3-phase Motor

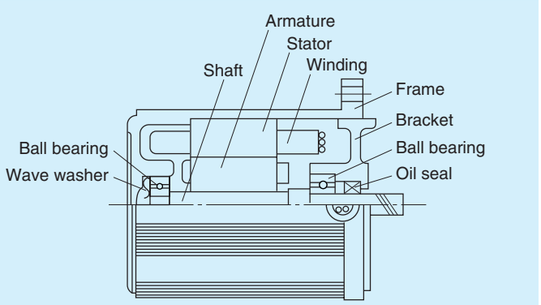
Contents

Outline of 3-phase motor

Features

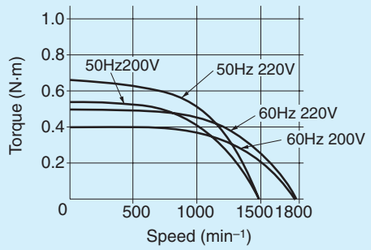
- The 3-phase motor is an induction motor for 3-phase power.
- Continuous time rating
- The motor with national specifications is of heatproof class 120 (E); the motor with specifications compliant with overseas standards is of heatproof class 130 (B).

Construction



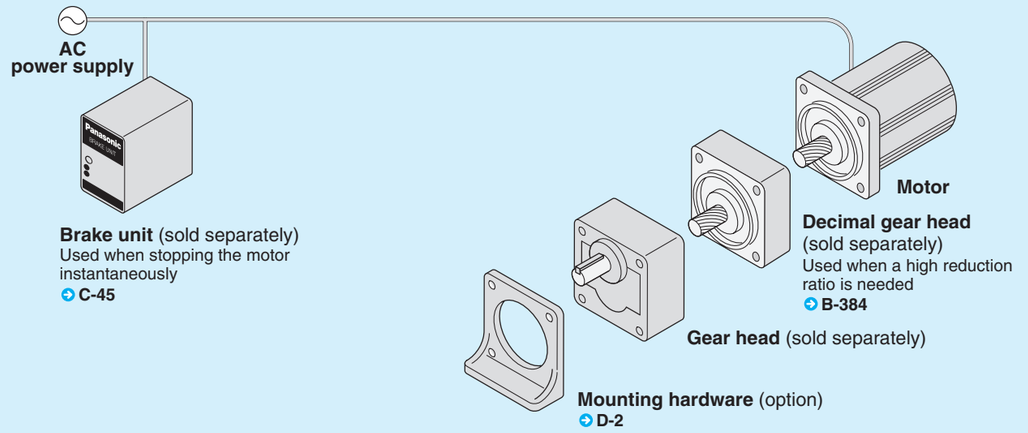
Characteristics

• Speed-torque characteristics



Example:M8MX25G4Y

System configuration diagram



Coding system

M 9 M X 40 G 4 Y S A

- **Size**
  - 8 : 80 mm sq. (3.15 inch sq.)
  - 9 : 90 mm sq. (3.54 inch sq.)
- **Motor type**
  - M : 3-phase motor
- **Output type**
  - X : 40 W or smaller
  - Z : 60 W or larger
- **Output**
  - 25 : 25 W
  - 40 : 40 W
  - 60 : 60 W
  - 90 : 90 W
- **Shape of shaft**
  - G : Pinion shaft
  - S : Round shaft
- **Option**
  - K : Sealed connector (Left aligned when no option is used)
- **No. of poles**
  - 4 : 4 poles
- **Voltage**
  - Y : National specifications: 200/220 V
    Specifications compliant with overseas standards: 200/220/230 V
  - C : 380/400 V
- **Classification**
  - The models with a motor model number to which “A” is suffixed are not sold or available in Japan.
  - G : Specifications compliant with overseas standards
  - S : Round shaft (S for round shaft with national specifications only)

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

Fit tolerance

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

Model list of 3-phase motor

Pinion shaft motor

✪ Motor compliant with overseas standards

Size	Output (W)	Leadwire type			Sealed connector type		
		Model number	Specifications	Page	Model number	Specifications	Page
80 mm sq. (3.15 inch sq.)	25	M8MX25G4Y	200/220V	B-130	M8MX25GK4Y	200/220V	B-146
		M8MX25G4YG(A)	200/220/230V ✪	B-132	M8MX25GK4YG(A)	200/220/230V ✪	B-148
					M8MX25GK4CG(A)	380/400V ✪	B-148
90 mm sq. (3.54 inch sq.)	40	M9MX40G4Y	200/220V	B-134	M9MX40GK4Y	200/220V	B-150
		M9MX40G4YG(A)	200/220/230V ✪	B-136	M9MX40GK4YG(A)	200/220/230V ✪	B-152
					M9MX40GK4CG(A)	380/400V ✪	B-152
	60	M9MZ60G4Y	200/220V	B-138	M9MZ60GK4Y	200/220V	B-154
		M9MZ60G4YG(A)	200/220/230V ✪	B-140	M9MZ60GK4YG(A)	200/220/230V ✪	B-156
					M9MZ60GK4CG(A)	380/400V ✪	B-156
	90	M9MZ90G4Y	200/220V	B-142	M9MZ90GK4Y	200/220V	B-158
		M9MZ90G4YG(A)	200/220/230V ✪	B-144	M9MZ90GK4YG(A)	200/220/230V ✪	B-160
					M9MZ90GK4CG(A)	380/400V ✪	B-160

Applicable gear head

Hinge attached

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

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

Round shaft motor

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

Size	Output (W)	Leadwire type		Sealed connector type		
		Model number	Specifications	Model number	Specifications	
80 mm sq. (3.15 inch sq.)	25	M8MX25S4YS	200/220V	M8MX25SK4YS	200/220V	Ⓟ
		M8MX25S4YG(A)	200/220/230V ✪	M8MX25SK4YG(A)	200/220/230V ✪	Ⓟ
				M8MX25SK4CG(A)	380/400V ✪	
90 mm sq. (3.54 inch sq.)	40	M9MX40S4YS	200/220V	M9MX40SK4YS	200/220V	Ⓟ
		M9MX40S4YG(A)	200/220/230V ✪	M9MX40SK4YG(A)	200/220/230V ✪	Ⓟ
				M9MX40SK4CG(A)	380/400V ✪	
	60	M9MZ60S4YS	200/220V	M9MZ60SK4YS	200/220V	Ⓟ
		M9MZ60S4YG(A)	200/220/230V ✪	M9MZ60SK4YG(A)	200/220/230V ✪	Ⓟ
				M9MZ60SK4CG(A)	380/400V ✪	
	90	M9MZ90S4YS	200/220V	M9MZ90SK4YS	200/220V	Ⓟ
		M9MZ90S4YG(A)	200/220/230V ✪	M9MZ90SK4YG(A)	200/220/230V ✪	Ⓟ
				M9MZ90SK4CG(A)	380/400V ✪	

* 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-164.

<Notice>
380V/400V 3-phase round shaft motors with a sealed connector are not covered by the Electrical Appliance and Material Safety Law.

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min⁻¹)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
80 mm sq.	M8MX25G4Y	4	25	200	50	Cont.	50	0.25	1350	0.18 (25.5)	0.62	0.54 (76.5)
					60		47	0.22	1625	0.15 (21.2)	0.58	0.40 (56.6)
				220	50	Cont.	54	0.27	1375	0.18 (25.5)	0.67	0.66 (93.5)
					60		49	0.23	1650	0.15 (21.2)	0.64	0.50 (70.8)

• 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-164.

• Permissible torque at output shaft of gear head

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

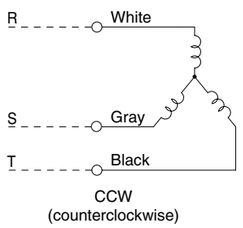
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

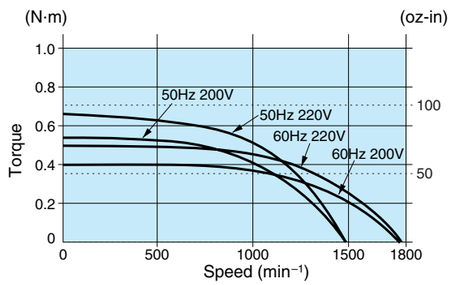
Connection diagram



Change any two lead wires of R, S and T for CW rotation.

Speed-torque characteristics

M8MX25G4Y

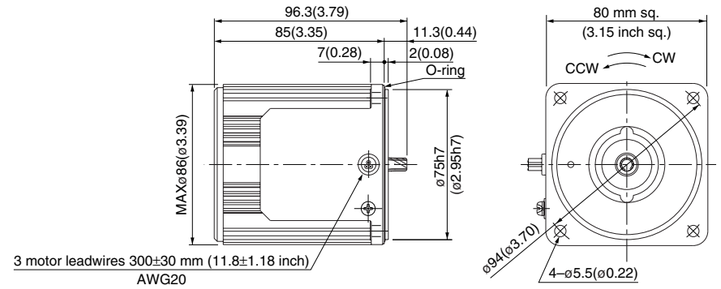


Motor (dimensions)

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

M8MX25G4Y 4P 25 W 200 V / 220 V

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

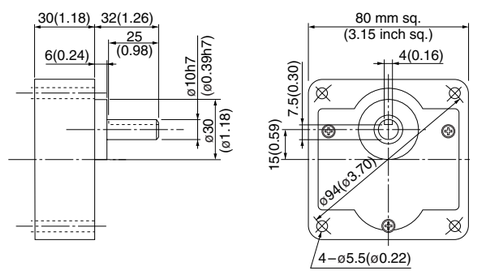


* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

Gear head (dimensions)

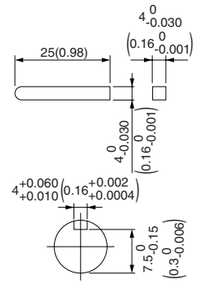
Scale: 1/3, Unit: mm (inch)

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.

