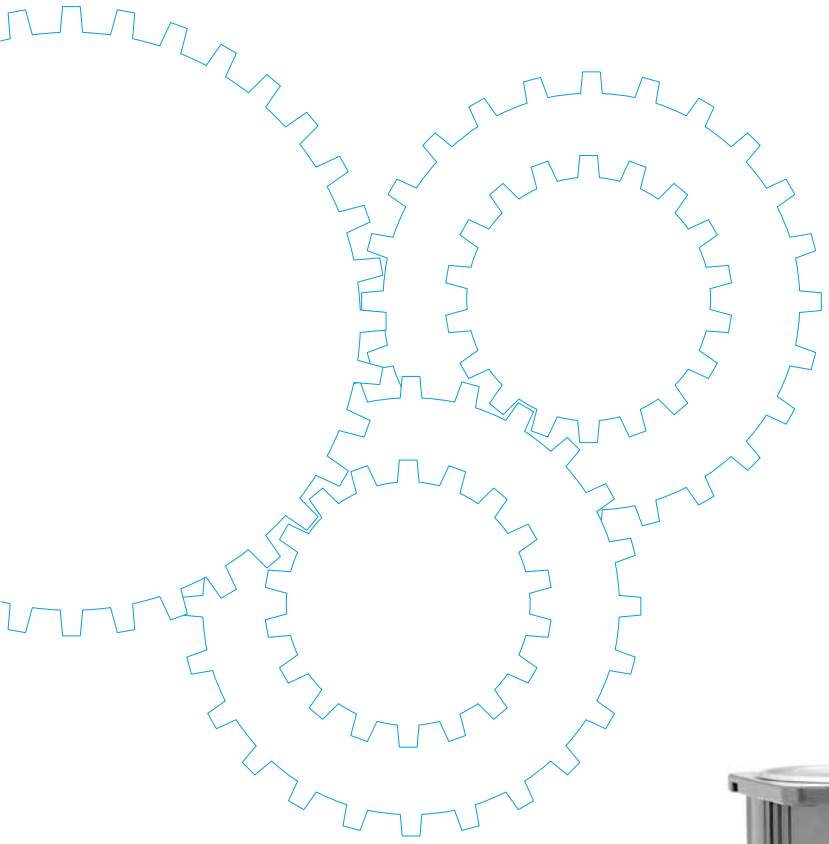
Induction Motor



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- 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

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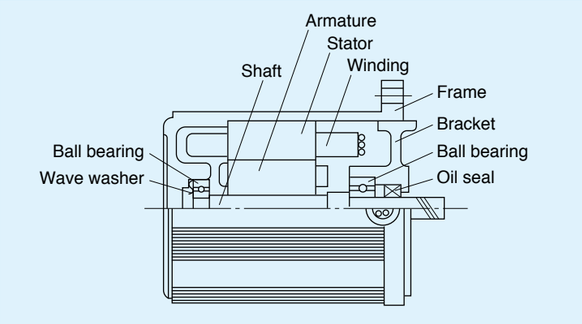
Outline of induction motor

Features

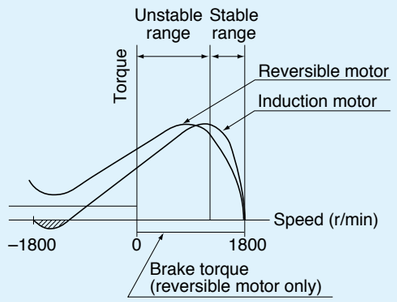
- It is fitted for continuous running in one direction. <Single-phase motor>
- Continuous time rating
- The motor with national specifications is of heatproof class 120 (E); the motor with specifications compliant with overseas standards is of heatproof class 130 (B).
- Because it is a capacitor-type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

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

Construction

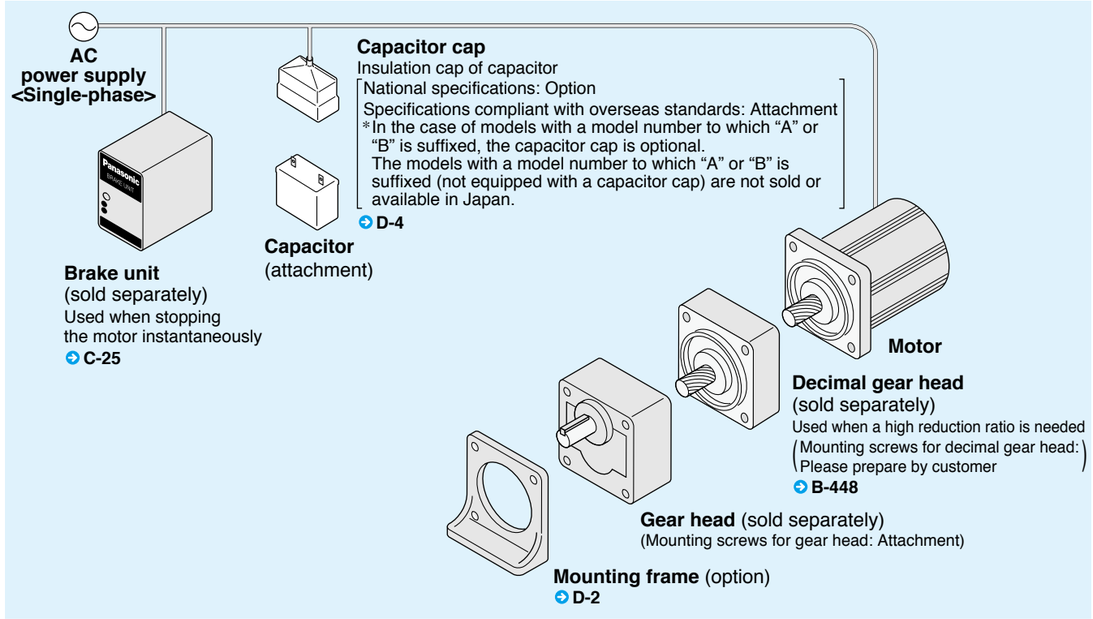


Characteristics

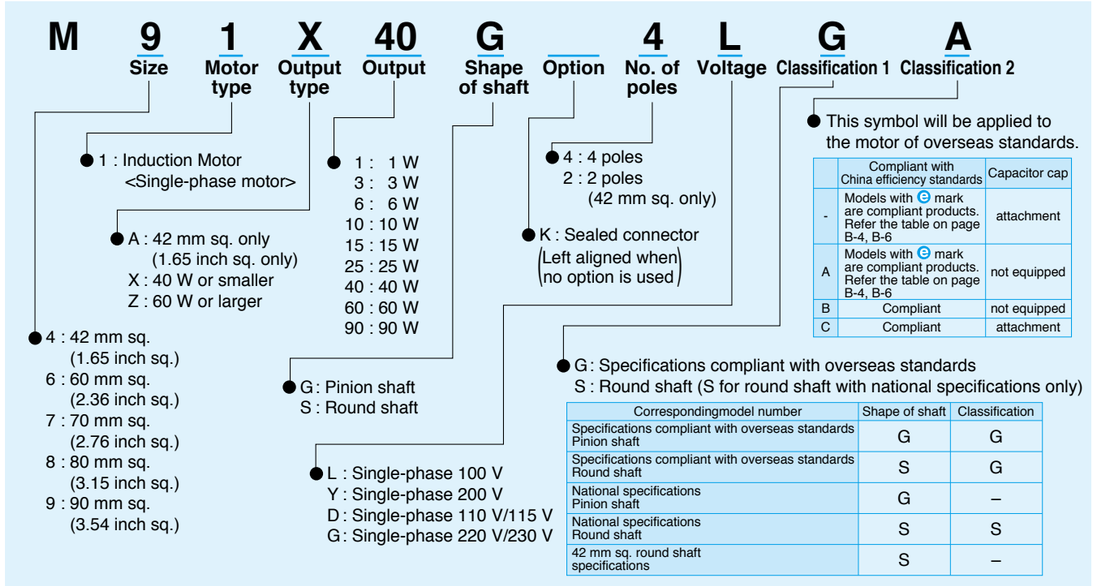


Note) Operation at 60 Hz

System configuration diagram



Coding system



	Compliant with China efficiency standards	Capacitor cap
-	Models with Ⓔ mark are compliant products. Refer the table on page B-4, B-6	attachment
A	Models with Ⓔ mark are compliant products. Refer the table on page B-4, B-6	not equipped
B	Compliant	not equipped
C	Compliant	attachment

Correspondingmodel number	Shape of shaft	Classification
Specifications compliant with overseas standards Pinion shaft	G	G
Specifications compliant with overseas standards Round shaft	S	G
National specifications Pinion shaft	G	–
National specifications Round shaft	S	S
42 mm sq. round shaft specifications	S	–

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.

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Model list of induction motor

Pinion shaft motor

✪ Motor compliant with overseas standards ⓔ Motor compliant with China efficiency standards

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

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

Applicable gear head

Hinge attached

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	MZ9G□R	MZ9G□BU	MZ9G10XB
MY9G□B			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.

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Model list of induction motor

Round shaft motor

✪ Motor compliant with overseas standards ⓔ Motor compliant with China efficiency standards
Ⓟ Electrical Appliance and Material Safety Law

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

* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft motor.
Dimensional outline drawing → Page B-61.
* The models with a motor model number to which “A” or “B” is suffixed are not equipped with a capacitor cap.
The models with a motor model number to which “A” or “B” is suffixed are not sold or available in Japan.

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Induction motor (leadwire)

42 mm (1.65 inch) sq. 3 W

• Specifications

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

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

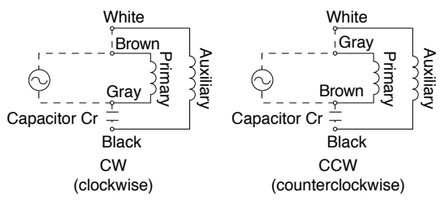
• Permissible torque at output shaft of gear head

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

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

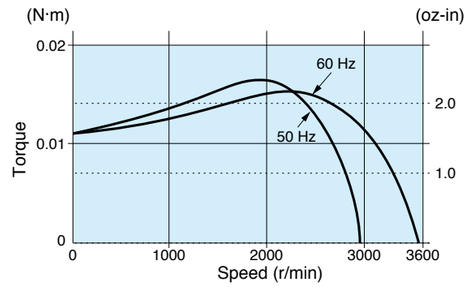
Reduction ratio			3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	1000	833	600	500	400	333	240	200	167	120	100	83.3	60	50	40	33.3	30	25	20	16.7
		60 Hz	1200	1000	720	600	480	400	288	240	200	144	120	100	72	60	48	40	36	30	24	20
Applicable gear head	M4GA3F to M4GA180F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

Connection diagram



Speed-torque characteristics

M41A3G2L



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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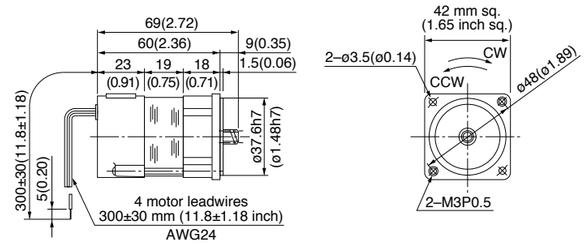
Motor (dimensions)

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

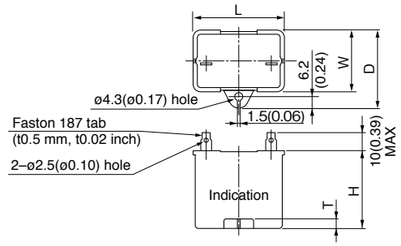
M41A3G2L 2P 3 W 100 V

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



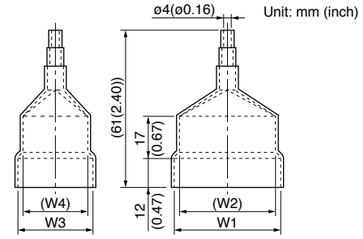
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

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

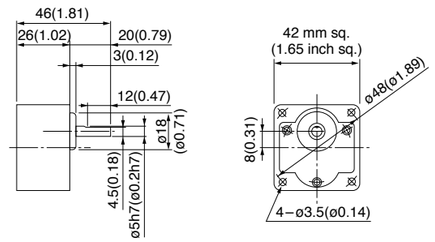
* Capacitors (single item) can also be purchased.

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.



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

Gear head combination B-58 | Round shaft motor B-61 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

42 mm (1.65 inch) sq. | 1 W

• Specifications

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

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

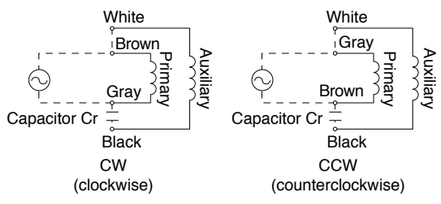
• Permissible torque at output shaft of gear head

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

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

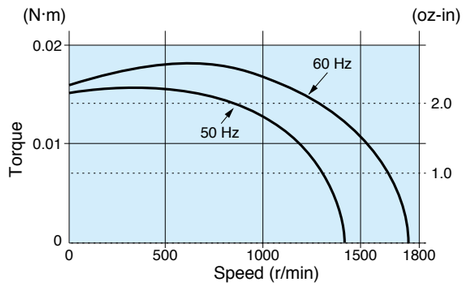
Reduction ratio			3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	120	100	83.3	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	M4GA3F to M4GA180F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

Connection diagram



Speed-torque characteristics

M41A1G4L



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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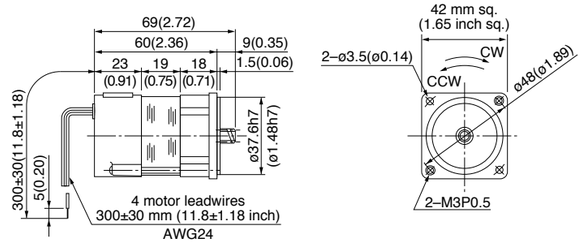
Motor (dimensions)

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

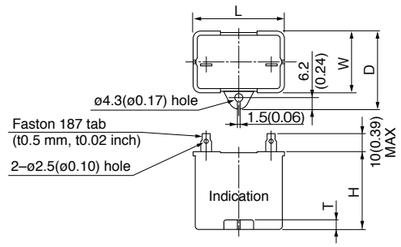
M41A1G4L 4P 1 W 100 V

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



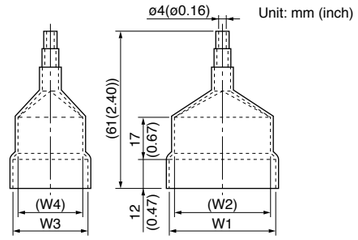
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

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

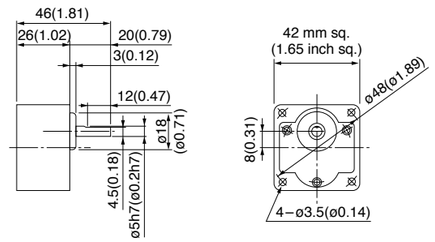
* Capacitors (single item) can also be purchased.

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.



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

Gear head combination B-58 | Round shaft motor B-61 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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• Specifications

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

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

• Permissible torque at output shaft of gear head

* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 % to 20 %.
* The part number of reduction gear ratio less than 1/25 is MX6G□BA (MA).

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

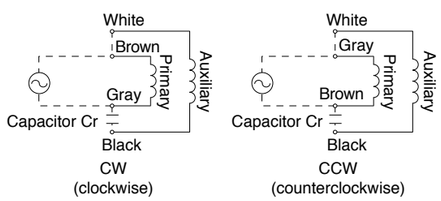
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	MX6G3BA to MX6G180B (ball bearing)	50 Hz	0.048 (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)
	MX6G3MA to MX6G180M (metal bearing)	60 Hz	0.040 (0.35)	0.048 (0.42)	0.067 (0.59)	0.097 (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

* For external dimensions of the decimal gear head, refer to page B-448.

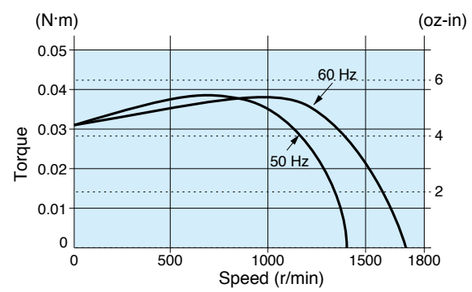
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX6G□BA (ball bearing) MX6G□B (ball bearing) MX6G□MA (metal bearing) MX6G□M (metal 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)
		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.

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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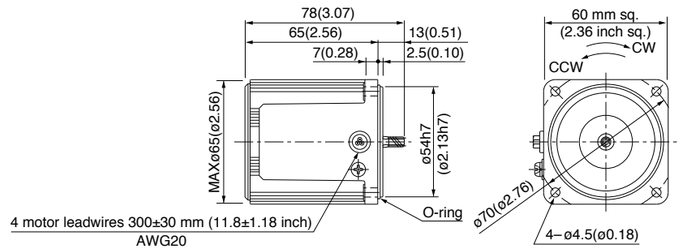
Motor (dimensions)

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

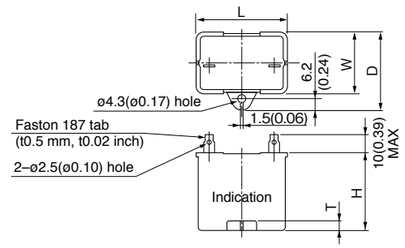
M61X3G4L 4P 3 W 100 V

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



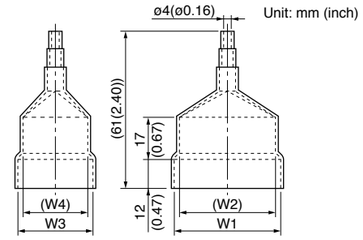
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

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

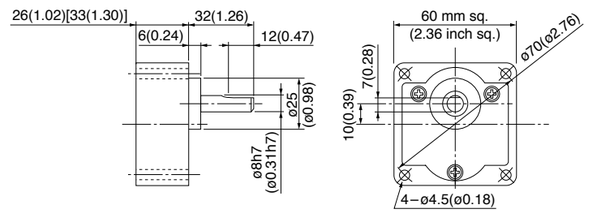
* Capacitors (single item) can also be purchased.

