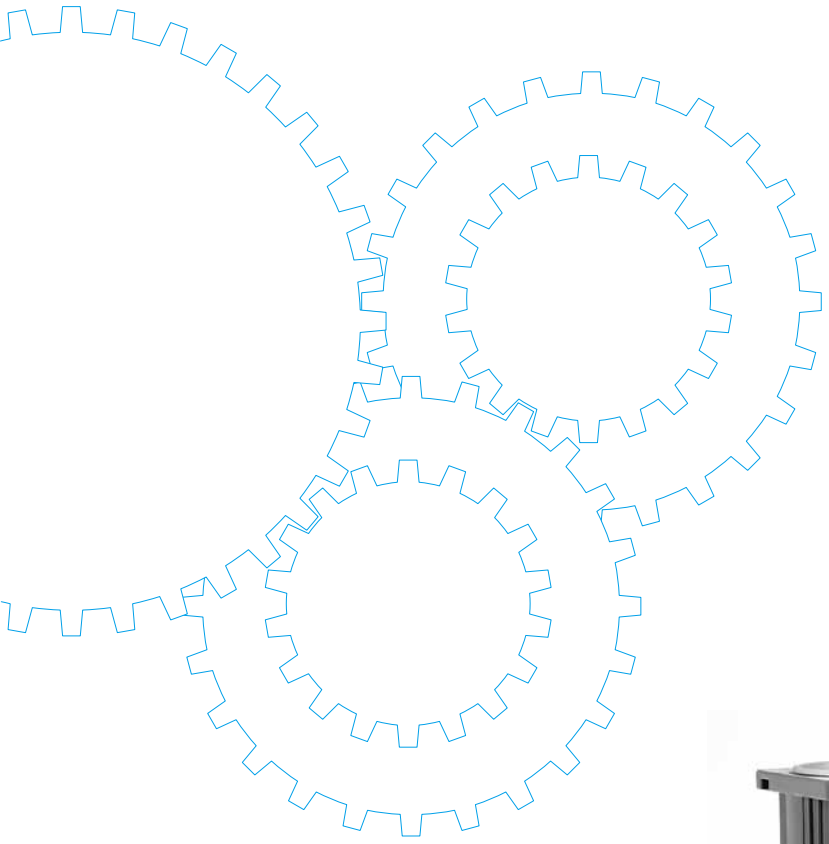
Reversible Motor



Contents

Outline of reversible motor

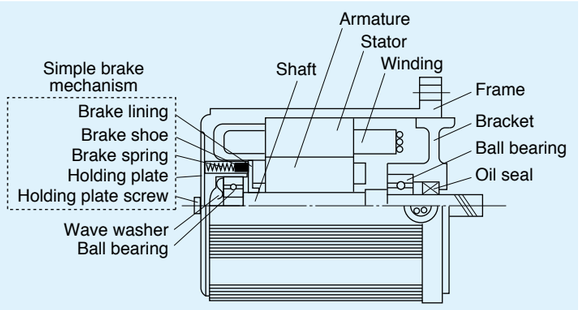
Features

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

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

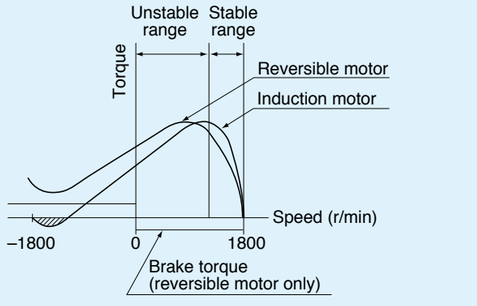
  (Note) • Limit the frequency of reversal operation to 6 cycles per minute.
  - If it is necessary that the frequency of reversal operation be 7 to 100 cycles per minute, use the C&B motor. (For running in one direction only)
  - For applications that need holding, use the electromagnetic brake motor.

Construction



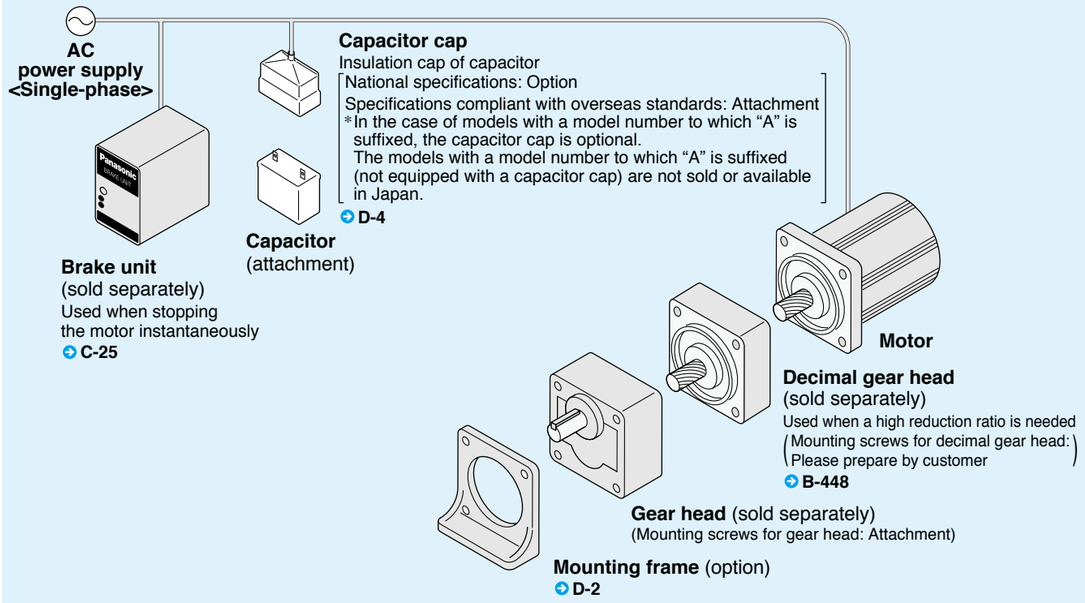
Characteristics

• Speed-torque characteristics



Note) Operation at 60 Hz

System configuration diagram



Coding system

M	9	R	X	40	G		4	L	G	A
	Size	Motor type	Output type	Output	Shape of shaft	Option	No. of poles	Voltage	Classification 1	Classification 2

- Size
  - 4 : 42 mm sq. (1.65 inch sq.)
  - 6 : 60 mm sq. (2.36 inch sq.)
  - 7 : 70 mm sq. (2.76 inch sq.)
  - 8 : 80 mm sq. (3.15 inch sq.)
  - 9 : 90 mm sq. (3.54 inch sq.)
- Motor type
  - R : Reversible motor <Single-phase motor>
- Output type
  - A : 42 mm sq. only (1.65 inch sq. only)
  - X : 40 W or smaller
  - Z : 60 W or larger
- Output
  - 1 : 1 W
  - 4 : 4 W
  - 6 : 6 W
  - 10 : 10 W
  - 15 : 15 W
  - 20 : 20 W
  - 25 : 25 W
  - 40 : 40 W
  - 60 : 60 W
  - 90 : 90 W
- Shape of shaft
  - G : Pinion shaft
  - S : Round shaft
- Option
  - K : Sealed connector (Left aligned when no option is used)
- No. of poles
  - 4 : 4 poles
- Voltage
  - L : Single-phase 100 V
  - Y : Single-phase 200 V
  - D : Single-phase 110 V/115 V
  - G : Single-phase 220 V/230 V
- Classification 1
  - G : Specifications compliant with overseas standards
  - S : Round shaft (S for round shaft with national specifications only)
- Classification 2
  - Motor with specifications compliant with overseas standards that is not equipped with a capacitor cap.

Corresponding model 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.

Outline of reversible motor

Overrun

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

• List of overruns of reversible motor

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

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

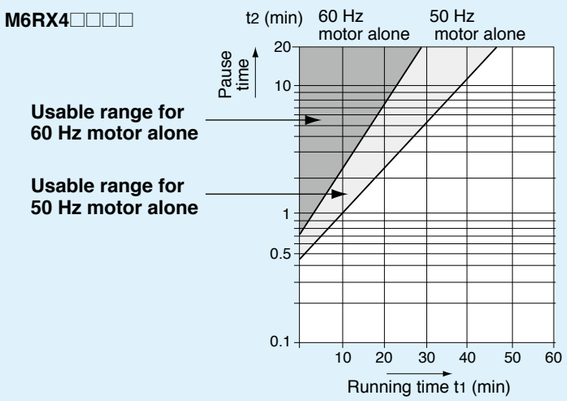
The brake torque of the reversible motor varies and changes over time.
When selecting a motor, do so allowing for such variations and changes.

Temperature rise of reversible motor

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

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

Example: M6RX4□□□□

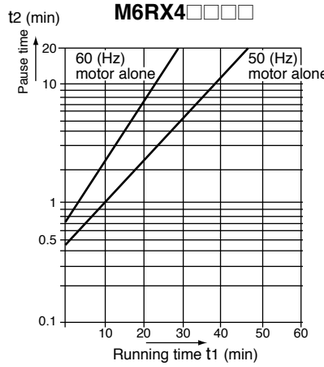


Note) You can make a continuous run with the gear head at 50 Hz and 60 Hz.

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

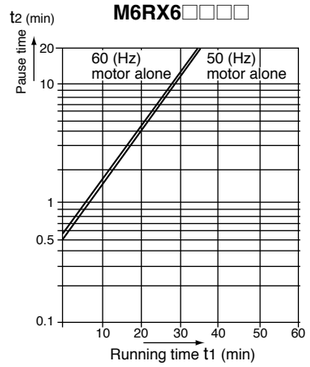
Limit of intermittent run of reversible motor

M6RX4□□□□



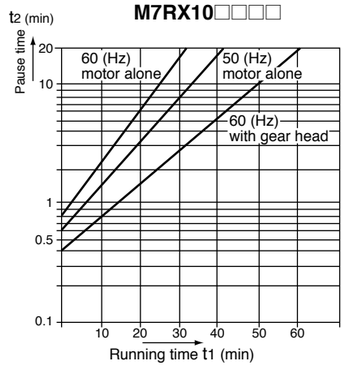
Note) You can make a continuous run with the gear head at 50 Hz and 60 Hz.

M6RX6□□□□



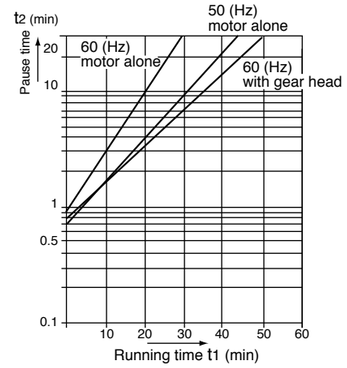
Note) You can make a continuous run with the gear head at 50 Hz and 60 Hz.

M7RX10□□□□



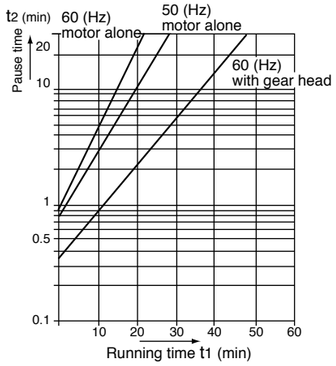
Note) You can make a continuous run with the gear head at 50 Hz.

M7RX15□□□□



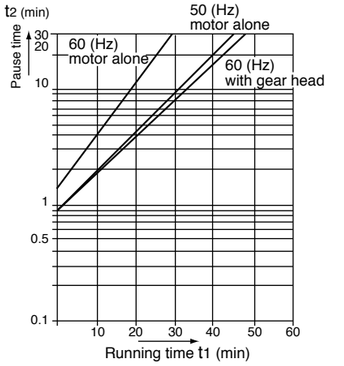
Note) You can make a continuous run with the gear head at 50 Hz.

M8RX20□□□□



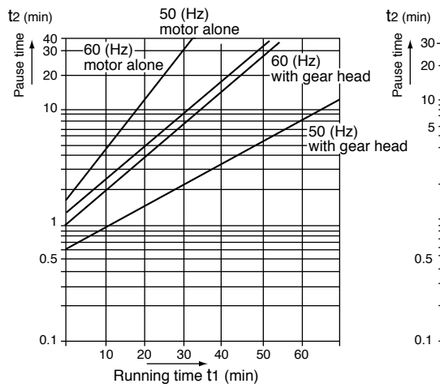
Note) You can make a continuous run with the gear head at 50 Hz.

M8RX25□□□□

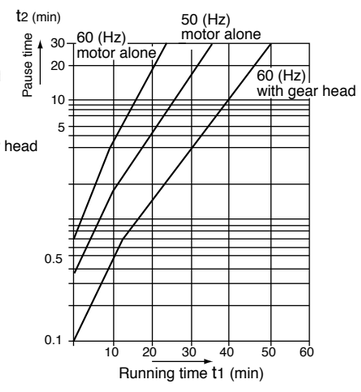


Note) You can make a continuous run with the gear head at 50 Hz.

M9RX40□□□□

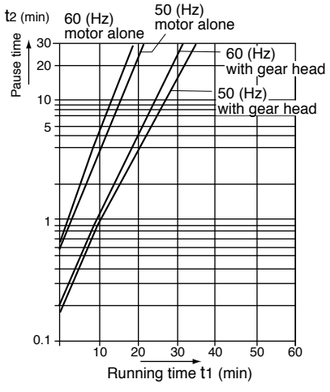


M9RZ60□□□□



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

M9RZ90□□□□



Model list of reversible motor

Pinion shaft motor

Applicable gear head

✪ Motor compliant with overseas standards

Hinge attached

Size	Output (W)	Leadwire type			Sealed connector type			Standard gear head			High torque gear head	Right-angle gear head	Gear head -Inch (U.S.A.)	Decimal gear head
		Model number	Specifications	Page	Model number	Specifications	Page	Ball bearing	Metal bearing	Ball and metal bearing				
42 mm sq. (1.65 inch sq.)	1	**M4RA1G4L**	100 V	**B-72**				—	—	**M4G□F**	—	—	—	—
60 mm sq. (2.36 inch sq.)	4	**M6RX4G4L**	100 V	**B-74**				**MX6G□BA** **MX6G□B**	**MX6G□MA** **MX6G□M**	—	—	—	**MX6G□BU**	**MX6G10XB**
	6	**M6RX6G4L**	100 V	**B-76**										
		M6RX6G4Y	200 V	**B-76**										
		M6RX6G4LG(A)	100 V ✪	**B-78**										
		M6RX6G4DG(A)	110 V/115 V ✪	**B-78**										
		M6RX6G4YG(A)	200 V ✪	**B-78**										
		M6RX6G4GG(A)	220 V/230 V ✪	**B-78**										
70 mm sq. (2.76 inch sq.)	10	**M7RX10G4L**	100 V	**B-80**				**MX7G□BA** **MX7G□B**	**MX7G□MA** **MX7G□M**	—	—	—	**MX7G□BU**	**MX7G10XB**
		M7RX10G4Y	200 V	**B-80**										
	15	**M7RX15G4L**	100 V	**B-82**										
		M7RX15G4Y	200 V	**B-82**										
		M7RX15G4LG(A)	100 V ✪	**B-84**										
		M7RX15G4DG(A)	110 V/115 V ✪	**B-84**										
		M7RX15G4YG(A)	200 V ✪	**B-84**										
		M7RX15G4GG(A)	220 V/230 V ✪	**B-84**										
80 mm sq. (3.15 inch sq.)	20	**M8RX20G4L**	100 V	**B-86**				**MX8G□B**	**MX8G□M**	—	—	—	**MX8G□BU**	**MX8G10XB**
		M8RX20G4Y	200 V	**B-86**										
	25	**M8RX25G4L**	100 V	**B-88**	**M8RX25GK4L**	100 V	**B-104**							
		M8RX25G4Y	200 V	**B-88**	**M8RX25GK4Y**	200 V	**B-104**							
		M8RX25G4LG(A)	100 V ✪	**B-90**	**M8RX25GK4LG(A)**	100 V ✪	**B-106**							
		M8RX25G4DG(A)	110 V/115 V ✪	**B-90**	**M8RX25GK4DG(A)**	110 V/115 V ✪	**B-106**							
		M8RX25G4YG(A)	200 V ✪	**B-90**	**M8RX25GK4YG(A)**	200 V ✪	**B-106**							
		M8RX25G4GG(A)	220 V/230 V ✪	**B-90**	**M8RX25GK4GG(A)**	220 V/230 V ✪	**B-106**							
90 mm sq. (3.54 inch sq.)	40	**M9RX40G4L**	100 V	**B-92**	**M9RX40GK4L**	100 V	**B-108**	**MX9G□B**	**MX9G□M**	—	—	**MX9G□R**	**MX9G□BU**	**MX9G10XB**
		M9RX40G4Y	200 V	**B-92**	**M9RX40GK4Y**	200 V	**B-108**							
		M9RX40G4LG(A)	100 V ✪	**B-94**	**M9RX40GK4LG(A)**	100 V ✪	**B-110**							
		M9RX40G4DG(A)	110 V/115 V ✪	**B-94**	**M9RX40GK4DG(A)**	110 V/115 V ✪	**B-110**							
		M9RX40G4YG(A)	200 V ✪	**B-94**	**M9RX40GK4YG(A)**	200 V ✪	**B-110**							
		M9RX40G4GG(A)	220 V/230 V ✪	**B-94**	**M9RX40GK4GG(A)**	220 V/230 V ✪	**B-110**							
	60	**M9RZ60G4L**	100 V	**B-96**	**M9RZ60GK4L**	100 V	**B-112**	**MZ9G□B**	—	—	**MR9G□B**	**MZ9G□R**	**MZ9G□BU**	**MZ9G10XB**
		M9RZ60G4Y	200 V	**B-96**	**M9RZ60GK4Y**	200 V	**B-112**							
		M9RZ60G4LG(A)	100 V ✪	**B-98**	**M9RZ60GK4LG(A)**	100 V ✪	**B-114**							
		M9RZ60G4DG(A)	110 V/115 V ✪	**B-98**	**M9RZ60GK4DG(A)**	110 V/115 V ✪	**B-114**							
		M9RZ60G4YG(A)	200 V ✪	**B-98**	**M9RZ60GK4YG(A)**	200 V ✪	**B-114**							
		M9RZ60G4GG(A)	220 V/230 V ✪	**B-98**	**M9RZ60GK4GG(A)**	220 V/230 V ✪	**B-114**							
	90	**M9RZ90G4L**	100 V	**B-100**	**M9RZ90GK4L**	100 V	**B-116**	**MY9G□B**			**MP9G□B**			
		M9RZ90G4Y	200 V	**B-100**	**M9RZ90GK4Y**	200 V	**B-116**							
		M9RZ90G4LG(A)	100 V ✪	**B-102**	**M9RZ90GK4LG(A)**	100 V ✪	**B-118**							
		M9RZ90G4DG(A)	110 V/115 V ✪	**B-102**	**M9RZ90GK4DG(A)**	110 V/115 V ✪	**B-118**							
		M9RZ90G4YG(A)	200 V ✪	**B-102**	**M9RZ90GK4YG(A)**	200 V ✪	**B-118**							
		M9RZ90G4GG(A)	220 V/230 V ✪	**B-102**	**M9RZ90GK4GG(A)**	220 V/230 V ✪	**B-118**							

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

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

Model list of reversible motor

Round shaft motor

✪ Motor compliant with overseas standards cULus CE
Ⓟ Electrical Appliance and Material Safety Law