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

3-phase motor (leadwire)

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

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min^{-1})	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
80 mm sq.	M8MX25G4YG M8MX25G4YGA	4	25	200	50	Cont.	50	0.25	1350	0.18 (25.5)	0.62	0.54 (76.5)
					60		47	0.22	1625	0.15 (21.2)	0.58	0.40 (56.6)
				220	60		49	0.23	1650	0.14 (19.8)	0.64	0.50 (70.8)
				230	60		50	0.24	1675	0.14 (19.8)	0.65	0.54 (76.5)

• 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-164.
• The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

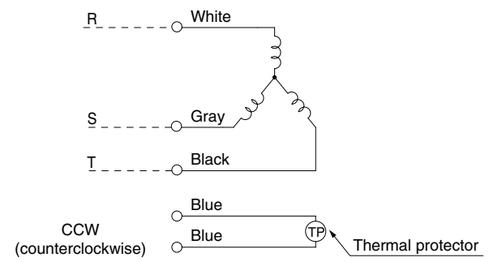
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

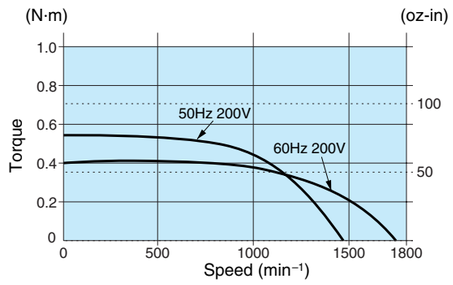
Connection diagram



Change any two lead wires of R, S and T for CW rotation.
(Refer to page A-58 for connection of thermal protector.)

Speed-torque characteristics

M8MX25G4YG(A)

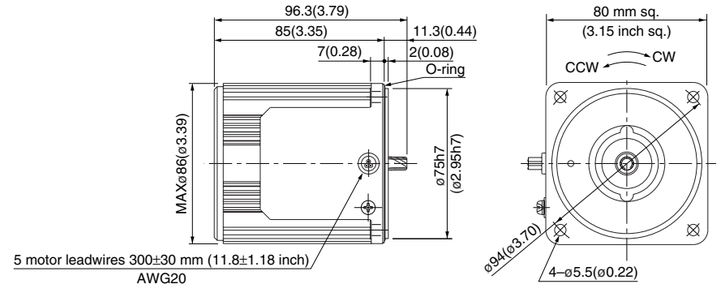


Motor (dimensions)

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

M8MX25G4YG(A) 4P 25 W 200 V / 220 V / 230 V

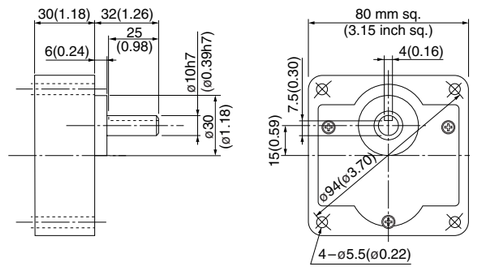
Mass 1.5 kg 3.31 lb | Helical gear | Module 0.5 | Number of teeth 9



Gear head (dimensions)

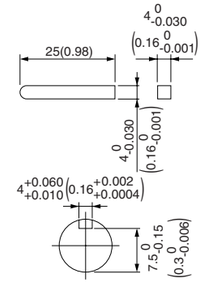
Scale: 1/3, Unit: mm (inch)

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.

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

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min^{-1})	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
90 mm sq.	M9MX40G4Y	4	40	200	50	Cont.	69	0.31	1350	0.28 (39.7)	0.90	0.72 (102)
					60		68	0.29	1625	0.24 (34.0)	0.82	0.51 (72.2)
				220	50	Cont.	70	0.32	1375	0.27 (38.2)	1.0	0.88 (125)
					60		66	0.28	1675	0.23 (32.6)	0.91	0.63 (89.2)

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-164.

• Permissible torque at output shaft of gear head

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

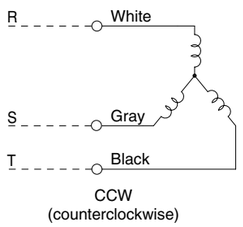
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

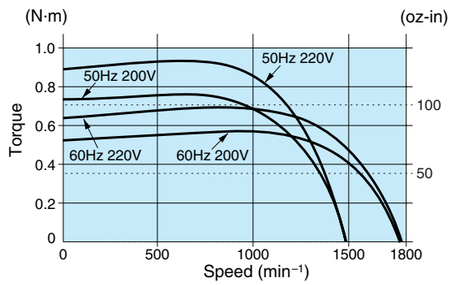
Connection diagram



Change any two lead wires of R, S and T for CW rotation.

Speed-torque characteristics

M9MX40G4Y



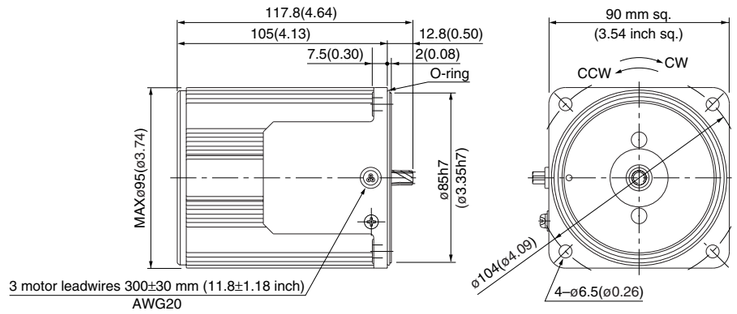
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

M9MX40G4Y 4P 40 W 200 V / 220 V

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

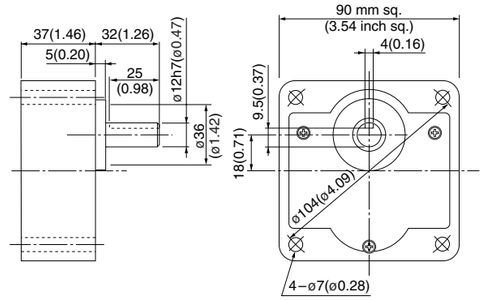


* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

Gear head (dimensions)

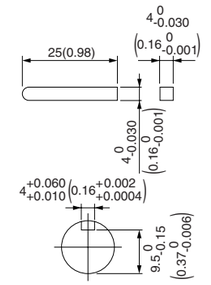
Scale: 1/3, Unit: mm (inch)

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.

3-phase motor (leadwire)

c UL 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)	Rating Input (W)	Rating Current (A)	Rating Speed (min⁻¹)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
90 mm sq.	M9MX40G4YG M9MX40G4YGA	4	40	200	50	Cont.	69	0.31	1350	0.28 (39.7)	0.90	0.72 (102)
					60		68	0.29	1625	0.24 (34.0)	0.82	0.51 (72.2)
				220	60		66	0.28	1675	0.23 (32.6)	0.91	0.63 (89.2)
				230	60		66	0.29	1675	0.23 (32.6)	0.96	0.69 (97.7)

• 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-164.
• The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

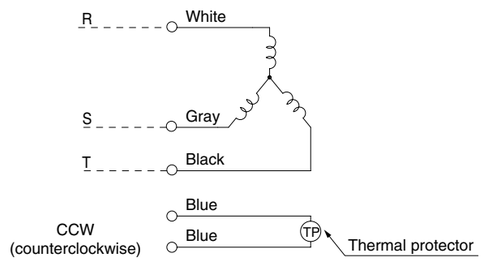
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

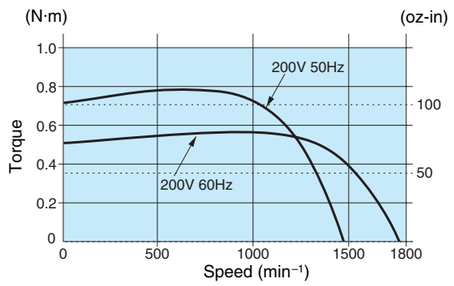
Connection diagram



Change any two lead wires of R, S and T for CW rotation.
(Refer to page A-58 for connection of thermal protector.)

