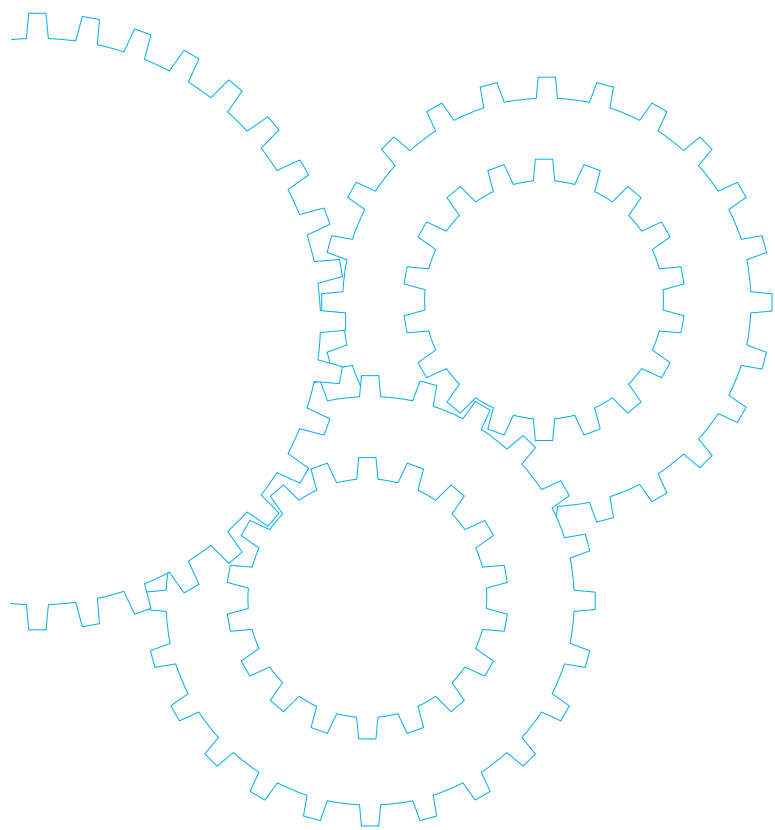


Variable Speed Reversible Motor



Contents

- Motor Overview B-268
- Model list B-270
- Product information for each model B-274
- Gear head combination dimensions B-304
- Round shaft motor dimensions B-306

Outline of variable speed reversible motor

Features

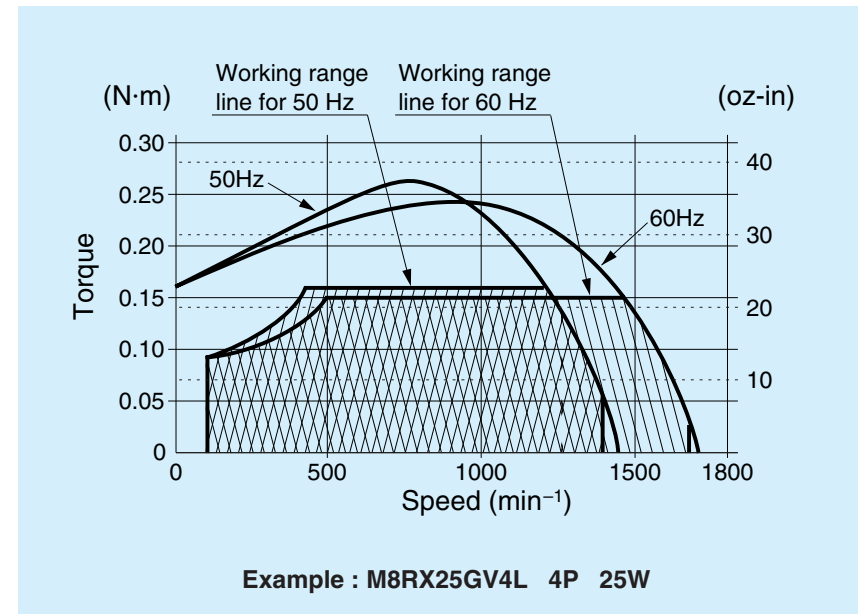
- It is a variable speed motor containing a simple brake mechanism.
- The built-in simple brake mechanism makes the overrun small as compared with the induction motor, enabling a quick-reversal run.
- The time rating is 30 minutes.
- By using it together with a speed controller, you can vary the speed over a wider range (90 to 1400 min⁻¹ for 50 Hz and 90 to 1700 min⁻¹ 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 tachogenerator gives a constant speed despite of frequency change.
- The motor output is 4 W to 90 W.

Working range

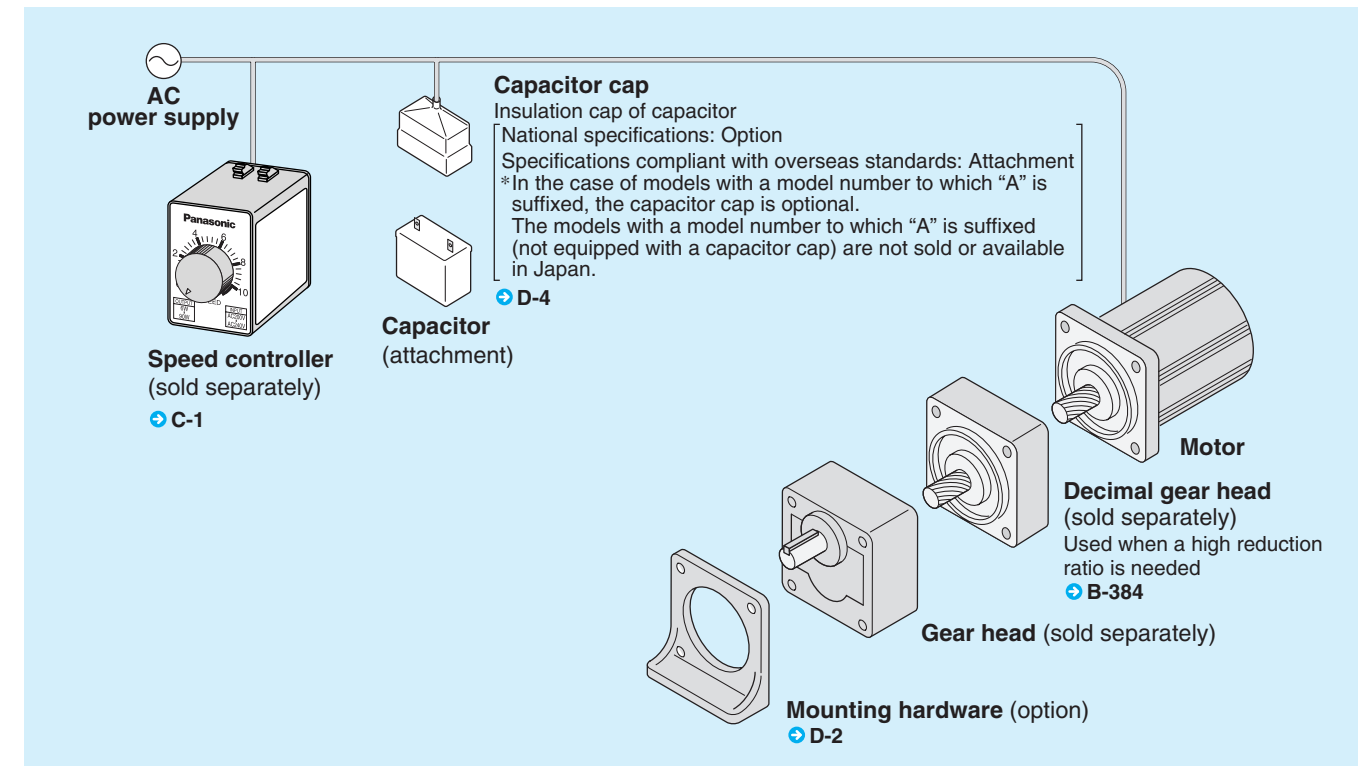
The working range line shows the working limit for the variable speed motor. (The time rating is 30 minutes.) The permissible torque should fall within the shaded portion.

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.

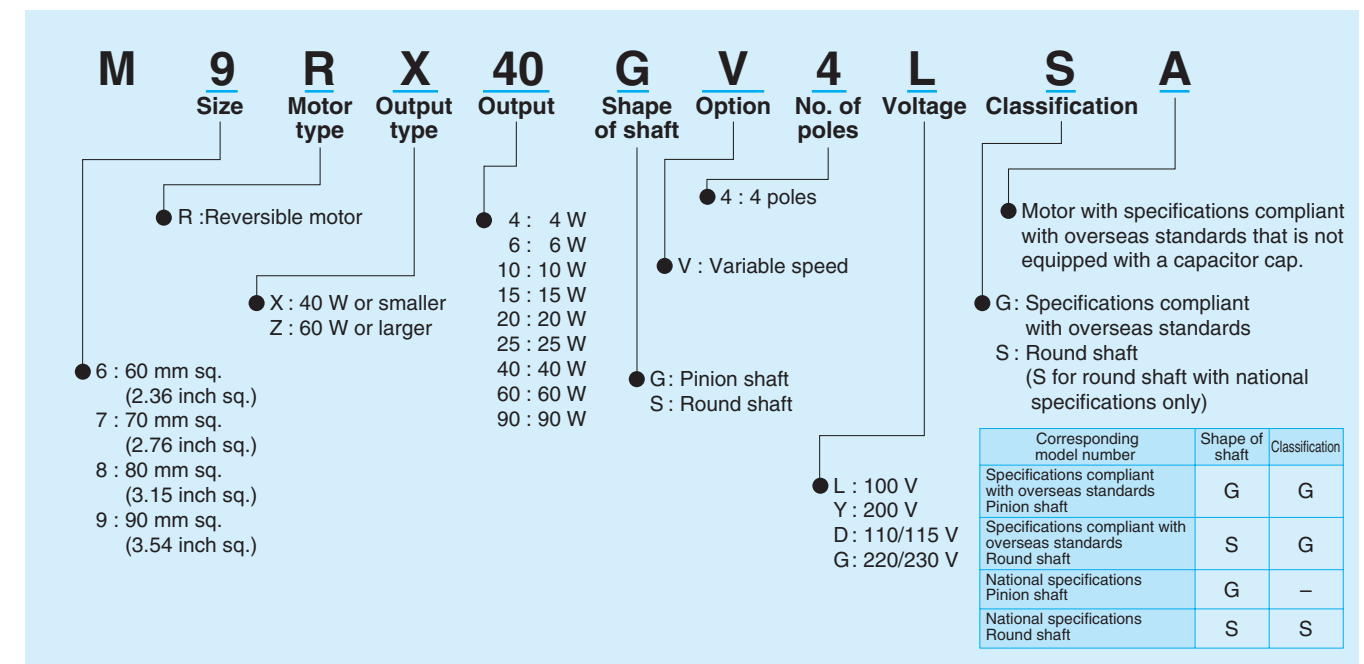
Working range line



System configuration diagram



Coding system



Fit tolerance

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

Model list of variable speed reversible motor

Pinion shaft motor

Applicable gear head

★ Motor compliant with overseas standards 

 Hinge attached

| Size | Output (W) | Leadwire type | | |
|------------------------------|------------|----------------|----------------|-------|
| | | Model number | Specifications | Page |
| 60 mm sq. (2.36 inch sq.) | 4 | M6RX4GV4L | 100V | B-274 |
| | 6 | M6RX6GV4L | 100V | B-276 |
| | | M6RX6GV4Y | 200V | B-276 |
| | | M6RX6GV4LG(A) | 100V ★ | B-278 |
| | | M6RX6GV4DG(A) | 110/115V ★ | B-278 |
| | | M6RX6GV4YG(A) | 200V ★ | B-278 |
| M6RX6GV4GG(A) | 220/230V ★ | B-278 | | |
| 70 mm sq. (2.76 inch sq.) | 10 | M7RX10GV4L | 100V | B-280 |
| | | M7RX10GV4Y | 200V | B-280 |
| | 15 | M7RX15GV4L | 100V | B-282 |
| | | M7RX15GV4Y | 200V | B-282 |
| | | M7RX15GV4LG(A) | 100V ★ | B-284 |
| | | M7RX15GV4DG(A) | 110/115V ★ | B-284 |
| | | M7RX15GV4YG(A) | 200V ★ | B-284 |
| M7RX15GV4GG(A) | 220/230V ★ | B-284 | | |
| 80 mm sq. (3.15 inch sq.) | 20 | M8RX20GV4L | 100V | B-286 |
| | | M8RX20GV4Y | 200V | B-286 |
| | 25 | M8RX25GV4L | 100V | B-288 |
| | | M8RX25GV4Y | 200V | B-288 |
| | | M8RX25GV4LG(A) | 100V ★ | B-290 |
| | | M8RX25GV4DG(A) | 110/115V ★ | B-290 |
| | | M8RX25GV4YG(A) | 200V ★ | B-290 |
| M8RX25GV4GG(A) | 220/230V ★ | B-290 | | |
| 90 mm sq. (3.54 inch sq.) | 40 | M9RX40GV4L | 100V | B-292 |
| | | M9RX40GV4Y | 200V | B-292 |
| | | M9RX40GV4LG(A) | 100V ★ | B-294 |
| | | M9RX40GV4DG(A) | 110/115V ★ | B-294 |
| | | M9RX40GV4YG(A) | 200V ★ | B-294 |
| | | M9RX40GV4GG(A) | 220/230V ★ | B-294 |
| | 60 | M9RZ60GV4L | 100V | B-296 |
| | | M9RZ60GV4Y | 200V | B-296 |
| | | M9RZ60GV4LG(A) | 100V ★ | B-298 |
| | | M9RZ60GV4DG(A) | 110/115V ★ | B-298 |
| | | M9RZ60GV4YG(A) | 200V ★ | B-298 |
| | | M9RZ60GV4GG(A) | 220/230V ★ | B-298 |
| | 90 | M9RZ90GV4L | 100V | B-300 |
| M9RZ90GV4Y | | 200V | B-300 | |
| M9RZ90GV4LG(A) | | 100V ★ | B-302 | |
| M9RZ90GV4DG(A) | | 110/115V ★ | B-302 | |
| M9RZ90GV4YG(A) | | 200V ★ | B-302 | |
| M9RZ90GV4GG(A) | | 220/230V ★ | B-302 | |

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

* 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.

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 | 100V |
| | 6 | M6RX6SV4LS | 100V |
| | | M6RX6SV4YS | 200V |
| | | M6RX6SV4LG(A) | 100V ★ |
| | | M6RX6SV4DG(A) | 110/115V ★ |
| | | M6RX6SV4YG(A) | 200V ★ |
| M6RX6SV4GG(A) | 220/230V ★ | | |
| 70 mm sq. (2.76 inch sq.) | 10 | M7RX10SV4LS | 100V |
| | | M7RX10SV4YS | 200V |
| | 15 | M7RX15SV4LS | 100V |
| | | M7RX15SV4YS | 200V |
| | | M7RX15SV4LG(A) | 100V ★ |
| | | M7RX15SV4DG(A) | 110/115V ★ |
| | | M7RX15SV4YG(A) | 200V ★ |
| | | M7RX15SV4GG(A) | 220/230V ★ |
| 80 mm sq. (3.15 inch sq.) | 20 | M8RX20SV4LS | 100V |
| | | M8RX20SV4YS | 200V |
| | 25 | M8RX25SV4LS | 100V |
| | | M8RX25SV4YS | 200V |
| | | M8RX25SV4LG(A) | 100V ★ |
| | | M8RX25SV4DG(A) | 110/115V ★ |
| | | M8RX25SV4YG(A) | 200V ★ |
| | | M8RX25SV4GG(A) | 220/230V ★ |
| 90 mm sq. (3.54 inch sq.) | 40 | M9RX40SV4LS | 100V |
| | | M9RX40SV4YS | 200V |
| | | M9RX40SV4LG(A) | 100V ★ |
| | | M9RX40SV4DG(A) | 110/115V ★ |
| | | M9RX40SV4YG(A) | 200V ★ |
| | | M9RX40SV4GG(A) | 220/230V ★ |
| | 60 | M9RZ60SV4LS | 100V |
| | | M9RZ60SV4YS | 200V |
| | | M9RZ60SV4LG(A) | 100V ★ |
| | | M9RZ60SV4DG(A) | 110/115V ★ |
| | | M9RZ60SV4YG(A) | 200V ★ |
| | | M9RZ60SV4GG(A) | 220/230V ★ |
| | 90 | M9RZ90SV4LS | 100V |
| | | M9RZ90SV4YS | 200V |
| | | M9RZ90SV4LG(A) | 100V ★ |
| | | M9RZ90SV4DG(A) | 110/115V ★ |
| | | M9RZ90SV4YG(A) | 200V ★ |
| | | M9RZ90SV4GG(A) | 220/230V ★ |


* The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft motor. Dimensional outline drawing Page B-306.