Size	Output (W)	Leadwire type		Sealed connector type	
		Model number	Specifications	Model number	Specifications
42 mm sq. (1.65 inch sq.)	1	**M4RA1S4L**	100 V		
60 mm sq. (2.36 inch sq.)	4	**M6RX4S4LS**	100 V		
	6	**M6RX6S4LS**	100 V		
		M6RX6S4YS	200 V		
		M6RX6S4LG(A)	100 V ✪		
		M6RX6S4DG(A)	110 V/115 V ✪		
		M6RX6S4YG(A)	200 V ✪		
		M6RX6S4GG(A)	220 V/230 V ✪		
70 mm sq. (2.76 inch sq.)	10	**M7RX10S4LS**	100 V		
		M7RX10S4YS	200 V		
	15	**M7RX15S4LS**	100 V		
		M7RX15S4YS	200 V		
		M7RX15S4LG(A)	100 V ✪		
		M7RX15S4DG(A)	110 V/115 V ✪		
		M7RX15S4YG(A)	200 V ✪		
		M7RX15S4GG(A)	220 V/230 V ✪		
80 mm sq. (3.15 inch sq.)	20	**M8RX20S4LS**	100 V		
		M8RX20S4YS	200 V		
	25	**M8RX25S4LS**	100 V	**M8RX25SK4LS**	100 V Ⓟ
		M8RX25S4YS	200 V	**M8RX25SK4YS**	200 V Ⓟ
		M8RX25S4LG(A)	100 V ✪	**M8RX25SK4LG(A)**	100 V ✪ Ⓟ
		M8RX25S4DG(A)	110 V/115 V ✪	**M8RX25SK4DG(A)**	110 V/115 V ✪
		M8RX25S4YG(A)	200 V ✪	**M8RX25SK4YG(A)**	200 V ✪ Ⓟ
		M8RX25S4GG(A)	220 V/230 V ✪	**M8RX25SK4GG(A)**	220 V/230 V ✪
90 mm sq. (3.54 inch sq.)	40	**M9RX40S4LS**	100 V	**M9RX40SK4LS**	100 V Ⓟ
		M9RX40S4YS	200 V	**M9RX40SK4YS**	200 V Ⓟ
		M9RX40S4LG(A)	100 V ✪	**M9RX40SK4LG(A)**	100 V ✪ Ⓟ
		M9RX40S4DG(A)	110 V/115 V ✪	**M9RX40SK4DG(A)**	110 V/115 V ✪
		M9RX40S4YG(A)	200 V ✪	**M9RX40SK4YG(A)**	200 V ✪ Ⓟ
		M9RX40S4GG(A)	220 V/230 V ✪	**M9RX40SK4GG(A)**	220 V/230 V ✪
	60	**M9RZ60S4LS**	100 V	**M9RZ60SK4LS**	100 V Ⓟ
		M9RZ60S4YS	200 V	**M9RZ60SK4YS**	200 V Ⓟ
		M9RZ60S4LG(A)	100 V ✪	**M9RZ60SK4LG(A)**	100 V ✪ Ⓟ
		M9RZ60S4DG(A)	110 V/115 V ✪	**M9RZ60SK4DG(A)**	110 V/115 V ✪
		M9RZ60S4YG(A)	200 V ✪	**M9RZ60SK4YG(A)**	200 V ✪ Ⓟ
		M9RZ60S4GG(A)	220 V/230 V ✪	**M9RZ60SK4GG(A)**	220 V/230 V ✪
	90	**M9RZ90S4LS**	100 V	**M9RZ90SK4LS**	100 V Ⓟ
		M9RZ90S4YS	200 V	**M9RZ90SK4YS**	200 V Ⓟ
		M9RZ90S4LG(A)	100 V ✪	**M9RZ90SK4LG(A)**	100 V ✪ Ⓟ
		M9RZ90S4DG(A)	110 V/115 V ✪	**M9RZ90SK4DG(A)**	110 V/115 V ✪
		M9RZ90S4YG(A)	200 V ✪	**M9RZ90SK4YG(A)**	200 V ✪ Ⓟ
		M9RZ90S4GG(A)	220 V/230 V ✪	**M9RZ90SK4GG(A)**	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-123.
* The models with a motor model number to which “A” is suffixed are not equipped with a capacitor cap.
The models with a motor model number to which “A” is suffixed are not sold or available in Japan.

Panasonic Corporation Electromechanical Control Business Division
industrial.panasonic.com/ac/e/

Reversible 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.	M4RA1G4L	4	1	100	50	30	11	0.12	1125	0.0083 (1.18)	0.12	0.016 (2.27)	1.5 (200 V)
					60		12	0.12	1550	0.0062 (0.88)	0.12	0.016 (2.27)	

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

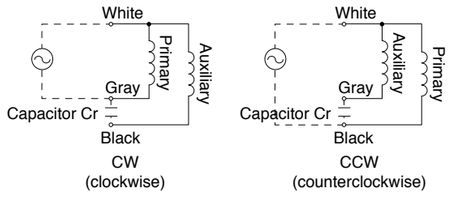
• Permissible torque at output shaft of gear head

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

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

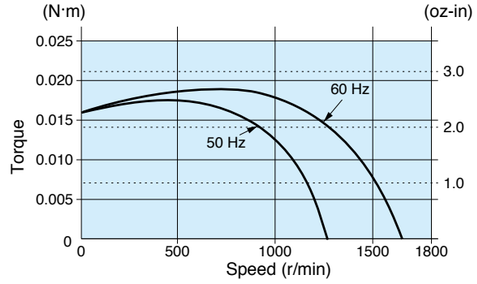
Reduction ratio			3	3.6	5	6	7.5	9	12.5	15	18	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	120	100	83.3	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	144	120	100	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	M4GA3F to M4GA180F (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

M4RA1G4L



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

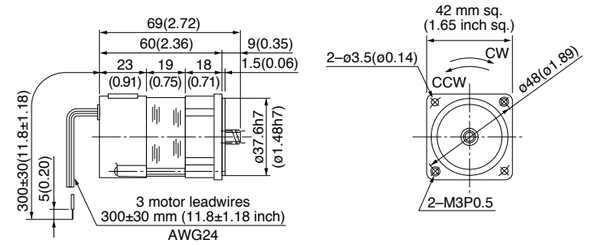
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

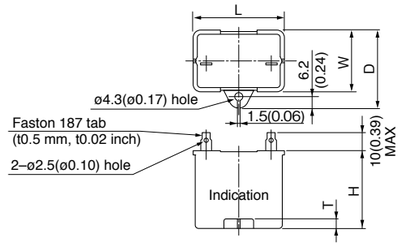
M4RA1G4L 4P 1 W 100 V

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



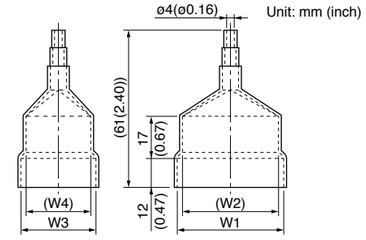
Capacitor (dimensions) [attachment]

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
M4RA1G4L	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)

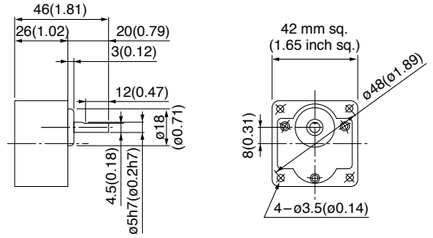
* Capacitors (single item) can also be purchased.

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-120 | Round shaft motor B-123 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (leadwire)

60 mm (2.36 inch) sq. 4 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.	M6RX4G4L	4	4	100	50	30	18	0.19	1200	0.030 (4.25)	0.23	0.039 (5.52)	3.0 (200 V)
					60		19	0.20	1550	0.023 (3.26)	0.24	0.040 (5.66)	

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

• Permissible torque at output shaft of gear head

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

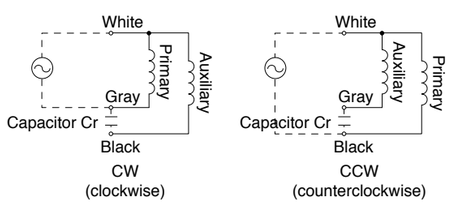
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	MX6G3BA to MX6G180B (ball bearing)	50 Hz	0.059 (0.52)	0.071 (0.63)	0.11 (0.97)	0.13 (1.15)	0.16 (1.42)	0.19 (1.68)	0.23 (2.04)	0.27 (2.39)	0.32 (2.83)	0.39 (3.45)	0.44 (3.89)	0.53 (4.69)	0.64 (5.66)	0.76 (6.73)	0.98 (8.67)	1.18 (10.4)	1.47 (13.0)	1.76 (15.6)	2.06 (18.2)	2.45 (21.7)	2.45 (21.7)	
	MX6G3MA to MX6G180M (metal bearing)	60 Hz	0.049 (0.43)	0.059 (0.52)	0.090 (0.80)	0.11 (0.97)	0.13 (1.15)	0.16 (1.42)	0.18 (1.60)	0.23 (2.04)	0.27 (2.39)	0.3 (2.66)	0.35 (3.10)	0.44 (3.89)	0.53 (4.69)	0.64 (5.66)	0.81 (7.17)	0.98 (8.67)	1.27 (11.2)	1.47 (13.0)	1.76 (15.6)	2.06 (18.2)	2.45 (21.7)	
Rotational direction			Same as motor rotational direction												Reverse to motor rotational direction									

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

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

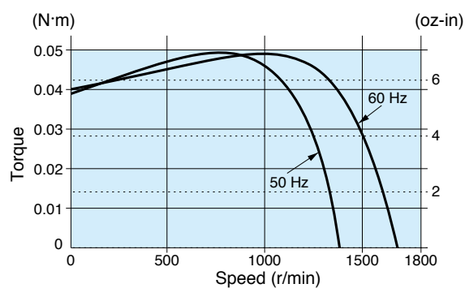
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX6G□BA (ball bearing) MX6G□B (ball bearing) MX6G□MA (metal bearing) MX6G□M (metal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

M6RX4G4L



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

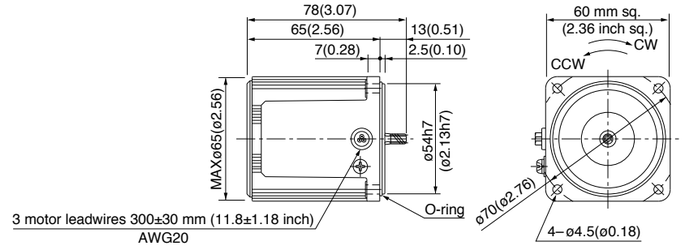
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

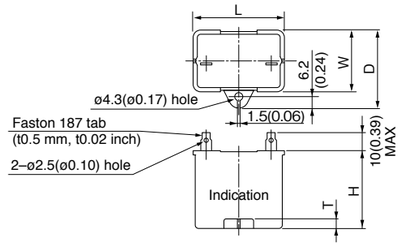
M6RX4G4L 4P 4 W 100 V

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



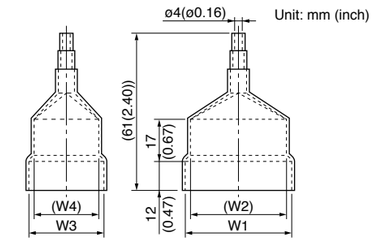
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor 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
M6RX4G4L	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)

* Capacitors (single item) can also be purchased.

Gear head (dimensions)

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

< □ is 25 or less >

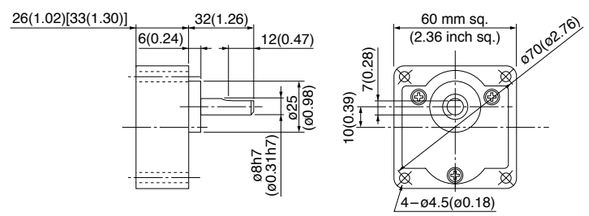
MX6G□BA (ball bearing) Mass 0.24 kg(0.53 lb): Output shaft D cut

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-120 | Round shaft motor B-123 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible 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.	M6RX6G4L	4	6	100	50	30	22	0.23	1250	0.047 (6.66)	0.30	0.050 (7.08)	3.5 (200 V)
					60		22	0.22	1575	0.037 (5.24)	0.31	0.052 (7.36)	
	M6RX6G4Y	4	6	200	50	30	22	0.11	1275	0.045 (6.37)	0.16	0.053 (7.50)	0.9 (400 V)
					60		22	0.12	1600	0.036 (5.10)	0.16	0.053 (7.50)	

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

• Permissible torque at output shaft of gear head

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

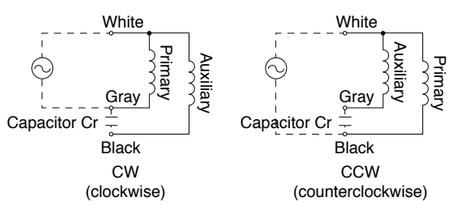
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	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.

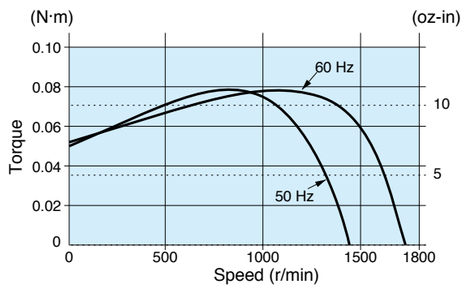
Applicable gear head			Reduction ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX6G□BA (ball bearing) MX6G□B (ball bearing) MX6G□MA (metal bearing) MX6G□M (metal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

M6RX6G4L



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

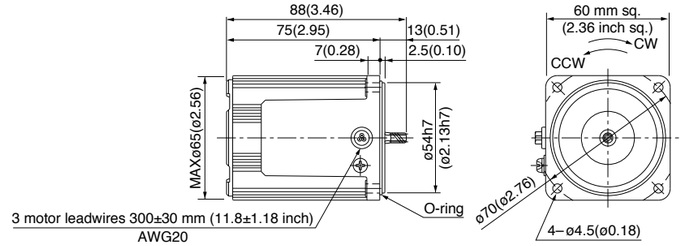
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

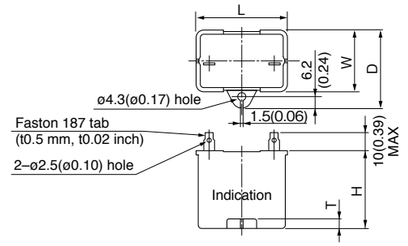
M6RX6G4L 4P 6 W 100 V
M6RX6G4Y 4P 6 W 200 V

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



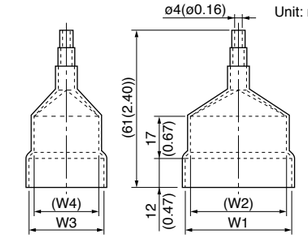
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor 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
M6RX6G4L	M0PC3.5M20	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)
M6RX6G4Y	M0PC0.9M40	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)

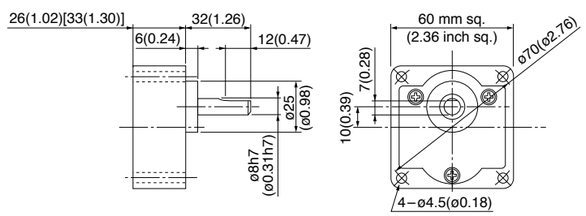
* Capacitors (single item) can also be purchased.

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-120 | Round shaft motor B-123 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible 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.	M6RX6G4LG M6RX6G4LGA	4	6	100	50	30	24	0.24	1300	0.044 (6.23)	0.33	0.060 (8.50)	4 (250 V)
					60		26	0.26	1600	0.036 (5.10)	0.35	0.060 (8.50)	
	M6RX6G4DG M6RX6G4DGA	4	6	110	60	30	24	0.22	1600	0.036 (5.10)	0.34	0.056 (7.93)	3 (250 V)
				115	60		26	0.23	1625	0.035 (4.96)	0.35	0.060 (8.50)	
	M6RX6G4YG M6RX6G4YGA	4	6	200	50	30	24	0.12	1250	0.046 (6.51)	0.15	0.060 (8.50)	1 (450 V)
					60		28	0.14	1550	0.037 (5.24)	0.16	0.060 (8.50)	
	M6RX6G4GG M6RX6G4GGA	4	6	220	50	30	24	0.11	1275	0.045 (6.37)	0.15	0.056 (7.93)	0.8 (450 V)
					60		26	0.12	1575	0.036 (5.10)	0.15	0.056 (7.93)	
				230	50		26	0.12	1300	0.044 (6.23)	0.15	0.060 (8.50)	
					60		28	0.12	1600	0.036 (5.10)	0.16	0.060 (8.50)	

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

• Permissible torque at output shaft of gear head

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

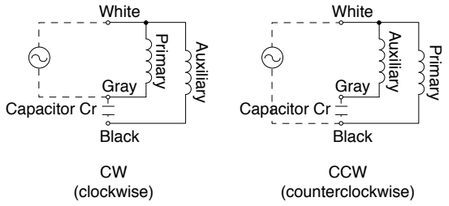
Reduction ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)	50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head: MX6G3BA 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)			
Applicable gear head: 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.

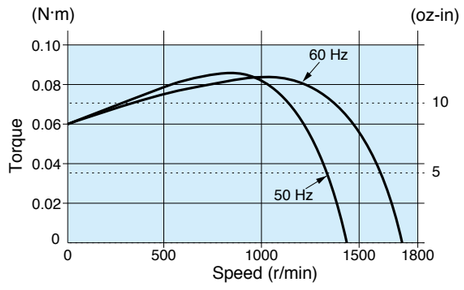
Applicable gear head: Bearing	Decimal gear head	Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
MX6G□BA (ball bearing) MX6G□B (ball bearing) MX6G□MA (metal bearing) MX6G□M (metal bearing)	MX6G10XB	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3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

Connection diagram



Speed-torque characteristics

M6RX6G4LG(A)



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

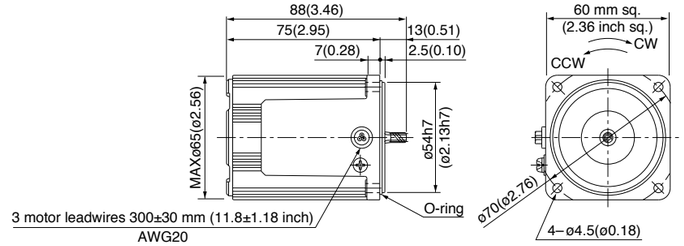
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

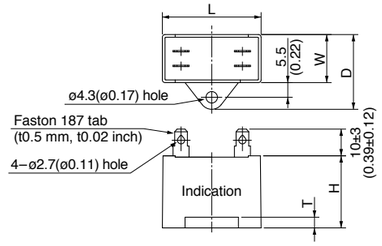
M6RX6G4LG(A) 4P 6 W 100 V
M6RX6G4DG(A) 4P 6 W 110 V / 115 V
M6RX6G4YG(A) 4P 6 W 200 V
M6RX6G4GG(A) 4P 6 W 220 V / 230 V

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



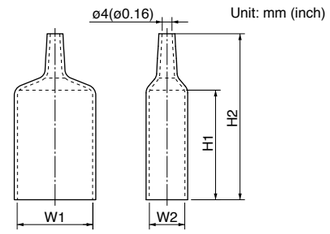
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

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

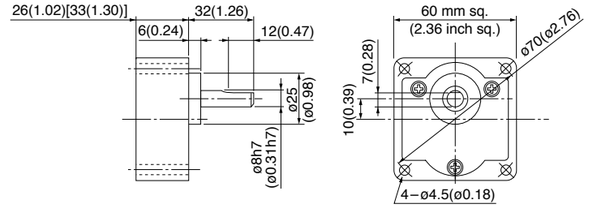
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

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-120 | Round shaft motor B-123 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible 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.	M7RX10G4L	4	10	100	50	30	30	0.30	1150	0.084 (11.9)	0.41	0.061 (8.64)	4.5 (200 V)
					60		30	0.30	1525	0.063 (8.92)	0.40	0.063 (8.92)	
	M7RX10G4Y	4	10	200	50	30	30	0.15	1200	0.082 (11.6)	0.20	0.061 (8.64)	1.2 (400 V)
					60		32	0.16	1550	0.063 (8.92)	0.21	0.063 (8.92)	

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

• Permissible torque at output shaft of gear head

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

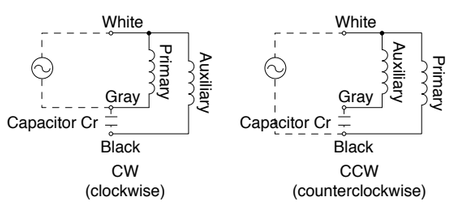
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	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.

