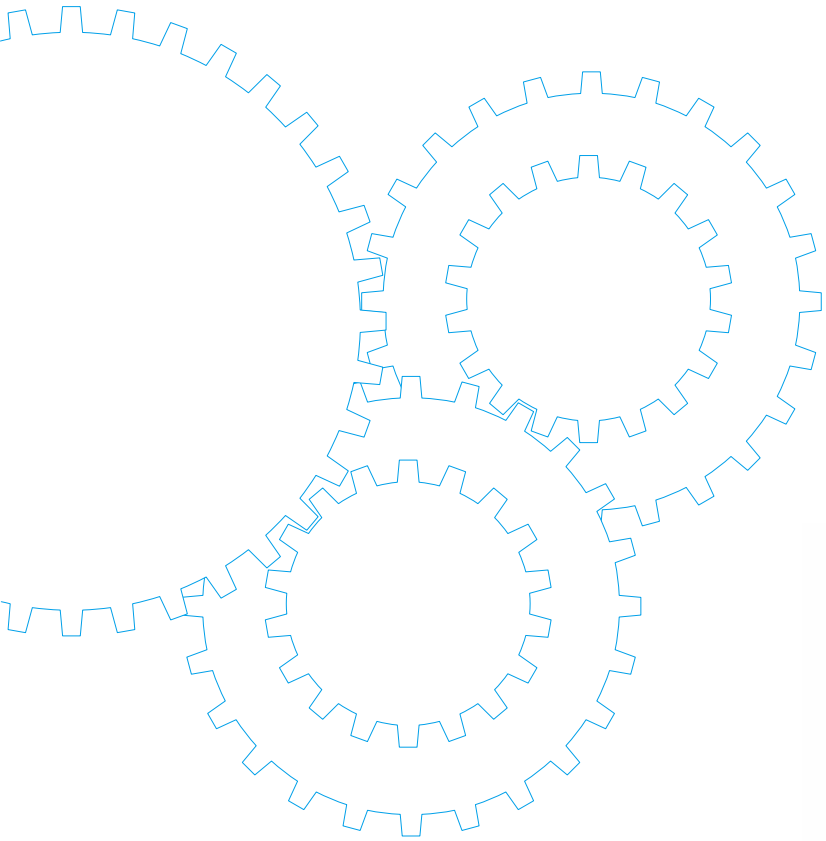
Variable Speed Reversible Motor



Contents

AQCTB02E 201806-E

Outline of variable speed reversible motor

Features

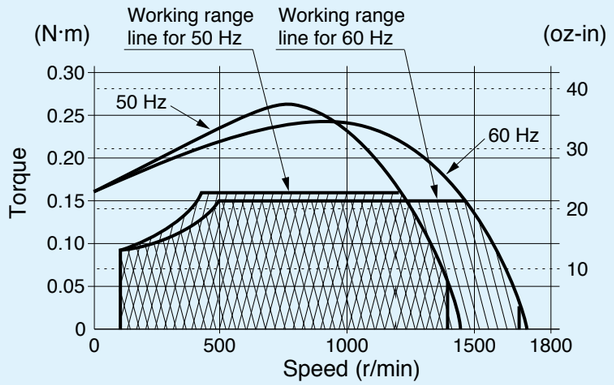
- It is a variable speed motor containing a simple brake mechanism. <Single-phase motor>
- The built-in simple brake mechanism makes the overrun small as compared with the induction motor, enabling a quick-reversal run.
- The time rating is 30 minutes.
- By using it together with a speed controller,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

Note) Variable speed reversible motor start-stop operation must not exceed 6-cycles per minute or damage may occur.

Working range

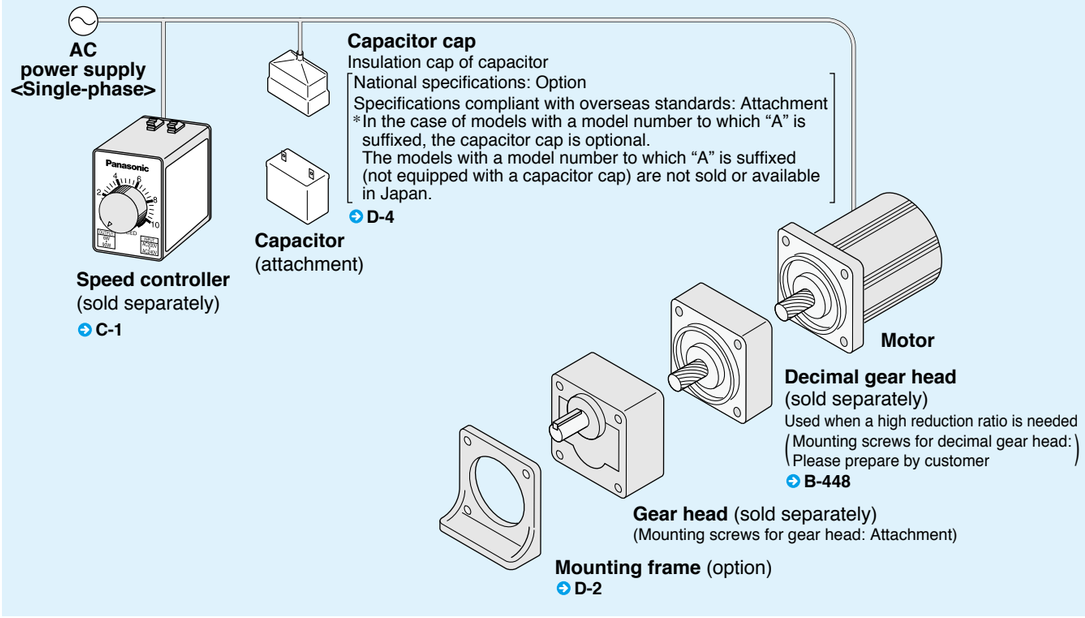
The working range line shows the working limit for the variable speed motor. (The time rating is 30 minutes.) The permissible torque should fall within the shaded portion.
If you use the motor with the permissible torque exceeding the working range line (falling within the portion not shaded), the motor may be burned out due to a high temperature rise or the gear tooth may be damaged.

- **Working range line**



Example : M8RX25GV4L 4P 25 W

System configuration diagram



Coding system

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

- Size
  - 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
  - X : 40 W or smaller
  - Z : 60 W or larger
- Output
  - 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
  - V : Variable speed
- 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

Fit tolerance

Fit tolerance symbol is used in the outside dimension diagram of motor and gear head. For further information, see "Fit tolerance" on page A-33.

Model list of variable speed reversible motor

Pinion shaft motor

Applicable gear head

✪ Motor compliant with overseas standards

Hinge attached

Size	Output (W)	Leadwire type			Standard gear head		High torque gear head	Right-angle gear head	Gear head -Inch (U.S.A.)	Decimal gear head
		Model number	Specifications	Page	Ball bearing	metal bearing				
60 mm sq. (2.36 inch sq.)	4	**M6RX4GV4L**	100 V	**B-274**	**MX6G□BA** **MX6G□B**	**MX6G□MA** **MX6G□M**	—	—	**MX6G□BU**	**MX6G10XB**
	6	**M6RX6GV4L**	100 V	**B-276**						
		M6RX6GV4Y	200 V	**B-276**						
		M6RX6GV4LG(A)	100 V ✪	**B-278**						
		M6RX6GV4DG(A)	110 V/115 V ✪	**B-278**						
		M6RX6GV4YG(A)	200 V ✪	**B-278**						
		M6RX6GV4GG(A)	220 V/230 V ✪	**B-278**						
70 mm sq. (2.76 inch sq.)	10	**M7RX10GV4L**	100 V	**B-280**	**MX7G□BA** **MX7G□B**	**MX7G□MA** **MX7G□M**	—	—	**MX7G□BU**	**MX7G10XB**
		M7RX10GV4Y	200 V	**B-280**						
	15	**M7RX15GV4L**	100 V	**B-282**						
		M7RX15GV4Y	200 V	**B-282**						
		M7RX15GV4LG(A)	100 V ✪	**B-284**						
		M7RX15GV4DG(A)	110 V/115 V ✪	**B-284**						
		M7RX15GV4YG(A)	200 V ✪	**B-284**						
		M7RX15GV4GG(A)	220 V/230 V ✪	**B-284**						
80 mm sq. (3.15 inch sq.)	20	**M8RX20GV4L**	100 V	**B-286**	**MX8G□B**	**MX8G□M**	—	—	**MX8G□BU**	**MX8G10XB**
		M8RX20GV4Y	200 V	**B-286**						
	25	**M8RX25GV4L**	100 V	**B-288**						
		M8RX25GV4Y	200 V	**B-288**						
		M8RX25GV4LG(A)	100 V ✪	**B-290**						
		M8RX25GV4DG(A)	110 V/115 V ✪	**B-290**						
		M8RX25GV4YG(A)	200 V ✪	**B-290**						
		M8RX25GV4GG(A)	220 V/230 V ✪	**B-290**						
90 mm sq. (3.54 inch sq.)	40	**M9RX40GV4L**	100 V	**B-292**	**MX9G□B**	**MX9G□M**	—	**MX9G□R**	**MX9G□BU**	**MX9G10XB**
		M9RX40GV4Y	200 V	**B-292**						
		M9RX40GV4LG(A)	100 V ✪	**B-294**						
		M9RX40GV4DG(A)	110 V/115 V ✪	**B-294**						
		M9RX40GV4YG(A)	200 V ✪	**B-294**						
		M9RX40GV4GG(A)	220 V/230 V ✪	**B-294**						
	60	**M9RZ60GV4L**	100 V	**B-296**	**MZ9G□B**	—	**MR9G□B**	**MZ9G□R**	**MZ9G□BU**	**MZ9G10XB**
		M9RZ60GV4Y	200 V	**B-296**						
		M9RZ60GV4LG(A)	100 V ✪	**B-298**						
		M9RZ60GV4DG(A)	110 V/115 V ✪	**B-298**						
		M9RZ60GV4YG(A)	200 V ✪	**B-298**						
		M9RZ60GV4GG(A)	220 V/230 V ✪	**B-298**						
	90	**M9RZ90GV4L**	100 V	**B-300**	**MY9G□B**		**MP9G□B**			
		M9RZ90GV4Y	200 V	**B-300**						
		M9RZ90GV4LG(A)	100 V ✪	**B-302**						
		M9RZ90GV4DG(A)	110 V/115 V ✪	**B-302**						
		M9RZ90GV4YG(A)	200 V ✪	**B-302**						
		M9RZ90GV4GG(A)	220 V/230 V ✪	**B-302**						

* 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 variable speed reversible motor

Round shaft motor

✪ Motor compliant with overseas standards

Size	Output (W)	Leadwire type	
		Model number	Specifications
60 mm sq. (2.36 inch sq.)	4	**M6RX4SV4LS**	100 V
	6	**M6RX6SV4LS**	100 V
		M6RX6SV4YS	200 V
		M6RX6SV4LG(A)	100 V ✪
		M6RX6SV4DG(A)	110 V/115 V ✪
		M6RX6SV4YG(A)	200 V ✪
		M6RX6SV4GG(A)	220 V/230 V ✪
70 mm sq. (2.76 inch sq.)	10	**M7RX10SV4LS**	100 V
		M7RX10SV4YS	200 V
	15	**M7RX15SV4LS**	100 V
		M7RX15SV4YS	200 V
		M7RX15SV4LG(A)	100 V ✪
		M7RX15SV4DG(A)	110 V/115 V ✪
		M7RX15SV4YG(A)	200 V ✪
		M7RX15SV4GG(A)	220 V/230 V ✪
80 mm sq. (3.15 inch sq.)	20	**M8RX20SV4LS**	100 V
		M8RX20SV4YS	200 V
	25	**M8RX25SV4LS**	100 V
		M8RX25SV4YS	200 V
		M8RX25SV4LG(A)	100 V ✪
		M8RX25SV4DG(A)	110 V/115 V ✪
		M8RX25SV4YG(A)	200 V ✪
		M8RX25SV4GG(A)	220 V/230 V ✪
90 mm sq. (3.54 inch sq.)	40	**M9RX40SV4LS**	100 V
		M9RX40SV4YS	200 V
		M9RX40SV4LG(A)	100 V ✪
		M9RX40SV4DG(A)	110 V/115 V ✪
		M9RX40SV4YG(A)	200 V ✪
		M9RX40SV4GG(A)	220 V/230 V ✪
	60	**M9RZ60SV4LS**	100 V
		M9RZ60SV4YS	200 V
		M9RZ60SV4LG(A)	100 V ✪
		M9RZ60SV4DG(A)	110 V/115 V ✪
		M9RZ60SV4YG(A)	200 V ✪
		M9RZ60SV4GG(A)	220 V/230 V ✪
	90	**M9RZ90SV4LS**	100 V
		M9RZ90SV4YS	200 V
		M9RZ90SV4LG(A)	100 V ✪
		M9RZ90SV4DG(A)	110 V/115 V ✪
		M9RZ90SV4YG(A)	200 V ✪
		M9RZ90SV4GG(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-306.
* The models with a motor model number to which “A” is suffixed are not equipped with a capacitor cap.
  The models with a motor model number to which “A” is suffixed are not sold or available in Japan.

Possible combination of speed controller and motor

Size	Output (W)	Motor			Voltage (V)	Speed controller	
		Certified	Pinion shaft type	Round shaft type		MGSD type	EX type
60 mm sq. (2.36 inch sq.)	4	-----	M6RX4GV4L	M6RX4SV4LS	100	MGSDA1 ★	DV1131
	6	-----	M6RX6GV4L	M6RX6SV4LS	100	MGSDA1 ★	DV1131
		-----	M6RX6GV4Y	M6RX6SV4YS	200	MGSDB2 ★	DV1231
		✪	M6RX6GV4LG(A)	M6RX6SV4LG(A)	100	MGSDA1 ★	-----
		✪	M6RX6GV4DG(A)	M6RX6SV4DG(A)	110/115	MGSDA1 ★	-----
		✪	M6RX6GV4YG(A)	M6RX6SV4YG(A)	200	MGSDB2 ★	-----
		✪	M6RX6GV4GG(A)	M6RX6SV4GG(A)	220/230	MGSDB2 ★	-----
70 mm sq. (2.76 inch sq.)	10	-----	M7RX10GV4L	M7RX10SV4LS	100	MGSDA1 ★	DV1131
		-----	M7RX10GV4Y	M7RX10SV4YS	200	MGSDB2 ★	DV1231
	15	-----	M7RX15GV4L	M7RX15SV4LS	100	MGSDA1 ★	DV1132
		-----	M7RX15GV4Y	M7RX15SV4YS	200	MGSDB2 ★	DV1231
		✪	M7RX15GV4LG(A)	M7RX15SV4LG(A)	100	MGSDA1 ★	-----
		✪	M7RX15GV4DG(A)	M7RX15SV4DG(A)	110/115	MGSDA1 ★	-----
		✪	M7RX15GV4YG(A)	M7RX15SV4YG(A)	200	MGSDB2 ★	-----
		✪	M7RX15GV4GG(A)	M7RX15SV4GG(A)	220/230	MGSDB2 ★	-----
80 mm sq. (3.15 inch sq.)	20	-----	M8RX20GV4L	M8RX20SV4LS	100	MGSDA1 ★	DV1132
		-----	M8RX20GV4Y	M8RX20SV4YS	200	MGSDB2 ★	DV1231
	25	-----	M8RX25GV4L	M8RX25SV4LS	100	MGSDA1 ★	DV1132
		-----	M8RX25GV4Y	M8RX25SV4YS	200	MGSDB2 ★	DV1234
		✪	M8RX25GV4LG(A)	M8RX25SV4LG(A)	100	MGSDA1 ★	-----
		✪	M8RX25GV4DG(A)	M8RX25SV4DG(A)	110/115	MGSDA1 ★	-----
		✪	M8RX25GV4YG(A)	M8RX25SV4YG(A)	200	MGSDB2 ★	-----
		✪	M8RX25GV4GG(A)	M8RX25SV4GG(A)	220/230	MGSDB2 ★	-----
90 mm sq. (3.54 inch sq.)	40	-----	M9RX40GV4L	M9RX40SV4LS	100	MGSDA1 ★	DV1132
		-----	M9RX40GV4Y	M9RX40SV4YS	200	MGSDB2 ★	DV1234
		✪	M9RX40GV4LG(A)	M9RX40SV4LG(A)	100	MGSDA1 ★	-----
		✪	M9RX40GV4DG(A)	M9RX40SV4DG(A)	110/115	MGSDA1 ★	-----
		✪	M9RX40GV4YG(A)	M9RX40SV4YG(A)	200	MGSDB2 ★	-----
		✪	M9RX40GV4GG(A)	M9RX40SV4GG(A)	220/230	MGSDB2 ★	-----
	60	-----	M9RZ60GV4L	M9RZ60SV4LS	100	MGSDB1 ★	DV1134
		-----	M9RZ60GV4Y	M9RZ60SV4YS	200	MGSDB2 ★	DV1234
		✪	M9RZ60GV4LG(A)	M9RZ60SV4LG(A)	100	MGSDB1 ★	-----
		✪	M9RZ60GV4DG(A)	M9RZ60SV4DG(A)	110/115	MGSDB1 ★	-----
		✪	M9RZ60GV4YG(A)	M9RZ60SV4YG(A)	200	MGSDB2 ★	-----
		✪	M9RZ60GV4GG(A)	M9RZ60SV4GG(A)	220/230	MGSDB2 ★	-----
	90	-----	M9RZ90GV4L	M9RZ90SV4LS	100	MGSDB1 ★	DV1134
		-----	M9RZ90GV4Y	M9RZ90SV4YS	200	MGSDB2 ★	DV1234
		✪	M9RZ90GV4LG(A)	M9RZ90SV4LG(A)	100	MGSDB1 ★	-----
		✪	M9RZ90GV4DG(A)	M9RZ90SV4DG(A)	110/115	MGSDB1 ★	-----
		✪	M9RZ90GV4YG(A)	M9RZ90SV4YG(A)	200	MGSDB2 ★	-----
		✪	M9RZ90GV4GG(A)	M9RZ90SV4GG(A)	220/230	MGSDB2 ★	-----