Speed-torque characteristics

M9MX40G4YG(A)

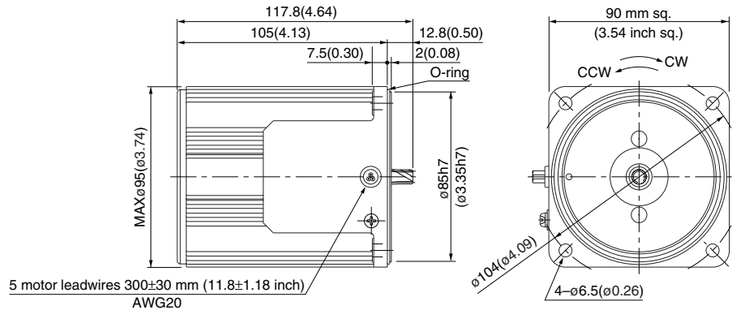


Motor (dimensions)

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

M9MX40G4YG(A) 4P 40 W 200 V / 220 V / 230 V

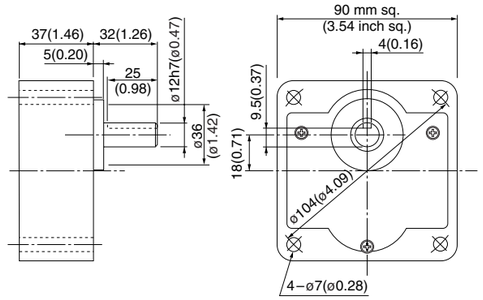
Mass 2.4 kg 5.29 lb | Helical gear | Module 0.55 | Number of teeth 9



Gear head (dimensions)

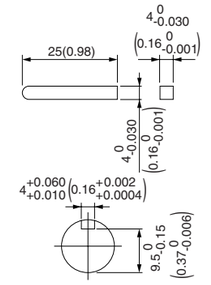
Scale: 1/3, Unit: mm (inch)

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.

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

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min⁻¹)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
90 mm sq.	M9MZ60G4Y	4	60	200	50	Cont.	101	0.45	1350	0.42 (59.5)	1.3	1.0 (142)
					60		96	0.41	1625	0.35 (49.6)	1.2	0.69 (97.7)
				220	50	Cont.	103	0.46	1375	0.41 (58.1)	1.5	1.2 (170)
					60		98	0.40	1650	0.34 (48.1)	1.3	0.87 (123)

• 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-164.

• Permissible torque at output shaft of gear head

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

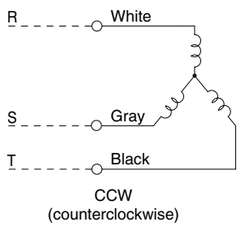
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

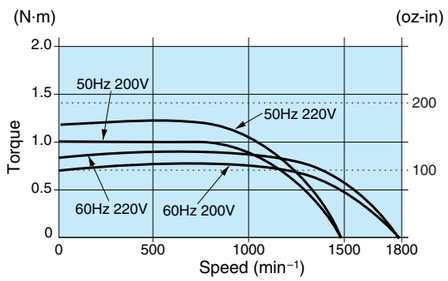
Connection diagram



Change any two lead wires of R, S and T for CW rotation.

Speed-torque characteristics

M9MZ60G4Y



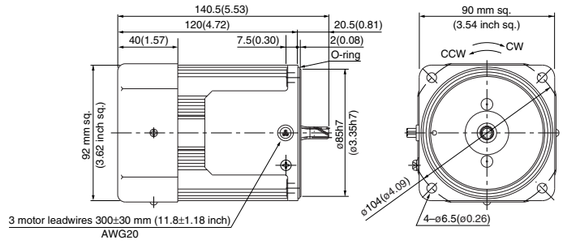
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

M9MZ60G4Y 4P 60 W 200 V / 220 V (with fan)

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



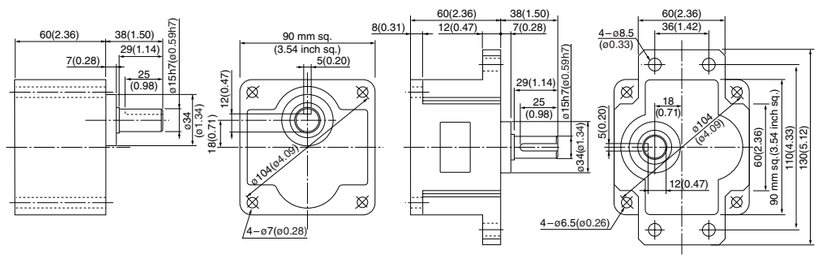
* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

Gear head (dimensions)

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

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

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

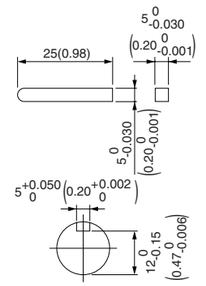


Note) MZ / MY is available for a gear head of either type.

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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



3-phase motor (leadwire)

90 mm (3.54 inch) sq. 60 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min⁻¹)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
90 mm sq.	M9MZ60G4YG M9MZ60G4YGA	4	60	200	50	Cont.	101	0.45	1350	0.42 (59.5)	1.3	1.0 (142)
					60		96	0.41	1625	0.35 (49.6)	1.2	0.69 (97.7)
				220	60		98	0.40	1650	0.35 (49.6)	1.3	0.87 (123)
				230	60		98	0.41	1675	0.34 (48.1)	1.4	1.0 (142)

• 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-164.
• The models with a motor model number to which “A” is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

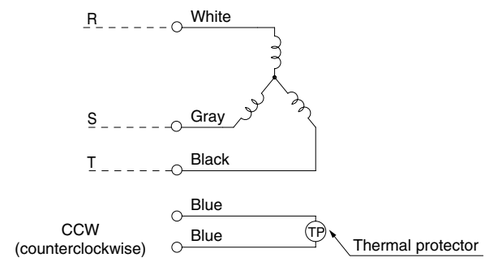
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

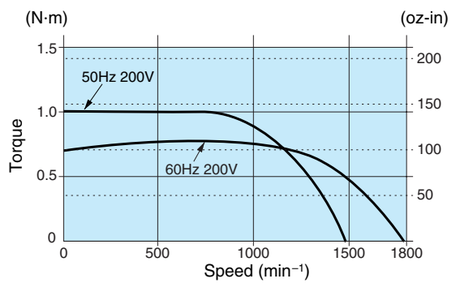
Connection diagram



Change any two lead wires of R, S and T for CW rotation.
(Refer to page A-58 for connection of thermal protector.)

Speed-torque characteristics

M9MZ60G4YG(A)

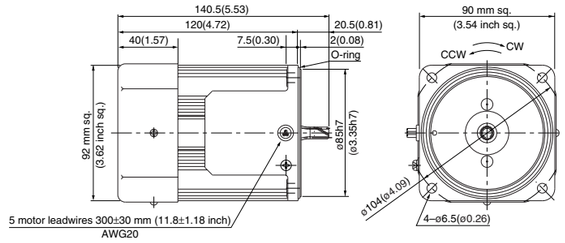


Motor (dimensions)

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

M9MZ60G4YG(A) 4P 60 W 200 V / 220 V / 230 V (with fan)

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

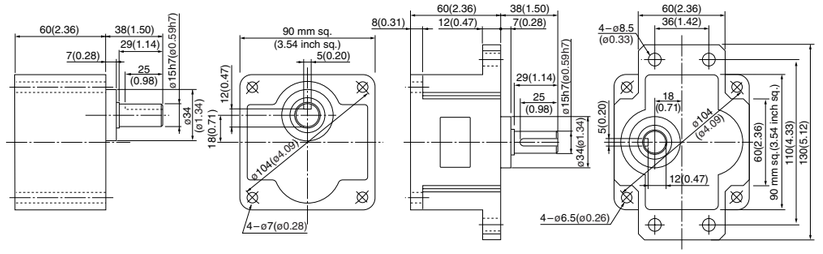


Gear head (dimensions)

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

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

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

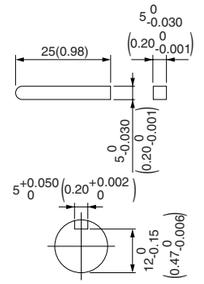


Note) MZ / MY is available for a gear head of either type.

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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



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

3-phase motor (leadwire)

90 mm (3.54 inch) sq. 90 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min^{-1})	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
90 mm sq.	M9MZ90G4Y	4	90	200	50	Cont.	141	0.62	1350	0.63 (89.2)	2.0	1.6 (227)
					60		137	0.56	1625	0.53 (75.1)	1.8	1.1 (156)
				220	50	Cont.	143	0.65	1400	0.62 (87.8)	2.2	2.0 (283)
					60		137	0.56	1650	0.52 (73.6)	2.0	1.4 (198)

• 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-164.

• Permissible torque at output shaft of gear head

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

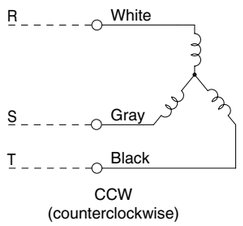
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

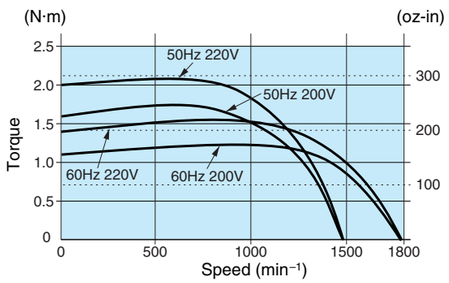
Connection diagram



Change any two lead wires of R, S and T for CW rotation.