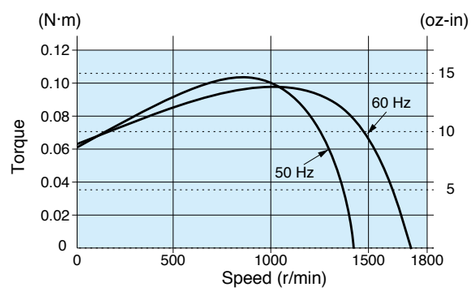
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX7G□BA (ball bearing) MX7G□B (ball bearing) MX7G□MA (metal bearing) MX7G□M (metal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

M7RX10G4L



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

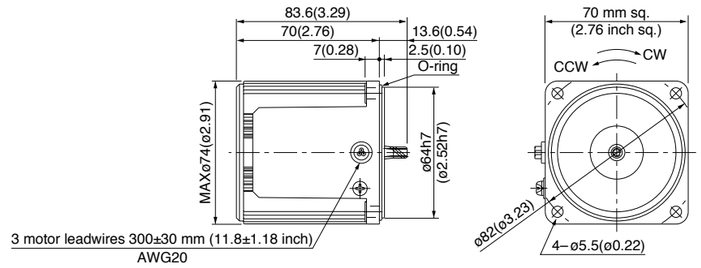
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

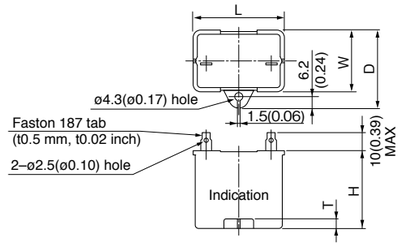
M7RX10G4L 4P 10 W 100 V
M7RX10G4Y 4P 10 W 200 V

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



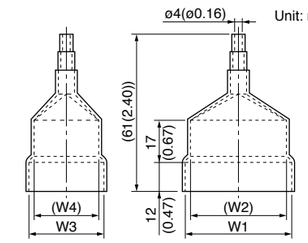
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor 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
M7RX10G4L	M0PC4.5M20	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)
M7RX10G4Y	M0PC1.2M40	39.5 (1.56)	18.3 (0.72)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC3922	39.5 (1.56)	37.5 (1.48)	22 (0.87)	20 (0.79)

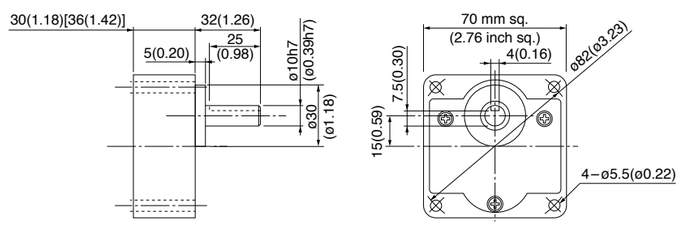
* Capacitors (single item) can also be purchased.

Gear head (dimensions)

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

< □ 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)



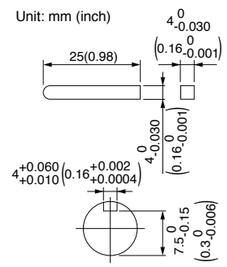
* Figures in [ ] represent the dimensions of MX7G□B (M) (1/30 or larger reduction ratio).

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

Key and keyway (dimensions) [attachment]

MX7G□BA(B)
MX7G□MA(M)

Unit: mm (inch)



Gear head combination B-120 | Round shaft motor B-123 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible 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.	M7RX15G4L	4	15	100	50	30	36	0.37	1275	0.110 (15.6)	0.59	0.085 (12.0)	6 (200 V)
					60		37	0.38	1575	0.088 (12.5)	0.57	0.085 (12.0)	
	M7RX15G4Y	4	15	200	50	30	36	0.19	1275	0.110 (15.6)	0.30	0.078 (11.0)	1.5 (400 V)
					60		37	0.19	1575	0.088 (12.5)	0.29	0.078 (11.0)	

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

• Permissible torque at output shaft of gear head

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

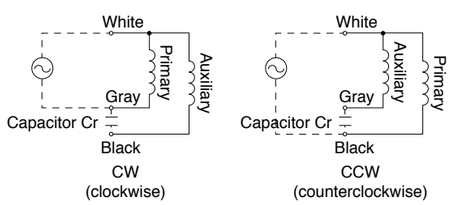
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	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.

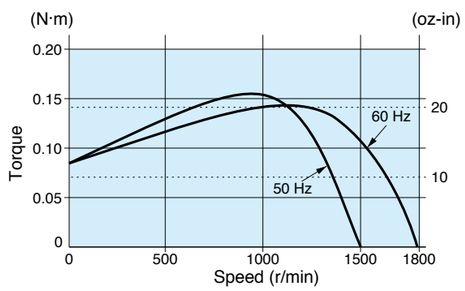
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX7G□BA (ball bearing) MX7G□B MX7G□MA (metal bearing) MX7G□M	MX7G10XB	Permissible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



Speed-torque characteristics

M7RX15G4L



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

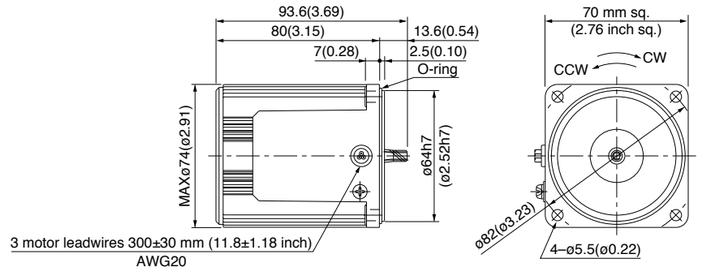
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

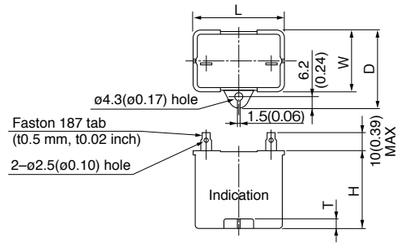
M7RX15G4L 4P 15 W 100 V
M7RX15G4Y 4P 15 W 200 V

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



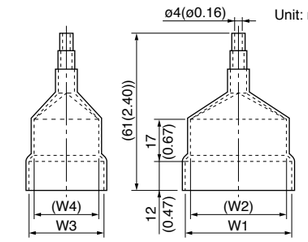
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor 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
M7RX15G4L	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)
M7RX15G4Y	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)

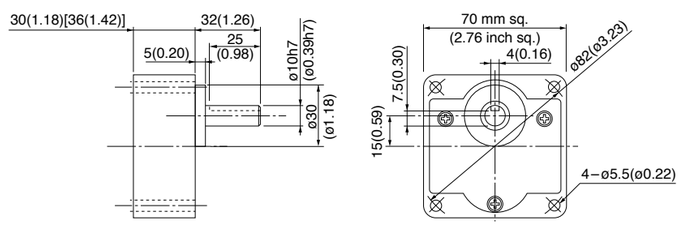
* Capacitors (single item) can also be purchased.

Gear head (dimensions)

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

< □ 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)



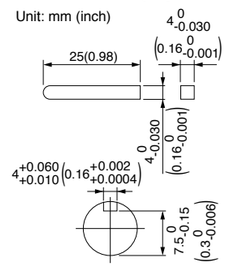
* Figures in [ ] represent the dimensions of MX7G□B (M) (1/30 or larger reduction ratio).

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

Key and keyway (dimensions) [attachment]

MX7G□BA(B)
MX7G□MA(M)

Unit: mm (inch)



Gear head combination B-120 | Round shaft motor B-123 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible 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.	M7RX15G4LG M7RX15G4LGA	4	15	100	50	30	39	0.39	1250	0.12 (17.0)	0.58	0.10 (14.2)	6.5 (250 V)
					60		43	0.44	1575	0.092 (13.0)	0.58	0.10 (14.2)	
	M7RX15G4DG M7RX15G4DGA	4	15	110	60	30	42	0.38	1600	0.090 (12.7)	0.60	0.10 (14.2)	5.5 (250 V)
				115	60		44	0.38	1625	0.088 (12.5)	0.63	0.11 (15.6)	
	M7RX15G4YG M7RX15G4YGA	4	15	200	50	30	40	0.20	1225	0.12 (17.0)	0.27	0.10 (14.2)	1.7 (450 V)
					60		50	0.25	1525	0.094 (13.3)	0.28	0.10 (14.2)	
	M7RX15G4GG M7RX15G4GGA	4	15	220	50	30	39	0.18	1225	0.12 (17.0)	0.27	0.086 (12.2)	1.3 (450 V)
					60		41	0.19	1550	0.092 (13.0)	0.26	0.086 (12.2)	
				230	50		40	0.18	1275	0.11 (15.6)	0.28	0.094 (13.3)	
					60		43	0.19	1575	0.091 (12.9)	0.28	0.094 (13.3)	

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

• Permissible torque at output shaft of gear head

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

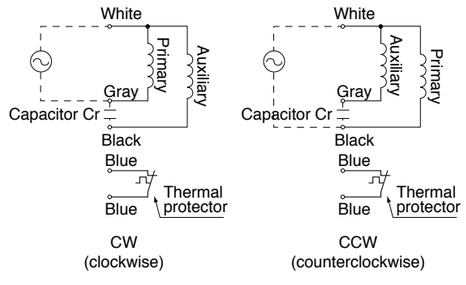
Reduction ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)	50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
	60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head: MX7G3BA 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)				
Applicable gear head: 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: Bearing	Decimal gear head	Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
MX7G□BA (ball bearing) MX7G□B MX7G□MA (metal bearing) MX7G□M	MX7G10XB	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
		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										

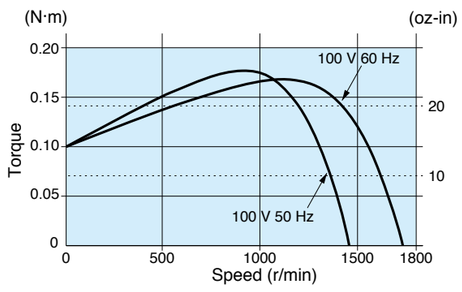
Connection diagram



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

Speed-torque characteristics

M7RX15G4LG(A)



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

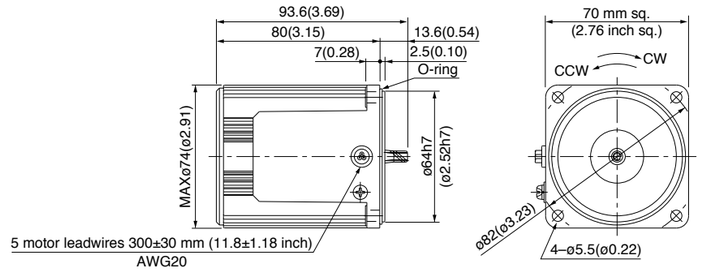
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

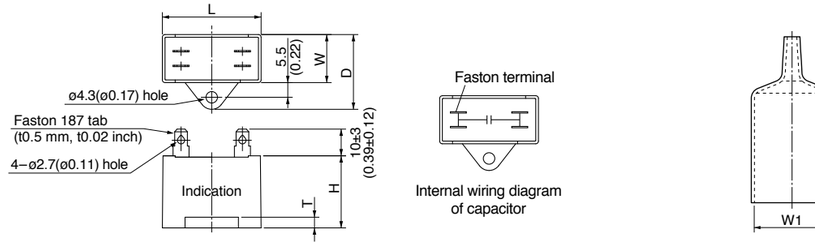
M7RX15G4LG(A) 4P 15 W 100 V
M7RX15G4DG(A) 4P 15 W 110 V / 115 V
M7RX15G4YG(A) 4P 15 W 200 V
M7RX15G4GG(A) 4P 15 W 220 V / 230 V

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



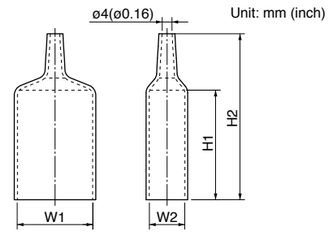
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [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
M7RX15G4LG(A)	M0PC6.5M25G	48 (1.89)	19 (0.75)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC4819G	48 (1.89)	19 (0.75)	55 (2.17)	78 (3.07)
M7RX15G4DG(A)	M0PC5.5M25G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC3821G	38 (1.50)	21 (0.83)	55 (2.17)	78 (3.07)
M7RX15G4YG(A)	M0PC1.7M45G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC3821G	38 (1.50)	21 (0.83)	55 (2.17)	78 (3.07)
M7RX15G4GG(A)	M0PC1.3M45G	38 (1.50)	19 (0.75)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC3819G	38 (1.50)	19 (0.75)	50 (1.97)	73 (2.87)

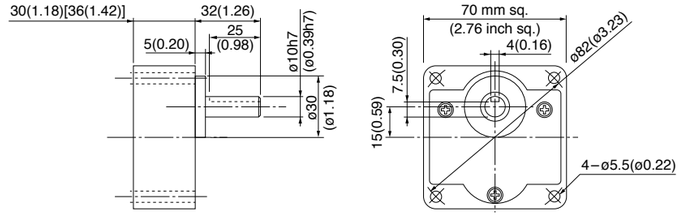
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

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)

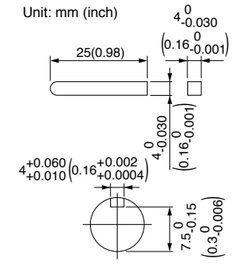


* Figures in [ ] represent the dimensions of MX7G□B (M) (1/30 or larger reduction ratio).

Key and keyway (dimensions) [attachment]

MX7G□BA(B)
MX7G□MA(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-120 | Round shaft motor B-123 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (leadwire)

80 mm (3.15 inch) sq. 20 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.	M8RX20G4L	4	20	100	50	30	51	0.52	1100	0.17 (24.1)	0.73	0.12 (17.0)	7 (200 V)
					60		48	0.47	1475	0.13 (18.4)	0.71	0.12 (17.0)	
	M8RX20G4Y	4	20	200	50	30	52	0.26	1100	0.17 (24.1)	0.37	0.13 (18.4)	1.8 (400 V)
					60		48	0.24	1475	0.13 (18.4)	0.36	0.13 (18.4)	

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

• Permissible torque at output shaft of gear head

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

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

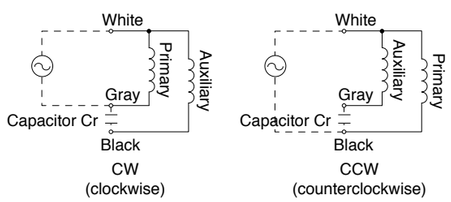
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	MX8G3B to MX8G180B (ball bearing)	50 Hz	0.34 (3.01)	0.41 (3.63)	0.57 (5.04)	0.69 (6.11)	0.85 (7.52)	0.98 (8.67)	1.18 (10.4)	1.37 (12.1)	1.67 (14.8)	1.96 (17.3)	2.25 (19.9)	2.74 (24.3)	3.33 (29.5)	4.02 (35.6)	5.49 (48.6)	6.57 (58.1)	7.84 (69.4)	7.84 (69.4)				
	MX8G3M to MX8G180M (metal bearing)	60 Hz	0.28 (2.48)	0.34 (3.01)	0.47 (4.16)	0.57 (5.04)	0.72 (6.37)	0.85 (7.52)	0.95 (8.41)	1.18 (10.4)	1.37 (12.1)	1.67 (14.8)	1.86 (16.5)	2.25 (19.9)	2.74 (24.3)	3.33 (29.5)	4.61 (40.8)	5.49 (48.6)	6.86 (60.7)	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.

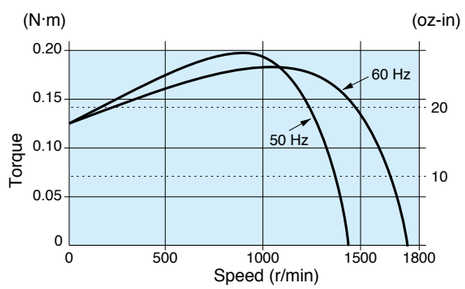
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N·m	7.84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

M8RX20G4L



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

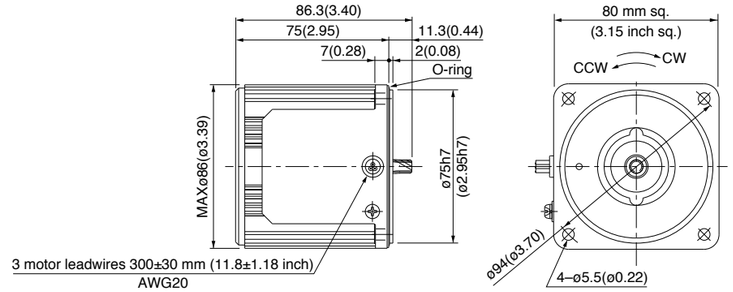
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

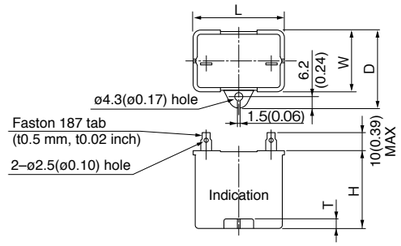
M8RX20G4L 4P 20 W 100 V
M8RX20G4Y 4P 20 W 200 V

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



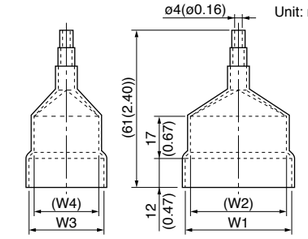
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

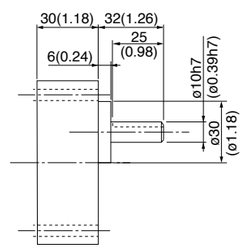
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M8RX20G4L	M0PC7M20	39.5 (1.56)	22 (0.87)	32.5 (1.28)	30.5 (1.20)	4 (0.16)	M0PC3922	39.5 (1.56)	37.5 (1.48)	22 (0.87)	20 (0.79)
M8RX20G4Y	M0PC1.8M40	39.5 (1.56)	22 (0.87)	32.5 (1.28)	30.5 (1.20)	4 (0.16)	M0PC3922	39.5 (1.56)	37.5 (1.48)	22 (0.87)	20 (0.79)

* Capacitors (single item) can also be purchased.