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

✪ **Conforming to international standards :**

★ **MGSD speed controllers are compliant with and .**

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

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

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-306.

• Permissible torque at output shaft of gear head

* 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)**

Applicable gear head Bearing	Speed		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
MX6G□BA (ball bearing) MX6G□B (ball bearing) MX6G□MA (metal bearing) MX6G□M (metal bearing)	1200 r/min	50 Hz	0.046 (0.41)	0.055 (0.49)	0.077 (0.68)	0.092 (0.81)	0.11 (0.97)	0.13 (1.15)	0.15 (1.33)	0.19 (1.68)	0.23 (2.04)	0.27 (2.39)	0.30 (2.66)	0.38 (3.36)	0.41 (3.63)	0.49 (4.34)	0.69 (6.11)	0.82 (7.26)	1.03 (9.12)	1.24 (11.0)	1.38 (12.2)	1.65 (14.6)	2.07 (18.3)	2.45 (21.7)
		60 Hz	0.046 (0.41)	0.055 (0.49)	0.077 (0.68)	0.092 (0.81)	0.11 (0.97)	0.13 (1.15)	0.15 (1.33)	0.19 (1.68)	0.23 (2.04)	0.27 (2.39)	0.30 (2.66)	0.38 (3.36)	0.41 (3.63)	0.49 (4.34)	0.69 (6.11)	0.82 (7.26)	1.03 (9.12)	1.24 (11.0)	1.38 (12.2)	1.65 (14.6)	2.07 (18.3)	2.45 (21.7)
	90 r/min		0.046 (0.41)	0.055 (0.49)	0.077 (0.68)	0.092 (0.81)	0.11 (0.97)	0.13 (1.15)	0.15 (1.33)	0.19 (1.68)	0.23 (2.04)	0.27 (2.39)	0.30 (2.66)	0.38 (3.36)	0.41 (3.63)	0.49 (4.34)	0.69 (6.11)	0.82 (7.26)	1.03 (9.12)	1.24 (11.0)	1.38 (12.2)	1.65 (14.6)	2.07 (18.3)	2.45 (21.7)
	Rotational direction		Same as motor rotational direction												Reverse to motor rotational direction									

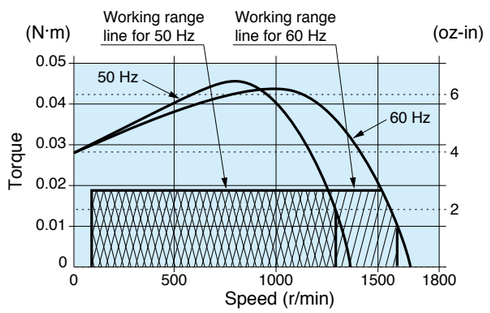
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head Bearing	Decimal gear head	Speed		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	1200 r/min	50 Hz	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)
			60 Hz	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)
		90 r/min		2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)
		Rotational direction		Same as motor rotational direction	Reverse to motor rotational direction										

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

* Working range line

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

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

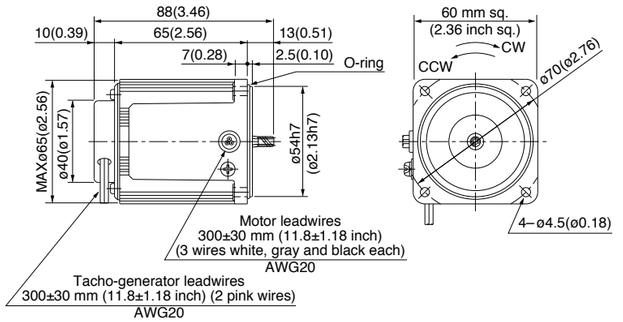
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

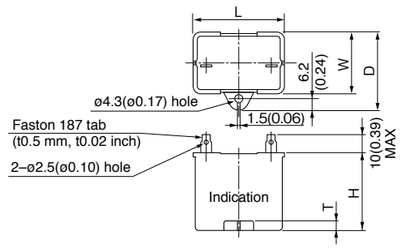
M6RX4GV4L 4P 4 W 100 V

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



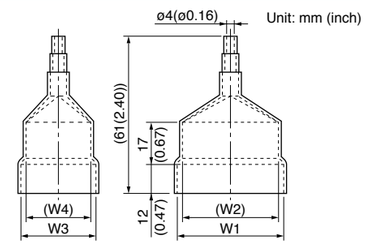
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor 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
M6RX4GV4L	M0PC2.5M20	39.5 (1.56)	16 (0.63)	26.5 (1.04)	30.5 (1.20)	4 (0.16)	M0PC3917	39.5 (1.56)	37.5 (1.48)	17 (0.67)	15 (0.59)

* Capacitors (single item) can also be purchased.

Gear head (dimensions)

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

< □ is 25 or less >

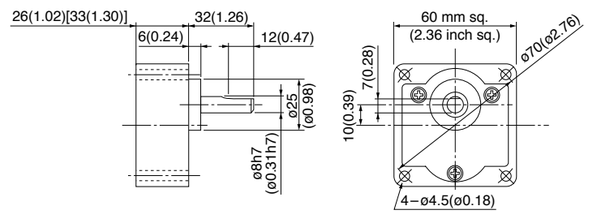
MX6G□BA (ball bearing) Mass 0.24 kg(0.53 lb): Output shaft D cut

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-304 | Round shaft motor B-306 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Variable speed 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)	Variable speed range Speed (r/min)	Permissible Torque N·m (oz-in) at 1200 r/min	Permissible Torque N·m (oz-in) at 90 r/min	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
60 mm sq.	M6RX6GV4L	4	6	100	50	30	90 to 1400	0.030 (4.25)	0.030 (4.25)	0.31	0.038 (5.38)	3 (200 V)
					60		90 to 1700	0.030 (4.25)	0.030 (4.25)	0.31	0.038 (5.38)	
	M6RX6GV4Y	4	6	200	50	30	90 to 1400	0.030 (4.25)	0.030 (4.25)	0.16	0.038 (5.38)	0.8 (400 V)
					60		90 to 1700	0.030 (4.25)	0.030 (4.25)	0.16	0.038 (5.38)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-306.

• Permissible torque at output shaft of gear head

* 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)**

Applicable gear head Bearing	Speed		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
MX6G□BA (ball bearing) MX6G□B (ball bearing) MX6G□MA (metal bearing) MX6G□M (metal bearing)	1200 r/min	50 Hz	0.072 (0.64)	0.087 (0.77)	0.12 (1.06)	0.14 (1.24)	0.18 (1.59)	0.21 (1.86)	0.24 (2.12)	0.29 (2.57)	0.36 (3.19)	0.43 (3.81)	0.48 (4.25)	0.60 (5.31)	0.65 (5.75)	0.78 (6.90)	1.09 (9.65)	1.30 (11.5)	1.63 (14.4)	1.98 (17.5)	2.18 (19.3)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)
		60 Hz	0.072 (0.64)	0.087 (0.77)	0.12 (1.06)	0.14 (1.24)	0.18 (1.59)	0.21 (1.86)	0.24 (2.12)	0.29 (2.57)	0.36 (3.19)	0.43 (3.81)	0.48 (4.25)	0.60 (5.31)	0.65 (5.75)	0.78 (6.90)	1.09 (9.65)	1.30 (11.5)	1.63 (14.4)	1.98 (17.5)	2.18 (19.3)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)
	90 r/min		0.072 (0.64)	0.087 (0.77)	0.12 (1.06)	0.14 (1.24)	0.18 (1.59)	0.21 (1.86)	0.24 (2.12)	0.29 (2.57)	0.36 (3.19)	0.43 (3.81)	0.48 (4.25)	0.60 (5.31)	0.65 (5.75)	0.78 (6.90)	1.09 (9.65)	1.30 (11.5)	1.63 (14.4)	1.98 (17.5)	2.18 (19.3)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)
	Rotational direction		Same as motor rotational direction												Reverse to motor rotational direction									

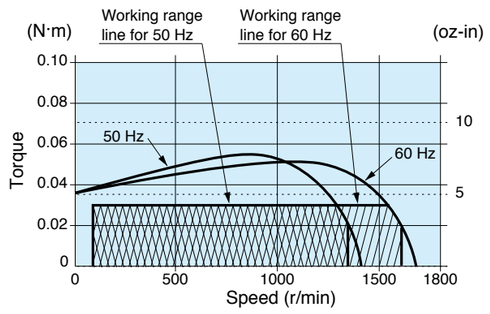
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head Bearing	Decimal gear head	Speed		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	1200 r/min	50 Hz	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)
			60 Hz	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)
		90 r/min		2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)
		Rotational direction		Same as motor rotational direction	Reverse to motor rotational direction										

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

* Working range line

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

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

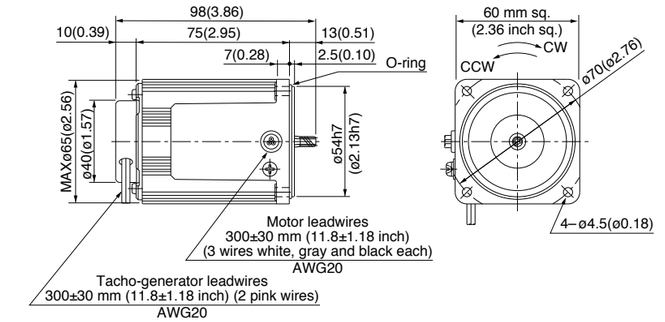
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

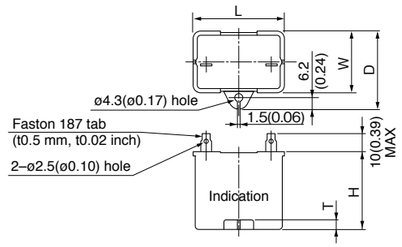
M6RX6GV4L 4P 6 W 100 V
M6RX6GV4Y 4P 6 W 200 V

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



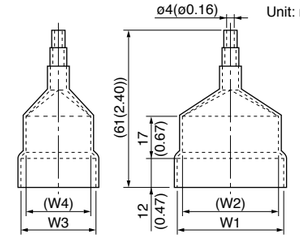
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor 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
M6RX6GV4L	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)
M6RX6GV4Y	M0PC0.8M40	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)

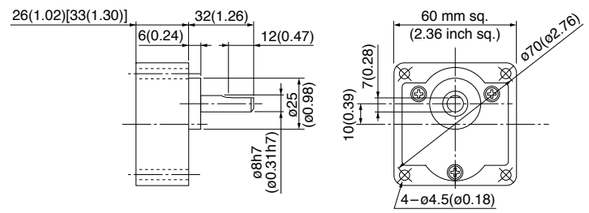
* Capacitors (single item) can also be purchased.

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-304 | Round shaft motor B-306 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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

Variable speed reversible motor (leadwire)

60 mm (2.36 inch) sq. 6W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Variable speed range Speed (r/min)	Permissible Torque N·m (oz-in) at 1200 r/min	Permissible Torque N·m (oz-in) at 90 r/min	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
60 mm sq.	M6RX6GV4LG M6RX6GV4LGA	4	6	100	50	30	90 to 1400	0.044 (6.23)	0.044 (6.23)	0.33	0.057 (8.07)	4 (250 V)
					60		90 to 1700	0.034 (4.81)	0.034 (4.81)	0.35	0.057 (8.07)	
	M6RX6GV4DG M6RX6GV4DGA	4	6	110	60	30	90 to 1700	0.034 (4.81)	0.034 (4.81)	0.34	0.051 (7.22)	3 (250 V)
				115	60		90 to 1700	0.034 (4.81)	0.034 (4.81)	0.35	0.057 (8.07)	
	M6RX6GV4YG M6RX6GV4YGA	4	6	200	50	30	90 to 1400	0.044 (6.23)	0.044 (6.23)	0.15	0.057 (8.07)	1 (450 V)
					60		90 to 1700	0.034 (4.81)	0.034 (4.81)	0.16	0.057 (8.07)	
	M6RX6GV4GG M6RX6GV4GGA	4	6	220	50	30	90 to 1400	0.044 (6.23)	0.044 (6.23)	0.15	0.056 (7.93)	0.8 (450 V)
					60		90 to 1700	0.034 (4.81)	0.034 (4.81)	0.15	0.056 (7.93)	
				230	50		90 to 1400	0.044 (6.23)	0.044 (6.23)	0.15	0.057 (8.07)	
					60		90 to 1700	0.034 (4.81)	0.034 (4.81)	0.16	0.057 (8.07)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-306.
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

