ] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).

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

M61X6G4L + MX6G□BA(MA) / MX6G□B(M)  
M61X6G4Y + MX6G□BA(MA) / MX6G□B(M)  
M61X6G4LG(A) + MX6G□BA(MA) / MX6G□B(M)  
M61X6G4DG(A) + MX6G□BA(MA) / MX6G□B(M)  
M61X6G4YG(A) + MX6G□BA(MA) / MX6G□B(M)  
M61X6G4GG(A) + MX6G□BA(MA) / MX6G□B(M)

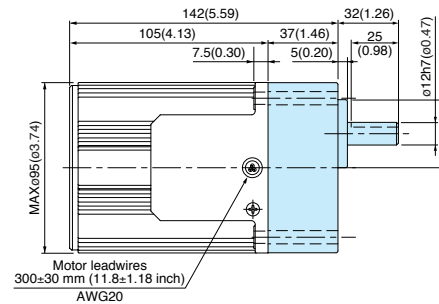


\* Figures in [ ] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).

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

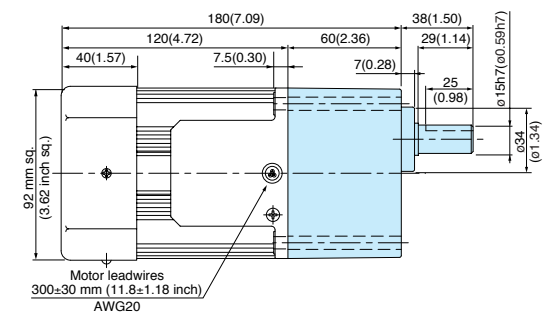
## 90 mm sq. (3.54 inch sq.) 40 W

M91X40G4L + MX9G□B(M)  
M91X40G4Y + MX9G□B(M)  
M91X40G4LG(A) + MX9G□B(M)  
M91X40G4DG(A) + MX9G□B(M)  
M91X40G4YG(A) + MX9G□B(M)  
M91X40G4GG(A) + MX9G□B(M)



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

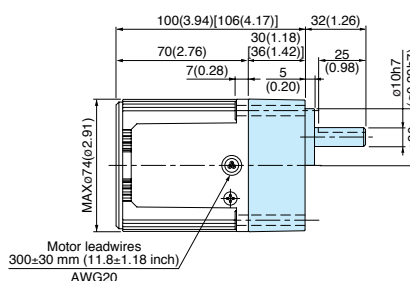
M91Z60G4L + MZ9G□B (MY9G□B)  
M91Z60G4Y + MZ9G□B (MY9G□B)  
M91Z60G4LG(A) + MZ9G□B (MY9G□B)  
M91Z60G4DG(A) + MZ9G□B (MY9G□B)  
M91Z60G4YG(A) + MZ9G□B (MY9G□B)  
M91Z60G4GG(A) + MZ9G□B (MY9G□B)  
M91Z60G4GGB + MZ9G□B (MY9G□B)  
M91Z60G4GGC + MZ9G□B (MY9G□B)



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

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

M71X10G4L + MX7G□BA(MA) / MX7G□B(M)  
M71X10G4Y + MX7G□BA(MA) / MX7G□B(M)

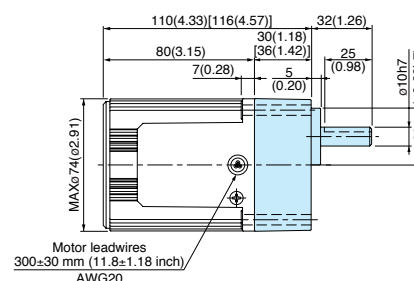


\* Figures in [ ] represent the dimensions of MX7G□B (M) (1/30 or larger reduction ratio).

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

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

M71X15G4L + MX7G□BA(MA) / MX7G□B(M)  
M71X15G4Y + MX7G□BA(MA) / MX7G□B(M)  
M71X15G4LG(A) + MX7G□BA(MA) / MX7G□B(M)  
M71X15G4DG(A) + MX7G□BA(MA) / MX7G□B(M)  
M71X15G4YG(A) + MX7G□BA(MA) / MX7G□B(M)  
M71X15G4GG(A) + MX7G□BA(MA) / MX7G□B(M)

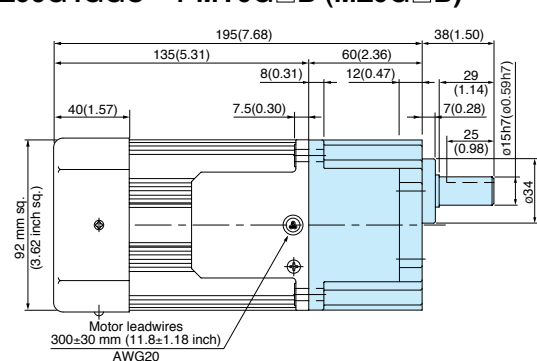


\* Figures in [ ] represent the dimensions of MX7G□B (M) (1/30 or larger reduction ratio).