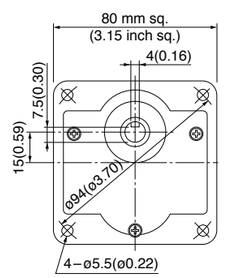
Gear head (dimensions)

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

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



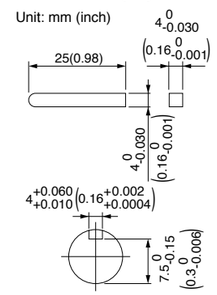
MX8G□M (metal bearing) Mass 0.6 kg(1.32 lb)



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-120 | Round shaft motor B-123 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible 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.	M8RX25G4L	4	25	100	50	30	58	0.59	1275	0.19 (26.9)	1.0	0.17 (24.1)	9.5 (200 V)
					60		57	0.59	1575	0.16 (22.7)	1.0	0.17 (24.1)	
	M8RX25G4Y	4	25	200	50	30	57	0.29	1275	0.19 (26.9)	0.52	0.19 (26.9)	2.4 (400 V)
					60		57	0.29	1575	0.16 (22.7)	0.50	0.19 (26.9)	

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

• Permissible torque at output shaft of gear head

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

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

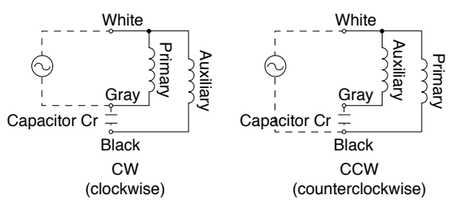
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	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.

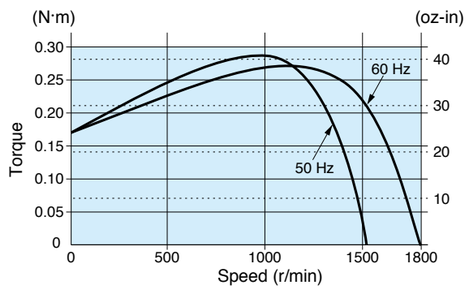
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N·m	7.84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

M8RX25G4L



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

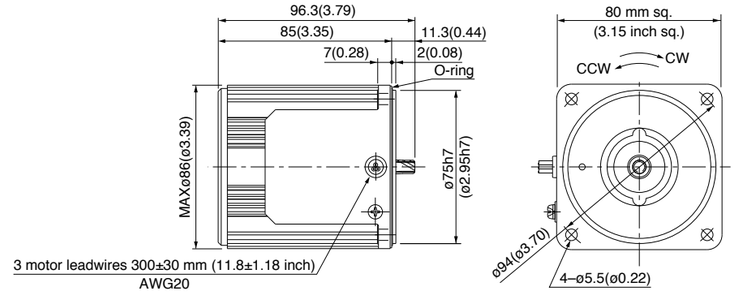
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

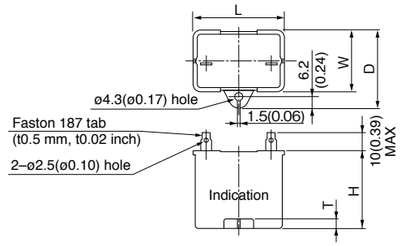
M8RX25G4L 4P 25 W 100 V
M8RX25G4Y 4P 25 W 200 V

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



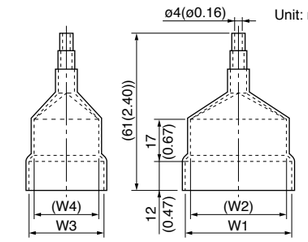
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

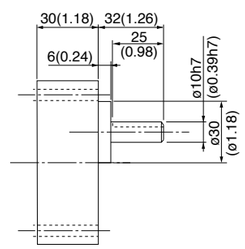
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M8RX25G4L	M0PC9.5M20	39.5 (1.56)	22 (0.87)	32.5 (1.28)	30.5 (1.20)	4 (0.16)	M0PC3922	39.5 (1.56)	37.5 (1.48)	22 (0.87)	20 (0.79)
M8RX25G4Y	M0PC2.4M40	49.7 (1.96)	24 (0.94)	34.5 (1.36)	34.5 (1.36)	4 (0.16)	M0PC5026	50 (1.97)	48 (1.89)	26 (1.02)	22 (0.87)

* Capacitors (single item) can also be purchased.

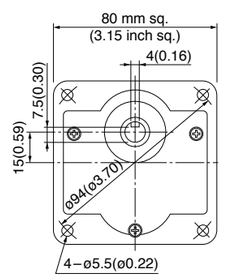
Gear head (dimensions)

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

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



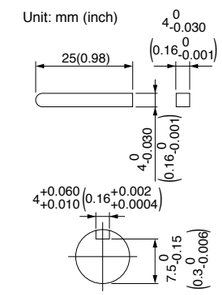
MX8G□M (metal bearing) Mass 0.6 kg(1.32 lb)



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-121 | Round shaft motor B-123 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (leadwire)

c UL us CE 80 mm (3.15 inch) sq. 25 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	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.	M8RX25G4LG M8RX25G4LGA	4	25	100	50	30	59	0.60	1250	0.19 (26.9)	1.1	0.19 (26.9)	10 (250 V)
					60		61	0.61	1550	0.15 (21.2)	1.1	0.19 (26.9)	
	M8RX25G4DG M8RX25G4DGA	4	25	110	60	30	58	0.53	1575	0.15 (21.2)	1.1	0.17 (24.1)	8 (250 V)
				115	60		61	0.53	1600	0.15 (21.2)	1.2	0.19 (26.9)	
	M8RX25G4YG M8RX25G4YGA	4	25	200	50	30	59	0.30	1200	0.20 (28.3)	0.45	0.19 (26.9)	2.5 (450 V)
					60		66	0.34	1525	0.16 (22.7)	0.46	0.19 (26.9)	
	M8RX25G4GG M8RX25G4GGA	4	25	220	50	30	60	0.28	1225	0.19 (26.9)	0.47	0.18 (25.5)	2 (450 V)
					60		60	0.27	1550	0.15 (21.2)	0.46	0.18 (25.5)	
				230	50		62	0.28	1275	0.19 (26.9)	0.49	0.19 (26.9)	
					60		62	0.27	1575	0.15 (21.2)	0.48	0.19 (26.9)	

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

• Permissible torque at output shaft of gear head

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

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

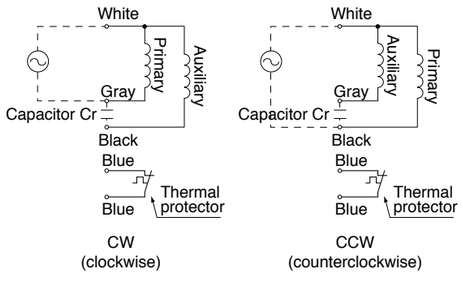
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	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									

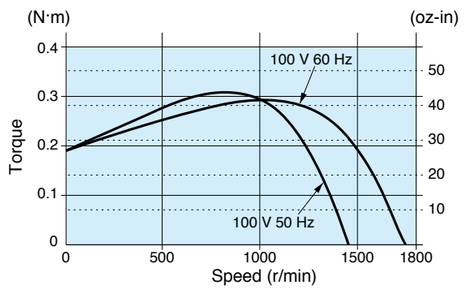
Connection diagram



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

Speed-torque characteristics

M8RX25G4LG(A)



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

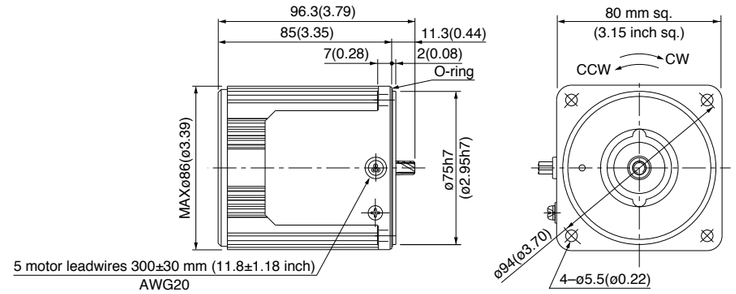
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

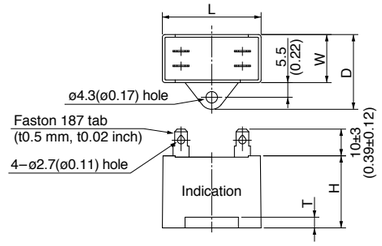
M8RX25G4LG(A) 4P 25 W 100 V
M8RX25G4DG(A) 4P 25 W 110 V / 115 V
M8RX25G4YG(A) 4P 25 W 200 V
M8RX25G4GG(A) 4P 25 W 220 V / 230 V

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



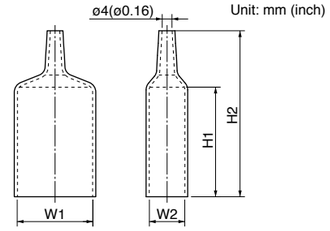
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

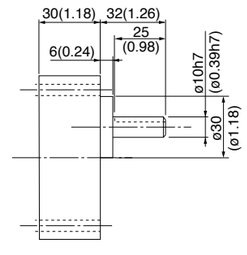
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M8RX25G4LG(A)	M0PC10M25G	58 (2.28)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC5821G	58 (2.28)	21 (0.83)	55 (2.17)	78 (3.07)
M8RX25G4DG(A)	M0PC8M25G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)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

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

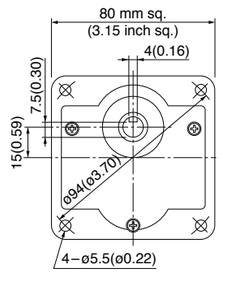
Gear head (dimensions)

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

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



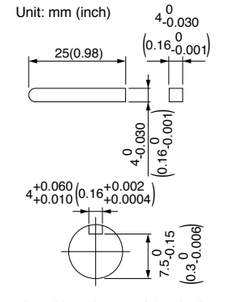
MX8G□M (metal bearing) Mass 0.6 kg(1.32 lb)



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-121 | Round shaft motor B-123 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (leadwire)

90 mm (3.54 inch) sq. 40 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating 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.	M9RX40G4L	4	40	100	50	30	94	0.96	1200	0.32 (45.3)	1.6	0.27 (38.2)	15 (210 V)
					60		93	0.93	1525	0.25 (35.4)	1.5	0.26 (36.8)	
	M9RX40G4Y	4	40	200	50	30	92	0.48	1200	0.32 (45.3)	0.81	0.28 (39.7)	3.8 (400 V)
					60		93	0.46	1525	0.25 (35.4)	0.77	0.29 (41.1)	

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

• Permissible torque at output shaft of gear head

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

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

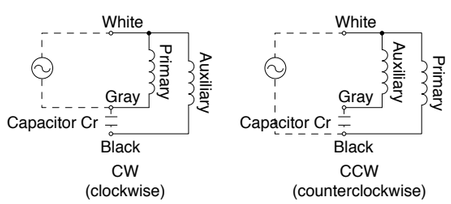
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	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.

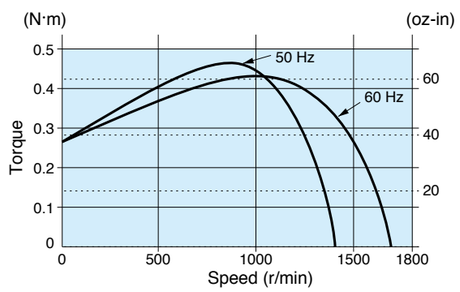
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	Permissible torque	N·m	9.80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

Connection diagram



Speed-torque characteristics

M9RX40G4L



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

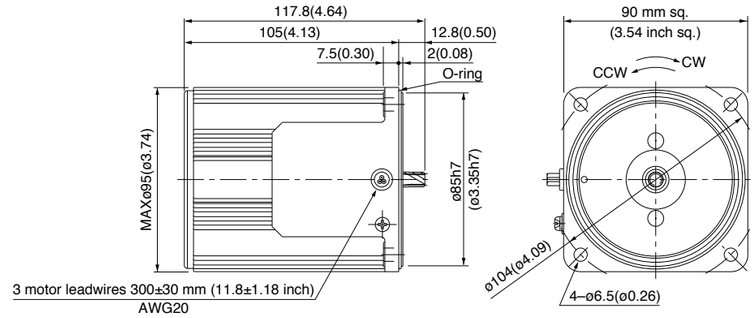
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

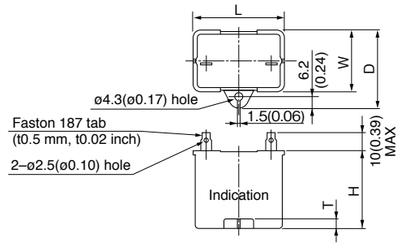
M9RX40G4L 4P 40 W 100 V
M9RX40G4Y 4P 40 W 200 V

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



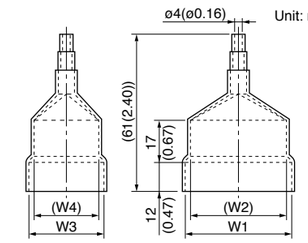
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

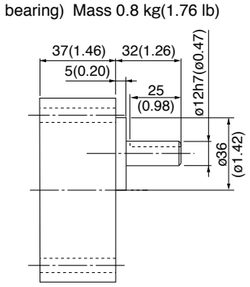
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M9RX40G4L	M0PC15M20	39.5 (1.56)	26.7 (1.05)	37 (1.46)	41 (1.61)	4 (0.16)	M0PC3926	39.5 (1.56)	37.5 (1.48)	26 (1.02)	25 (0.98)
M9RX40G4Y	M0PC3.8M40	50 (1.97)	26.7 (1.05)	37.5 (1.48)	38 (1.50)	4 (0.16)	M0PC5026	50 (1.97)	48 (1.89)	26 (1.02)	22 (0.87)

* Capacitors (single item) can also be purchased.

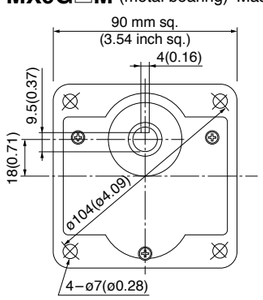
Gear head (dimensions)

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

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



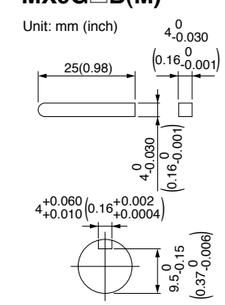
MX9G□M (metal bearing) Mass 0.8 kg(1.76 lb)



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-121 | Round shaft motor B-123 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (leadwire)

cULus 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.	M9RX40G4LG M9RX40G4LGA	4	40	100	50	30	86	0.87	1275	0.30 (42.5)	1.7	0.30 (42.5)	16 (250 V)
					60		93	0.95	1575	0.24 (34.0)	1.6	0.30 (42.5)	
	M9RX40G4DG M9RX40G4DGA	4	40	110	60	30	91	0.83	1550	0.25 (35.4)	1.7	0.25 (35.4)	12 (250 V)
				115	60		94	0.82	1575	0.24 (34.0)	1.8	0.29 (41.1)	
	M9RX40G4YG M9RX40G4YGA	4	40	200	50	30	91	0.45	1200	0.32 (45.3)	0.67	0.30 (42.5)	4 (450 V)
					60		109	0.57	1500	0.25 (35.4)	0.70	0.30 (42.5)	
	M9RX40G4GG M9RX40G4GGA	4	40	220	50	30	88	0.40	1250	0.31 (43.9)	0.71	0.30 (42.5)	3.5 (450 V)
					60		104	0.49	1550	0.25 (35.4)	0.71	0.30 (42.5)	
				230	50		92	0.40	1300	0.29 (41.1)	0.74	0.33 (46.7)	
					60		110	0.50	1575	0.24 (34.0)	0.74	0.33 (46.7)	

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

• Permissible torque at output shaft of gear head

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

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

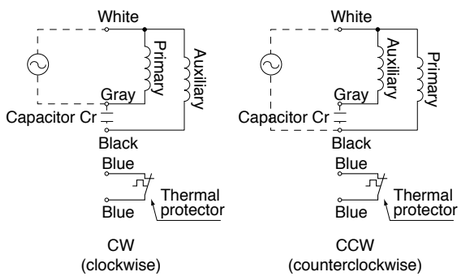
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	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	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80
			(lb-in)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)
		Rotational direction		Same as motor rotational direction		Reverse to motor rotational direction									

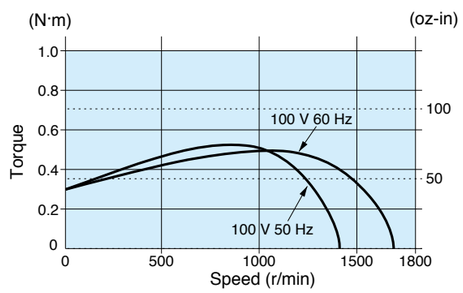
Connection diagram



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

Speed-torque characteristics

M9RX40G4LG(A)



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

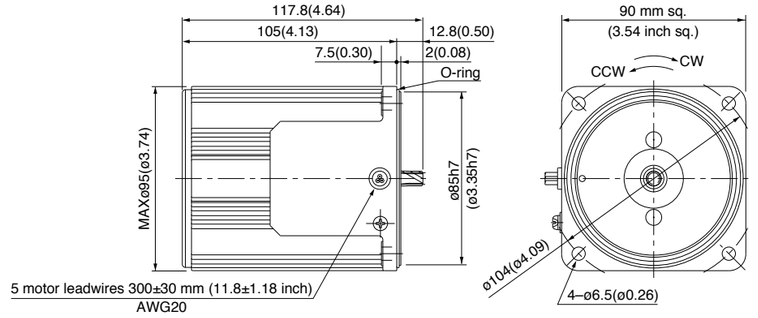
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

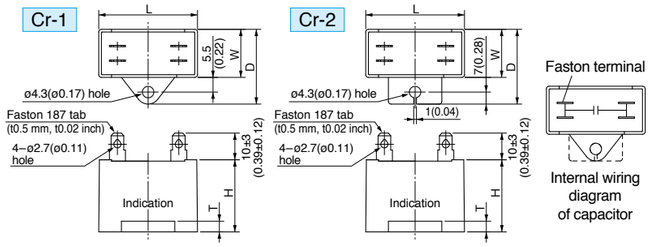
M9RX40G4LG(A) 4P 40 W 100 V
M9RX40G4DG(A) 4P 40 W 110 V / 115 V
M9RX40G4YG(A) 4P 40 W 200 V
M9RX40G4GG(A) 4P 40 W 220 V / 230 V

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



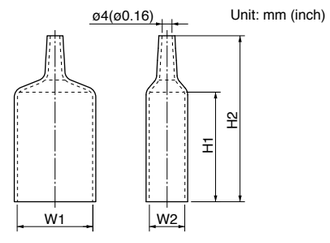
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

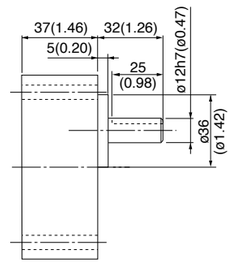
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	dimension No.	Capacitor cap (attachment)	W1	W2	H1	H2
M9RX40G4LG(A)	M0PC16M25G	58 (2.28)	23.5 (0.93)	38.5 (1.52)	37 (1.46)	4 (0.16)	Cr-2	M0PC5823G	58 (2.28)	23.5 (0.93)	55 (2.17)	78 (3.07)
M9RX40G4DG(A)	M0PC12M25G	58 (2.28)	22 (0.87)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

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

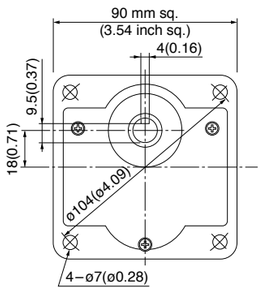
Gear head (dimensions)

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

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



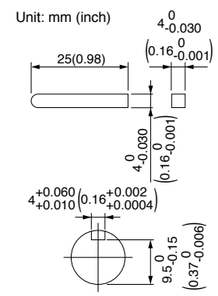
MX9G□M (metal bearing) Mass 0.8 kg(1.76 lb)



Key and keyway (dimensions) [attachment]

MX9G□B(M)

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-121 | Round shaft motor B-123 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (leadwire)

90 mm (3.54 inch) sq. 60 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	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.	M9RZ60G4L	4	60	100	50	30	144	1.5	1200	0.46 (65.1)	2.4	0.50 (70.8)	25 (200 V)
					60		163	1.5	1500	0.39 (55.2)	2.3	0.53 (75.1)	
	M9RZ60G4Y	4	60	200	50	30	146	0.74	1225	0.46 (65.1)	1.2	0.53 (75.1)	6.2 (375 V)
					60		153	0.77	1525	0.39 (55.2)	1.3	0.55 (77.9)	

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

• Permissible torque at output shaft of gear head

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

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

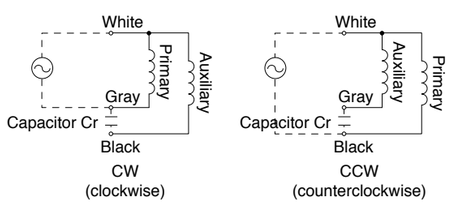
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable 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.