Gear head (dimensions)

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

< □ is 25 or less >
MX6G□BA (ball bearing) Mass 0.24 kg(0.53 lb): Output shaft D cut
MX6G□MA (metal bearing) Mass 0.24 kg(0.53 lb): Output shaft D cut

< □ is 30 or more >
MX6G□B (ball bearing) Mass 0.3 kg(0.66 lb): Output shaft D cut
MX6G□M (metal bearing) Mass 0.3 kg(0.66 lb): Output shaft D cut



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

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

Gear head combination B-58 | Round shaft motor B-61 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

60 mm (2.36 inch) sq. 6 W

• Specifications

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

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

• Permissible torque at output shaft of gear head

* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 % to 20 %.
* The part number of reduction gear ratio less than 1/25 is MX6G□BA (MA).

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

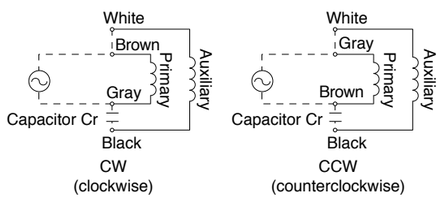
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head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

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

* For external dimensions of the decimal gear head, refer to page B-448.

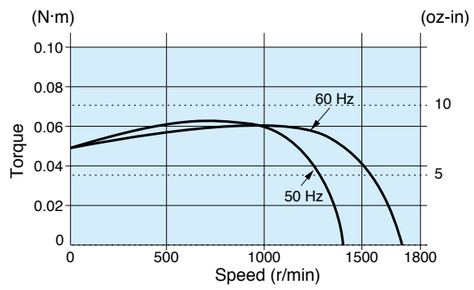
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX6G□BA (ball bearing) MX6G□B (ball bearing) MX6G□MA (metal bearing) MX6G□M (metal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

Connection diagram



Speed-torque characteristics

M61X6G4L



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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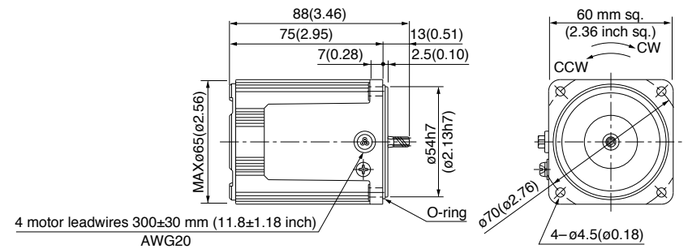
Motor (dimensions)

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

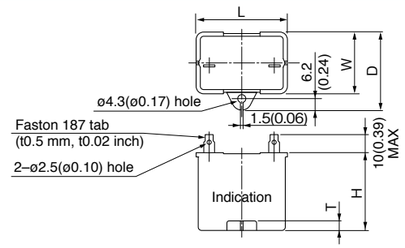
M61X6G4L 4P 6 W 100 V
M61X6G4Y 4P 6 W 200 V

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



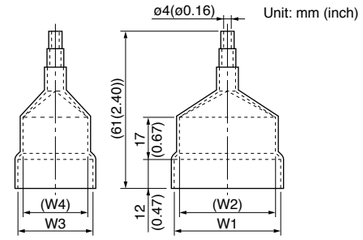
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

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

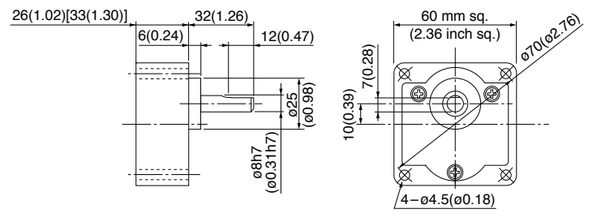
* Capacitors (single item) can also be purchased.

Gear head (dimensions)

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

< □ is 25 or less >
MX6G□BA (ball bearing) Mass 0.24 kg(0.53 lb): Output shaft D cut
MX6G□MA (metal bearing) Mass 0.24 kg(0.53 lb): Output shaft D cut

< □ is 30 or more >
MX6G□B (ball bearing) Mass 0.3 kg(0.66 lb): Output shaft D cut
MX6G□M (metal bearing) Mass 0.3 kg(0.66 lb): Output shaft D cut



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

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

Gear head combination B-58 | Round shaft motor B-61 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

60 mm (2.36 inch) sq. | 6 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
60 mm sq.	M61X6G4LG M61X6G4LGA	4	6	100	50	Cont.	22	0.23	1275	0.045 (6.37)	0.32	0.051 (7.22)	3.5 (250 V)
					60		23	0.23	1600	0.036 (5.10)	0.33	0.051 (7.22)	
	M61X6G4DG M61X6G4DGA	4	6	110	60	Cont.	21	0.20	1600	0.036 (5.10)	0.33	0.047 (6.66)	2.5 (250 V)
				115	60		23	0.21	1625	0.035 (4.96)	0.34	0.051 (7.22)	
	M61X6G4YG M61X6G4YGA	4	6	200	50	Cont.	21	0.11	1225	0.047 (6.66)	0.14	0.051 (7.22)	0.8 (450 V)
					60		22	0.11	1550	0.037 (5.24)	0.14	0.051 (7.22)	
	M61X6G4GG M61X6G4GGA	4	6	220	50	Cont.	22	0.11	1200	0.048 (6.80)	0.14	0.045 (6.37)	0.6 (450 V)
					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 %.
* The part number of reduction gear ratio less than 1/25 is MX6G□BA (MA).

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

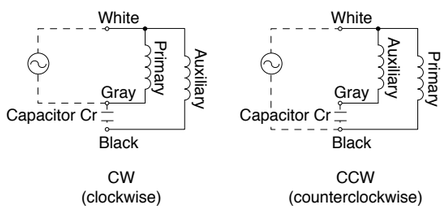
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head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

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

* For external dimensions of the decimal gear head, refer to page B-448.

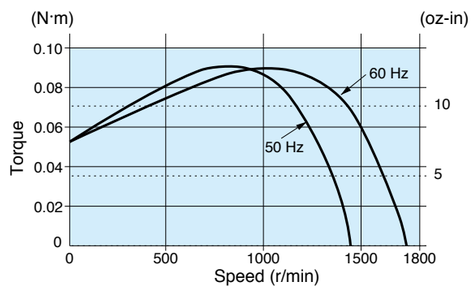
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX6G□BA (ball bearing) MX6G□B MX6G□MA (metal bearing) MX6G□M	MX6G10XB	Permissible 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

M61X6G4LG(A)



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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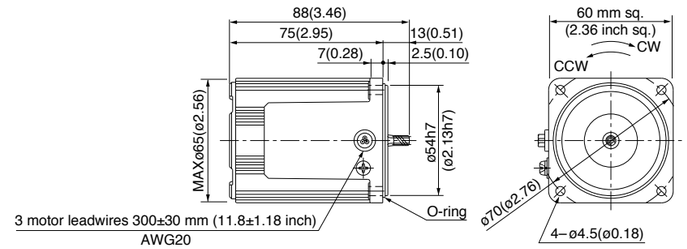
Motor (dimensions)

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

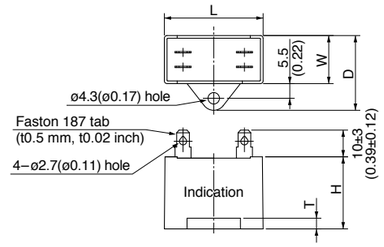
M61X6G4LG(A) 4P 6 W 100 V
M61X6G4DG(A) 4P 6 W 110 V / 115 V
M61X6G4YG(A) 4P 6 W 200 V
M61X6G4GG(A) 4P 6 W 220 V / 230 V

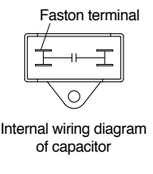
Mass	Helical gear	Module	Number of teeth
0.67 kg 1.48 lb		0.5	6



Capacitor (dimensions) [attachment]

Unit: mm (inch)

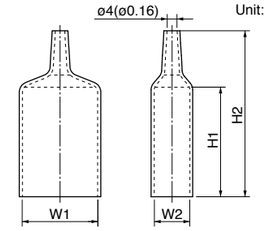




Internal wiring diagram of capacitor

Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M61X6G4LG(A)	M0PC3.5M25G	31 (1.22)	17 (0.67)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3117G	31 (1.22)	17 (0.67)	50 (1.97)	73 (2.87)
M61X6G4DG(A)	M0PC2.5M25G	31 (1.22)	17 (0.67)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3117G	31 (1.22)	17 (0.67)	50 (1.97)	73 (2.87)
M61X6G4YG(A)	M0PC0.8M45G	31 (1.22)	17 (0.67)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3117G	31 (1.22)	17 (0.67)	50 (1.97)	73 (2.87)
M61X6G4GG(A)	M0PC0.6M45G	31 (1.22)	14.5 (0.57)	24.5 (0.96)	23.5 (0.93)	4 (0.16)	M0PC3114G	31 (1.22)	14.5 (0.57)	45 (1.77)	68 (2.68)

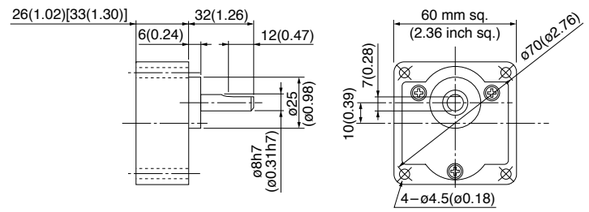
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

Gear head (dimensions)

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

< □ is 25 or less >
MX6G□BA (ball bearing) Mass 0.24 kg(0.53 lb): Output shaft D cut
MX6G□MA (metal bearing) Mass 0.24 kg(0.53 lb): Output shaft D cut

< □ is 30 or more >
MX6G□B (ball bearing) Mass 0.3 kg(0.66 lb): Output shaft D cut
MX6G□M (metal bearing) Mass 0.3 kg(0.66 lb): Output shaft D cut



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

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

Gear head combination B-58 | Round shaft motor B-61 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

70 mm (2.76 inch) sq. 10 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
70 mm sq.	M71X10G4L	4	10	100	50	Cont.	26	0.27	1250	0.074 (10.48)	0.42	0.062 (8.78)	3 (200 V)
					60		26	0.26	1575	0.059 (8.36)	0.40	0.062 (8.78)	
	M71X10G4Y	4	10	200	50	Cont.	27	0.14	1250	0.075 (10.62)	0.20	0.064 (9.06)	1 (400 V)
					60		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 %.
* The part number of reduction gear ratio less than 1/25 is MX7G□BA (MA).

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

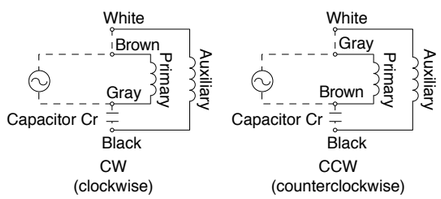
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head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

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

* For external dimensions of the decimal gear head, refer to page B-448.

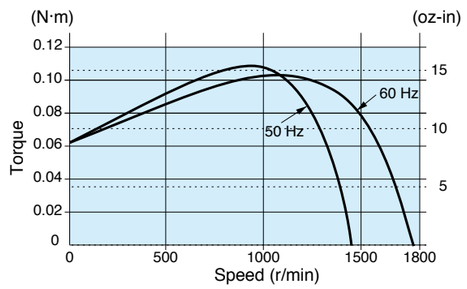
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX7G□BA (ball bearing) MX7G□B MX7G□MA (metal bearing) MX7G□M	MX7G10XB	Permissible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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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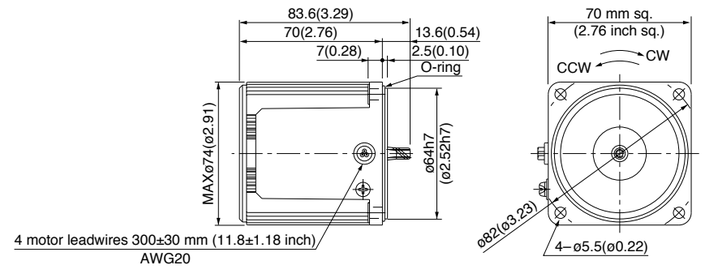
Motor (dimensions)

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

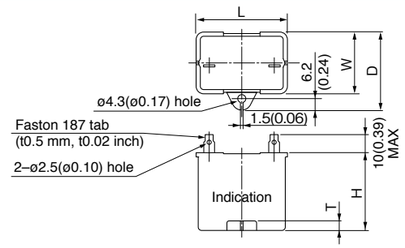
M71X10G4L 4P 10 W 100 V
M71X10G4Y 4P 10 W 200 V

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



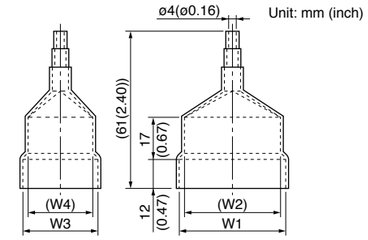
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

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

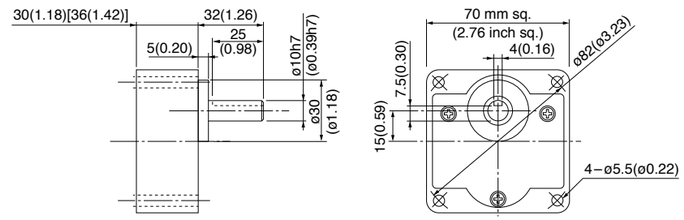
* Capacitors (single item) can also be purchased.

Gear head (dimensions)

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

< □ is 25 or less >
MX7G□BA (ball bearing) Mass 0.38 kg(0.84 lb)
MX7G□MA (metal bearing) Mass 0.38 kg(0.84 lb)

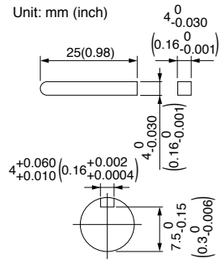
< □ is 30 or more >
MX7G□B (ball bearing) Mass 0.45 kg(0.99 lb)
MX7G□M (metal bearing) Mass 0.45 kg(0.99 lb)



Key and keyway (dimensions) [attachment]

MX7G□BA(B)
MX7G□MA(M)

Unit: mm (inch)



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

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

Gear head combination B-58 | Round shaft motor B-61 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

70 mm (2.76 inch) sq. 15 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
70 mm sq.	M71X15G4L	4	15	100	50	Cont.	34	0.37	1250	0.11 (15.6)	0.61	0.077 (10.9)	4 (200 V)
					60		33	0.33	1575	0.088 (12.5)	0.57	0.077 (10.9)	
	M71X15G4Y	4	15	200	50	Cont.	33	0.18	1300	0.11 (15.6)	0.30	0.077 (10.9)	1 (400 V)
					60		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 %.
* The part number of reduction gear ratio less than 1/25 is MX7G□BA (MA).

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

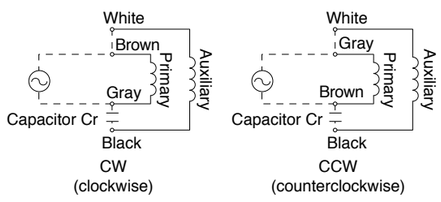
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head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

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

* For external dimensions of the decimal gear head, refer to page B-448.

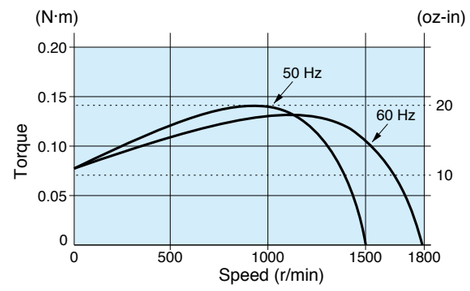
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX7G□BA (ball bearing) MX7G□B (ball bearing) MX7G□MA (metal bearing) MX7G□M (metal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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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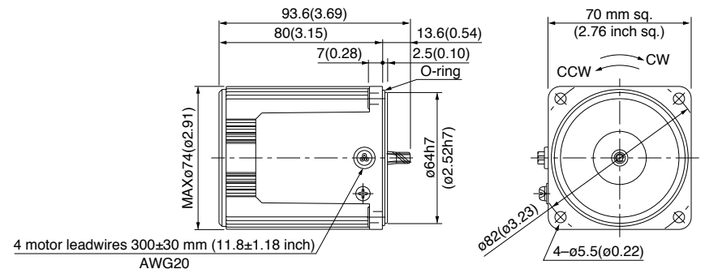
Motor (dimensions)

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

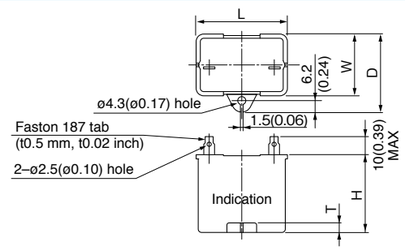
M71X15G4L 4P 15 W 100 V
M71X15G4Y 4P 15 W 200 V

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



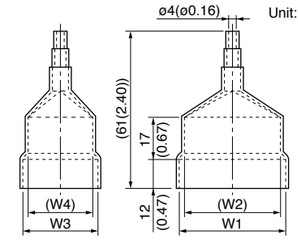
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

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

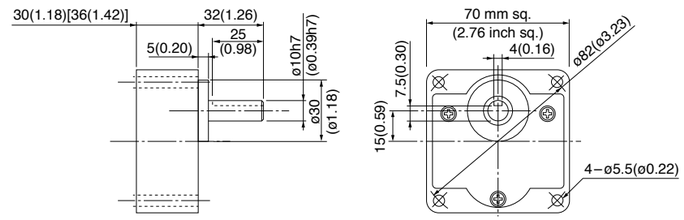
* Capacitors (single item) can also be purchased.