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

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

M91Z90G4L + MY9G□B (MZ9G□B)  
M91Z90G4Y + MY9G□B (MZ9G□B)  
M91Z90G4LG(A) + MY9G□B (MZ9G□B)  
M91Z90G4DG(A) + MY9G□B (MZ9G□B)  
M91Z90G4YG(A) + MY9G□B (MZ9G□B)  
M91Z90G4GG(A) + MY9G□B (MZ9G□B)  
M91Z90G4GGB + MY9G□B (MZ9G□B)  
M91Z90G4GGC + MY9G□B (MZ9G□B)



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

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

\* The models with a motor model number to which "A" or "B" 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.

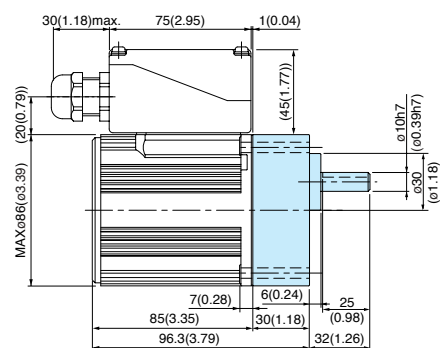
# Induction motor (sealed connector) Gear head combination dimensions

Scale: 1/4, Unit: mm

\* Gear head is sold separately.

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

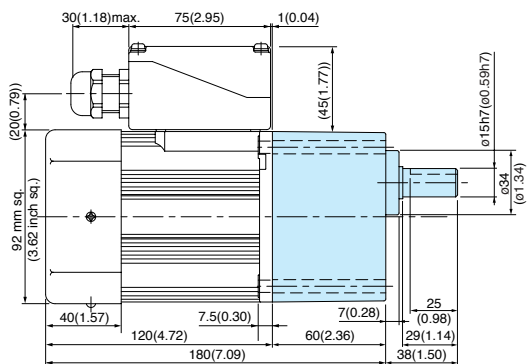
- M81X25GK4L + MX8G□B(M)
- M81X25GK4Y + MX8G□B(M)
- M81X25GK4LG(A) + MX8G□B(M)
- M81X25GK4DG(A) + MX8G□B(M)
- M81X25GK4YG(A) + MX8G□B(M)
- M81X25GK4GG(A) + MX8G□B(M)



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

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

- M91Z60GK4L + MZ9G□B (MY9G□B)
- M91Z60GK4Y + MZ9G□B (MY9G□B)
- M91Z60GK4LG(A) + MZ9G□B (MY9G□B)
- M91Z60GK4DG(A) + MZ9G□B (MY9G□B)
- M91Z60GK4YG(A) + MZ9G□B (MY9G□B)
- M91Z60GK4GG(A) + MZ9G□B (MY9G□B)
- M91Z60GK4GGB + MZ9G□B (MY9G□B)
- M91Z60GK4GGC + MZ9G□B (MY9G□B)

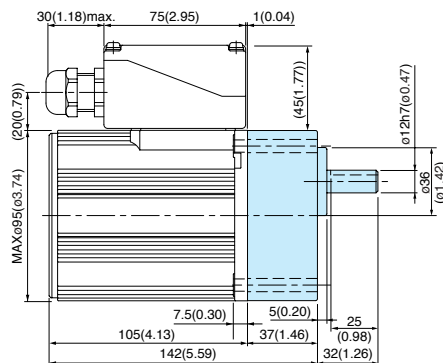


\* Diameter of applicable cable to be  $\phi 8(\phi 0.31)$  to  $\phi 12(\phi 0.47)$ .

