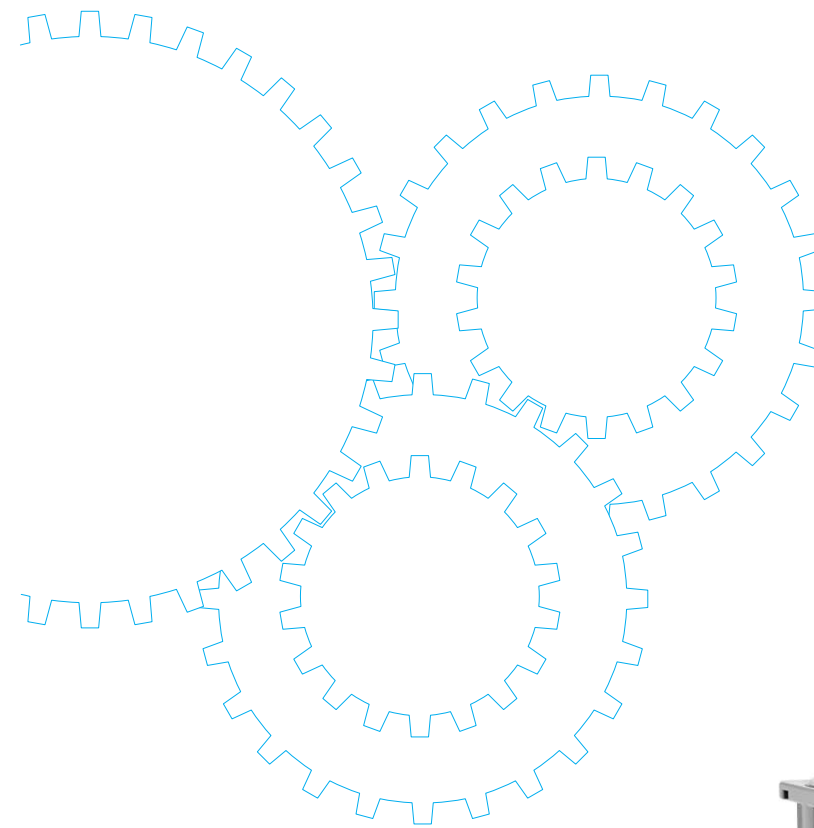


Induction Motor



Contents

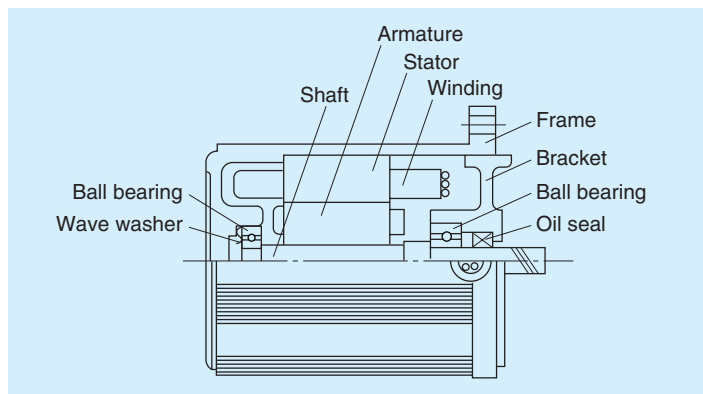
- Motor Overview B- 2
- Model list B- 4
- Product information for each model B- 8
- Gear head combination dimensions B-58
- Round shaft motor dimensions B-61

Outline of induction motor

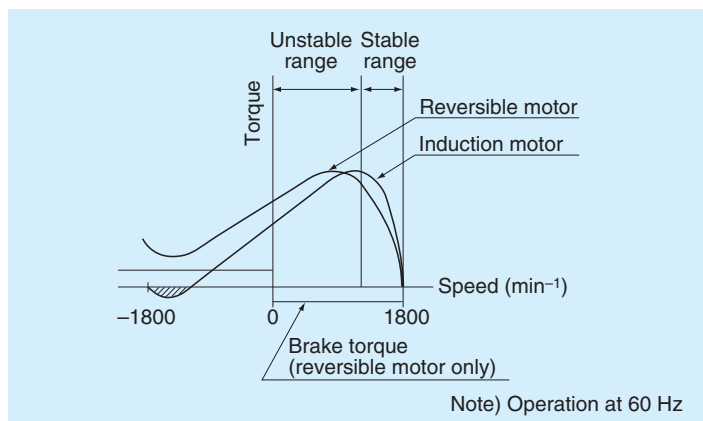
Features

- It is fitted for continuous running in one direction.
- 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.
- Caution
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.

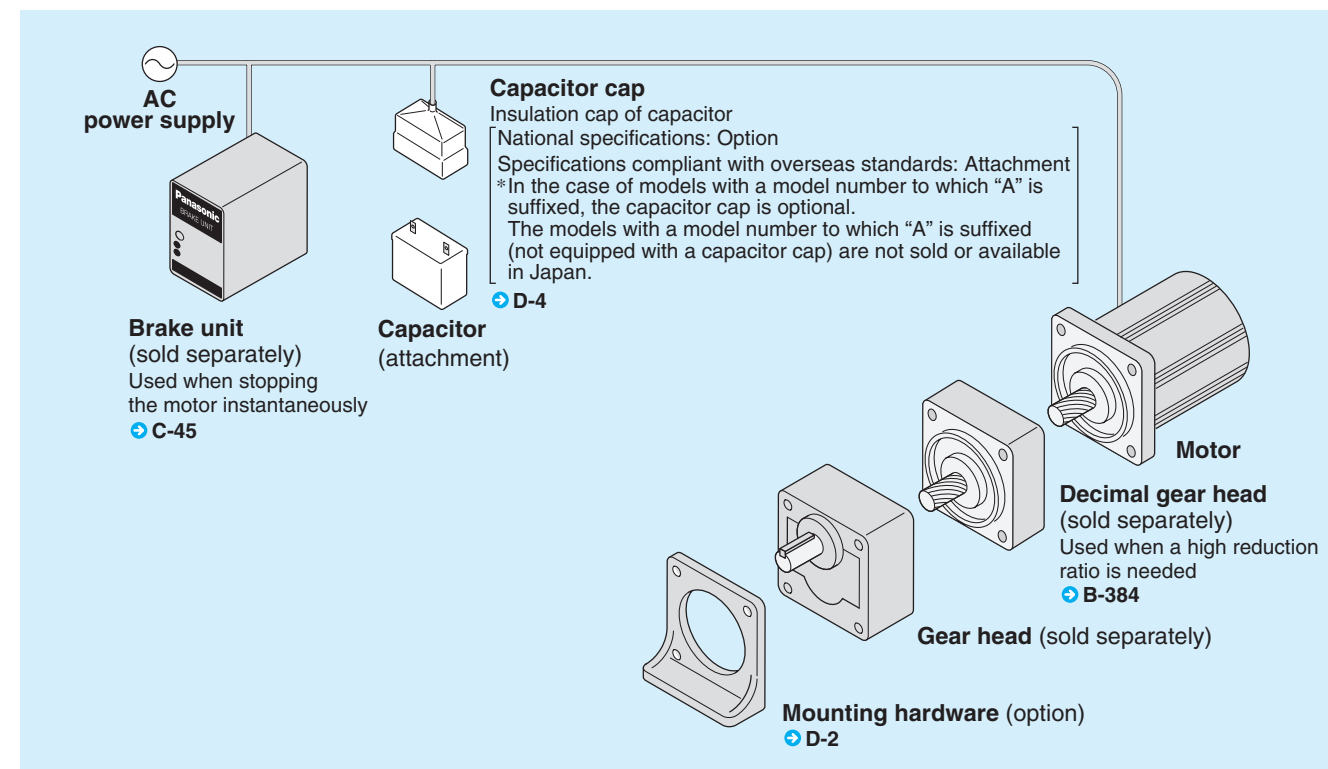
Construction



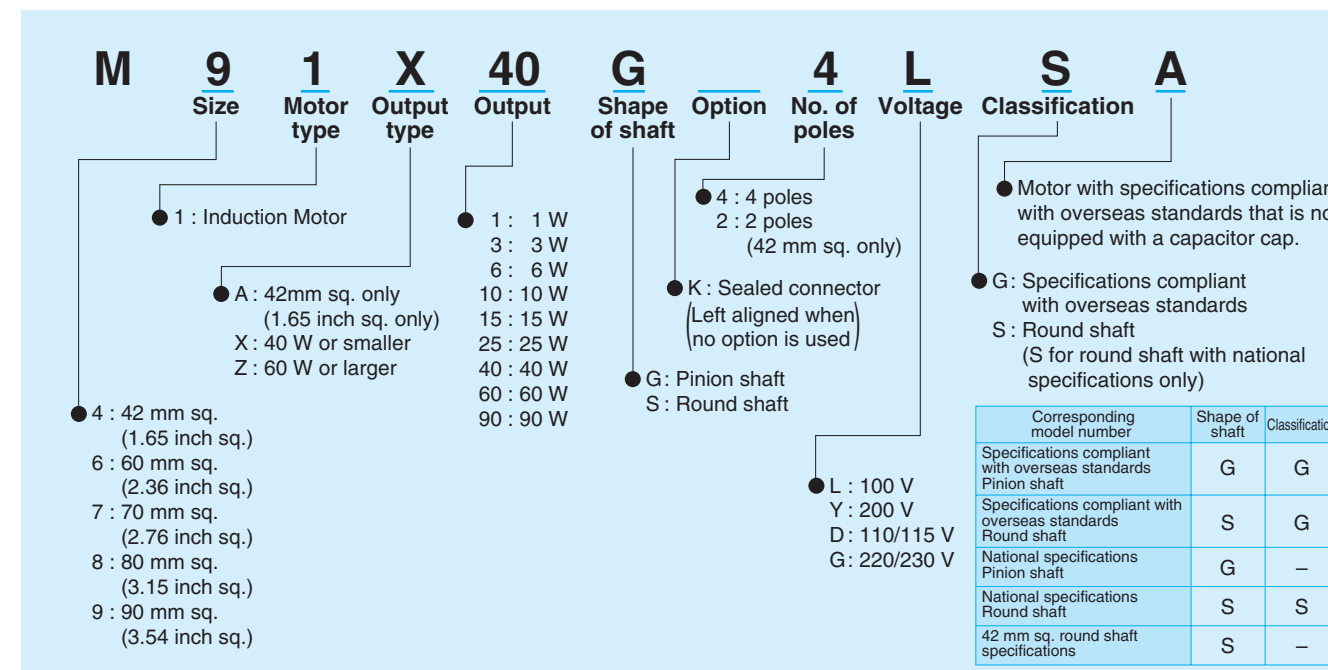
Characteristics



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 c   

 Hinge attached

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




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

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

* 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 c   
 Ⓟ Electrical Appliance and Material Safety Law

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

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

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (200V)
							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)

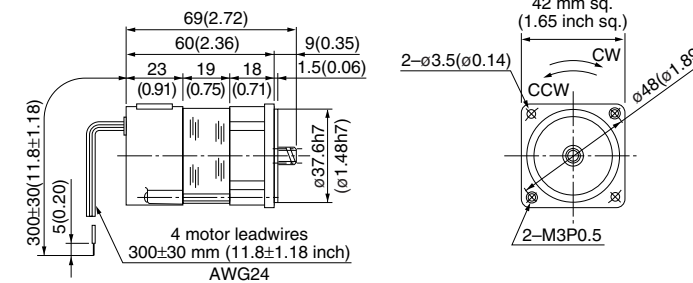
Reduction ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
Speed (min ⁻¹)	50Hz	1000	833	600	500	400	333	240	200	167	120	100	83.3	60	40	33.3	30	25	20	16.7	
	60Hz	1200	1000	720	600	480	400	288	240	200	144	120	100	72	48	40	36	30	24	20	
Applicable gear head M4GA3F to M4GA180F (metal+ball bearing)	50Hz	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)
	60Hz	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)

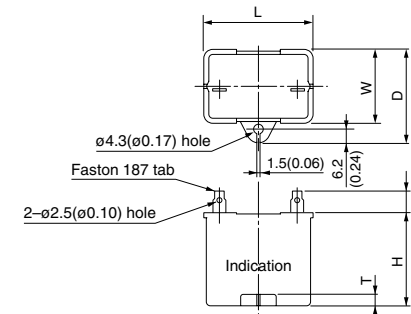
M41A3G2L 2P 3 W 100 V

Mass 0.3 kg 0.66 lb	Spur gear	Module 0.4	Number of teeth 10
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Capacitor (dimensions) [attachment]

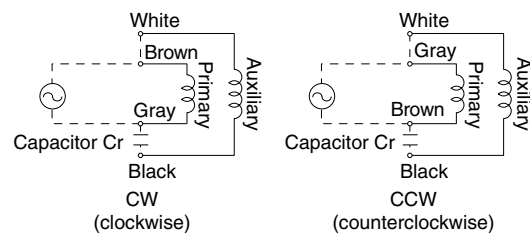
Unit: mm (inch)



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

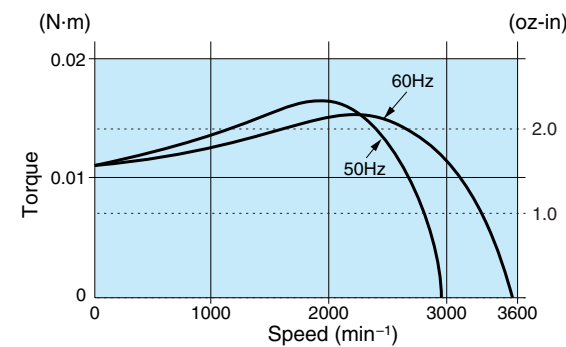
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M41A3G2L	M0PC1.5M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917

Connection diagram



Speed-torque characteristics

M41A3G2L

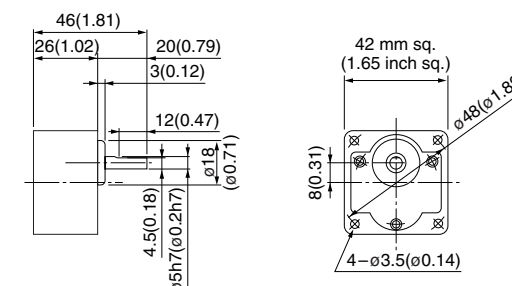


Gear head (dimensions)

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.



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

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

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (200V)
							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)

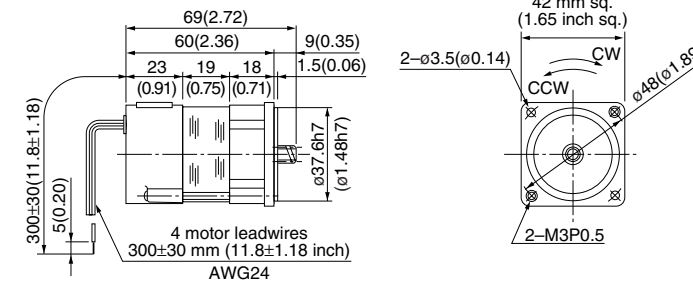
Reduction ratio	3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180	
Speed (min ⁻¹)	50Hz	500	416.7	300	250	200	166.7	120	100	83.3	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	60Hz	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head M4GA3F to M4GA180F (metal+ball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

Motor (dimensions)

M41A1G4L 4P 1 W 100 V

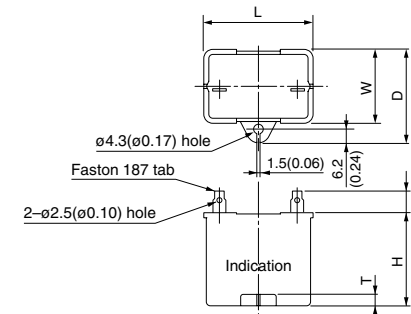
Scale: 1/3, Unit: mm (inch)

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)

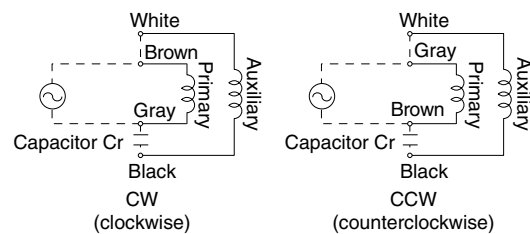


• Capacitor dimension list

Unit: upper (mm) / lower (inch)

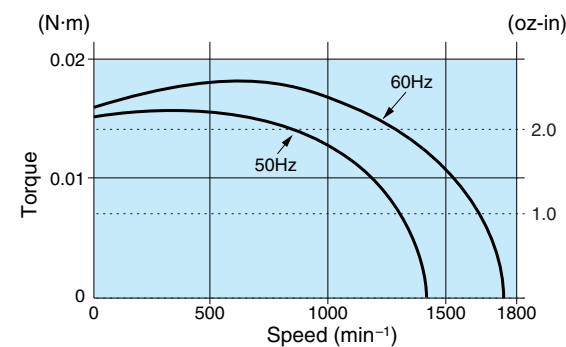
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M41A1G4L	M0PC1.3M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917

Connection diagram



Speed-torque characteristics

M41A1G4L

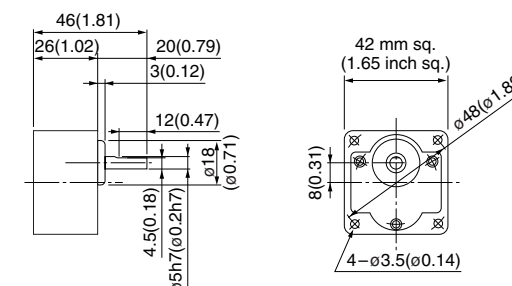


Gear head (dimensions)

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.



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

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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (200V)
							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%.

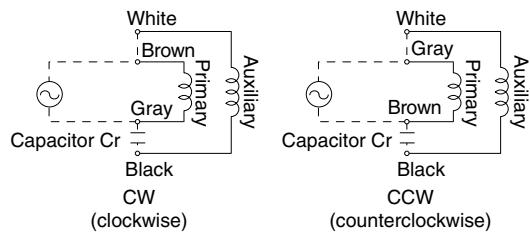
Unit of permissible torque: upper (N·m) / lower (lb-in)

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 (min ⁻¹)	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	
Applicable gear head	MX6G3BA to MX6G180B (ball bearing) MX6G3MA to MX6G180M (metal bearing)	50Hz	0.048 (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)
		60Hz	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

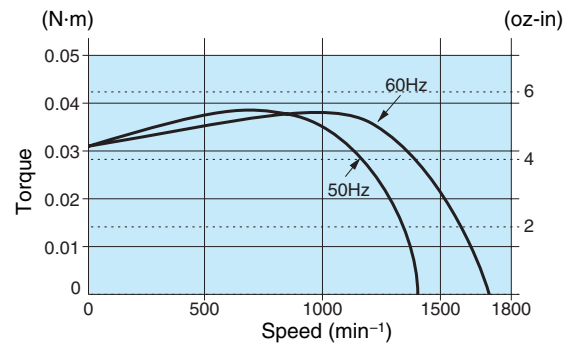
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min ⁻¹)	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8	
				60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing)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

Connection diagram



Speed-torque characteristics

M61X3G4L



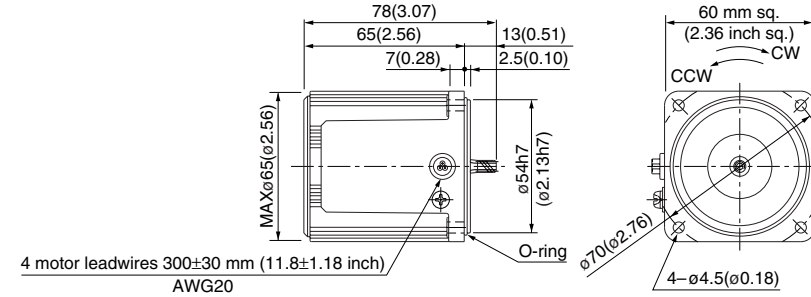
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

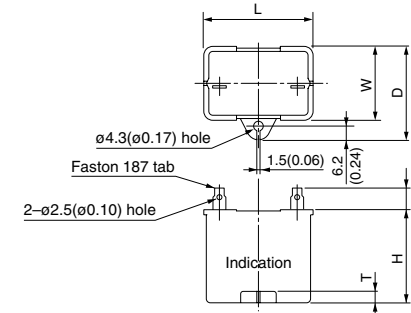
M61X3G4L 4P 3 W 100 V

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor dimension list

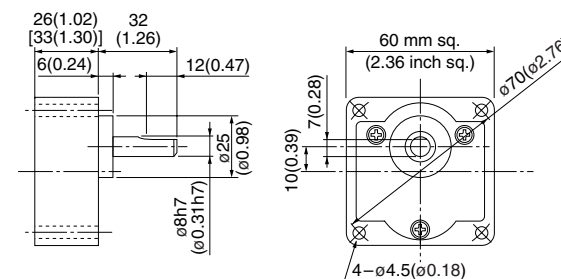
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M61X3G4L	M0PC2M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917

Gear head (dimensions)

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

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



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

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

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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (200V)
							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 (400V)
							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%.