Speed-torque characteristics

M9MZ90G4Y



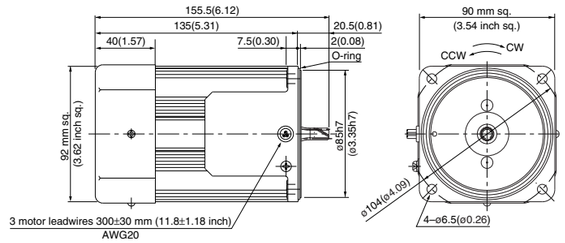
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

M9MZ90G4Y 4P 90 W 200 V / 220 V (with fan)

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



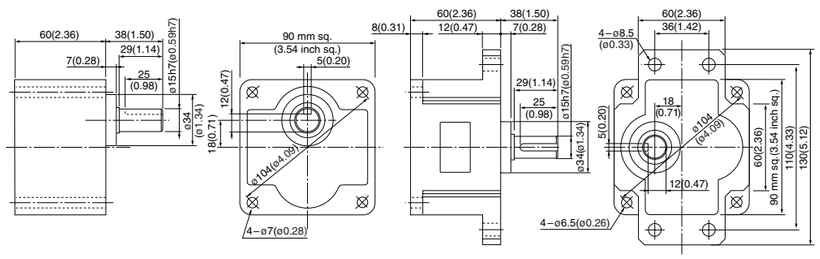
* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

Gear head (dimensions)

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

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

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

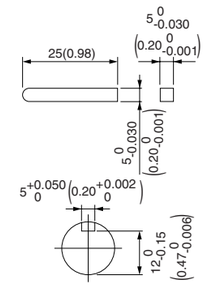


Note) MZ / MY is available for a gear head of either type.

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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



3-phase motor (leadwire)

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

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min⁻¹)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
90 mm sq.	M9MZ90G4YG M9MZ90G4YGA	4	90	200	50	Cont.	142	0.62	1350	0.63 (89.2)	2.0	1.6 (227)
					60		138	0.56	1625	0.53 (75.1)	1.8	1.1 (156)
				220	60		137	0.56	1650	0.52 (73.6)	2.0	1.4 (198)
				230	60		137	0.58	1675	0.51 (72.2)	2.1	1.6 (227)

• 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-164.
• The models with a motor model number to which “A” is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

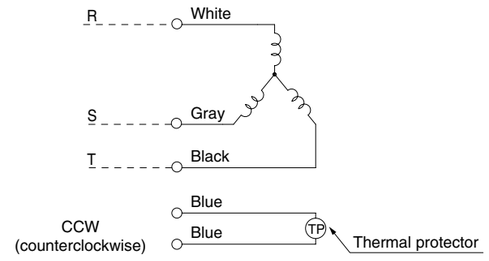
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

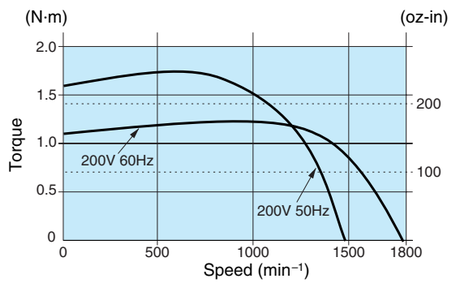
Connection diagram



Change any two lead wires of R, S and T for CW rotation.
(Refer to page A-58 for connection of thermal protector.)

Speed-torque characteristics

M9MZ90G4YG(A)

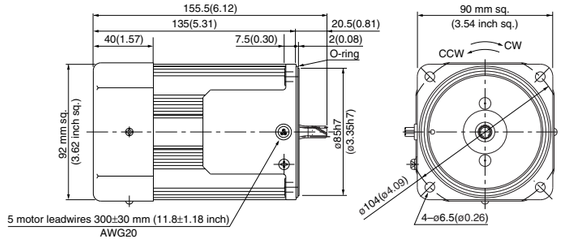


Motor (dimensions)

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

M9MZ90G4YG(A) 4P 90 W 200 V / 220 V / 230 V (with fan)

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

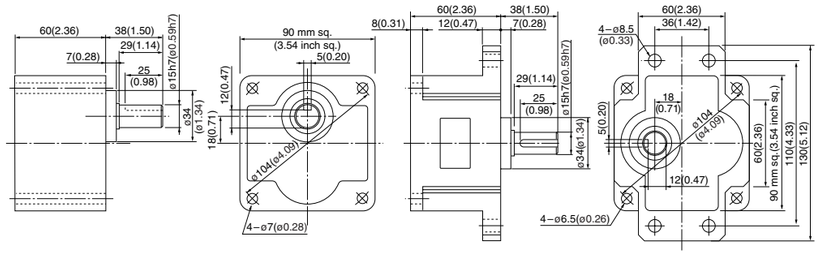


Gear head (dimensions)

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

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

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

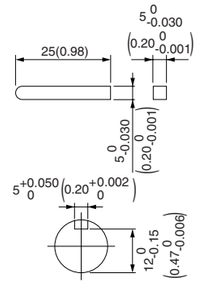


Note) MZ / MY is available for a gear head of either type.

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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



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

3-phase motor (sealed connector)

80 mm (3.15 inch) sq. 25 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min⁻¹)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
80 mm sq.	M8MX25GK4Y	4	25	200	50	Cont.	50	0.25	1350	0.18 (25.5)	0.62	0.54 (76.5)
					60		47	0.22	1625	0.15 (21.2)	0.58	0.40 (56.6)
				220	50	Cont.	54	0.27	1375	0.18 (25.5)	0.67	0.66 (93.5)
					60		49	0.23	1650	0.15 (21.2)	0.64	0.50 (70.8)

• 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-165.

• Permissible torque at output shaft of gear head

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

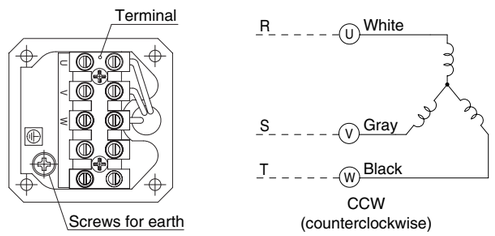
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

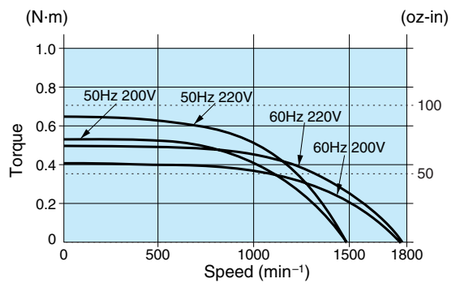
Connection diagram



Change any two lead wires of U, V and W for CW rotation.

Speed-torque characteristics

M8MX25GK4Y

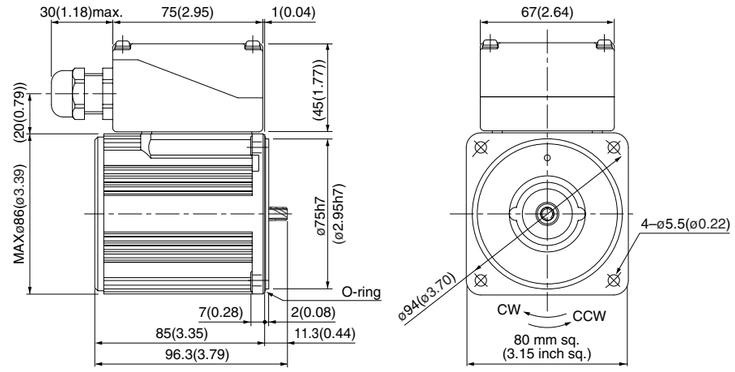


Motor (dimensions)

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

M8MX25GK4Y 4P 25 W 200 V / 220 V

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

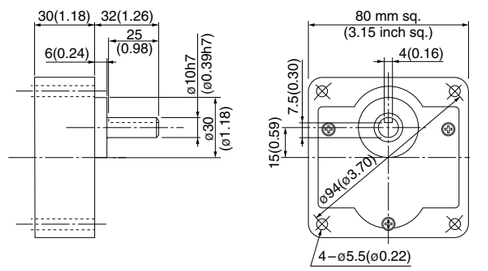


* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

Gear head (dimensions)

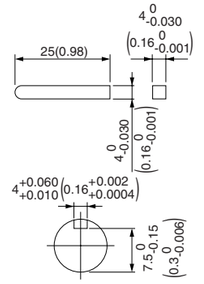
Scale: 1/3, Unit: mm (inch)

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.