* 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)**

Applicable gear head / Bearing	Speed		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
MX6G□BA (ball bearing) MX6G□B (ball bearing) MX6G□MA (metal bearing) MX6G□M (metal bearing)	1200 r/min	50 Hz	0.11 (0.97)	0.13 (1.15)	0.18 (1.59)	0.21 (1.86)	0.27 (2.39)	0.32 (2.83)	0.36 (3.19)	0.45 (3.98)	0.53 (4.69)	0.64 (5.66)	0.71 (6.28)	0.89 (7.88)	0.96 (8.50)	1.15 (10.2)	1.60 (14.2)	1.92 (17.0)	2.41 (21.3)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)
		60 Hz	0.083 (0.73)	0.10 (0.89)	0.14 (1.24)	0.17 (1.5)	0.21 (1.86)	0.25 (2.21)	0.28 (2.48)	0.34 (3.01)	0.41 (3.63)	0.50 (4.43)	0.55 (4.87)	0.69 (6.10)	0.74 (6.55)	0.89 (7.88)	1.24 (11.0)	1.49 (13.2)	1.86 (16.5)	2.23 (19.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)
	90 r/min	50 Hz	0.11 (0.97)	0.13 (1.15)	0.18 (1.59)	0.21 (1.86)	0.27 (2.39)	0.32 (2.83)	0.36 (3.19)	0.45 (3.98)	0.53 (4.69)	0.64 (5.66)	0.71 (6.28)	0.89 (7.88)	0.96 (8.50)	1.15 (10.2)	1.60 (14.2)	1.92 (17.0)	2.41 (21.3)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)
		60 Hz	0.083 (0.73)	0.10 (0.89)	0.14 (1.24)	0.17 (1.5)	0.21 (1.86)	0.25 (2.21)	0.28 (2.48)	0.34 (3.01)	0.41 (3.63)	0.50 (4.43)	0.55 (4.87)	0.69 (6.10)	0.74 (6.55)	0.89 (7.88)	1.24 (11.0)	1.49 (13.2)	1.86 (16.5)	2.23 (19.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)
	Rotational direction		Same as motor rotational direction												Reverse to motor rotational direction									

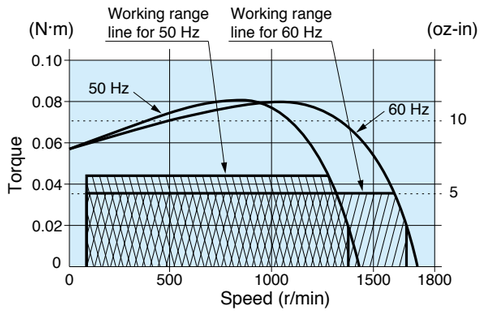
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head Bearing	Decimal gear head	Speed		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	1200 r/min	50 Hz	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)
			60 Hz	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)
		90 r/min	50 Hz	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)
			60 Hz	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)	2.45 (21.7)
		Rotational direction		Same as motor rotational direction		Reverse to motor rotational direction									

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

* Working range line

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

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

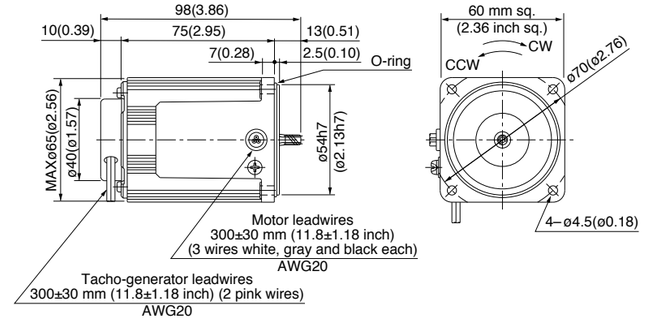
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

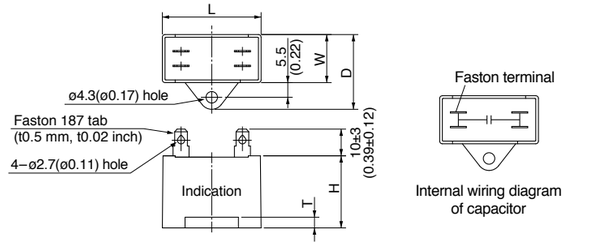
M6RX6GV4LG(A) 4P 6 W 100 V
M6RX6GV4DG(A) 4P 6 W 110 V / 115 V
M6RX6GV4YG(A) 4P 6 W 200 V
M6RX6GV4GG(A) 4P 6 W 220 V / 230 V

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



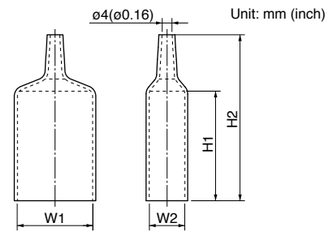
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [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
M6RX6GV4LG(A)	M0PC4M25G	37 (1.46)	18 (0.71)	28 (1.10)	27 (1.06)	4 (0.16)	M0PC3718G	37 (1.46)	18 (0.71)	50 (1.97)	73 (2.87)
M6RX6GV4DG(A)	M0PC3M25G	31 (1.22)	17 (0.67)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3117G	31 (1.22)	17 (0.67)	50 (1.97)	73 (2.87)
M6RX6GV4YG(A)	M0PC1M45G	37 (1.46)	18 (0.71)	28 (1.10)	27 (1.06)	4 (0.16)	M0PC3718G	37 (1.46)	18 (0.71)	50 (1.97)	73 (2.87)
M6RX6GV4GG(A)	M0PC0.8M45G	31 (1.22)	17 (0.67)	27 (1.06)	27 (1.06)	4 (0.16)	M0PC3117G	31 (1.22)	17 (0.67)	50 (1.97)	73 (2.87)

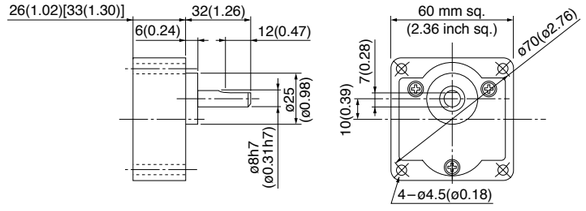
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

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-304 | Round shaft motor B-306 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Variable speed 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)	Variable speed range Speed (r/min)	Permissible Torque N·m (oz-in) at 1200 r/min	Permissible Torque N·m (oz-in) at 90 r/min	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
70 mm sq.	M7RX10GV4L	4	10	100	50	30	90 to 1400	0.059 (8.36)	0.034 (4.81)	0.41	0.049 (6.94)	4.5 (200 V)
					60		90 to 1700	0.059 (8.36)	0.034 (4.81)	0.40	0.049 (6.94)	
	M7RX10GV4Y	4	10	200	50	30	90 to 1400	0.059 (8.36)	0.034 (4.81)	0.20	0.049 (6.94)	1.2 (400 V)
					60		90 to 1700	0.059 (8.36)	0.034 (4.81)	0.21	0.049 (6.94)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-306.

• Permissible torque at output shaft of gear head

* 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)**

Applicable gear head Bearing	Speed	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
MX7G□BA (ball bearing)	1200 r/min	50 Hz	0.14 (1.24)	0.17 (1.50)	0.23 (2.04)	0.28 (2.48)	0.35 (3.10)	0.43 (3.81)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.86 (7.61)	0.95 (8.41)	1.19 (10.5)	1.29 (11.4)	1.54 (13.6)	2.15 (19.0)	2.58 (22.8)	3.22 (28.5)	3.87 (34.2)	4.30 (38.1)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
MX7G□B (ball bearing)		60 Hz	0.14 (1.24)	0.17 (1.50)	0.23 (2.04)	0.28 (2.48)	0.35 (3.10)	0.43 (3.81)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.86 (7.61)	0.95 (8.41)	1.19 (10.5)	1.29 (11.4)	1.54 (13.6)	2.15 (19.0)	2.58 (22.8)	3.22 (28.5)	3.87 (34.2)	4.30 (38.1)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
MX7G□MA (metal bearing) MX7G□M (metal bearing)	90 r/min		0.082 (0.73)	0.099 (0.88)	0.13 (1.15)	0.16 (1.42)	0.20 (1.77)	0.24 (2.12)	0.27 (2.39)	0.34 (3.01)	0.41 (3.63)	0.49 (4.34)	0.55 (4.87)	0.68 (6.02)	0.74 (6.55)	0.98 (8.67)	1.23 (10.9)	1.48 (13.1)	1.85 (16.4)	2.22 (19.6)	2.47 (21.9)	2.96 (26.2)	3.70 (32.7)	4.44 (39.3)
	Rotational direction		Same as motor rotational direction												Reverse to motor rotational direction									

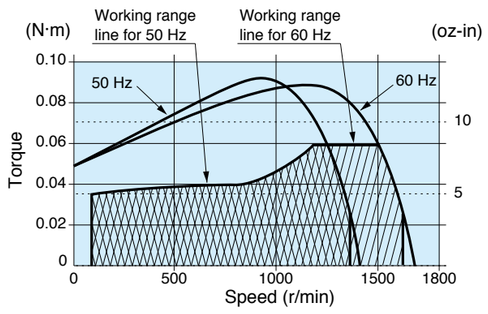
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head Bearing	Decimal gear head	Speed	Reduction Ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800
MX7G□BA (ball bearing) MX7G□B (ball bearing) MX7G□MA (metal bearing) MX7G□M (metal bearing)	MX7G10XB	1200 r/min	50 Hz	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
			60 Hz	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
		90 r/min		4.42 (39.1)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
		Rotational direction		Same as motor rotational direction	Reverse to motor rotational direction										

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

* Working range line

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

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

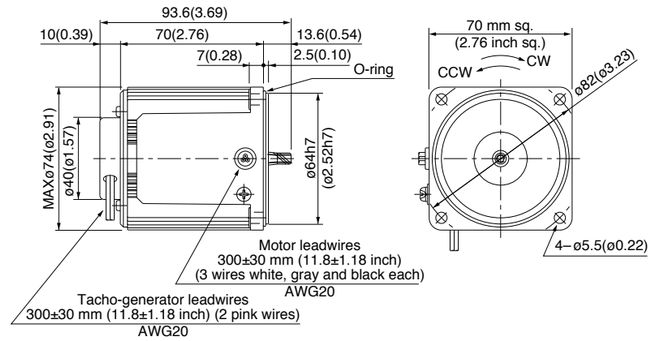
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

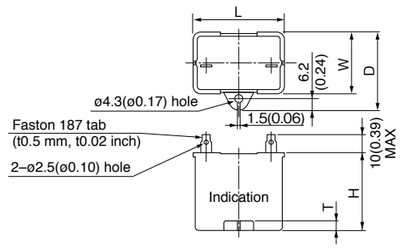
M7RX10GV4L 4P 10 W 100 V
M7RX10GV4Y 4P 10 W 200 V

Mass	Helical gear	Module	Number of teeth
0.8 kg 1.76 lb		0.5	7



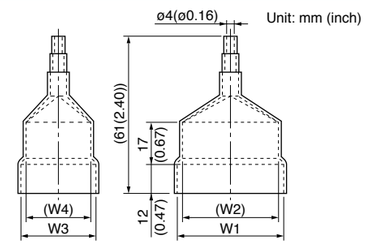
Capacitor (dimensions) [attachment]

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
M7RX10GV4L	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)
M7RX10GV4Y	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)

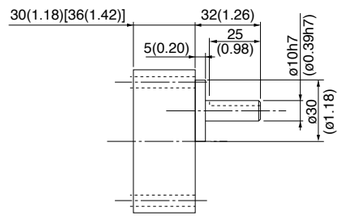
* Capacitors (single item) can also be purchased.

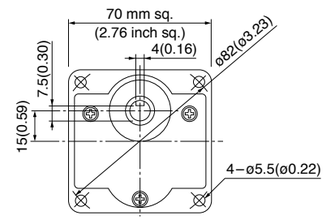
Gear head (dimensions)

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)



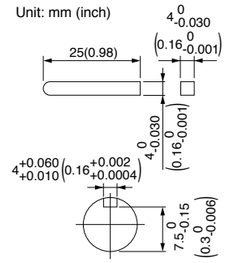


* Figures in [ ] represent the dimensions of MX7G□B (M) (1/30 or larger reduction ratio).

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-304 | Round shaft motor B-306 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-306.

• Permissible torque at output shaft of gear head

* 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)**

Applicable gear head Bearing	Speed	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
MX7G□BA (ball bearing) MX7G□B (ball bearing) MX7G□MA (metal bearing) MX7G□M (metal bearing)	1200 r/min 50 Hz	0.23 (2.04)	0.28 (2.48)	0.39 (3.45)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.79 (6.99)	0.99 (8.76)	1.19 (10.5)	1.42 (12.6)	1.58 (14.0)	1.98 (17.5)	2.13 (18.9)	2.56 (22.7)	3.56 (31.5)	4.27 (37.8)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
	1200 r/min 60 Hz	0.23 (2.04)	0.28 (2.48)	0.39 (3.45)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.79 (6.99)	0.99 (8.76)	1.19 (10.5)	1.42 (12.6)	1.58 (14.0)	1.98 (17.5)	2.13 (18.9)	2.56 (22.7)	3.56 (31.5)	4.27 (37.8)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
	90 r/min	0.11 (0.97)	0.13 (1.15)	0.18 (1.59)	0.22 (1.95)	0.27 (2.39)	0.33 (2.92)	0.37 (3.27)	0.46 (4.07)	0.55 (4.87)	0.66 (5.84)	0.74 (6.55)	0.93 (8.23)	1.00 (8.85)	1.20 (10.6)	1.67 (14.8)	2.00 (17.7)	2.50 (22.1)	3.00 (26.6)	3.34 (29.6)	4.00 (35.4)	4.90 (43.4)	4.90 (43.4)
	Rotational direction	Same as motor rotational direction												Reverse to motor rotational direction									

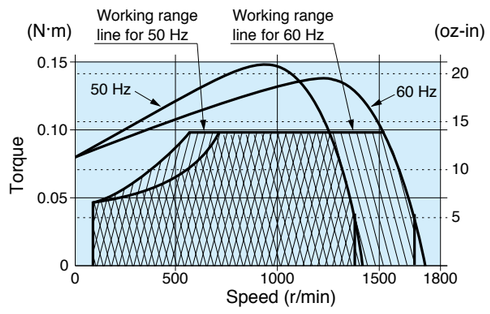
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head Bearing	Decimal gear head	Speed	Reduction Ratio 200	250	300	360	500	600	750	900	1000	1200	1500	1800
MX7G□BA (ball bearing) MX7G□B (ball bearing) MX7G□MA (metal bearing) MX7G□M (metal bearing)	MX7G10XB	1200 r/min 50 Hz	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
		1200 r/min 60 Hz	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
		90 r/min	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
		Rotational direction	Same as motor rotational direction	Reverse to motor rotational direction										

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

* Working range line

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

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

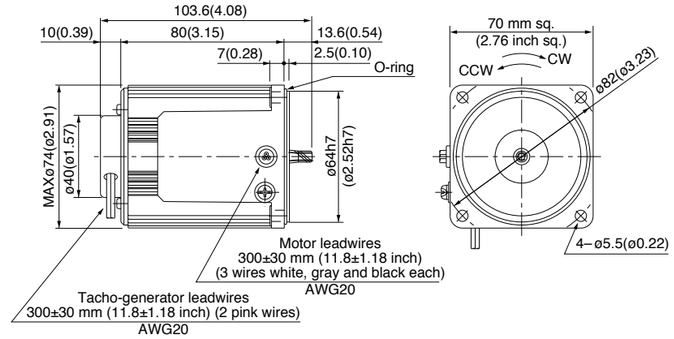
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

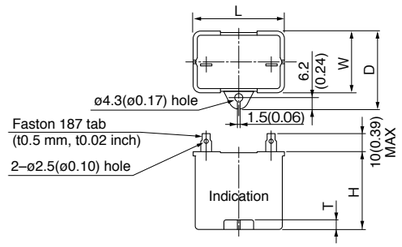
M7RX15GV4L 4P 15 W 100 V
M7RX15GV4Y 4P 15 W 200 V

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



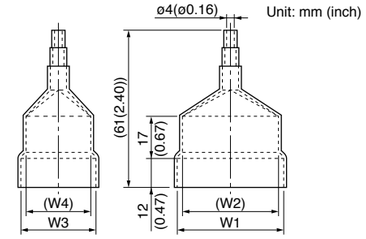
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor 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
M7RX15GV4L	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)
M7RX15GV4Y	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)

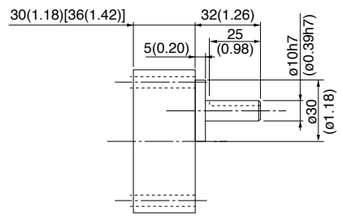
* Capacitors (single item) can also be purchased.