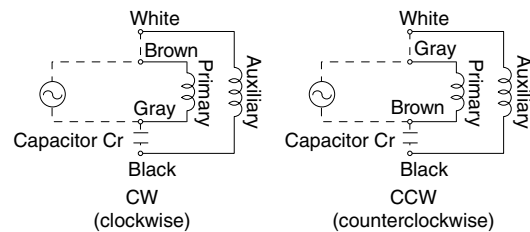
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

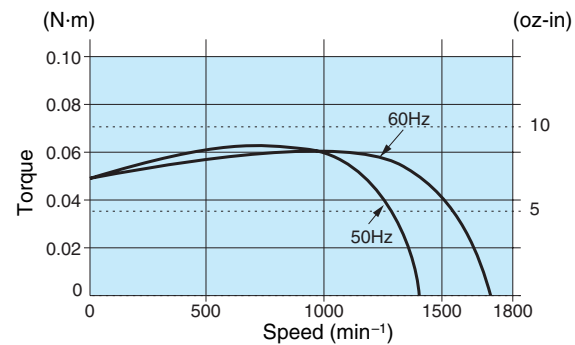
Applicable gear head		Reduction ratio	Unit of permissible torque: upper (N·m) / lower (lb-in)															
Bearing	Decimal gear head		Speed (min ⁻¹)	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8		
MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing)	MX6G10XB	Permissible torque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

Connection diagram



Speed-torque characteristics

M61X6G4L

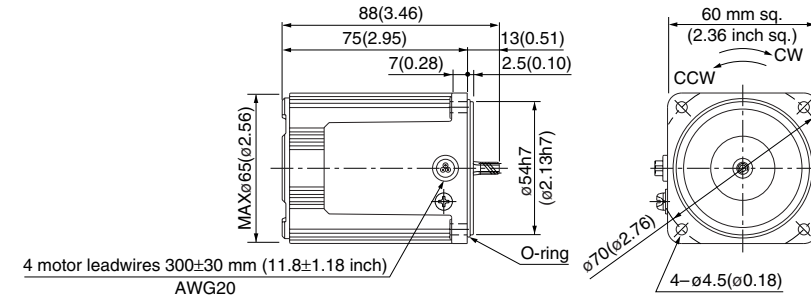


Motor (dimensions)

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

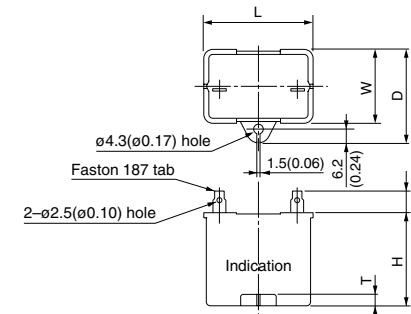
M61X6G4L	4P 6 W 100 V
M61X6G4Y	4P 6 W 200 V

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor dimension list

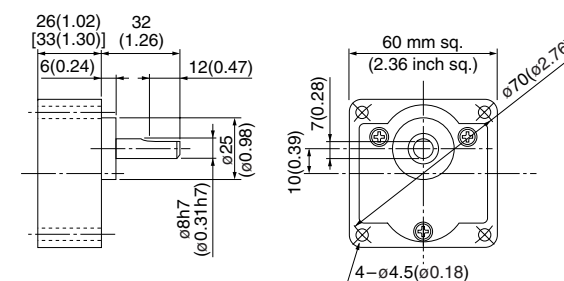
Unit: upper (mm) / lower (inch)

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

Gear head (dimensions)

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

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



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

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

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

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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (250V)
	M61X6G4DG M61X6G4DGA	4	6	110	60	Cont.	21	0.20	1600	0.036 (5.10)	0.33	0.051 (7.22)	2.5 (250V)
				115	60	Cont.	23	0.21	1625	0.035 (4.96)	0.34	0.051 (7.22)	(250V)
	M61X6G4YG M61X6G4YGA	4	6	200	50	Cont.	21	0.11	1225	0.047 (6.66)	0.14	0.051 (7.22)	0.8 (450V)
				60	Cont.	22	0.11	1550	0.037 (5.24)	0.14	0.051 (7.22)	(450V)	
	M61X6G4GG M61X6G4GGA	4	6	220	50	Cont.	22	0.11	1200	0.048 (6.80)	0.14	0.045 (6.37)	0.6 (450V)
					60		21	0.10	1550	0.037 (5.24)	0.14	0.045 (6.37)	
				230	50	23	0.11	1250	0.046 (6.51)	0.15	0.050 (7.08)		
					60	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%.

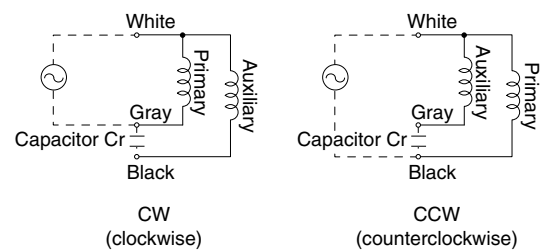
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

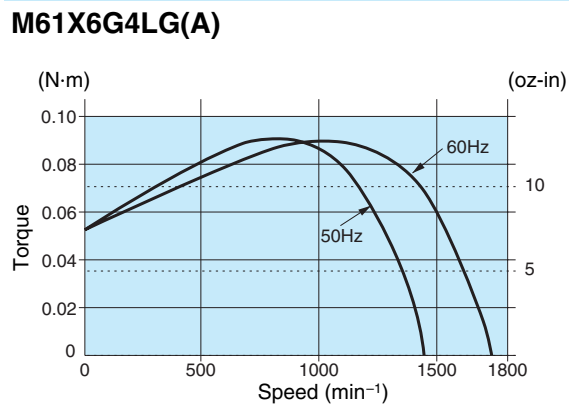
Permissible torque at output shaft of gear head using decimal gear head

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

Connection diagram



Speed-torque characteristics



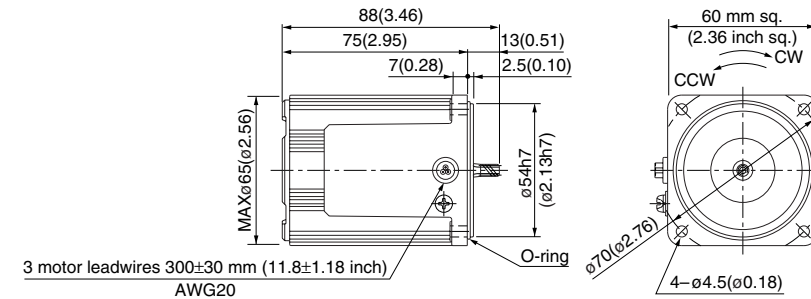
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

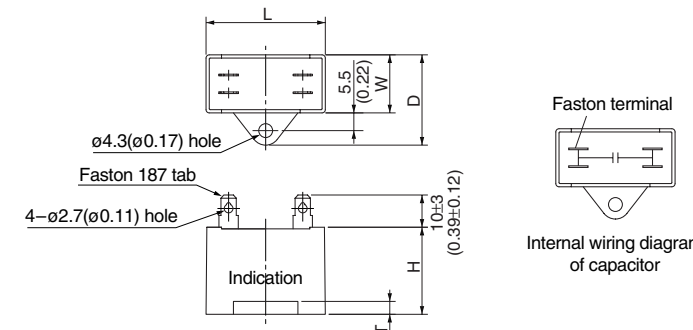
M61X6G4LG(A)	4P 6 W 100 V
M61X6G4DG(A)	4P 6 W 110 V / 115 V
M61X6G4YG(A)	4P 6 W 200 V
M61X6G4GG(A)	4P 6 W 220 V / 230 V

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



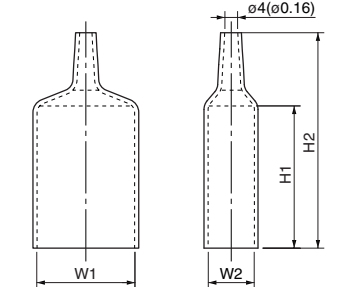
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

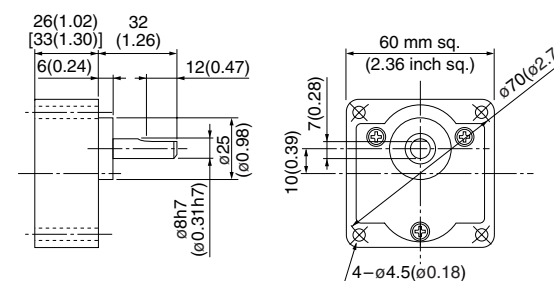
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M61X6G4LG(A)	M0PC3.5M25G	31 (1.22)	17 (0.67)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3117G	31 (1.22)	17 (0.67)	50 (1.97)	73 (2.87)
M61X6G4DG(A)	M0PC2.5M25G	31 (1.22)	17 (0.67)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3117G	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) / MX6G□B (ball bearing) Mass 0.24/0.3 kg (0.53/0.66 lb): Output shaft D cut
 MX6G□MA (metal bearing) / MX6G□M (metal bearing) Mass 0.24/0.3 kg (0.53/0.66 lb): Output shaft D cut



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

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

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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (200V)
							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 (400V)
							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%.

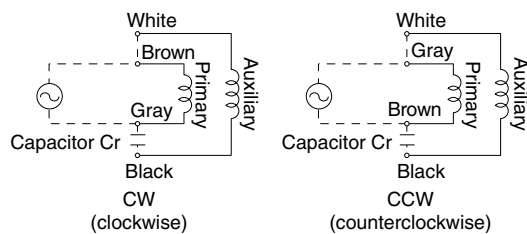
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180		
Speed (min ⁻¹)	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	
Applicable gear head	MX7G3BA to MX7G180B (ball bearing)	50Hz	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)	1.27 (11.2)	1.47 (13.0)	1.76 (15.6)	2.55 (22.6)	3.04 (26.9)	3.63 (32.1)	4.31 (38.1)	4.80 (42.5)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
		60Hz	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)	1.08 (9.56)	1.27 (11.2)	1.47 (13.0)	2.16 (19.1)	2.55 (22.6)	3.04 (26.9)	3.63 (32.1)	4.03 (35.7)	4.80 (42.5)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
Rotational direction	Same as motor rotational direction											Reverse to motor rotational direction												

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

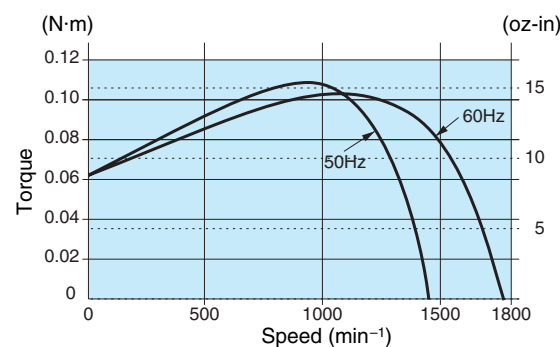
Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (min ⁻¹)	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX7G□BA (ball bearing)	MX7G10XB	Permissible torque	N·m	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)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

Connection diagram



Speed-torque characteristics

M71X10G4L



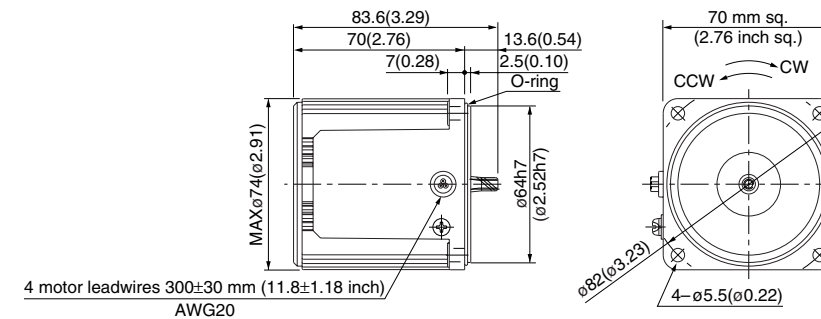
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

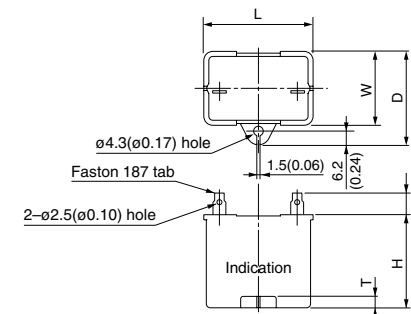
M71X10G4L	4P 10 W 100 V
M71X10G4Y	4P 10 W 200 V

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor dimension list

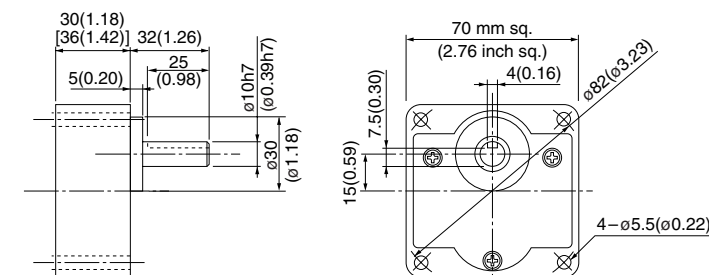
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M71X10G4L	M0PC3M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917
M71X10G4Y	M0PC1M40	39.5 (1.56)	16.2 (0.64)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3917

Gear head (dimensions)

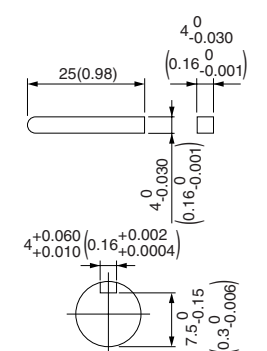
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX7G□BA(B)	4 ^{+0.030} _{-0.001}
MX7G□MA(M)	4 ^{+0.030} _{-0.001}



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

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

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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (200V)
							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 (400V)
							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%.

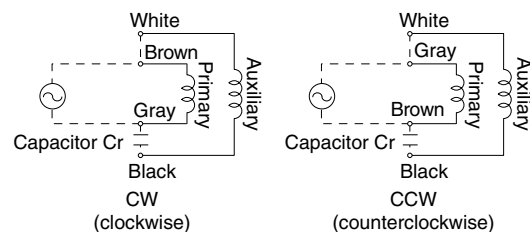
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

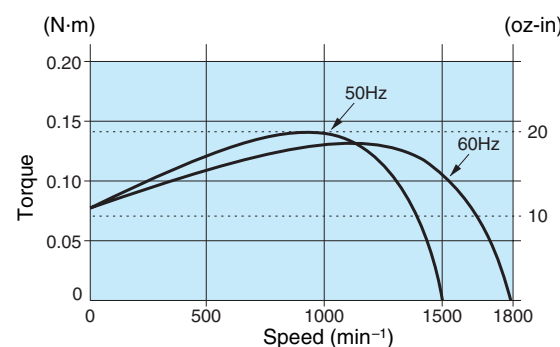
Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min ⁻¹)	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MX7G□BA (ball bearing)	MX7G10XB	Permissible torque	N·m	4.90 (43.4)	4.90 (43.4)	4.90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

Connection diagram



Speed-torque characteristics

M71X15G4L



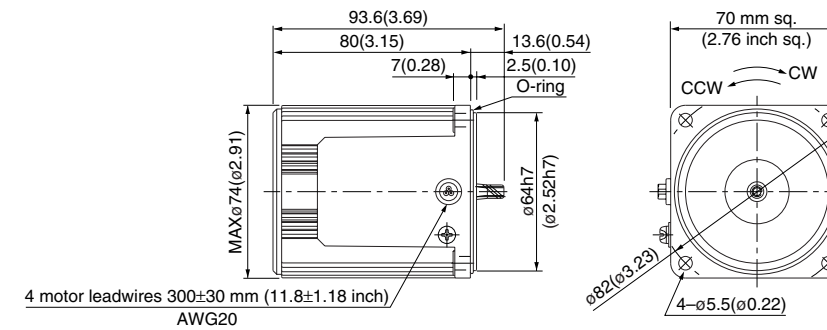
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

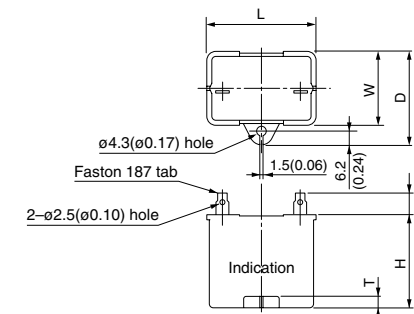
M71X15G4L	4P 15 W 100 V
M71X15G4Y	4P 15 W 200 V

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor dimension list

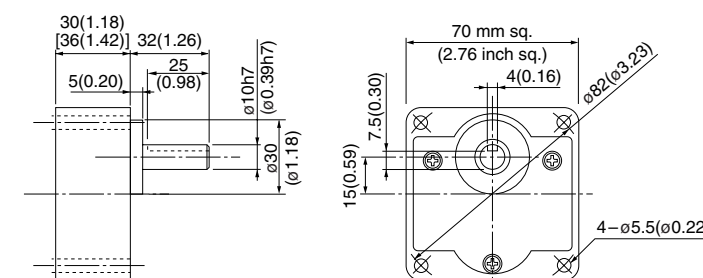
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M71X15G4L	M0PC4M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917
M71X15G4Y	M0PC1M40	39.5 (1.56)	16.2 (0.64)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3917

Gear head (dimensions)

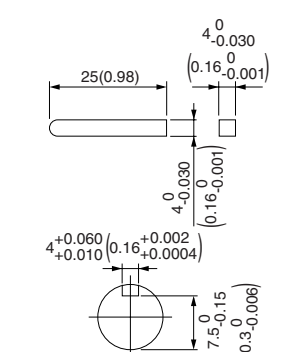
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX7G□BA(B)	4 ^{+0.030} _{-0.001}
MX7G□MA(M)	4 ^{+0.030} _{-0.001}



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

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

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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (250V)
	60				35		0.35	1600	0.090 (12.7)	0.56	0.090 (12.7)	4.5 (250V)	
	M71X15G4DG M71X15G4DGA	4	15	110	Cont.	34	0.31	1600	0.090 (12.7)	0.58	0.090 (12.7)	4.5 (250V)	
				60		36	0.32	1625	0.088 (12.5)	0.61	0.10 (14.2)	4.5 (250V)	
	M71X15G4YG M71X15G4YGA	4	15	200	Cont.	34	0.17	1175	0.12 (17.0)	0.24	0.090 (12.7)	1.3 (450V)	
				60		35	0.18	1550	0.092 (13.0)	0.24	0.090 (12.7)	1.3 (450V)	
	M71X15G4GG M71X15G4GGA	4	15	220	Cont.	35	0.16	1275	0.11 (15.6)	0.27	0.10 (14.2)	1.2 (450V)	
				60		37	0.17	1600	0.090 (12.7)	0.26	0.10 (14.2)	1.2 (450V)	
				50		36	0.16	1300	0.11 (15.6)	0.28	0.11 (15.6)	1.2 (450V)	
				60		38	0.17	1625	0.088 (12.5)	0.27	0.11 (15.6)	1.2 (450V)	

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

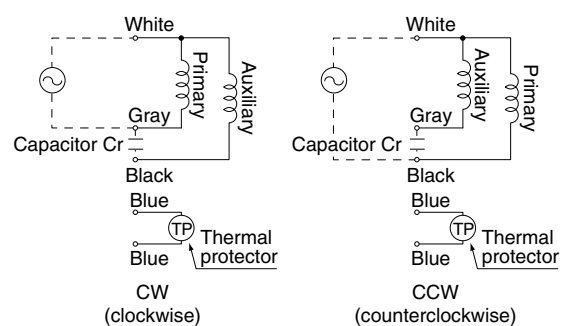
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