Gear head (dimensions)

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

< □ is 25 or less >
MX7G□BA (ball bearing) Mass 0.38 kg(0.84 lb)
MX7G□MA (metal bearing) Mass 0.38 kg(0.84 lb)

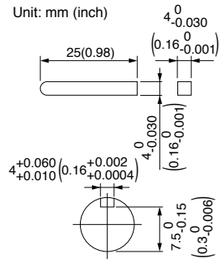
< □ is 30 or more >
MX7G□B (ball bearing) Mass 0.45 kg(0.99 lb)
MX7G□M (metal bearing) Mass 0.45 kg(0.99 lb)



Key and keyway (dimensions) [attachment]

MX7G□BA(B)
MX7G□MA(M)

Unit: mm (inch)



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

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

Gear head combination B-58 | Round shaft motor B-61 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

70 mm (2.76 inch) sq. 15 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
70 mm sq.	M71X15G4LG M71X15G4LGA	4	15	100	50	Cont.	34	0.35	1250	0.11 (15.6)	0.57	0.090 (12.7)	5.5 (250 V)
					60		35	0.35	1600	0.090 (12.7)	0.56	0.090 (12.7)	
	M71X15G4DG M71X15G4DGA	4	15	110	60	Cont.	34	0.31	1600	0.090 (12.7)	0.58	0.090 (12.7)	4.5 (250 V)
				115	60		36	0.32	1625	0.088 (12.5)	0.61	0.10 (14.2)	
	M71X15G4YG M71X15G4YGA	4	15	200	50	Cont.	34	0.17	1175	0.12 (17.0)	0.24	0.090 (12.7)	1.3 (450 V)
					60		35	0.18	1550	0.092 (13.0)	0.24	0.090 (12.7)	
	M71X15G4GG M71X15G4GGA	4	15	220	50	Cont.	35	0.16	1275	0.11 (15.6)	0.27	0.10 (14.2)	1.2 (450 V)
					60		37	0.17	1600	0.090 (12.7)	0.26	0.10 (14.2)	
				230	50		36	0.16	1300	0.11 (15.6)	0.28	0.11 (15.6)	
					60		38	0.17	1625	0.088 (12.5)	0.27	0.11 (15.6)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-61.
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

* The speed shown below is a calculated value based on the synchronous rotational speed. Depending on the load, the speed is less than the indicated value by 2 % to 20 %.
* The part number of reduction gear ratio less than 1/25 is MX7G□BA (MA).

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

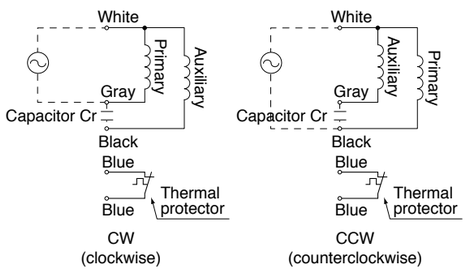
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head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

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

* For external dimensions of the decimal gear head, refer to page B-448.

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

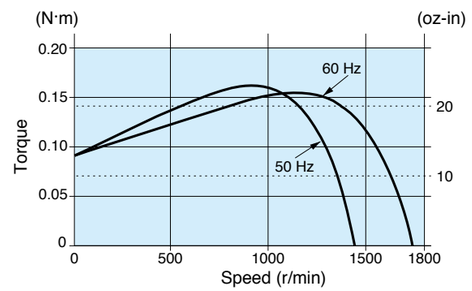
Connection diagram



(Refer to page A-60 for connection of thermal protector.)

Speed-torque characteristics

M71X15G4LG(A)



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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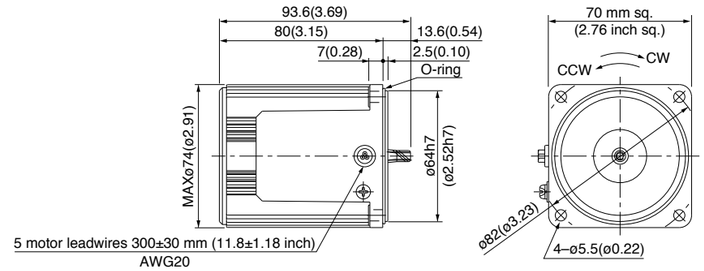
Motor (dimensions)

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

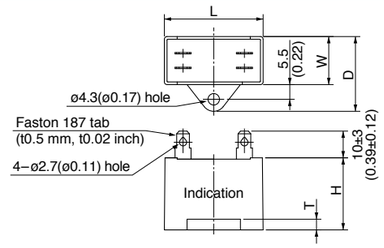
M71X15G4LG(A) 4P 15W 100 V
M71X15G4DG(A) 4P 15W 110 V / 115 V
M71X15G4YG(A) 4P 15W 200 V
M71X15G4GG(A) 4P 15W 220 V / 230 V

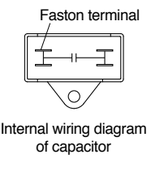
Mass	Helical gear	Module	Number of teeth
1.1 kg 2.43 lb		0.5	7



Capacitor (dimensions) [attachment]

Unit: mm (inch)

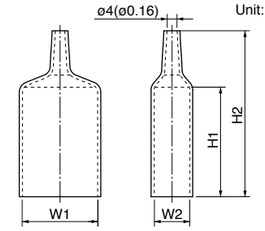




Internal wiring diagram of capacitor

Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M71X15G4LG(A)	M0PC5.5M25G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC3821G	38 (1.50)	21 (0.83)	55 (2.17)	78 (3.07)
M71X15G4DG(A)	M0PC4.5M25G	37 (1.46)	18 (0.71)	28 (1.10)	27 (1.06)	4 (0.16)	M0PC3718G	37 (1.46)	18 (0.71)	50 (1.97)	73 (2.87)
M71X15G4YG(A)	M0PC1.3M45G	38 (1.50)	19 (0.75)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC3819G	38 (1.50)	19 (0.75)	50 (1.97)	73 (2.87)
M71X15G4GG(A)	M0PC1.2M45G	37 (1.46)	18 (0.71)	28 (1.10)	27 (1.06)	4 (0.16)	M0PC3718G	37 (1.46)	18 (0.71)	50 (1.97)	73 (2.87)

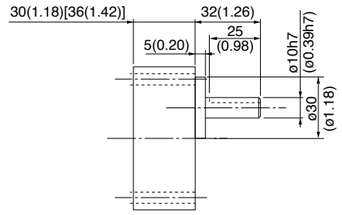
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

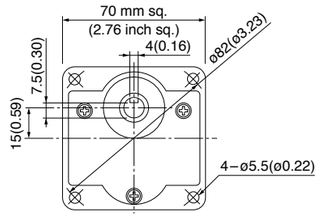
Gear head (dimensions)

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

< □ is 25 or less >
MX7G□BA (ball bearing) Mass 0.38 kg(0.84 lb)
MX7G□MA (metal bearing) Mass 0.38 kg(0.84 lb)

< □ is 30 or more >
MX7G□B (ball bearing) Mass 0.45 kg(0.99 lb)
MX7G□M (metal bearing) Mass 0.45 kg(0.99 lb)

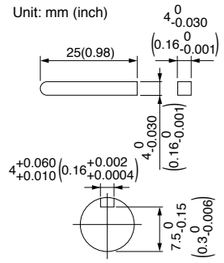




Key and keyway (dimensions) [attachment]

MX7G□BA(B)
MX7G□MA(M)

Unit: mm (inch)



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

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

Gear head combination B-58 | Round shaft motor B-61 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

80 mm (3.15 inch) sq. 15 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
80 mm sq.	M81X15G4L	4	15	100	50	Cont.	36	0.39	1225	0.12 (17.0)	0.62	0.10 (14.2)	4 (200 V)
					60		35	0.35	1550	0.09 (12.7)	0.60	0.10 (14.2)	
	M81X15G4Y	4	15	200	50	Cont.	36	0.19	1225	0.12 (17.0)	0.30	0.10 (14.2)	1 (400 V)
					60		35	0.18	1550	0.09 (12.7)	0.30	0.10 (14.2)	

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

• Permissible torque at output shaft of gear head

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

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

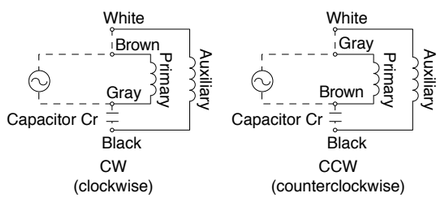
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	MX8G3B to MX8G180B (ball bearing)	50 Hz	0.24 (2.12)	0.28 (2.48)	0.39 (3.45)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.80 (7.08)	0.98 (8.67)	1.18 (10.4)	1.37 (12.1)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	2.74 (24.3)	3.82 (33.8)	4.61 (40.8)	5.49 (48.6)	6.57 (58.1)	7.35 (65.1)	7.84 (69.4)	7.84 (69.4)	
	MX8G3M to MX8G180M (metal bearing)	60 Hz	0.20 (1.77)	0.24 (2.12)	0.32 (2.83)	0.39 (3.45)	0.49 (4.34)	0.59 (5.22)	0.66 (5.84)	0.81 (7.17)	0.98 (8.67)	1.18 (10.4)	1.27 (11.2)	1.57 (13.9)	1.86 (16.5)	2.25 (19.9)	3.23 (28.6)	3.82 (33.8)	4.61 (40.8)	5.49 (48.6)	6.17 (54.6)	7.35 (65.1)	7.84 (69.4)	
Rotational direction			Same as motor rotational direction												Reverse to motor rotational direction									

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

* For external dimensions of the decimal gear head, refer to page B-448.

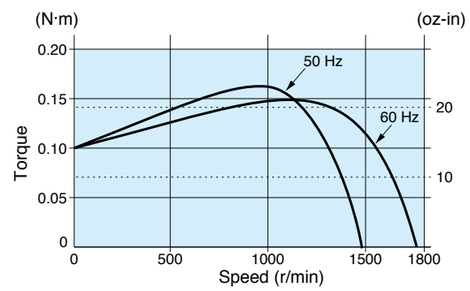
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N·m	7.84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

M81X15G4L



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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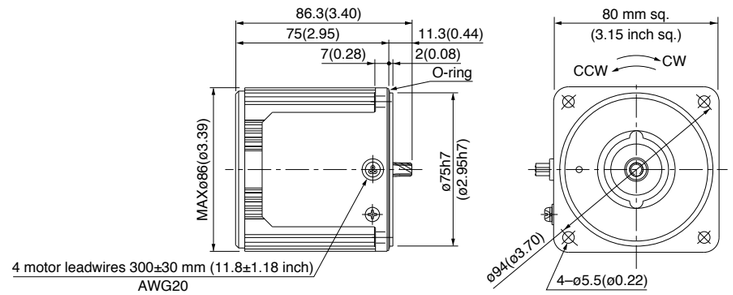
Motor (dimensions)

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

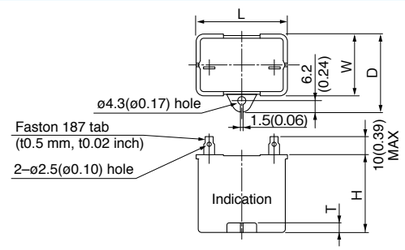
M81X15G4L 4P 15 W 100 V
M81X15G4Y 4P 15 W 200 V

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



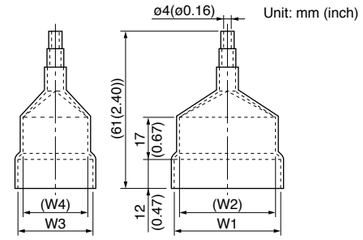
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

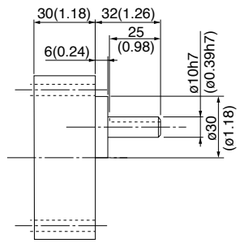
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M81X15G4L	M0PC4M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)
M81X15G4Y	M0PC1M40	39.5 (1.56)	16.2 (0.64)	27 (1.06)	27 (1.06)	4 (0.16)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

* Capacitors (single item) can also be purchased.

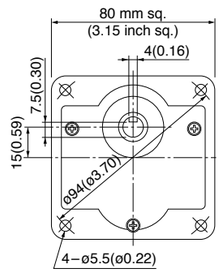
Gear head (dimensions)

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

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



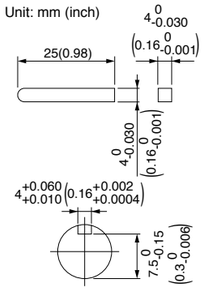
MX8G□M (metal bearing) Mass 0.6 kg(1.32 lb)



Key and keyway (dimensions) [attachment]

MX8G□B(M)

Unit: mm (inch)



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

Gear head combination B-59 | Round shaft motor B-61 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

80 mm (3.15 inch) sq. 25 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
80 mm sq.	M81X25G4L	4	25	100	50	Cont.	51	0.55	1250	0.19 (26.9)	0.98	0.16 (22.7)	6 (200 V)
					60		49	0.48	1550	0.15 (21.2)	0.94	0.16 (22.7)	
	M81X25G4Y	4	25	200	50	Cont.	51	0.27	1250	0.19 (26.9)	0.50	0.16 (22.7)	1.5 (400 V)
					60		49	0.24	1575	0.15 (21.2)	0.47	0.16 (22.7)	

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

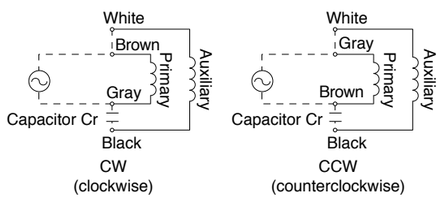
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head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

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

* For external dimensions of the decimal gear head, refer to page B-448.

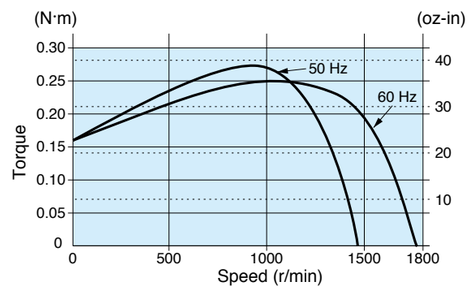
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N·m	7.84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

M81X25G4L



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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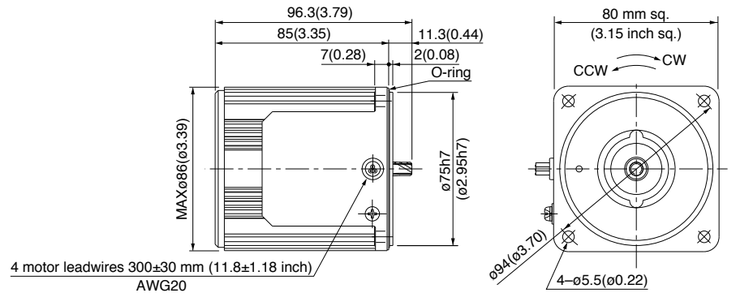
Motor (dimensions)

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

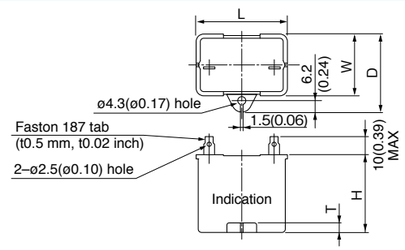
M81X25G4L 4P 25 W 100 V
M81X25G4Y 4P 25 W 200 V

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



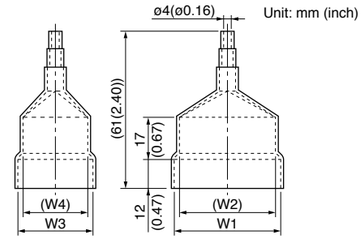
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

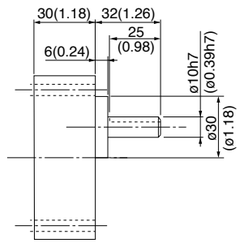
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M81X25G4L	M0PC6M20	39.5 (1.56)	17.5 (0.69)	28 (1.10)	30.5 (1.20)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)
M81X25G4Y	M0PC1.5M40	39.5 (1.56)	22 (0.87)	32.5 (1.28)	32.5 (1.28)	4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

* Capacitors (single item) can also be purchased.

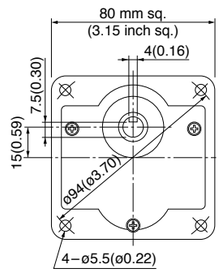
Gear head (dimensions)

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

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



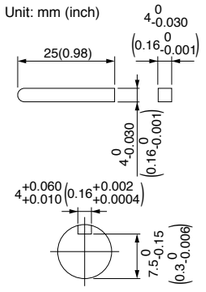
MX8G□M (metal bearing) Mass 0.6 kg(1.32 lb)



Key and keyway (dimensions) [attachment]

MX8G□B(M)

Unit: mm (inch)



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

Gear head combination B-59 | Round shaft motor B-61 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

80 mm (3.15 inch) sq. 25 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
80 mm sq.	M81X25G4LG M81X25G4LGA	4	25	100	50	Cont.	55	0.59	1250	0.19 (26.9)	1.1	0.16 (22.7)	8 (250 V)
					60		50	0.50	1575	0.15 (21.2)	1.0	0.16 (22.7)	
	M81X25G4DG M81X25G4DGA	4	25	110	60	Cont.	52	0.50	1575	0.15 (21.2)	1.1	0.14 (19.8)	6 (250 V)
				115	60		53	0.50	1600	0.15 (21.2)	1.1	0.15 (21.2)	
	M81X25G4YG M81X25G4YGA	4	25	200	50	Cont.	54	0.27	1200	0.20 (28.3)	0.43	0.16 (22.7)	2.1 (450 V)
					60		54	0.27	1550	0.15 (21.2)	0.42	0.16 (22.7)	
	M81X25G4GG M81X25G4GGA	4	25	220	50	Cont.	59	0.29	1200	0.20 (28.3)	0.46	0.15 (21.2)	1.5 (450 V)
					60		51	0.23	1550	0.15 (21.2)	0.44	0.15 (21.2)	
				230	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)**

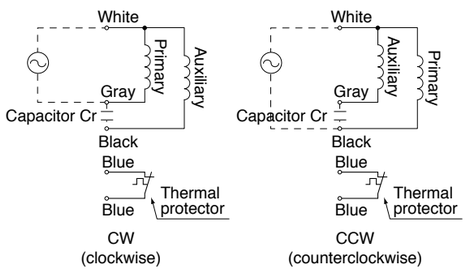
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head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

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

* For external dimensions of the decimal gear head, refer to page B-448.