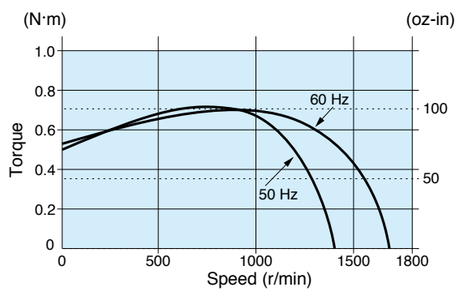
Applicable gear head		Reduction ratio		250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MZ9G□B (ball bearing / Hinge not attached) MY9G□B (ball bearing / Hinge attached)	MZ9G10XB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



Speed-torque characteristics

M9RZ60G4L



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

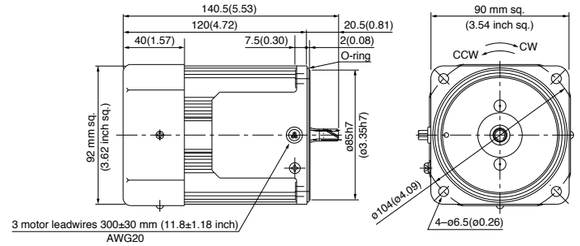
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

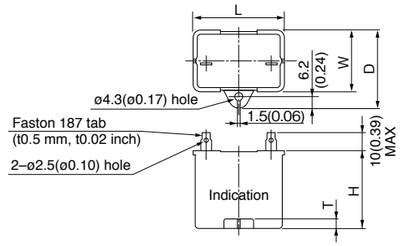
M9RZ60G4L 4P 60 W 100 V (with fan)
M9RZ60G4Y 4P 60 W 200 V (with fan)

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



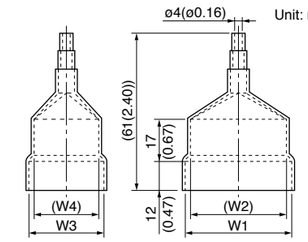
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

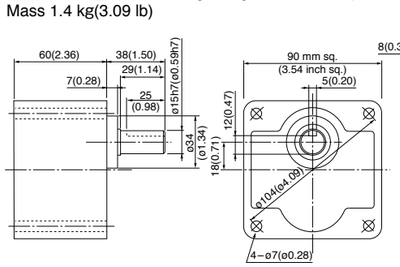
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M9RZ60G4L	M0PC25M20	50.2 (1.98)	31 (1.22)	41 (1.61)	42 (1.65)	5 (0.20)	M0PC5032	50 (1.97)	48 (1.89)	32.5 (1.28)	29.5 (1.16)
M9RZ60G4Y	M0PC6.2M38	50 (1.97)	30.5 (1.20)	41 (1.61)	41.5 (1.63)	4 (0.16)	M0PC5032	50 (1.97)	48 (1.89)	32.5 (1.28)	29.5 (1.16)

* Capacitors (single item) can also be purchased.

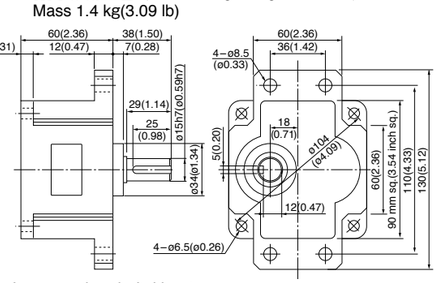
Gear head (dimensions)

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)

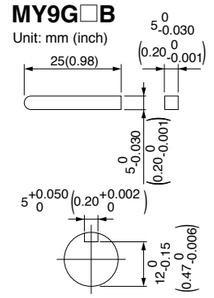


Note) MZ / MY is available for a gear head of either type.

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-121 | Round shaft motor B-124 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (leadwire)

90 mm (3.54 inch) sq. 60 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	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.	M9RZ60G4LG M9RZ60G4LGA	4	60	100	50	30	137	1.4	1250	0.46 (65.1)	2.4	0.51 (72.2)	25 (250 V)
					60		147	1.5	1550	0.37 (52.4)	2.4	0.53 (75.1)	
	M9RZ60G4DG M9RZ60G4DGA	4	60	110	60	30	138	1.3	1575	0.36 (51.0)	2.5	0.50 (70.8)	20 (250 V)
				115	60		144	1.3	1600	0.36 (51.0)	2.6	0.55 (77.9)	
	M9RZ60G4YG M9RZ60G4YGA	4	60	200	50	30	135	0.67	1200	0.48 (68.0)	1.0	0.51 (72.2)	6 (450 V)
					60		158	0.81	1500	0.38 (53.8)	1.1	0.53 (75.1)	
	M9RZ60G4GG M9RZ60G4GGA	4	60	220	50	30	137	0.64	1225	0.47 (66.6)	1.1	0.50 (70.8)	5 (450 V)
					60		145	0.67	1550	0.37 (52.4)	1.1	0.52 (73.6)	
				230	50		145	0.66	1275	0.45 (63.7)	1.1	0.57 (80.7)	
					60		151	0.67	1575	0.36 (51.0)	1.1	0.57 (80.7)	

• 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-124.
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

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

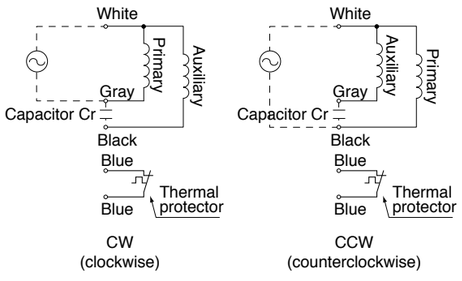
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable 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								

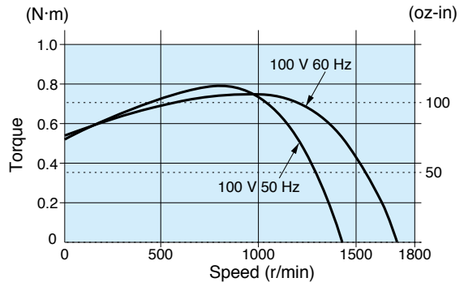
Connection diagram



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

Speed-torque characteristics

M9RZ60G4LG(A)



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

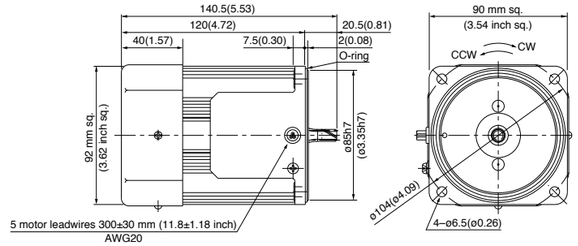
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

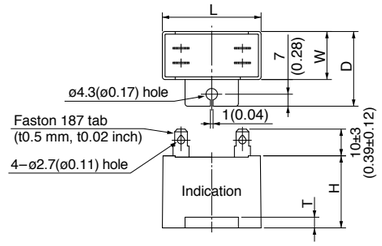
M9RZ60G4LG(A) 4P 60 W 100 V (with fan)
M9RZ60G4DG(A) 4P 60 W 110 V / 115 V (with fan)
M9RZ60G4YG(A) 4P 60 W 200 V (with fan)
M9RZ60G4GG(A) 4P 60 W 220 V / 230V (with fan)

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



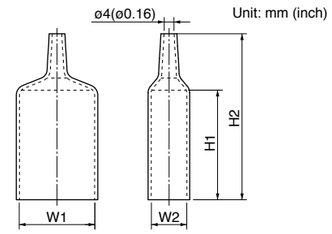
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

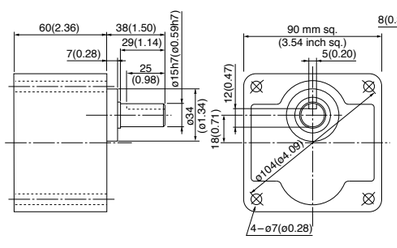
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M9RZ60G4LG(A)	M0PC25M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ60G4DG(A)	M0PC20M25G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4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

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

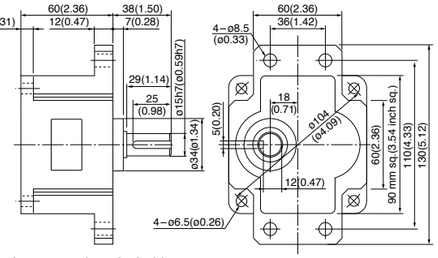
Gear head (dimensions)

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

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



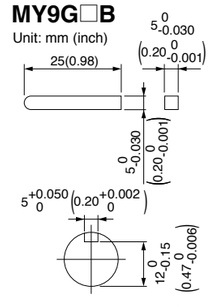
MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg(3.09 lb)



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-121 | Round shaft motor B-124 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (leadwire)

90 mm (3.54 inch) sq. 90 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	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.	M9RZ90G4L	4	90	100	50	30	171	1.7	1225	0.70 (99.1)	2.8	0.63 (89.2)	30 (200 V)
					60		181	1.9	1525	0.56 (79.3)	2.7	0.64 (90.6)	
	M9RZ90G4Y	4	90	200	50	30	184	0.93	1150	0.72 (102)	1.4	0.64 (90.6)	7.5 (370 V)
					60		170	0.96	1475	0.57 (80.7)	1.4	0.66 (93.5)	

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

• Permissible torque at output shaft of gear head

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

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

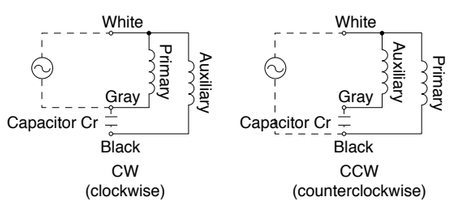
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable 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.

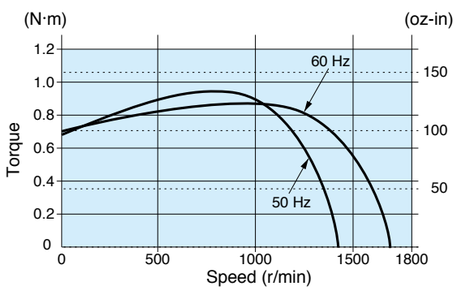
Applicable gear head		Reduction ratio		250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	MZ9G10XB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



Speed-torque characteristics

M9RZ90G4L



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

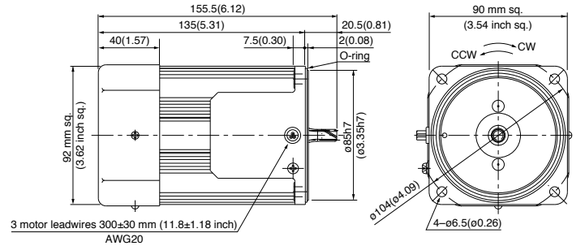
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

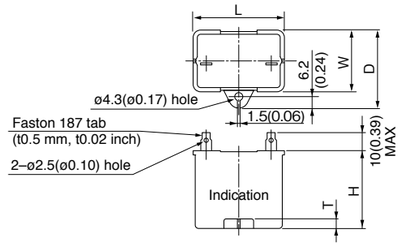
M9RZ90G4L 4P 90 W 100 V (with fan)
M9RZ90G4Y 4P 90 W 200 V (with fan)

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



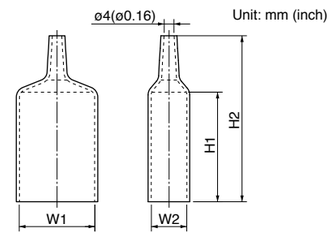
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

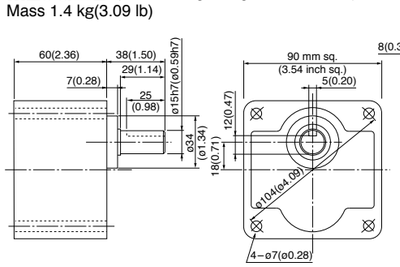
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	H1	H2
M9RZ90G4L	M0PC30M20A	50.2 (1.98)	35 (1.38)	45.5 (1.79)	47 (1.85)	5 (0.20)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90G4Y	M0PC7.5M37	50 (1.97)	34 (1.34)	45 (1.77)	45 (1.77)	6 (0.24)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)

* Capacitors (single item) can also be purchased.

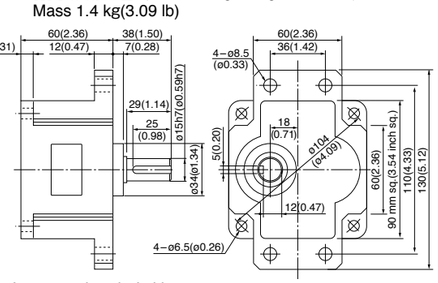
Gear head (dimensions)

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)

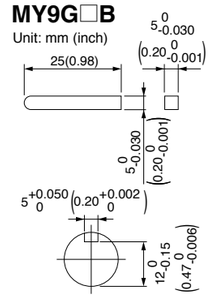


Note) MZ / MY is available for a gear head of either type.

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-121 | Round shaft motor B-124 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (leadwire)

90 mm (3.54 inch) sq. 90 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	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.	M9RZ90G4LG M9RZ90G4LGA	4	90	100	50	30	195	2.0	1175	0.73 (104)	3.0	0.68 (96.3)	32 (250 V)
					60		203	2.0	1525	0.57 (80.7)	2.9	0.68 (96.3)	
	M9RZ90G4DG M9RZ90G4DGA	4	90	110	60	30	201	1.8	1550	0.55 (77.9)	3.1	0.72 (102)	28 (250 V)
				115	60		209	1.8	1575	0.55 (77.9)	3.2	0.79 (112)	
	M9RZ90G4YG M9RZ90G4YGA	4	90	200	50	30	185	0.93	1175	0.73 (104)	1.4	0.68 (96.3)	8 (450 V)
					60		206	1.1	1500	0.57 (80.7)	1.4	0.68 (96.3)	
	M9RZ90G4GG M9RZ90G4GGA	4	90	220	50	30	191	0.89	1225	0.70 (99.1)	1.5	0.72 (102)	7 (450 V)
					60		197	0.90	1550	0.55 (77.9)	1.4	0.72 (102)	
				230	50		202	0.92	1250	0.69 (97.7)	1.6	0.79 (112)	
					60		204	0.88	1575	0.55 (77.9)	1.5	0.79 (112)	

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

• Permissible torque at output shaft of gear head

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

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

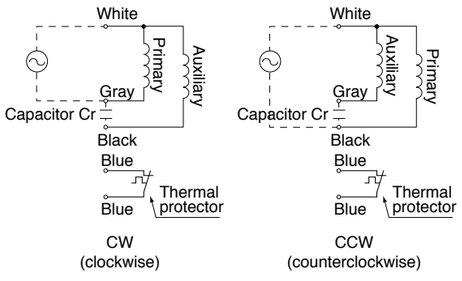
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable 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								

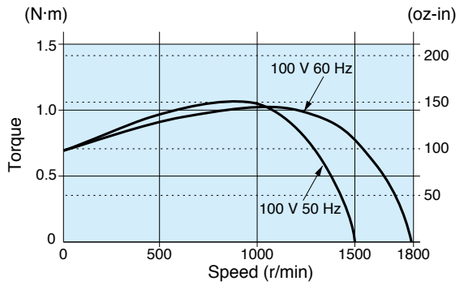
Connection diagram



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

Speed-torque characteristics

M9RZ90G4LG(A)



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

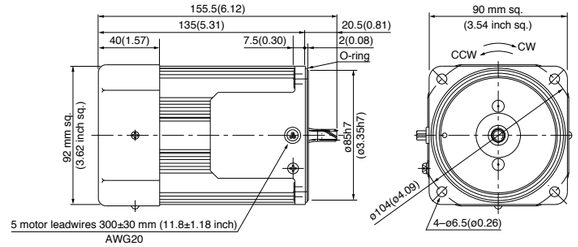
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

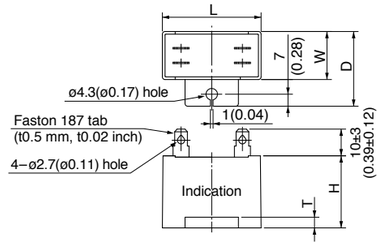
M9RZ90G4LG(A) 4P 90 W 100 V (with fan)
M9RZ90G4DG(A) 4P 90 W 110 V / 115 V (with fan)
M9RZ90G4YG(A) 4P 90 W 200 V (with fan)
M9RZ90G4GG(A) 4P 90 W 220 V / 230 V (with fan)

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



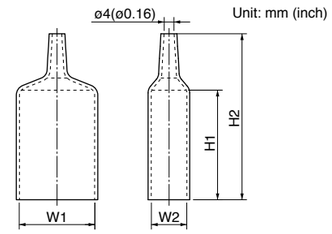
Capacitor (dimensions) [attachment]

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
M9RZ90G4LG(A)	M0PC32M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90G4DG(A)	M0PC28M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90G4YG(A)	M0PC8M45G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90G4GG(A)	M0PC7M45G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)

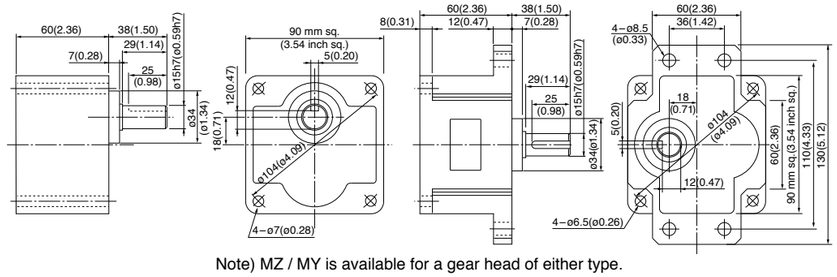
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

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)

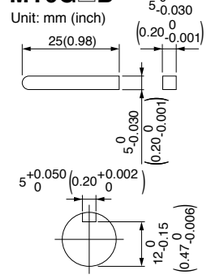


Note) MZ / MY is available for a gear head of either type.

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-121 | Round shaft motor B-124 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible 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.	M8RX25GK4L	4	25	100	50	30	58	0.59	1275	0.19 (26.9)	1.0	0.17 (24.1)	9.5 (200 V)
					60		57	0.59	1575	0.16 (22.7)	1.0	0.17 (24.1)	
	M8RX25GK4Y	4	25	200	50	30	57	0.29	1275	0.19 (26.9)	0.52	0.19 (26.9)	2.4 (400 V)
					60		57	0.29	1575	0.16 (22.7)	0.50	0.19 (26.9)	

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

• Permissible torque at output shaft of gear head

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

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

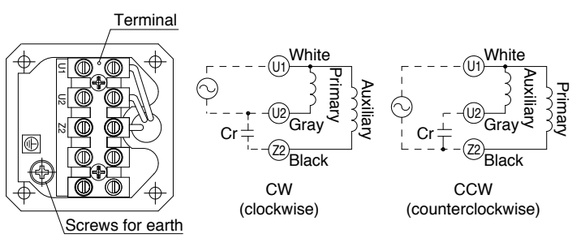
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	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.