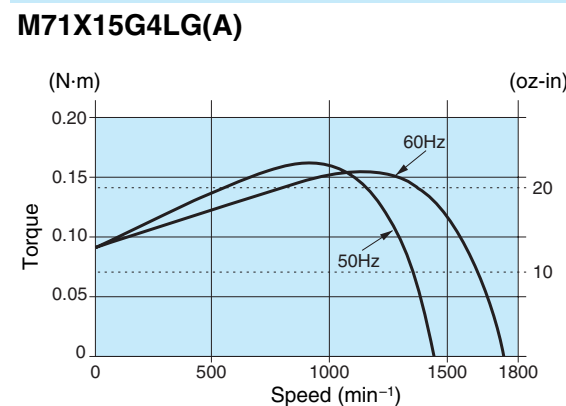
Applicable gear head		Reduction ratio	Speed (min ⁻¹)															
Bearing	Decimal gear head		200	250	300	360	500	600	750	900	1000	1200	1500	1800				
		MX7G□BA (ball bearing) MX7G□B (bearing) MX7G□MA (metal bearing) MX7G□M (bearing)	MX7G10XB	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8		
60Hz	9			7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1				
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)				
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

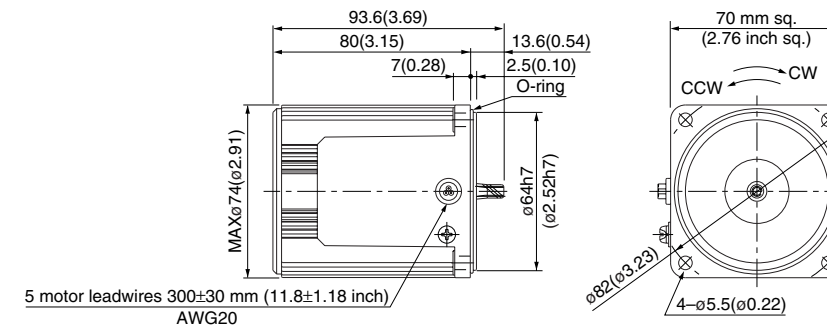


Motor (dimensions)

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

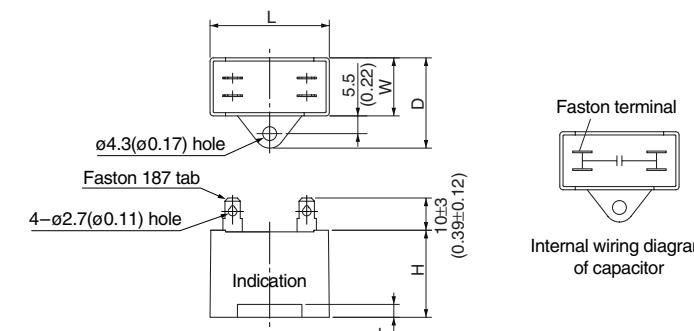
M71X15G4LG(A)	4P 15W 100 V
M71X15G4DG(A)	4P 15W 110 V / 115 V
M71X15G4YG(A)	4P 15W 200 V
M71X15G4GG(A)	4P 15W 220 V / 230 V

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



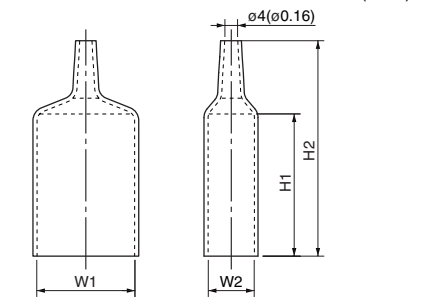
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

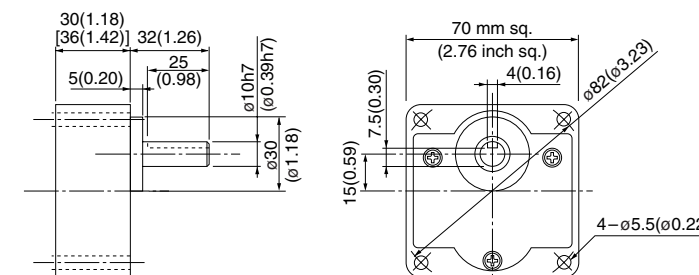
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M71X15G4LG(A)	M0PC5.5M25G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC3821G	38 (1.50)	21 (0.83)	55 (2.17)	78 (3.07)
M71X15G4DG(A)	M0PC4.5M25G	37 (1.46)	18 (0.71)	28 (1.10)	27 (1.06)	4 (0.16)	M0PC3718G	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)

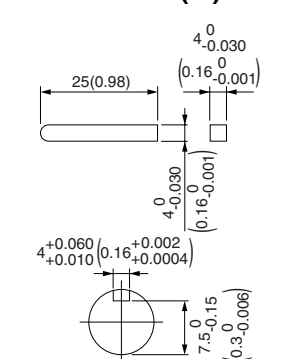
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX7G□BA(B)	4 ^{+0.030} _{-0.001}
MX7G□MA(M)	4 ^{+0.030} _{-0.001}



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

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

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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (200V)
							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 (400V)
							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%.

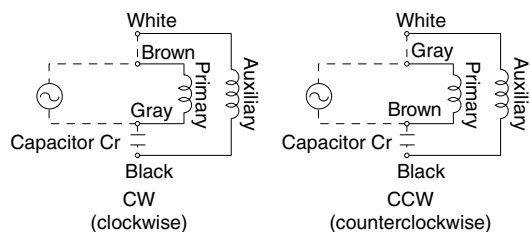
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	
Speed (min ⁻¹)	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	MX8G3B to MX8G180B (ball bearing)	50Hz	0.24 (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)
		60Hz	0.20 (1.77)	0.24 (2.12)	0.32 (2.83)	0.39 (3.45)	0.49 (4.34)	0.59 (5.22)	0.66 (5.84)	0.81 (7.17)	0.98 (8.67)	1.18 (10.4)	1.27 (11.2)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	3.23 (28.6)	3.82 (33.8)	4.61 (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

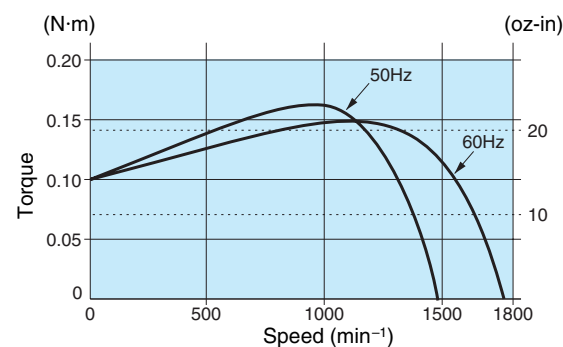
Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (min ⁻¹)	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N·m (lb-in)	7.84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

Connection diagram



Speed-torque characteristics

M81X15G4L



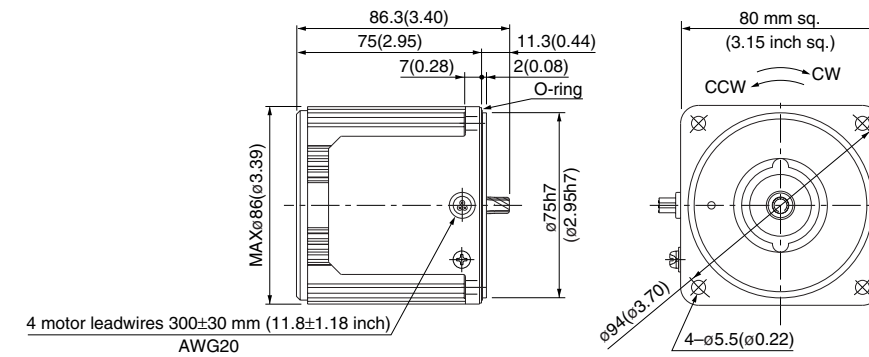
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

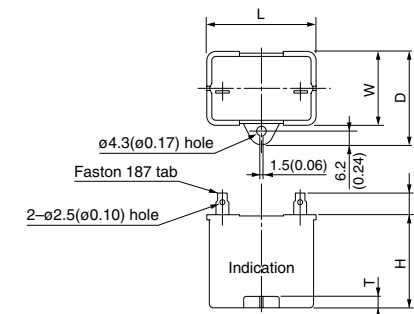
M81X15G4L	4P 15 W 100 V
M81X15G4Y	4P 15 W 200 V

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor dimension list

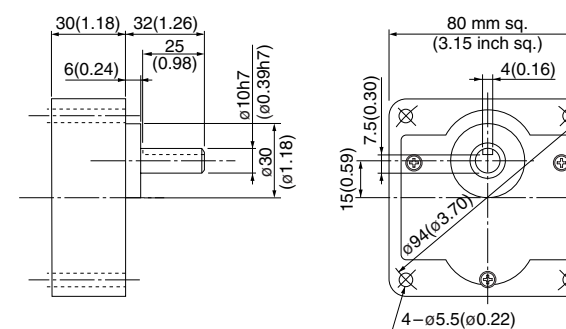
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M81X15G4L	M0PC4M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917
M81X15G4Y	M0PC1M40	39.5 (1.56)	16.2 (0.64)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3917

Gear head (dimensions)

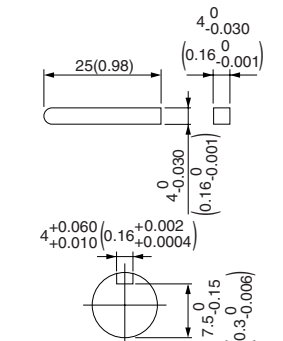
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX8G□B(M)



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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (200V)
							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 (400V)
							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%.

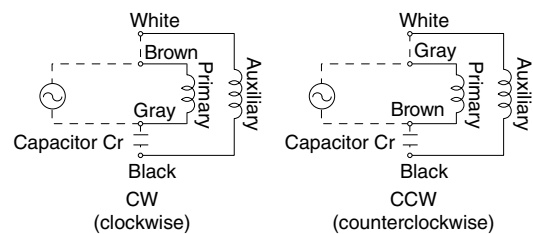
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

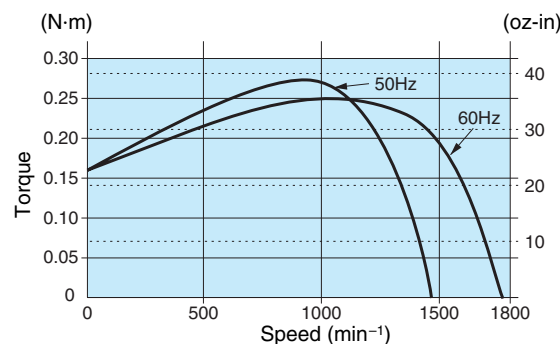
Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (min ⁻¹)	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N·m (lb-in)	7.84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



Speed-torque characteristics

M81X25G4L



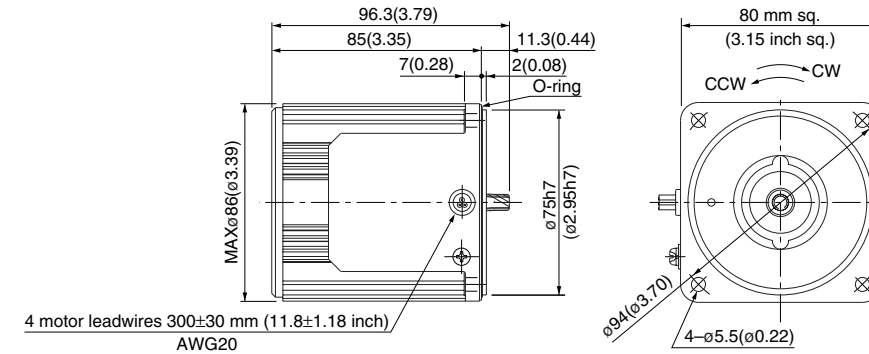
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

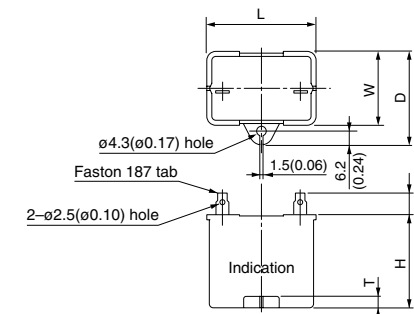
M81X25G4L	4P 25 W 100 V
M81X25G4Y	4P 25 W 200 V

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor dimension list

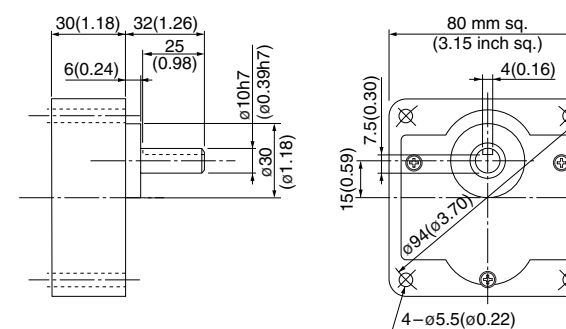
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M81X25G4L	M0PC6M20	39.5 (1.56)	17.5 (0.69)	28 (1.10)	30.5 (1.20)	4 (0.16)	M0PC3917
M81X25G4Y	M0PC1.5M40	39.5 (1.56)	22 (0.87)	32.5 (1.28)	32.5 (1.28)	4 (0.16)	M0PC3922

Gear head (dimensions)

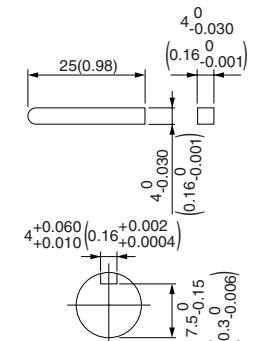
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX8G□B(M)



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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	Torque N-m (oz-in)			
80 mm sq.	M81X25G4LG	4	25	100	50	Cont.	55	0.59	1250	0.19 (26.9)	1.1	0.16 (22.7)	8 (250V)
	60				50		0.50	1575	0.15 (21.2)	1.0	0.16 (22.7)		
	M81X25G4DG	4	25	110	60	Cont.	52	0.50	1575	0.15 (21.2)	1.1	0.14 (19.8)	6 (250V)
	60				53		0.50	1600	0.15 (21.2)	1.1	0.15 (21.2)		
	M81X25G4YG	4	25	200	50	Cont.	54	0.27	1200	0.20 (28.3)	0.43	0.16 (22.7)	2.1 (450V)
	60				54		0.27	1550	0.15 (21.2)	0.42	0.16 (22.7)		
	M81X25G4GG	4	25	220	50	Cont.	59	0.29	1200	0.20 (28.3)	0.46	0.15 (21.2)	1.5 (450V)
	60				51		0.23	1550	0.15 (21.2)	0.44	0.15 (21.2)		
	50				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	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%.

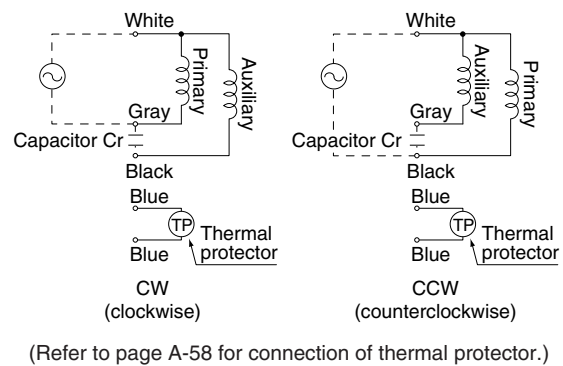
Unit of permissible torque: upper (N·m) / lower (lb·in)

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

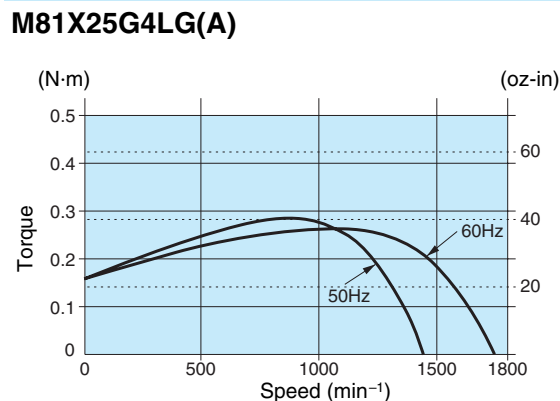
Permissible torque at output shaft of gear head using decimal gear head

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

Connection diagram



Speed-torque characteristics

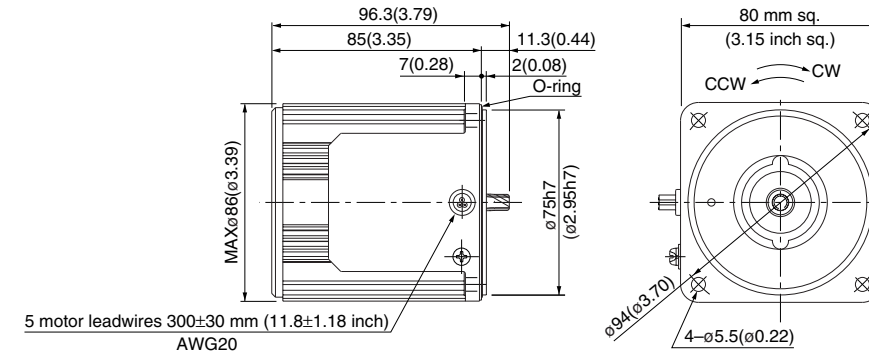


Motor (dimensions)

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

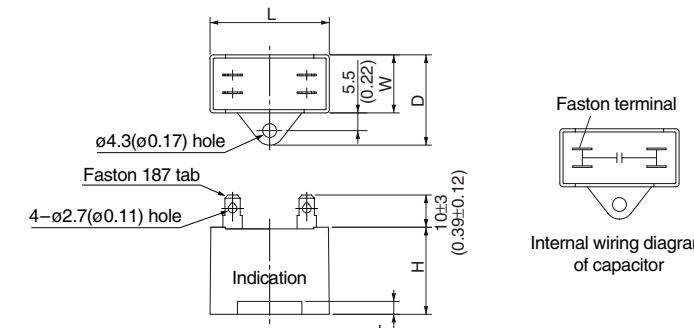
M81X25G4LG(A)	4P 25 W 100 V
M81X25G4DG(A)	4P 25 W 110 V / 115 V
M81X25G4YG(A)	4P 25 W 200 V
M81X25G4GG(A)	4P 25 W 220 V / 230 V

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



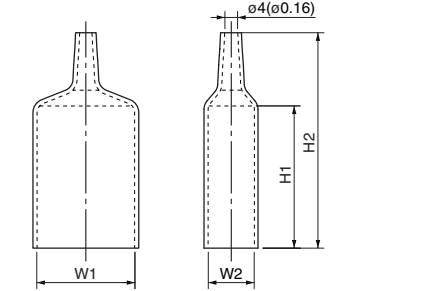
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

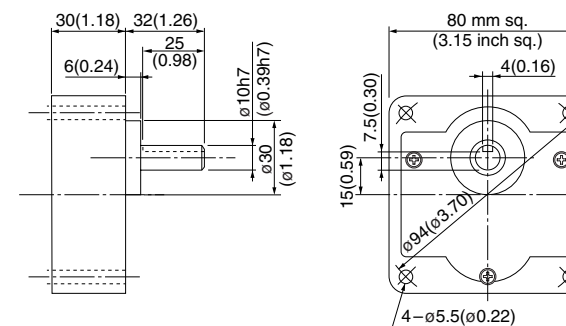
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M81X25G4LG(A)	M0PC8M25G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC4821G	48 (1.89)	21 (0.83)	55 (2.17)	78 (3.07)
M81X25G4DG(A)	M0PC6M25G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC3821G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

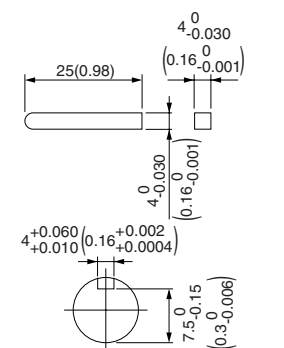
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX8G□B(M)



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

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

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (200V)
							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 (400V)
							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%.