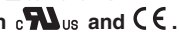
* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap. The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

Possible combination of speed controller and motor

| Size | Output (W) | Motor | | | Voltage (V) | Speed controller | | | |
|------------------------------|------------|----------------|----------------|---------|-------------|------------------|----------|-----------|-----------|
| | | Certified | Part No. | | | MGSD type | EX type | SD48 type | EX48 type |
| 60 mm sq. (2.36 inch sq.) | 3 | ---- | M6RX4GV4L | | 100 | MGSDA1 ★ | DV1131 | DVSD48AL | DVEX48AL |
| | 6 | ---- | M6RX6GV4L | | 100 | MGSDA1 ★ | DV1131 | DVSD48AL | DVEX48AL |
| | | ---- | M6RX6GV4Y | | 200 | MGSDA1 ★ | DV1231 | DVSD48AY | DVEX48AY |
| | | ★ | M6RX6GV4LG(A) | | 100 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M6RX6GV4DG(A) | | 110/115 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M6RX6GV4YG(A) | | 200 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M6RX6GV4GG(A) | | 220/230 | MGSDA1 ★ | ---- | ---- | ---- |
| 70 mm sq. (2.76 inch sq.) | 10 | ---- | M7RX10GV4L | | 100 | MGSDA1 ★ | DV1131 | DVSD48AL | DVEX48AL |
| | | ---- | M7RX10GV4Y | | 200 | MGSDA1 ★ | DV1231 | DVSD48AY | DVEX48AY |
| | 15 | ---- | M7RX15GV4L | | 100 | MGSDA1 ★ | DV1132 | DVSD48AL | DVEX48AL |
| | | ---- | M7RX15GV4Y | | 200 | MGSDA1 ★ | DV1231 | DVSD48AY | DVEX48AY |
| | | ★ | M7RX15GV4LG(A) | | 100 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M7RX15GV4DG(A) | | 110/115 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M7RX15GV4YG(A) | | 200 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M7RX15GV4GG(A) | | 220/230 | MGSDA1 ★ | ---- | ---- | ---- |
| 80 mm sq. (3.15 inch sq.) | 15 | ---- | M8RX20GV4L | | 100 | MGSDA1 ★ | DV1132 | DVSD48AL | DVEX48AL |
| | | ---- | M8RX20GV4Y | | 200 | MGSDA1 ★ | DV1231 | DVSD48AY | DVEX48AY |
| | 25 | ---- | M8RX25GV4L | | 100 | MGSDA1 ★ | DV1132 | DVSD48BL | DVEX48BL |
| | | ---- | M8RX25GV4Y | | 200 | MGSDA1 ★ | DV1234 | DVSD48BY | DVEX48BY |
| | | ★ | M8RX25GV4LG(A) | | 100 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M8RX25GV4DG(A) | | 110/115 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M8RX25GV4YG(A) | | 200 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M8RX25GV4GG(A) | | 220/230 | MGSDA1 ★ | ---- | ---- | ---- |
| 90 mm sq. (3.54 inch sq.) | 40 | ---- | M9RX40GV4L | | 100 | MGSDA1 ★ | DV1132 | DVSD48BL | DVEX48BL |
| | | ---- | M9RX40GV4Y | | 200 | MGSDA1 ★ | DV1234 | DVSD48BY | DVEX48BY |
| | | ★ | M9RX40GV4LG(A) | | 100 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M9RX40GV4DG(A) | | 110/115 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M9RX40GV4YG(A) | | 200 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M9RX40GV4GG(A) | | 220/230 | MGSDA1 ★ | ---- | ---- | ---- |
| | 60 | ---- | M9RZ60GV4L | | 100 | MGSDA1 ★ | DV1134 | DVSD48CL | DVEX48CL |
| | | ---- | M9RZ60GV4Y | | 200 | MGSDA1 ★ | DV1234 | DVSD48CY | DVEX48CY |
| | | ★ | M9RZ60GV4LG(A) | | 100 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M9RZ60GV4DG(A) | | 110/115 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M9RZ60GV4YG(A) | | 200 | MGSDA1 ★ | ---- | ---- | ---- |
| | | ★ | M9RZ60GV4GG(A) | | 220/230 | MGSDA1 ★ | ---- | ---- | ---- |
| 90 | ---- | M9RZ90GV4L | | 100 | MGSDA1 ★ | DV1134 | DVSD48CL | DVEX48CL | |
| | ---- | M9RZ90GV4Y | | 200 | MGSDA1 ★ | DV1234 | DVSD48CY | DVEX48CY | |
| | ★ | M9RZ90GV4LG(A) | | 100 | MGSDA1 ★ | ---- | ---- | ---- | |
| | ★ | M9RZ90GV4DG(A) | | 110/115 | MGSDA1 ★ | ---- | ---- | ---- | |
| | ★ | M9RZ90GV4YG(A) | | 200 | MGSDA1 ★ | ---- | ---- | ---- | |
| | ★ | M9RZ90GV4GG(A) | | 220/230 | MGSDA1 ★ | ---- | ---- | ---- | |

* When using a speed controller operative under a wide range of supply voltage (MGSD, SD48, EX48), 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 .

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

Specifications

| Size | Motor model No. | Number of pole (P) | Output (W) | Voltage (V) | Frequency (Hz) | Rating (min) | Variable speed range | | Starting current (A) | Starting torque N-m (oz-in) | Capacitor (μF) (rated voltage) | |
|-----------|-----------------|--------------------|------------|-------------|----------------|--------------|----------------------------|---|---|-----------------------------|--------------------------------|------------|
| | | | | | | | Speed (min ⁻¹) | Permissible Torque N-m (oz-in) at | | | | |
| 60 mm sq. | M6RX4GV4L | 4 | 4 | 100 | 50 | 30 | 90 to 1400 | at 1200 min ⁻¹ 0.019 (2.69) | at 90 min ⁻¹ 0.019 (2.69) | 0.22 | 0.028 (3.97) | 2.5 (200V) |
| | | | | | 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.

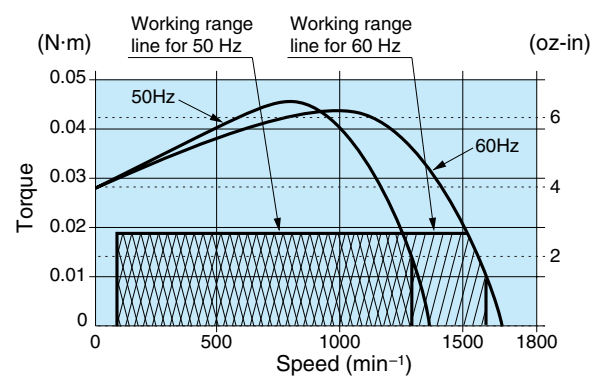
Permissible torque at output shaft of gear head

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

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible Torque (N·m / lb·in) | | | | | | | | | | | |
|---|-----------------------|-----------------|------------------------------------|--------------|--------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 |
| MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing) | 1200min ⁻¹ | 50Hz | 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) |
| | | 60Hz | 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) |
| | 90min ⁻¹ | | 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) |
| Rotational direction | | | Same as motor rotational direction | | | | | | | | | | | |

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible Torque (N·m / lb·in) | | | | | | | | | | Applicable decimal gear head |
|---|-----------------------|-----------------|---------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------------------|
| | | | 30 | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | |
| MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing) | 1200min ⁻¹ | 50Hz | 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) | MX6G10XB |
| | | 60Hz | 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) | |
| | 90min ⁻¹ | | 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 | | | 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-35.

* 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.

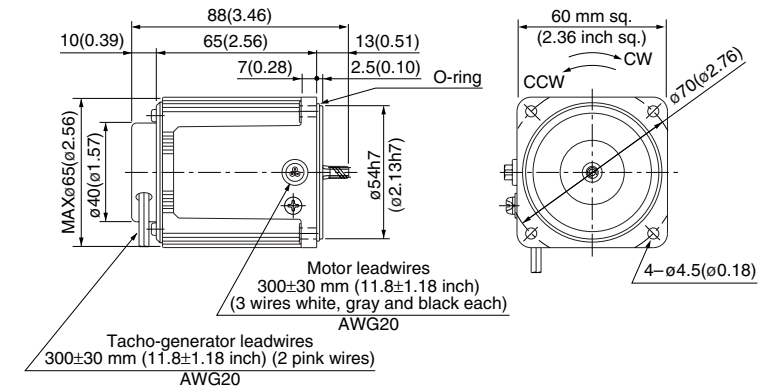
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

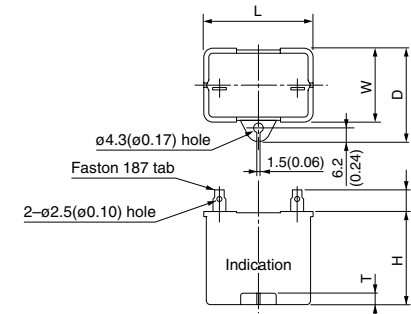
M6RX4GV4L 4P 4W 100V

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor dimension list

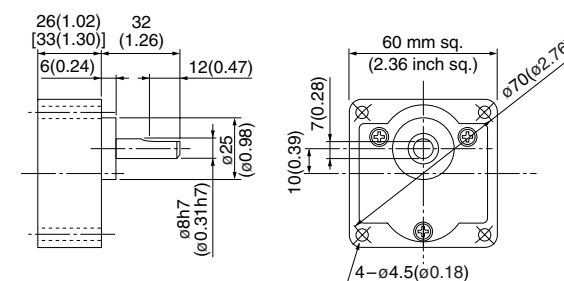
Unit: upper (mm) / lower (inch)

| Model number of motor | Model number of capacitor (attachment) | L | W | D | H | T | Capacitor cap (option) |
|-----------------------|--|-------------|-----------|-------------|-------------|----------|------------------------|
| M6RX4GV4L | M0PC2.5M20 | 39.5 (1.56) | 16 (0.63) | 26.5 (1.04) | 30.5 (1.20) | 4 (0.16) | M0PC3917 |

Gear head (dimensions)

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

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



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

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

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

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

• Specifications

| Size | Motor model No. | Number of pole (P) | Output (W) | Voltage (V) | Frequency (Hz) | Rating (min) | Variable speed range | | Permissible Torque N·m (oz·in) | | Starting current (A) | Starting torque N·m (oz·in) | Capacitor (μF) (rated voltage) |
|-----------|-----------------|--------------------|------------|-------------|----------------|--------------|----------------------------|---------------------------|--------------------------------|---------------------------|----------------------|-----------------------------|--------------------------------|
| | | | | | | | Speed (min ⁻¹) | at 1200 min ⁻¹ | at 90 min ⁻¹ | at 1200 min ⁻¹ | | | |
| 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 (200V) | |
| | | | | | 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 (400V) | |
| | | | | | 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.

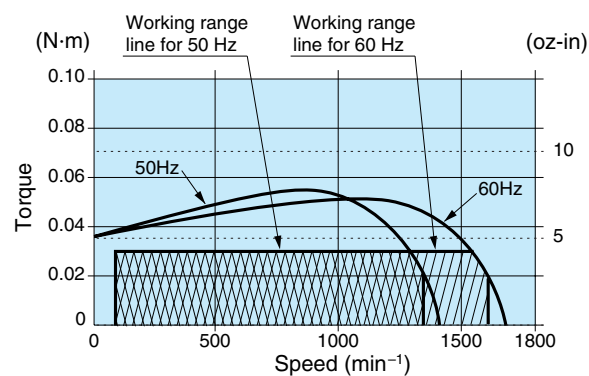
• Permissible torque at output shaft of gear head

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

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible Torque | | | | | | | | | | | |
|---|-----------------------|-----------------|------------------------------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 |
| MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing) | 1200min ⁻¹ | 50Hz | 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) |
| | | 60Hz | 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) |
| | 90min ⁻¹ | 50Hz | 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) |
| | | 60Hz | 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) |
| Rotational direction | | | Same as motor rotational direction | | | | | | | | | | | |

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible Torque | | | | | | | | | | Applicable decimal gear head |
|---|-----------------------|-----------------|---------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------------------|
| | | | 30 | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | |
| MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing) | 1200min ⁻¹ | 50Hz | 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) | MX6G10XB |
| | | 60Hz | 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) | |
| | 90min ⁻¹ | 50Hz | 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) | |
| | | 60Hz | 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 | | | 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-35.

* 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.

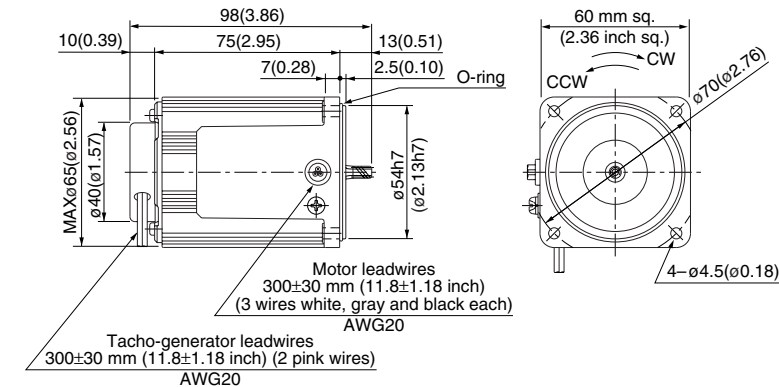
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

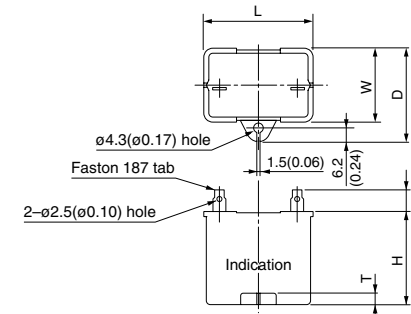
| | |
|-----------|--------------|
| M6RX6GV4L | 4P 6 W 100 V |
| M6RX6GV4Y | 4P 6 W 200 V |

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



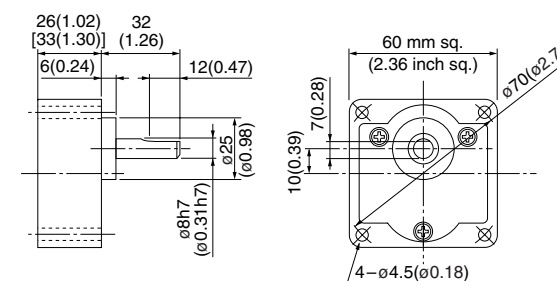
• Capacitor dimension list Unit: upper (mm) / lower (inch)

| Model number of motor | Model number of capacitor (attachment) | L | W | D | H | T | Capacitor cap (option) |
|-----------------------|--|-------------|-------------|-------------|-------------|----------|------------------------|
| M6RX6GV4L | M0PC3M20 | 39.5 (1.56) | 16 (0.63) | 26.5 (1.04) | 30.5 (1.20) | 4 (0.16) | M0PC3917 |
| M6RX6GV4Y | M0PC0.8M40 | 39.5 (1.56) | 16.2 (0.64) | 27 (1.06) | 27 (1.06) | 4 (0.16) | M0PC3917 |

Gear head (dimensions)

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

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



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

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

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

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

Specifications

| Size | Motor model No. | Number of pole (P) | Output (W) | Voltage (V) | Frequency (Hz) | Rating (min) | Variable speed range | | Starting current (A) | Starting torque N-m (oz-in) | Capacitor (μF) (rated voltage) | |
|-----------|---------------------------|--------------------|------------|-------------|----------------|--------------|----------------------------|-----------------------------------|----------------------|-----------------------------|--------------------------------|------------|
| | | | | | | | Speed (min ⁻¹) | Permissible Torque N-m (oz-in) at | | | | |
| 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 (250V) |
| | | | | | 60 | | 90 to 1700 | 0.034 (4.81) | 0.034 (4.81) | 0.35 | 0.057 (8.07) | 3 (250V) |
| | 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 (250V) |
| | | | | | 60 | | 90 to 1700 | 0.034 (4.81) | 0.034 (4.81) | 0.35 | 0.057 (8.07) | 1 (450V) |
| | 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 (450V) |
| | | | | | 60 | | 90 to 1700 | 0.034 (4.81) | 0.034 (4.81) | 0.16 | 0.057 (8.07) | 0.8 (450V) |
| | 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 (450V) |
| | | | | | 60 | | 90 to 1700 | 0.034 (4.81) | 0.034 (4.81) | 0.15 | 0.056 (7.93) | 0.8 (450V) |
| | | | | | 230 | 50 | 90 to 1400 | 0.044 (6.23) | 0.044 (6.23) | 0.15 | 0.057 (8.07) | 0.8 (450V) |
| | | | | | | 60 | 90 to 1700 | 0.034 (4.81) | 0.034 (4.81) | 0.16 | 0.057 (8.07) | 0.8 (450V) |

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

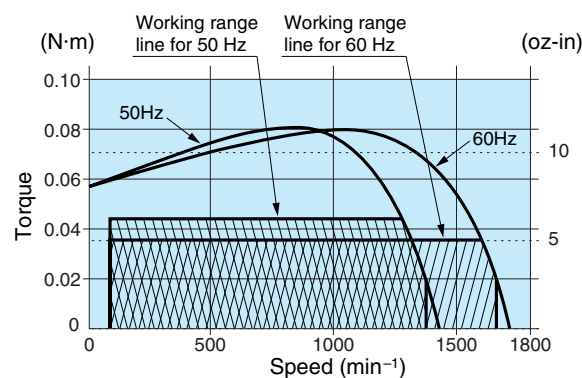
Permissible torque at output shaft of gear head

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 | |
| MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing) | 1200min ⁻¹ | 50Hz | 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) |
| | | 60Hz | 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) |
| | 90min ⁻¹ | 50Hz | 0.08 (0.71) | 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) |
| | | 60Hz | 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) |
| Rotational direction | | Same as motor rotational direction | | | | | | | | | | | | |

| Applicable gear head Bearing | Speed | Reduction ratio | | | | | | | | | | | Applicable decimal gear head | | |
|---|-----------------------|---------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------------------|-------------|----------|
| | | 30 | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | | | | |
| MX6G□BA (ball bearing) MX6G□B (bearing) MX6G□MA (metal bearing) MX6G□M (bearing) | 1200min ⁻¹ | 50Hz | 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) | 2.45 (21.7) | MX6G10XB |
| | | 60Hz | 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) | 2.45 (21.7) | |
| | 90min ⁻¹ | 50Hz | 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) | 2.45 (21.7) | |
| | | 60Hz | 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) | 2.45 (21.7) | |
| 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-35.