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

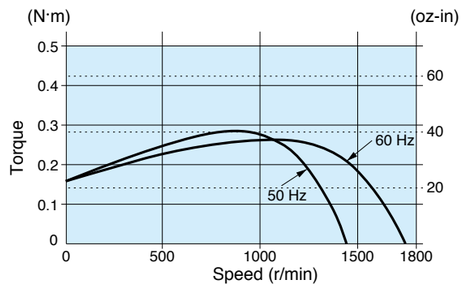
Connection diagram



(Refer to page A-60 for connection of thermal protector.)

Speed-torque characteristics

M81X25G4LG(A)



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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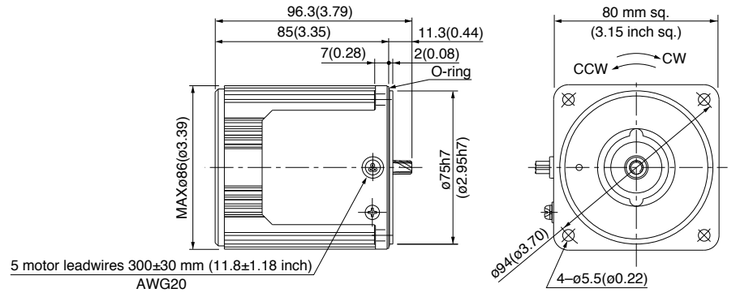
Motor (dimensions)

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

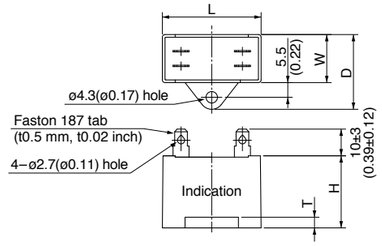
M81X25G4LG(A) 4P 25 W 100 V
M81X25G4DG(A) 4P 25 W 110 V / 115 V
M81X25G4YG(A) 4P 25 W 200 V
M81X25G4GG(A) 4P 25 W 220 V / 230 V

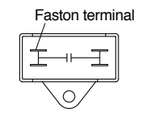
Mass	Helical gear	Module	Number of teeth
1.5 kg 3.31 lb		0.5	9



Capacitor (dimensions) [attachment]

Unit: mm (inch)

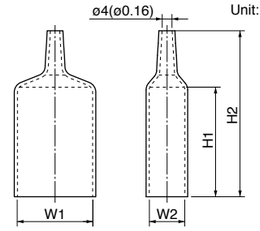




Internal wiring diagram of capacitor

Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

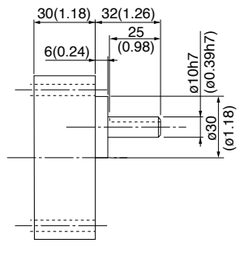
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M81X25G4LG(A)	M0PC8M25G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC4821G	48 (1.89)	21 (0.83)	55 (2.17)	78 (3.07)
M81X25G4DG(A)	M0PC6M25G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)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

• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

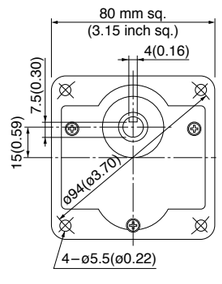
Gear head (dimensions)

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

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



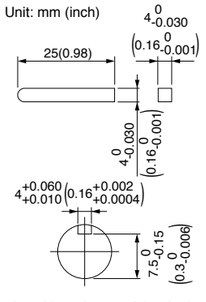
MX8G□M (metal bearing) Mass 0.6 kg(1.32 lb)



Key and keyway (dimensions) [attachment]

MX8G□B(M)

Unit: mm (inch)



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

Gear head combination B-59 | Round shaft motor B-61 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

90 mm (3.54 inch) sq. 40 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90 mm sq.	M91X40G4L	4	40	100	50	Cont.	78	0.86	1225	0.30 (42.5)	1.5	0.24 (34.0)	10 (200 V)
					60		72	0.72	1550	0.25 (35.4)	1.5	0.25 (35.4)	
	M91X40G4Y	4	40	200	50	Cont.	79	0.43	1250	0.30 (42.5)	0.83	0.25 (35.4)	2.5 (400 V)
					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-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)**

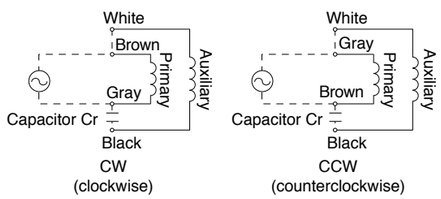
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head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

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

* For external dimensions of the decimal gear head, refer to page B-448.

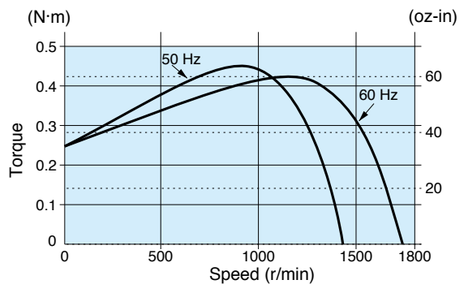
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	Permissible torque	N·m (lb-in)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

Connection diagram



Speed-torque characteristics

M91X40G4L



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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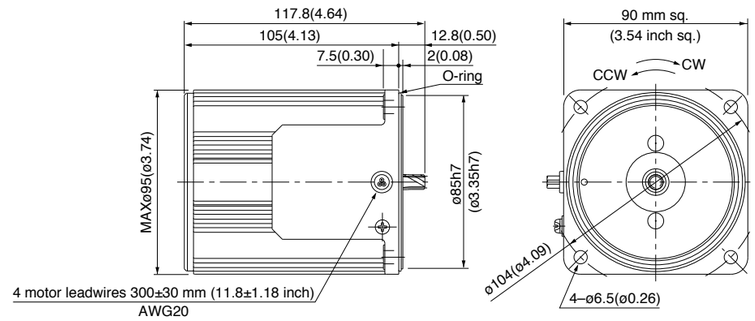
Motor (dimensions)

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

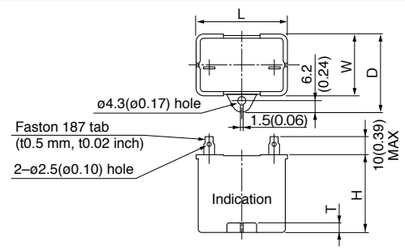
M91X40G4L 4P 40 W 100 V
M91X40G4Y 4P 40 W 200 V

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



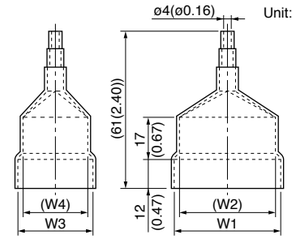
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

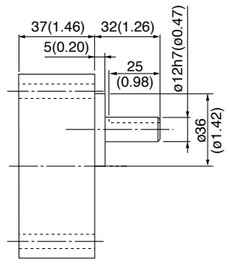
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M91X40G4L	M0PC10M20	39.5 (1.56)	26.7 (1.05)	37 (1.46)	32 (1.26)	4 (0.16)	M0PC3926	39.5 (1.56)	37.5 (1.48)	26 (1.02)	25 (0.98)
M91X40G4Y	M0PC2.5M40	49.7 (1.96)	24 (0.94)	34.5 (1.36)	34.5 (1.36)	4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

* Capacitors (single item) can also be purchased.

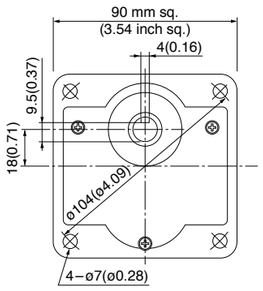
Gear head (dimensions)

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

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



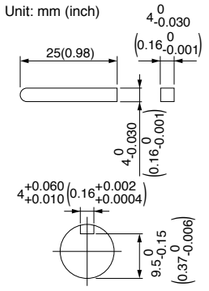
MX9G□M (metal bearing) Mass 0.8 kg(1.76 lb)



Key and keyway (dimensions) [attachment]

MX9G□B(M)

Unit: mm (inch)



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

Gear head combination B-59 | Round shaft motor B-61 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

90 mm (3.54 inch) sq. 40 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90 mm sq.	M91X40G4LG M91X40G4LGA	4	40	100	50	Cont.	76	0.83	1250	0.31 (43.9)	1.7	0.26 (36.8)	12 (250 V)
					60		70	0.70	1600	0.24 (34.0)	1.5	0.26 (36.8)	
	M91X40G4DG M91X40G4DGA	4	40	110	60	Cont.	72	0.67	1625	0.24 (34.0)	1.7	0.26 (36.8)	10 (250 V)
				115	60		74	0.68	1625	0.24 (34.0)	1.8	0.27 (38.2)	
	M91X40G4YG M91X40G4YGA	4	40	200	50	Cont.	77	0.39	1175	0.33 (46.7)	0.64	0.26 (36.8)	3 (450 V)
					60		77	0.39	1525	0.25 (35.4)	0.62	0.26 (36.8)	
	M91X40G4GG M91X40G4GGA	4	40	220	50	Cont.	78	0.37	1250	0.31 (43.9)	0.69	0.26 (36.8)	2.5 (450 V)
					60		74	0.34	1575	0.24 (34.0)	0.65	0.26 (36.8)	
				230	50		79	0.37	1275	0.30 (42.5)	0.72	0.28 (39.6)	
					60		77	0.33	1600	0.24 (34.0)	0.68	0.28 (39.6)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-61.
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

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

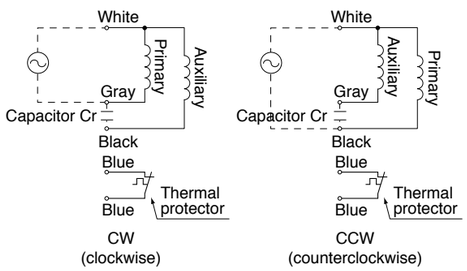
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head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

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

* For external dimensions of the decimal gear head, refer to page B-448.

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

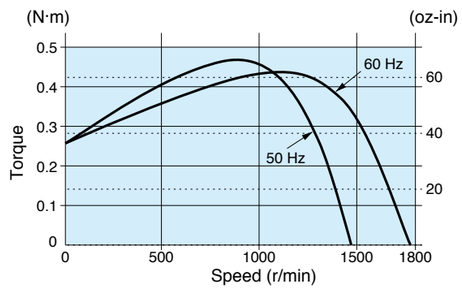
Connection diagram



(Refer to page A-60 for connection of thermal protector.)

Speed-torque characteristics

M91X40G4LG(A)



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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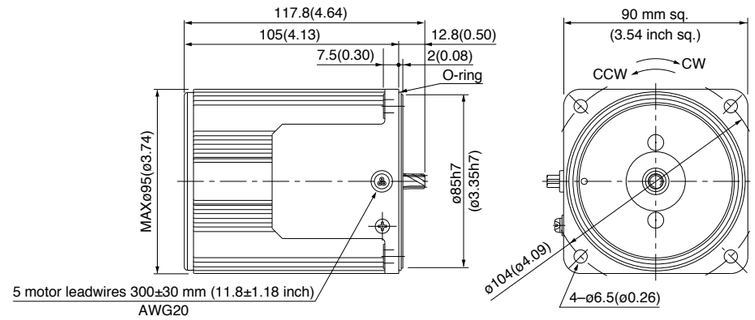
Motor (dimensions)

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

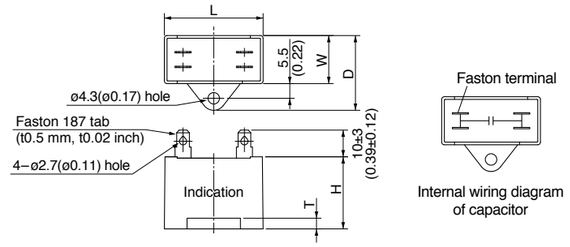
M91X40G4LG(A) 4P 40 W 100 V
M91X40G4DG(A) 4P 40 W 110 V / 115 V
M91X40G4YG(A) 4P 40 W 200 V
M91X40G4GG(A) 4P 40 W 220 V / 230 V

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



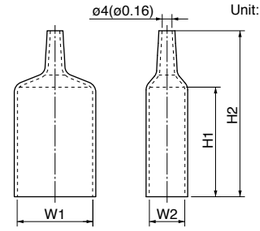
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

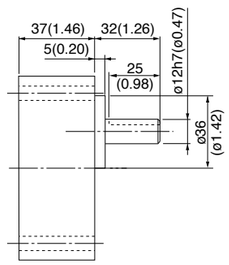
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M91X40G4LG(A)	M0PC12M25G	58 (2.28)	22 (0.87)	32 (1.26)	35 (1.38)	4 (0.16)	M0PC5822G	58 (2.28)	22 (0.87)	55 (2.17)	78 (3.07)
M91X40G4DG(A)	M0PC10M25G	58 (2.28)	21 (0.83)	31 (1.22)	31 (1.22)	4 (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)	M0PC5821G	58 (2.28)	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.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

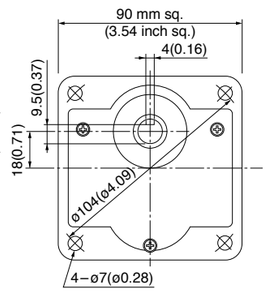
Gear head (dimensions)

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

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

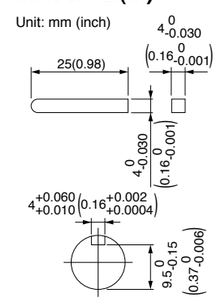


MX9G□M (metal bearing) Mass 0.8 kg(1.76 lb)



Key and keyway (dimensions) [attachment]

MX9G□B(M)



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

Gear head combination B-59 | Round shaft motor B-61 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

90 mm (3.54 inch) sq. 60 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90 mm sq.	M91Z60G4L	4	60	100	50	Cont.	118	1.3	1250	0.46 (65.1)	2.2	0.41 (58.1)	15 (210 V)
					60		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 (400 V)
					60		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)**

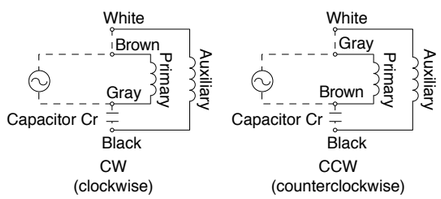
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable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

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

* For external dimensions of the decimal gear head, refer to page B-448.

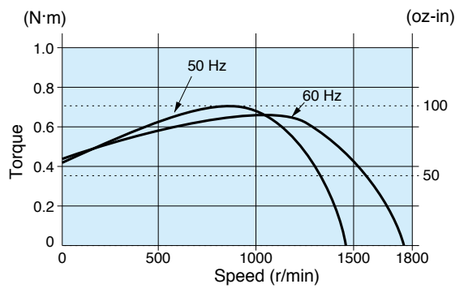
Applicable gear head		Reduction ratio		250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MZ9G□B (ball bearing / Hinge not attached) MY9G□B (ball bearing / Hinge attached)	MZ9G10XB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



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.

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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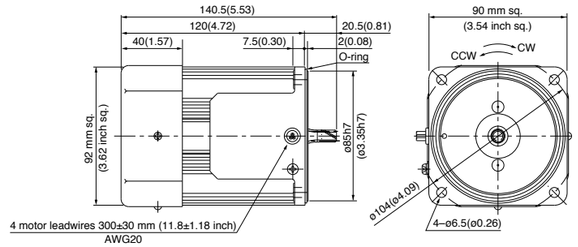
Motor (dimensions)

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

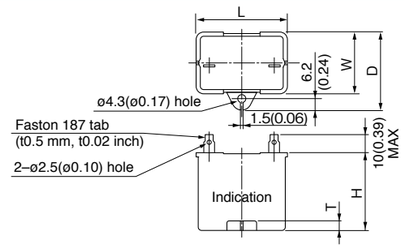
M91Z60G4L 4P 60 W 100 V (with fan)
M91Z60G4Y 4P 60 W 200 V (with fan)

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



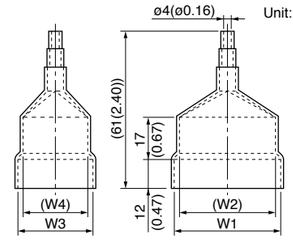
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

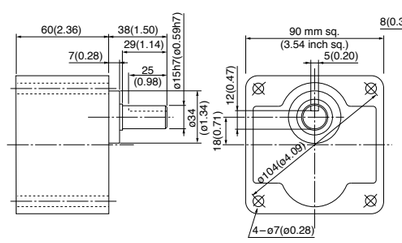
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M91Z60G4L	M0PC15M20	39.5 (1.56)	26.7 (1.05)	37 (1.46)	41 (1.61)	4 (0.16)	M0PC3926	39.5 (1.56)	37.5 (1.48)	26 (1.02)	25 (0.98)
M91Z60G4Y	M0PC3.8M40	50 (1.97)	26.7 (1.05)	37.5 (1.48)	38 (1.50)	4 (0.16)	M0PC5026	50 (1.97)	48 (1.89)	26 (1.02)	22 (0.87)

* Capacitors (single item) can also be purchased.