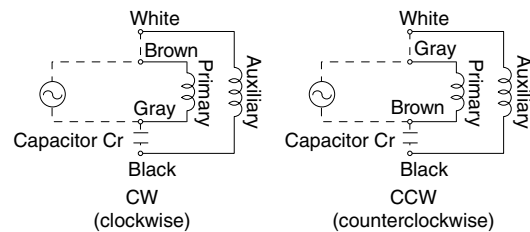
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

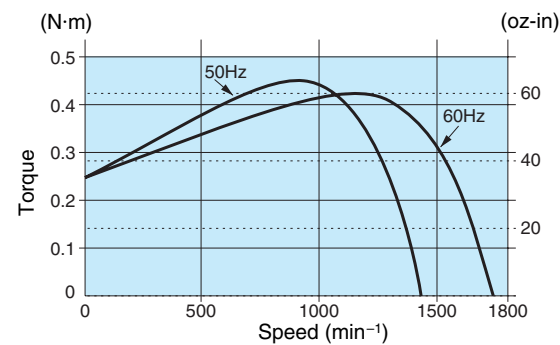
Applicable gear head		Reduction ratio	Unit of permissible torque: upper (N·m) / lower (lb-in)														
Bearing	Decimal gear head		Speed (min ⁻¹)	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8	
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	Permissible torque	N-m (lb-in)	9.80 (86.7)	9.80 (86.7)	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



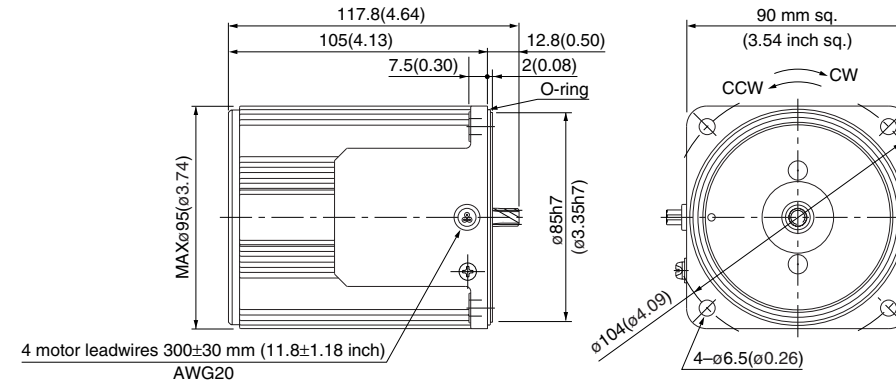
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

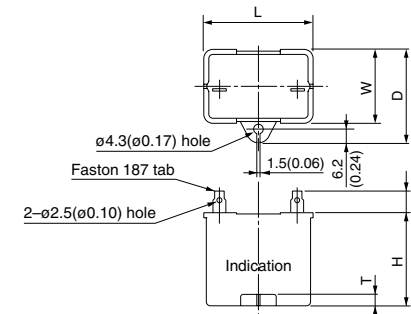
M91X40G4L	4P 40 W 100 V
M91X40G4Y	4P 40 W 200 V

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

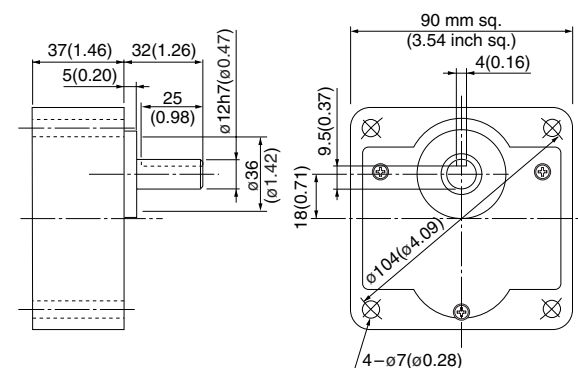
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M91X40G4L	M0PC10M20	39.5 (1.56)	26.7 (1.05)	37 (1.46)	32 (1.26)	4 (0.16)	M0PC3926
M91X40G4Y	M0PC2.5M40	49.7 (1.96)	24 (0.94)	34.5 (1.36)	34.5 (1.36)	4 (0.16)	M0PC5026

Gear head (dimensions)

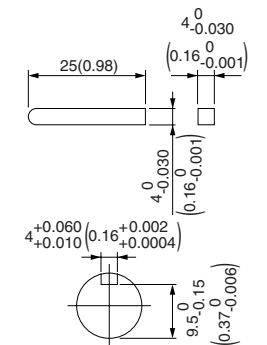
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX9G□B(M)



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

Induction motor (leadwire)

US CE CCC **90 mm (3.54 inch) sq. 40 W**

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	Torque N-m (oz-in)			
90 mm sq.	M91X40G4LG	4	40	100	50	Cont.	76	0.83	1250	0.31 (43.9)	1.7	0.26 (36.8)	12 (250V)
	60				70		0.70	1600	0.24 (34.0)	1.5	0.26 (36.8)	10 (250V)	
	M91X40G4DG	4	40	110	60	Cont.	72	0.67	1625	0.24 (34.0)	1.7	0.26 (36.8)	10 (250V)
	M91X40G4DGA				60		74	0.68	1625	0.24 (34.0)	1.8	0.27 (38.2)	10 (250V)
	M91X40G4YG	4	40	200	50	Cont.	77	0.39	1175	0.33 (46.7)	0.64	0.26 (36.8)	3 (450V)
	M91X40G4YGA				60		77	0.39	1525	0.25 (35.4)	0.62	0.26 (36.8)	3 (450V)
	M91X40G4GG	4	40	220	50	Cont.	78	0.37	1250	0.31 (43.9)	0.69	0.26 (36.8)	2.5 (450V)
	M91X40G4GGA				60		74	0.34	1575	0.24 (34.0)	0.65	0.26 (36.8)	2.5 (450V)
	M91X40G4GG				50		79	0.37	1275	0.30 (42.5)	0.72	0.28 (39.6)	2.5 (450V)
	M91X40G4GGA				60		77	0.33	1600	0.24 (34.0)	0.68	0.28 (39.6)	2.5 (450V)

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

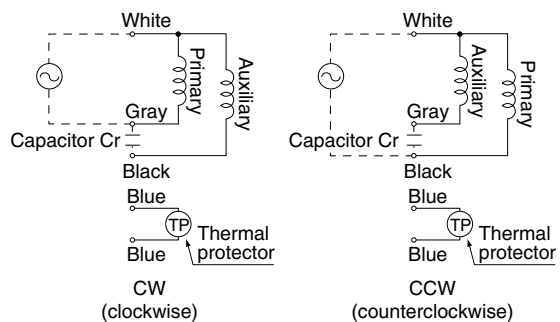
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

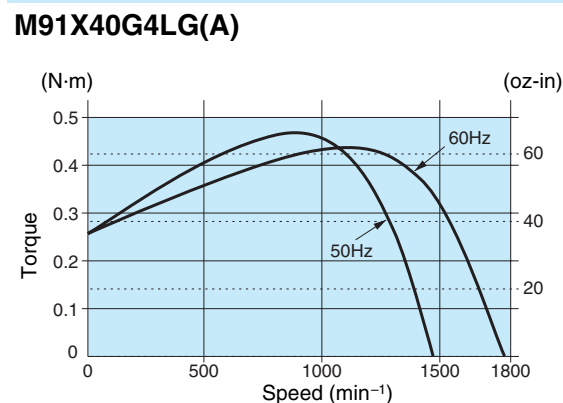
Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min ⁻¹)	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	Permissible torque	N-m	9.80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

Connection diagram



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

Speed-torque characteristics

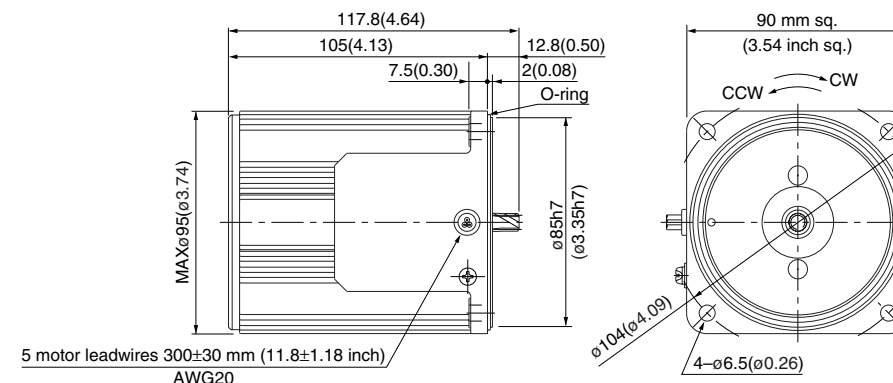


Motor (dimensions)

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

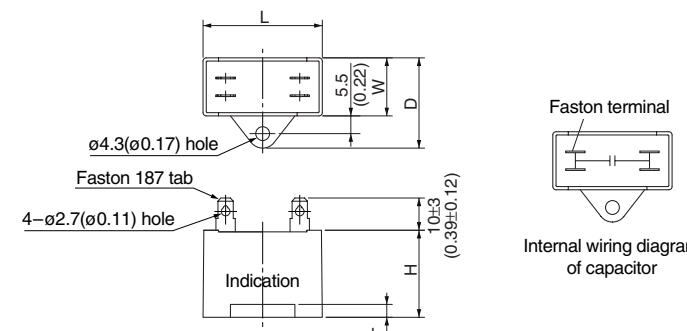
M91X40G4LG(A)	4P 40 W 100 V
M91X40G4DG(A)	4P 40 W 110 V / 115 V
M91X40G4YG(A)	4P 40 W 200 V
M91X40G4GG(A)	4P 40 W 220 V / 230 V

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



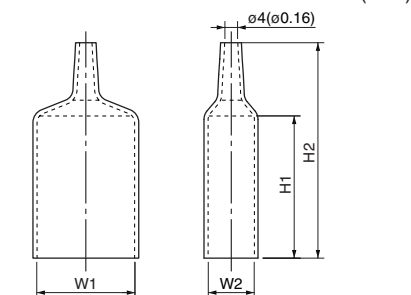
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

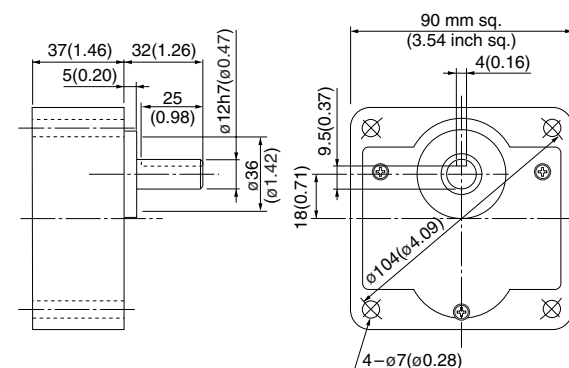
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M91X40G4LG(A)	M0PC12M25G	58 (2.28)	22 (0.87)	32 (1.26)	35 (1.38)	4 (0.16)	M0PC5822G	58 (2.28)	22 (0.87)	55 (2.17)	78 (3.07)
M91X40G4DG(A)	M0PC10M25G	58 (2.28)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC5821G	58 (2.28)	21 (0.83)	55 (2.17)	78 (3.07)
M91X40G4YG(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)
M91X40G4GG(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)

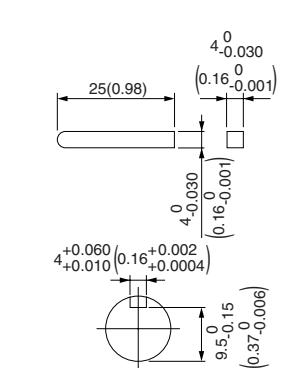
Scale: 1/3, Unit: mm (inch)

MX9G□B (ball bearing) / 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 (min ⁻¹)	Torque N-m (oz-in)			
90 mm sq.	M91Z60G4L	4	60	100	50	Cont.	118	1.3	1250	0.46 (65.1)	2.2	0.41 (58.1)	15 (210V)
							117	1.2	1550	0.36 (51.0)	2.2	0.42 (59.5)	
	M91Z60G4Y	4	60	200	50	Cont.	120	0.65	1250	0.46 (65.1)	1.1	0.42 (59.5)	3.8 (400V)
							119	0.59	1550	0.36 (51.0)	1.1	0.44 (62.3)	

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

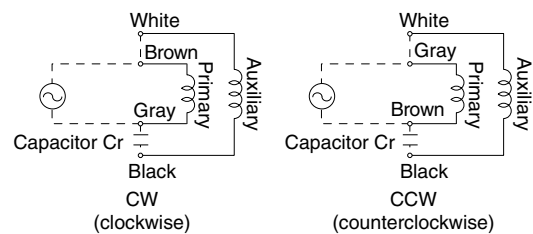
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

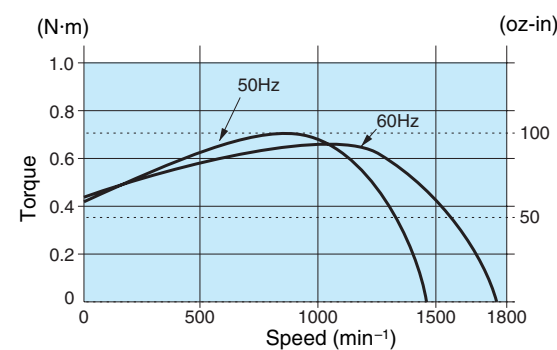
Applicable gear head		Reduction ratio	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min ⁻¹)	50Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MZ9G□B (ball bearing / Hinge not attached) MY9G□B (ball bearing / Hinge attached)	MZ9G10XB	Permissible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

Connection diagram



Speed-torque characteristics

M91Z60G4L



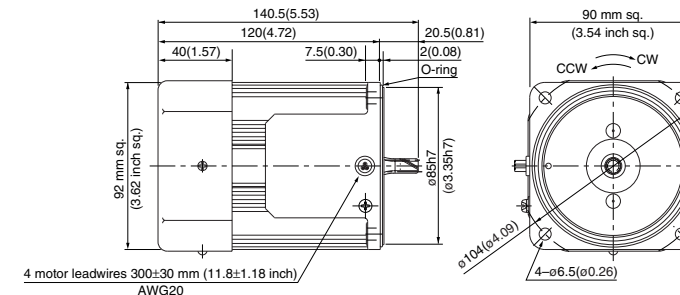
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

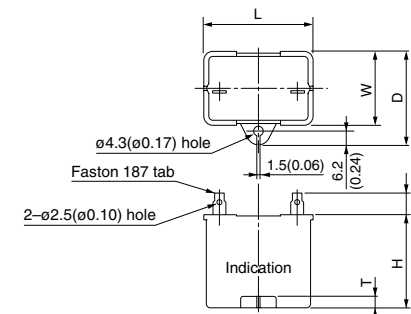
M91Z60G4L 4P 60 W 100 V (with fan)
M91Z60G4Y 4P 60 W 200 V (with fan)

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

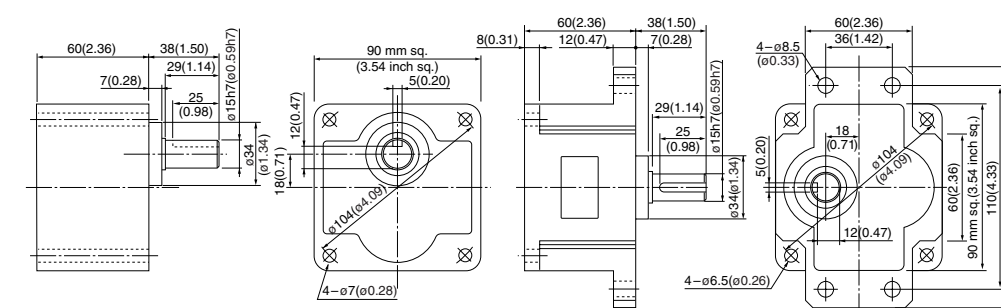
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M91Z60G4L	M0PC15M21	39.5 (1.56)	26.7 (1.05)	37 (1.46)	41 (1.61)	4 (0.16)	M0PC3926
M91Z60G4Y	M0PC3.8M40	50 (1.97)	26.7 (1.05)	37.5 (1.48)	38 (1.50)	4 (0.16)	M0PC5026

Gear head (dimensions)

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

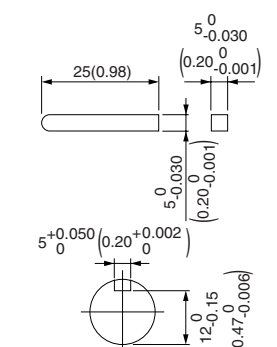
MZ9G□B (ball bearing / hinge not attached)
Mass 1.4 kg (3.09 lb)

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



Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



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

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

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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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
					60		112	1.2	1575	0.36 (51.0)	2.3	0.44 (62.3)	(250V)
	M91Z60G4DG M91Z60G4DGA	4	60	110	Cont.	120	1.1	1625	0.35 (49.6)	2.5	0.49 (69.4)	18	
				60		127	1.2	1625	0.35 (49.6)	2.6	0.53 (75.1)	(250V)	
				200		114	0.57	1225	0.47 (66.6)	1.0	0.44 (62.3)	5	
				60		122	0.62	1550	0.37 (52.4)	1.0	0.44 (62.3)	(450V)	
	M91Z60G4GG M91Z60G4GGA	4	60	220	Cont.	121	0.58	1275	0.45 (63.7)	1.1	0.49 (69.4)	4.5	
				60		120	0.55	1600	0.36 (51.0)	1.1	0.49 (69.4)	(450V)	
				50		129	0.61	1300	0.44 (62.3)	1.1	0.53 (75.0)		
				60		126	0.55	1625	0.35 (49.6)	1.1	0.53 (75.1)		

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

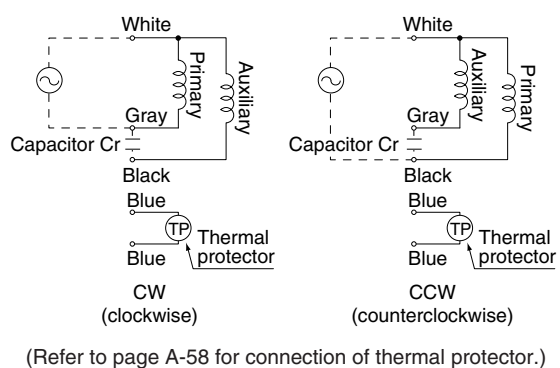
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

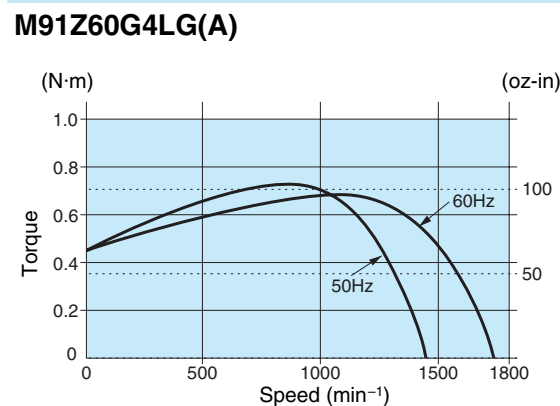
Permissible torque at output shaft of gear head using decimal gear head

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

Connection diagram



Speed-torque characteristics



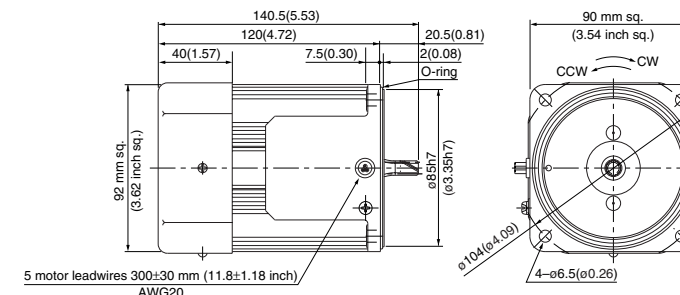
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

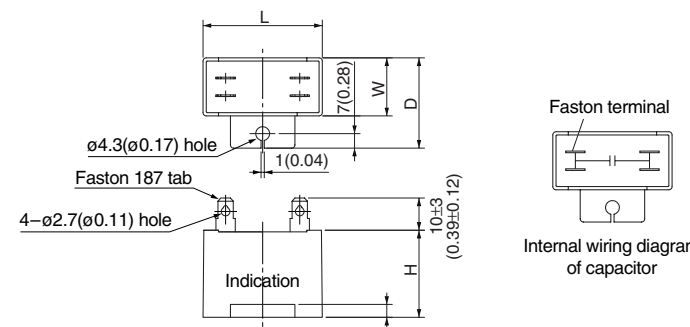
M91Z60G4LG(A)	4P 60 W 100 V (with fan)
M91Z60G4DG(A)	4P 60 W 110 V / 115 V (with fan)
M91Z60G4YG(A)	4P 60 W 200 V (with fan)
M91Z60G4GG(A)	4P 60 W 220 V / 230 V (with fan)

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



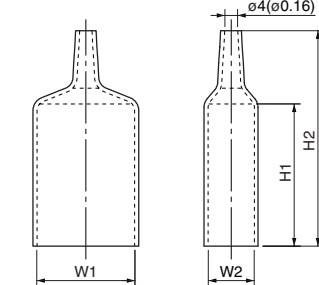
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

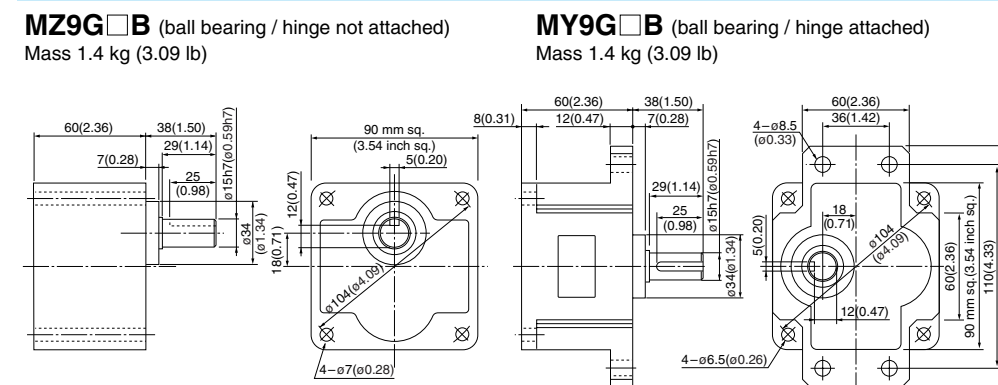
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
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)

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

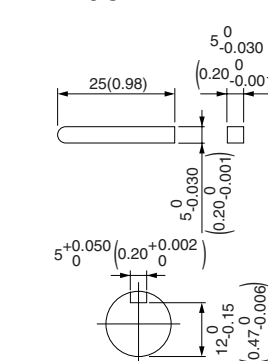
Gear head (dimensions)

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



Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



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

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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (200V)
							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 (400V)
							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%.