* 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.

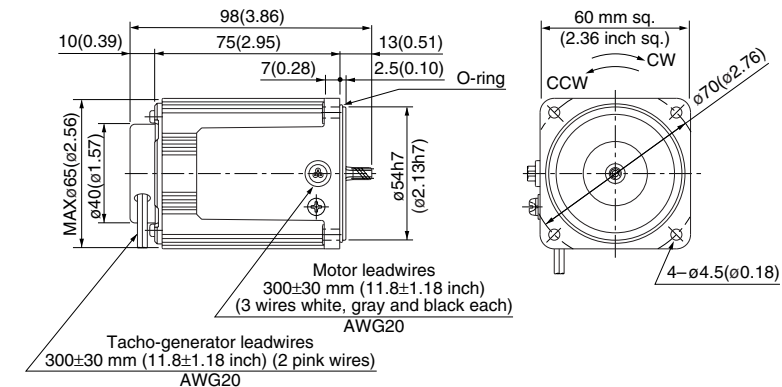
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

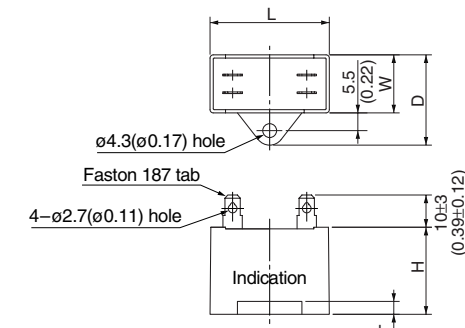
| | |
|---------------|----------------------|
| M6RX6GV4LG(A) | 4P 6 W 100 V |
| M6RX6GV4DG(A) | 4P 6 W 110 V / 115 V |
| M6RX6GV4YG(A) | 4P 6 W 200 V |
| M6RX6GV4GG(A) | 4P 6 W 220 V / 230 V |

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



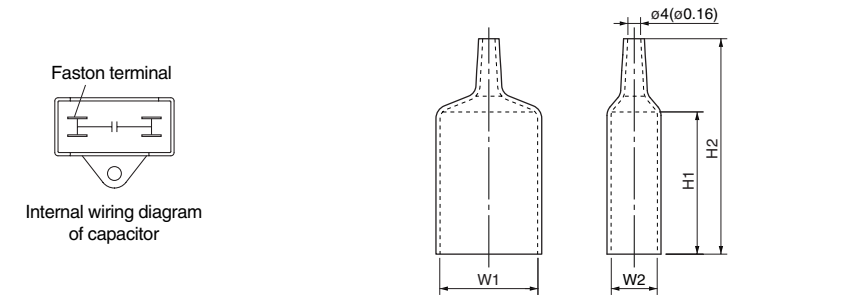
Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

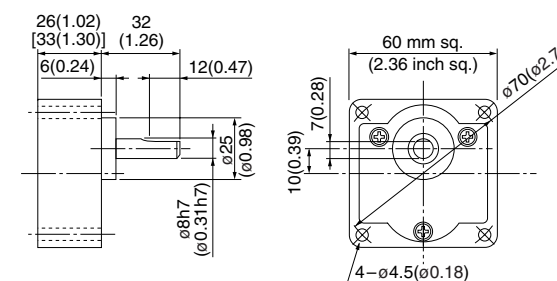
| Model number of motor | Model number of capacitor (attachment) | L | W | D | H | T | Capacitor cap | W1 | W2 | H1 | H2 |
|-----------------------|--|-----------|-----------|-----------|-----------|----------|---------------|-----------|-----------|-----------|-----------|
| M6RX6GV4LG(A) | M0PC4M25G | 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.

Gear head (dimensions)

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

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



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

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

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

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

• Specifications

| Size | Motor model No. | Number of pole (P) | Output (W) | Voltage (V) | Frequency (Hz) | Rating (min) | Variable speed range | | Permissible Torque N·m (oz·in) | | Starting current (A) | Starting torque N·m (oz·in) | | Capacitor (μF) (rated voltage) |
|-----------|-----------------|--------------------|------------|-------------|----------------|--------------|----------------------------|---------------------------|--------------------------------|---------------------------|----------------------|-----------------------------|------------|--------------------------------|
| | | | | | | | Speed (min ⁻¹) | at 1200 min ⁻¹ | at 90 min ⁻¹ | at 1200 min ⁻¹ | | at 90 min ⁻¹ | | |
| 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 (200V) | |
| | | | | | 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 (400V) | |
| | | | | | 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.

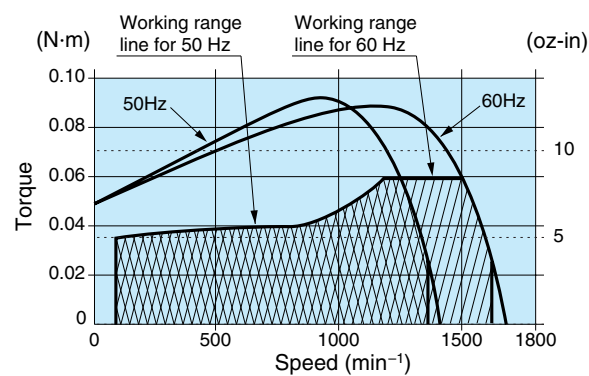
• Permissible torque at output shaft of gear head

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

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible torque | | | | | | | | | | | |
|---|-----------------------|-----------------|------------------------------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 |
| MX7G□BA (ball bearing) MX7G□B (bearing) MX7G□MA (metal bearing) MX7G□M (bearing) | 1200min ⁻¹ | 50Hz | 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) |
| | | 60Hz | 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) |
| | 90min ⁻¹ | 50Hz | 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) |
| | | 60Hz | 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) |
| Rotational direction | | | Same as motor rotational direction | | | | | | | | | | | |

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible torque | | | | | | | | | | Applicable decimal gear head |
|---|-----------------------|-----------------|---------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------------------|
| | | | 30 | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | |
| MX7G□BA (ball bearing) MX7G□B (bearing) MX7G□MA (metal bearing) MX7G□M (bearing) | 1200min ⁻¹ | 50Hz | 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) | MX7G10XB |
| | | 60Hz | 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) | |
| | 90min ⁻¹ | 50Hz | 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) | |
| | | 60Hz | 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 | | | 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-35.

* 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.

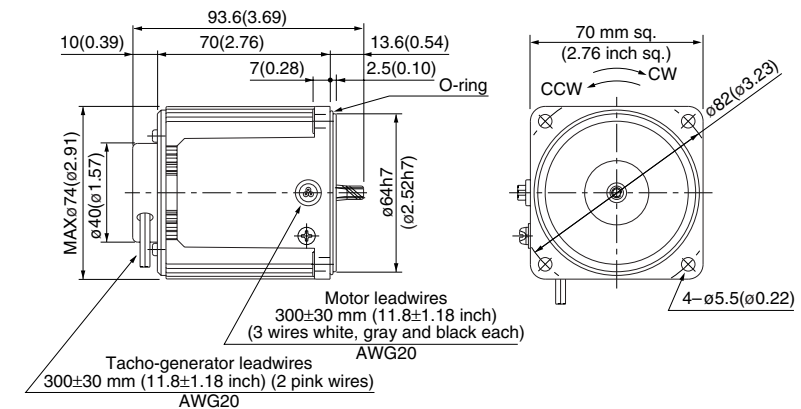
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

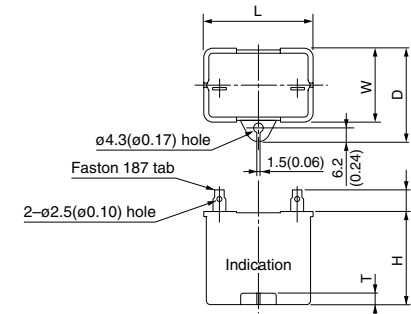
| | |
|------------|---------------|
| M7RX10GV4L | 4P 10 W 100 V |
| M7RX10GV4Y | 4P 10 W 200 V |

| | | | |
|--------------------|--------------|--------|-----------------|
| Mass | Helical gear | Module | Number of teeth |
| 0.88 kg 1.94 lb | | 0.5 | 7 |



Capacitor (dimensions) [attachment]

Unit: mm (inch)



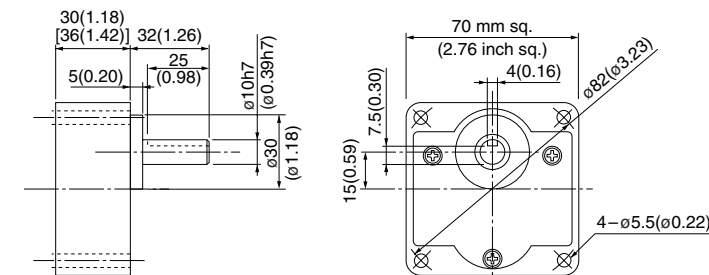
• Capacitor dimension list Unit: upper (mm) / lower (inch)

| Model number of motor | Model number of capacitor (attachment) | L | W | D | H | T | Capacitor cap (option) |
|-----------------------|--|-------------|-------------|-------------|-------------|----------|------------------------|
| M7RX10GV4L | M0PC4.5M20 | 39.5 (1.56) | 16 (0.63) | 26.5 (1.04) | 30.5 (1.20) | 4 (0.16) | M0PC3917 |
| M7RX10GV4Y | M0PC1.2M40 | 39.5 (1.56) | 18.3 (0.72) | 29 (1.14) | 29 (1.14) | 4 (0.16) | M0PC3922 |

Gear head (dimensions)

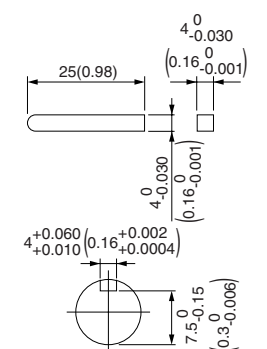
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

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



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

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

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

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

• Specifications

| Size | Motor model No. | Number of pole (P) | Output (W) | Voltage (V) | Frequency (Hz) | Rating (min) | Variable speed range | | Permissible Torque N·m (oz·in) | | Starting current (A) | Starting torque N·m (oz·in) | Capacitor (μF) (rated voltage) |
|-----------|-----------------|--------------------|------------|-------------|----------------|--------------|----------------------------|---------------------------|--------------------------------|---------------------------|----------------------|-----------------------------|--------------------------------|
| | | | | | | | Speed (min ⁻¹) | at 1200 min ⁻¹ | at 90 min ⁻¹ | at 1200 min ⁻¹ | | | |
| 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 (200V) | |
| | | | | | 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 (400V) | |
| | | | | | 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.

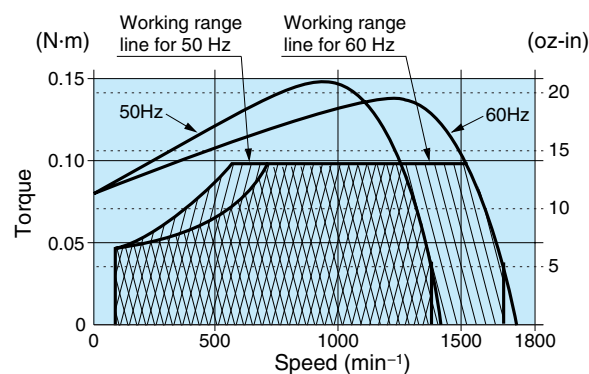
• Permissible torque at output shaft of gear head

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

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible Torque | | | | | | | | | | | |
|---|-----------------------|------------------------------------|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 |
| MX7G□BA (ball bearing) MX7G□B (bearing) MX7G□MA (metal bearing) MX7G□M (bearing) | 1200min ⁻¹ | 50Hz | 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) |
| | | 60Hz | 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) |
| | 90min ⁻¹ | 50Hz | 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) |
| | | 60Hz | 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) |
| Rotational direction | | Same as motor rotational direction | | | | | | | | | | | | |

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible Torque | | | | | | | | | | | Applicable decimal gear head | |
|---|-----------------------|---------------------------------------|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------------------|----------|
| | | | 30 | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | | | |
| MX7G□BA (ball bearing) MX7G□B (bearing) MX7G□MA (metal bearing) MX7G□M (bearing) | 1200min ⁻¹ | 50Hz | 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) | 4.90 (43.4) | 4.90 (43.4) | MX7G10XB |
| | | 60Hz | 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) | 4.90 (43.4) | 4.90 (43.4) | |
| | 90min ⁻¹ | 50Hz | 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) | | | |
| | | 60Hz | 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 | | 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-35.

* 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.