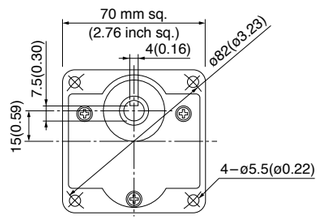
Gear head (dimensions)

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)



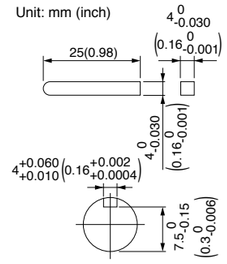


* Figures in [ ] represent the dimensions of MX7G□B (M) (1/30 or larger reduction ratio).

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-304 | Round shaft motor B-306 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Variable speed 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)	Variable speed range Speed (r/min)	Permissible Torque N·m (oz-in) at 1200 r/min	Permissible Torque N·m (oz-in) at 90 r/min	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
70 mm sq.	M7RX15GV4LG M7RX15GV4LGA	4	15	100	50	30	90 to 1400	0.11 (15.6)	0.069 (9.77)	0.58	0.088 (12.5)	6.5 (250 V)
					60		90 to 1700	0.088 (12.5)	0.069 (9.77)	0.58	0.088 (12.5)	
	M7RX15GV4DG M7RX15GV4DGA	4	15	110	60	30	90 to 1700	0.088 (12.5)	0.069 (9.77)	0.60	0.088 (12.5)	5.5 (250 V)
				115	60		90 to 1700	0.088 (12.5)	0.069 (9.77)	0.63	0.10 (14.2)	
	M7RX15GV4YG M7RX15GV4YGA	4	15	200	50	30	90 to 1400	0.11 (15.6)	0.069 (9.77)	0.27	0.088 (12.5)	1.7 (450 V)
					60		90 to 1700	0.088 (12.5)	0.069 (9.77)	0.28	0.088 (12.5)	
	M7RX15GV4GG M7RX15GV4GGA	4	15	220	50	30	90 to 1400	0.11 (15.6)	0.069 (9.77)	0.27	0.082 (11.6)	1.3 (450 V)
					60		90 to 1700	0.088 (12.5)	0.069 (9.77)	0.26	0.082 (11.6)	
				230	50		90 to 1400	0.11 (15.6)	0.069 (9.77)	0.28	0.10 (14.2)	
					60		90 to 1700	0.088 (12.5)	0.069 (9.77)	0.28	0.10 (14.2)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-306.
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

* 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)**

Applicable gear head: Bearing	Speed	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
MX7G□BA (ball bearing) MX7G□B (ball bearing) MX7G□MA (metal bearing) MX7G□M (metal bearing)	1200 r/min 50 Hz	0.27 (2.39)	0.32 (2.83)	0.45 (3.98)	0.53 (4.69)	0.67 (5.93)	0.80 (7.08)	0.89 (7.88)	1.11 (9.82)	1.34 (11.9)	1.60 (14.2)	1.78 (15.8)	2.23 (19.7)	2.41 (21.3)	2.89 (25.6)	4.01 (35.5)	4.81 (42.6)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
	1200 r/min 60 Hz	0.21 (1.86)	0.26 (2.30)	0.36 (3.19)	0.43 (3.81)	0.53 (4.69)	0.64 (5.66)	0.71 (6.28)	0.89 (7.88)	1.07 (9.47)	1.28 (11.3)	1.43 (12.7)	1.78 (15.8)	1.92 (17.0)	2.31 (20.4)	3.21 (28.4)	3.85 (34.1)	4.81 (42.6)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
	90 r/min	0.17 (1.50)	0.20 (1.77)	0.28 (2.48)	0.34 (3.01)	0.42 (3.72)	0.50 (4.43)	0.56 (4.96)	0.70 (6.20)	0.84 (7.43)	1.01 (8.94)	1.12 (9.91)	1.40 (12.4)	1.51 (13.4)	1.81 (16.0)	2.52 (22.3)	3.02 (26.7)	3.77 (33.4)	4.53 (40.1)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
	Rotational direction	Same as motor rotational direction												Reverse to motor rotational direction									

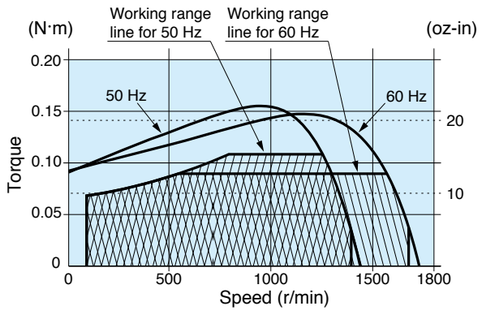
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head: Bearing	Decimal gear head	Speed	Reduction Ratio: 200	250	300	360	500	600	750	900	1000	1200	1500	1800
MX7G□BA (ball bearing) MX7G□B (ball bearing) MX7G□MA (metal bearing) MX7G□M (metal bearing)	MX7G10XB	1200 r/min 50 Hz	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
		1200 r/min 60 Hz	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
		90 r/min	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)	4.90 (43.4)
		Rotational direction	Same as motor rotational direction	Reverse to motor rotational direction										

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

* Working range line

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

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

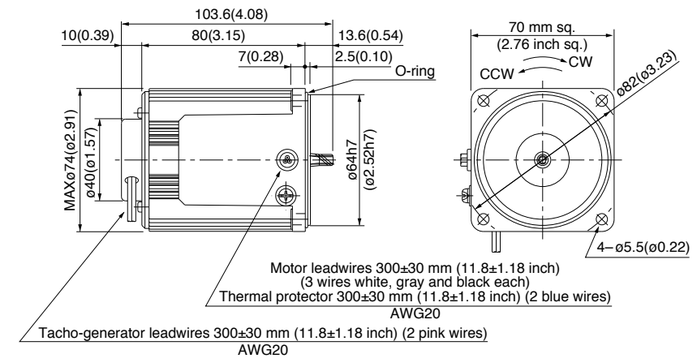
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

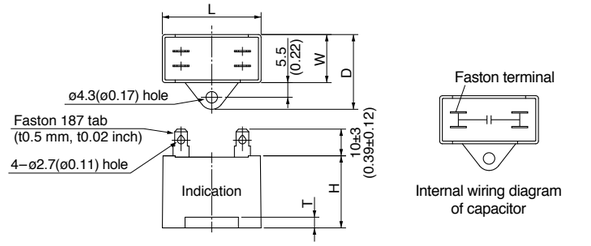
M7RX15GV4LG(A) 4P 15 W 100 V
M7RX15GV4DG(A) 4P 15 W 110 V / 115 V
M7RX15GV4YG(A) 4P 15 W 200 V
M7RX15GV4GG(A) 4P 15 W 220 V / 230 V

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



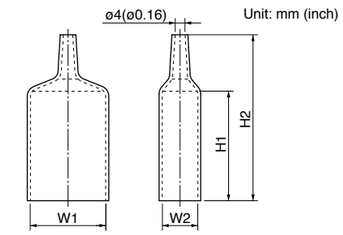
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [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
M7RX15GV4LG(A)	M0PC6.5M25G	48 (1.89)	19 (0.75)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC4819G	48 (1.89)	19 (0.75)	55 (2.17)	78 (3.07)
M7RX15GV4DG(A)	M0PC5.5M25G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC3821G	38 (1.50)	21 (0.83)	55 (2.17)	78 (3.07)
M7RX15GV4YG(A)	M0PC1.7M45G	38 (1.50)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC3821G	38 (1.50)	21 (0.83)	55 (2.17)	78 (3.07)
M7RX15GV4GG(A)	M0PC1.3M45G	38 (1.50)	19 (0.75)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC3819G	38 (1.50)	19 (0.75)	50 (1.97)	73 (2.87)

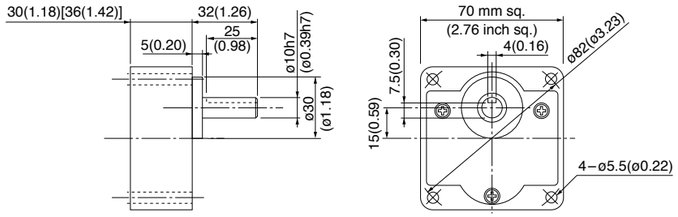
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

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)

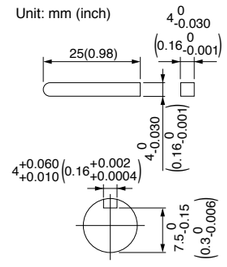


* Figures in [ ] represent the dimensions of MX7G□B (M) (1/30 or larger reduction ratio).

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-304 | Round shaft motor B-306 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Variable speed 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)	Variable speed range Speed (r/min)	Permissible Torque N·m (oz-in) at 1200 r/min	Permissible Torque N·m (oz-in) at 90 r/min	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
80 mm sq.	M8RX20GV4L	4	20	100	50	30	90 to 1400	0.12 (17.0)	0.049 (6.94)	0.73	0.12 (17.0)	7 (200 V)
					60		90 to 1700	0.12 (17.0)	0.049 (6.94)	0.71	0.12 (17.0)	
	M8RX20GV4Y	4	20	200	50	30	90 to 1400	0.12 (17.0)	0.049 (6.94)	0.36	0.12 (17.0)	1.8 (400 V)
					60		90 to 1700	0.12 (17.0)	0.049 (6.94)	0.36	0.12 (17.0)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-306.

• Permissible torque at output shaft of gear head

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

Applicable gear head Bearing	Reduction Ratio / Speed		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
MX8G□B (ball bearing) MX8G□M (metal bearing)	1200 r/min	50 Hz	0.29 (2.57)	0.34 (3.01)	0.48 (4.25)	0.58 (5.13)	0.72 (6.37)	0.87 (7.70)	0.97 (8.59)	1.21 (10.7)	1.45 (12.8)	1.74 (15.4)	1.94 (17.2)	2.43 (21.5)	2.62 (23.2)	3.14 (27.8)	4.37 (38.7)	5.24 (46.4)	6.55 (58.0)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
		60 Hz	0.29 (2.57)	0.34 (3.01)	0.48 (4.25)	0.58 (5.13)	0.72 (6.37)	0.87 (7.70)	0.97 (8.59)	1.21 (10.7)	1.45 (12.8)	1.74 (15.4)	1.94 (17.2)	2.43 (21.5)	2.62 (23.2)	3.14 (27.8)	4.37 (38.7)	5.24 (46.4)	6.55 (58.0)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
	90 r/min		0.11 (0.97)	0.14 (1.24)	0.19 (1.68)	0.23 (2.04)	0.29 (2.57)	0.35 (3.10)	0.39 (3.45)	0.49 (4.34)	0.59 (5.22)	0.71 (6.28)	0.79 (6.99)	0.99 (8.76)	1.19 (10.5)	1.42 (12.6)	1.98 (17.5)	2.38 (21.1)	2.97 (26.3)	3.57 (31.6)	3.97 (35.1)	4.76 (42.1)	5.95 (52.7)	7.14 (63.2)
	Rotational direction		Same as motor rotational direction												Reverse to motor rotational direction									

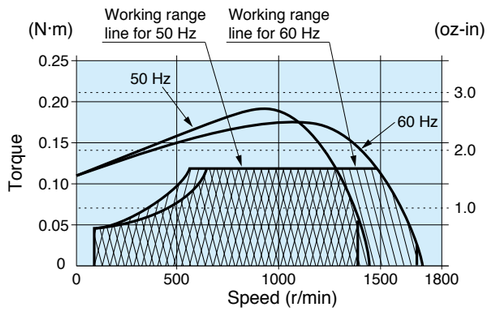
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head Bearing	Applicable gear head Decimal gear head	Reduction Ratio / Speed		200	250	300	360	500	600	750	900	1000	1200	1500	1800
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	1200 r/min	50 Hz	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
			60 Hz	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
		90 r/min		6.37 (56.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
		Rotational direction		Same as motor rotational direction	Reverse to motor rotational direction										

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

* Working range line

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

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

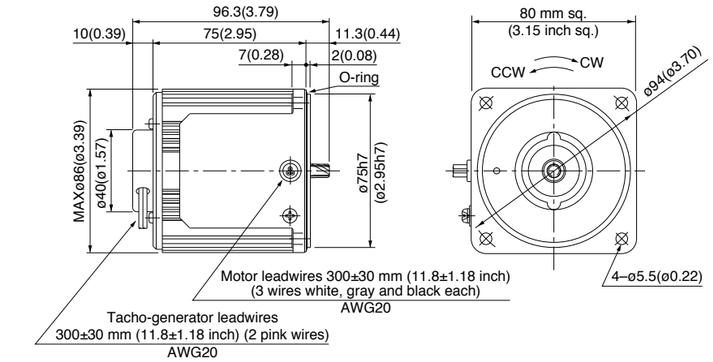
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

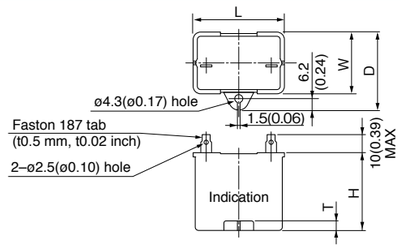
M8RX20GV4L 4P 20 W 100 V
M8RX20GV4Y 4P 20 W 200 V

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



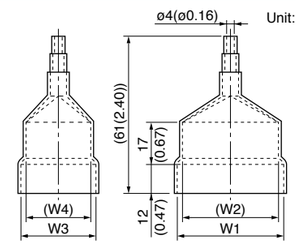
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

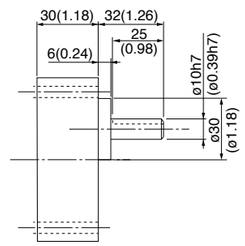
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M8RX20GV4L	M0PC7M20	39.5 (1.56)	22 (0.87)	32.5 (1.28)	30.5 (1.20)	4 (0.16)	M0PC3922	39.5 (1.56)	37.5 (1.48)	22 (0.87)	20 (0.79)
M8RX20GV4Y	M0PC1.8M40	39.5 (1.56)	22 (0.87)	32.5 (1.28)	32.5 (1.28)	4 (0.16)	M0PC3922	39.5 (1.56)	37.5 (1.48)	22 (0.87)	20 (0.79)

* Capacitors (single item) can also be purchased.

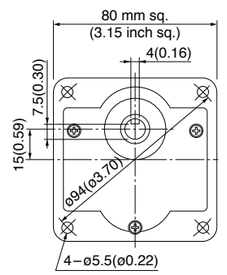
Gear head (dimensions)

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

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



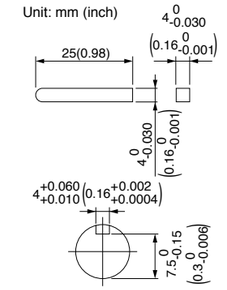
MX8G□M (metal bearing) Mass 0.6 kg(1.32 lb)



Key and keyway (dimensions) [attachment]

MX8G□B(M)

Unit: mm (inch)



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

Gear head combination B-304 | Round shaft motor B-306 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-306.