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

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

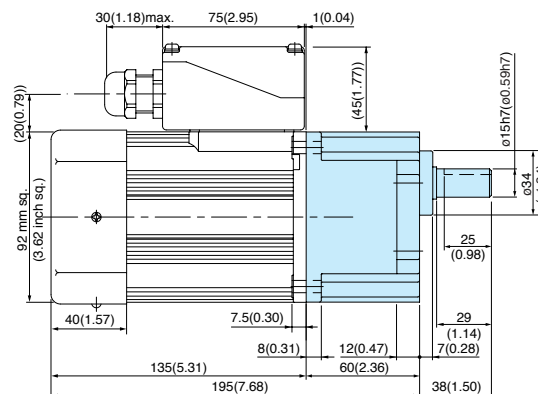
- M91X40GK4L + MX9G□B(M)
- M91X40GK4Y + MX9G□B(M)
- M91X40GK4LG(A) + MX9G□B(M)
- M91X40GK4DG(A) + MX9G□B(M)
- M91X40GK4YG(A) + MX9G□B(M)
- M91X40GK4GG(A) + MX9G□B(M)



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

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

- M91Z90GK4L + MY9G□B (MZ9G□B)
- M91Z90GK4Y + MY9G□B (MZ9G□B)
- M91Z90GK4LG(A) + MY9G□B (MZ9G□B)
- M91Z90GK4DG(A) + MY9G□B (MZ9G□B)
- M91Z90GK4YG(A) + MY9G□B (MZ9G□B)
- M91Z90GK4GG(A) + MY9G□B (MZ9G□B)
- M91Z90GK4GGB + MY9G□B (MZ9G□B)
- M91Z90GK4GGC + MY9G□B (MZ9G□B)



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

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

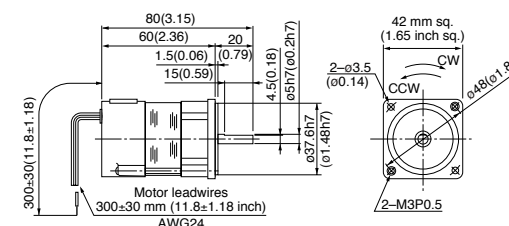
# Induction motor (4-pole round shaft / leadwire) Dimensions

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

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

Mass 0.3 kg (0.66 lb)

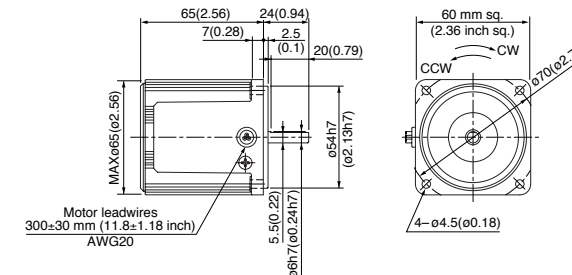
M41A1S4L



## 60 mm sq. (2.36 inch sq.) 3 W

Mass 0.56 kg (1.23 lb)

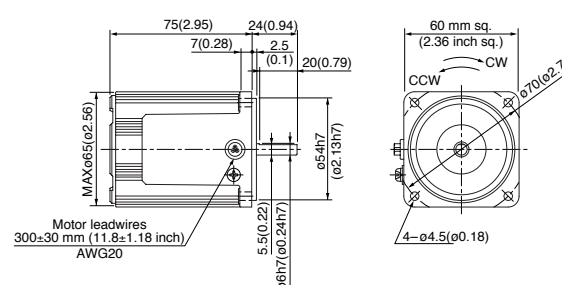
M61X3S4LS



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

Mass 0.67 kg (1.48 lb)

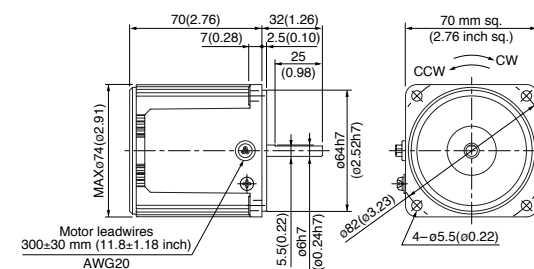
M61X6S4LS M61X6S4LG(A) M61X6S4YG(A)  
M61X6S4YS M61X6S4DG(A) M61X6S4GG(A)



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

Mass 0.84 kg (1.85 lb)

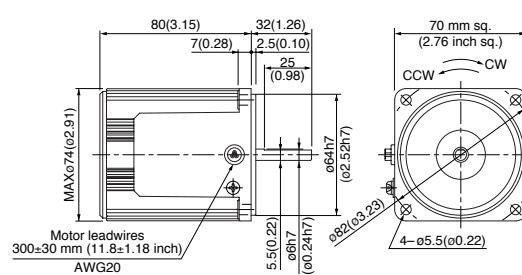
M71X10S4LS  
M71X10S4YS



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

Mass 1.1 kg (2.43 lb)