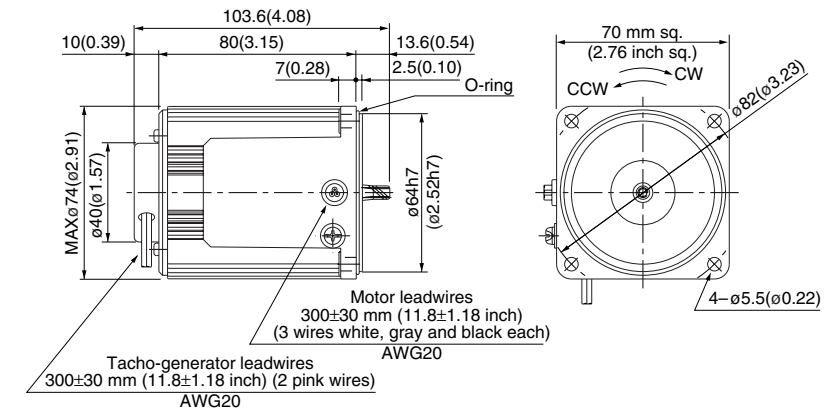
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

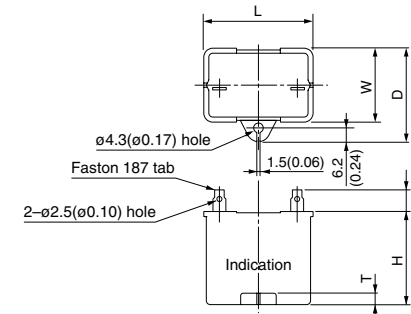
| | |
|------------|---------------|
| M7RX15GV4L | 4P 15 W 100 V |
| M7RX15GV4Y | 4P 15 W 200 V |

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



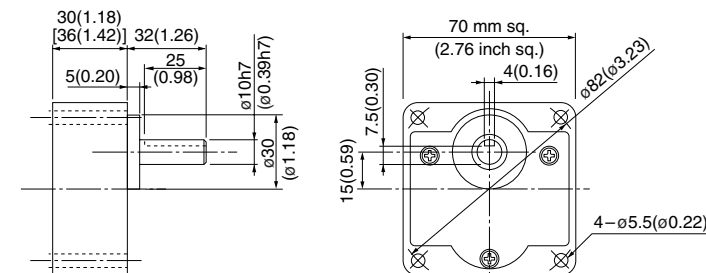
• Capacitor dimension list Unit: upper (mm) / lower (inch)

| Model number of motor | Model number of capacitor (attachment) | L | W | D | H | T | Capacitor cap (option) |
|-----------------------|--|-------------|-------------|-------------|-------------|----------|------------------------|
| M7RX15GV4L | M0PC6M20 | 39.5 (1.56) | 17.5 (0.69) | 28 (1.10) | 30.5 (1.20) | 4 (0.16) | M0PC3917 |
| M7RX15GV4Y | M0PC1.5M40 | 39.5 (1.56) | 22 (0.87) | 32.5 (1.28) | 32.5 (1.28) | 4 (0.16) | M0PC3922 |

Gear head (dimensions)

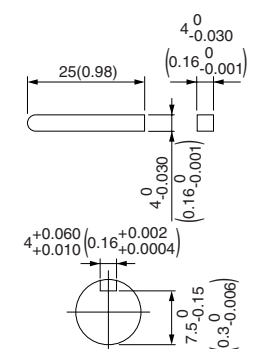
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

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



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

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

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

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

Variable speed reversible motor (leadwire)

US CE 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 | | Starting current (A) | Starting torque N-m (oz-in) | Capacitor (μF) (rated voltage) | |
|-----------|-----------------------------|--------------------|------------|-------------|----------------|--------------|----------------------------|-----------------------------------|----------------------|-----------------------------|--------------------------------|------------|
| | | | | | | | Speed (min ⁻¹) | Permissible Torque N-m (oz-in) at | | | | |
| 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 (250V) |
| | | | | | 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 (250V) |
| | | | | | 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 (450V) |
| | | | | | 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 (450V) |
| | | | | | 60 | | 90 to 1700 | 0.088 (12.5) | 0.069 (9.77) | 0.26 | 0.082 (11.6) | |
| | | | | | 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.

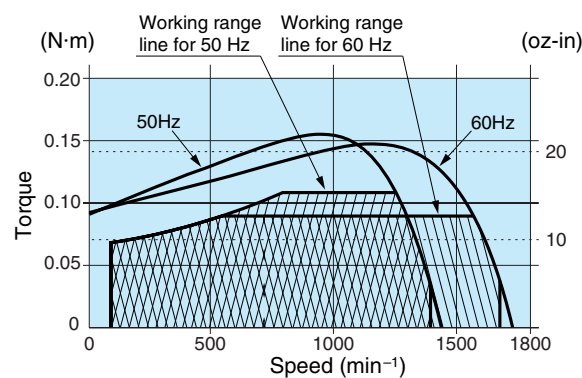
Permissible torque at output shaft of gear head

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 |
|------------------------------|-------------|----------------------|---|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | MX7G□BA (ball bearing) MX7G□B (bearing) MX7G□MA (metal bearing) MX7G□M (bearing) | 1200min ⁻¹ | 50Hz | 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) |
| 60Hz | 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) |
| | | 90min ⁻¹ | 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) |
| | | Rotational direction | Same as motor rotational direction | | | | | | | | | | | |

| Applicable gear head Bearing | Speed | Reduction ratio | 30 | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | Applicable decimal gear head |
|------------------------------|-------------|----------------------|---|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------------------|
| | | | MX7G□BA (ball bearing) MX7G□B (bearing) MX7G□MA (metal bearing) MX7G□M (bearing) | 1200min ⁻¹ | 50Hz | 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) | |
| 60Hz | 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) | |
| | | 90min ⁻¹ | 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 | 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-35.

* 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.

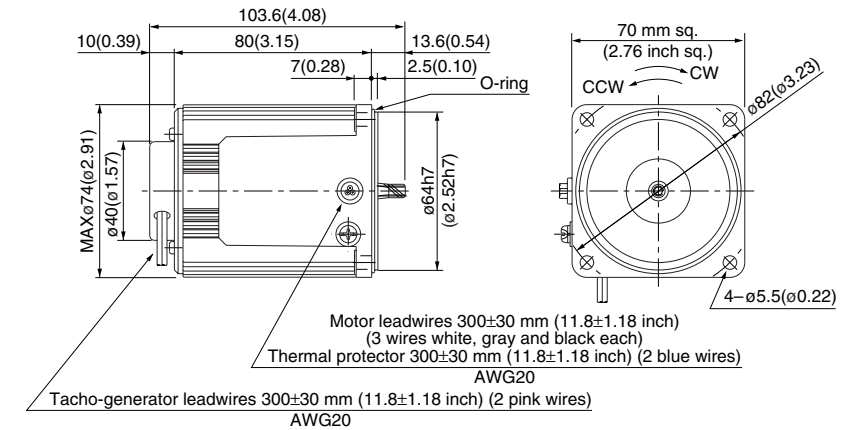
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

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 |

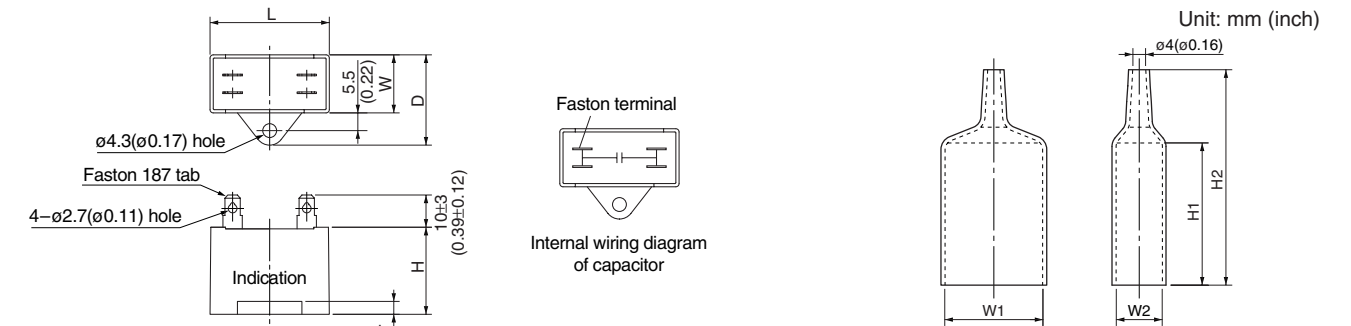


Capacitor (dimensions) [attachment]

Unit: mm (inch)

Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

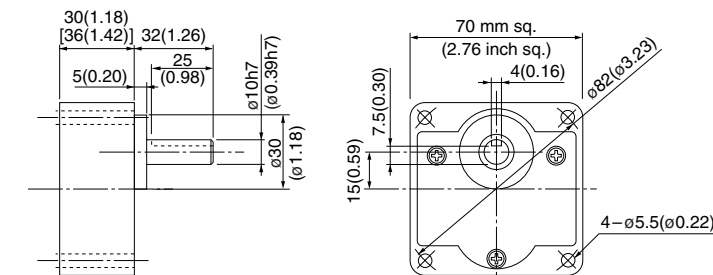
| Model number of motor | Model number of capacitor (attachment) | L | W | D | H | T | Capacitor cap | W1 | W2 | H1 | H2 |
|-----------------------|--|-----------|-----------|-----------|-----------|----------|---------------|-----------|-----------|-----------|-----------|
| M7RX15GV4LG(A) | M0PC6.5M25G | 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.

Gear head (dimensions)

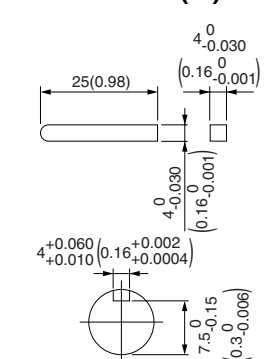
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

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



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

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

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

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

• Specifications

| Size | Motor model No. | Number of pole (P) | Output (W) | Voltage (V) | Frequency (Hz) | Rating (min) | Variable speed range | | Permissible Torque N·m (oz·in) | | Starting current (A) | Starting torque N·m (oz·in) | Capacitor (μF) (rated voltage) |
|-----------|-----------------|--------------------|------------|-------------|----------------|--------------|----------------------------|---------------------------|--------------------------------|---------------------------|----------------------|-----------------------------|--------------------------------|
| | | | | | | | Speed (min ⁻¹) | at 1200 min ⁻¹ | at 90 min ⁻¹ | at 1200 min ⁻¹ | | | |
| 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 (200V) | |
| | | | | | 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 (400V) | |
| | | | | | 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.

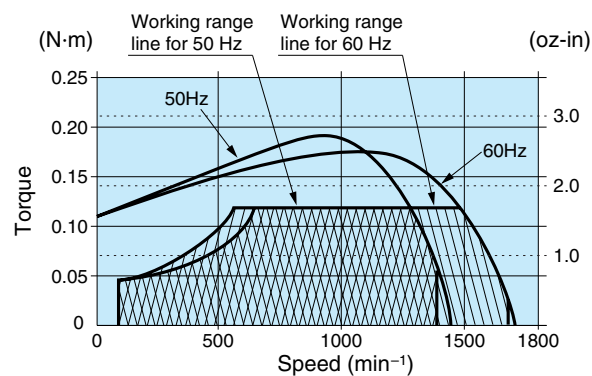
• Permissible torque at output shaft of gear head

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

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible Torque | | | | | | | | | | | |
|------------------------------|-----------------------|----------------------|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 |
| MX8G□B (ball bearing) | 1200min ⁻¹ | 50Hz | 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) |
| | | 60Hz | 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) |
| MX8G□M (metal bearing) | 90min ⁻¹ | | 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) |
| | | Rotational direction | Same as motor rotational direction | | | | | | | | | | | |

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible Torque | | | | | | | | | | Applicable decimal gear head |
|------------------------------|-----------------------|----------------------|---------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------------------|
| | | | 30 | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | |
| MX8G□B (ball bearing) | 1200min ⁻¹ | 50Hz | 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) | MX8G10XB |
| | | 60Hz | 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) | |
| MX8G□M (metal bearing) | 90min ⁻¹ | | 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 | 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-35.

* 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.

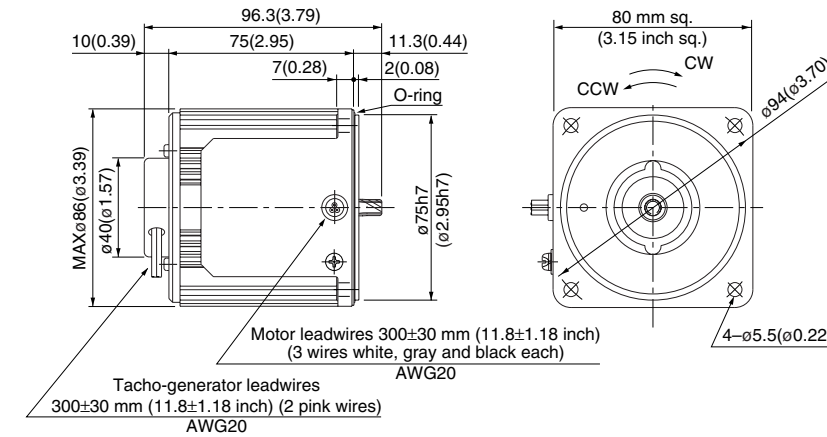
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

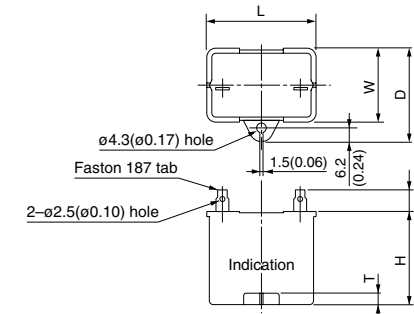
| | |
|------------|---------------|
| M8RX20GV4L | 4P 20 W 100 V |
| M8RX20GV4Y | 4P 20 W 200 V |

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



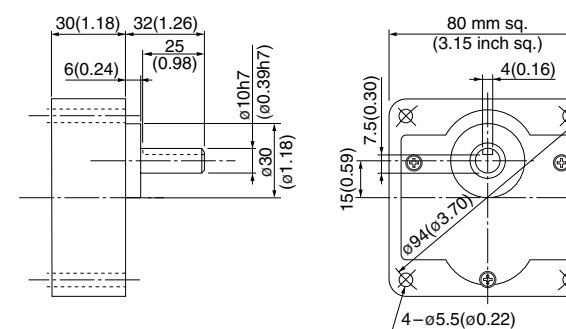
• Capacitor dimension list Unit: upper (mm) / lower (inch)

| Model number of motor | Model number of capacitor (attachment) | L | W | D | H | T | Capacitor cap (option) |
|-----------------------|--|-------------|-----------|-------------|-------------|----------|------------------------|
| M8RX20GV4L | M0PC7M20 | 39.5 (1.56) | 22 (0.87) | 32.5 (1.28) | 30.5 (1.20) | 4 (0.16) | M0PC3922 |
| M8RX20GV4Y | M0PC1.8M40 | 39.5 (1.56) | 22 (0.87) | 32.5 (1.28) | 32.5 (1.28) | 4 (0.16) | M0PC3922 |

Gear head (dimensions)

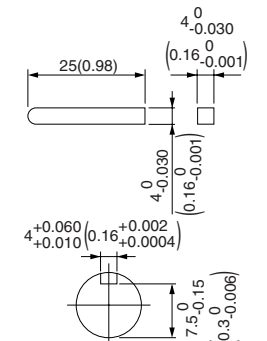
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX8G□B(M)



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

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

Specifications

| Size | Motor model No. | Number of pole (P) | Output (W) | Voltage (V) | Frequency (Hz) | Rating (min) | Variable speed range | | Permissible Torque N·m (oz·in) | | Starting current (A) | Starting torque N·m (oz·in) | Capacitor (μF) (rated voltage) |
|-----------|-----------------|--------------------|------------|-------------|----------------|--------------|----------------------------|---------------------------|--------------------------------|---------------------------|----------------------|-----------------------------|--------------------------------|
| | | | | | | | Speed (min ⁻¹) | at 1200 min ⁻¹ | at 90 min ⁻¹ | at 1200 min ⁻¹ | | | |
| 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 (200V) | |
| | | | | | 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 (400V) | |
| | | | | | 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.

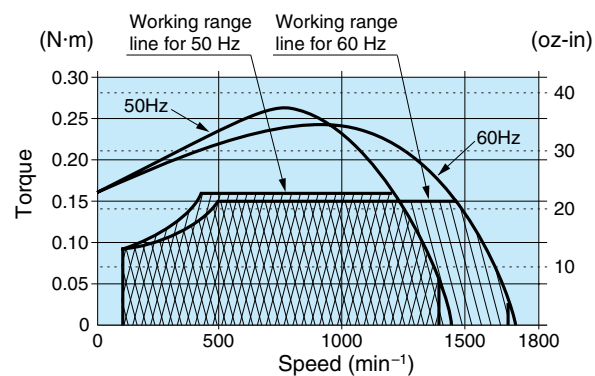
Permissible torque at output shaft of gear head

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

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible Torque | | | | | | | | | | | |
|------------------------------|-----------------------|------------------------------------|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 |
| MX8G□B (ball bearing) | 1200min ⁻¹ | 50Hz | 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) |
| | | 60Hz | 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) |
| MX8G□M (metal bearing) | 90min ⁻¹ | | 0.094 (0.83) | 0.11 (0.97) | 0.15 (1.33) | 0.18 (1.59) | 0.23 (2.04) | 0.28 (2.48) | 0.31 (2.74) | 0.39 (3.45) | 0.47 (4.16) | 0.56 (4.96) | 0.63 (5.58) | 0.78 (6.90) |
| Rotational direction | | Same as motor rotational direction | | | | | | | | | | | | |

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible Torque | | | | | | | | | | Applicable decimal gear head |
|------------------------------|-----------------------|---------------------------------------|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------------------|
| | | | 30 | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | |
| MX8G□B (ball bearing) | 1200min ⁻¹ | 50Hz | 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) | MX8G10XB |
| | | 60Hz | 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) | |
| MX8G□M (metal bearing) | 90min ⁻¹ | | 0.84 (7.43) | 1.01 (8.94) | 1.41 (12.5) | 1.69 (15.0) | 2.12 (18.8) | 2.54 (22.5) | 2.83 (25.0) | 3.39 (30.0) | 4.24 (37.5) | 5.09 (45.1) | |
| 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-35.

* 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.