• Permissible torque at output shaft of gear head

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

Applicable gear head Bearing	Reduction Ratio / Speed		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
MX8G□B (ball bearing) MX8G□M (metal bearing)	1200 r/min	50 Hz	0.34 (3.01)	0.40 (3.54)	0.56 (4.96)	0.68 (6.02)	0.85 (7.52)	1.02 (9.03)	1.13 (10.0)	1.41 (12.5)	1.70 (15.0)	2.04 (18.1)	2.26 (20.0)	2.83 (25.1)	3.06 (27.1)	3.67 (32.5)	5.10 (45.1)	6.12 (54.2)	7.65 (67.7)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
		60 Hz	0.34 (3.01)	0.40 (3.54)	0.56 (4.96)	0.68 (6.02)	0.85 (7.52)	1.02 (9.03)	1.13 (10.0)	1.41 (12.5)	1.70 (15.0)	2.04 (18.1)	2.26 (20.0)	2.83 (25.1)	3.06 (27.1)	3.67 (32.5)	5.10 (45.1)	6.12 (54.2)	7.65 (67.7)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
	90 r/min		0.21 (1.86)	0.25 (2.21)	0.35 (3.10)	0.42 (3.72)	0.53 (4.69)	0.64 (5.66)	0.71 (6.28)	0.89 (7.88)	1.06 (9.38)	1.28 (11.3)	1.42 (12.6)	1.78 (15.8)	2.13 (18.9)	2.56 (22.7)	3.56 (31.5)	4.27 (37.8)	5.34 (47.3)	6.41 (56.7)	7.12 (63.0)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
	Rotational direction		Same as motor rotational direction												Reverse to motor rotational direction									

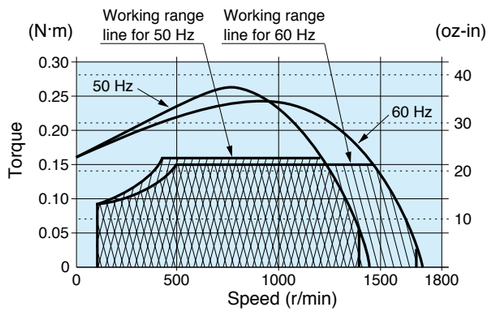
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head Bearing	Decimal gear head	Reduction Ratio / Speed		200	250	300	360	500	600	750	900	1000	1200	1500	1800
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	1200 r/min	50 Hz	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
			60 Hz	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
		90 r/min		7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
		Rotational direction		Same as motor rotational direction		Reverse to motor rotational direction									

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

* Working range line

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

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

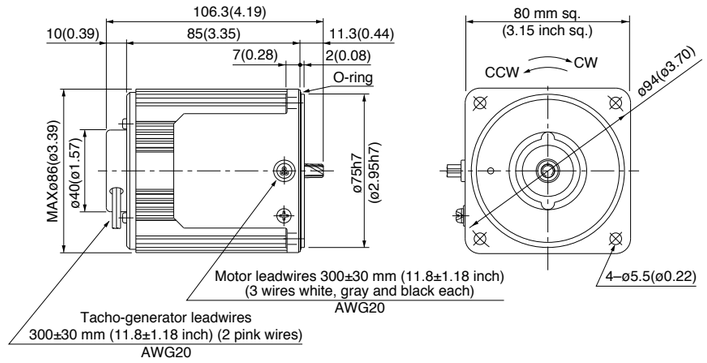
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

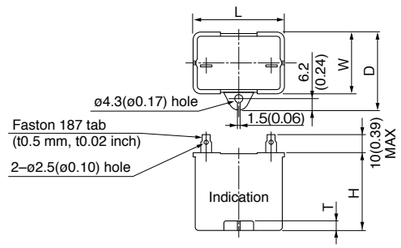
M8RX25GV4L 4P 25 W 100 V
M8RX25GV4Y 4P 25 W 200 V

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



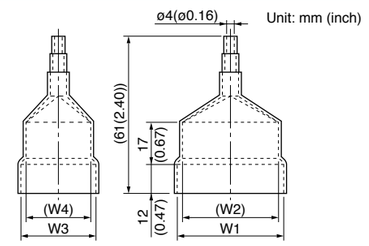
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

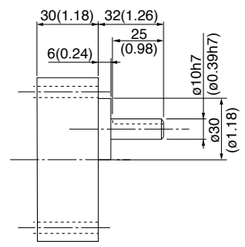
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M8RX25GV4L	M0PC9.5M20	39.5 (1.56)	22 (0.87)	32.5 (1.28)	30.5 (1.20)	4 (0.16)	M0PC3922	39.5 (1.56)	37.5 (1.48)	22 (0.87)	20 (0.79)
M8RX25GV4Y	M0PC2.4M40	49.7 (1.96)	24 (0.94)	34.5 (1.36)	34.5 (1.36)	4 (0.16)	M0PC5026	50 (1.97)	48 (1.89)	26 (1.02)	22 (0.87)

* Capacitors (single item) can also be purchased.

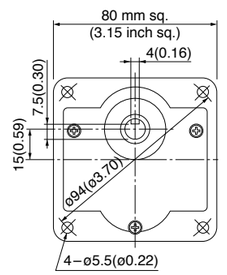
Gear head (dimensions)

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

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



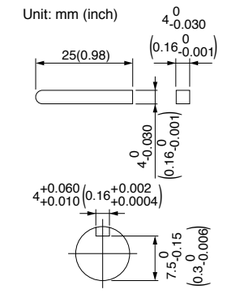
MX8G□M (metal bearing) Mass 0.6 kg(1.32 lb)



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-304 | Round shaft motor B-306 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Variable speed 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)	Variable speed range Speed (r/min)	Permissible Torque N·m (oz-in) at 1200 r/min	Permissible Torque N·m (oz-in) at 90 r/min	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
80 mm sq.	M8RX25GV4LG M8RX25GV4LGA	4	25	100	50	30	90 to 1400	0.19 (26.9)	0.11 (15.6)	1.1	0.17 (24.1)	10 (250 V)
					60		90 to 1700	0.15 (21.2)	0.11 (15.6)	1.1	0.17 (24.1)	
	M8RX25GV4DG M8RX25GV4DGA	4	25	110	60	30	90 to 1700	0.15 (21.2)	0.11 (15.6)	1.1	0.16 (22.7)	8 (250 V)
				115	60		90 to 1700	0.15 (21.2)	0.11 (15.6)	1.2	0.17 (24.1)	
	M8RX25GV4YG M8RX25GV4YGA	4	25	200	50	30	90 to 1400	0.19 (26.9)	0.11 (15.6)	0.45	0.17 (24.1)	2.5 (450 V)
					60		90 to 1700	0.15 (21.2)	0.11 (15.6)	0.46	0.17 (24.1)	
	M8RX25GV4GG M8RX25GV4GGA	4	25	220	50	30	90 to 1400	0.19 (26.9)	0.11 (15.6)	0.47	0.16 (22.7)	2 (450 V)
					60		90 to 1700	0.15 (21.2)	0.11 (15.6)	0.46	0.16 (22.7)	
				230	50		90 to 1400	0.19 (26.9)	0.11 (15.6)	0.49	0.17 (24.1)	
					60		90 to 1700	0.15 (21.2)	0.11 (15.6)	0.48	0.17 (24.1)	

• 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-306.
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

Applicable gear head: Bearing	Speed		Reduction Ratio 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
MX8G□B (ball bearing) MX8G□M (metal bearing)	1200 r/min	50 Hz	0.46 (4.07)	0.55 (4.87)	0.77 (6.82)	0.92 (8.14)	1.15 (10.2)	1.39 (12.3)	1.54 (13.6)	1.92 (17.0)	2.31 (20.4)	2.77 (24.5)	3.08 (27.3)	3.85 (34.1)	4.16 (36.8)	4.99 (44.2)	6.93 (61.3)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
		60 Hz	0.36 (3.19)	0.44 (3.89)	0.61 (5.40)	0.73 (6.46)	0.91 (8.05)	1.09 (9.65)	1.22 (10.8)	1.52 (13.5)	1.82 (16.1)	2.19 (19.4)	2.43 (21.5)	3.04 (26.9)	3.28 (29.0)	3.94 (34.9)	5.47 (48.4)	6.56 (58.1)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
	90 r/min		0.27 (2.39)	0.32 (2.83)	0.45 (3.98)	0.53 (4.69)	0.67 (5.93)	0.80 (7.08)	0.89 (7.88)	1.11 (9.82)	1.34 (11.9)	1.60 (14.2)	1.78 (15.8)	2.23 (19.7)	2.41 (21.3)	2.89 (25.6)	4.01 (35.5)	4.81 (42.6)	6.01 (53.2)	7.22 (63.9)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
	Rotational direction		Same as motor rotational direction												Reverse to motor rotational direction									

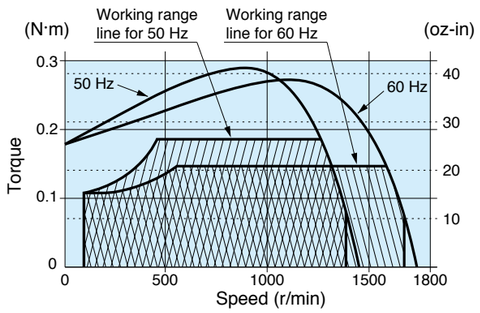
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head: Bearing	Decimal gear head	Speed		Reduction Ratio 200	250	300	360	500	600	750	900	1000	1200	1500	1800
MX8G□B (ball bearing) MX8G□M (metal bearing)	MX8G10XB	1200 r/min	50 Hz	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
			60 Hz	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
		90 r/min		7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)	7.84 (69.4)
		Rotational direction		Same as motor rotational direction	Reverse to motor rotational direction										

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

* Working range line

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

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

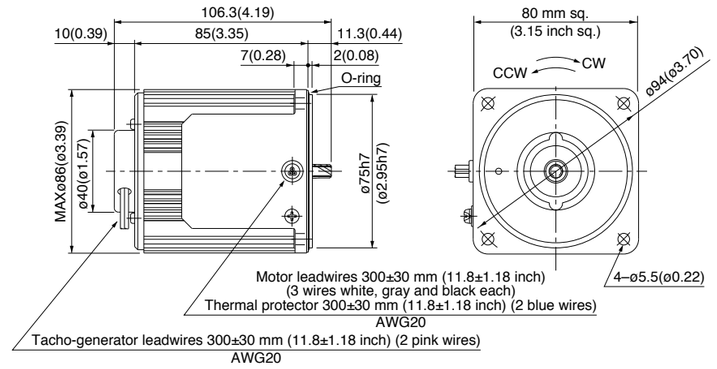
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

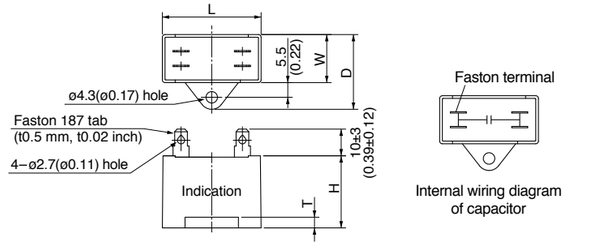
M8RX25GV4LG(A) 4P 25 W 100 V
M8RX25GV4DG(A) 4P 25 W 110 V / 115 V
M8RX25GV4YG(A) 4P 25 W 200 V
M8RX25GV4GG(A) 4P 25 W 220 V / 230 V

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



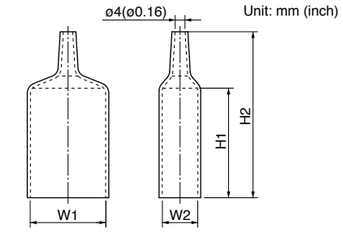
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

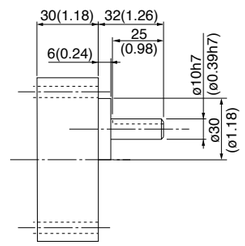
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M8RX25GV4LG(A)	M0PC10M25G	58 (2.28)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC5821G	58 (2.28)	21 (0.83)	55 (2.17)	78 (3.07)
M8RX25GV4DG(A)	M0PC8M25G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC4821G	48 (1.89)	21 (0.83)	55 (2.17)	78 (3.07)
M8RX25GV4YG(A)	M0PC2.5M45G	48 (1.89)	21 (0.83)	31 (1.22)	31 (1.22)	4 (0.16)	M0PC4821G	48 (1.89)	21 (0.83)	55 (2.17)	78 (3.07)
M8RX25GV4GG(A)	M0PC2M45G	48 (1.89)	19 (0.75)	29 (1.14)	29 (1.14)	4 (0.16)	M0PC4819G	48 (1.89)	19 (0.75)	55 (2.17)	78 (3.07)

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

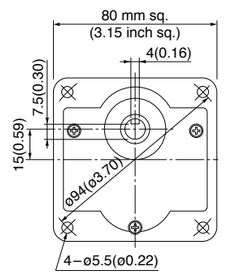
Gear head (dimensions)

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

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



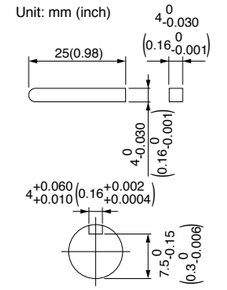
MX8G□M (metal bearing) Mass 0.6 kg(1.32 lb)



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-304 | Round shaft motor B-306 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

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

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-307.

• Permissible torque at output shaft of gear head

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

Applicable gear head: Bearing	Reduction Ratio / Speed		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
MX9G□B (ball bearing) MX9G□M (metal bearing)	1200 r/min	50 Hz	0.66 (5.84)	0.84 (7.43)	1.08 (9.56)	1.38 (12.2)	1.57 (13.9)	2.00 (17.7)	2.25 (19.9)	2.74 (24.3)	3.23 (28.6)	4.13 (36.6)	4.41 (39.0)	5.29 (46.8)	6.37 (56.4)	8.15 (72.1)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)
		60 Hz	0.51 (4.51)	0.66 (5.84)	0.84 (7.43)	1.08 (9.56)	1.22 (10.8)	1.57 (13.9)	1.76 (15.6)	2.14 (18.9)	2.74 (24.3)	3.23 (28.6)	3.53 (31.2)	4.13 (36.6)	5.29 (46.8)	6.37 (56.4)	8.80 (77.9)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)
	90 r/min		0.23 (2.04)	0.28 (2.48)	0.39 (3.45)	0.47 (4.16)	0.59 (5.22)	0.71 (6.28)	0.79 (6.99)	0.99 (8.76)	1.19 (10.5)	1.42 (12.6)	1.58 (14.0)	1.98 (17.5)	2.38 (21.1)	2.85 (25.2)	3.96 (35.0)	4.76 (42.1)	5.95 (52.7)	7.14 (63.2)	7.93 (70.2)	9.52 (84.3)	9.80 (86.7)	9.80 (86.7)
	Rotational direction		Same as motor rotational direction												Reverse to motor rotational direction									

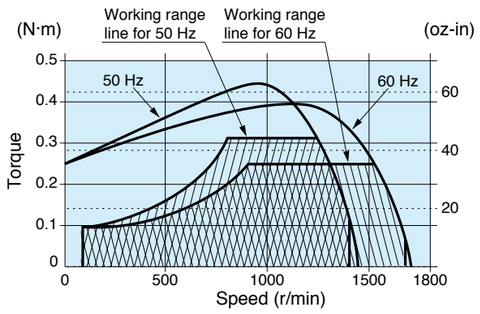
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head: Bearing	Decimal gear head	Reduction Ratio / Speed		200	250	300	360	500	600	750	900	1000	1200	1500	1800
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	1200 r/min	50 Hz	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)
			60 Hz	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)
		90 r/min		9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)
		Rotational direction		Same as motor rotational direction		Reverse to motor rotational direction									

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

* Working range line

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

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

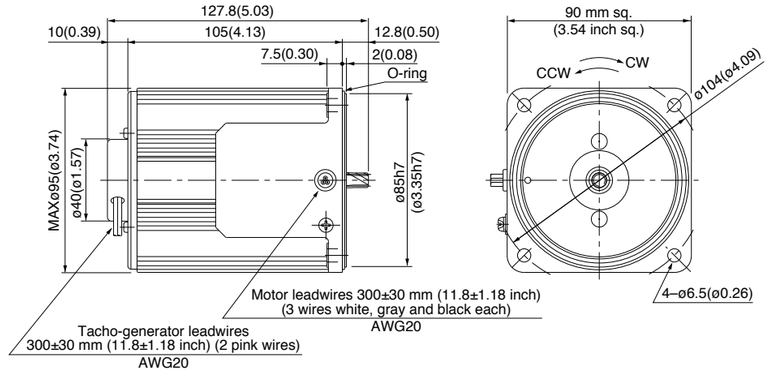
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

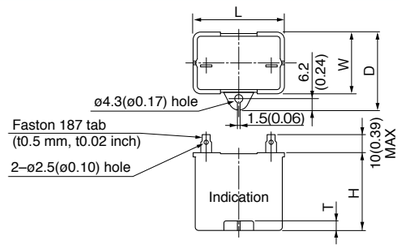
M9RX40GV4L 4P 40 W 100 V
M9RX40GV4Y 4P 40 W 200 V

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



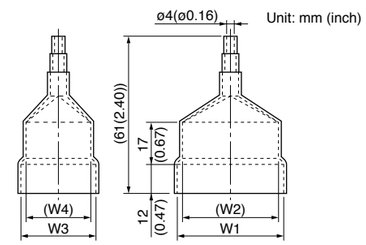
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

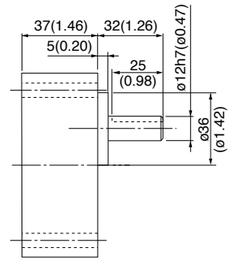
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M9RX40GV4L	M0PC15M20	39.5 (1.56)	26.7 (1.05)	37 (1.46)	41 (1.61)	4 (0.16)	M0PC3926	39.5 (1.56)	37.5 (1.48)	26 (1.02)	25 (0.98)
M9RX40GV4Y	M0PC3.8M40	50 (1.97)	26.7 (1.05)	37.5 (1.48)	38 (1.50)	4 (0.16)	M0PC5026	50 (1.97)	48 (1.89)	26 (1.02)	22 (0.87)

* Capacitors (single item) can also be purchased.