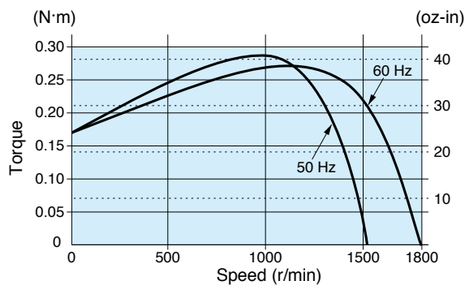
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	Permissible torque	N·m	7.84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

M8RX25GK4L



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

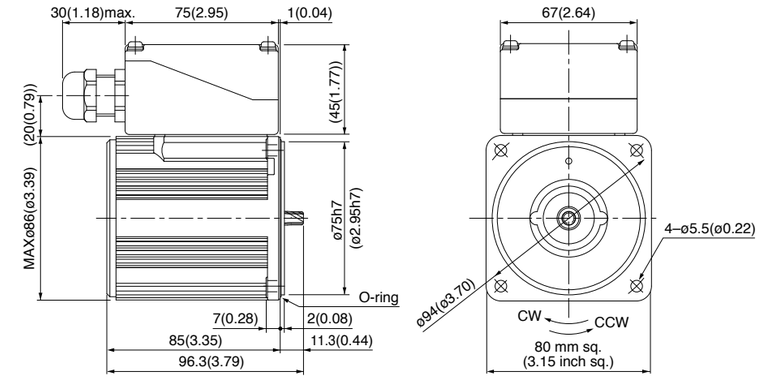
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

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

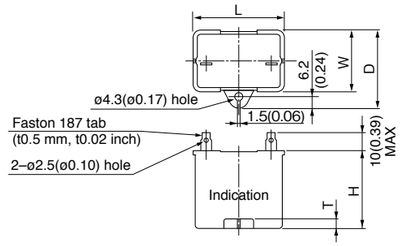
Mass	Helical gear	Module	Number of teeth
1.8 kg 3.97 lb		0.5	9



* Diameter of applicable cabtyre cable to be ø8(0.31) to ø12(0.47).

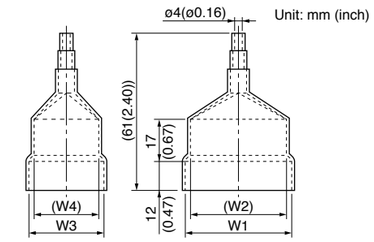
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

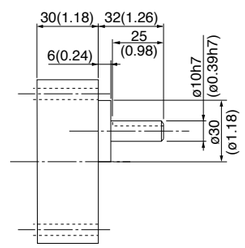
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M8RX25GK4L	M0PC9.5M20	39.5 (1.56)	22 (0.87)	32.5 (1.28)	30.5 (1.20)	4 (0.16)	M0PC3922	39.5 (1.56)	37.5 (1.48)	22 (0.87)	20 (0.79)
M8RX25GK4Y	M0PC2.4M40	49.7 (1.96)	24 (0.94)	34.5 (1.36)	34.5 (1.36)	4 (0.16)	M0PC5026	50 (1.97)	48 (1.89)	26 (1.02)	22 (0.87)

* Capacitors (single item) can also be purchased.

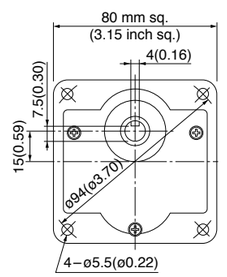
Gear head (dimensions)

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

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

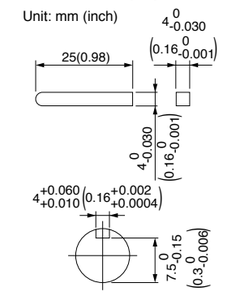


MX8G□M (metal bearing) Mass 0.6 kg(1.32 lb)



Key and keyway (dimensions) [attachment]

MX8G□B(M)



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

Gear head combination B-122 | Round shaft motor B-124 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (sealed connector)

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

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	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.	M8RX25GK4LG M8RX25GK4LGA	4	25	100	50	30	59	0.60	1250	0.19 (26.9)	1.1	0.19 (26.9)	10 (250 V)
					60		61	0.61	1550	0.15 (21.2)	1.1	0.19 (26.9)	
	M8RX25GK4DG M8RX25GK4DGA	4	25	110	60	30	58	0.53	1575	0.15 (21,2)	1.1	0.17 (24.1)	8 (250 V)
				115	60		61	0.53	1600	0.15 (21.2)	1.2	0.19 (26.9)	
	M8RX25GK4YG M8RX25GK4YGA	4	25	200	50	30	59	0.30	1200	0.20 (28.3)	0.45	0.19 (26.9)	2.5 (450 V)
					60		66	0.34	1525	0.16 (22.7)	0.46	0.19 (26.9)	
	M8RX25GK4GG M8RX25GK4GGA	4	25	220	50	30	60	0.28	1225	0.19 (26.9)	0.47	0.18 (25.5)	2 (450 V)
					60		60	0.27	1550	0.15 (21.2)	0.46	0.18 (25.5)	
				230	50		62	0.28	1275	0.19 (26.9)	0.49	0.19 (26.9)	
					60		62	0.27	1575	0.15 (21.2)	0.48	0.19 (26.9)	

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

• Permissible torque at output shaft of gear head

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

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

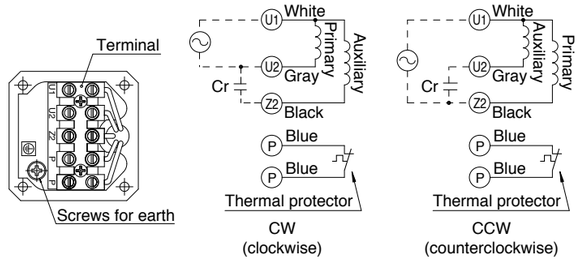
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	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									

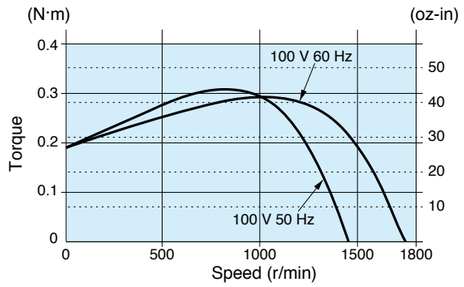
Connection diagram



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

Speed-torque characteristics

M8RX25GK4LG(A)



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

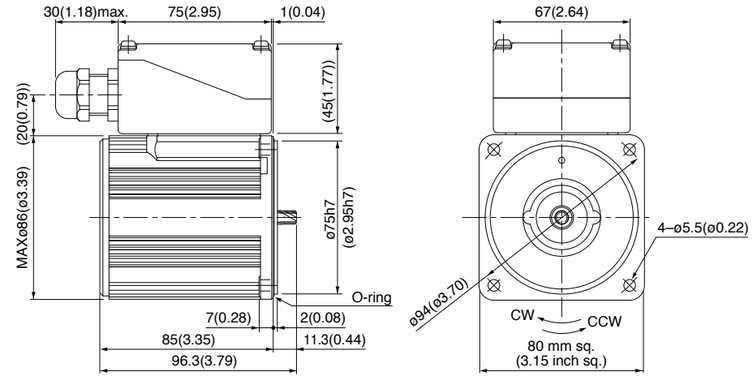
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

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

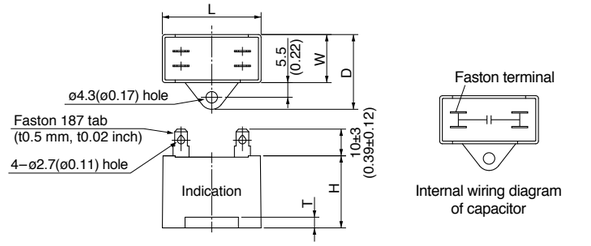
Mass	Helical gear	Module	Number of teeth
1.8 kg 3.97 lb		0.5	9



* Diameter of applicable cabtyre cable to be ø8(0.31) to ø12(0.47).

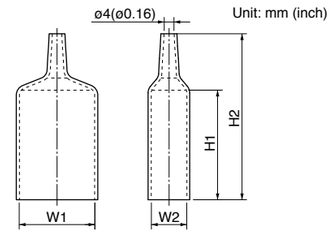
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

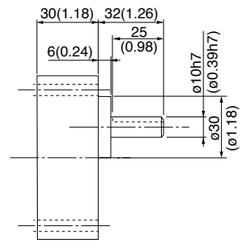
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M8RX25GK4LG(A)	M0PC10M25G	58 (2.28)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC5821G	58 (2.28)	21 (0.83)	55 (2.17)	78 (3.07)
M8RX25GK4DG(A)	M0PC8M25G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4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

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

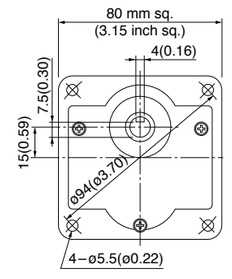
Gear head (dimensions)

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

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



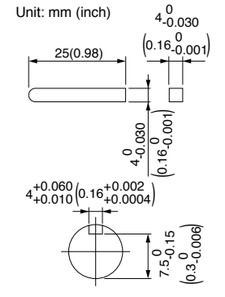
MX8G□M (metal bearing) Mass 0.6 kg(1.32 lb)



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-122 | Round shaft motor B-124 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (sealed connector)

90 mm (3.54 inch) sq. 40 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating 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.	M9RX40GK4L	4	40	100	50	30	94	0.96	1200	0.32 (45.3)	1.6	0.27 (38.2)	15 (210 V)
					60		93	0.93	1525	0.25 (35.4)	1.5	0.26 (36.8)	
	M9RX40GK4Y	4	40	200	50	30	92	0.48	1200	0.32 (45.3)	0.81	0.28 (39.7)	3.8 (400 V)
					60		93	0.46	1525	0.25 (35.4)	0.77	0.29 (41.1)	

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

• Permissible torque at output shaft of gear head

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

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

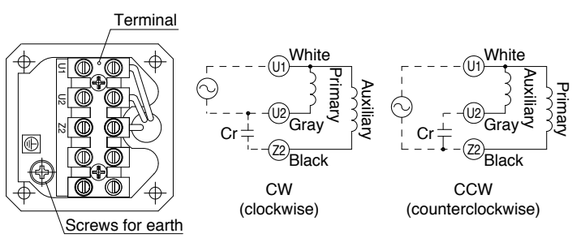
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	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.

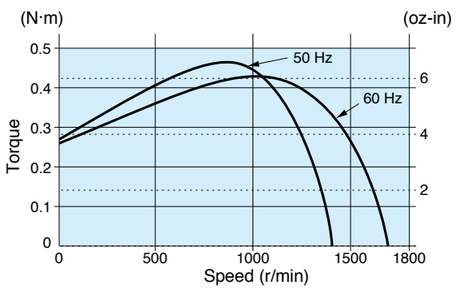
Applicable gear head		Reduction ratio		200	250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	7.5	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	9	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	Permissible torque	N·m	9.80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

Connection diagram



Speed-torque characteristics

M9RX40GK4L



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

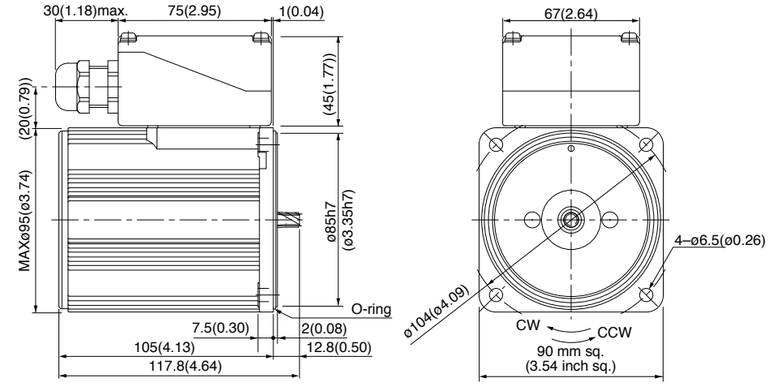
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

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

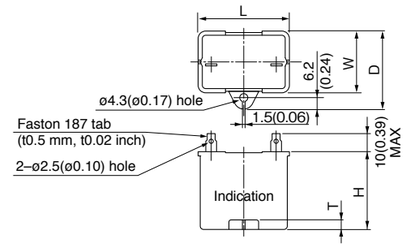
Mass	Helical gear	Module	Number of teeth
2.8 kg 6.17 lb		0.55	9



* Diameter of applicable cabtyre cable to be ø8(0.31) to ø12(0.47).

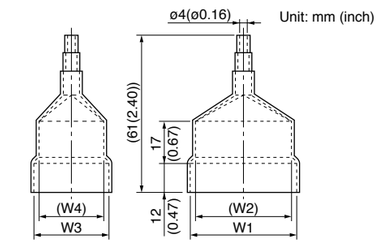
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

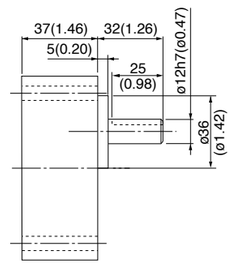
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M9RX40GK4L	M0PC15M20	39.5 (1.56)	26.7 (1.05)	37 (1.46)	41 (1.61)	4 (0.16)	M0PC3926	39.5 (1.56)	37.5 (1.48)	26 (1.02)	25 (0.98)
M9RX40GK4Y	M0PC3.8M40	50 (1.97)	26.7 (1.05)	37.5 (1.48)	38 (1.50)	4 (0.16)	M0PC5026	50 (1.97)	48 (1.89)	26 (1.02)	22 (0.87)

* Capacitors (single item) can also be purchased.

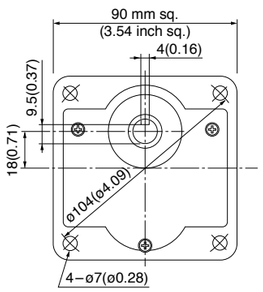
Gear head (dimensions)

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

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

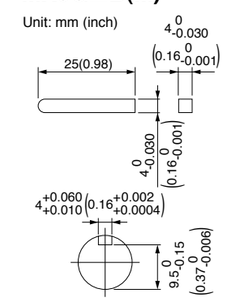


MX9G□M (metal bearing) Mass 0.8 kg(1.76 lb)



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-122 | Round shaft motor B-124 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (sealed connector)

cULus 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.	M9RX40GK4LG M9RX40GK4LGA	4	40	100	50	30	86	0.87	1275	0.30 (42.5)	1.7	0.30 (42.5)	16 (250 V)
					60		93	0.95	1575	0.24 (34.0)	1.6	0.30 (42.5)	
	M9RX40GK4DG M9RX40GK4DGA	4	40	110	60	30	91	0.83	1550	0.25 (35.4)	1.7	0.25 (35.4)	12 (250 V)
				115	60		94	0.82	1575	0.24 (34.0)	1.8	0.29 (41.1)	
	M9RX40GK4YG M9RX40GK4YGA	4	40	200	50	30	91	0.45	1200	0.32 (45.3)	0.67	0.30 (42.5)	4 (450 V)
					60		109	0.57	1500	0.25 (35.4)	0.70	0.30 (42.5)	
	M9RX40GK4GG M9RX40GK4GGA	4	40	220	50	30	88	0.40	1250	0.31 (43.9)	0.71	0.30 (42.5)	3.5 (450 V)
					60		104	0.49	1550	0.25 (35.4)	0.71	0.30 (42.5)	
				230	50		92	0.40	1300	0.29 (41.1)	0.74	0.33 (46.7)	
					60		110	0.50	1575	0.24 (34.0)	0.74	0.33 (46.7)	

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

• Permissible torque at output shaft of gear head

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

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

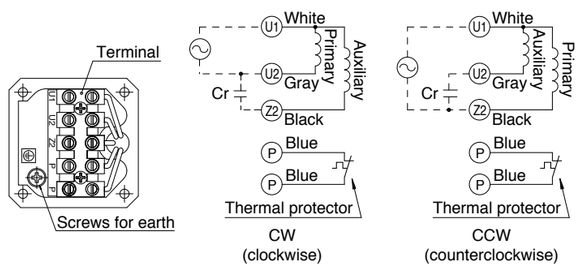
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10
Applicable gear head	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)							
	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)							
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	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80	9.80
			(lb-in)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)	(86.7)
		Rotational direction		Same as motor rotational direction		Reverse to motor rotational direction									

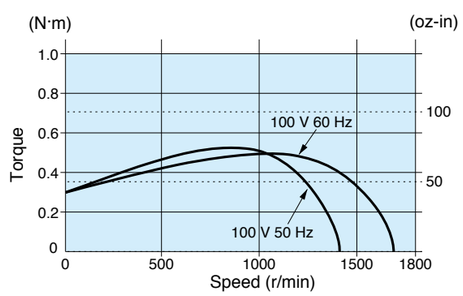
Connection diagram



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

Speed-torque characteristics

M9RX40GK4LG(A)



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

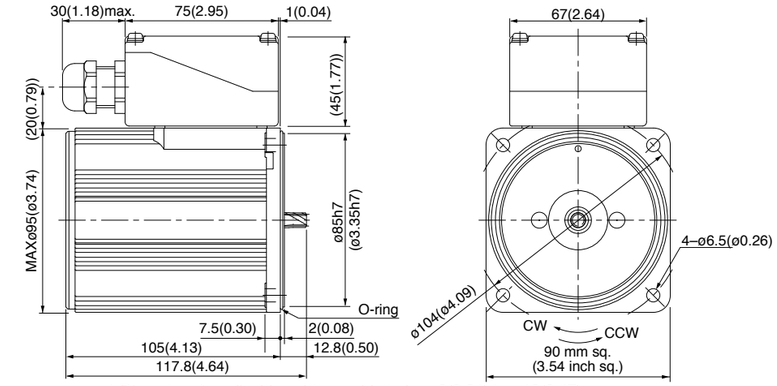
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

M9RX40GK4LG(A) 4P 40 W 100 V
M9RX40GK4DG(A) 4P 40 W 110 V / 115 V
M9RX40GK4YG(A) 4P 40 W 200 V
M9RX40GK4GG(A) 4P 40 W 220 V / 230 V

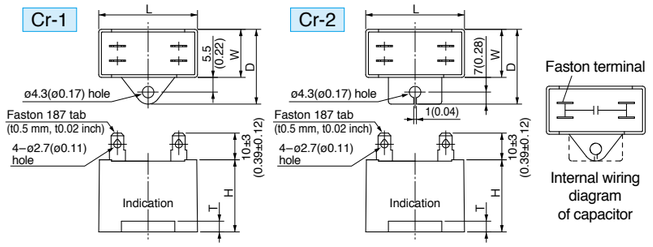
Mass	Helical gear	Module	Number of teeth
2.8 kg 6.17 lb		0.55	9



* Diameter of applicable cabtyre cable to be ø8(0.31) to ø12(0.47).