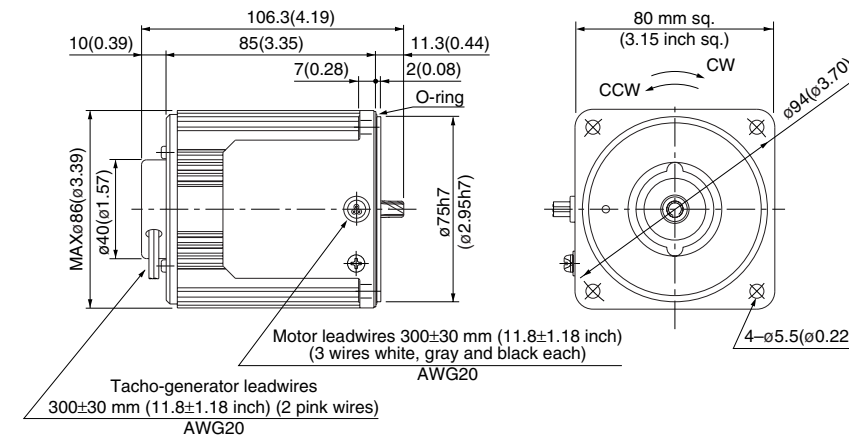
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

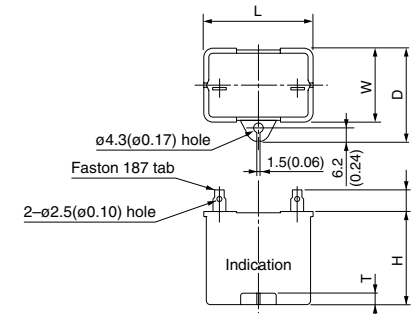
| | |
|------------|---------------|
| M8RX25GV4L | 4P 25 W 100 V |
| M8RX25GV4Y | 4P 25 W 200 V |

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



Capacitor dimension list

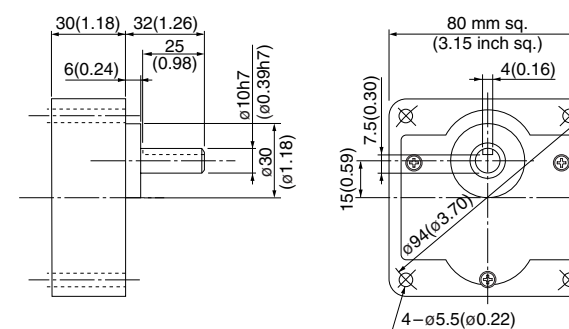
Unit: upper (mm) / lower (inch)

| Model number of motor | Model number of capacitor (attachment) | L | W | D | H | T | Capacitor cap (option) |
|-----------------------|--|-------------|-----------|-------------|-------------|----------|------------------------|
| M8RX25GV4L | M0PC9.5M20 | 39.5 (1.56) | 22 (0.87) | 32.5 (1.28) | 30.5 (1.20) | 4 (0.16) | M0PC3922 |
| M8RX25GV4Y | M0PC2.4M40 | 49.7 (1.96) | 24 (0.94) | 34.5 (1.36) | 34.5 (1.36) | 4 (0.16) | M0PC5026 |

Gear head (dimensions)

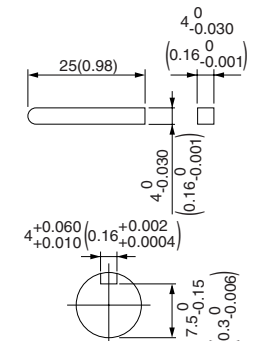
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX8G□B(M)



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

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

Variable speed reversible motor (leadwire)

US CE CCC 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 | | Starting current (A) | Starting torque N-m (oz-in) | Capacitor (μF) (rated voltage) | |
|-----------|-----------------------------|--------------------|------------|-------------|----------------|--------------|----------------------------|-----------------------------------|----------------------|-----------------------------|--------------------------------|------------|
| | | | | | | | Speed (min ⁻¹) | Permissible Torque N-m (oz-in) at | | | | |
| 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 (250V) |
| | | | | | 60 | | 90 to 1700 | 0.15 (21.2) | 0.11 (15.6) | 1.1 | 0.17 (24.1) | 8 (250V) |
| | M8RX25GV4DG M8RX25GV4DGA | 4 | 25 | 110 | 60 | 30 | 90 to 1700 | 0.15 (21.2) | 0.11 (15.6) | 1.2 | 0.17 (24.1) | 2.5 (450V) |
| | | | | | 60 | | 90 to 1700 | 0.15 (21.2) | 0.11 (15.6) | 0.46 | 0.17 (24.1) | 2 (450V) |
| | M8RX25GV4YG M8RX25GV4YGA | 4 | 25 | 200 | 50 | 30 | 90 to 1400 | 0.19 (26.9) | 0.11 (15.6) | 0.47 | 0.16 (22.7) | 2 (450V) |
| | | | | | 60 | | 90 to 1400 | 0.19 (26.9) | 0.11 (15.6) | 0.47 | 0.16 (22.7) | 2 (450V) |
| | M8RX25GV4GG M8RX25GV4GGA | 4 | 25 | 220 | 50 | 30 | 90 to 1700 | 0.15 (21.2) | 0.11 (15.6) | 0.46 | 0.16 (22.7) | 2 (450V) |
| | | | | | 60 | | 90 to 1700 | 0.15 (21.2) | 0.11 (15.6) | 0.46 | 0.16 (22.7) | 2 (450V) |
| | | | | | 230 | | 90 to 1400 | 0.19 (26.9) | 0.11 (15.6) | 0.49 | 0.17 (24.1) | 2 (450V) |
| | | | | | 60 | | 90 to 1700 | 0.15 (21.2) | 0.11 (15.6) | 0.48 | 0.17 (24.1) | 2 (450V) |

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

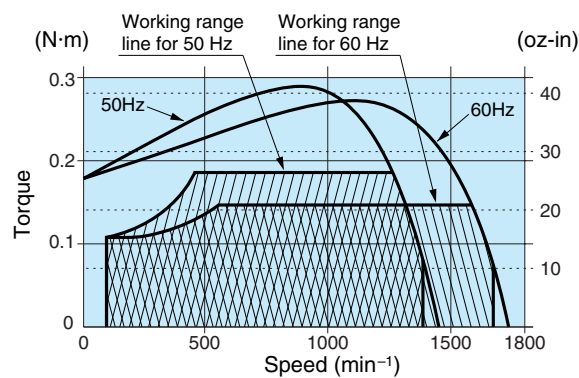
Permissible torque at output shaft of gear head

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

| Applicable gear head | Bearing | Speed | Reduction ratio | Permissible torque | | | | | | | | | | | |
|------------------------|---------|-----------------------|-----------------|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 |
| MX8G□B (ball bearing) | | 1200min ⁻¹ | 50Hz | 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) |
| | | | 60Hz | 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) |
| MX8G□M (metal bearing) | | 90min ⁻¹ | 50Hz | 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) |
| | | | 60Hz | 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) |
| Rotational direction | | | | Same as motor rotational direction | | | | | | | | | | | |

| Applicable gear head | Bearing | Speed | Reduction ratio | Permissible torque | | | | | | | | | | | | Applicable decimal gear head |
|------------------------|---------|-----------------------|-----------------|---------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|----------|------------------------------|
| | | | | 30 | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | | | |
| MX8G□B (ball bearing) | | 1200min ⁻¹ | 50Hz | 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) | MX8G10XB | |
| | | | 60Hz | 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) | | |
| MX8G□M (metal bearing) | | 90min ⁻¹ | 50Hz | 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) | | | |
| | | | 60Hz | 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) | | | |
| 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-35.

* 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.

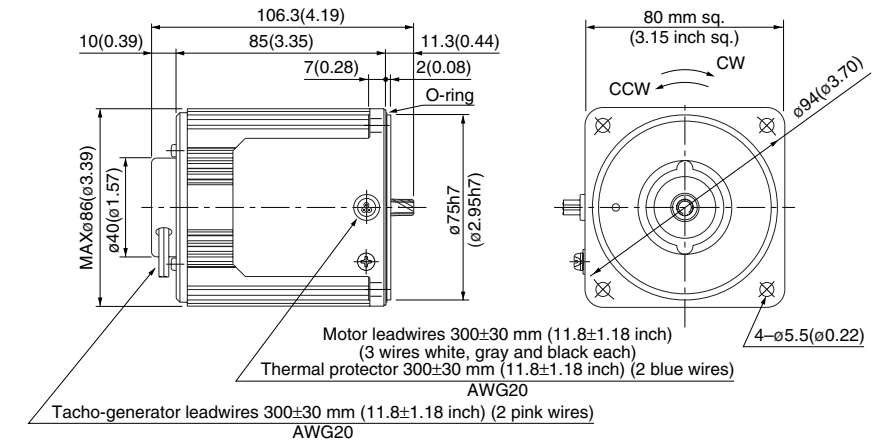
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

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 |

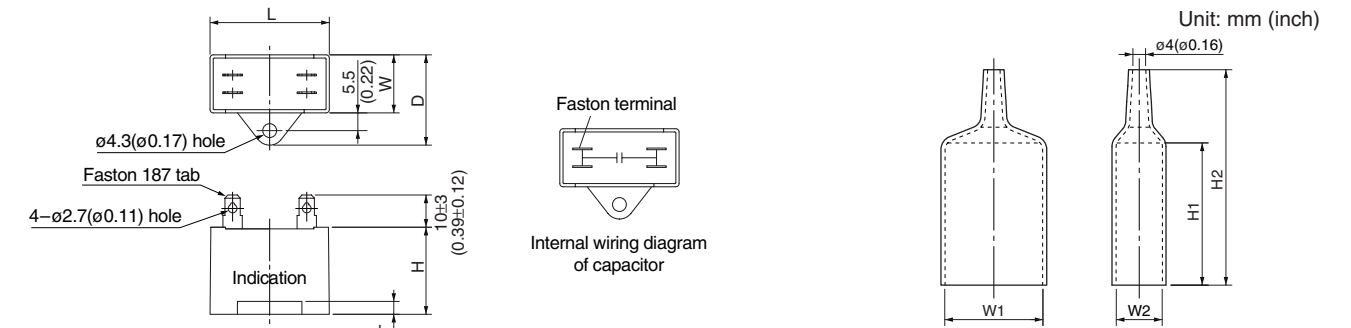


Capacitor (dimensions) [attachment]

Unit: mm (inch)

Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

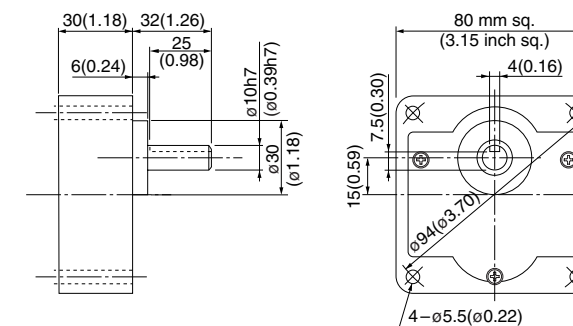
| Model number of motor | Model number of capacitor (attachment) | L | W | D | H | T | Capacitor cap | W1 | W2 | H1 | H2 |
|-----------------------|--|-----------|-----------|-----------|-----------|----------|---------------|-----------|-----------|-----------|-----------|
| M8RX25GV4LG(A) | M0PC10M25G | 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.

Gear head (dimensions)

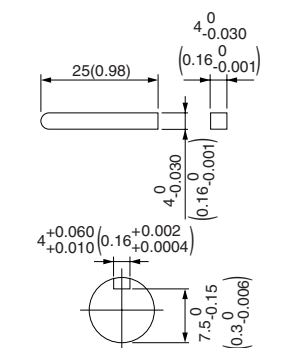
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX8G□B(M)



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

Variable speed reversible motor (leadwire)

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

Specifications

| Size | Motor model No. | Number of pole (P) | Output (W) | Voltage (V) | Frequency (Hz) | Rating (min) | Variable speed range | | Starting current (A) | Starting torque N-m (oz-in) | Capacitor (μF) (rated voltage) | |
|-----------|-----------------------------|--------------------|------------|-------------|----------------|--------------|----------------------------|-----------------------------------|----------------------|-----------------------------|--------------------------------|------------|
| | | | | | | | Speed (min ⁻¹) | Permissible Torque N-m (oz-in) at | | | | |
| 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 (250V) |
| | | | | 110 | 60 | 30 | 90 to 1700 | 0.25 (35.4) | 0.12 (17.0) | 1.6 | 0.27 (38.2) | 12 (250V) |
| | M9RX40GV4DG M9RX40GV4DGA | 4 | 40 | 110 | 60 | 30 | 90 to 1700 | 0.25 (35.4) | 0.12 (17.0) | 1.8 | 0.25 (35.4) | 12 (250V) |
| | | | | 115 | 60 | 30 | 90 to 1700 | 0.25 (35.4) | 0.12 (17.0) | 1.8 | 0.25 (35.4) | 12 (250V) |
| | 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 (450V) |
| | | | | 200 | 60 | 30 | 90 to 1700 | 0.25 (35.4) | 0.12 (17.0) | 0.70 | 0.27 (38.2) | 4 (450V) |
| | M9RX40GV4GG M9RX40GV4GGA | 4 | 40 | 220 | 50 | 30 | 90 to 1400 | 0.25 (35.4) | 0.12 (17.0) | 0.71 | 0.27 (38.2) | 3.5 (450V) |
| | | | | 230 | 60 | | 90 to 1700 | 0.25 (35.4) | 0.12 (17.0) | 0.71 | 0.27 (38.2) | |
| | | | | 230 | 50 | 30 | 90 to 1400 | 0.30 (42.5) | 0.12 (17.0) | 0.74 | 0.30 (42.5) | 3.5 (450V) |
| | | | | 230 | 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.

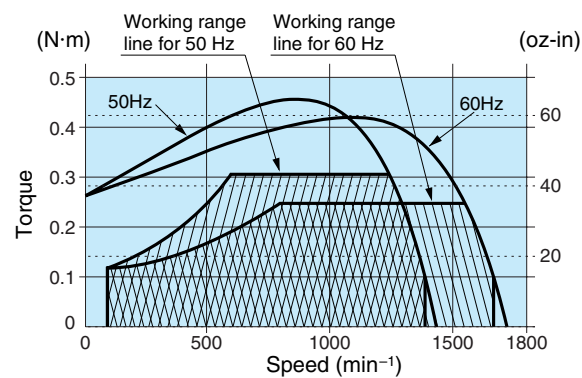
Permissible torque at output shaft of gear head

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

| Applicable gear head | Bearing | Speed | Reduction ratio | Permissible torque | | | | | | | | | | | | |
|------------------------|---------|-----------------------|-----------------|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--|
| | | | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 | |
| MX9G□B (ball bearing) | | 1200min ⁻¹ | 50Hz | 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) | |
| | | | 60Hz | 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) | |
| MX9G□M (metal bearing) | | 90min ⁻¹ | 50Hz | 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) | |
| | | | 60Hz | 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) | |
| Rotational direction | | | | Same as motor rotational direction | | | | | | | | | | | | |

| Applicable gear head | Bearing | Speed | Reduction ratio | Permissible torque | | | | | | | | | | | Applicable decimal gear head | |
|------------------------|---------|-----------------------|-----------------|---------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|------------|------------------------------|----------|
| | | | | 30 | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | | | |
| MX9G□B (ball bearing) | | 1200min ⁻¹ | 50Hz | 6.56 (58.1) | 7.87 (69.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | MX9G10XB |
| | | | 60Hz | 5.47 (48.4) | 6.56 (58.1) | 9.11 (80.6) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | |
| MX9G□M (metal bearing) | | 90min ⁻¹ | 50Hz | 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) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | MX9G10XB | |
| | | | 60Hz | 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) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | 9.8 (86.7) | | |
| 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-35.

* 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.