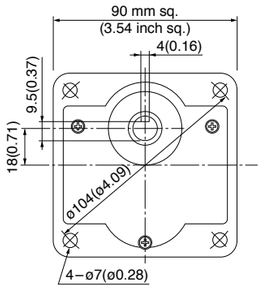
Gear head (dimensions)

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

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



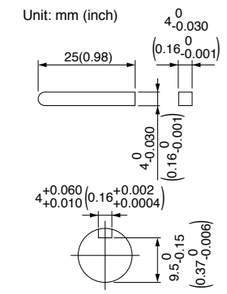
MX9G□M (metal bearing) Mass 0.8 kg(1.76 lb)



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-305 | Round shaft motor B-307 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Variable speed reversible motor (leadwire)

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

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Variable speed range Speed (r/min)	Permissible Torque N·m (oz-in) at 1200 r/min	Permissible Torque N·m (oz-in) at 90 r/min	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90 mm sq.	M9RX40GV4LG M9RX40GV4LGA	4	40	100	50	30	90 to 1400	0.30 (42.5)	0.12 (17.0)	1.7	0.27 (38.2)	16 (250 V)
					60		90 to 1700	0.25 (35.4)	0.12 (17.0)	1.6	0.27 (38.2)	
	M9RX40GV4DG M9RX40GV4DGA	4	40	110	60	30	90 to 1700	0.25 (35.4)	0.12 (17.0)	1.7	0.23 (32.6)	12 (250 V)
				115	60		90 to 1700	0.25 (35.4)	0.12 (17.0)	1.8	0.25 (35.4)	
	M9RX40GV4YG M9RX40GV4YGA	4	40	200	50	30	90 to 1400	0.30 (42.5)	0.12 (17.0)	0.67	0.27 (38.2)	4 (450 V)
					60		90 to 1700	0.25 (35.4)	0.12 (17.0)	0.70	0.27 (38.2)	
	M9RX40GV4GG M9RX40GV4GGA	4	40	220	50	30	90 to 1400	0.30 (42.5)	0.12 (17.0)	0.71	0.27 (38.2)	3.5 (450 V)
					60		90 to 1700	0.25 (35.4)	0.12 (17.0)	0.71	0.27 (38.2)	
				230	50		90 to 1400	0.30 (42.5)	0.12 (17.0)	0.74	0.30 (42.5)	
					60		90 to 1700	0.25 (35.4)	0.12 (17.0)	0.74	0.30 (42.5)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-307.
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

Applicable gear head: Bearing	Speed	Reduction Ratio	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
MX9G□B (ball bearing) MX9G□M (metal bearing)	1200 r/min	50 Hz	0.73 (6.46)	0.87 (7.7)	1.22 (10.8)	1.46 (12.9)	1.82 (16.1)	2.19 (19.4)	2.43 (21.5)	3.04 (26.9)	3.65 (32.3)	4.37 (38.7)	4.86 (43.0)	6.08 (53.8)	6.56 (58.1)	7.87 (69.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)
		60 Hz	0.61 (5.40)	0.73 (6.46)	1.01 (8.94)	1.22 (10.8)	1.52 (13.5)	1.82 (16.1)	2.03 (18.0)	2.53 (22.4)	3.04 (26.9)	3.65 (32.3)	4.05 (35.8)	5.06 (44.8)	5.47 (48.4)	6.56 (58.1)	9.11 (80.6)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.8 (86.7)	9.80 (86.7)	9.80 (86.7)
	90 r/min		0.29 (2.57)	0.35 (3.10)	0.49 (4.34)	0.58 (5.13)	0.73 (6.46)	0.87 (7.70)	0.97 (8.59)	1.22 (10.8)	1.46 (12.9)	1.75 (15.5)	1.94 (17.2)	2.43 (21.5)	2.62 (23.2)	3.15 (27.9)	4.37 (38.7)	5.25 (46.5)	6.56 (58.1)	7.87 (69.7)	8.75 (77.4)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)
	Rotational direction		Same as motor rotational direction												Reverse to motor rotational direction									

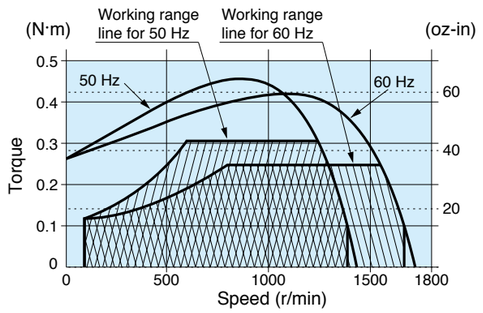
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head: Bearing	Decimal gear head	Speed	Reduction Ratio	200	250	300	360	500	600	750	900	1000	1200	1500	1800
MX9G□B (ball bearing) MX9G□M (metal bearing)	MX9G10XB	1200 r/min	50 Hz	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)
			60 Hz	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)
		90 r/min		9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)	9.80 (86.7)
		Rotational direction		Same as motor rotational direction	Reverse to motor rotational direction										

Speed-torque characteristics



Connection diagram

＊ For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

＊Working range line

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

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

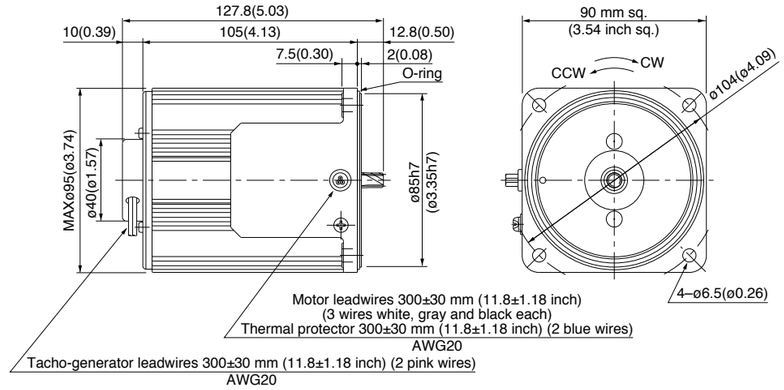
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

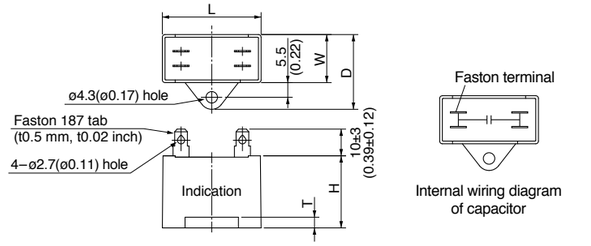
M9RX40GV4LG(A) 4P 40 W 100 V
M9RX40GV4DG(A) 4P 40 W 110 V / 115 V
M9RX40GV4YG(A) 4P 40 W 200 V
M9RX40GV4GG(A) 4P 40 W 220 V / 230 V

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



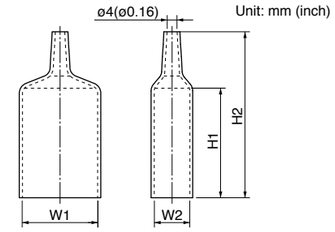
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [attachment]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

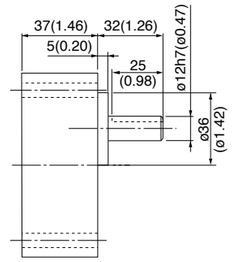
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (attachment)	W1	W2	H1	H2
M9RX40GV4LG(A)	M0PC16M25G	58 (2.28)	23.5 (0.93)	38.5 (1.52)	37 (1.46)	4 (0.16)	M0PC5823G	58 (2.28)	23.5 (0.93)	55 (2.17)	78 (3.07)
M9RX40GV4DG(A)	M0PC12M25G	58 (2.28)	22 (0.87)	32 (1.26)	35 (1.38)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

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

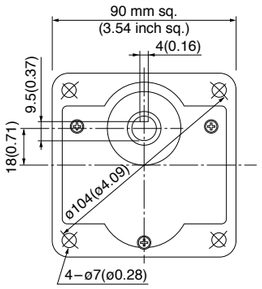
Gear head (dimensions)

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

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



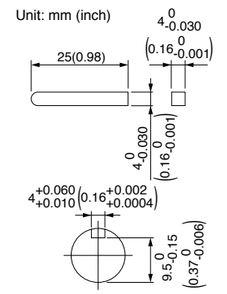
MX9G□M (metal bearing) Mass 0.8 kg(1.76 lb)



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-305 | Round shaft motor B-307 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Variable speed reversible motor (leadwire)

90 mm (3.54 inch) sq. 60 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Variable speed range Speed (r/min)	Permissible Torque N·m (oz-in) at 1200 r/min	Permissible Torque N·m (oz-in) at 90 r/min	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90 mm sq.	M9RZ60GV4L	4	60	100	50	30	90 to 1400	0.43 (60.9)	0.12 (17.0)	3.0	0.46 (65.1)	25 (200 V)
					60		90 to 1700	0.36 (51.0)	0.12 (17.0)	2.8	0.46 (65.1)	
	M9RZ60GV4Y	4	60	200	50	30	90 to 1400	0.43 (60.9)	0.12 (17.0)	1.4	0.46 (65.1)	6.2 (375 V)
					60		90 to 1700	0.36 (51.0)	0.12 (17.0)	1.3	0.46 (65.1)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-307.

• Permissible torque at output shaft of gear head

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

Applicable gear head Bearing	Speed		Reduction Ratio 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
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	1200 r/min	50 Hz	1.04 (9.20)	1.25 (11.1)	1.74 (15.4)	2.08 (18.4)	2.61 (23.1)	3.13 (27.7)	3.48 (30.8)	3.91 (34.6)	4.69 (41.5)	5.63 (49.8)	6.26 (55.4)	7.82 (69.2)	9.39 (83.1)	10.1 (89.4)	14.0 (124)	16.8 (149)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		60 Hz	0.87 (7.70)	1.04 (9.20)	1.45 (12.8)	1.74 (15.4)	2.18 (19.3)	2.61 (23.1)	2.91 (25.8)	3.27 (28.9)	3.91 (34.6)	4.69 (41.5)	5.22 (46.2)	6.52 (57.7)	7.83 (69.3)	8.42 (74.5)	11.7 (104)	14.0 (124)	17.5 (155)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
	90 r/min		0.29 (2.57)	0.34 (3.01)	0.48 (4.25)	0.58 (5.13)	0.72 (6.37)	0.87 (7.70)	0.97 (8.58)	1.12 (9.91)	1.35 (11.9)	1.62 (14.3)	1.80 (15.9)	2.25 (19.9)	2.70 (23.9)	3.02 (26.7)	4.20 (37.2)	5.04 (44.6)	6.30 (55.8)	7.56 (66.9)	8.40 (74.3)	10 (88.5)	12.6 (112)	15.1 (134)	16.8 (149)
	Rotational direction		Same as motor rotational direction							Reverse to motor rotational direction						Same as motor rotational direction									

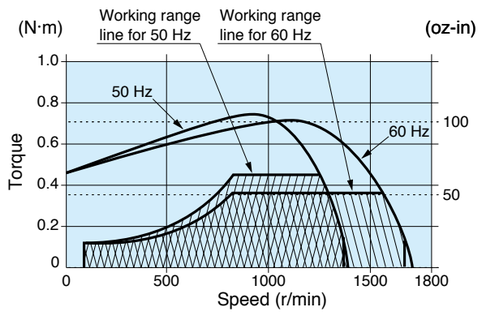
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head Bearing	Decimal gear head	Speed		Reduction Ratio 250	300	360	500	600	750	900	1000	1200	1500	1800	2000
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	MZ9G10XB	1200 r/min	50 Hz	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
			60 Hz	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		90 r/min		17.7 (157)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		Rotational direction		Same as motor rotational direction		Reverse to motor rotational direction									

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

* Working range line

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

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

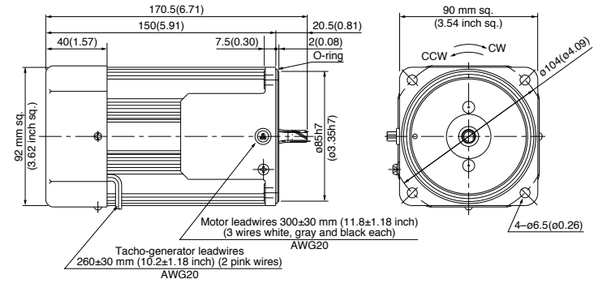
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

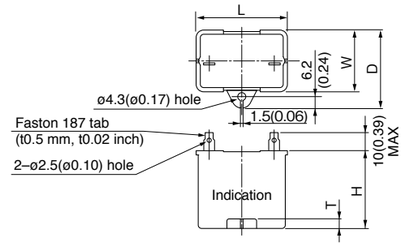
M9RZ60GV4L 4P 60 W 100 V (with fan)
M9RZ60GV4Y 4P 60 W 200 V (with fan)

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



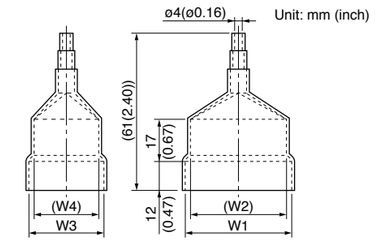
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

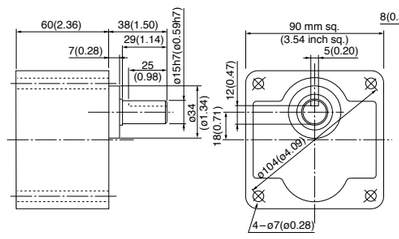
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	W3	W4
M9RZ60GV4L	M0PC25M20	50.2 (1.98)	31 (1.22)	41 (1.61)	42 (1.65)	5 (0.20)	M0PC5032	50 (1.97)	48 (1.89)	32.5 (1.28)	29.5 (1.16)
M9RZ60GV4Y	M0PC6.2M38	50 (1.97)	30.5 (1.20)	41 (1.61)	41.5 (1.63)	4 (0.16)	M0PC5032	50 (1.97)	48 (1.89)	32.5 (1.28)	29.5 (1.16)

* Capacitors (single item) can also be purchased.