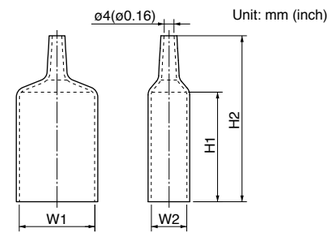
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

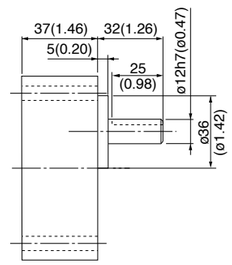
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	dimension No.	Capacitor cap (attachment)	W1	W2	H1	H2
M9RX40GK4LG(A)	M0PC16M25G	58 (2.28)	23.5 (0.93)	38.5 (1.52)	37 (1.46)	4 (0.16)	Cr-2	M0PC5823G	58 (2.28)	23.5 (0.93)	55 (2.17)	78 (3.07)
M9RX40GK4DG(A)	M0PC12M25G	58 (2.28)	22 (0.87)	32 (1.26)	35 (1.38)	4 (0.16)	Cr-1	M0PC5822G	58 (2.28)	22 (0.87)	55 (2.17)	78 (3.07)
M9RX40GK4YG(A)	M0PC4M45G	58 (2.28)	23.5 (0.93)	38.5 (1.52)	37 (1.46)	4 (0.16)	Cr-2	M0PC5823G	58 (2.28)	23.5 (0.93)	55 (2.17)	78 (3.07)
M9RX40GK4GG(A)	M0PC3.5M45G	58 (2.28)	22 (0.87)	32 (1.26)	35 (1.38)	4 (0.16)	Cr-1	M0PC5822G	58 (2.28)	22 (0.87)	55 (2.17)	78 (3.07)

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

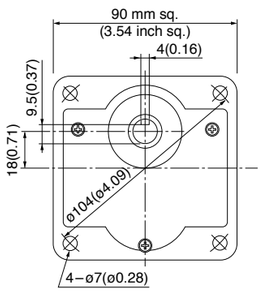
Gear head (dimensions)

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

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



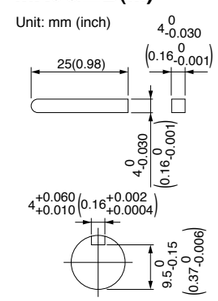
MX9G□M (metal bearing) Mass 0.8 kg(1.76 lb)



Key and keyway (dimensions) [attachment]

MX9G□B(M)

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-122 | Round shaft motor B-124 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible 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.	M9RZ60GK4L	4	60	100	50	30	144	1.5	1200	0.46 (65.1)	2.4	0.50 (70.8)	25 (200 V)
					60		163	1.5	1500	0.39 (55.2)	2.3	0.53 (75.1)	
	M9RZ60GK4Y	4	60	200	50	30	146	0.74	1225	0.46 (65.1)	1.2	0.53 (75.1)	6.2 (375 V)
					60		153	0.77	1525	0.39 (55.2)	1.3	0.55 (77.9)	

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

• Permissible torque at output shaft of gear head

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

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

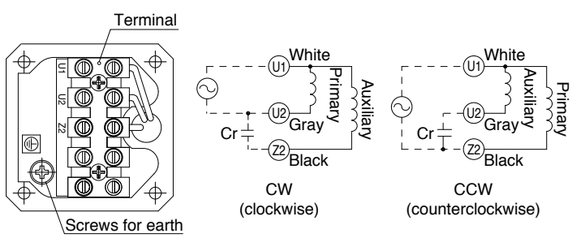
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable 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.

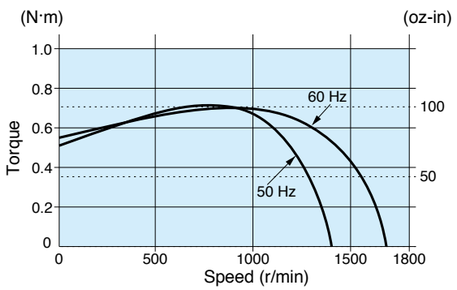
Applicable gear head		Reduction ratio		250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MZ9G□B (ball bearing / Hinge not attached) MY9G□B (ball bearing / Hinge attached)	MZ9G10XB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



Speed-torque characteristics

M9RZ60GK4L



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

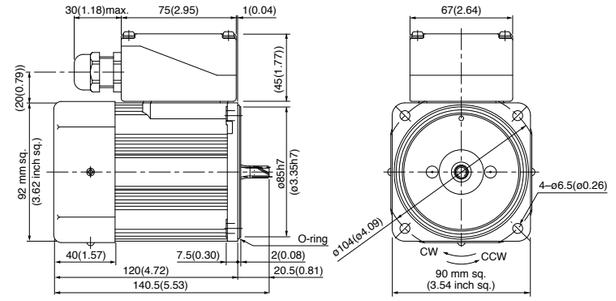
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

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

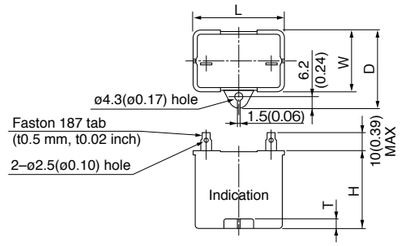
Mass	Helical gear	Module	Number of teeth
3.0 kg 6.61 lb		0.5	9



* Diameter of applicable cabtyre cable to be ø8(0.31) to ø12(0.47).

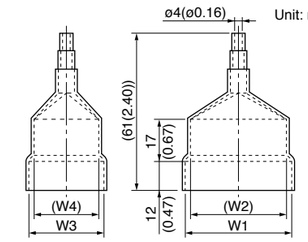
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

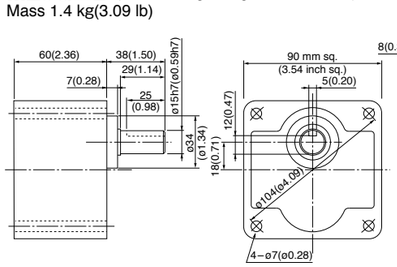
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M9RZ60GK4L	M0PC25M20	50.2 (1.98)	31 (1.22)	41 (1.61)	42 (1.65)	5 (0.20)	M0PC5032	50 (1.97)	48 (1.89)	32.5 (1.28)	29.5 (1.16)
M9RZ60GK4Y	M0PC6.2M38	50 (1.97)	30.5 (1.20)	41 (1.61)	41.5 (1.63)	4 (0.16)	M0PC5032	50 (1.97)	48 (1.89)	32.5 (1.28)	29.5 (1.16)

* Capacitors (single item) can also be purchased.

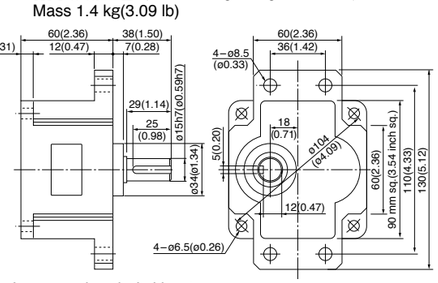
Gear head (dimensions)

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)

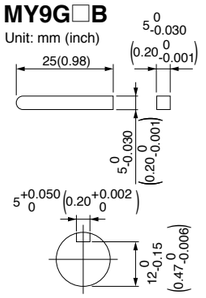


Note) MZ / MY is available for a gear head of either type.

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-122 | Round shaft motor B-124 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (sealed connector)

cULus CE CCC **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.	M9RZ60GK4LG M9RZ60GK4LGA	4	60	100	50	30	137	1.4	1250	0.46 (65.1)	2.4	0.51 (72.2)	25 (250 V)
					60		147	1.5	1550	0.37 (52.4)	2.4	0.53 (75.1)	
	M9RZ60GK4DG M9RZ60GK4DGA	4	60	110	60	30	138	1.3	1575	0.36 (51.0)	2.5	0.50 (70.8)	20 (250 V)
				115	60		144	1.3	1600	0.36 (51.0)	2.6	0.55 (77.9)	
	M9RZ60GK4YG M9RZ60GK4YGA	4	60	200	50	30	135	0.67	1200	0.48 (68.0)	1.0	0.51 (72.2)	6 (450 V)
					60		158	0.81	1500	0.38 (53.8)	1.1	0.53 (75.1)	
	M9RZ60GK4GG M9RZ60GK4GGA	4	60	220	50	30	137	0.64	1225	0.47 (66.6)	1.1	0.50 (70.8)	5 (450 V)
					60		145	0.67	1550	0.37 (52.4)	1.1	0.52 (73.6)	
				230	50		145	0.66	1275	0.45 (63.7)	1.1	0.57 (80.7)	
					60		151	0.67	1575	0.36 (51.0)	1.1	0.57 (80.7)	

• 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-124.
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

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

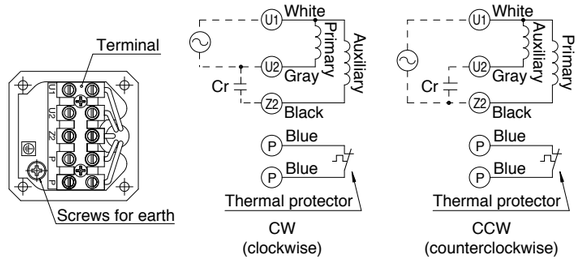
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable 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								

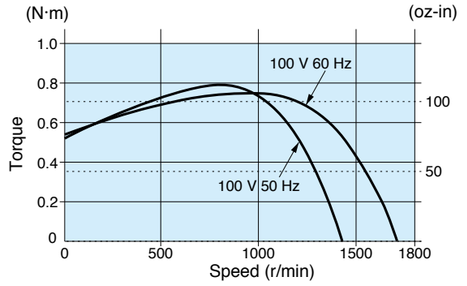
Connection diagram



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

Speed-torque characteristics

M9RZ60GK4LG(A)



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

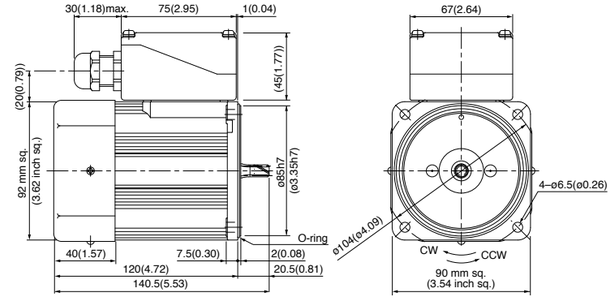
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

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

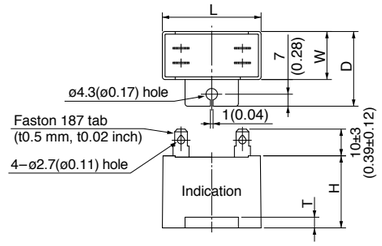
Mass	Helical gear	Module	Number of teeth
3.0 kg 6.61 lb		0.6	9



* Diameter of applicable cabtyre cable to be ø8(0.31) to ø12(0.47).

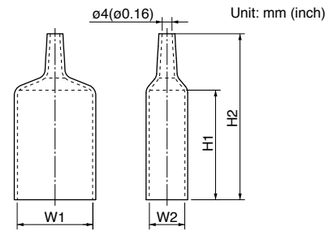
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

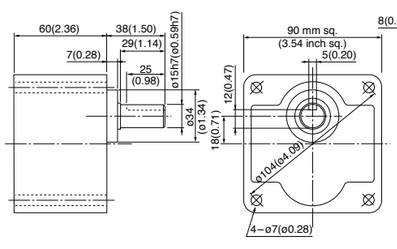
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M9RZ60GK4LG(A)	M0PC25M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ60GK4DG(A)	M0PC20M25G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)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

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

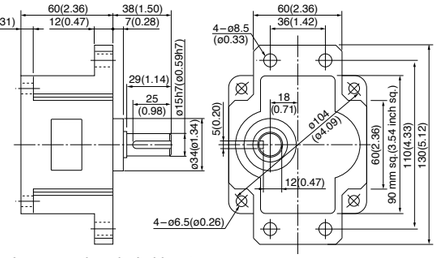
Gear head (dimensions)

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

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



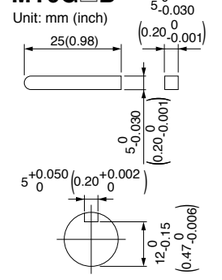
MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg(3.09 lb)



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-122 | Round shaft motor B-124 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible 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.	M9RZ90GK4L	4	90	100	50	30	171	1.7	1225	0.70 (99.1)	2.8	0.63 (89.2)	30 (200 V)
					60		181	1.9	1525	0.56 (79.3)	2.7	0.64 (90.6)	
	M9RZ90GK4Y	4	90	200	50	30	184	0.93	1150	0.72 (102)	1.4	0.64 (90.6)	7.5 (370 V)
					60		190	0.96	1475	0.57 (80.7)	1.4	0.66 (93.5)	

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

• Permissible torque at output shaft of gear head

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

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

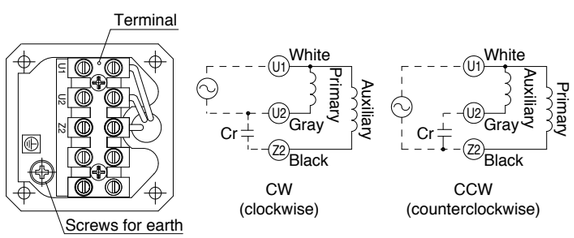
Reduction ratio			3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)		50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
		60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable 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.

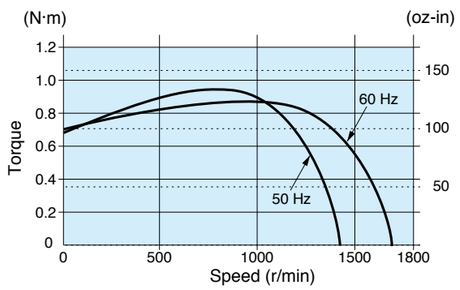
Applicable gear head		Reduction ratio		250	300	360	500	600	750	900	1000	1200	1500	1800
Bearing	Decimal gear head	Speed (r/min)	50 Hz	6	5	4.2	3	2.5	2	1.7	1.5	1.3	1	0.8
			60 Hz	7.2	6	5	3.6	3	2.4	2	1.8	1.5	1.2	1
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	MZ9G10XB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



Speed-torque characteristics

M9RZ90GK4L



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

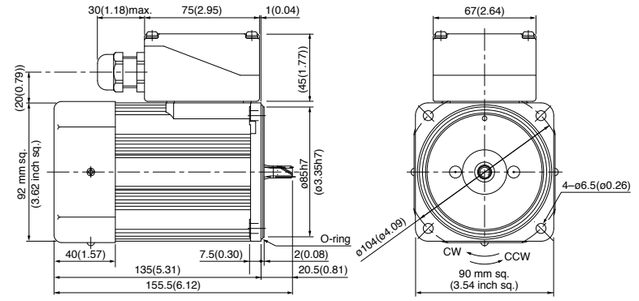
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

M9RZ90GK4L 4P 90W 100V (with fan)
M9RZ90GK4Y 4P 90W 200V (with fan)

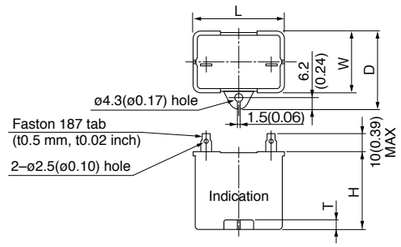
Mass	Helical gear	Module	Number of teeth
3.3 kg 7.28 lb		0.6	9



* Diameter of applicable cabtyre cable to be ø8(0.31) to ø12(0.47).

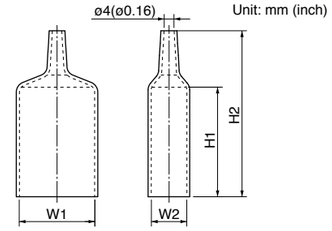
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

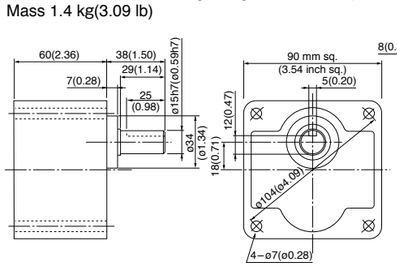
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	H1	H2
M9RZ90GK4L	M0PC30M20A	50.2 (1.98)	35 (1.38)	45.5 (1.79)	47 (1.85)	5 (0.20)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90GK4Y	M0PC7.5M37	50 (1.97)	34 (1.34)	45 (1.77)	45 (1.77)	6 (0.24)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)

* Capacitors (single item) can also be purchased.

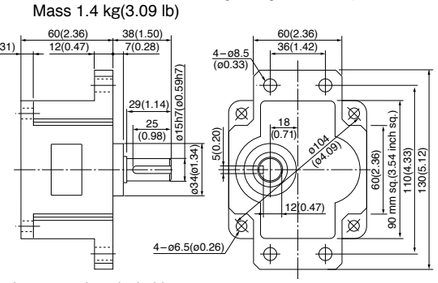
Gear head (dimensions)

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)

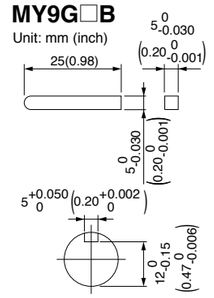


Note) MZ / MY is available for a gear head of either type.

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-122 | Round shaft motor B-124 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Reversible motor (sealed connector)

cULus CE 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.	M9RZ90GK4LG	4	90	100	50	30	195	2.0	1175	0.73 (103)	3.0	0.68 (96.3)	32 (250 V)
	M9RZ90GK4LGA				60		203	2.0	1525	0.57 (80.7)	2.9	0.68 (96.3)	
	M9RZ90GK4DG	4	90	110	60	30	201	1.8	1550	0.55 (77.9)	3.1	0.72 (102)	28 (250 V)
	M9RZ90GK4DGA			115	60		209	1.8	1575	0.55 (77.9)	3.2	0.79 (112)	
	M9RZ90GK4YG	4	90	200	50	30	185	0.93	1175	0.73 (103)	1.4	0.68 (96.3)	8 (450 V)
	M9RZ90GK4YGA				60		206	1.1	1500	0.57 (80.7)	1.4	0.68 (96.3)	
	M9RZ90GK4GG	4	90	220	50	30	191	0.89	1225	0.70 (99.1)	1.5	0.72 (102)	7 (450 V)
	M9RZ90GK4GGA				60		197	0.90	1550	0.55 (77.9)	1.4	0.72 (102)	
				230	50		202	0.92	1250	0.69 (97.7)	1.6	0.79 (112)	
					60		204	0.88	1575	0.55 (77.9)	1.5	0.79 (112)	

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

• Permissible torque at output shaft of gear head

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

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

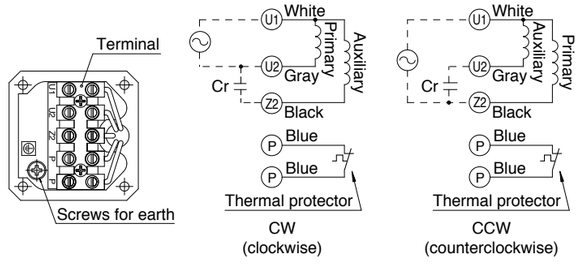
Reduction ratio		3	3.6	5	6	7.5	9	10	12.5	15	18	20	25	30	36	50	60	75	90	100	120	150	180	200
Speed (r/min)	50 Hz	500	416.7	300	250	200	166.7	150	120	100	83.3	75	60	50	41.7	30	25	20	16.7	15	12.5	10	8.3	7.5
	60 Hz	600	500	360	300	240	200	180	144	120	100	90	72	60	50	36	30	24	20	18	15	12	10	9
Applicable gear 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)							
Applicable gear head: 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: Bearing	Decimal gear head	Reduction ratio		250	300	360	500	600	750	900	1000	1200	1500	1800
		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								

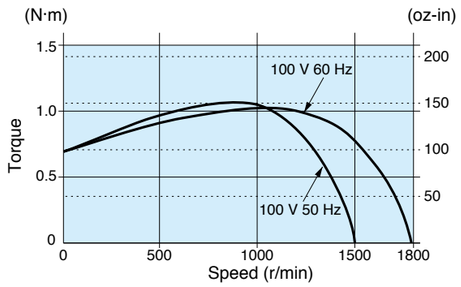
Connection diagram



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

Speed-torque characteristics

M9RZ90GK4LG(A)



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

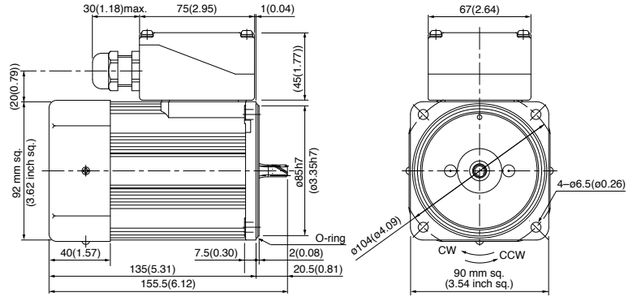
Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

Motor (dimensions)

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

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

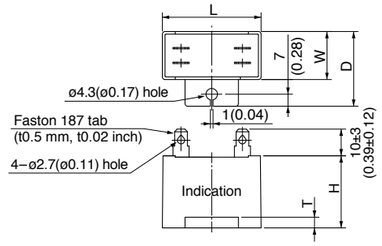
Mass	Helical gear	Module	Number of teeth
3.3 kg 7.28 lb		0.6	9



* Diameter of applicable cabtyre cable to be ø8(0.31) to ø12(0.47).