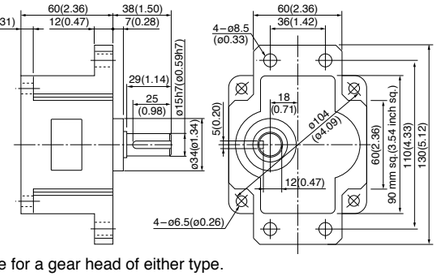
Gear head (dimensions)

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

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



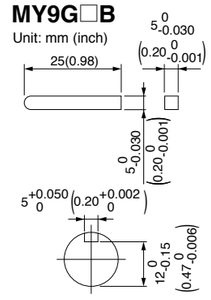
MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg(3.09 lb)



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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B
Unit: mm (inch)



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

Gear head combination B-59 | Round shaft motor B-62 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

90 mm (3.54 inch) sq. 60 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
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 (250 V)
					60		112	1.2	1575	0.36 (51.0)	2.3	0.44 (62.3)	
	M91Z60G4DG M91Z60G4DGA	4	60	110	60	Cont.	120	1.1	1625	0.35 (49.6)	2.5	0.49 (69.4)	18 (250 V)
				115	60		127	1.2	1625	0.35 (49.6)	2.6	0.53 (75.1)	
	M91Z60G4YG M91Z60G4YGA	4	60	200	50	Cont.	114	0.57	1225	0.47 (66.6)	1.0	0.44 (62.3)	5 (450 V)
					60		122	0.62	1550	0.37 (52.4)	1.0	0.44 (62.3)	
	M91Z60G4GG M91Z60G4GGA	4	60	220	50	Cont.	121	0.58	1275	0.45 (63.7)	1.1	0.49 (69.4)	4.5 (450 V)
					60		120	0.55	1600	0.36 (51.0)	1.1	0.49 (69.4)	
				230	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)	
	M91Z60G4GGB M91Z60G4GGC	4	60	220	50	Cont.	106	0.48	1350	0.42 (4.3)	1.0	0.40 (4.0)	4.5 (450 V)
					60		123	0.59	1650	0.34 (3.5)	0.97	0.40 (4.0)	
				230	50		112	0.49	1375	0.42 (4.3)	1.1	0.43 (4.4)	
					60		128	0.59	1675	0.34 (3.5)	1.0	0.43 (4.4)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-62.
• The models with a motor model number to which "A" 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)**

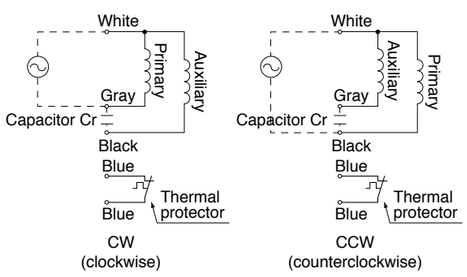
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable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

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

* For external dimensions of the decimal gear head, refer to page B-448.

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

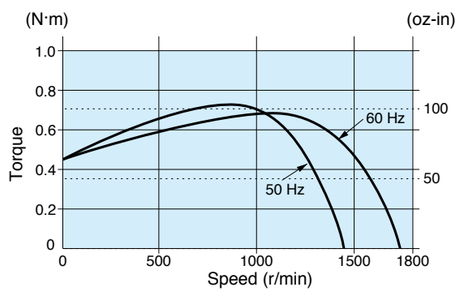
Connection diagram



(Refer to page A-60 for connection of thermal protector.)

Speed-torque characteristics

M91Z60G4LG(A)



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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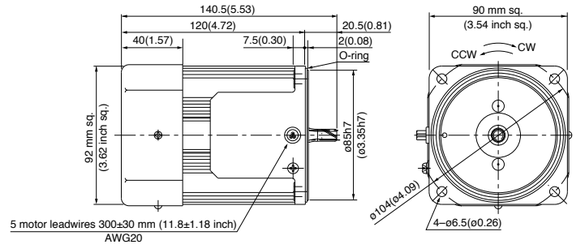
Motor (dimensions)

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

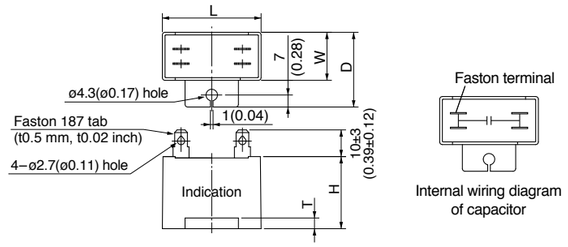
M91Z60G4LG(A)	4P	60 W	100 V (with fan)	
M91Z60G4DG(A)	4P	60 W	110 V / 115 V (with fan)	
M91Z60G4YG(A)	4P	60 W	200 V (with fan)	
M91Z60G4GG(A)	4P	60 W	220 V / 230 V (with fan)	
M91Z60G4GGB	4P	60 W	220 V / 230 V (with fan)	
M91Z60G4GGC	4P	60 W	220 V / 230 V (with fan)	

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



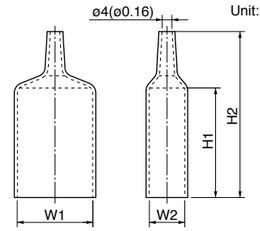
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

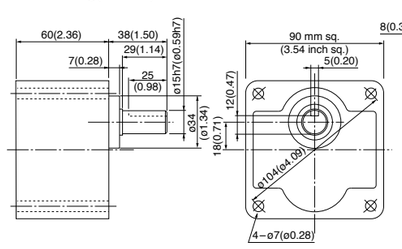
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M91Z60G4LG(A)	M0PC20M25G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)
M91Z60G4DG(A)	M0PC18M25G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (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) M91Z60G4GGB M91Z60G4GGC	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" or "B" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

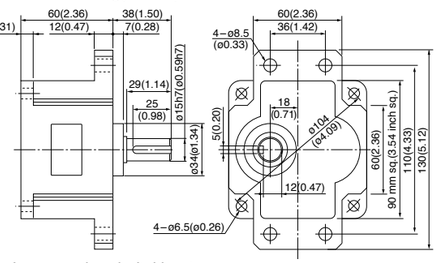
Gear head (dimensions)

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

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

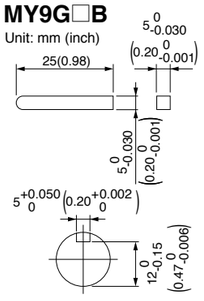


MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg(3.09 lb)



Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B
Unit: mm (inch)



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

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

Gear head combination B-59 | Round shaft motor B-62 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (leadwire)

90 mm (3.54 inch) sq. 90 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90 mm sq.	M91Z90G4L	4	90	100	50	Cont.	153	1.6	1325	0.65 (92.0)	3.3	0.47 (66.6)	25 (200 V)
					60		160	1.6	1625	0.53 (75.1)	3.0	0.47 (66.6)	
	M91Z90G4Y	4	90	200	50	Cont.	150	0.75	1325	0.62 (87.8)	1.7	0.47 (66.6)	5.8 (400 V)
					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			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable gear head	MZ9G3B to MZ9G200B (ball bearing / hinge not attached)	50 Hz	1.37 (12.1)	1.67 (14.8)	2.25 (19.9)	2.74 (24.3)	3.43 (30.4)	4.12 (36.5)	4.51 (39.9)	5.68 (50.3)	6.76 (59.8)	8.04 (71.2)	9.02 (79.8)	10.9 (96.5)	13.0 (115)	15.7 (139)	19.6 (173)	19.6 (173)							
	MY9G3B to MY9G200B (ball bearing / hinge attached)	60 Hz	1.18 (10.4)	1.37 (12.1)	1.86 (16.5)	2.25 (19.9)	2.84 (25.1)	3.43 (30.4)	3.72 (32.9)	4.70 (41.6)	5.68 (50.3)	6.76 (59.8)	7.55 (66.8)	9.21 (81.5)	10.9 (96.5)	13.0 (115)	18.3 (162)	19.6 (173)							
Rotational direction			Same as motor rotational direction							Reverse to motor rotational direction						Same as motor rotational direction									

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

* For external dimensions of the decimal gear head, refer to page B-448.

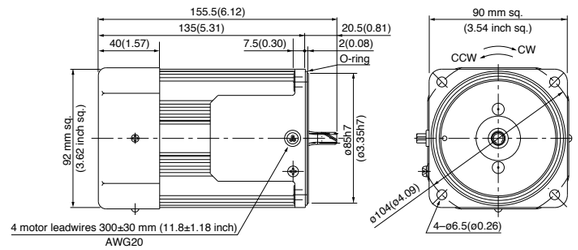
Applicable gear head		Reduction ratio		250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	MZ9G10XB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

Motor (dimensions)

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

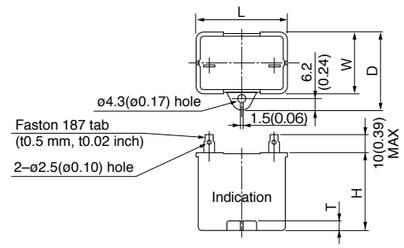
M91Z90G4L 4P 90 W 100 V (with fan)
M91Z90G4Y 4P 90 W 200 V (with fan)

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



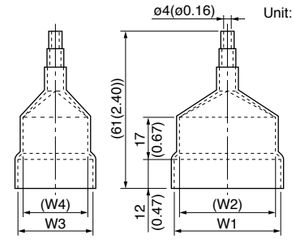
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



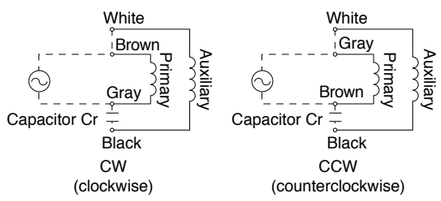
• Capacitor dimension list

Unit: upper (mm) / lower (inch)

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

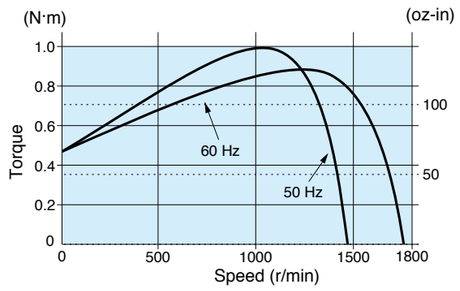
* Capacitors (single item) can also be purchased.

Connection diagram



Speed-torque characteristics

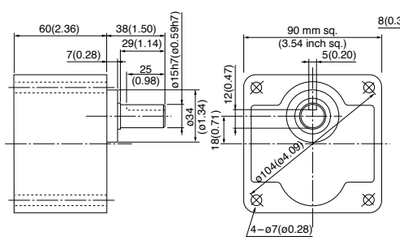
M91Z90G4L



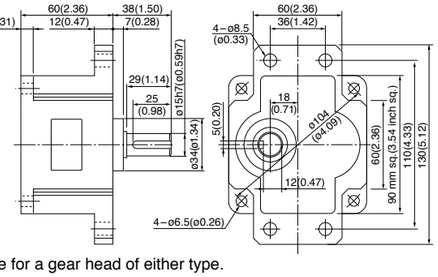
Gear head (dimensions)

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)

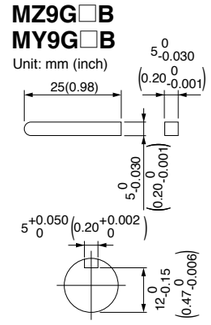


Note) MZ / MY is available for a gear head of either type.

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B

Unit: mm (inch)



(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.

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

Gear head combination B-59 | Round shaft motor B-62 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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.)

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Induction motor (leadwire)

90 mm (3.54 inch) sq. 90 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90 mm sq.	M91Z90G4LG M91Z90G4LGA	4	90	100	50	Cont.	172	1.8	1250	0.69 (97.7)	3.0	0.65 (92.0)	30 (250 V)
					60		177	1.8	1575	0.55 (77.9)	2.8	0.65 (92.0)	
	M91Z90G4DG M91Z90G4DGA	4	90	110	60	Cont.	168	1.6	1600	0.54 (76.5)	3.0	0.65 (92.0)	25 (250 V)
				115	60		176	1.6	1600	0.54 (76.5)	3.1	0.72 (102.0)	
	M91Z90G4YG M91Z90G4YGA	4	90	200	50	Cont.	170	0.85	1225	0.70 (99.1)	1.4	0.65 (92.0)	7.5 (450 V)
					60		188	0.97	1550	0.55 (77.9)	1.4	0.65 (92.0)	
	M91Z90G4GG M91Z90G4GGA	4	90	220	50	Cont.	176	0.85	1225	0.70 (99.1)	1.5	0.63 (89.2)	6 (450 V)
					60		167	0.76	1575	0.55 (77.9)	1.4	0.65 (92.0)	
				230	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 (102.0)	
	M91Z90G4GGB M91Z90G4GGC	4	90	220	50	Cont.	153	0.70	1325	0.65 (92.0)	1.4	0.55 (77.9)	6 (450 V)
					60		169	0.81	1625	0.53 (75.1)	1.3	0.56 (79.3)	
				230	50		159	0.70	1350	0.64 (90.6)	1.5	0.61 (86.4)	
					60		176	0.81	1650	0.52 (73.6)	1.4	0.63 (89.2)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-62.
• The models with a motor model number to which "A" 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)**

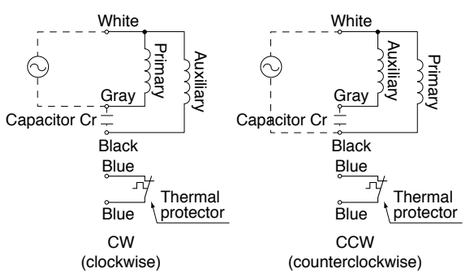
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable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

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

* For external dimensions of the decimal gear head, refer to page B-448.

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

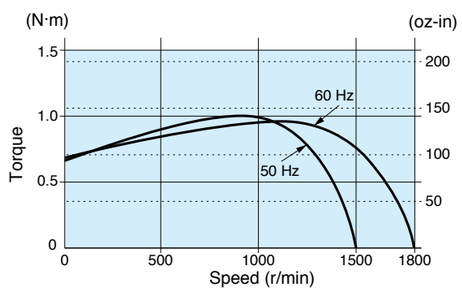
Connection diagram



(Refer to page A-60 for connection of thermal protector.)

Speed-torque characteristics

M91Z90G4LG(A)



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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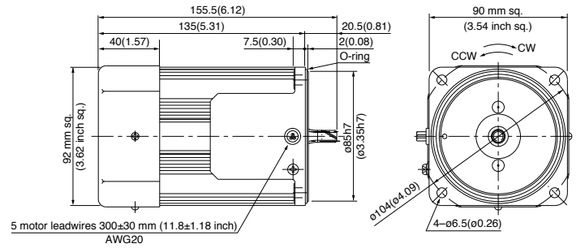
Motor (dimensions)

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

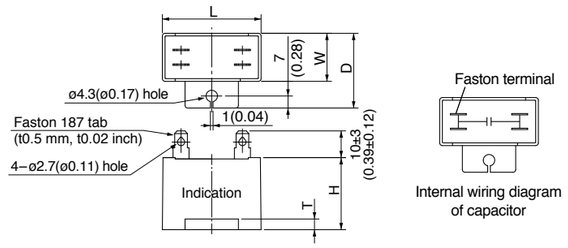
M91Z90G4LG(A)	4P	90 W	100 V (with fan)	
M91Z90G4DG(A)	4P	90 W	110 V / 115 V (with fan)	
M91Z90G4YG(A)	4P	90 W	200 V (with fan)	
M91Z90G4GG(A)	4P	90 W	220 V / 230 V (with fan)	
M91Z90G4GGB	4P	90 W	220 V / 230 V (with fan)	
M91Z90G4GGC	4P	90 W	220 V / 230 V (with fan)	

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



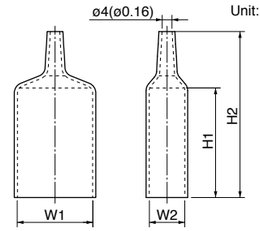
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
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) M91Z90G4GGB M91Z90G4GGC	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)

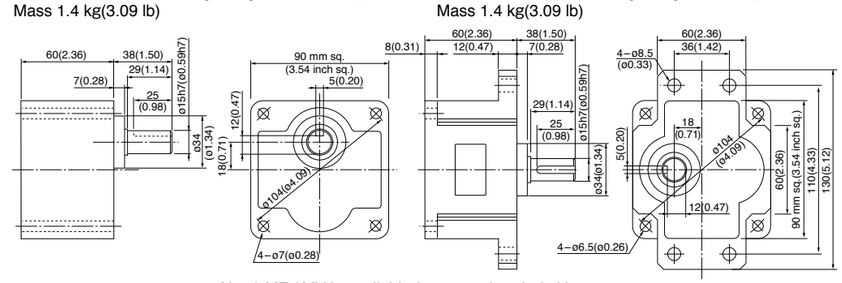
• The models with a motor model number to which "A" or "B" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

Gear head (dimensions)

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

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

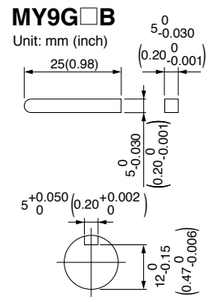
MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg(3.09 lb)



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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B
Unit: mm (inch)



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

Gear head combination B-59 | Round shaft motor B-62 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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• Specifications

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

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-62.

• Permissible torque at output shaft of gear head

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

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

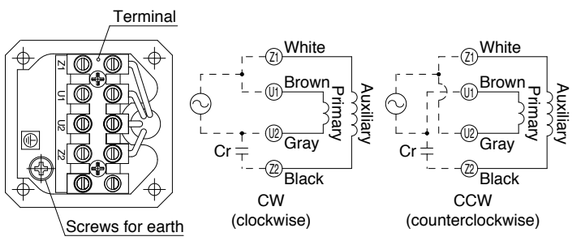
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head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

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

* For external dimensions of the decimal gear head, refer to page B-448.