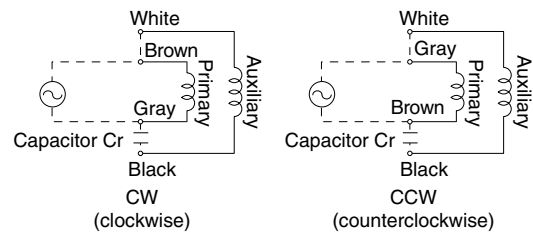
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

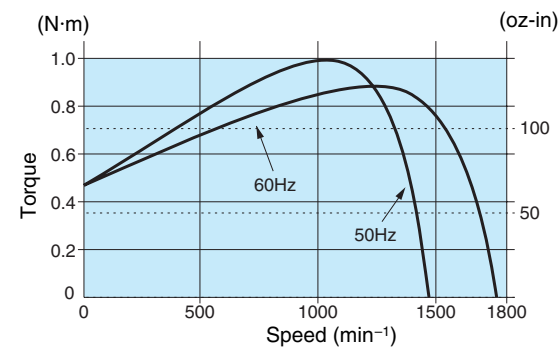
Applicable gear head		Reduction ratio	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (min⁻¹)	50Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	0.8
		60Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MZ9G□B (ball bearing / hinge not attached)	MZ9G10XB	Permissible torque	N·m	19.6 (173)	19.6 (173)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

Connection diagram



Speed-torque characteristics

M91Z90G4L



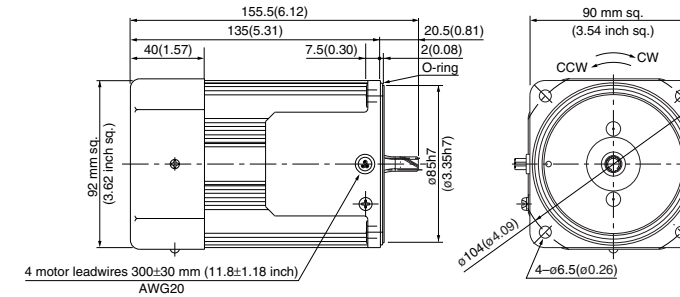
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

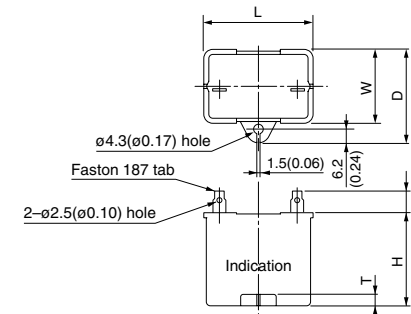
M91Z90G4L 4P 90 W 100 V (with fan)
M91Z90G4Y 4P 90 W 200 V (with fan)

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor dimension list

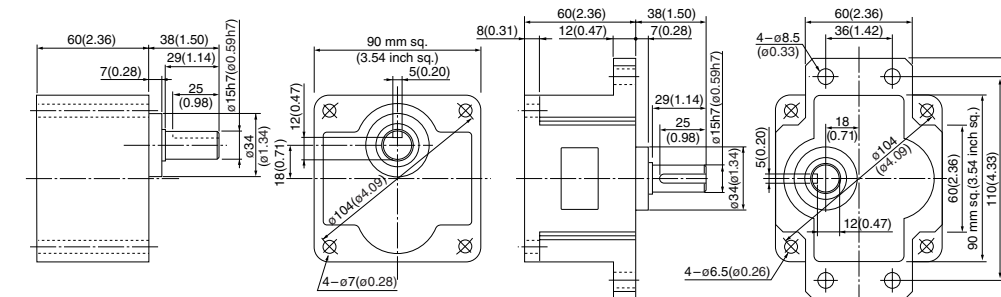
Unit: upper (mm) / lower (inch)

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

Gear head (dimensions)

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

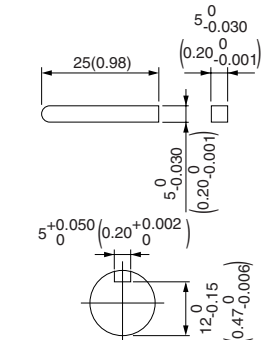
MZ9G□B (ball bearing / hinge not attached) Mass 1.4 kg (3.09 lb)
MY9G□B (ball bearing / hinge attached) Mass 1.4 kg (3.09 lb)



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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (250V)
					60		177	1.8	1575	0.55 (77.9)	2.8	0.65 (92.0)	25 (250V)
	M91Z90G4DG M91Z90G4DGA	4	90	110	60	Cont.	168	1.6	1600	0.54 (76.5)	3.0	0.65 (92.0)	25 (250V)
					60		176	1.6	1600	0.54 (76.5)	3.1	0.72 (102.0)	25 (250V)
	M91Z90G4YG M91Z90G4YGA	4	90	200	50	Cont.	170	0.85	1225	0.70 (99.1)	1.4	0.65 (92.0)	7.5 (450V)
					60		188	0.97	1550	0.55 (77.9)	1.4	0.65 (92.0)	7.5 (450V)
	M91Z90G4GG M91Z90G4GGA	4	90	220	50	Cont.	176	0.85	1225	0.70 (99.1)	1.5	0.63 (89.2)	6 (450V)
					60		167	0.76	1575	0.55 (77.9)	1.4	0.65 (92.0)	6 (450V)
					50		185	0.89	1250	0.69 (97.7)	1.5	0.68 (96.3)	6 (450V)
					60		173	0.76	1600	0.54 (76.5)	1.5	0.72 (102.0)	6 (450V)

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

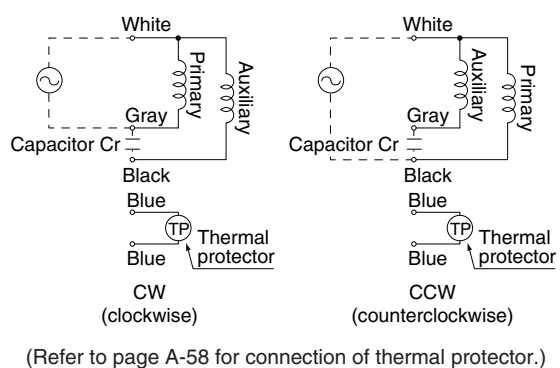
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

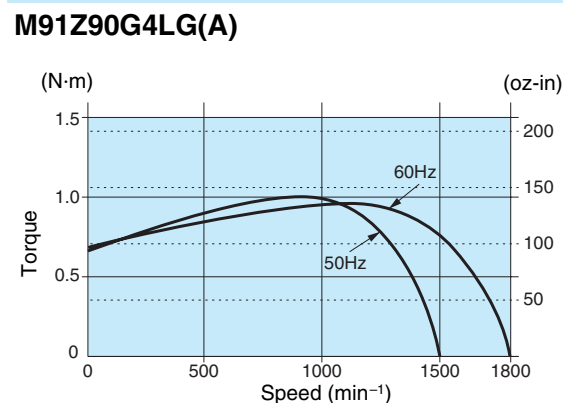
Permissible torque at output shaft of gear head using decimal gear head

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

Connection diagram



Speed-torque characteristics



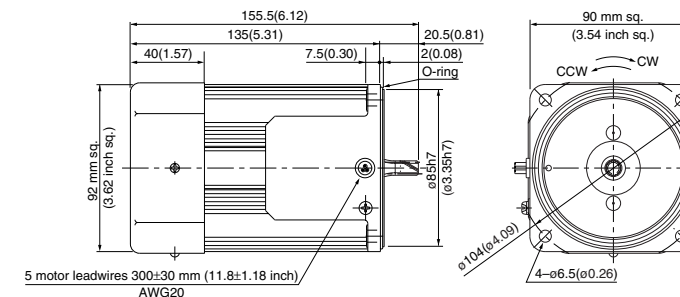
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

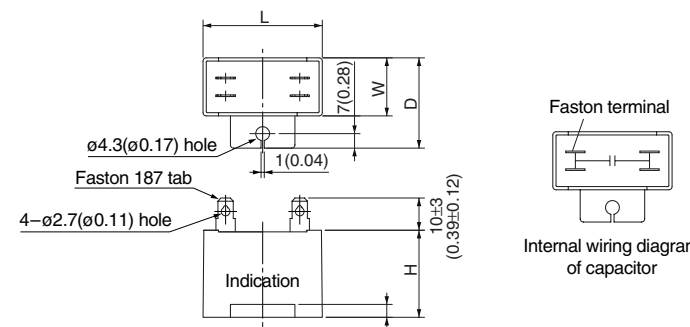
M91Z90G4LG(A)	4P 90 W 100 V (with fan)
M91Z90G4DG(A)	4P 90 W 110 V / 115 V (with fan)
M91Z90G4YG(A)	4P 90 W 200 V (with fan)
M91Z90G4GG(A)	4P 90 W 220 V / 230 V (with fan)

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



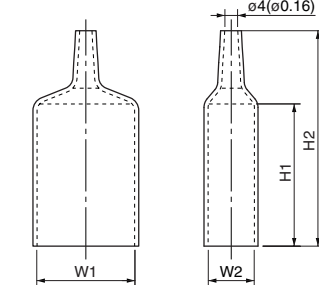
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

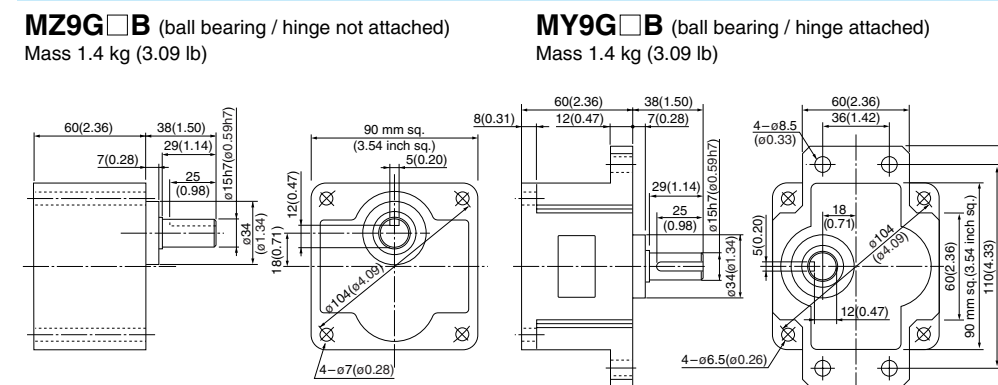
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
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)

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

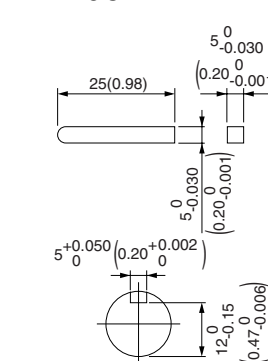
Gear head (dimensions)

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



Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



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

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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (200V)
							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 (400V)
							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%.

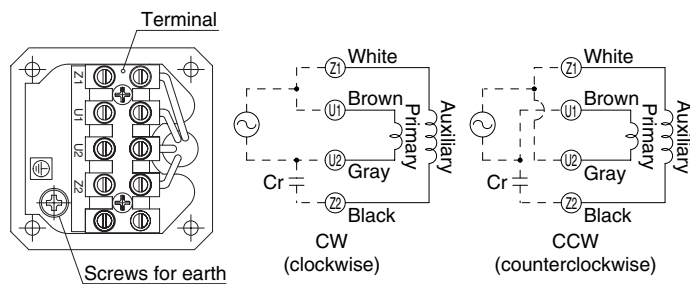
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

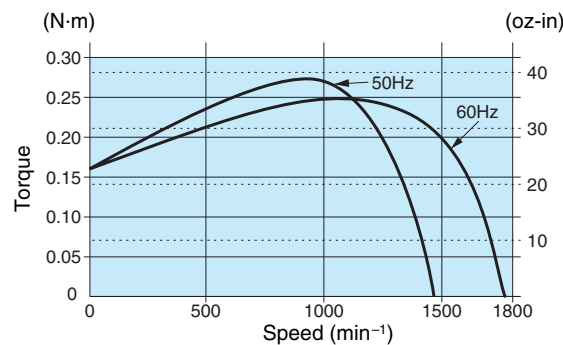
Applicable gear head		Reduction ratio	Speed (min ⁻¹)														
Bearing	Decimal gear head		200	250	300	360	500	600	750	900	1000	1200	1500	1800			
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Speed (min ⁻¹)	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8		
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2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

Connection diagram



Speed-torque characteristics

M81X25GK4L



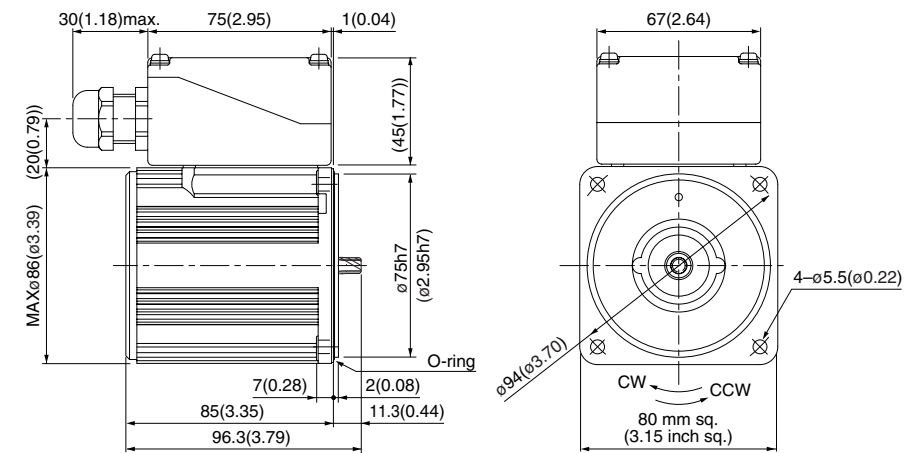
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

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

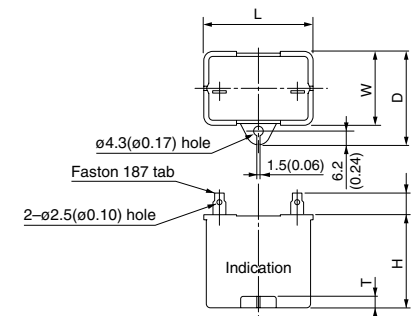
Mass	Helical gear	Module	Number of teeth
1.8 kg (3.97 lb)		0.6	9



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

Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor dimension list

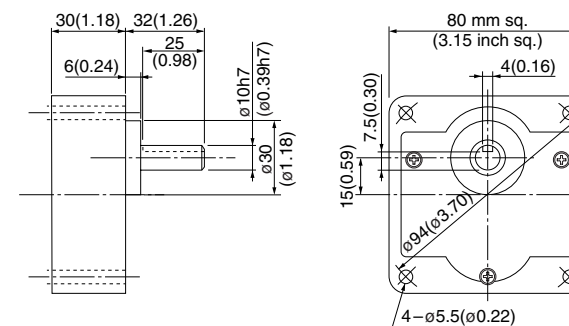
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M81X25GK4L	M0PC6M20	39.5 (1.56)	17.5 (0.69)	28 (1.10)	30.5 (1.20)	4 (0.16)	M0PC3917
M81X25GK4Y	M0PC1.5M40	39.5 (1.56)	22 (0.87)	32.5 (1.28)	32.5 (1.28)	4 (0.16)	M0PC3922

Gear head (dimensions)

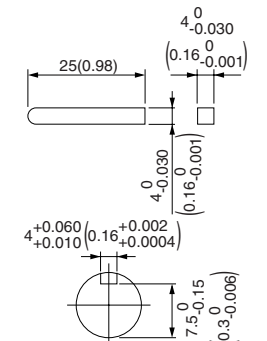
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX8G□B(M)



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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)		
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (250V)		
	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 (250V)		
					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 (450V)		
					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 (450V)		
					60		51	0.23	1550	0.15 (21.2)				0.44	0.15 (21.2)
					50		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	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.
 • The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
 • The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

Permissible torque at output shaft of gear head

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

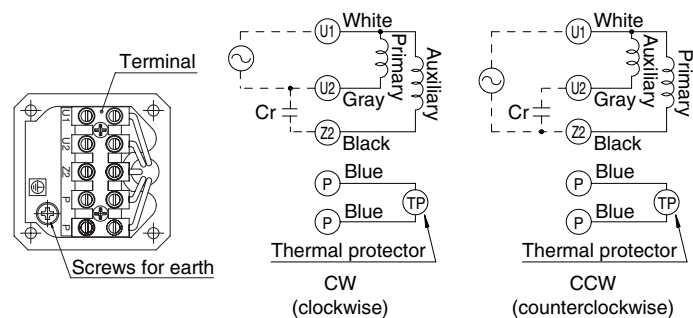
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

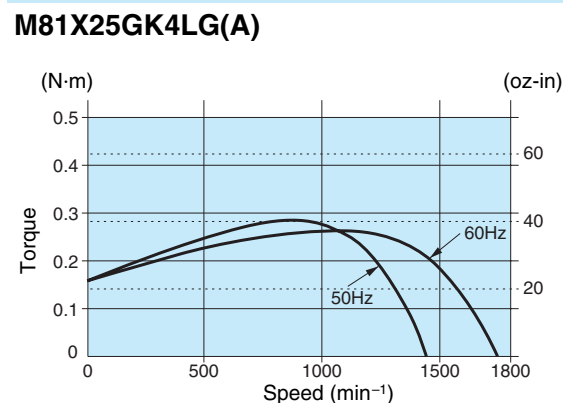
Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min ⁻¹)	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N-m	7.84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

Connection diagram



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

Speed-torque characteristics

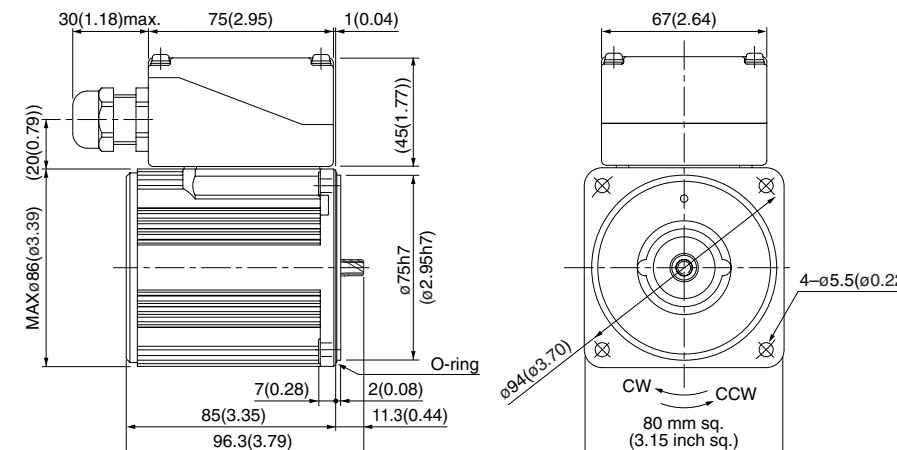


Motor (dimensions)

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

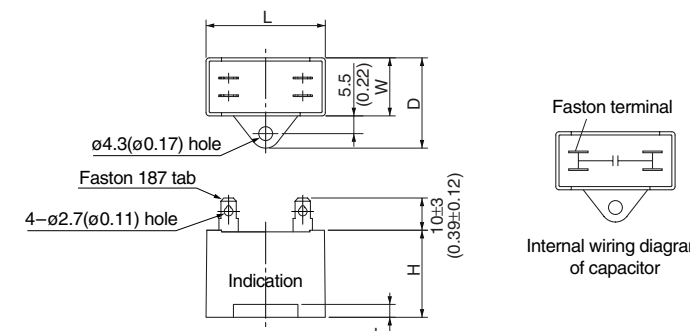
Mass	Helical gear	Module	Number of teeth
1.8 kg 3.97 lb		0.6	9



* Diameter of applicable cable to be φ8(φ0.31) to φ12(φ0.47).