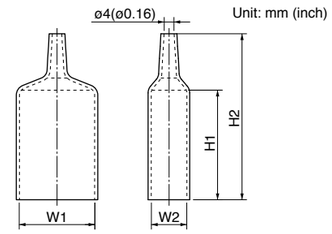
Capacitor (dimensions) [attachment]

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
M9RZ90GK4LG(A)	M0PC32M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90GK4DG(A)	M0PC28M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90GK4YG(A)	M0PC8M45G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90GK4GG(A)	M0PC7M45G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)

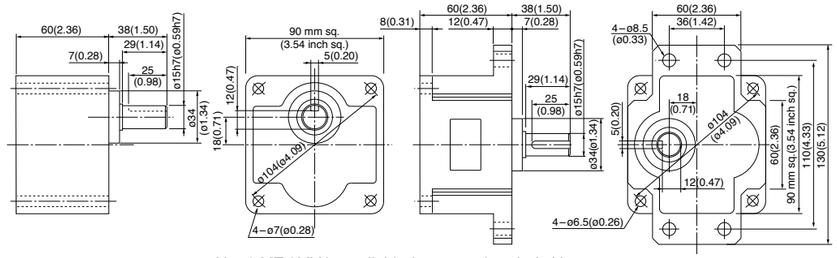
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

Gear head (dimensions)

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

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

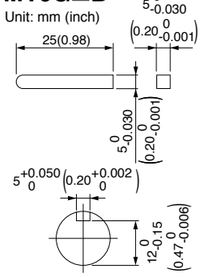
MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg(3.09 lb)



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-122 | Round shaft motor B-124 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

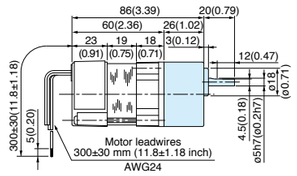
Reversible motor (leadwire)

Gear head combination dimensions
Scale: 1/4, Unit: mm (inch)

*** Gear head is sold separately.**

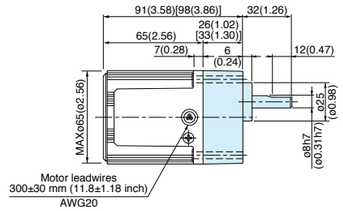
42 mm sq. (1.65 inch sq.) 1 W

M4RA1G4L + M4GA□F



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

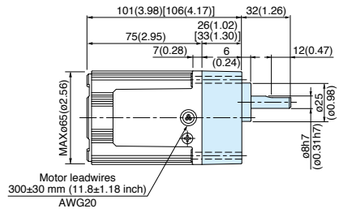
M6RX4G4L + MX6G□BA(MA) / MX6G□B(M)



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

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

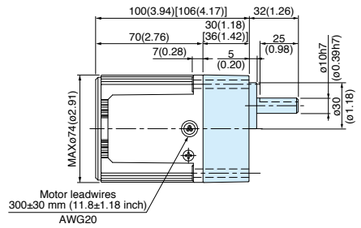
M6RX6G4L + MX6G□BA(MA) / MX6G□B(M)
M6RX6G4Y + MX6G□BA(MA) / MX6G□B(M)
M6RX6G4LG(A) + MX6G□BA(MA) / MX6G□B(M)
M6RX6G4DG(A) + MX6G□BA(MA) / MX6G□B(M)
M6RX6G4YG(A) + MX6G□BA(MA) / MX6G□B(M)
M6RX6G4GG(A) + MX6G□BA(MA) / MX6G□B(M)



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

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

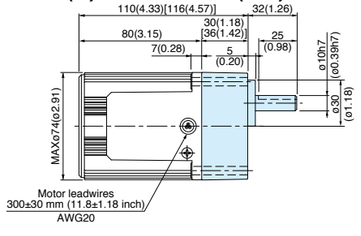
M7RX10G4L + MX7G□BA(MA) / MX7G□B(M)
M7RX10G4Y + MX7G□BA(MA) / MX7G□B(M)



* Figures in [ ] represent the dimensions of 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

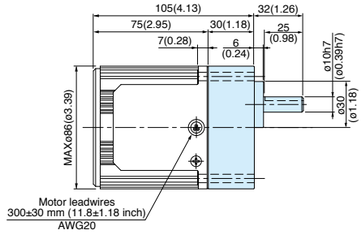
M7RX15G4L + MX7G□BA(MA) / MX7G□B(M)
M7RX15G4Y + MX7G□BA(MA) / MX7G□B(M)
M7RX15G4LG(A) + MX7G□BA(MA) / MX7G□B(M)
M7RX15G4DG(A) + MX7G□BA(MA) / MX7G□B(M)
M7RX15G4YG(A) + MX7G□BA(MA) / MX7G□B(M)
M7RX15G4GG(A) + MX7G□BA(MA) / MX7G□B(M)



* Figures in [ ] represent the dimensions of 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).

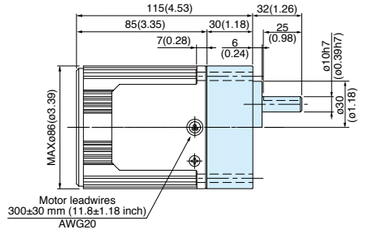
80 mm sq. (3.15 inch sq.) 20 W

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



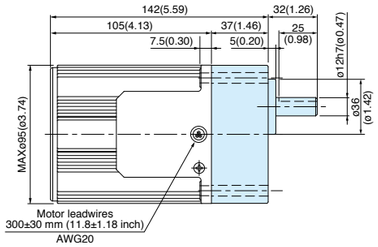
80 mm sq. (3.15 inch sq.) 25 W

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



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

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



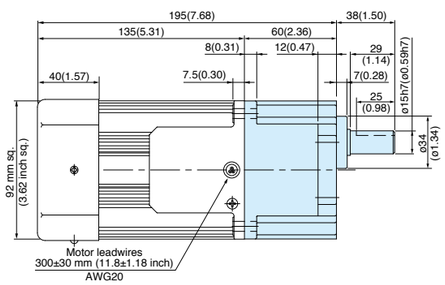
90 mm sq. (3.54 inch sq.) 60 W

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

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

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

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



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

* 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-64 | System configuration B-65 | Coding system B-65 | Model list B-68

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

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

Specifications B-72 to B-119 | Controls C-4 | Option D-2

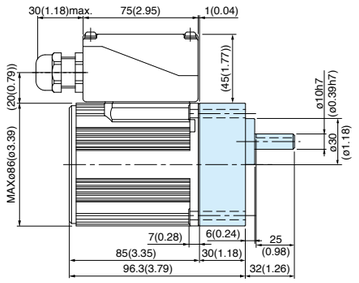
Reversible motor (sealed connector) Gear head combination dimensions

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

*** Gear head is sold separately.**

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

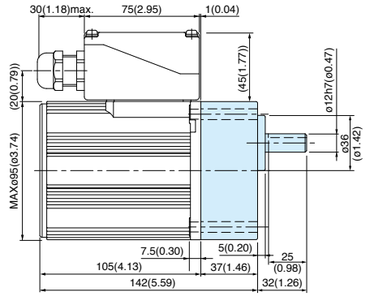
M8RX25GK4L + MX8G□B(M)
M8RX25GK4Y + MX8G□B(M)
M8RX25GK4LG(A) + MX8G□B(M)
M8RX25GK4DG(A) + MX8G□B(M)
M8RX25GK4YG(A) + MX8G□B(M)
M8RX25GK4GG(A) + MX8G□B(M)



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

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

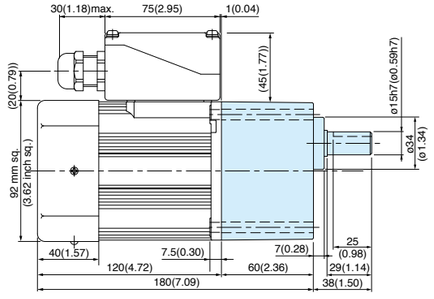
M9RX40GK4L + MX9G□B(M)
M9RX40GK4Y + MX9G□B(M)
M9RX40GK4LG(A) + MX9G□B(M)
M9RX40GK4DG(A) + MX9G□B(M)
M9RX40GK4YG(A) + MX9G□B(M)
M9RX40GK4GG(A) + MX9G□B(M)



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

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

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

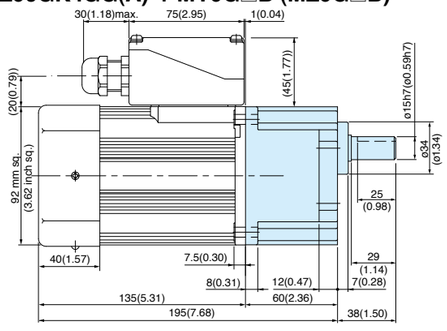


* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

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

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

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



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

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

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

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

Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68

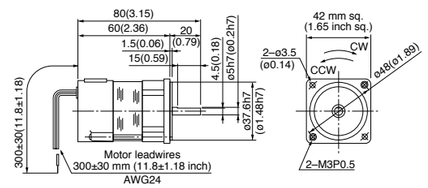
Reversible motor (4-pole round shaft / leadwire) Dimensions

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

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

Mass 0.3 kg (0.66 lb)

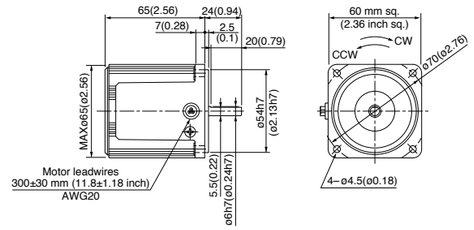
M4RA1S4L



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

Mass 0.56 kg (1.23 lb)

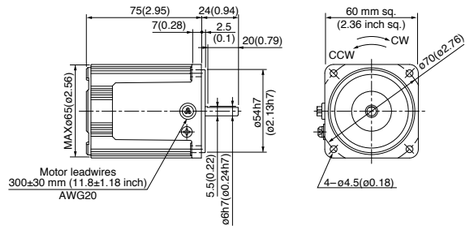
M6RX4S4LS



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

Mass 0.67 kg (1.48 lb)

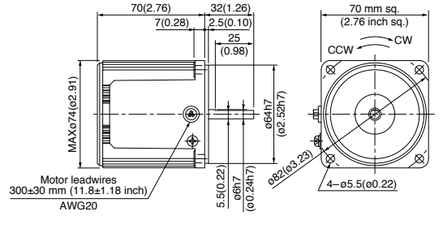
M6RX6S4LS M6RX6S4LG(A) M6RX6S4YG(A)
M6RX6S4YS M6RX6S4DG(A) M6RX6S4GG(A)



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

Mass 0.84 kg (1.85 lb)

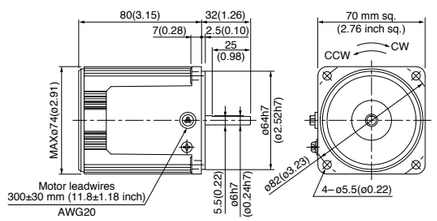
M7RX10S4LS
M7RX10S4YS



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

Mass 1.1 kg (2.43 lb)

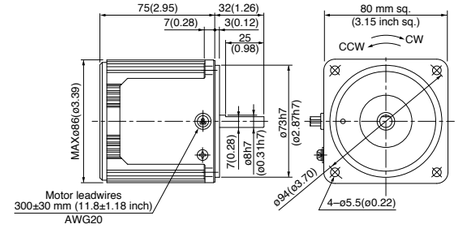
M7RX15S4LS M7RX15S4LG(A) M7RX15S4YG(A)
M7RX15S4YS M7RX15S4DG(A) M7RX15S4GG(A)



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

Mass 1.2 kg (2.65 lb)

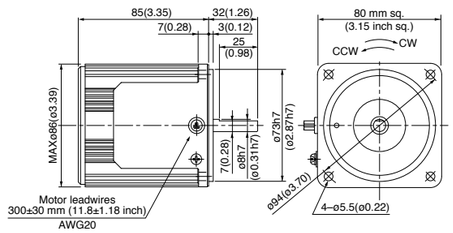
M8RX20S4LS
M8RX20S4YS



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

Mass 1.5 kg (3.31 lb)

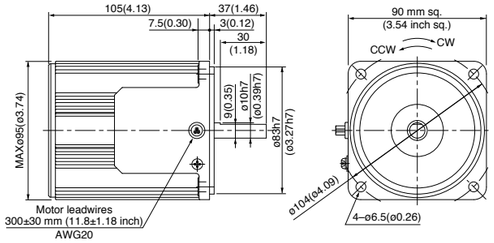
M8RX25S4LS M8RX25S4LG(A) M8RX25S4YG(A)
M8RX25S4YS M8RX25S4DG(A) M8RX25S4GG(A)



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

Mass 2.4 kg (5.29 lb)

M9RX40S4LS M9RX40S4LG(A) M9RX40S4YG(A)
M9RX40S4YS M9RX40S4DG(A) M9RX40S4GG(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-72 to B-119 | Controls C-4 | Option D-2

Reversible motor (4-pole round shaft / leadwire)

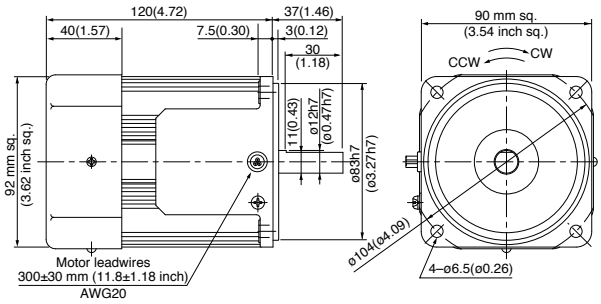
Dimensions
Scale: 1/4, Unit: mm (inch)

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

Mass 2.7 kg (5.95 lb)

M9RZ60S4LS (with fan)
M9RZ60S4YS (with fan)

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

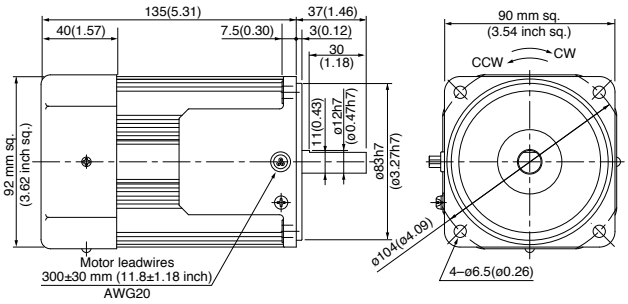


90 mm sq. (3.54 inch sq.) 90 W

Mass 3.4 kg (7.50 lb)

M9RZ90S4LS (with fan)
M9RZ90S4YS (with fan)

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



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

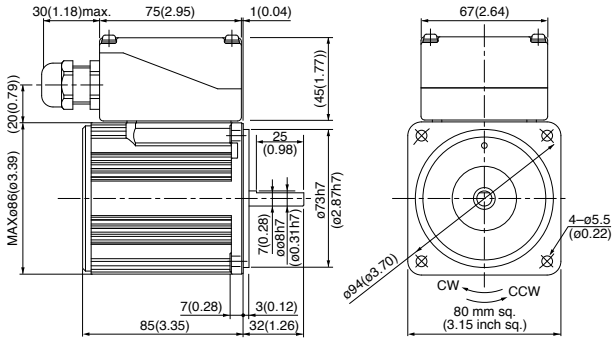
Dimensions
Scale: 1/4, Unit: mm (inch)

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

Mass 1.8 kg (3.97 lb)

M8RX25SK4LS
M8RX25SK4YS

M8RX25SK4LG(A)
M8RX25SK4YG(A)
M8RX25SK4DG(A)
M8RX25SK4GG(A)

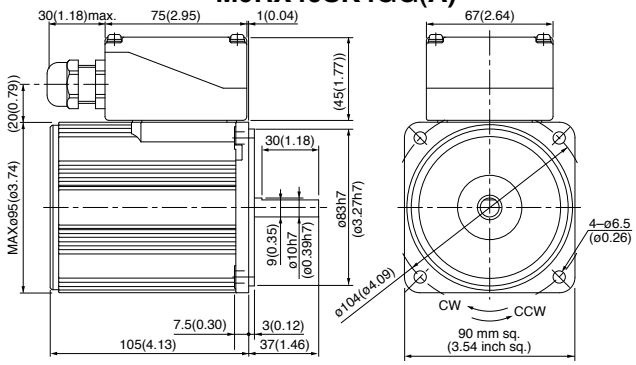


90 mm sq. (3.54 inch sq.) 40 W

Mass 2.8 kg (6.17 lb)

M9RX40SK4LS
M9RX40SK4YS

M9RX40SK4LG(A)
M9RX40SK4YG(A)
M9RX40SK4DG(A)
M9RX40SK4GG(A)

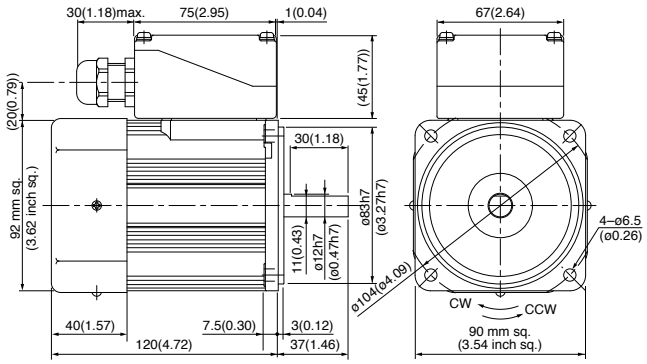


90 mm sq. (3.54 inch sq.) 60 W

Mass 3.0 kg (6.61 lb)

M9RZ60SK4LS (with fan)
M9RZ60SK4YS (with fan)

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

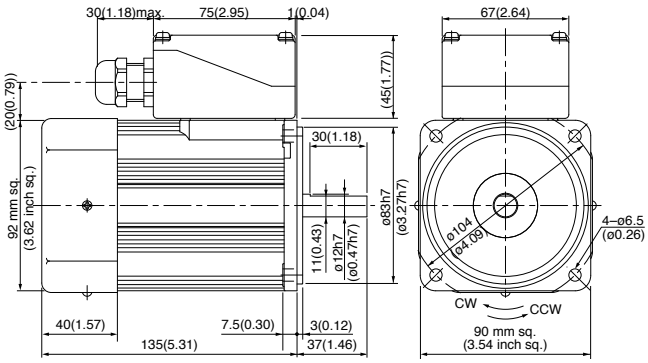


90 mm sq. (3.54 inch sq.) 90 W

Mass 3.3 kg (7.28 lb)

M9RZ90SK4LS (with fan)
M9RZ90SK4YS (with fan)

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



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

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

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

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

Features B-64 | System configuration B-65 | Coding system B-65 | Model list B-68