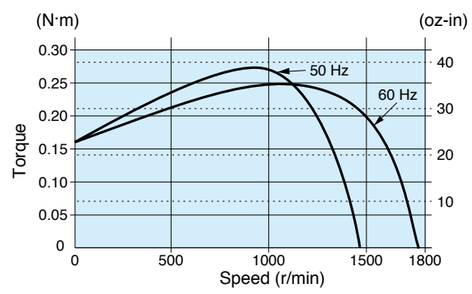
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N·m	7.84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

M81X25GK4L



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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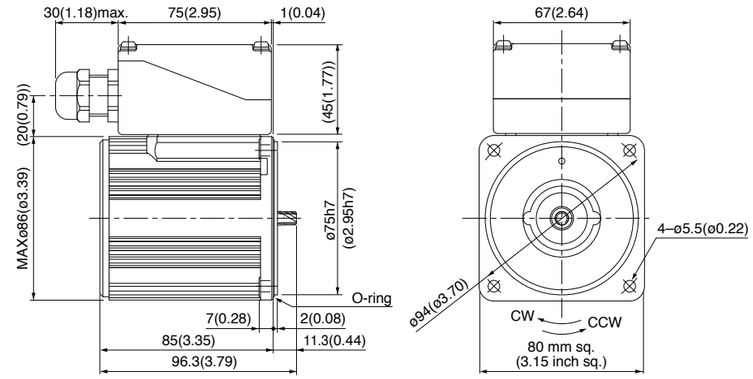
Motor (dimensions)

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

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

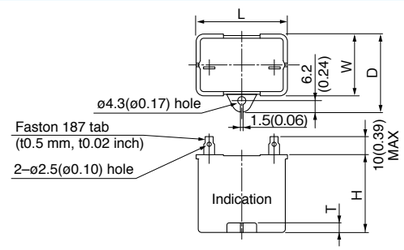
Mass	Helical gear	Module	Number of teeth
1.8 kg 3.97 lb		0.5	9



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

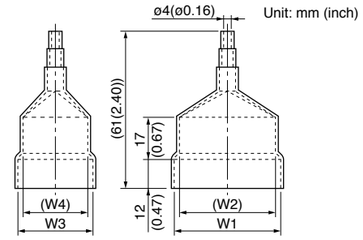
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

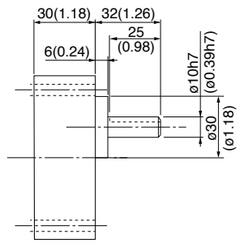
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M81X25GK4L	M0PC6M20	39.5 (1.56)	17.5 (0.69)	28 (1.10)	30.5 (1.20)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)
M81X25GK4Y	M0PC1.5M40	39.5 (1.56)	22 (0.87)	32.5 (1.28)	32.5 (1.28)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

* Capacitors (single item) can also be purchased.

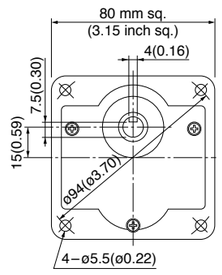
Gear head (dimensions)

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

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



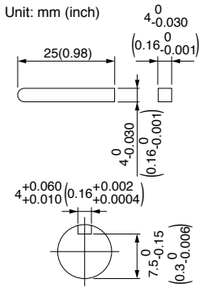
MX8G□M (metal bearing) Mass 0.6 kg(1.32 lb)



Key and keyway (dimensions) [attachment]

MX8G□B(M)

Unit: mm (inch)



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

Gear head combination B-60 | Round shaft motor B-62 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (sealed connector)

80 mm (3.15 inch) sq. 25 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
80 mm sq.	M81X25GK4LG M81X25GK4LGA	4	25	100	50	Cont.	55	0.59	1250	0.19 (26.9)	1.1	0.16 (22.7)	8 (250 V)
					60		50	0.50	1575	0.15 (21.2)	1.0	0.16 (22.7)	
	M81X25GK4DG M81X25GK4DGA	4	25	110	60	Cont.	52	0.50	1575	0.15 (21.2)	1.1	0.14 (19.8)	6 (250 V)
				115	60		53	0.50	1600	0.15 (21.2)	1.1	0.15 (21.2)	
	M81X25GK4YG M81X25GK4YGA	4	25	200	50	Cont.	54	0.27	1200	0.20 (28.3)	0.43	0.16 (22.7)	2.1 (450 V)
					60		54	0.27	1550	0.15 (21.2)	0.42	0.16 (22.7)	
	M81X25GK4GG M81X25GK4GGA	4	25	220	50	Cont.	59	0.29	1200	0.20 (28.3)	0.46	0.15 (21.2)	1.5 (450 V)
					60		51	0.23	1550	0.15 (21.2)	0.44	0.15 (21.2)	
				230	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)**

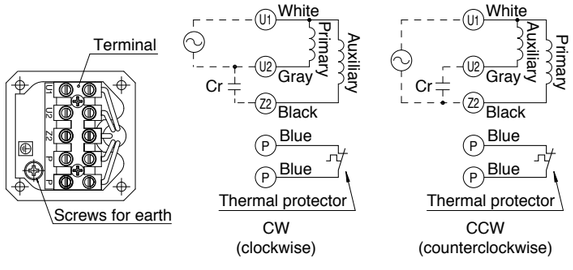
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head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

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

* For external dimensions of the decimal gear head, refer to page B-448.

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

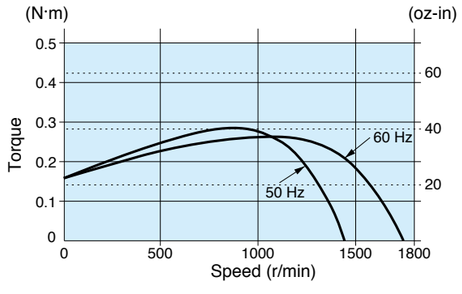
Connection diagram



(Refer to page A-60 for connection of thermal protector.)

Speed-torque characteristics

M81X25GK4LG(A)



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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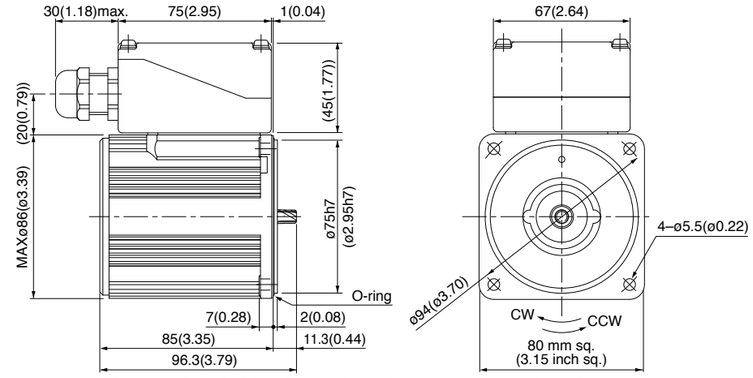
Motor (dimensions)

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

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

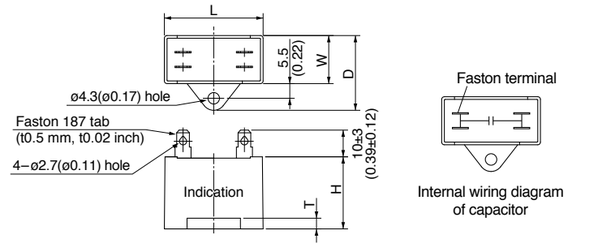
Mass	Helical gear	Module	Number of teeth
1.8 kg 3.97 lb		0.5	9



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

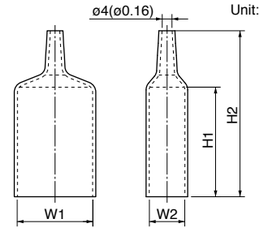
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

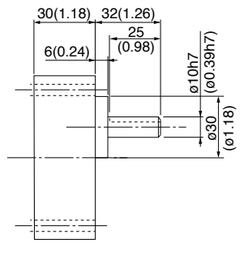
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M81X25GK4LG(A)	M0PC8M25G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC4821G	48 (1.89)	21 (0.83)	55 (2.17)	78 (3.07)
M81X25GK4DG(A)	M0PC6M25G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4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

• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

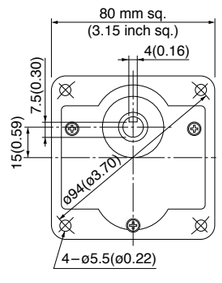
Gear head (dimensions)

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

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



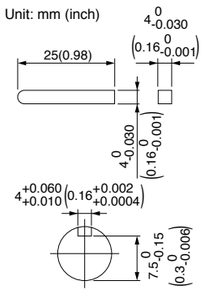
MX8G□M (metal bearing) Mass 0.6 kg(1.32 lb)



Key and keyway (dimensions) [attachment]

MX8G□B(M)

Unit: mm (inch)



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

Gear head combination B-60 | Round shaft motor B-62 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (sealed connector)

90 mm (3.54 inch) sq. 40 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90 mm sq.	M91X40GK4L	4	40	100	50	Cont.	78	0.86	1225	0.30 (42.5)	1.5	0.24 (34.0)	10 (200 V)
					60		72	0.72	1550	0.25 (35.4)	1.5	0.25 (35.4)	
	M91X40GK4Y	4	40	200	50	Cont.	79	0.43	1250	0.30 (42.5)	0.83	0.25 (35.4)	2.5 (400 V)
					60		72	0.36	1575	0.24 (34.0)	0.76	0.25 (35.4)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-62.

• Permissible torque at output shaft of gear head

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

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

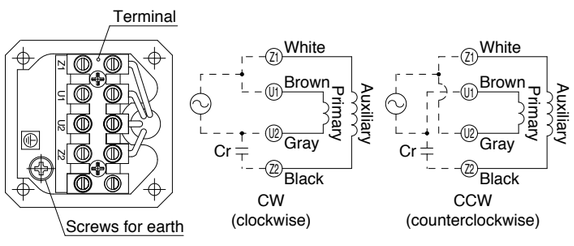
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head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

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

* For external dimensions of the decimal gear head, refer to page B-448.

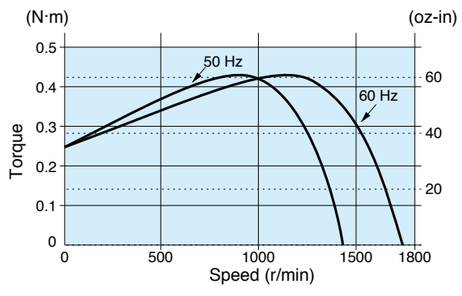
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	Permissible torque	N·m (lb-in)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

Connection diagram



Speed-torque characteristics

M91X40GK4L



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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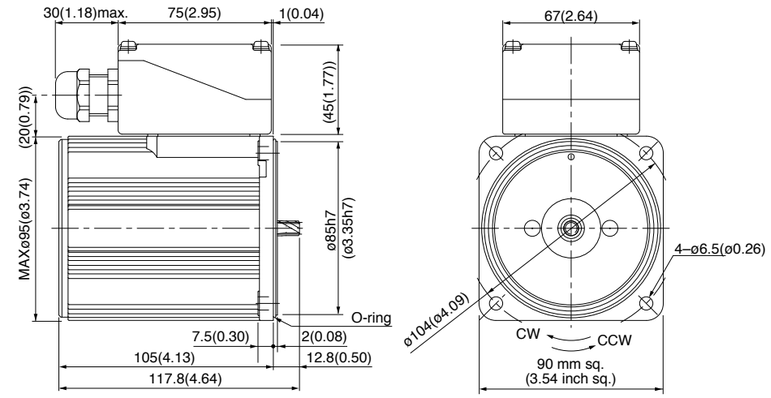
Motor (dimensions)

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

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

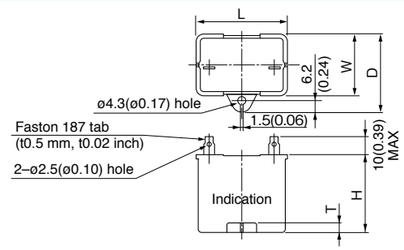
Mass	Helical gear	Module	Number of teeth
2.8 kg 6.17 lb		0.55	9



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

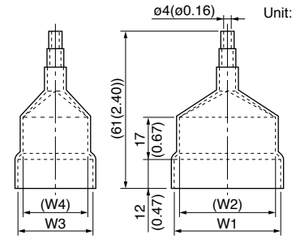
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

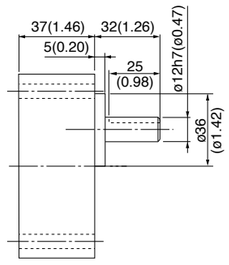
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M91X40GK4L	M0PC10M20	39.5 (1.56)	26.7 (1.05)	37 (1.46)	32 (1.26)	4 (0.16)	M0PC3926	39.5 (1.56)	37.5 (1.48)	26 (1.02)	25 (0.98)
M91X40GK4Y	M0PC2.5M40	49.7 (1.96)	24 (0.94)	34.5 (1.36)	34.5 (1.36)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

* Capacitors (single item) can also be purchased.

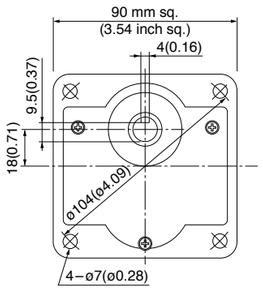
Gear head (dimensions)

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

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



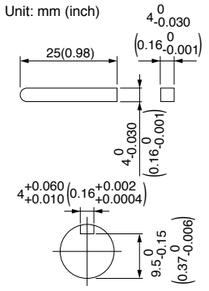
MX9G□M (metal bearing) Mass 0.8 kg(1.76 lb)



Key and keyway (dimensions) [attachment]

MX9G□B(M)

Unit: mm (inch)



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

Gear head combination B-60 | Round shaft motor B-62 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (sealed connector)

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

• 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.
• 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)**

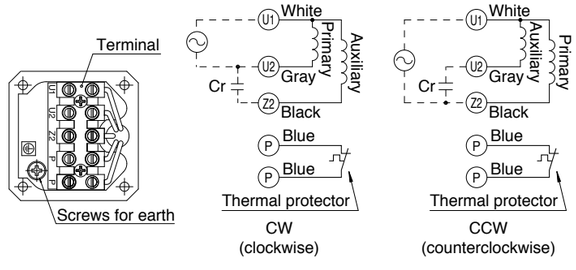
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head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

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

* For external dimensions of the decimal gear head, refer to page B-448.

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

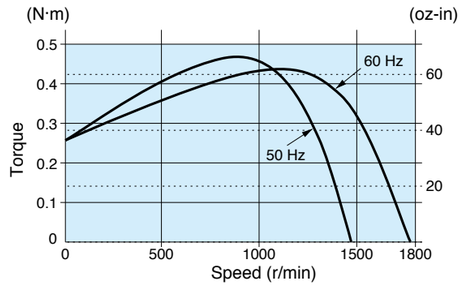
Connection diagram



(Refer to page A-60 for connection of thermal protector.)

Speed-torque characteristics

M91X40GK4LG(A)



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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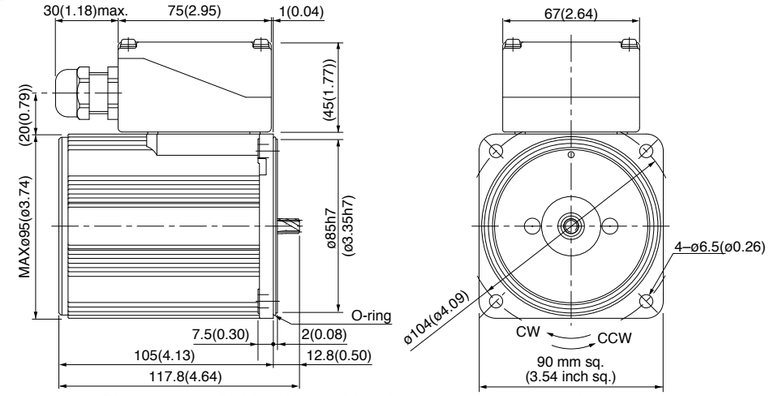
Motor (dimensions)

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

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

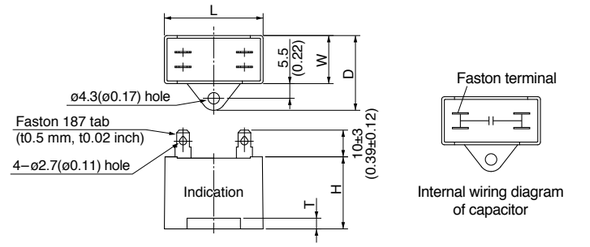
Mass	Helical gear	Module	Number of teeth
2.8 kg 6.17 lb		0.55	9



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

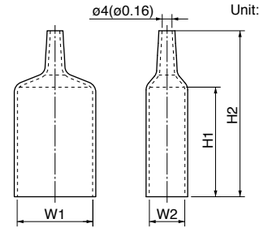
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

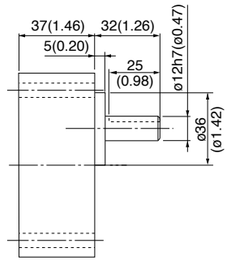
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M91X40GK4LG(A)	M0PC12M25G	58 (2.28)	22 (0.87)	32 (1.26)	35 (1.38)	4 (0.16)	M0PC5822G	58 (2.28)	22 (0.87)	55 (2.17)	78 (3.07)
M91X40GK4DG(A)	M0PC10M25G	58 (2.28)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC5821G	58 (2.28)	21 (0.83)	55 (2.17)	78 (3.07)
M91X40GK4YG(A)	M0PC3M45G	58 (2.28)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC5821G	58 (2.28)	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.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

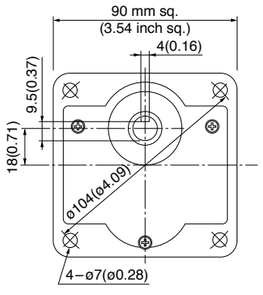
Gear head (dimensions)

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

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

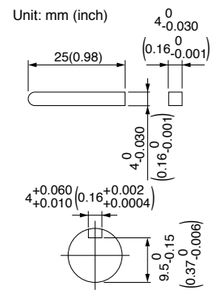


MX9G□M (metal bearing) Mass 0.8 kg(1.76 lb)



Key and keyway (dimensions) [attachment]

MX9G□B(M)



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

Gear head combination B-60 | Round shaft motor B-62 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (sealed connector)

90 mm (3.54 inch) sq. 60 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90 mm sq.	M91Z60GK4L	4	60	100	50	Cont.	118	1.3	1250	0.46 (65.1)	2.2	0.41 (58.1)	15 (210 V)
					60		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 (400 V)
					60		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)**

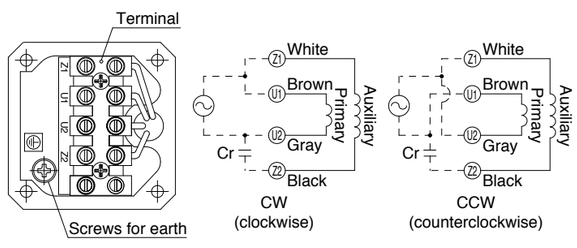
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable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

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

* For external dimensions of the decimal gear head, refer to page B-448.