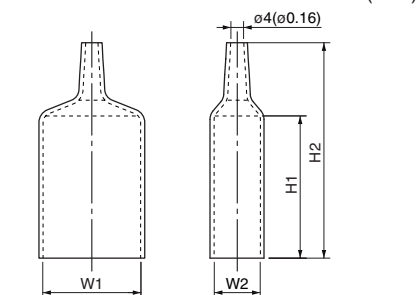
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

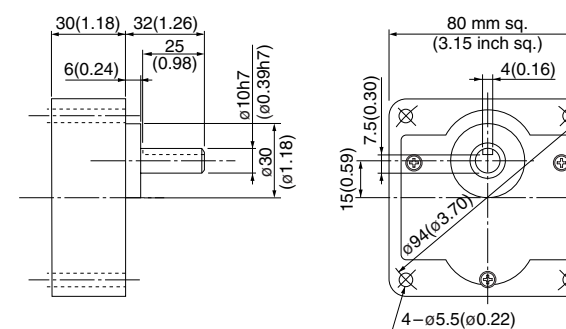
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M81X25GK4LG(A)	M0PC8M25G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC4821G	48 (1.89)	21 (0.83)	55 (2.17)	78 (3.07)
M81X25GK4DG(A)	M0PC6M25G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC3821G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

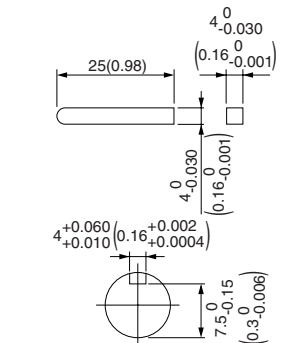
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX8G□B(M)



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

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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (200V)
					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 (400V)
					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%.

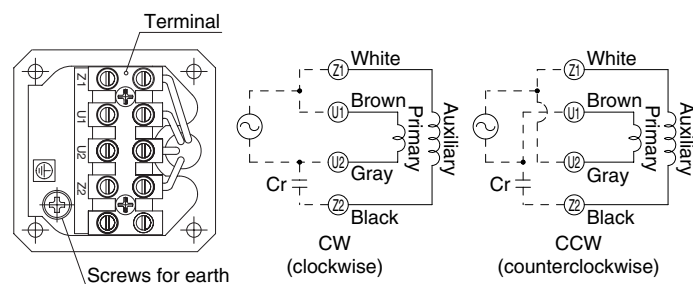
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

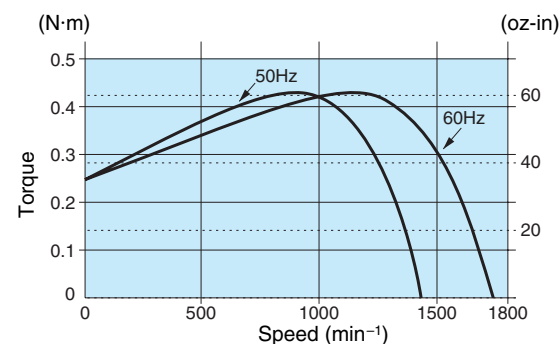
Applicable gear head		Reduction ratio	Unit of permissible torque: upper (N·m) / lower (lb-in)														
Bearing	Decimal gear head		Speed (min ⁻¹)	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8	
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	Permissible torque	N-m	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	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

M91X40GK4L



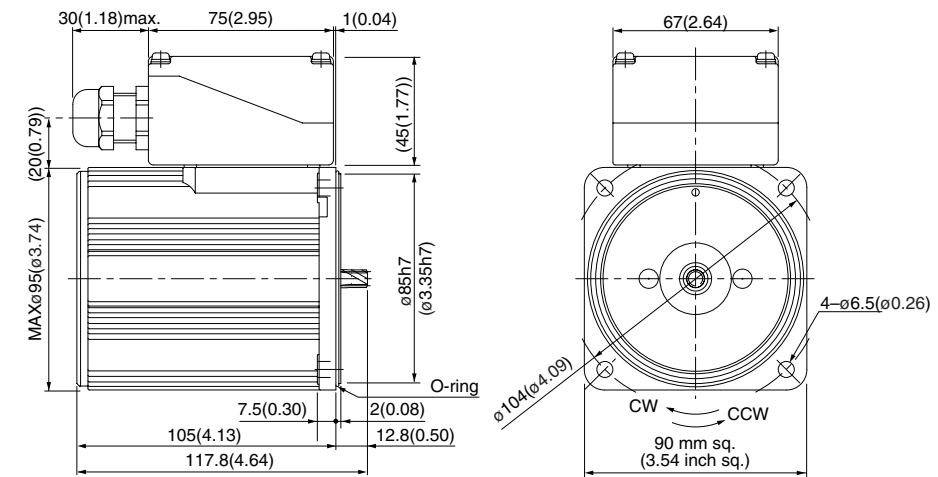
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

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

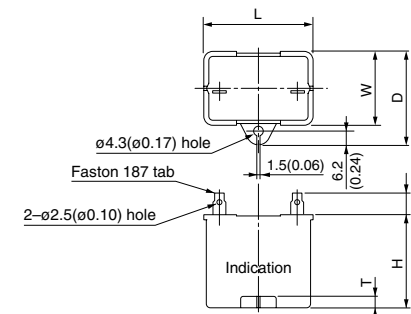
Mass	Helical gear	Module	Number of teeth
2.8 kg 6.17 lb		0.55	9



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

Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor dimension list

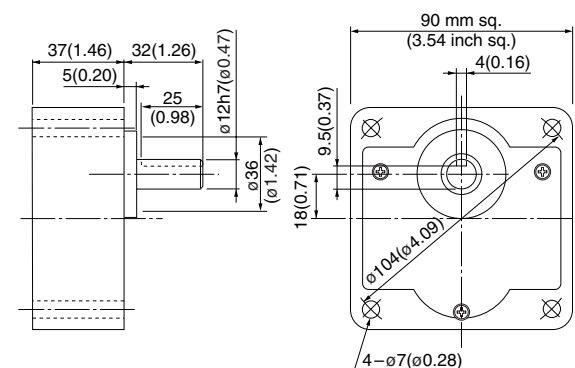
Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M91X40GK4L	M0PC10M20	39.5 (1.56)	26.7 (1.05)	37 (1.46)	32 (1.26)	4 (0.16)	M0PC3926
M91X40GK4Y	M0PC2.5M40	49.7 (1.96)	24 (0.94)	34.5 (1.36)	34.5 (1.36)	4 (0.16)	M0PC5026

Gear head (dimensions)

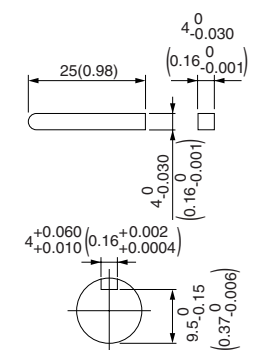
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX9G□B(M)



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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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 (250V)
	60				70		0.70	1600	0.24 (34.0)	1.5	0.26 (36.8)	10 (250V)	
	M91X40GK4DG M91X40GK4DGA	4	40	110	60	Cont.	72	0.67	1625	0.24 (34.0)	1.7	0.26 (36.8)	10 (250V)
	115						74	0.68	1625	0.24 (34.0)	1.8	0.27 (38.2)	10 (250V)
	M91X40GK4YG M91X40GK4YGA	4	40	200	50	Cont.	77	0.39	1175	0.33 (46.7)	0.64	0.26 (36.8)	3 (450V)
	60				77		0.39	1525	0.25 (35.4)	0.62	0.26 (36.8)	3 (450V)	
	M91X40GK4GG M91X40GK4GGA	4	40	220	50	Cont.	78	0.37	1250	0.31 (43.9)	0.69	0.26 (36.8)	2.5 (450V)
	60				74		0.34	1575	0.24 (34.0)	0.65	0.26 (36.8)	2.5 (450V)	
	50				79	0.37	1275	0.30 (42.5)	0.72	0.28 (39.6)	2.5 (450V)		
	60				77	0.33	1600	0.24 (34.0)	0.68	0.28 (39.6)	2.5 (450V)		

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

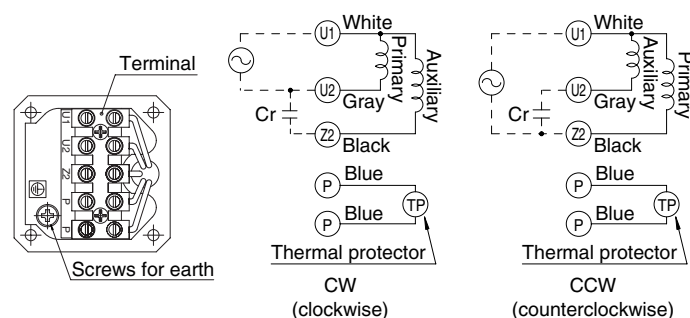
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

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

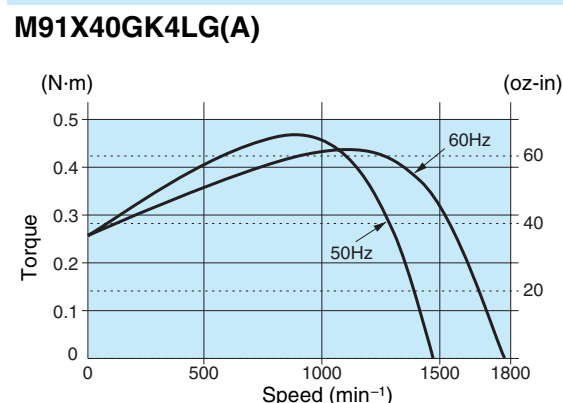
Applicable gear head		Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (min ⁻¹)	50Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1
		60Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	Permissible torque	N-m	9.80 (86.7)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

Connection diagram



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

Speed-torque characteristics

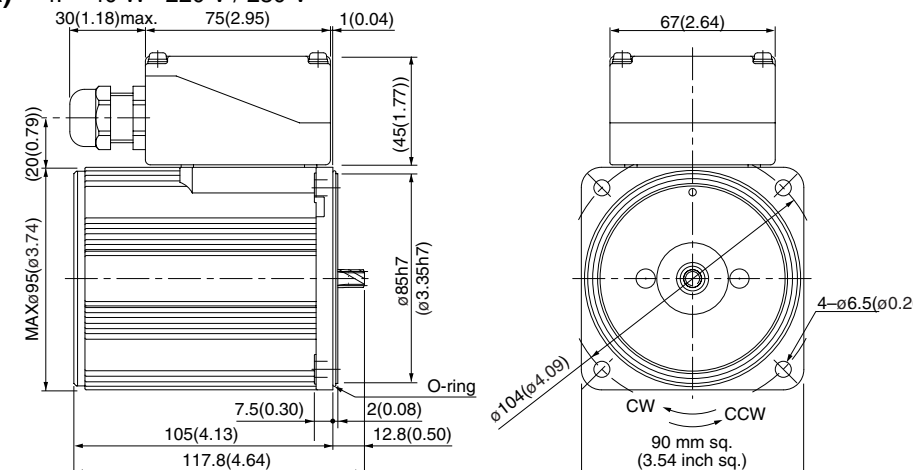


Motor (dimensions)

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

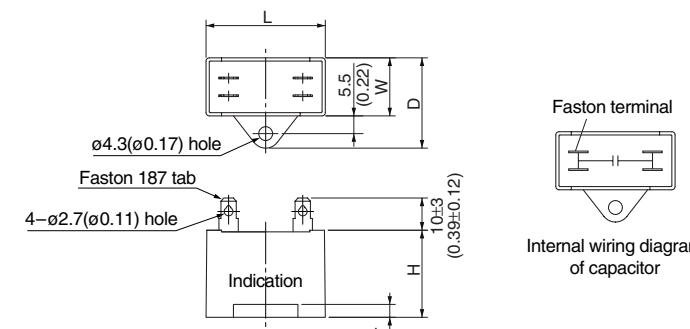
Mass 2.8 kg 6.17 lb
Helical gear
Module 0.55
Number of teeth 9



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

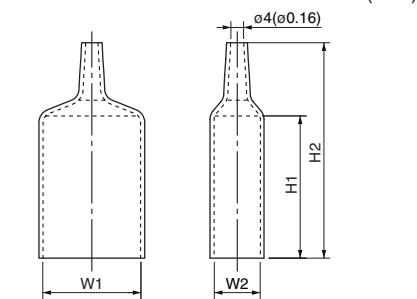
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

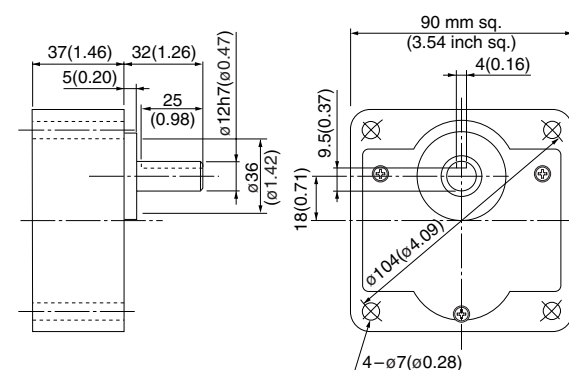
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M91X40GK4LG(A)	M0PC12M25G	58 (2.28)	22 (0.87)	32 (1.26)	35 (1.38)	4 (0.16)	M0PC5822G	58 (2.28)	22 (0.87)	55 (2.17)	78 (3.07)
M91X40GK4DG(A)	M0PC10M25G	58 (2.28)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC5821G	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)

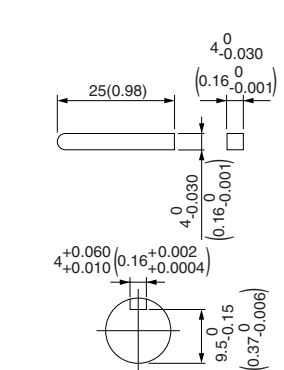
Scale: 1/3, Unit: mm (inch)

MX9G□B (ball bearing) / 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 (min ⁻¹)	Torque N-m (oz-in)			
90 mm sq.	M91Z60GK4L	4	60	100	50	Cont.	118	1.3	1250	0.46 (65.1)	2.2	0.41 (58.1)	15 (210V)
							117	1.2	1550	0.36 (51.0)	2.2	0.42 (59.5)	
	M91Z60GK4Y	4	60	200	50	Cont.	120	0.65	1250	0.46 (65.1)	1.1	0.42 (59.5)	3.8 (400V)
							119	0.59	1550	0.36 (51.0)	1.1	0.44 (62.3)	

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

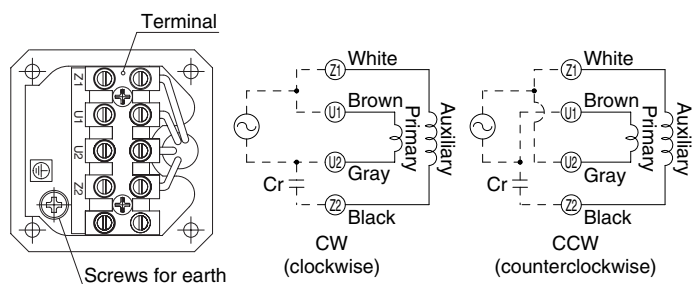
Unit of permissible torque: upper (N·m) / lower (lb-in)

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

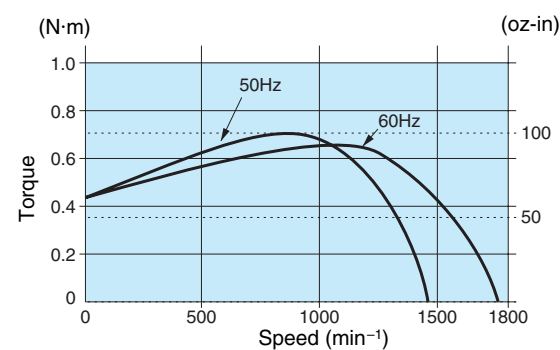
Applicable gear head		Reduction ratio	Permissible torque														
Bearing	Decimal gear head		Speed (min ⁻¹)	250	300	360	500	600	750	900	1000	1200	1500	1800			
MZ9G□B (ball bearing / Hinge not attached)	MZ9G10XB	50Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8				
		60Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1				
MY9G□B (ball bearing / Hinge attached)	MZ9G10XB	50Hz	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6				
		60Hz	(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



Speed-torque characteristics

M91Z60GK4L



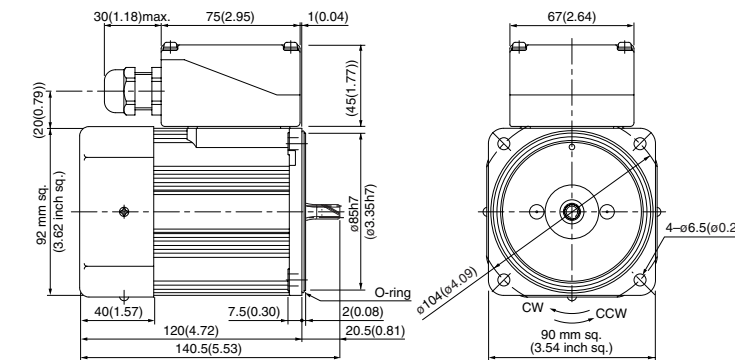
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

M91Z60GK4L	4P 60 W 100 V (with fan)
M91Z60GK4Y	4P 60 W 200 V (with fan)

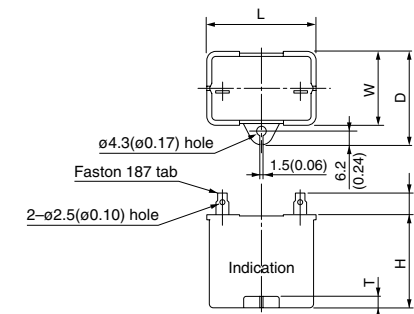
Mass	Helical gear	Module	Number of teeth
3.0 kg 6.61 lb		0.6	9



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

Capacitor (dimensions) [attachment]

Unit: mm (inch)