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

3-phase motor (sealed connector)

80 mm (3.15 inch) sq. 25 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating: Input (W)	Rating: Current (A)	Rating: Speed (min⁻¹)	Rating: Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
80 mm sq.	M8MX25GK4YG M8MX25GK4YGA	4	25	200	50	Cont.	50	0.25	1350	0.18 (25.5)	0.62	0.54 (76.5)
					60		47	0.22	1625	0.15 (21.2)	0.58	0.40 (56.6)
				220	60		49	0.23	1650	0.14 (19.8)	0.64	0.50 (70.8)
				230	60		50	0.24	1675	0.14 (19.8)	0.65	0.54 (76.5)
	M8MX25GK4CG M8MX25GK4CGA	4	25	380	50	Cont.	49	0.12	1325	0.18 (25.5)	0.29	0.50 (70.8)
				400	50		52	0.12	1325	0.18 (25.5)	0.32	0.56 (79.3)

• 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-165.
• The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

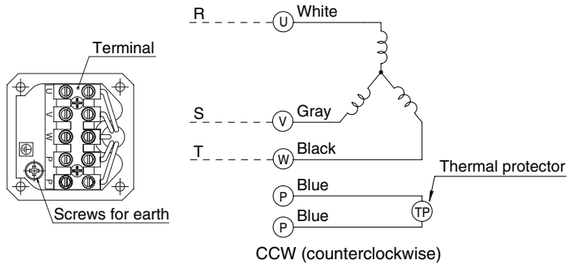
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

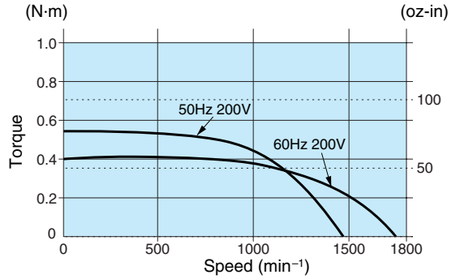
Connection diagram



CCW (counterclockwise)
Change any two lead wires of U, V and W for CW rotation.
(Refer to page A-58 for connection of thermal protector.)

Speed-torque characteristics

M8MX25GK4YG(A)



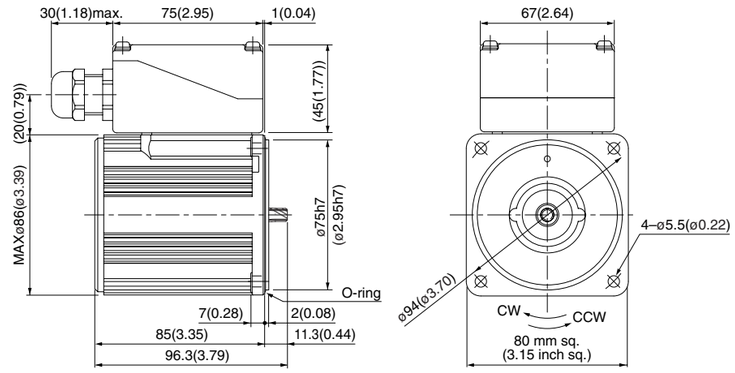
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

M8MX25GK4YG(A) 4P 25 W 200 V / 220 V / 230 V
M8MX25GK4CG(A) 4P 25 W 380 V / 400 V

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

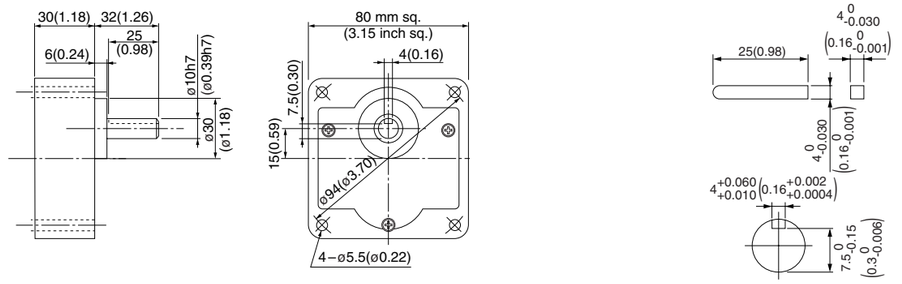


* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

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.

3-phase motor (sealed connector)

90 mm (3.54 inch) sq. 40 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min⁻¹)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
90 mm sq.	M9MX40GK4Y	4	40	200	50	Cont.	69	0.31	1350	0.28 (39.7)	0.90	0.72 (102)
					60		68	0.29	1625	0.24 (34.0)	0.82	0.51 (72.2)
				220	50	Cont.	70	0.32	1375	0.27 (38.2)	1.0	0.88 (125)
					60		66	0.28	1675	0.23 (32.6)	0.91	0.63 (89.2)

• The specifications and wire connections of the round shaft motor are the same as those of the pinion shaft type. For the dimensional outline drawing, refer to page B-165.

• Permissible torque at output shaft of gear head

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

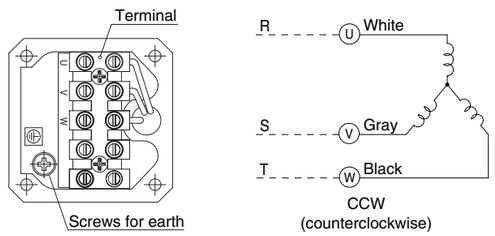
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

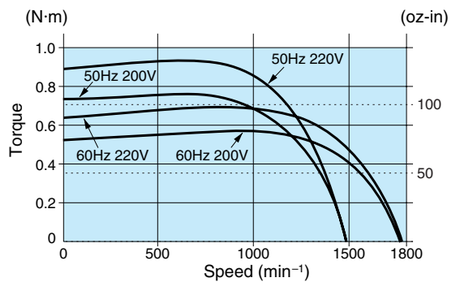
Connection diagram



Change any two lead wires of U, V and W for CW rotation.

Speed-torque characteristics

M9MX40GK4Y

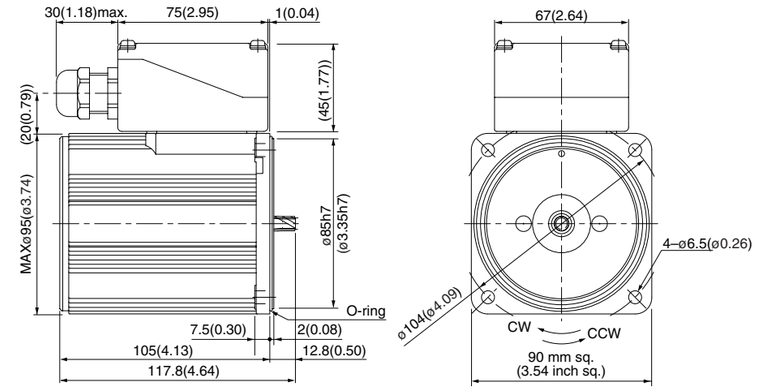


Motor (dimensions)

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

M9MX40GK4Y 4P 40 W 200 V / 220 V

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

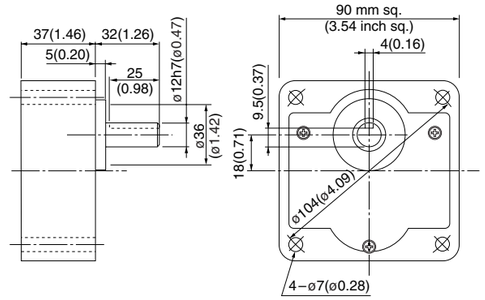


* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

Gear head (dimensions)

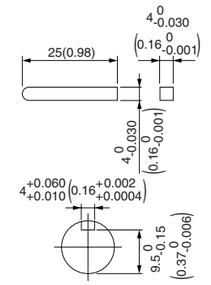
Scale: 1/3, Unit: mm (inch)

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.

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

3-phase motor (sealed connector)

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

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min⁻¹)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
90 mm sq.	M9MX40GK4YG M9MX40GK4YGA	4	40	200	50	Cont.	69	0.31	1350	0.28 (39.7)	0.90	0.72 (102)
					60		68	0.29	1625	0.24 (34.0)	0.82	0.51 (72.2)
				220	60		66	0.28	1675	0.23 (32.6)	0.91	0.63 (89.2)
				230	60		66	0.29	1675	0.23 (32.6)	0.96	0.69 (97.7)
	M9MX40GK4CG M9MX40GK4CGA	4	40	380	50	Cont.	68	0.15	1325	0.29 (41.1)	0.44	0.64 (90.6)
				400	50		66	0.15	1350	0.28 (39.7)	0.47	0.74 (105)

• 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-165.
• The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

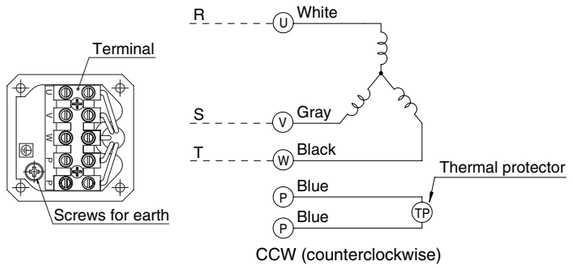
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

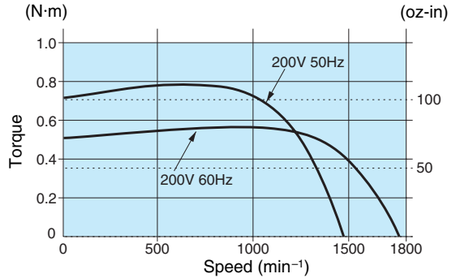
Connection diagram



CCW (counterclockwise)
Change any two lead wires of U, V and W for CW rotation.
(Refer to page A-58 for connection of thermal protector.)