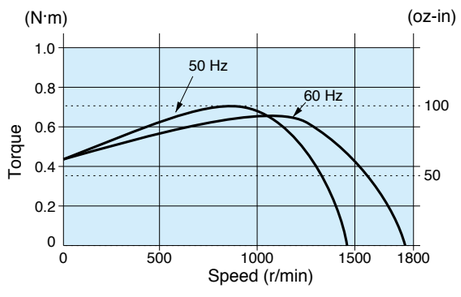
Applicable gear head		Reduction ratio		250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MZ9G□B (ball bearing / Hinge not attached) MY9G□B (ball bearing / Hinge attached)	MZ9G10XB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



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.

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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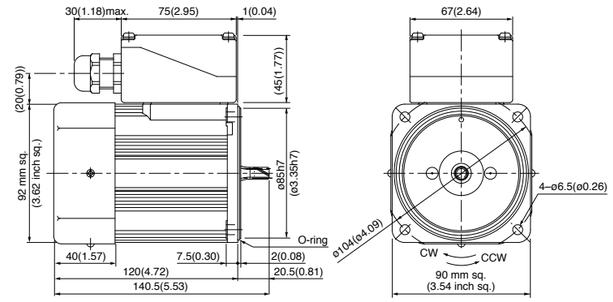
Motor (dimensions)

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

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

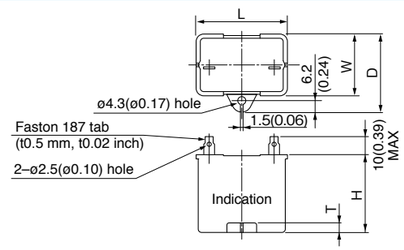
Mass	Helical gear	Module	Number of teeth
3.0 kg 6.61 lb		0.6	9



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

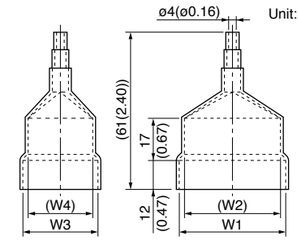
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

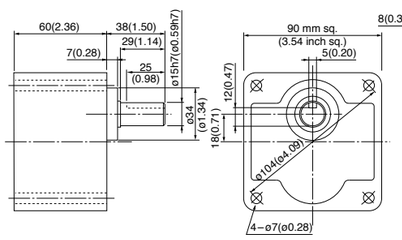
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M91Z60GK4L	M0PC15M20	39.5 (1.56)	26.7 (1.05)	37 (1.46)	41 (1.61)	4 (0.16)	M0PC3926	39.5 (1.56)	37.5 (1.48)	26 (1.02)	25 (0.98)
M91Z60GK4Y	M0PC3.8M40	50 (1.97)	26.7 (1.05)	37.5 (1.48)	38 (1.50)	4 (0.16)	M0PC5026	50 (1.97)	48 (1.89)	26 (1.02)	22 (0.87)

* Capacitors (single item) can also be purchased.

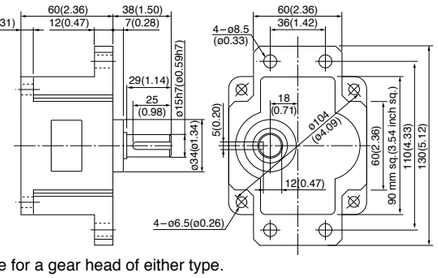
Gear head (dimensions)

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

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



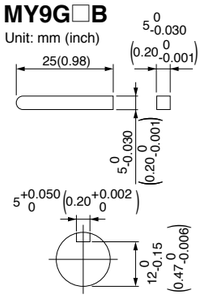
MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg(3.09 lb)



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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B
Unit: mm (inch)



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

Gear head combination B-60 | Round shaft motor B-62 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (sealed connector)

90 mm (3.54 inch) sq. 60 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90 mm sq.	M91Z60GK4LG	4	60	100	50	Cont.	119	1.3	1250	0.46 (65.1)	2.4	0.44 (62.3)	20 (250 V)
	M91Z60GK4LGA				60		112	1.2	1575	0.36 (51.0)	2.3	0.44 (62.3)	
	M91Z60GK4DG	4	60	110	60	Cont.	120	1.1	1625	0.35 (49.6)	2.5	0.49 (69.4)	18 (250 V)
	M91Z60GK4DGA			115	60		127	1.2	1625	0.35 (49.6)	2.6	0.53 (75.1)	
	M91Z60GK4YG	4	60	200	50	Cont.	114	0.57	1225	0.47 (66.6)	1.0	0.44 (62.3)	5 (450 V)
	M91Z60GK4YGA				60		122	0.62	1550	0.37 (52.4)	1.0	0.44 (62.3)	
	M91Z60GK4GG	4	60	220	50	Cont.	121	0.58	1275	0.45 (63.7)	1.1	0.49 (69.4)	4.5 (450 V)
	M91Z60GK4GGA				60		120	0.55	1600	0.36 (51.0)	1.1	0.49 (69.4)	
				230	50		129	0.61	1300	0.44 (62.3)	1.1	0.53 (75.1)	
					60		126	0.55	1625	0.35 (49.6)	1.1	0.53 (75.1)	
	M91Z60GK4GGB	4	60	220	50	Cont.	106	0.48	1350	0.42 (4.3)	1.0	0.40 (4.0)	4.5 (450 V)
	M91Z60GK4GGC				60		123	0.59	1650	0.34 (3.5)	0.97	0.40 (4.0)	
				230	50		112	0.49	1375	0.42 (4.3)	1.1	0.43 (4.4)	
					60		128	0.59	1675	0.34 (3.5)	1.0	0.43 (4.4)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-62.
• The models with a motor model number to which "A" 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)**

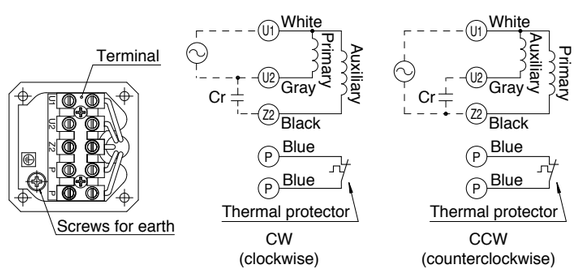
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable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

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

* For external dimensions of the decimal gear head, refer to page B-448.

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

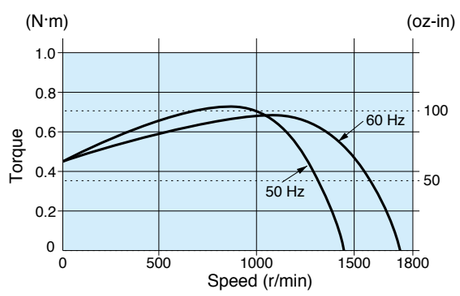
Connection diagram



(Refer to page A-60 for connection of thermal protector.)

Speed-torque characteristics

M91Z60GK4LG(A)



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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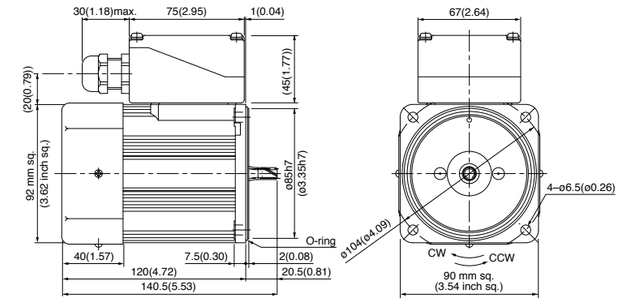
Motor (dimensions)

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

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

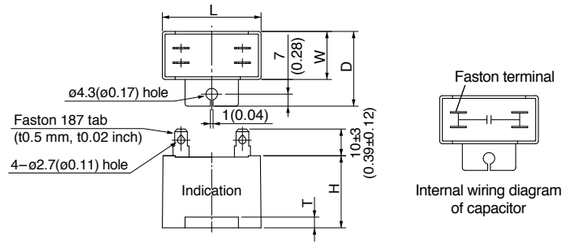
Mass	Helical gear	Module	Number of teeth
3.0 kg 6.61 lb		0.6	9



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

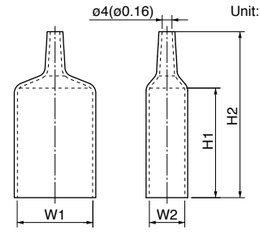
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

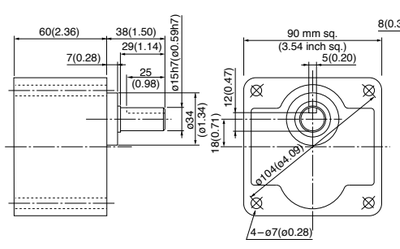
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M91Z60GK4LG(A)	M0PC20M25G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)
M91Z60GK4DG(A)	M0PC18M25G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)
M91Z60GK4YG(A)	M0PC5M45G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)
M91Z60GK4GG(A)	M0PC4.5M45G	58 (2.28)	23.5 (0.93)	38.5 (1.52)	37 (1.46)	4 (0.16)	M0PC5823G	58 (2.28)	23.5 (0.93)	55 (2.17)	78 (3.07)
M91Z60GK4GGB											
M91Z60GK4GGC											

• The models with a motor model number to which "A" or "B" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

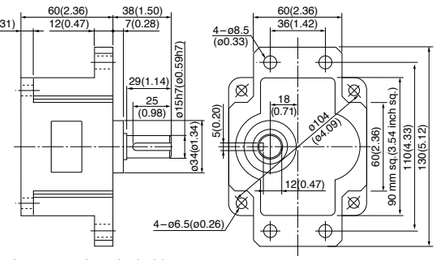
Gear head (dimensions)

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

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



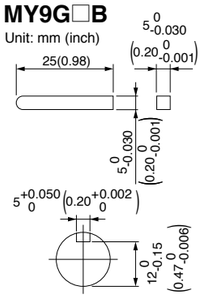
MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg(3.09 lb)



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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B
Unit: mm (inch)



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

Gear head combination B-60 | Round shaft motor B-62 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (sealed connector)

90 mm (3.54 inch) sq. 90 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (r/min)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90mm sq.	M91Z90GK4L	4	90	100	50	Cont.	153	1.6	1325	0.65 (92.0)	3.3	0.47 (66.6)	25 (200 V)
					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 (400 V)
					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			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable gear head	MZ9G3B to MZ9G200B (ball bearing / hinge not attached)	50 Hz	1.37 (12.1)	1.67 (14.8)	2.25 (19.9)	2.74 (24.3)	3.43 (30.4)	4.12 (36.5)	4.51 (39.9)	5.68 (50.3)	6.76 (59.8)	8.04 (71.2)	9.02 (79.8)	10.9 (96.5)	13.0 (115)	15.7 (139)	19.6 (173)	19.6 (173)							
	MY9G3B to MY9G200B (ball bearing / hinge attached)	60 Hz	1.18 (10.4)	1.37 (12.1)	1.86 (16.5)	2.25 (19.9)	2.84 (25.1)	3.43 (30.4)	3.72 (32.9)	4.70 (41.6)	5.68 (50.3)	6.76 (59.8)	7.55 (66.8)	9.21 (81.5)	10.9 (96.5)	13.0 (115)	18.3 (162)	19.6 (173)							
Rotational direction			Same as motor rotational direction							Reverse to motor rotational direction						Same as motor rotational direction									

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

＊For external dimensions of the decimal gear head, refer to page B-448.

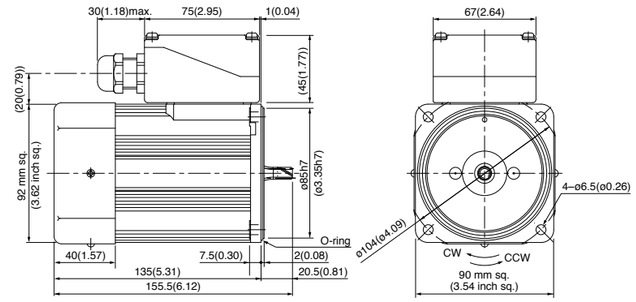
Applicable gear head		Reduction ratio		250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	MZ9G10XB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

Motor (dimensions)

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

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

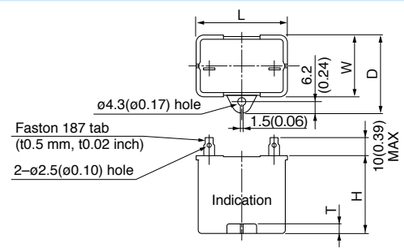
Mass	Helical gear	Module	Number of teeth
3.3 kg 7.28 lb		0.6	9



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

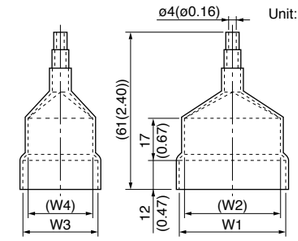
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



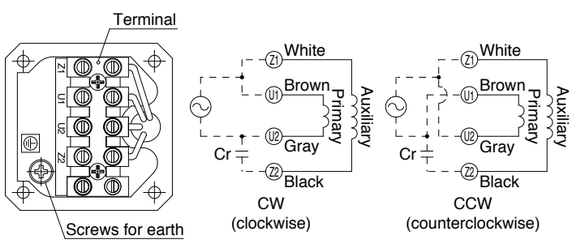
• Capacitor dimension list

Unit: upper (mm) / lower (inch)

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

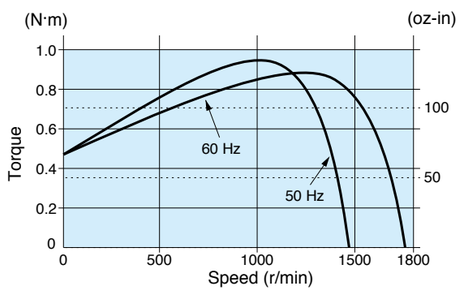
＊Capacitors (single item) can also be purchased.

Connection diagram



Speed-torque characteristics

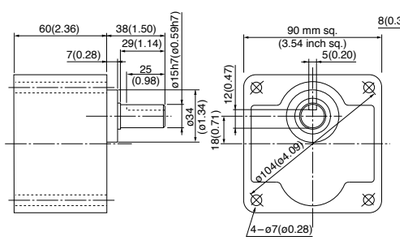
M91Z90GK4L



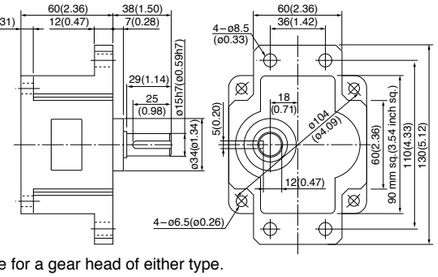
Gear head (dimensions)

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

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



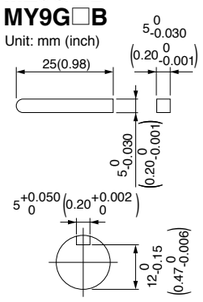
MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg(3.09 lb)



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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B
Unit: mm (inch)



(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.

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

Gear head combination B-60 | Round shaft motor B-62 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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Induction motor (sealed connector)

90 mm (3.54 inch) sq. 90 W

• Specifications

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

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-62.
• The models with a motor model number to which "A" 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)**

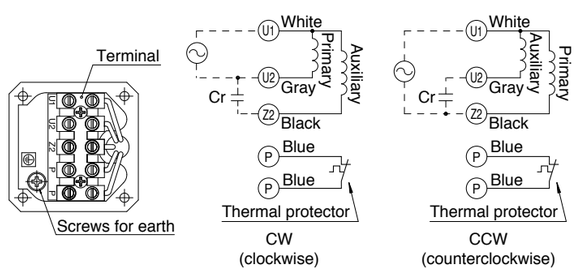
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable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

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

* For external dimensions of the decimal gear head, refer to page B-448.

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

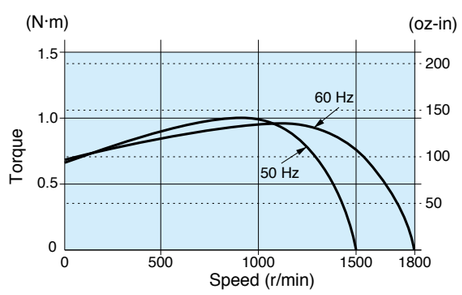
Connection diagram



(Refer to page A-60 for connection of thermal protector.)

Speed-torque characteristics

M91Z90GK4LG(A)



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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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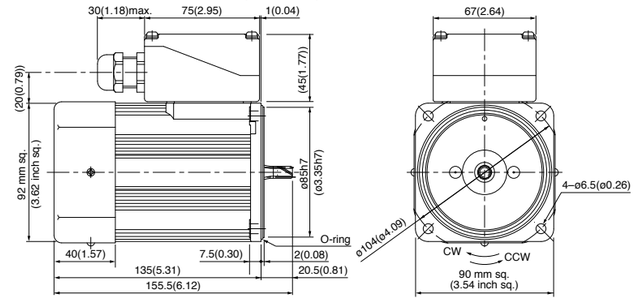
Motor (dimensions)

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

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

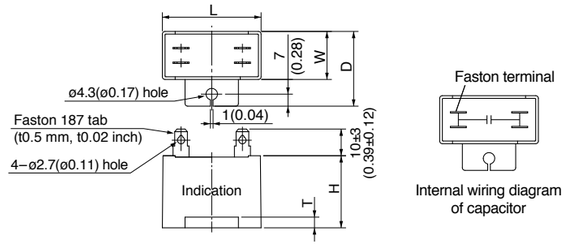
Mass	Helical gear	Module	Number of teeth
3.3 kg 7.28 lb		0.6	9



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

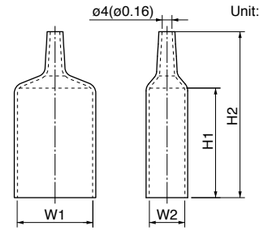
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
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) M91Z90GK4GGB M91Z90GK4GGC	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)

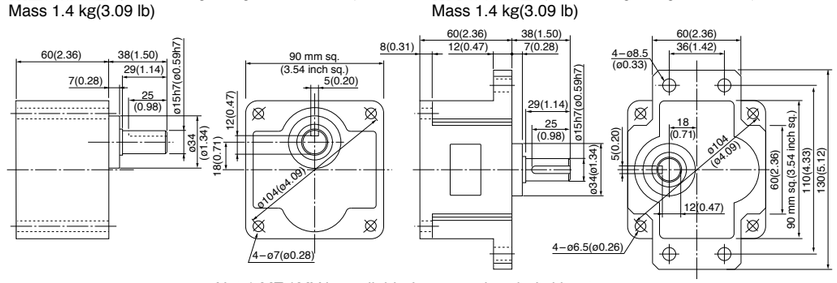
• The models with a motor model number to which "A" or "B" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

Gear head (dimensions)

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

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

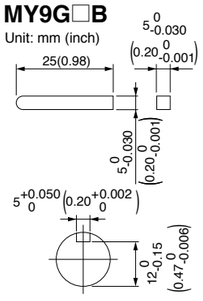
MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg(3.09 lb)



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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B
Unit: mm (inch)



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

Gear head combination B-60 | Round shaft motor B-62 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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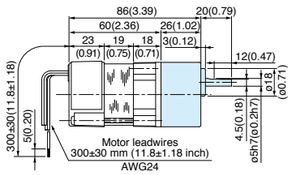
* Gear head is sold separately.