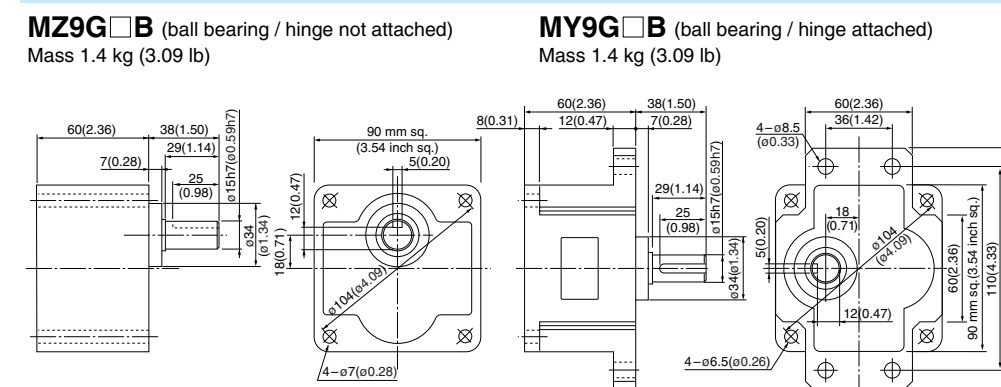
Capacitor dimension list

Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M91Z60GK4L	M0PC15M21	39.5 (1.56)	26.7 (1.05)	37 (1.46)	41 (1.61)	4 (0.16)	M0PC3926
M91Z60GK4Y	M0PC3.8M40	50 (1.97)	26.7 (1.05)	37.5 (1.48)	38 (1.50)	4 (0.16)	M0PC5026

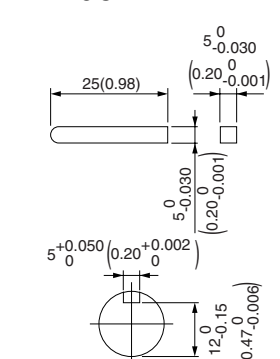
Gear head (dimensions)

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



Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



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

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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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
							112	1.2	1575	0.36 (51.0)	2.3	0.44 (62.3)	(250V)
	M91Z60GK4DG M91Z60GK4DGA	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)	(250V)
	M91Z60GK4YG M91Z60GK4YGA	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)	(450V)
	M91Z60GK4GG M91Z60GK4GGA	4	60	220	50	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)	
							129	0.61	1300	0.44 (62.3)	1.1	0.53 (75.1)	
							126	0.55	1625	0.35 (49.6)	1.1	0.53 (75.1)	

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

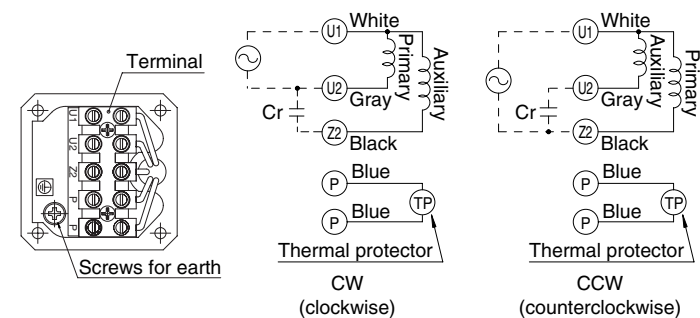
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
Speed (min ⁻¹)	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable gear head	50Hz	0.98	1.18	1.57	1.96	2.35	2.94	3.14	3.92	4.70	5.59	6.27	7.55	9.11	11.0	15.2	17.8						19.6	(173)
	60Hz	0.78	0.98	1.37	1.57	1.96	2.35	2.65	3.33	3.92	4.70	5.29	6.47	7.55	9.11	12.6	15.2						19.6	(173)
Rotational direction	Same as motor rotational direction											Reverse to motor rotational direction												

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

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

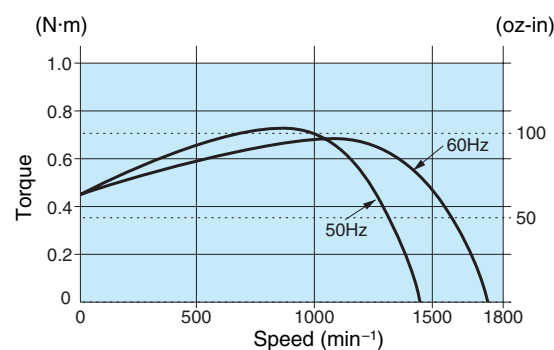
Connection diagram



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

Speed-torque characteristics

M91Z60GK4LG(A)

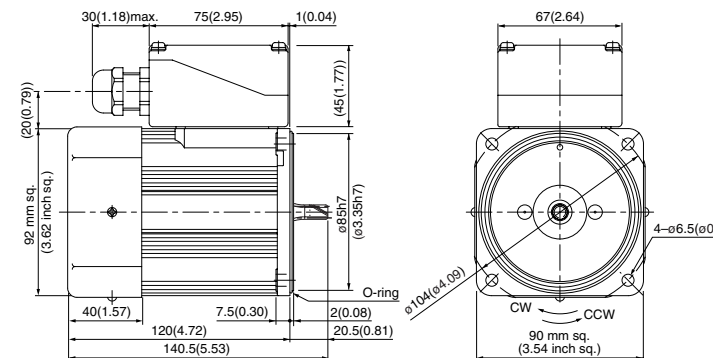


Motor (dimensions)

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)

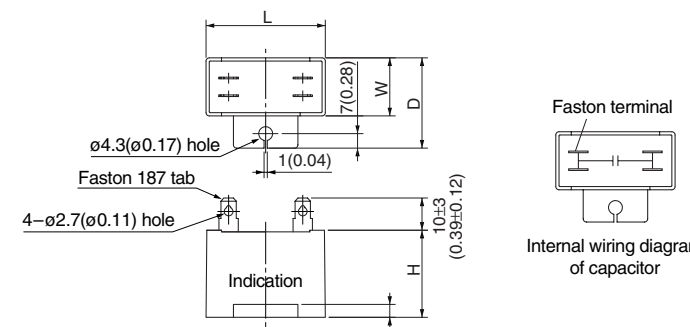
Mass	Helical gear	Module	Number of teeth
3.0 kg 6.61 lb		0.6	9



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

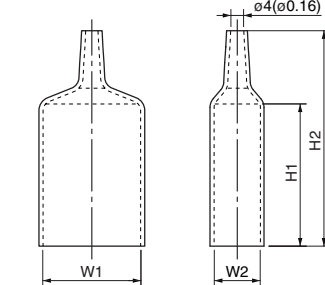
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

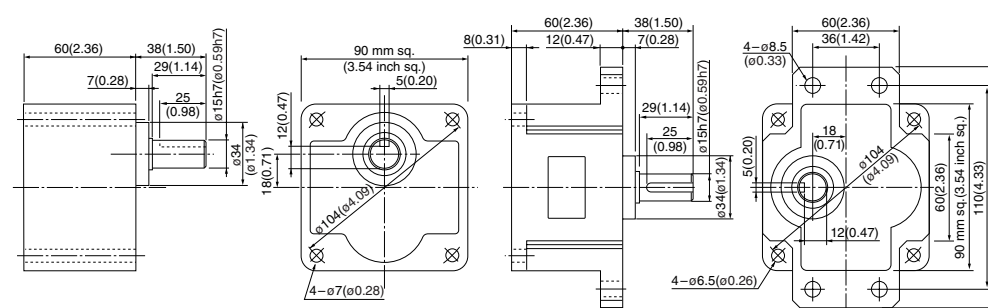
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M91Z60GK4LG(A)	M0PC20M25G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)
M91Z60GK4DG(A)	M0PC18M25G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	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)

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

Gear head (dimensions)

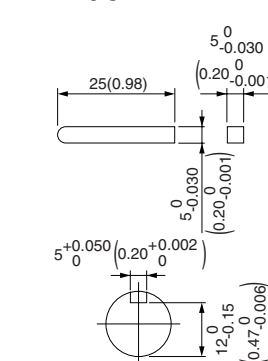
Scale: 1/4, Unit: mm (inch)

MZ9G□B (ball bearing / hinge not attached)	MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg (3.09 lb)	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 (min ⁻¹)	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 (200V)
					60		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 (400V)
					60		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%.

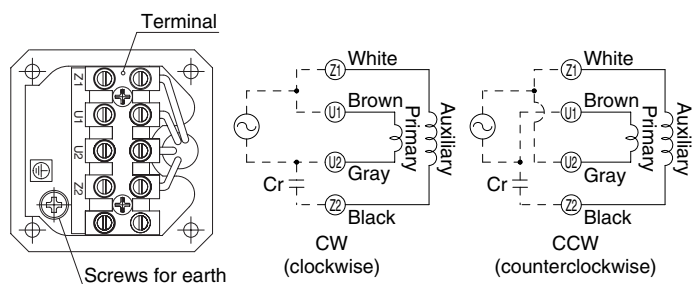
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	Speed (min ⁻¹)																							
	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
Speed (min ⁻¹)	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable gear head (ball bearing / hinge not attached)	50Hz	19.6 (173)																						
		19.6 (173)																						
Applicable gear head (ball bearing / hinge attached)	60Hz	19.6 (173)																						
		19.6 (173)																						
Rotational direction	Same as motor rotational direction										Reverse to motor rotational direction					Same as motor rotational direction								

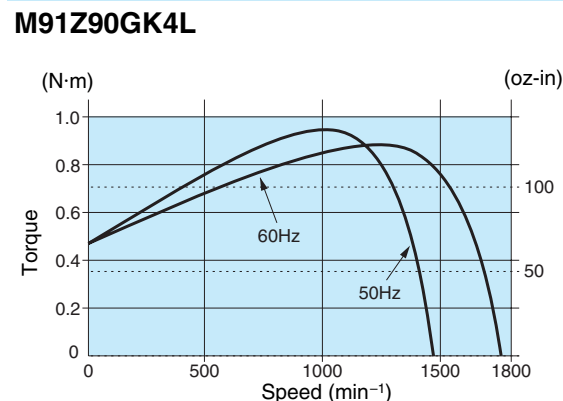
Permissible torque at output shaft of gear head using decimal gear head

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

Connection diagram



Speed-torque characteristics



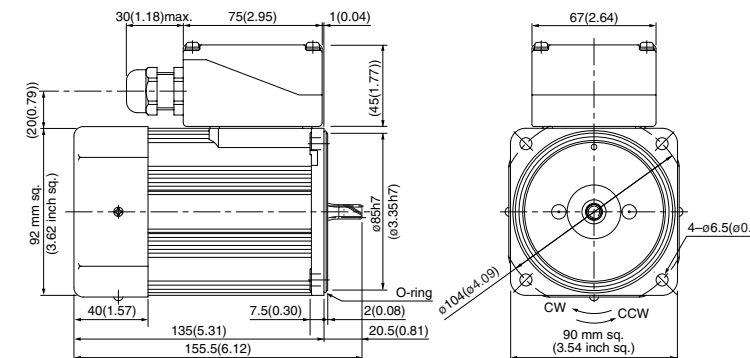
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

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

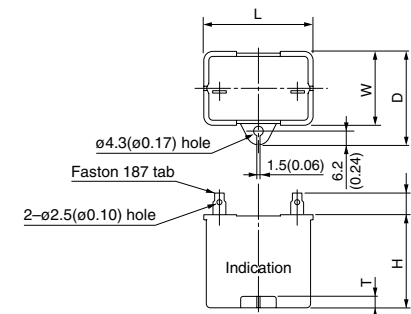
Mass	Helical gear	Module	Number of teeth
3.3 kg 7.28 lb	0.6	9	



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

Capacitor (dimensions) [attachment]

Unit: mm (inch)

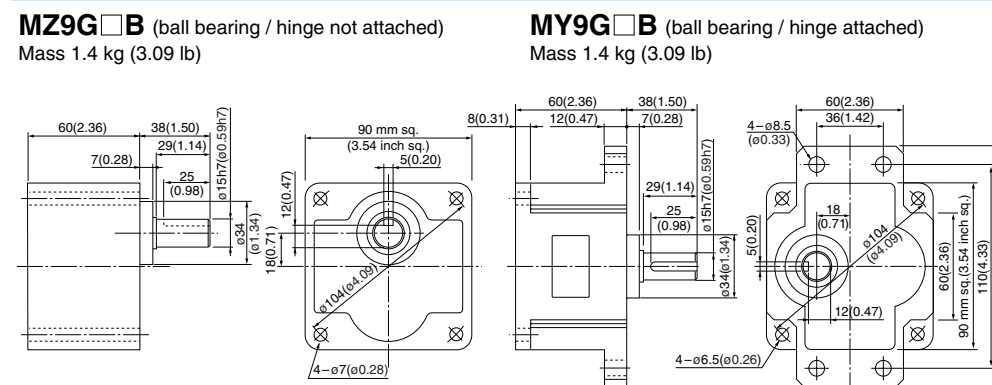


Capacitor dimension list

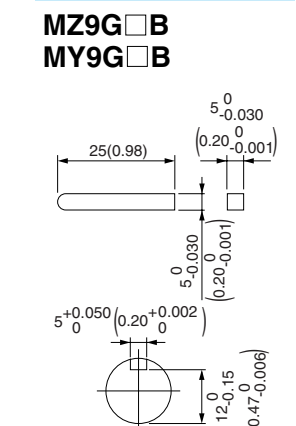
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)
M91Z90GK4L	M0PC25M20	50.2 (1.98)	31 (1.22)	41 (1.61)	42 (1.65)	5 (0.20)	M0PC5032
M91Z90GK4Y	M0PC5.8M40	50 (1.97)	30.5 (1.20)	41 (1.61)	41.5 (1.63)	4 (0.16)	M0PC5032

Gear head (dimensions)

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



Key and keyway (dimensions) [attachment]



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

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

Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating				Starting current (A)	Starting torque N-m (oz-in)	Capacitor (μF) (rated voltage)
							Input (W)	Current (A)	Speed (min ⁻¹)	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)	(250V)
	M91Z90GK4DG M91Z90GK4DGA	4	90	110	60	Cont.	168	1.6	1600	0.54(76.5)	3.0	0.65(92.0)	25
					60		176	1.6	1600	0.54(76.5)	3.1	0.72(102)	(250V)
	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)	(450V)
	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)	
					50		185	0.89	1250	0.69(97.7)	1.5	0.68(96.3)	
					60		173	0.76	1600	0.54(76.5)	1.5	0.72(102)	

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

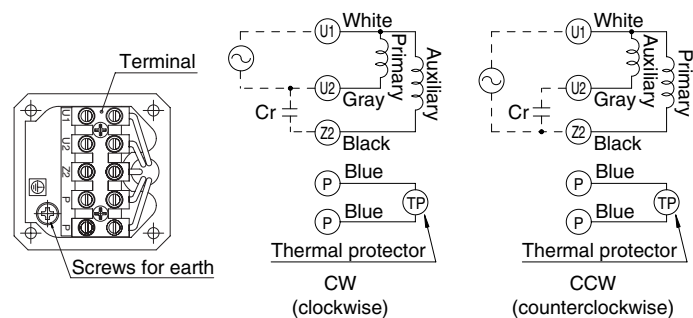
Unit of permissible torque: upper (N·m) / lower (lb-in)

Reduction ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200	
Speed (min ⁻¹)	50Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
	60Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable gear head	MZ9G3B to MZ9G200B (ball bearing / hinge not attached)	50Hz	1.37	1.67	2.25	2.74	3.43	4.12	4.51	5.68	6.76	8.04	9.02	10.9	13.0	15.7	19.6							19.6
	MY9G3B to MY9G200B (ball bearing / hinge attached)	60Hz	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												

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

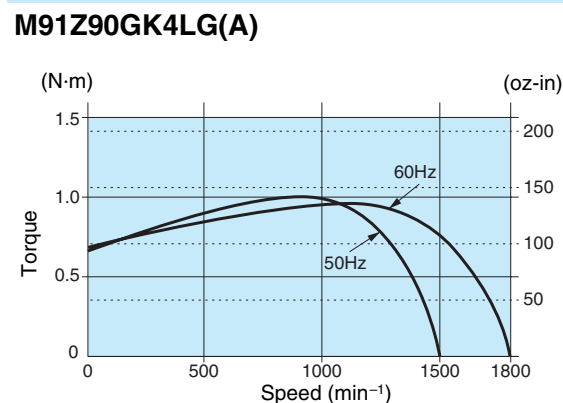
Applicable gear head		Reduction ratio	250	300	360	500	600	750	900	1000	1200	1500	1800	
Bearing	Decimal gear head	Speed (min ⁻¹)	50Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
		60Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1	
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	MZ9G10XB	Permissible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

Connection diagram



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

Speed-torque characteristics

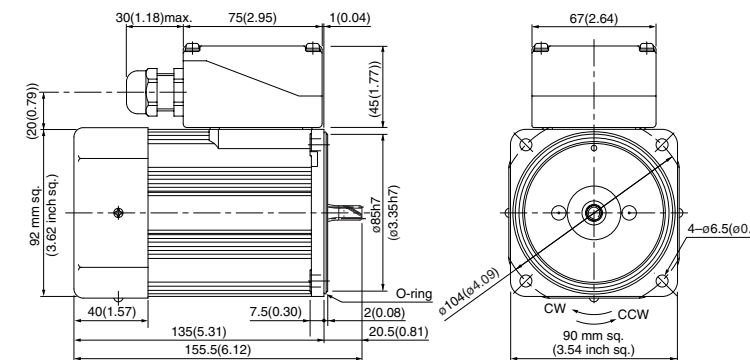


Motor (dimensions)

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)

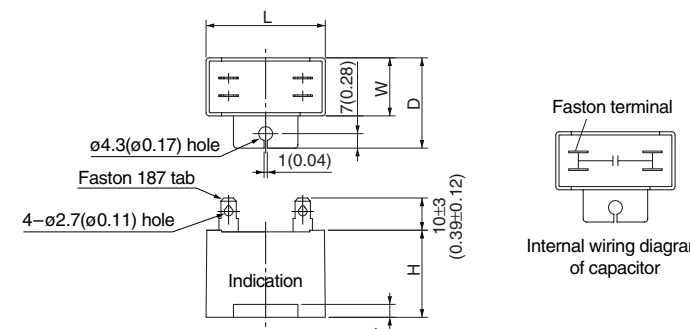
Mass	3.3 kg	Helical gear	Module	0.6	Number of teeth	9
	7.28 lb					



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

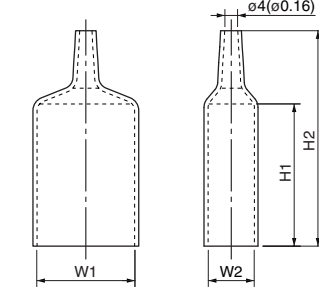
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

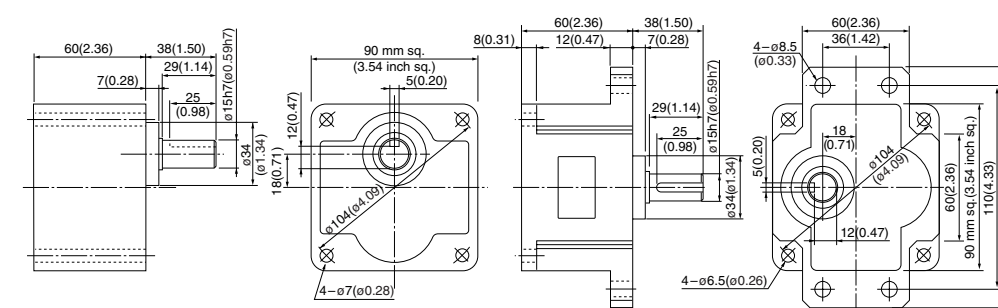
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap	W1	W2	H1	H2
M91Z90GK4LG(A)	M0PC30M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M91Z90GK4DG(A)	M0PC25M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	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)

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

Gear head (dimensions)

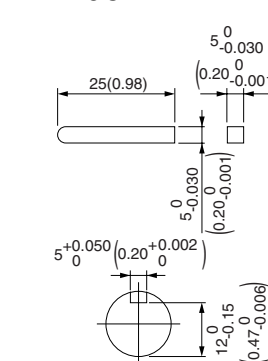
Scale: 1/4, Unit: mm (inch)

MZ9G□B (ball bearing / hinge not attached)	MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg (3.09 lb)	Mass 1.4 kg (3.09 lb)



Key and keyway (dimensions) [attachment]

MZ9G□B	5 ⁰ ₀
MY9G□B	5 ⁰ ₀

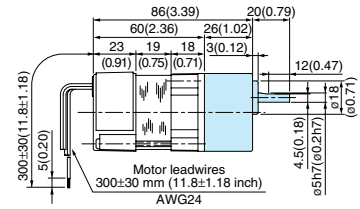


Note) MZ / MY is available for a gear head of either type.