Speed-torque characteristics

M9MX40GK4YG(A)



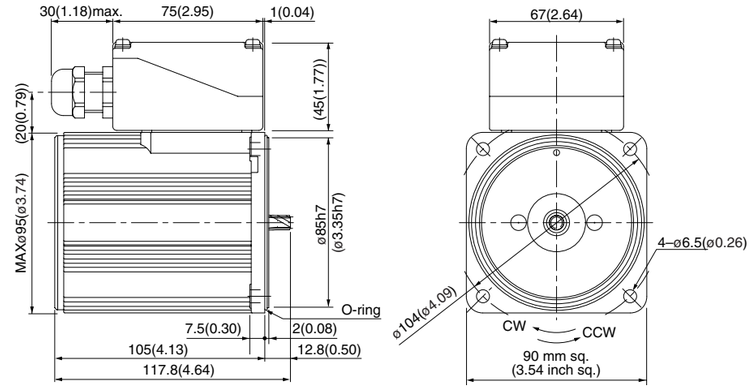
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

M9MX40GK4YG(A) 4P 40 W 200 V / 220 V / 230 V
M9MX40GK4CG(A) 4P 40 W 380 V / 400 V

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

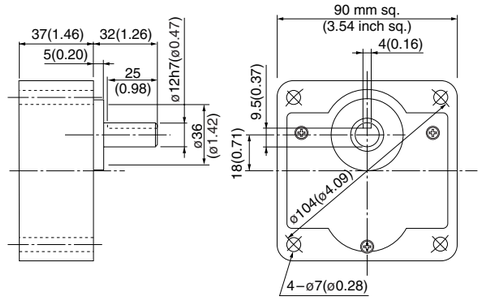


* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

Gear head (dimensions)

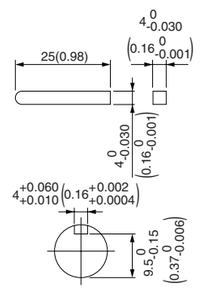
Scale: 1/3, Unit: mm (inch)

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.

3-phase motor (sealed connector)

90 mm (3.54 inch) sq. 60 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min⁻¹)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
90 mm sq.	M9MZ60GK4Y	4	60	200	50	Cont.	101	0.45	1350	0.42 (59.5)	1.3	1.0 (142)
					60		96	0.41	1625	0.35 (49.6)	1.2	0.69 (97.7)
				220	50	Cont.	103	0.46	1375	0.41 (58.1)	1.5	1.2 (170)
					60		98	0.40	1650	0.34 (48.1)	1.3	0.87 (123)

• 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-165.

• Permissible torque at output shaft of gear head

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

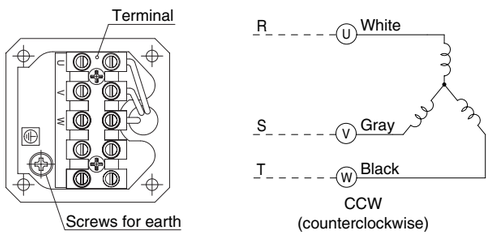
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

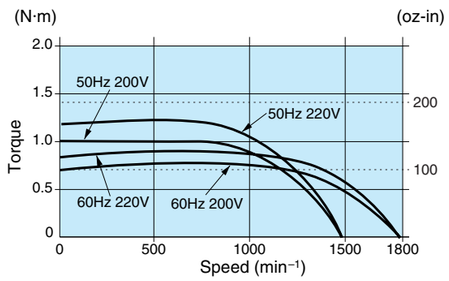
Connection diagram



Change any two lead wires of U, V and W for CW rotation.

Speed-torque characteristics

M9MZ60GK4Y



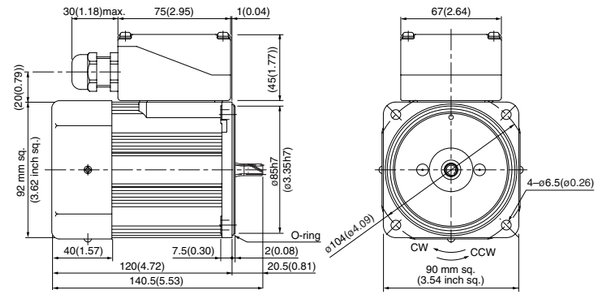
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

M9MZ60GK4Y 4P 60 W 200 V / 220 V (with fan)

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



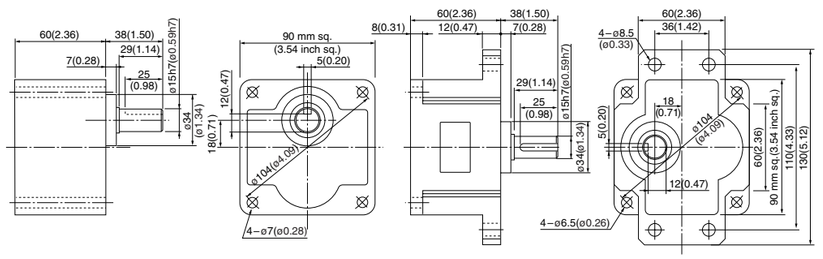
* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

Gear head (dimensions)

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

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

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

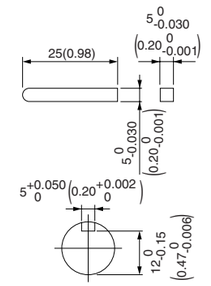


Note) MZ / MY is available for a gear head of either type.

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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



3-phase motor (sealed connector)

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

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min⁻¹)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
90 mm sq.	M9MZ60GK4YG M9MZ60GK4YGA	4	60	200	50	Cont.	101	0.45	1350	0.42 (59.5)	1.3	1.0 (142)
					60		96	0.41	1625	0.35 (49.6)	1.2	0.69 (97.7)
				220	60		98	0.40	1650	0.35 (49.6)	1.3	0.87 (123)
				230	60		98	0.41	1675	0.34 (48.1)	1.4	1.0 (142)
	M9MZ60GK4CG M9MZ60GK4CGA	4	60	380	50	Cont.	103	0.22	1325	0.43 (60.9)	0.62	0.88 (125)
				400	50		103	0.22	1325	0.43 (60.9)	0.65	1.0 (142)

• 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-165.
• The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

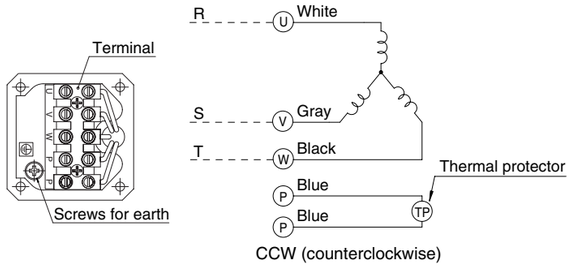
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

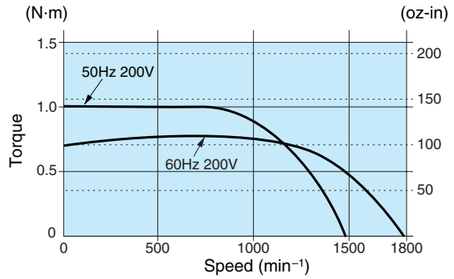
Connection diagram



CCW (counterclockwise)
Change any two lead wires of U, V and W for CW rotation.
(Refer to page A-58 for connection of thermal protector.)

Speed-torque characteristics

M9MZ60GK4YG(A)



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

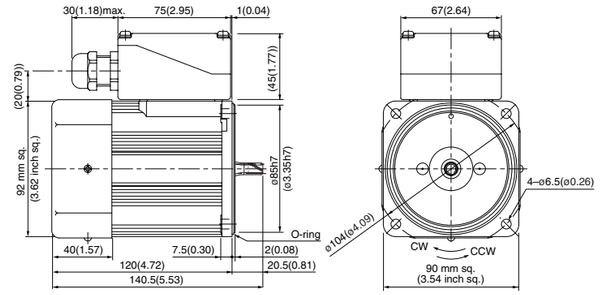
Features B-126 | System configuration B-127 | Coding system B-127 | Model list B-128

Motor (dimensions)

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

M9MZ60GK4YG(A) 4P 60 W 200 V / 220 V / 230 V (with fan)
M9MZ60GK4CG(A) 4P 60 W 380 V / 400 V (with fan)

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

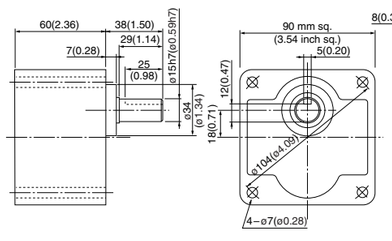


＊ Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

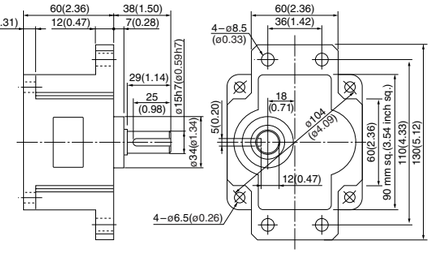
Gear head (dimensions)

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

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



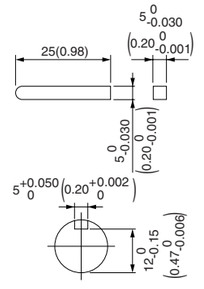
MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg (3.09 lb)



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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



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

Gear head combination B-163 | Round shaft motor B-165 | Decimal gear head B-448 | Gear head -inch (U.S.A.) B-449 | Controls C-4 | Option D-2

3-phase motor (sealed connector)

90 mm (3.54 inch) sq. 90 W

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min⁻¹)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
90 mm sq.	M9MZ90GK4Y	4	90	200	50	Cont.	141	0.62	1350	0.63 (89.2)	2.0	1.6 (227)
					60		137	0.56	1625	0.53 (75.1)	1.8	1.1 (156)
				220	50	Cont.	143	0.65	1400	0.62 (87.8)	2.2	2.0 (283)
					60		137	0.56	1650	0.52 (73.6)	2.0	1.4 (198)

• 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-165.