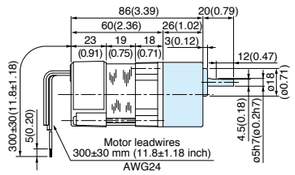
42 mm sq. (1.65 inch sq.) 3 W

M41A3G2L + M4GA□F



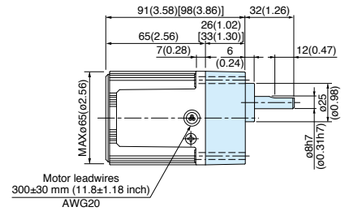
42 mm sq. (1.65 inch sq.) 1 W

M41A1G4L + M4GA□F



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

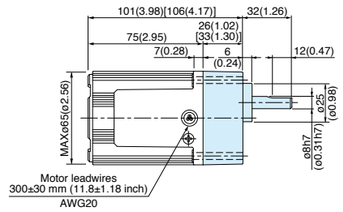
M61X3G4L + MX6G□BA(MA) / MX6G□B(M)



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

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

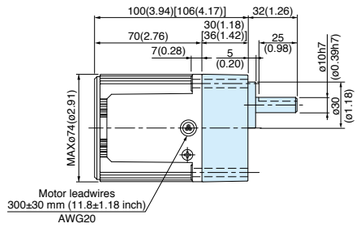
M61X6G4L + MX6G□BA(MA) / MX6G□B(M)
M61X6G4Y + MX6G□BA(MA) / MX6G□B(M)
M61X6G4LG(A) + MX6G□BA(MA) / MX6G□B(M)
M61X6G4DG(A) + MX6G□BA(MA) / MX6G□B(M)
M61X6G4YG(A) + MX6G□BA(MA) / MX6G□B(M)
M61X6G4GG(A) + MX6G□BA(MA) / MX6G□B(M)



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

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

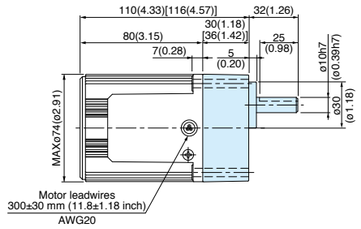
M71X10G4L + MX7G□BA(MA) / MX7G□B(M)
M71X10G4Y + MX7G□BA(MA) / MX7G□B(M)



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

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

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



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

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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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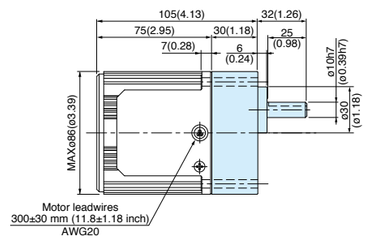
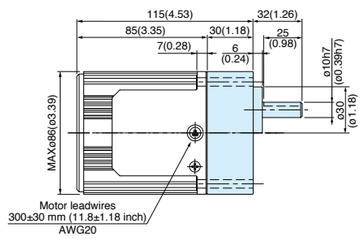
80 mm sq. (3.15 inch sq.) 15 W

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



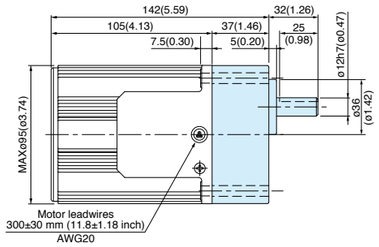
80 mm sq. (3.15 inch sq.) 25 W

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)



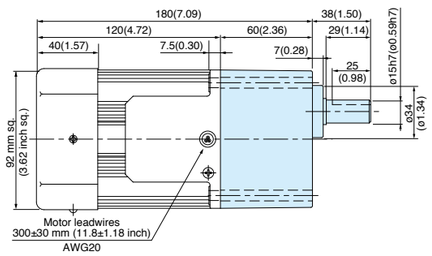
90 mm sq. (3.54 inch sq.) 40 W

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



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

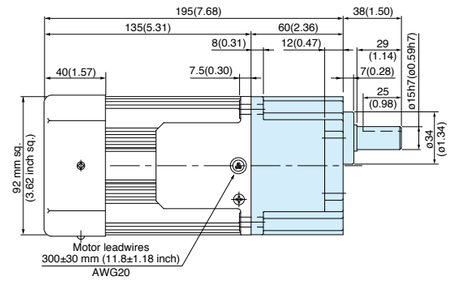
M91Z60G4L + MZ9G□B (MY9G□B)
M91Z60G4Y + MZ9G□B (MY9G□B)
M91Z60G4LG(A) + MZ9G□B (MY9G□B)
M91Z60G4DG(A) + MZ9G□B (MY9G□B)
M91Z60G4YG(A) + MZ9G□B (MY9G□B)
M91Z60G4GG(A) + MZ9G□B (MY9G□B)
M91Z60G4GGB + MZ9G□B (MY9G□B).
M91Z60G4GGC + MZ9G□B (MY9G□B).



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

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

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



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

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

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

Specifications B-8 to B-57 | Controls C-4 | Option D-2

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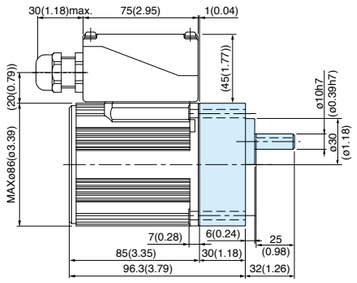
Induction motor (sealed connector) Gear head combination dimensions

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

＊Gear head is sold separately.

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

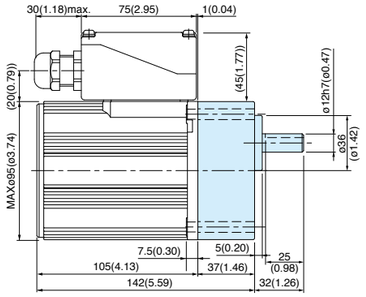
M81X25GK4L + MX8G□B(M)
M81X25GK4Y + MX8G□B(M)
M81X25GK4LG(A) + MX8G□B(M)
M81X25GK4DG(A) + MX8G□B(M)
M81X25GK4YG(A) + MX8G□B(M)
M81X25GK4GG(A) + MX8G□B(M)



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

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

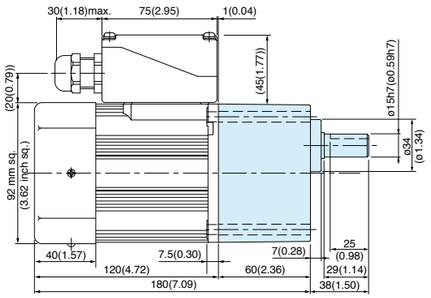
M91X40GK4L + MX9G□B(M)
M91X40GK4Y + MX9G□B(M)
M91X40GK4LG(A) + MX9G□B(M)
M91X40GK4DG(A) + MX9G□B(M)
M91X40GK4YG(A) + MX9G□B(M)
M91X40GK4GG(A) + MX9G□B(M)



＊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)
M91Z60GK4GGB + MZ9G□B (MY9G□B)
M91Z60GK4GGC + MZ9G□B (MY9G□B)

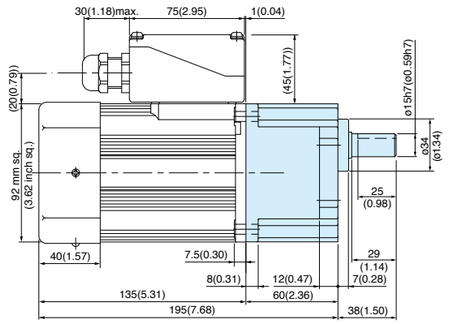


＊Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

＊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)
M91Z90GK4GGB + MY9G□B (MZ9G□B)
M91Z90GK4GGC + 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” or “B” is suffixed are not equipped with a capacitor cap.
＊The models with a motor model number to which “A” or “B” is suffixed are not sold or available in Japan.

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

Features B-2 System configuration B-3 Coding system B-3 Model list B-4

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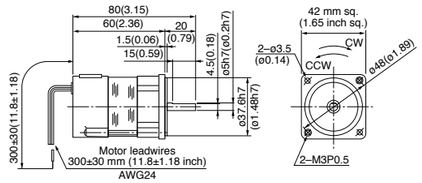
Induction motor (4-pole round shaft / leadwire) Dimensions

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

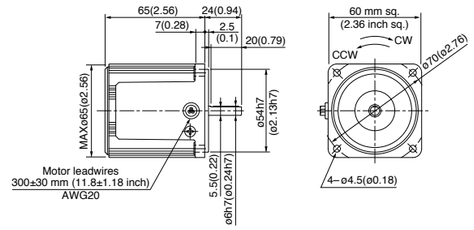
42 mm sq. (1.65 inch sq.) 1 W — Mass 0.3 kg (0.66 lb)

M41A1S4L



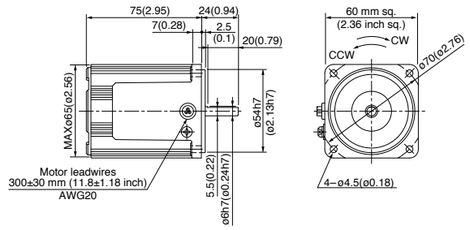
60 mm sq. (2.36 inch sq.) 3 W — Mass 0.56 kg (1.23 lb)

M61X3S4LS



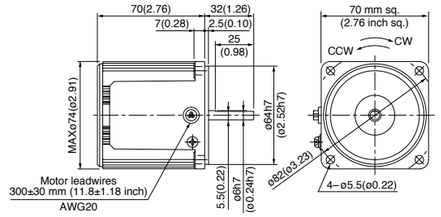
60 mm sq. (2.36 inch sq.) 6 W — Mass 0.67 kg (1.48 lb)

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



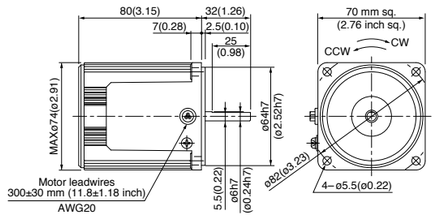
70 mm sq. (2.76 inch sq.) 10 W — Mass 0.84 kg (1.85 lb)

M71X10S4LS
M71X10S4YS



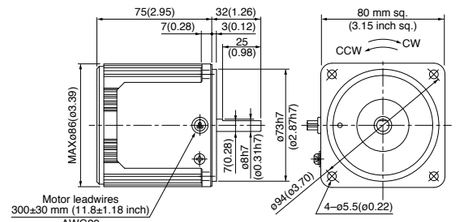
70 mm sq. (2.76 inch sq.) 15 W — Mass 1.1 kg (2.43 lb)

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



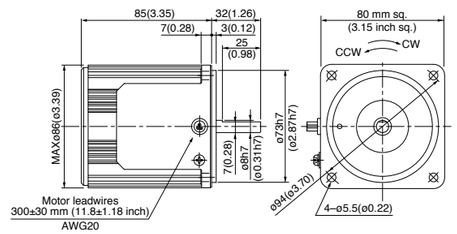
80 mm sq. (3.15 inch sq.) 15 W — Mass 1.2 kg (2.65 lb)

M81X15S4LS
M81X15S4YS



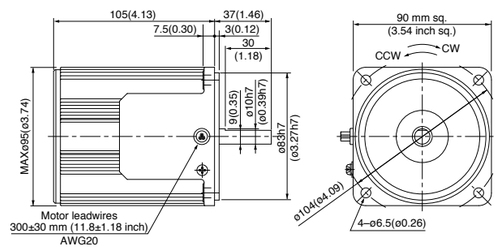
80 mm sq. (3.15 inch sq.) 25 W — Mass 1.5 kg (3.31 lb)

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



90 mm sq. (3.54 inch sq.) 40 W — Mass 2.4 kg (5.29 lb)

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



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

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

Specifications B-8 to B-57 Controls C-4 Option D-2

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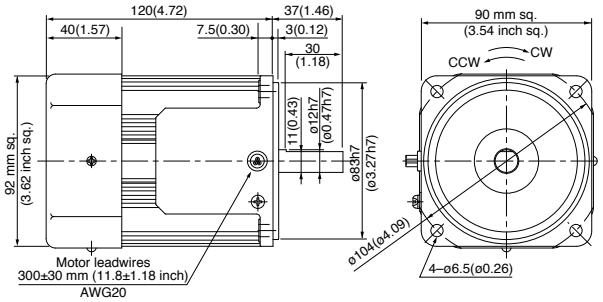
Induction motor (4-pole round shaft / leadwire)

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

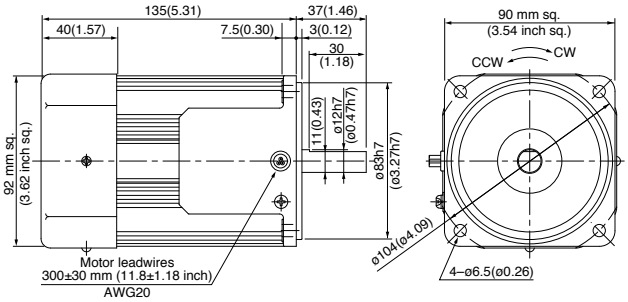
90 mm sq. (3.54 inch sq.) **60 W** Mass 2.7 kg (5.95 lb)

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



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

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

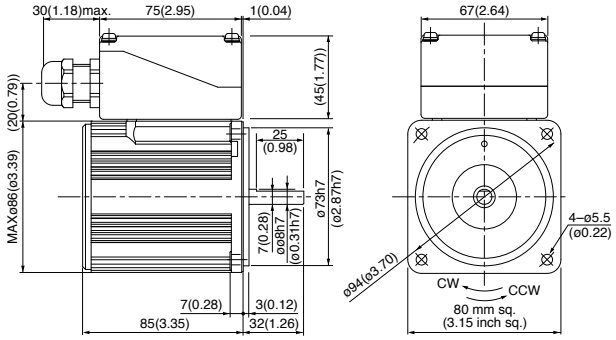


Induction motor (4-pole round shaft / sealed connector)

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

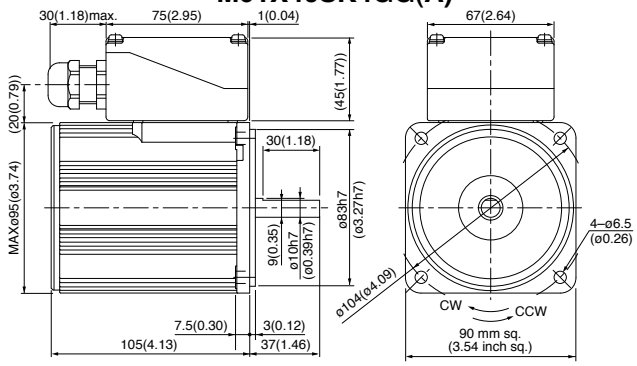
80 mm sq. (3.15 inch sq.) **25 W** Mass 1.8 kg (3.97 lb)

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



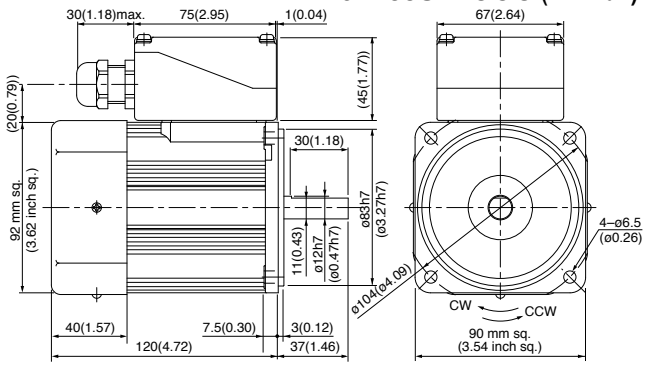
90 mm sq. (3.54 inch sq.) **40 W** Mass 2.8 kg (6.17 lb)

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



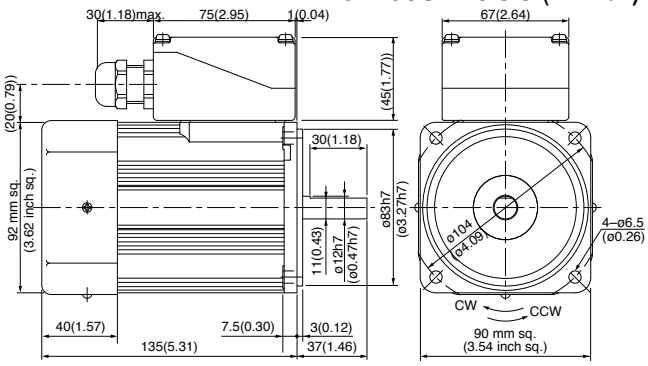
90 mm sq. (3.54 inch sq.) **60 W** Mass 3.0 kg (6.61 lb)

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



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

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



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

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

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

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

Features B-2 | System configuration B-3 | Coding system B-3 | Model list B-4

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