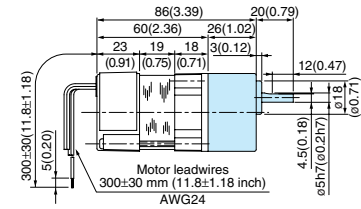
(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

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

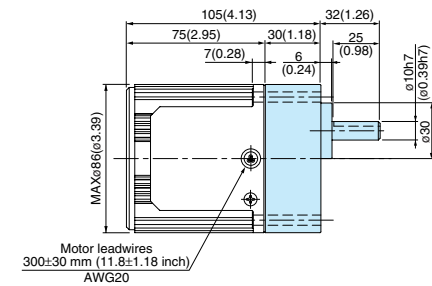
42 mm sq. (1.65 inch sq.) 3 W
M41A3G2L + M4GA□F



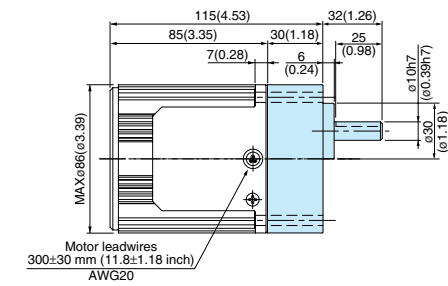
42 mm sq. (1.65 inch sq.) 1 W
M41A1G4L + M4GA□F



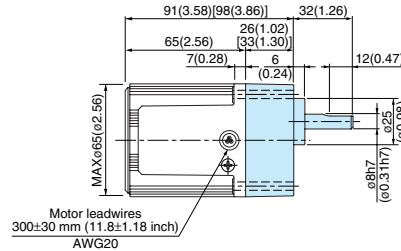
80 mm sq. (3.15 inch sq.) 15 W
M81X15G4L + MX8G□B(M)
M81X15G4Y + MX8G□B(M)



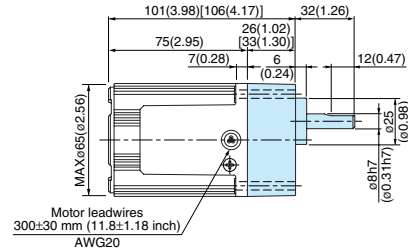
80 mm sq. (3.15 inch sq.) 25 W
M81X25G4L + MX8G□B(M)
M81X25G4Y + MX8G□B(M)
M81X25G4LG(A) + MX8G□B(M)
M81X25G4DG(A) + MX8G□B(M)
M81X25G4YG(A) + MX8G□B(M)
M81X25G4GG(A) + MX8G□B(M)



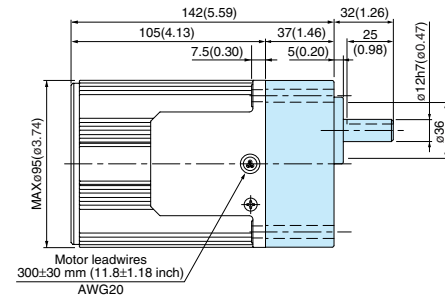
60 mm sq. (2.36 inch sq.) 3 W
M61X3G4L + MX6G□BA(MA) / MX6G□B(M)



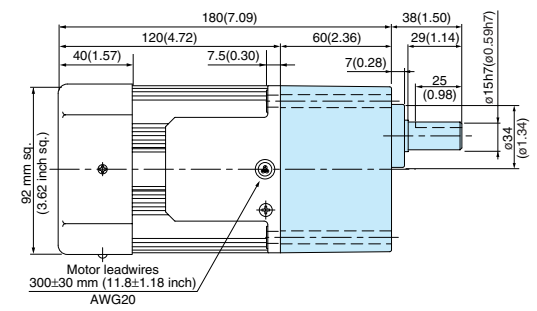
60 mm sq. (2.36 inch sq.) 6 W
M61X6G4L + MX6G□BA(MA) / MX6G□B(M)
M61X6G4Y + MX6G□BA(MA) / MX6G□B(M)
M61X6G4LG(A) + MX6G□BA(MA) / MX6G□B(M)
M61X6G4DG(A) + MX6G□BA(MA) / MX6G□B(M)
M61X6G4YG(A) + MX6G□BA(MA) / MX6G□B(M)
M61X6G4GG(A) + MX6G□BA(MA) / MX6G□B(M)



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)



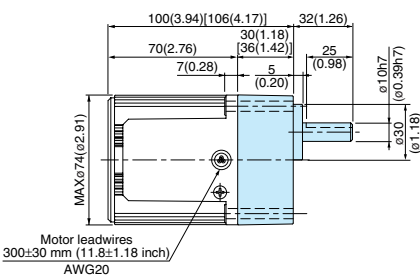
90 mm sq. (3.54 inch sq.) 60 W
M91Z60G4L + MZ9G□B (MY9G□B)
M91Z60G4Y + MZ9G□B (MY9G□B)
M91Z60G4LG(A) + MZ9G□B (MY9G□B)
M91Z60G4DG(A) + MZ9G□B (MY9G□B)
M91Z60G4YG(A) + MZ9G□B (MY9G□B)
M91Z60G4GG(A) + MZ9G□B (MY9G□B)



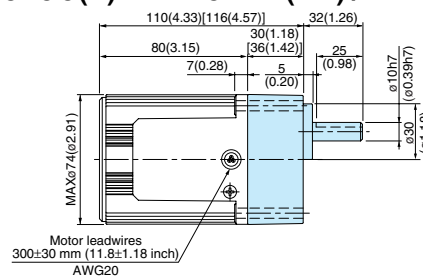
* Figures in [] represent the dimensions of MX6G□B (M) (1/30 or larger reduction ratio).
The model number of the gear head with a reduction ratio of 1/25 or smaller is MX6G□BA (MA).

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

70 mm sq. (2.76 inch sq.) 10 W
M71X10G4L + MX7G□BA(MA) / MX7G□B(M)
M71X10G4Y + MX7G□BA(MA) / MX7G□B(M)



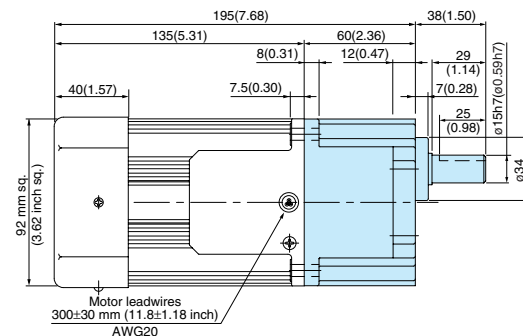
70 mm sq. (2.76 inch sq.) 15 W
M71X15G4L + MX7G□BA(MA) / MX7G□B(M)
M71X15G4Y + MX7G□BA(MA) / MX7G□B(M)
M71X15G4LG(A) + MX7G□BA(MA) / MX7G□B(M)
M71X15G4DG(A) + MX7G□BA(MA) / MX7G□B(M)
M71X15G4YG(A) + MX7G□BA(MA) / MX7G□B(M)
M71X15G4GG(A) + MX7G□BA(MA) / MX7G□B(M)



* 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).

* 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)



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

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

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

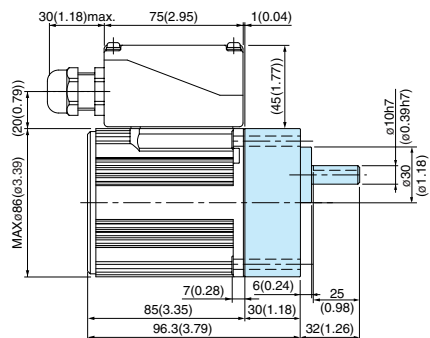
(Note) Because the dimensions may be subject to change, also check the determinate dimensions if the gear head is to be used for design.

Induction motor (sealed connector) Gear head combination dimensions

Scale: 1/4, Unit: mm

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

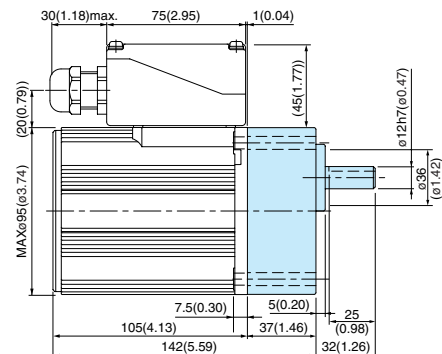
- M81X25GK4L + MX8G□B(M)
- M81X25GK4Y + MX8G□B(M)
- M81X25GK4LG(A) + MX8G□B(M)
- M81X25GK4DG(A) + MX8G□B(M)
- M81X25GK4YG(A) + MX8G□B(M)
- M81X25GK4GG(A) + MX8G□B(M)



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

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

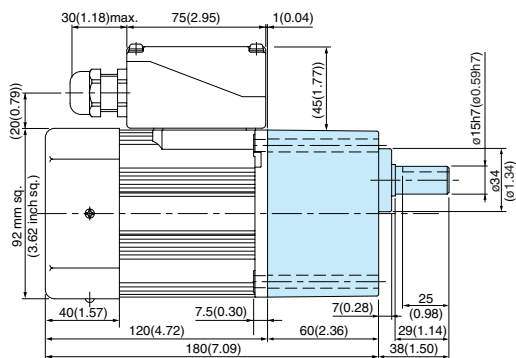
- M91X40GK4L + MX9G□B(M)
- M91X40GK4Y + MX9G□B(M)
- M91X40GK4LG(A) + MX9G□B(M)
- M91X40GK4DG(A) + MX9G□B(M)
- M91X40GK4YG(A) + MX9G□B(M)
- M91X40GK4GG(A) + MX9G□B(M)



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

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)

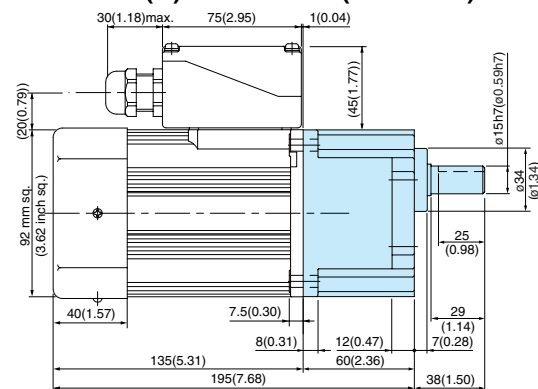


* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

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

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)



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

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

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

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

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

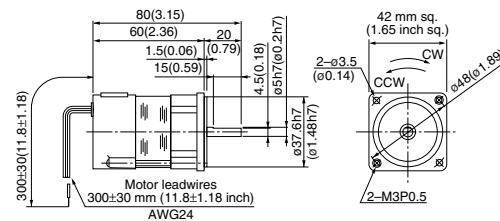
Induction motor (4-pole round shaft / leadwire)

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

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

Mass 0.3 kg (0.66 lb)

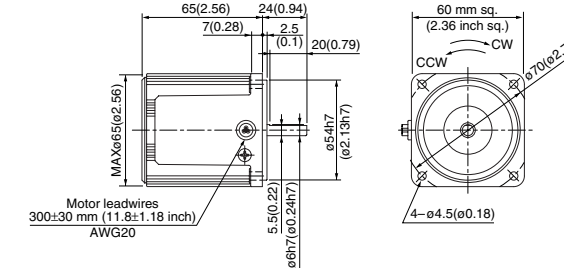
M41A1S4L



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

Mass 0.56 kg (1.23 lb)

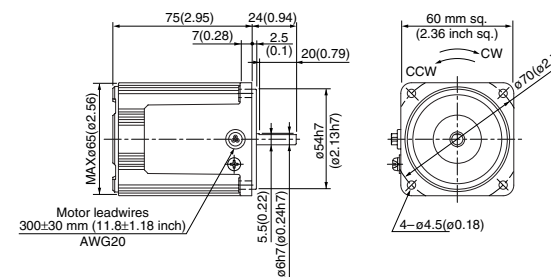
M61X3S4LS



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

Mass 0.67 kg (1.48 lb)

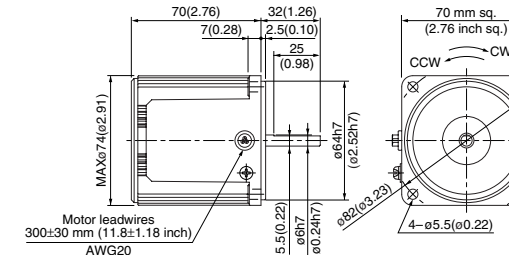
M61X6S4LS M61X6S4LG(A) M61X6S4YG(A)
M61X6S4YS M61X6S4DG(A) M61X6S4GG(A)



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

Mass 0.84 kg (1.85 lb)

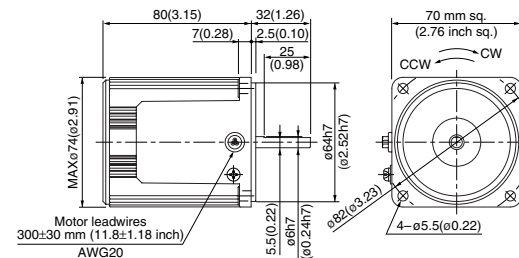
M71X10S4LS
M71X10S4YS



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

Mass 1.1 kg (2.43 lb)

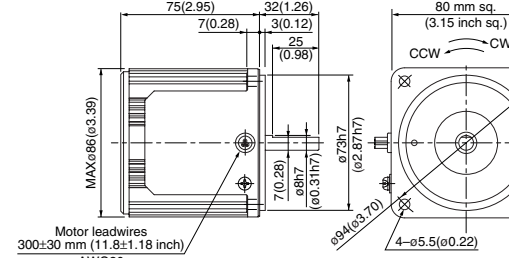
M71X15S4LS M71X15S4LG(A) M71X15S4YG(A)
M71X15S4YS M71X15S4DG(A) M71X15S4GG(A)



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

Mass 1.2 kg (2.65 lb)

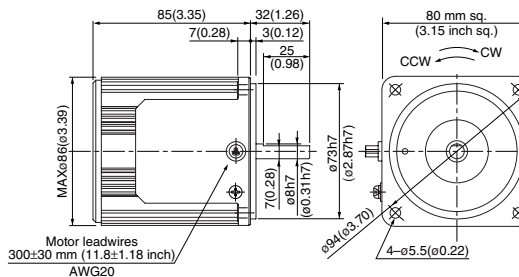
M81X15S4LS
M81X15S4YS



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

Mass 1.5 kg (3.31 lb)

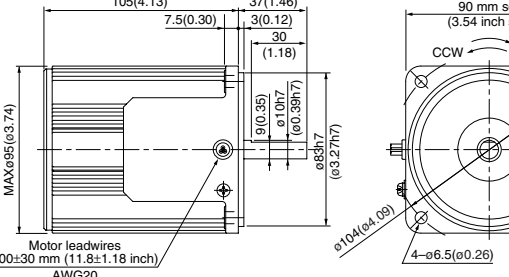
M81X25S4LS M81X25S4LG(A) M81X25S4YG(A)
M81X25S4YS M81X25S4DG(A) M81X25S4GG(A)



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)



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

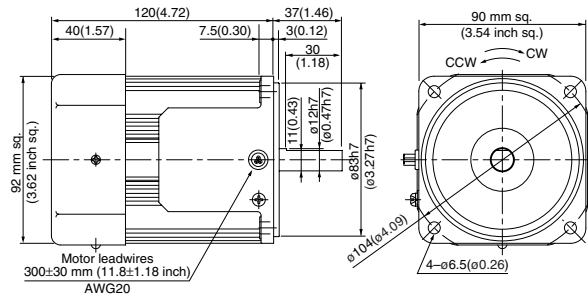
Induction motor
Reversible motor
3-phase motor
Electromagnetic brake motor
Variable speed induction motor
Variable speed motor
Variable speed electromagnetic brake single-phase motor
Variable speed unit motor
C&B motor
2-pole round shaft motor
Gear head
Gear head -inch (U.S.A.)

Induction motor (4-pole round shaft / leadwire)

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

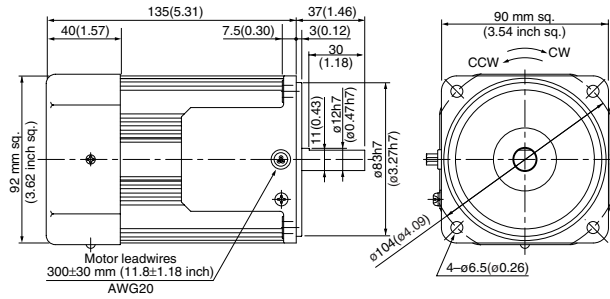
90 mm sq. (3.54 inch sq.) 60 W Mass 2.7 kg (5.95 lb)

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



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)

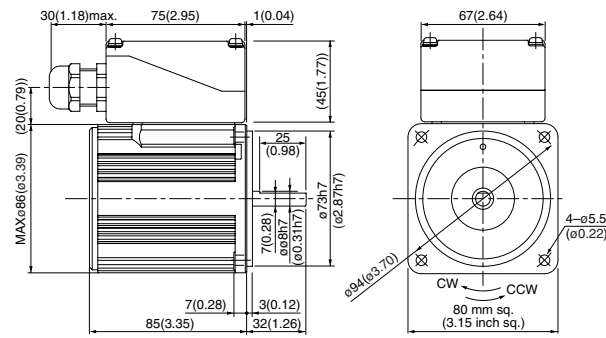


Induction motor (4-pole round shaft / sealed connector)

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

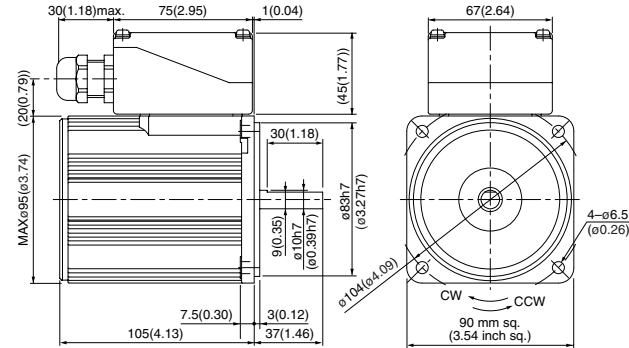
80 mm sq. (3.15 inch sq.) 25 W Mass 1.8 kg (3.97 lb)

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



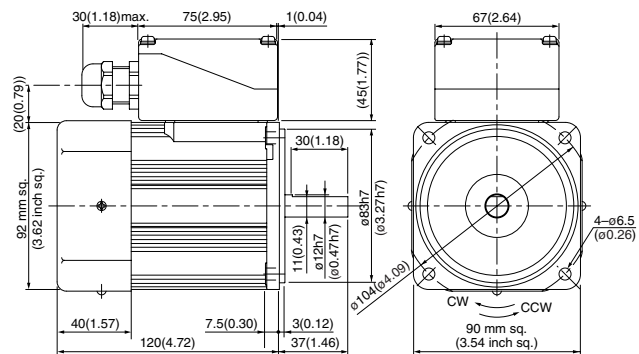
90 mm sq. (3.54 inch sq.) 40 W Mass 2.8 kg (6.17 lb)

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



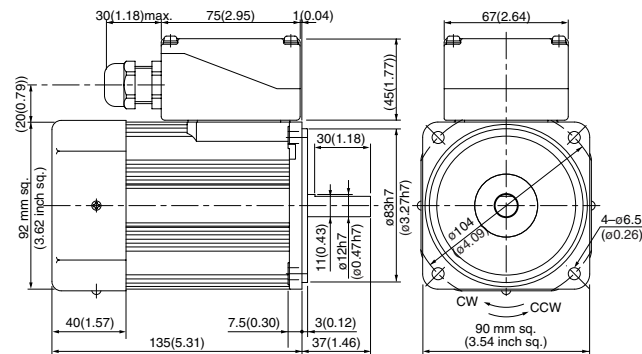
90 mm sq. (3.54 inch sq.) 60 W Mass 3.0 kg (6.61 lb)

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



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)



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

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

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

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