• Permissible torque at output shaft of gear head

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

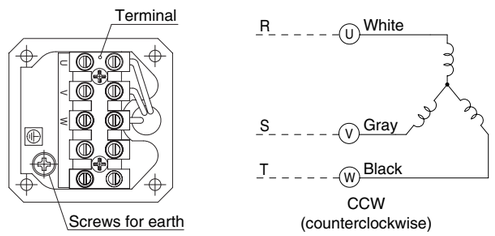
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

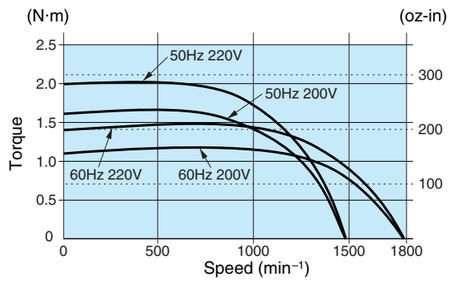
Connection diagram



Change any two lead wires of U, V and W for CW rotation.

Speed-torque characteristics

M9MZ90GK4Y



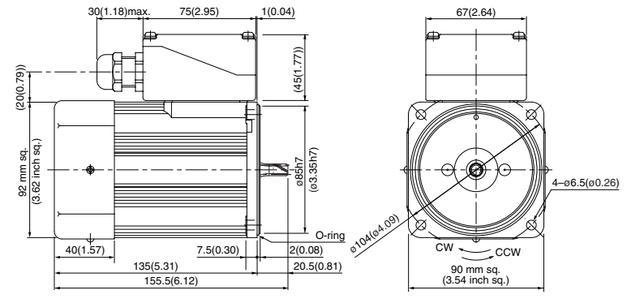
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

Motor (dimensions)

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

M9MZ90GK4Y 4P 90 W 200 V / 220 V (with fan)

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



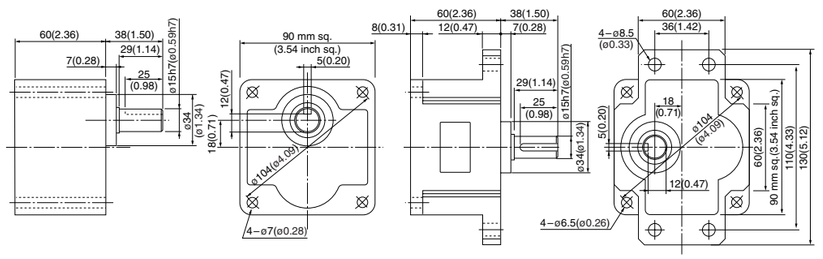
* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

Gear head (dimensions)

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

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

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

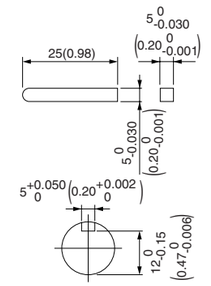


Note) MZ / MY is available for a gear head of either type.

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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



3-phase motor (sealed connector)

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

• Specifications

Size	Motor model No.	Number of pole (P)	Output (W)	Voltage (V)	Frequency (Hz)	Rating (min)	Rating Input (W)	Rating Current (A)	Rating Speed (min⁻¹)	Rating Torque N·m (oz-in)	Starting current (A)	Starting torque N·m (oz-in)
90 mm sq.	M9MZ90GK4YG M9MZ90GK4YGA	4	90	200	50	Cont.	142	0.62	1350	0.63 (89.2)	2.0	1.6 (227)
					60		138	0.56	1625	0.53 (75.1)	1.8	1.1 (156)
				220	60		137	0.56	1650	0.52 (73.6)	2.0	1.4 (198)
				230	60		137	0.58	1675	0.51 (72.2)	2.1	1.6 (227)
	M9MZ90GK4CG M9MZ90GK4CGA	4	90	380	50	Cont.	144	0.31	1325	0.65 (92.0)	1.0	1.4 (198)
				400	50		144	0.31	1350	0.64 (90.6)	1.0	1.6 (227)

• 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-165.
• The models with a motor model number to which "A" is suffixed are not sold or available in Japan.

• Permissible torque at output shaft of gear head

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

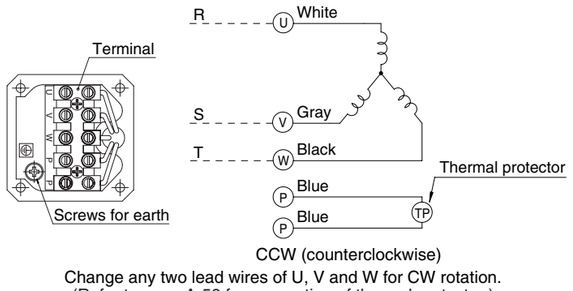
Unit of permissible torque: upper **(N·m)** / lower **(lb-in)**

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

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

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

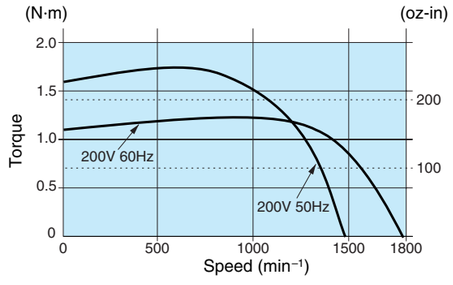
Connection diagram



CCW (counterclockwise)
Change any two lead wires of U, V and W for CW rotation.
(Refer to page A-58 for connection of thermal protector.)

Speed-torque characteristics

M9MZ90GK4YG(A)

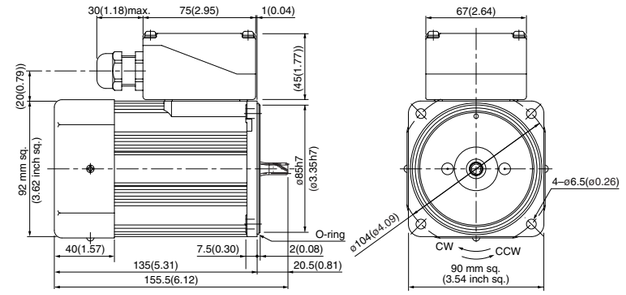


Motor (dimensions)

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

M9MZ90GK4YG(A) 4P 90 W 200 V / 220 V / 230 V (with fan)
M9MZ90GK4CG(A) 4P 90 W 380 V / 400 V (with fan)

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



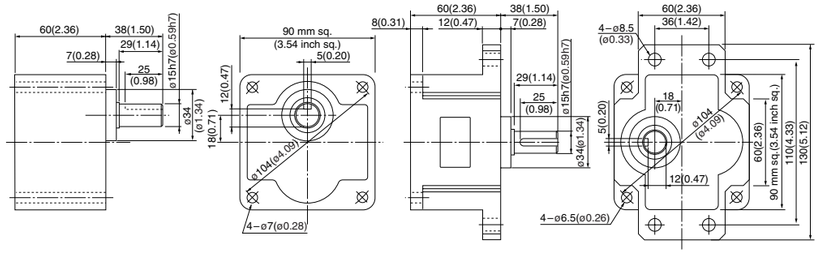
* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

Gear head (dimensions)

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

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

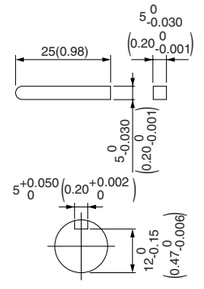
MY9G□B (ball bearing / hinge attached)
Mass 1.4 kg (3.09 lb)



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

Key and keyway (dimensions) [attachment]

MZ9G□B
MY9G□B



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

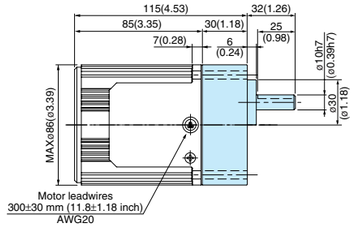
* Please read your User's manual carefully so that you will understand the operation and safety precautions before attempting to operate the system.