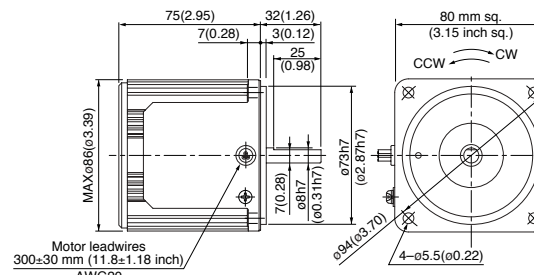
M71X15S4LS M71X15S4LG(A) M71X15S4YG(A)  
M71X15S4YS M71X15S4DG(A) M71X15S4GG(A)



## 80 mm sq. (3.15 inch sq.) 15 W

Mass 1.2 kg (2.65 lb)

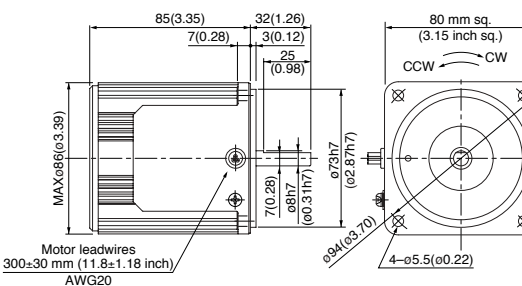
M81X15S4LS  
M81X15S4YS



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

Mass 1.5 kg (3.31 lb)

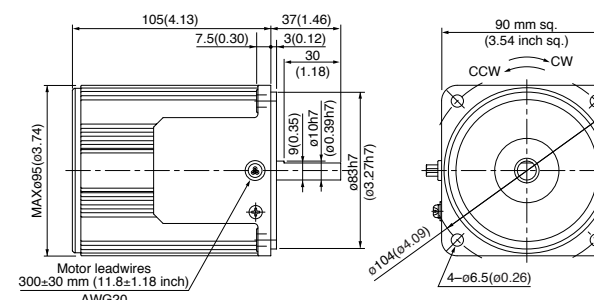
M81X25S4LS M81X25S4LG(A) M81X25S4YG(A)  
M81X25S4YS M81X25S4DG(A) M81X25S4GG(A)



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

Mass 2.4 kg (5.29 lb)

M91X40S4LS M91X40S4LG(A) M91X40S4YG(A)  
M91X40S4YS M91X40S4DG(A) M91X40S4GG(A)



\* Please refer to the pinion shaft motor for wiring and specifications of the motor.

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

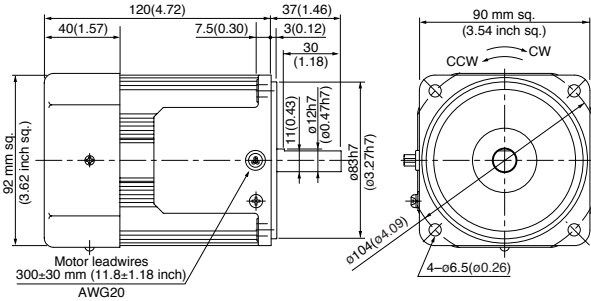
# Induction motor (4-pole round shaft / leadwire)

## Dimensions

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

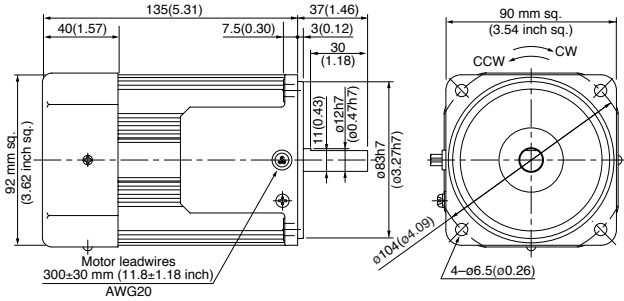
**90 mm sq. (3.54 inch sq.) 60 W** Mass 2.7 kg (5.95 lb)

M91Z60S4LS (with fan) M91Z60S4LG(A) (with fan)  
 M91Z60S4YS (with fan) M91Z60S4DG(A) (with fan)  
 M91Z60S4YG(A) (with fan)  
 M91Z60S4GG(A) (with fan)  
 M91Z60S4GGB (with fan)  
 M91Z60S4GGC (with fan)



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

M91Z90S4LS (with fan) M91Z90S4LG(A) (with fan)  
 M91Z90S4YS (with fan) M91Z90S4DG(A) (with fan)  
 M91Z90S4YG(A) (with fan)  
 M91Z90S4GG(A) (with fan)  
 M91Z90S4GGB (with fan)  
 M91Z90S4GGC (with fan)