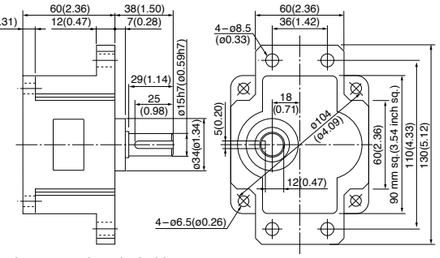
Gear head (dimensions)

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

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



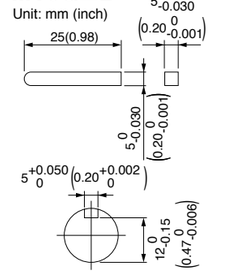
MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg(3.09 lb)



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-305 | Round shaft motor B-307 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Variable speed reversible motor (leadwire)

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)	Variable speed range Speed (r/min)	Permissible Torque N·m (oz-in) at 1200 r/min	Permissible Torque N·m (oz-in) at 90 r/min	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90 mm sq.	M9RZ60GV4LG M9RZ60GV4LGA	4	60	100	50	30	90 to 1400	0.45 (63.7)	0.14 (19.8)	3.0	0.46 (65.1)	25 (250 V)
					60		90 to 1700	0.36 (51.0)	0.14 (19.8)	2.8	0.48 (68.0)	
	M9RZ60GV4DG M9RZ60GV4DGA	4	60	110	60	30	90 to 1700	0.36 (51.0)	0.14 (19.8)	3.0	0.43 (60.9)	20 (250 V)
				115	60		90 to 1700	0.36 (51.0)	0.14 (19.8)	3.1	0.48 (68.0)	
	M9RZ60GV4YG M9RZ60GV4YGA	4	60	200	50	30	90 to 1400	0.45 (63.7)	0.14 (19.8)	1.3	0.46 (65.1)	6 (450 V)
					60		90 to 1700	0.36 (51.0)	0.14 (19.8)	1.2	0.48 (68.0)	
	M9RZ60GV4GG M9RZ60GV4GGA	4	60	220	50	30	90 to 1400	0.45 (63.7)	0.14 (19.8)	1.4	0.43 (60.9)	5 (450 V)
					60		90 to 1700	0.36 (51.0)	0.14 (19.8)	1.3	0.43 (60.9)	
				230	50		90 to 1400	0.45 (63.7)	0.14 (19.8)	1.5	0.48 (68.0)	
					60		90 to 1700	0.36 (51.0)	0.14 (19.8)	1.4	0.48 (68.0)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-307.
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

Applicable gear head: Bearing	Speed \ Reduction Ratio		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
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	1200 r/min	50 Hz	1.09 (9.65)	1.31 (11.6)	1.82 (16.1)	2.19 (19.4)	2.73 (24.2)	3.28 (29.0)	3.65 (32.3)	4.10 (36.3)	4.92 (43.5)	5.90 (52.2)	6.56 (58.1)	8.20 (72.6)	9.84 (87.1)	10.6 (93.8)	14.8 (131)	17.7 (157)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		60 Hz	0.87 (7.70)	1.05 (9.29)	1.46 (12.9)	1.75 (15.5)	2.19 (19.4)	2.62 (23.2)	2.92 (25.8)	3.28 (29.0)	3.94 (34.9)	4.72 (41.8)	5.25 (46.5)	6.56 (58.1)	7.87 (69.7)	8.50 (75.2)	11.8 (104)	14.2 (126)	17.7 (157)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
	90 r/min		0.34 (3.01)	0.41 (3.63)	0.57 (5.04)	0.68 (6.02)	0.85 (7.52)	1.02 (9.03)	1.13 (10.0)	1.28 (11.3)	1.53 (13.5)	1.84 (16.3)	2.04 (18.1)	2.55 (22.6)	3.06 (27.1)	3.31 (29.3)	4.59 (40.6)	5.51 (48.8)	6.89 (61.0)	8.27 (73.2)	9.19 (81.3)	11.0 (97.4)	13.8 (122)	16.5 (146)	18.4 (163)
	Rotational direction		Same as motor rotational direction							Reverse to motor rotational direction						Same as motor rotational direction									

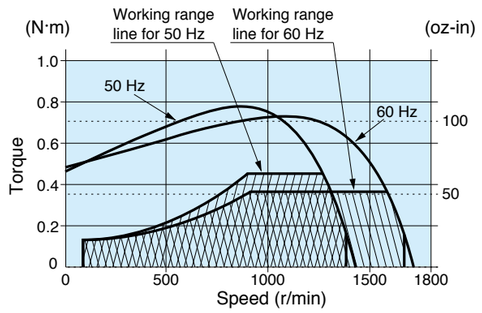
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head: Bearing	Applicable gear head: Decimal gear head	Speed \ Reduction Ratio		250	300	360	500	600	750	900	1000	1200	1500	1800	2000
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	MZ9G10XB	1200 r/min	50 Hz	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
			60 Hz	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		90 r/min		19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		Rotational direction		Same as motor rotational direction		Reverse to motor rotational direction									

Speed-torque characteristics



Connection diagram

＊ For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

＊Working range line

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

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

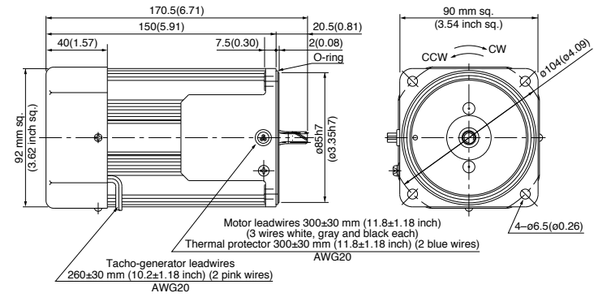
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

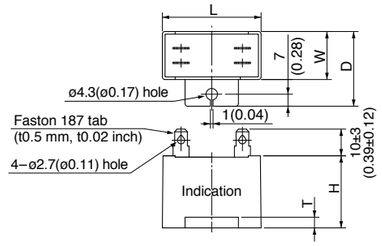
M9RZ60GV4LG(A) 4P 60 W 100 V (with fan)
M9RZ60GV4DG(A) 4P 60 W 110 V / 115 V (with fan)
M9RZ60GV4YG(A) 4P 60 W 200 V (with fan)
M9RZ60GV4GG(A) 4P 60 W 220 V / 230 V (with fan)

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



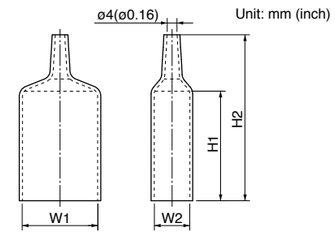
Capacitor (dimensions) [attachment]

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
M9RZ60GV4LG(A)	M0PC25M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ60GV4DG(A)	M0PC20M25G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)
M9RZ60GV4YG(A)	M0PC6M45G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)
M9RZ60GV4GG(A)	M0PC5M45G	58 (2.28)	29 (1.14)	44 (1.73)	41 (1.61)	4 (0.16)	M0PC5829G	58 (2.28)	29 (1.14)	55 (2.17)	78 (3.07)

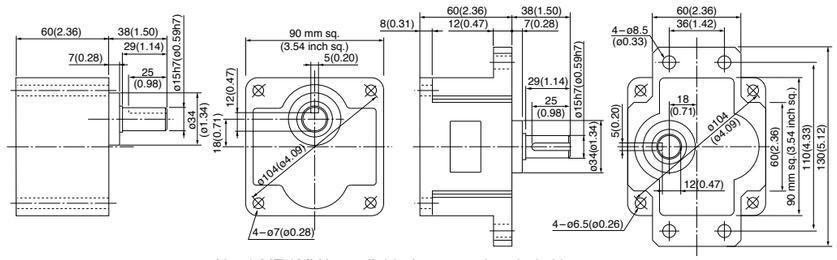
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
＊Capacitors (single item), capacitors cap (single item) can also be purchased.

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)

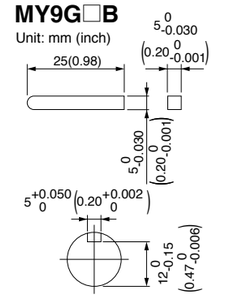


Note) MZ / MY is available for a gear head of either type.

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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B
Unit: mm (inch)



Gear head combination B-305 | Round shaft motor B-307 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Variable speed reversible motor (leadwire)

90 mm (3.54 inch) sq. 90 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Variable speed range Speed (r/min)	Permissible Torque N·m (oz-in) at 1200 r/min	Permissible Torque N·m (oz-in) at 90 r/min	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90 mm sq.	M9RZ90GV4L	4	90	100	50	30	90 to 1400	0.59 (83.6)	0.25 (35.4)	2.9	0.61 (86.4)	30 (200 V)
					60		90 to 1700	0.54 (76.5)	0.25 (35.4)	2.9	0.61 (86.4)	
	M9RZ90GV4Y	4	90	200	50	30	90 to 1400	0.59 (83.6)	0.25 (35.4)	1.6	0.59 (83.6)	7.5 (370 V)
					60		90 to 1700	0.54 (76.5)	0.25 (35.4)	1.5	0.59 (83.6)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-307.

• Permissible torque at output shaft of gear head

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

Applicable gear head Bearing	Speed	Reduction Ratio	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
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	1200 r/min	50 Hz	1.43 (12.7)	1.71 (15.1)	2.38 (21.1)	2.86 (25.3)	3.57 (31.6)	4.29 (38.0)	4.77 (42.2)	5.36 (47.4)	6.43 (56.9)	7.72 (68.3)	8.58 (75.9)	10.7 (94.7)	12.8 (113)	13.8 (122)	19.3 (171)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		60 Hz	1.31 (11.6)	1.57 (13.9)	2.18 (19.3)	2.62 (23.2)	3.27 (28.9)	3.93 (34.8)	4.37 (38.7)	4.91 (43.5)	5.89 (52.1)	7.07 (62.6)	7.86 (69.6)	9.82 (86.9)	11.7 (104)	12.7 (112)	17.6 (156)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
	90 r/min		0.60 (5.31)	0.72 (6.37)	1.01 (8.94)	1.21 (10.7)	1.51 (13.4)	1.81 (16.0)	2.02 (17.9)	2.27 (20.1)	2.70 (23.9)	2.89 (25.6)	3.62 (32.0)	4.52 (40.0)	5.43 (48.1)	5.86 (51.9)	8.10 (71.7)	9.72 (86.0)	12.1 (107)	14.5 (128)	16.2 (143)	19.4 (172)	19.6 (173)	19.6 (173)	19.6 (173)
	Rotational direction		Same as motor rotational direction							Reverse to motor rotational direction						Same as motor rotational direction									

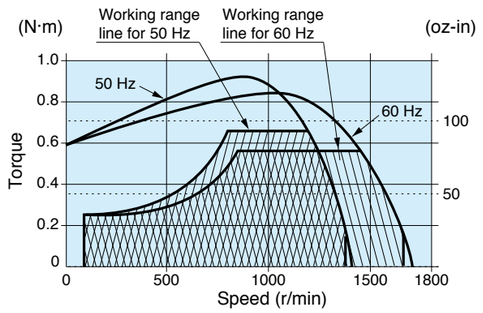
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head Bearing	Decimal gear head	Speed	Reduction Ratio	250	300	360	500	600	750	900	1000	1200	1500	1800	2000
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	MZ9G10XB	1200 r/min	50 Hz	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
			60 Hz	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		90 r/min		19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		Rotational direction		Same as motor rotational direction		Reverse to motor rotational direction									

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

* Working range line

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

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

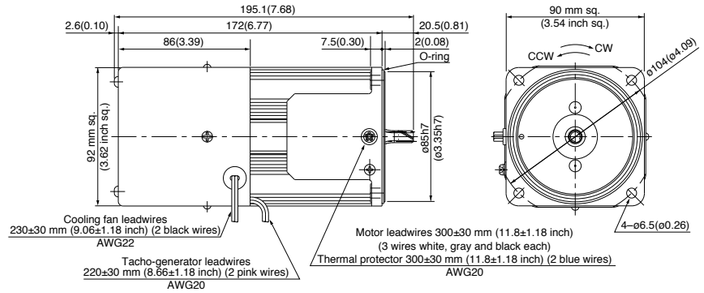
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

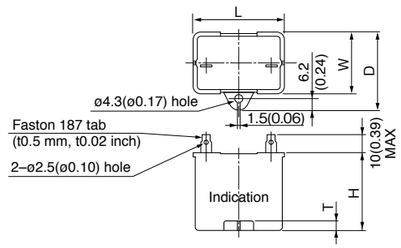
M9RZ90GV4L 4P 90 W 100 V (Forced cooling fan)
M9RZ90GV4Y 4P 90 W 200 V (Forced cooling fan)

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



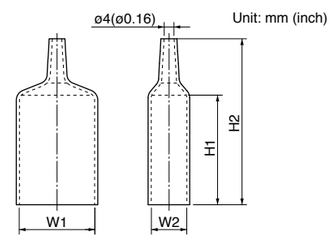
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [option]

Unit: mm (inch)



• Capacitor dimension list

Unit: upper (mm) / lower (inch)

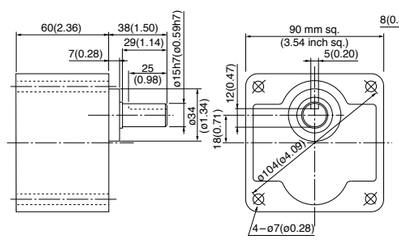
Model number of motor	Model number of capacitor (attachment)	L	W	D	H	T	Capacitor cap (option)	W1	W2	H1	H2
M9RZ90GV4L	M0PC30M20A	50.2 (1.98)	35 (1.38)	45.5 (1.79)	47 (1.85)	5 (0.20)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90GV4Y	M0PC7.5M37	50 (1.97)	34 (1.34)	45 (1.77)	45 (1.77)	6 (0.24)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)

* Capacitors (single item) can also be purchased.