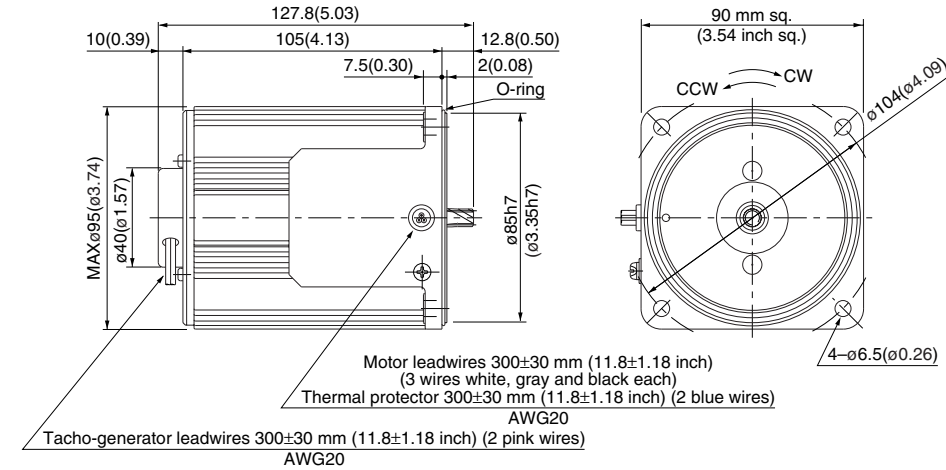
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

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 |

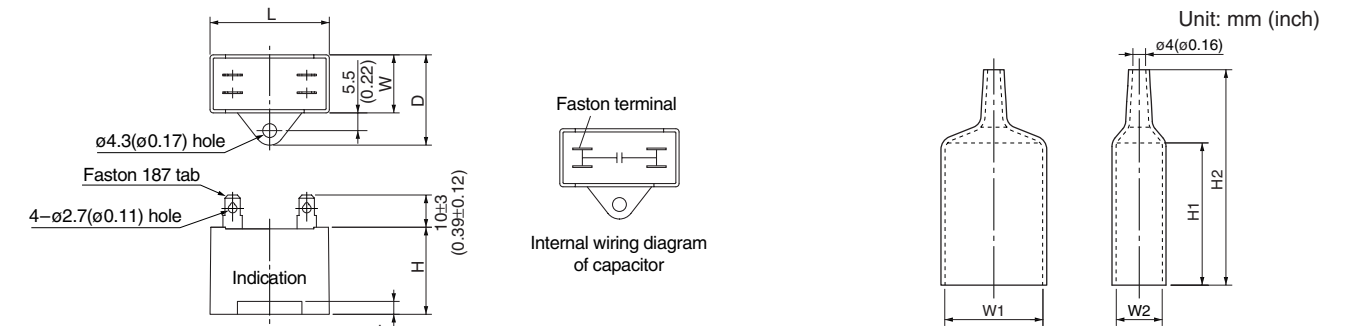


Capacitor (dimensions) [attachment]

Unit: mm (inch)

Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

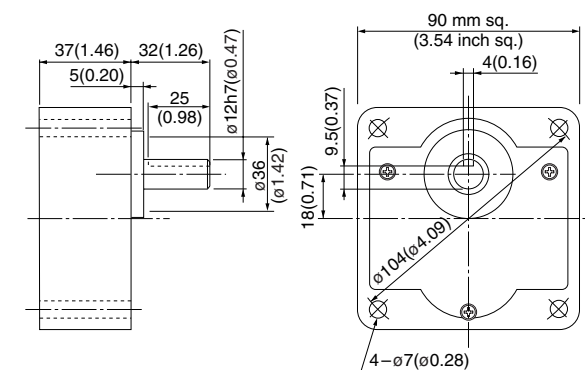
| Model number of motor | Model number of capacitor (attachment) | L | W | D | H | T | Capacitor cap | W1 | W2 | H1 | H2 |
|-----------------------|--|-----------|-------------|-------------|-----------|----------|---------------|-----------|-------------|-----------|-----------|
| M9RX40GV4LG(A) | M0PC16M25G | 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.

Gear head (dimensions)

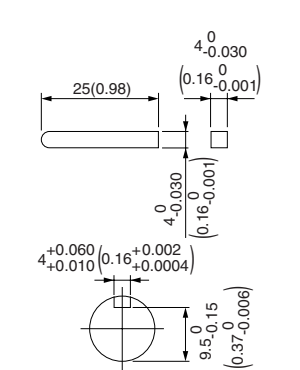
Scale: 1/3, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MX9G□B(M)



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

• Specifications

| Size | Motor model No. | Number of pole (P) | Output (W) | Voltage (V) | Frequency (Hz) | Rating (min) | Variable speed range | | Permissible Torque N·m (oz·in) | | Starting current (A) | Starting torque N·m (oz·in) | Capacitor (μF) (rated voltage) |
|-----------|-----------------|--------------------|------------|-------------|----------------|--------------|----------------------------|---------------------------|--------------------------------|-----|----------------------|-----------------------------|--------------------------------|
| | | | | | | | Speed (min ⁻¹) | at 1200 min ⁻¹ | at 90 min ⁻¹ | | | | |
| 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 (200V) | |
| | | | | | 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 (375V) | |
| | | | | | 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.

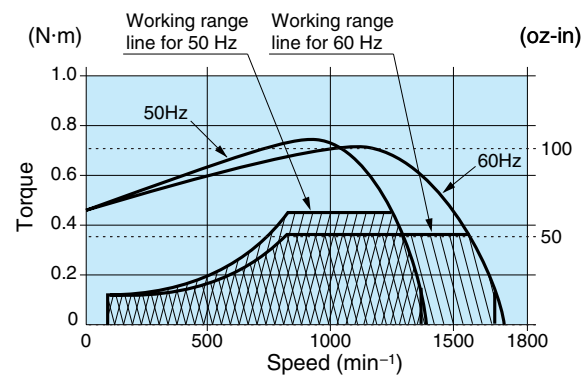
• Permissible torque at output shaft of gear head

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

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible Torque | | | | | | | | | | | | |
|---|-----------------------|------------------------------------|--------------------|-------------|-------------|-------------|-------------|---------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 | 30 |
| MZ9G□B (ball bearing hinge not attached) | 1200min ⁻¹ | 50Hz | 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) |
| | | 60Hz | 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) |
| MY9G□B (ball bearing hinge attached) | 90min ⁻¹ | 50Hz | 0.18 (1.59) | 0.22 (1.95) | 0.31 (2.74) | 0.37 (3.27) | 0.47 (4.16) | 0.56 (4.96) | 0.63 (5.58) | 0.70 (6.20) | 0.85 (7.52) | 1.02 (9.03) | 1.13 (10.0) | 1.41 (12.5) | 1.71 (15.1) |
| | | 60Hz | 0.18 (1.59) | 0.22 (1.95) | 0.31 (2.74) | 0.37 (3.27) | 0.47 (4.16) | 0.56 (4.96) | 0.63 (5.58) | 0.70 (6.20) | 0.85 (7.52) | 1.02 (9.03) | 1.13 (10.0) | 1.41 (12.5) | 1.71 (15.1) |
| Rotational direction | | Same as motor rotational direction | | | | | | Reverse to motor rotational direction | | | | | | | |

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible Torque | | | | | | | | | | Applicable decimal gear head | |
|---|-----------------------|------------------------------------|--------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|------------------------------|----------|
| | | | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | 200 | | |
| MZ9G□B (ball bearing hinge not attached) | 1200min ⁻¹ | 50Hz | 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) | MZ9G10XB |
| | | 60Hz | 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) | |
| MY9G□B (ball bearing hinge attached) | 90min ⁻¹ | 50Hz | 1.83 (16.2) | 2.55 (22.6) | 3.06 (27.1) | 3.82 (33.8) | 4.59 (40.6) | 5.10 (45.1) | 6.12 (54.2) | 7.65 (67.7) | 9.18 (81.2) | 10.2 (90.3) | | |
| | | 60Hz | 1.83 (16.2) | 2.55 (22.6) | 3.06 (27.1) | 3.82 (33.8) | 4.59 (40.6) | 5.10 (45.1) | 6.12 (54.2) | 7.65 (67.7) | 9.18 (81.2) | 10.2 (90.3) | | |
| Rotational direction | | Same as 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-35.

* 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.

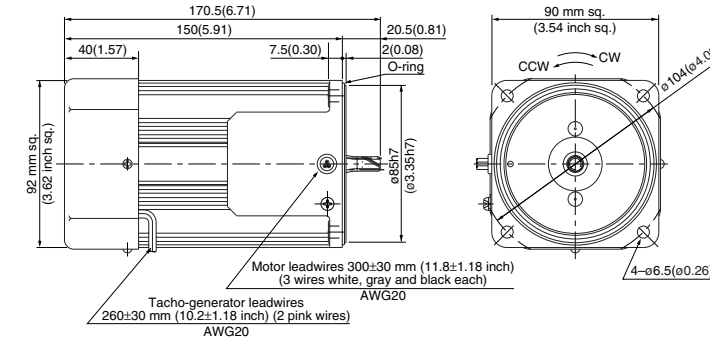
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

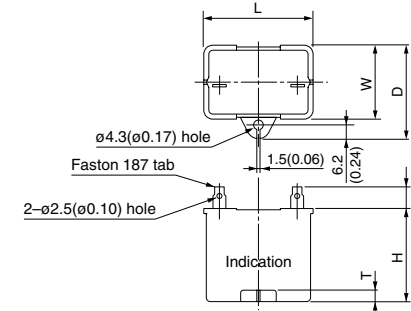
M9RZ60GV4L 4P 60 W 100 V (with fan)
M9RZ60GV4Y 4P 60 W 200 V (with fan)

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



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

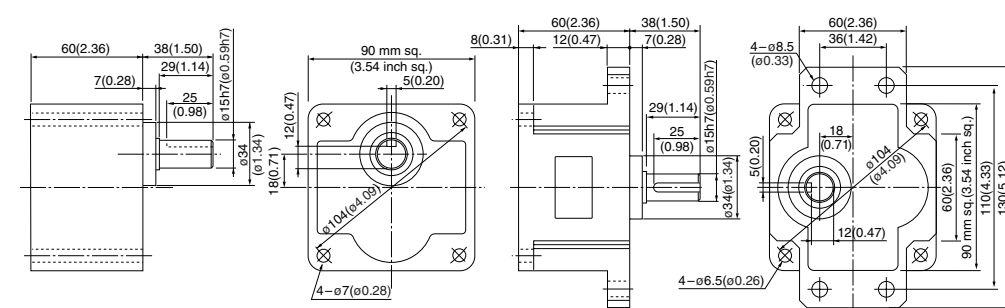
| Model number of motor | Model number of capacitor (attachment) | L | W | D | H | T | Capacitor cap (option) |
|-----------------------|--|-------------|-------------|-----------|-------------|----------|------------------------|
| M9RZ60GV4L | M0PC25M20 | 50.2 (1.98) | 31 (1.22) | 41 (1.61) | 42 (1.65) | 5 (0.20) | M0PC5032 |
| M9RZ60GV4Y | M0PC6.2M38 | 50 (1.97) | 30.5 (1.20) | 41 (1.61) | 41.5 (1.63) | 4 (0.16) | M0PC5032 |

Gear head (dimensions)

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

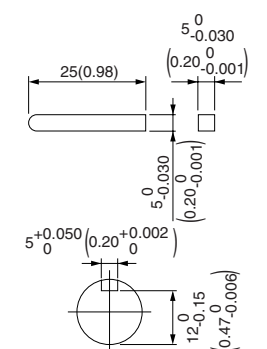
MZ9G□B (ball bearing / hinge not attached)
Mass 1.4 kg (3.09 lb)

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



Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



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

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

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

Variable speed reversible motor (leadwire)

US 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 | | Starting current (A) | Starting torque N-m (oz-in) | Capacitor (μF) (rated voltage) | |
|-----------|-----------------------------|--------------------|------------|-------------|----------------|--------------|----------------------------|-----------------------------------|----------------------|-----------------------------|--------------------------------|-----------|
| | | | | | | | Speed (min ⁻¹) | Permissible Torque N-m (oz-in) at | | | | |
| 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 (250V) |
| | | | | | 60 | | 90 to 1700 | 0.36 (51.0) | 0.14 (19.8) | 2.8 | 0.48 (68.0) | 20 (250V) |
| | M9RZ60GV4DG M9RZ60GV4DGA | 4 | 60 | 110 | 30 | 90 to 1700 | 0.36 (51.0) | 0.14 (19.8) | 3.1 | 0.48 (68.0) | 6 (450V) | |
| | | | | 115 | | 90 to 1400 | 0.45 (63.7) | 0.14 (19.8) | 1.2 | 0.48 (68.0) | 5 (450V) | |
| | M9RZ60GV4YG M9RZ60GV4YGA | 4 | 60 | 200 | 30 | 90 to 1400 | 0.45 (63.7) | 0.14 (19.8) | 1.4 | 0.43 (60.9) | 5 (450V) | |
| | | | | 230 | | 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.

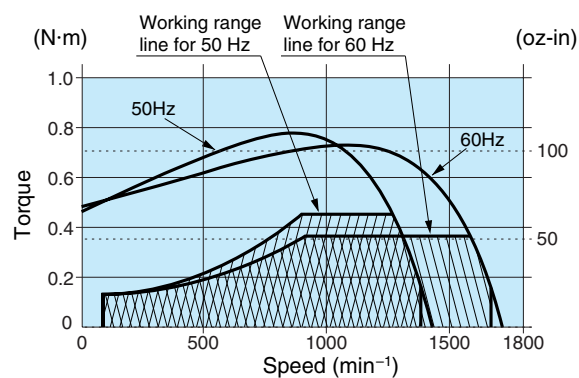
Permissible torque at output shaft of gear head

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

| Applicable gear head | Bearing | Speed | Reduction ratio | Permissible torque | | | | | | | | | | | | |
|---|---------|-----------------------|-----------------|------------------------------------|-------------|-------------|-------------|-------------|-------------|---------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 | 30 |
| MZ9G□B (ball bearing / hinge not attached) | | 1200min ⁻¹ | 50Hz | 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) |
| | | | 60Hz | 0.87 (7.70) | 1.05 (9.29) | 1.46 (12.9) | 1.75 (15.5) | 2.19 (19.4) | 2.62 (23.2) | 3.28 (29.0) | 3.94 (34.9) | 4.72 (41.8) | 5.25 (46.5) | 6.56 (58.1) | 7.87 (69.7) | |
| MY9G□B (ball bearing / hinge attached) | | 90min ⁻¹ | 50Hz | 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) |
| | | | 60Hz | 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) |
| Rotational direction | | | | Same as motor rotational direction | | | | | | Reverse to motor rotational direction | | | | | | |

| Applicable gear head | Bearing | Speed | Reduction ratio | Permissible torque | | | | | | | | | | | | | Applicable decimal gear head |
|---|---------|-----------------------|-----------------|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------------------------|
| | | | | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | 180 | 200 | | | | |
| MZ9G□B (ball bearing / hinge not attached) | | 1200min ⁻¹ | 50Hz | 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) | 19.6 (173) | 19.6 (173) | 19.6 (173) | MZ9G10XB |
| | | | 60Hz | 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) | 19.6 (173) | 19.6 (173) | 19.6 (173) | |
| MY9G□B (ball bearing / hinge attached) | | 90min ⁻¹ | 50Hz | 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) | | | | |
| | | | 60Hz | 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 | | | | | | | | | | | | | |

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

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.