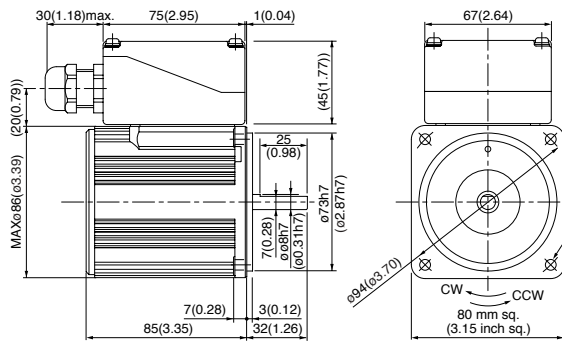
# Induction motor (4-pole round shaft / sealed connector)

## Dimensions

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

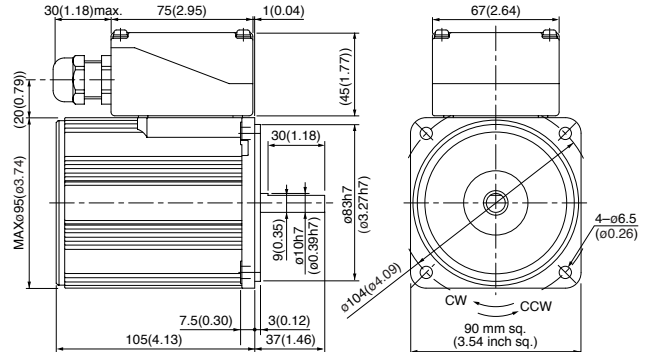
**80 mm sq. (3.15 inch sq.) 25 W** Mass 1.8 kg (3.97 lb)

M81X25SK4LS M81X25SK4LG(A)  
 M81X25SK4YS M81X25SK4YG(A)  
 M81X25SK4DG(A)  
 M81X25SK4GG(A)



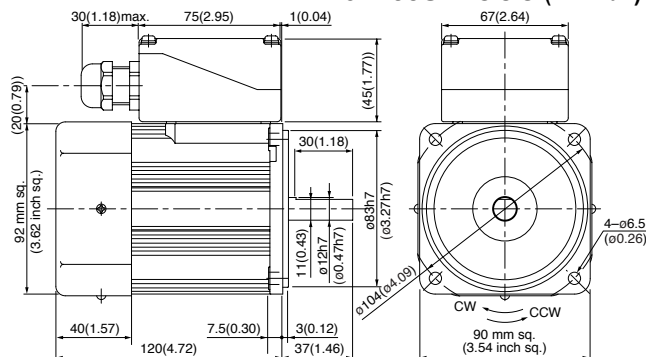
**90 mm sq. (3.54 inch sq.) 40 W** Mass 2.8 kg (6.17 lb)

M91X40SK4LS M91X40SK4LG(A)  
 M91X40SK4YS M91X40SK4YG(A)  
 M91X40SK4DG(A)  
 M91X40SK4GG(A)



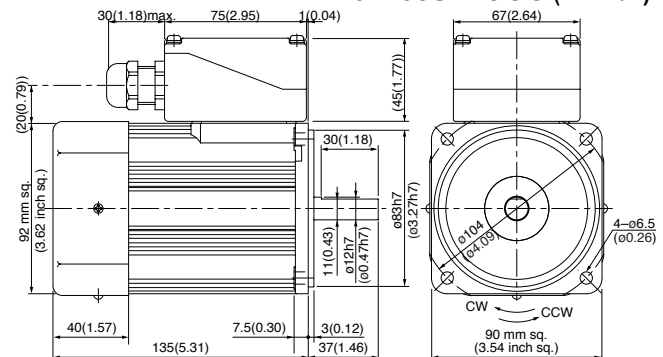
**90 mm sq. (3.54 inch sq.) 60 W** Mass 3.0 kg (6.61 lb)

M91Z60SK4LS (with fan) M91Z60SK4LG(A) (with fan)  
 M91Z60SK4YS (with fan) M91Z60SK4DG(A) (with fan)  
 M91Z60SK4YG(A) (with fan)  
 M91Z60SK4GG(A) (with fan)  
 M91Z60SK4GGB (with fan)  
 M91Z60SK4GGC (with fan)



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

M91Z90SK4LS (with fan) M91Z90SK4LG(A) (with fan)  
 M91Z90SK4YS (with fan) M91Z90SK4DG(A) (with fan)  
 M91Z90SK4YG(A) (with fan)  
 M91Z90SK4GG(A) (with fan)  
 M91Z90SK4GGB (with fan)  
 M91Z90SK4GGC (with fan)



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

\* Please refer to the pinion shaft motor for wiring and specifications of the motor.

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

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

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