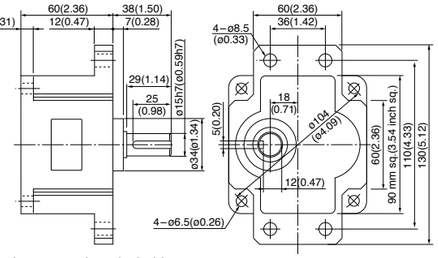
Gear head (dimensions)

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

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



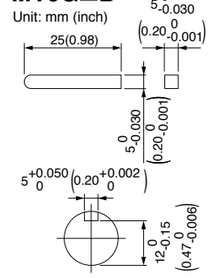
MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg(3.09 lb)



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-305 | Round shaft motor B-307 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Variable speed reversible motor (leadwire)

cULus CE CCC | 90 mm (3.54 inch) sq. | 90 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Variable speed range Speed (r/min)	Permissible Torque N·m (oz-in) at 1200 r/min	Permissible Torque N·m (oz-in) at 90 r/min	Starting current (A)	Starting torque N·m (oz-in)	Capacitor (μF) (rated voltage)
90 mm sq.	M9RZ90GV4LG M9RZ90GV4LGA	4	90	100	50	30	90 to 1400	0.69 (97.7)	0.39 (55.2)	3.0	0.66 (93.5)	32 (250 V)
					60		90 to 1700	0.55 (77.9)	0.39 (55.2)	2.9	0.66 (93.5)	
	M9RZ90GV4DG M9RZ90GV4DGA	4	90	110	60	30	90 to 1700	0.55 (77.9)	0.39 (55.2)	3.1	0.66 (93.5)	28 (250 V)
				115	60		90 to 1700	0.55 (77.9)	0.39 (55.2)	3.2	0.72 (102)	
	M9RZ90GV4YG M9RZ90GV4YGA	4	90	200	50	30	90 to 1400	0.69 (97.7)	0.39 (55.2)	1.4	0.66 (93.5)	8 (450 V)
					60		90 to 1700	0.55 (77.9)	0.39 (55.2)	1.4	0.66 (93.5)	
	M9RZ90GV4GG M9RZ90GV4GGA	4	90	220	50	30	90 to 1400	0.69 (97.7)	0.39 (55.2)	1.5	0.66 (93.5)	7 (450 V)
					60		90 to 1700	0.55 (77.9)	0.39 (55.2)	1.4	0.66 (93.5)	
				230	50		90 to 1400	0.69 (97.7)	0.39 (55.2)	1.6	0.72 (102)	
					60		90 to 1700	0.55 (77.9)	0.39 (55.2)	1.5	0.72 (102)	

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-307.
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

Applicable gear head: Bearing	Reduction Ratio / Speed		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
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	1200 r/min	50 Hz	1.68 (14.9)	2.01 (17.8)	2.79 (24.7)	3.35 (29.7)	4.19 (37.1)	5.03 (44.5)	5.59 (49.5)	6.29 (55.7)	7.55 (66.8)	9.05 (80.1)	10.1 (89.4)	12.6 (112)	15.1 (134)	16.3 (144)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		60 Hz	1.34 (11.9)	1.60 (14.2)	2.23 (19.7)	2.67 (23.6)	3.34 (29.6)	4.01 (35.5)	4.46 (39.5)	5.01 (44.3)	6.01 (53.2)	7.22 (63.9)	8.02 (71.0)	10.0 (88.5)	12.0 (106)	13.0 (115)	18.0 (159)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
	90 r/min		0.95 (8.41)	1.14 (10.1)	1.58 (14.0)	1.90 (16.8)	2.37 (21.0)	2.84 (25.1)	3.16 (28.0)	3.55 (31.4)	4.26 (37.7)	5.12 (45.3)	5.69 (50.4)	7.11 (62.9)	8.53 (75.5)	9.21 (81.5)	12.8 (113)	15.4 (136)	19.2 (170)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
	Rotational direction		Same as motor rotational direction							Reverse to motor rotational direction						Same as motor rotational direction									

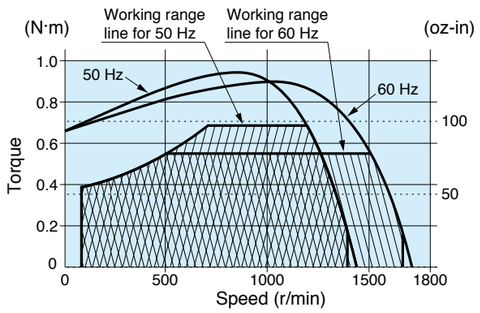
• Permissible torque at output shaft of gear head using decimal gear head

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

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

Applicable gear head: Bearing	Decimal gear head	Reduction Ratio / Speed		250	300	360	500	600	750	900	1000	1200	1500	1800	2000
MZ9G□B (ball bearing / hinge not attached) MY9G□B (ball bearing / hinge attached)	MZ9G10XB	1200 r/min	50 Hz	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
			60 Hz	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		90 r/min		19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)	19.6 (173)
		Rotational direction		Same as motor rotational direction		Reverse to motor rotational direction									

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-20.

* Working range line

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

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

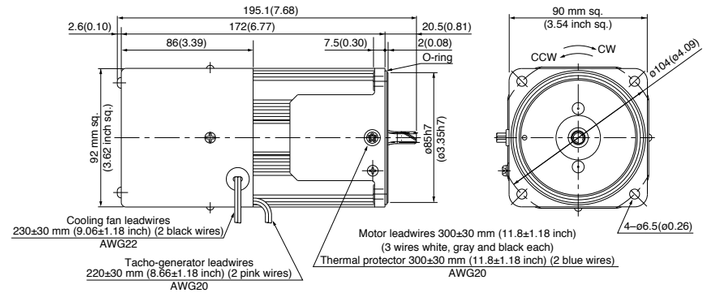
Features B-268 | System configuration B-269 | Coding system B-269 | Model list B-270

Motor (dimensions)

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

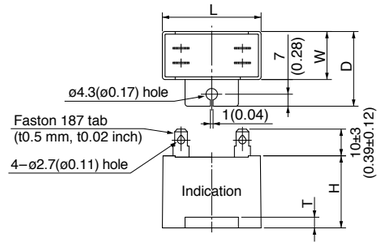
M9RZ90GV4LG(A)	4P	90 W	100 V (Forced cooling fan)
M9RZ90GV4DG(A)	4P	90 W	110 V / 115 V (Forced cooling fan)
M9RZ90GV4YG(A)	4P	90 W	200 V (Forced cooling fan)
M9RZ90GV4GG(A)	4P	90 W	220 V / 230 V (Forced cooling fan)

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



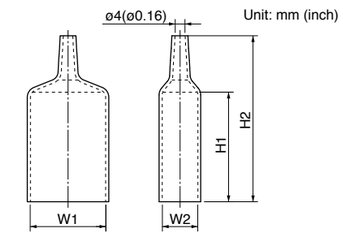
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions) [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
M9RZ90GV4LG(A)	M0PC32M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90GV4DG(A)	M0PC28M25G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90GV4YG(A)	M0PC8M45G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)
M9RZ90GV4GG(A)	M0PC7M45G	58 (2.28)	35 (1.38)	50 (1.97)	50 (1.97)	4 (0.16)	M0PC5835G	58 (2.28)	35 (1.38)	55 (2.17)	78 (3.07)

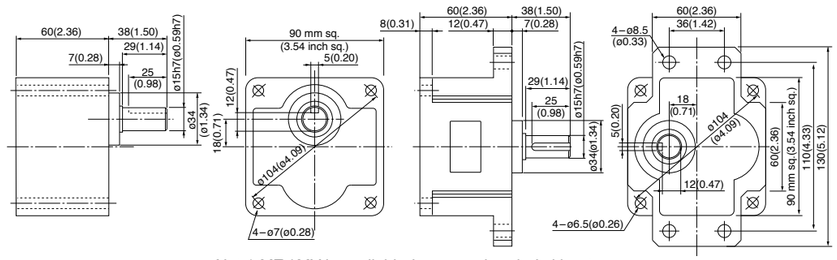
• The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.
* Capacitors (single item), capacitors cap (single item) can also be purchased.

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)

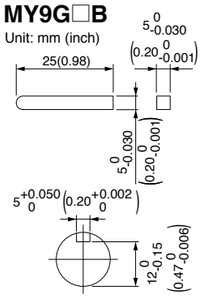


Note) MZ / MY is available for a gear head of either type.

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-305 | Round shaft motor B-307 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

Variable speed reversible motor (leadwire)

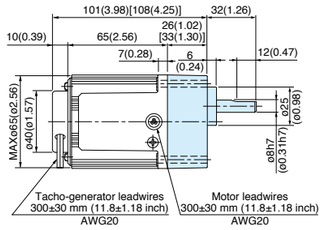
Gear head combination dimensions

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

*** Gear head is sold separately.**

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

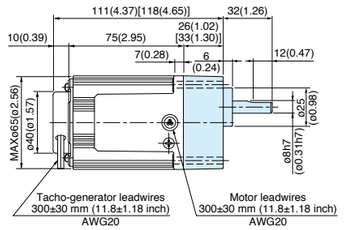
M6RX4GV4L + MX6G□BA(MA) / MX6G□B(M)



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

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

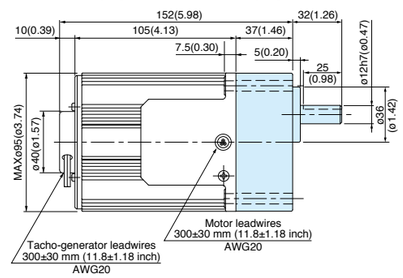
M6RX6GV4L + MX6G□BA(MA) / MX6G□B(M)
M6RX6GV4Y + MX6G□BA(MA) / MX6G□B(M)
M6RX6GV4LG(A) + MX6G□BA(MA) / MX6G□B(M)
M6RX6GV4DG(A) + MX6G□BA(MA) / MX6G□B(M)
M6RX6GV4YG(A) + MX6G□BA(MA) / MX6G□B(M)
M6RX6GV4GG(A) + MX6G□BA(MA) / MX6G□B(M)



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

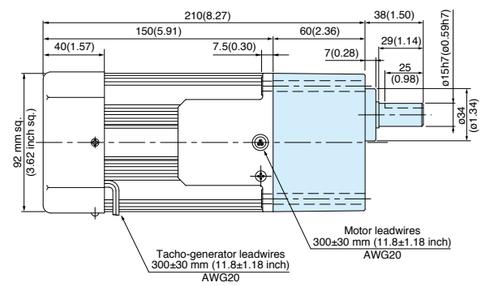
90 mm sq. (3.54 inch sq.) 40 W

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



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

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



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

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

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

* Figures in [ ] represent the dimensions of 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

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

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

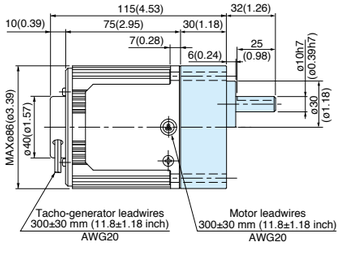
90 mm sq. (3.54 inch sq.) 90 W

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

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

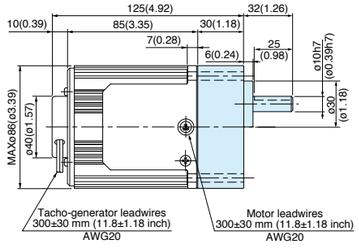
80 mm sq. (3.15 inch sq.) 20 W

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



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

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



* 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-268 | System configuration B-269 | Coding system B-269 | Model list B-270

*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.

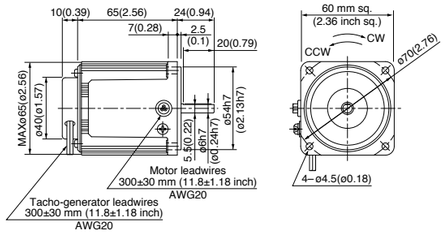
Specifications B-274 to B-303 | Controls C-4 | Option D-2

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

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

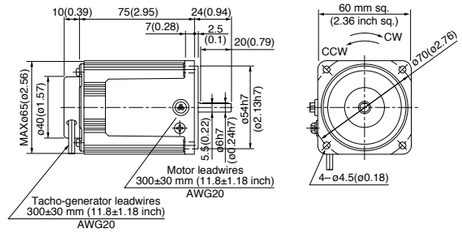
60 mm sq. (2.36 inch sq.) 4 W — Mass 0.6 kg (1.32 lb)

M6RX4SV4LS



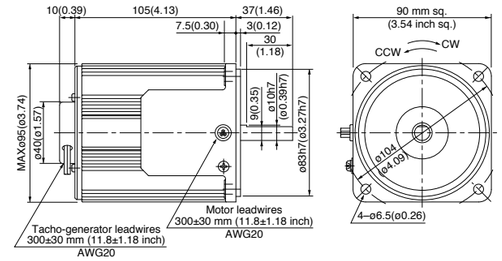
60 mm sq. (2.36 inch sq.) 6 W — Mass 0.71 kg (1.57 lb)

M6RX6SV4LS
M6RX6SV4YS
M6RX6SV4LG(A)
M6RX6SV4YG(A)
M6RX6SV4DG(A)
M6RX6SV4GG(A)



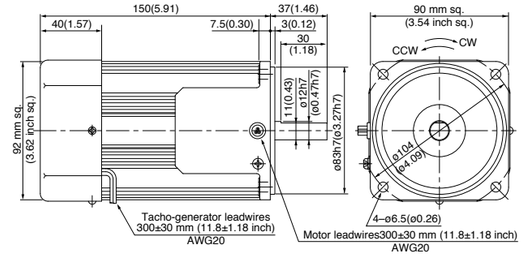
90 mm sq. (3.54 inch sq.) 40 W — Mass 2.4 kg (5.29 lb)

M9RX40SV4LS
M9RX40SV4YS
M9RX40SV4LG(A)
M9RX40SV4YG(A)
M9RX40SV4DG(A)
M9RX40SV4GG(A)



90 mm sq. (3.54 inch sq.) 60 W — Mass 3.2 kg (7.05 lb)

M9RZ60SV4LS (with fan)
M9RZ60SV4YS (with fan)
M9RZ60SV4LG(A) (with fan)
M9RZ60SV4DG(A) (with fan)
M9RZ60SV4YG(A) (with fan)
M9RZ60SV4GG(A) (with fan)



70 mm sq. (2.76 inch sq.) 10 W — Mass 0.88 kg (1.94 lb)

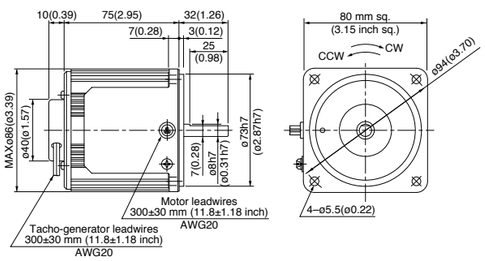
M7RX10SV4LS
M7RX10SV4YS

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

M7RX15SV4LS
M7RX15SV4YS
M7RX15SV4LG(A)
M7RX15SV4YG(A)
M7RX15SV4DG(A)
M7RX15SV4GG(A)

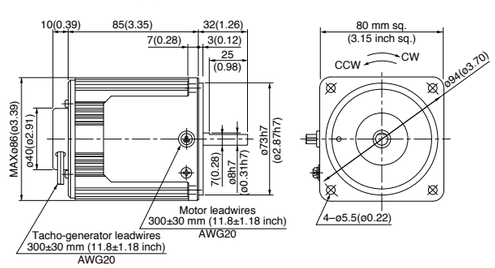
80 mm sq. (3.15 inch sq.) 20 W — Mass 1.2 kg (2.65 lb)

M8RX20SV4LS
M8RX20SV4YS



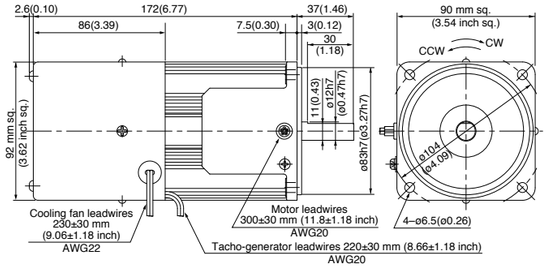
80 mm sq. (3.15 inch sq.) 25 W — Mass 1.5 kg (3.31 lb)

M8RX25SV4LS
M8RX25SV4YS
M8RX25SV4LG(A)
M8RX25SV4YG(A)
M8RX25SV4DG(A)
M8RX25SV4GG(A)



90 mm sq. (3.54 inch sq.) 90 W — Mass 3.5 kg (7.72 lb)

M9RZ90SV4LS (Forced cooling fan)
M9RZ90SV4YS (Forced cooling fan)
M9RZ90SV4LG(A) (Forced cooling fan)
M9RZ90SV4DG(A) (Forced cooling fan)
M9RZ90SV4YG(A) (Forced cooling fan)
M9RZ90SV4GG(A) (Forced cooling fan)



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

＊ 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-268 | System configuration B-269 | Coding system B-269 | Model list B-270

＊ 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.

(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-274 to B-303 | Controls C-4 | Option D-2