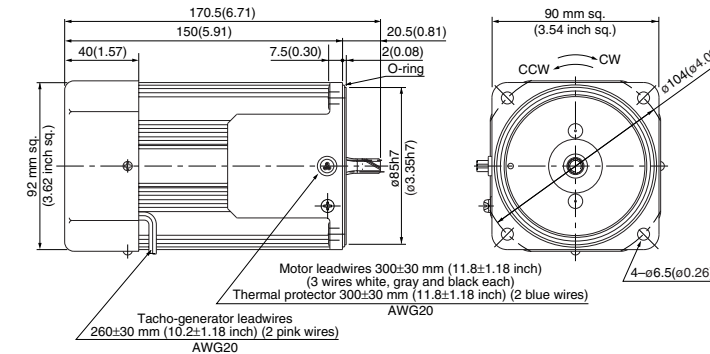
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

| Motor model No. | Output (W) | Voltage (V) | Notes |
|-----------------|------------|---------------|------------|
| M9RZ60GV4LG(A) | 60 W | 100 V | (with fan) |
| M9RZ60GV4DG(A) | 60 W | 110 V / 115 V | (with fan) |
| M9RZ60GV4YG(A) | 60 W | 200 V | (with fan) |
| M9RZ60GV4GG(A) | 60 W | 220 V / 230 V | (with fan) |

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

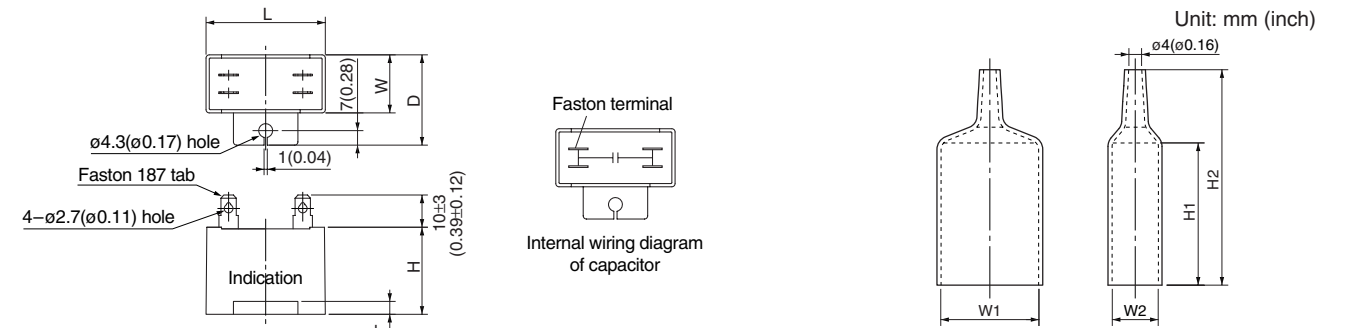


Capacitor (dimensions) [attachment]

Unit: mm (inch)

Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

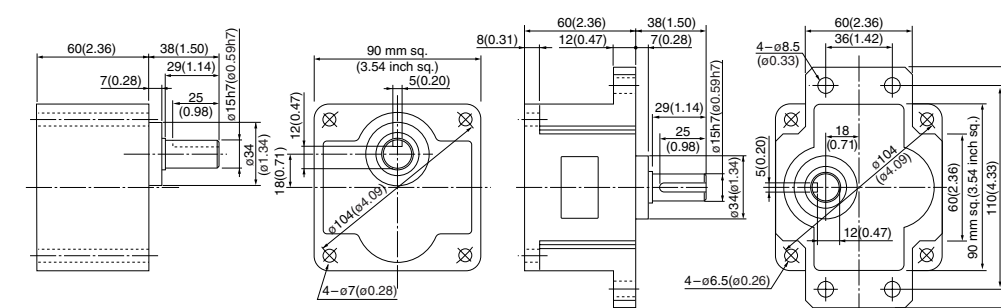
| Model number of motor | Model number of capacitor (attachment) | L | W | D | H | T | Capacitor cap | W1 | W2 | H1 | H2 |
|-----------------------|--|-----------|-----------|-----------|-----------|----------|---------------|-----------|-----------|-----------|-----------|
| M9RZ60GV4LG(A) | M0PC25M25G | 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.

Gear head (dimensions)

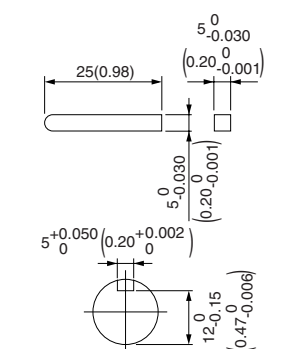
Scale: 1/4, Unit: mm (inch)

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



Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



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

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

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

• Specifications

| Size | Motor model No. | Number of pole (P) | Output (W) | Voltage (V) | Frequency (Hz) | Rating (min) | Variable speed range | | Starting current (A) | Starting torque N-m (oz-in) | Capacitor (μF) (rated voltage) | |
|-----------|-----------------|--------------------|------------|-------------|----------------|--------------|----------------------------|-----------------------------------|----------------------|-----------------------------|--------------------------------|------------|
| | | | | | | | Speed (min ⁻¹) | Permissible Torque N-m (oz-in) at | | | | |
| 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 (200V) |
| | | | | | 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 (370V) |
| | | | | | 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.

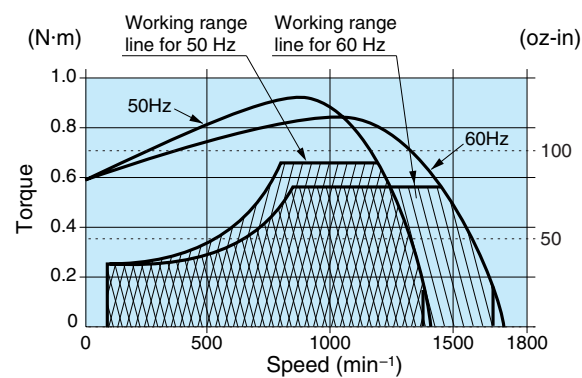
• Permissible torque at output shaft of gear head

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

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible torque | | | | | | | | | | | | |
|--|-----------------------|-----------------|------------------------------------|-------------|-------------|-------------|-------------|-------------|---------------------------------------|-------------|-------------|-------------|-------------|--------------|-------------|
| | | | 3 | 3.6 | 5 | 6 | 7.5 | 9 | 10 | 12.5 | 15 | 18 | 20 | 25 | 30 |
| MZ9G□B (ball bearing hinge not attached) | 1200min ⁻¹ | 50Hz | 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) | 10.97 (97.1) | 12.8 (113) |
| | | 60Hz | 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) |
| MY9G□B (ball bearing hinge attached) | 90min ⁻¹ | | 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) |
| Rotational direction | | | Same as motor rotational direction | | | | | | Reverse to motor rotational direction | | | | | | |

| Applicable gear head Bearing | Speed | Reduction ratio | Permissible torque | | | | | | | | Applicable decimal gear head | | |
|--|-----------------------|-----------------|------------------------------------|-------------|-------------|------------|------------|------------|------------|------------|------------------------------|------------|----------|
| | | | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | | 180 | 200 |
| MZ9G□B (ball bearing hinge not attached) | 1200min ⁻¹ | 50Hz | 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) | MZ9G10XB |
| | | 60Hz | 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) | |
| MY9G□B (ball bearing hinge attached) | 90min ⁻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) | | |
| Rotational direction | | | Same as 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-35.

* 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.

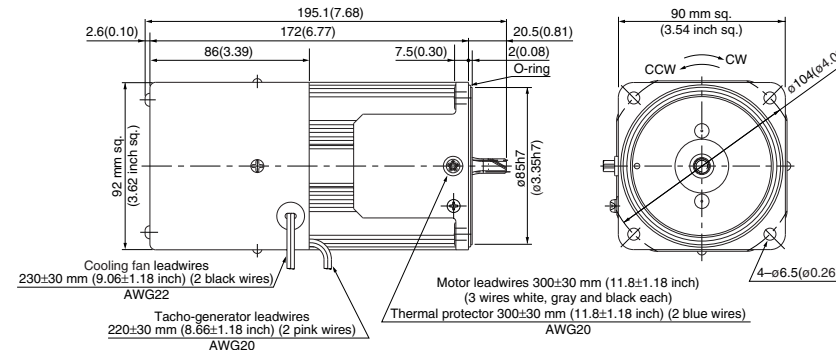
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

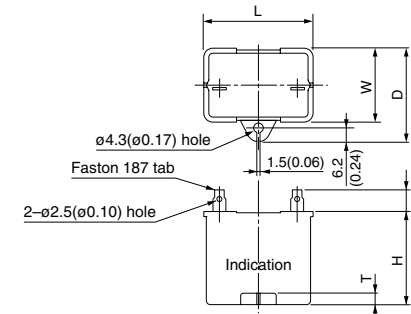
M9RZ90GV4L 4P 90 W 100 V (Forced cooling fan)
M9RZ90GV4Y 4P 90 W 200 V (Forced cooling fan)

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



Capacitor (dimensions) [attachment]

Unit: mm (inch)



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

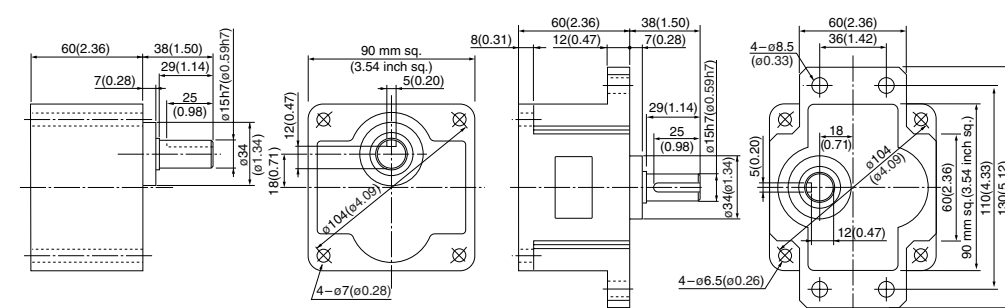
| Model number of motor | Model number of capacitor (attachment) | L | W | D | H | T | Capacitor cap (option) |
|-----------------------|--|-------------|-----------|-----------|-----------|----------|------------------------|
| M9RZ90GV4L | M0PC30M20 | 50.2 (1.98) | 31 (1.22) | 41 (1.61) | 42 (1.65) | 5 (0.20) | M0PC5032 |
| M9RZ90GV4Y | M0PC7.5M37 | 50 (1.97) | 34 (1.34) | 45 (1.77) | 45 (1.77) | 6 (0.24) | — |

Gear head (dimensions)

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

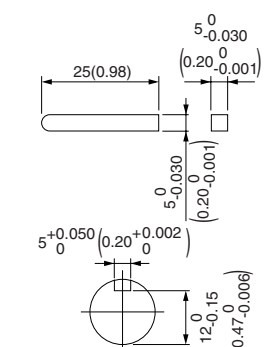
MZ9G□B (ball bearing / hinge not attached)
Mass 1.4 kg (3.09 lb)

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



Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



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

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

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

Variable speed reversible motor (leadwire)

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

Specifications

| Size | Motor model No. | Number of pole (P) | Output (W) | Voltage (V) | Frequency (Hz) | Rating (min) | Variable speed range | | Starting current (A) | Starting torque N-m (oz-in) | Capacitor (μF) (rated voltage) | |
|-----------|-----------------------------|--------------------|------------|-------------|----------------|--------------|----------------------------|-----------------------------------|----------------------|-----------------------------|--------------------------------|-----------|
| | | | | | | | Speed (min ⁻¹) | Permissible Torque N-m (oz-in) at | | | | |
| 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 (250V) |
| | | | | | 60 | | 90 to 1700 | 0.55 (77.9) | 0.39 (55.2) | 2.9 | 0.66 (93.5) | 28 (250V) |
| | 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 (250V) |
| | | | | | 60 | | 90 to 1700 | 0.55 (77.9) | 0.39 (55.2) | 3.2 | 0.72 (102) | 28 (250V) |
| | 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 (450V) |
| | | | | | 60 | | 90 to 1700 | 0.55 (77.9) | 0.39 (55.2) | 1.4 | 0.66 (93.5) | 8 (450V) |
| | 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 (450V) |
| | | | | | 60 | | 90 to 1700 | 0.55 (77.9) | 0.39 (55.2) | 1.4 | 0.66 (93.5) | 7 (450V) |
| | | | | | 230 | | 90 to 1400 | 0.69 (97.7) | 0.39 (55.2) | 1.6 | 0.72 (102) | 7 (450V) |
| | | | | | 60 | | 90 to 1700 | 0.55 (77.9) | 0.39 (55.2) | 1.5 | 0.72 (102) | 7 (450V) |

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

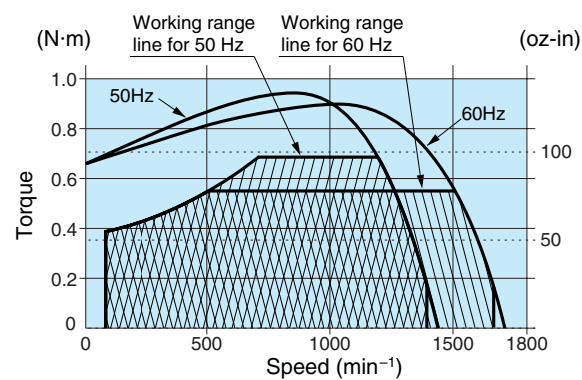
Permissible torque at output shaft of gear head

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 |
| MZ9G□B (ball bearing hinge not attached) | 1200min ⁻¹ | 50Hz | 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) |
| | | 60Hz | 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) |
| MY9G□B (ball bearing hinge attached) | 90min ⁻¹ | 50Hz | 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) |
| | | 60Hz | 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) |
| | | Rotational direction | Same as motor rotational direction | | | | | | Reverse to motor rotational direction | | | | | | |

| Applicable gear head | Bearing | Speed | Reduction ratio | | | | | | | | Applicable decimal gear head | | |
|--|-----------------------|----------------------|------------------------------------|------------|------------|------------|------------|------------|------------|------------|------------------------------|------------|----------|
| | | | 36 | 50 | 60 | 75 | 90 | 100 | 120 | 150 | | 180 | 200 |
| MZ9G□B (ball bearing hinge not attached) | 1200min ⁻¹ | 50Hz | 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) | MZ9G10XB |
| | | 60Hz | 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) | |
| MY9G□B (ball bearing hinge attached) | 90min ⁻¹ | 50Hz | 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) | |
| | | 60Hz | 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 | | | | | | | | | | |

Speed-torque characteristics



Connection diagram

* For the connection diagram showing wiring with the speed controller, refer to pages C-6 to C-35.

* 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.

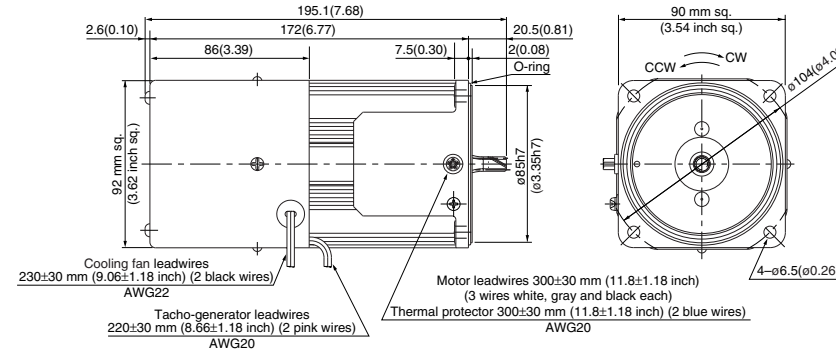
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

| Motor model No. | Output (W) | Voltage (V) | Cooling |
|-----------------|------------|---------------|----------------------|
| 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 |

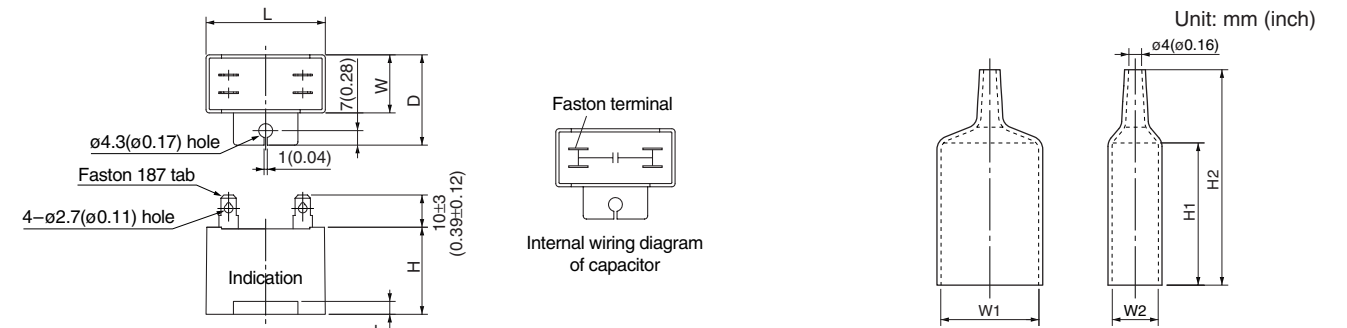


Capacitor (dimensions) [attachment]

Unit: mm (inch)

Capacitor cap (dimensions)

Unit: mm (inch)



Capacitor dimension list

Unit: upper (mm) / lower (inch)

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

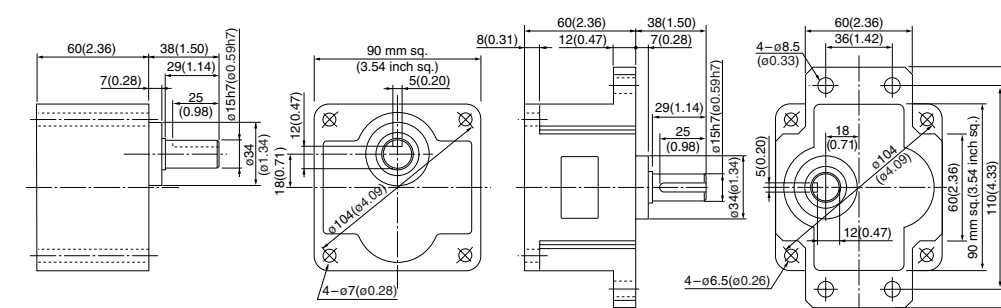
* The models with a motor model number to which "A" is suffixed are not equipped with a capacitor cap.