3-phase motor (leadwire)

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

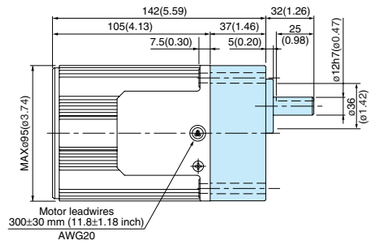
80 mm sq. (3.15 inch sq.) 25 W

M8MX25G4Y + MX8G□B(M)
M8MX25G4YG(A) + MX8G□B(M)



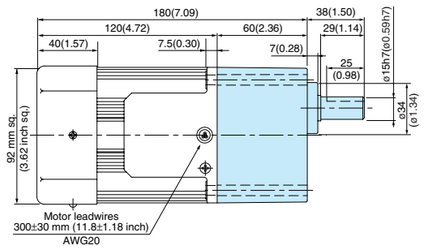
90 mm sq. (3.54 inch sq.) 40 W

M9MX40G4Y + MX9G□B(M)
M9MX40G4YG(A) + MX9G□B(M)



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

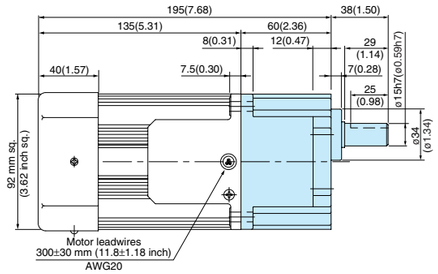
M9MZ60G4Y + MZ9G□B (MY9G□B)
M9MZ60G4YG(A) + MZ9G□B (MY9G□B)



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

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

M9MZ90G4Y + MY9G□B (MZ9G□B)
M9MZ90G4YG(A) + MY9G□B (MZ9G□B)



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

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

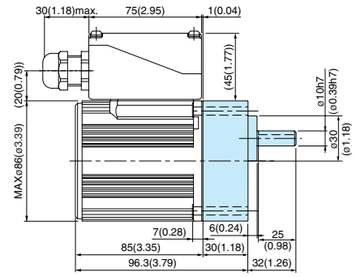
Features B-126 | System configuration B-127 | Coding system B-127 | Model list B-128

3-phase motor (sealed connector)

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

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

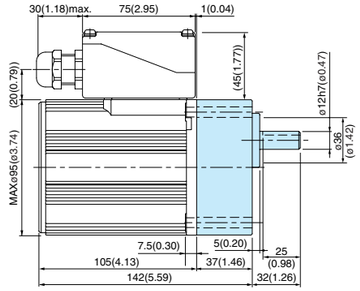
M8MX25GK4Y + MX8G□B(M)
M8MX25GK4YG(A) + MX8G□B(M)
M8MX25GK4CG(A) + MX8G□B(M)



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

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

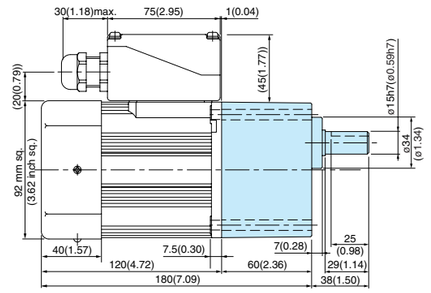
M9MX40GK4Y + MX9G□B(M)
M9MX40GK4YG(A) + MX9G□B(M)
M9MX40GK4CG(A) + MX9G□B(M)



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

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

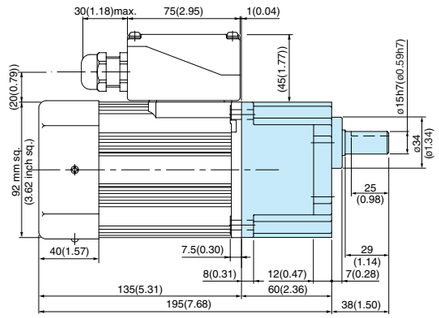
M9MZ60GK4Y + MZ9G□B (MY9G□B)
M9MZ60GK4YG(A) + MZ9G□B (MY9G□B)
M9MZ60GK4CG(A) + MZ9G□B (MY9G□B)



＊ Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).
＊ Refer to page B-444 for high torque gear head.

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

M9MZ90GK4Y + MY9G□B (MZ9G□B)
M9MZ90GK4YG(A) + MY9G□B (MZ9G□B)
M9MZ90GK4CG(A) + MY9G□B (MZ9G□B)



＊ Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).
＊ Refer to page B-444 for high torque gear head.

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

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

Specifications B-130 to B-161 | Controls C-4 | Option D-2

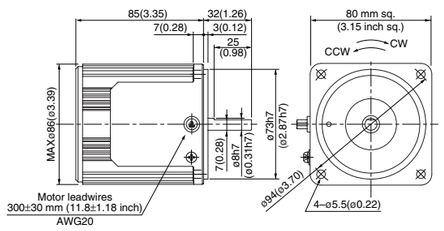
3-phase motor (4-pole round shaft / leadwire)

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

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

Mass 1.5 kg (3.31 lb)

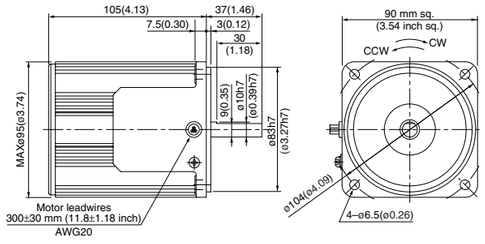
M8MX25S4YS
M8MX25S4YG(A)



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

Mass 2.4 kg (5.29 lb)

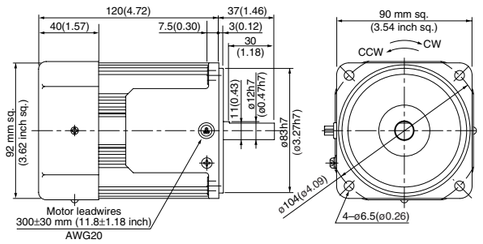
M9MX40S4YS
M9MX40S4YG(A)



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

Mass 2.7 kg (5.95 lb)

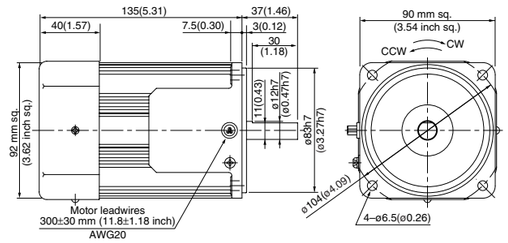
M9MZ60S4YS (with fan)
M9MZ60S4YG(A) (with fan)



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

Mass 3.2 kg (7.05 lb)

M9MZ90S4YS (with fan)
M9MZ90S4YG(A) (with fan)



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

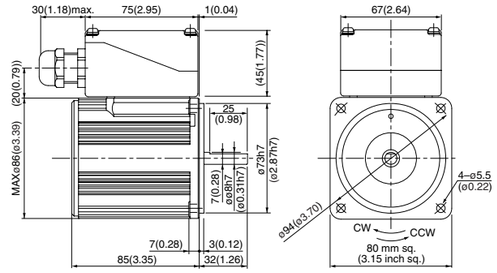
3-phase motor (4-pole round shaft / sealed connector)

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

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

Mass 1.8 kg (3.97 lb)

M8MX25SK4YS
M8MX25SK4YG(A)
M8MX25SK4CG(A)

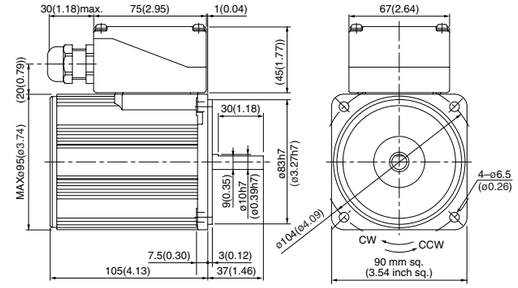


* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

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

Mass 2.8 kg (6.17 lb)

M9MX40SK4YS
M9MX40SK4YG(A)
M9MX40SK4CG(A)

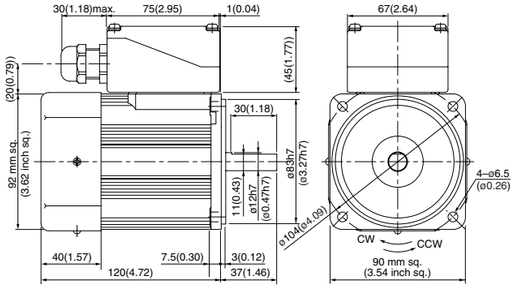


* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

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

Mass 3.0 kg (6.61 lb)

M9MZ60SK4YS (with fan)
M9MZ60SK4YG(A) (with fan)
M9MZ60SK4CG(A) (with fan)

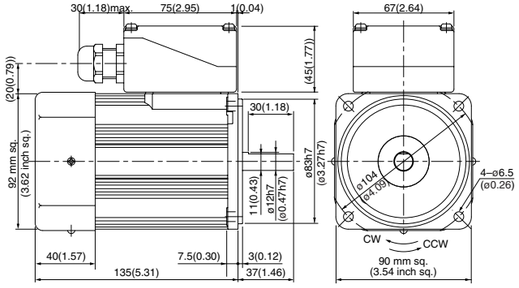


* Diameter of applicable cabtyre cable to be ø8(ø0.31) to ø12(ø0.47).

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

Mass 3.3 kg (7.28 lb)

M9MZ90SK4YS (with fan)
M9MZ90SK4YG(A) (with fan)
M9MZ90SK4CG(A) (with fan)



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

200 V/220 V/230 V round shaft motors with a sealed connector (with a terminal box) are covered by the Electrical Appliance and Material Safety Law. The indications on their nameplate are based on this law.

*The models with a motor model number to which “A” is suffixed are not 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.