Gear head (dimensions)

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

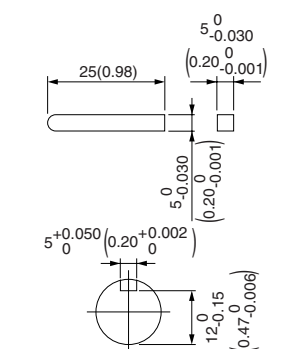
MZ9G□B (ball bearing / hinge not attached)
Mass 1.4 kg (3.09 lb)

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



Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



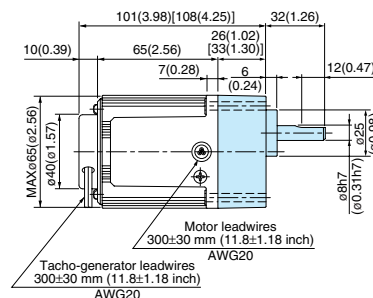
Note) MZ / MY is available for a gear head of either type.

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

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

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

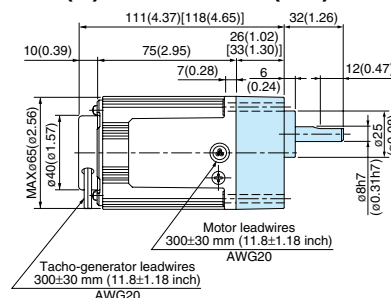
M6RX4GV4L + MX6G□BA(MA) / MX6G□B(M)



* 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

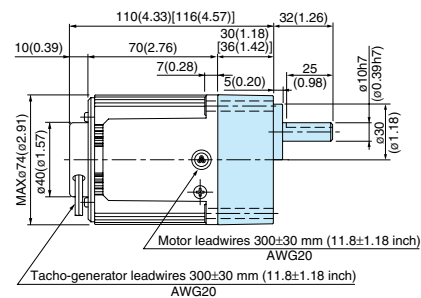
M6RX6GV4L + MX6G□BA(MA) / MX6G□B(M)
M6RX6GV4Y + MX6G□BA(MA) / MX6G□B(M)
M6RX6GV4LG(A) + MX6G□BA(MA) / MX6G□B(M)
M6RX6GV4DG(A) + MX6G□BA(MA) / MX6G□B(M)
M6RX6GV4YG(A) + MX6G□BA(MA) / MX6G□B(M)
M6RX6GV4GG(A) + MX6G□BA(MA) / MX6G□B(M)



* 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).

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

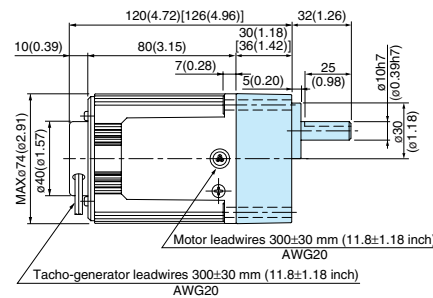
M7RX10GV4L + MX7G□BA(MA) / MX7G□B(M)
M7RX10GV4Y + MX7G□BA(MA) / MX7G□B(M)



* Figures in [] represent the dimensions of 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 MX7G□BA (MA).

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

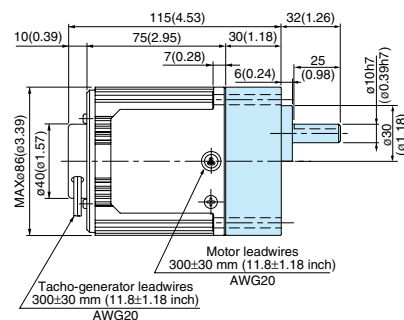
M7RX15GV4L + MX7G□BA(MA) / MX7G□B(M)
M7RX15GV4Y + MX7G□BA(MA) / MX7G□B(M)
M7RX15GV4LG(A) + MX7G□BA(MA) / MX7G□B(M)
M7RX15GV4DG(A) + MX7G□BA(MA) / MX7G□B(M)
M7RX15GV4YG(A) + MX7G□BA(MA) / MX7G□B(M)
M7RX15GV4GG(A) + MX7G□BA(MA) / MX7G□B(M)



* Figures in [] represent the dimensions of 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 MX7G□BA (MA).

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

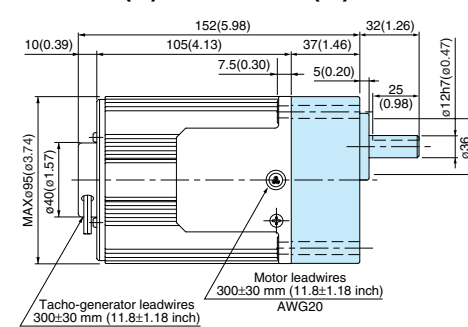
M8RX20GV4L + MX8G□B(M)
M8RX20GV4Y + MX8G□B(M)



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

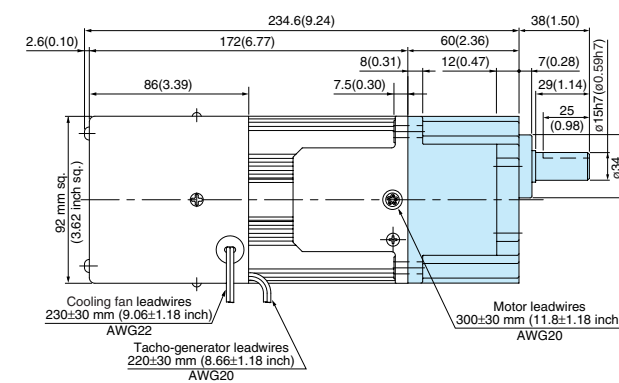
90 mm sq. (3.54 inch sq.) 40 W

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.) 90 W

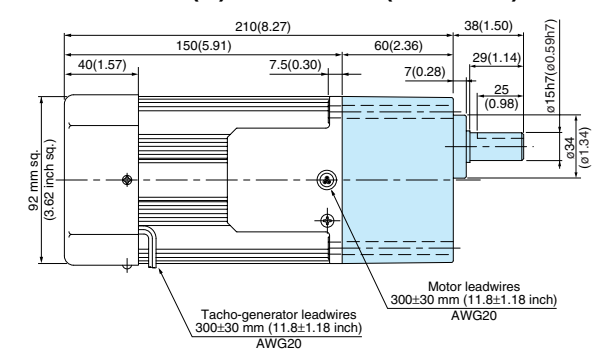
M9RZ90GV4L + MY9G□B (MZ9G□B)
M9RZ90GV4Y + MY9G□B (MZ9G□B)
M9RZ90GV4LG(A) + MY9G□B (MZ9G□B)
M9RZ90GV4DG(A) + MY9G□B (MZ9G□B)
M9RZ90GV4YG(A) + MY9G□B (MZ9G□B)
M9RZ90GV4GG(A) + MY9G□B (MZ9G□B)



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

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.

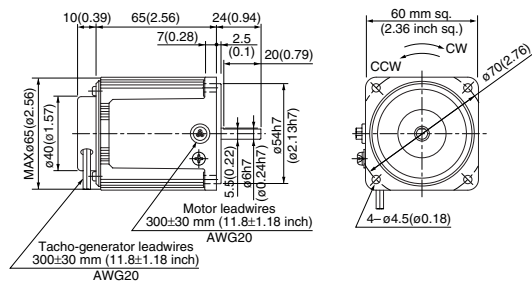
Induction motor
Reversible motor
3-phase motor
Electromagnetic brake motor
Variable speed induction motor
Variable speed reversible motor
Variable speed electromagnetic brake single-phase motor
Variable speed unit motor
C&B motor
2-pole round shaft motor
Gear head
Gear head -inch (U.S.A.)

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

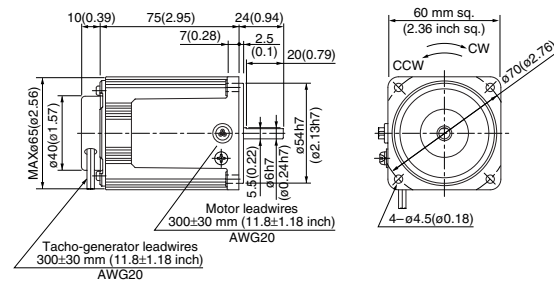
Dimensions

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

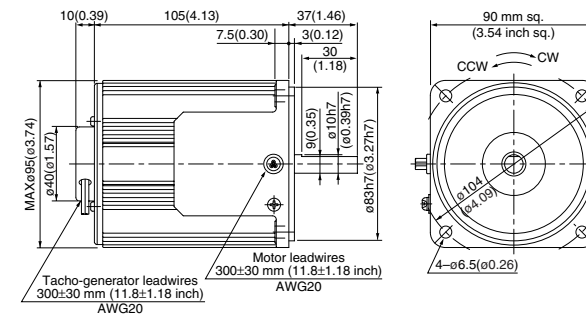
60 mm sq. (2.36 inch sq.) 4 W Mass 0.6 kg (1.32 lb)
M6RX4SV4LS



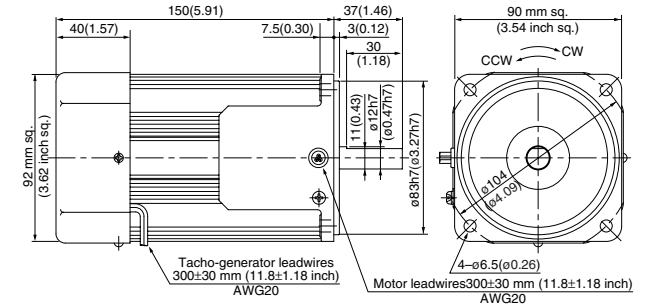
60 mm sq. (2.36 inch sq.) 6 W Mass 0.71 kg (1.57 lb)
M6RX6SV4LS
M6RX6SV4YS
M6RX6SV4LG(A)
M6RX6SV4YG(A)
M6RX6SV4DG(A)
M6RX6SV4GG(A)



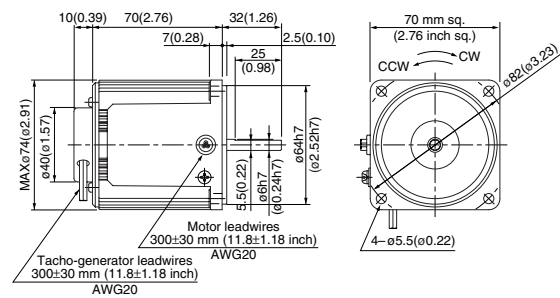
90 mm sq. (3.54 inch sq.) 40 W Mass 2.4 kg (5.29 lb)
M9RX40SV4LS
M9RX40SV4YS
M9RX40SV4LG(A)
M9RX40SV4YG(A)
M9RX40SV4DG(A)
M9RX40SV4GG(A)



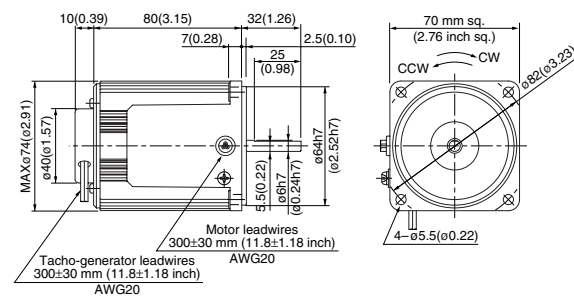
90 mm sq. (3.54 inch sq.) 60 W Mass 2.7 kg (5.95 lb)
M9RZ60SV4LS (with fan)
M9RZ60SV4YS (with fan)
M9RZ60SV4LG(A) (with fan)
M9RZ60SV4DG(A) (with fan)
M9RZ60SV4YG(A) (with fan)
M9RZ60SV4GG(A) (with fan)



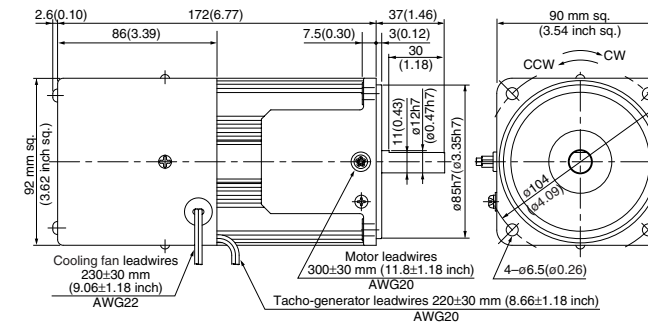
70 mm sq. (2.76 inch sq.) 10 W Mass 0.88 kg (1.94 lb)
M7RX10SV4LS
M7RX10SV4YS



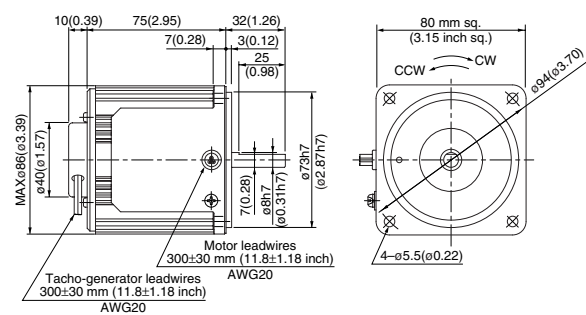
70 mm sq. (2.76 inch sq.) 15 W Mass 1.1 kg (2.43 lb)
M7RX15SV4LS
M7RX15SV4YS
M7RX15SV4LG(A)
M7RX15SV4YG(A)
M7RX15SV4DG(A)
M7RX15SV4GG(A)



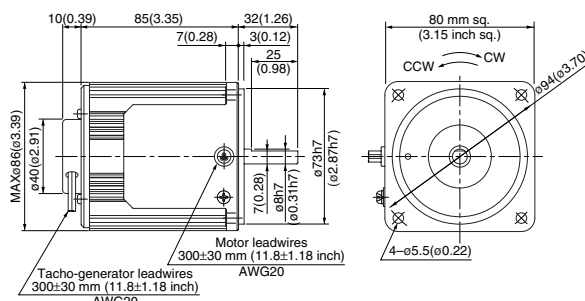
90 mm sq. (3.54 inch sq.) 90 W Mass 3.5 kg (7.72 lb)
M9RZ90SV4LS (Forced cooling fan)
M9RZ90SV4YS (Forced cooling fan)
M9RZ90SV4LG(A) (Forced cooling fan)
M9RZ90SV4DG(A) (Forced cooling fan)
M9RZ90SV4YG(A) (Forced cooling fan)
M9RZ90SV4GG(A) (Forced cooling fan)



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)



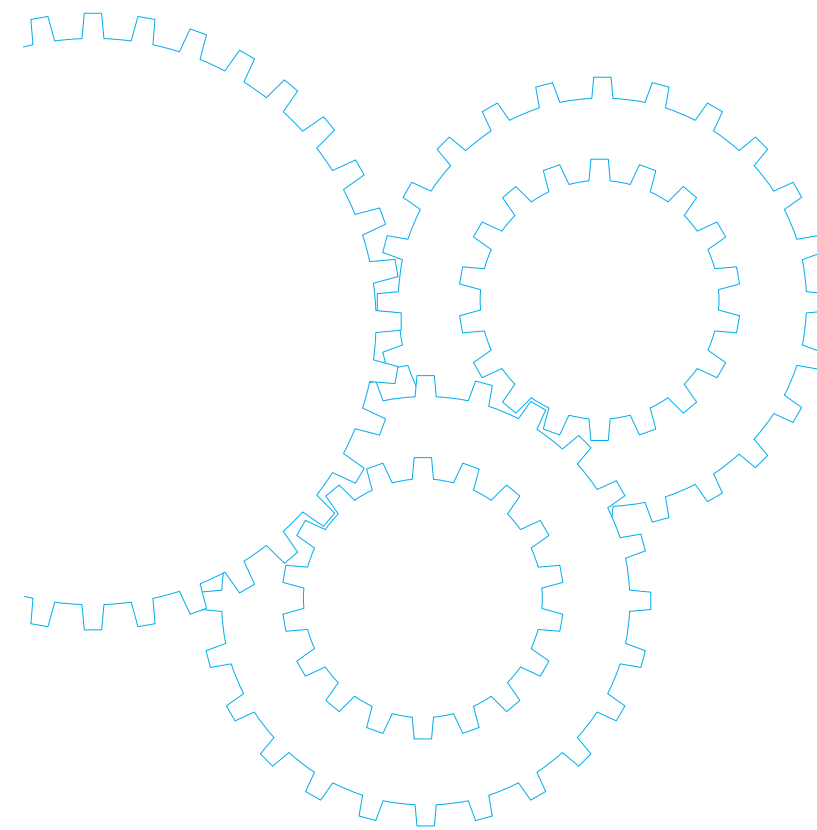
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

* 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.

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

Variable Speed Electromagnetic Brake Single-phase Motor



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- Motor Overview B-310
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- Product information for each model B-314
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