

# Partner Products

Panasonic 3-series geared motors



**Lenze**

Panasonic, one of the largest motor manufacturers in the world, have designed and developed a new range of globally approved geared motors. Covering powers from

6 to 90W, these units replace the established G-series range with improved efficiency and longer life, continuing the reputation for quality, value and reliability.



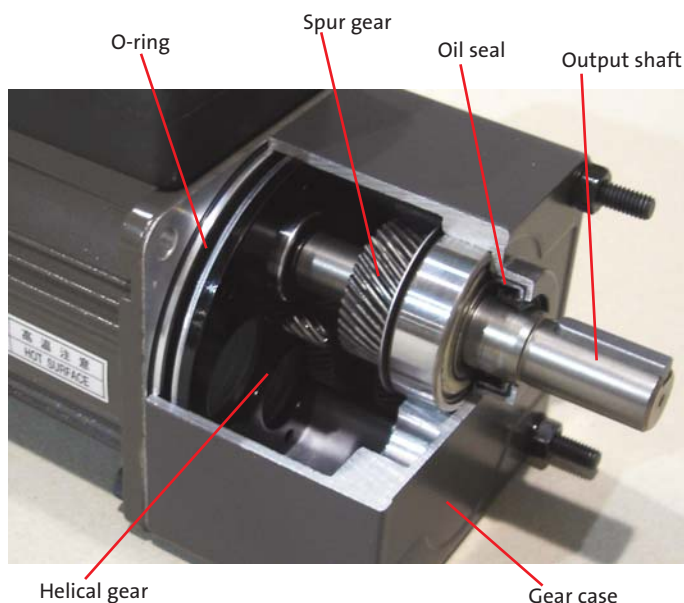
- Sealed for life gearboxes offer a long and maintenance free service life
- Global approval on all models CE/UL/cUL/CCC
- Speed range from 500r/min down to 0.7r/min
- Fixed speed and variable speed models available
- RoHS compliant
- Proven quality and reliability

### Construction

The Panasonic geared motors are designed for 1 or 3 phase supply. The 6-40W models are all self cooled and the 60 and 90W units are supplied with a cooling fan. Gearboxes use a combination of helical and spur gears for high speed efficient running with grease lubrication. Standard ratios of 3:1 to 200:1. However, where higher ratios and lower speeds are required, an intermediate 10:1 decimal gearbox can be fitted.

### Other models available

- Geared motors for 110V and 60Hz supply
- 400V brake motors
- 1 phase variable speed motors



### Applications

- Conveyors
- Food machinery
- Packaging
- Pumps
- Labelling
- Test equipment

### Range overview

#### 1 phase

Geared motors suitable for running at fixed speed in a power range 6 to 90W.

#### Quick reversing

Single phase geared motors with a built-in constant friction brake that reduces overrun.

#### 3 phase

Geared motors ranging from 25-90W. The 230V versions suit variable speed running with an inverter. The 400V versions are designed to be connected directly to 3 phase supplies.

#### Brake motor

Geared motors with an integrated spring applied brake for 1 or 3 phase 230V supply.

Other gearbox ratios are available although may not be available from stock.

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## Service factors

To maintain the life of the geared motor, a service factor must be selected which is dependent upon type of load and duty. From the below table, examples are given of typical applications. For example, under constant load a service factor of 1.0 should be used.

Type of load	Application	Service factor		
		5 h/day	8 h/day	24 h/day
Constant	Belt conveyor, Film winding One-way operation	0.8	1.0	1.5
Light impact	Start/Stop/Cam operation	1.2	1.5	2.0
Medium impact	Instant Reverse operation with Reversible motor Instant stall operation with brake pack	1.5	2.0	2.5
Heavy impact	Repetition of medium impact Instant stall of the motor at vibrating material	2.0 ~ 2.5	2.5 ~ 3.0	3.0 ~ 3.5

## Actual speeds

The actual output speed under rated torque is typically 10-20% less than the nominal speed. Motor speed – torque curves give the motor full load rated speed and indication of how speed varies with load. Speed torque curves are available on request. Nominal speeds are based on a nominal motor speed of 1500 r/min.

## Brake motors

Brake motors feature a built-in spring applied electromagnetic brake. This reduces stopping times and gives a static holding torque.

Motor overrun is normally 2-4 revolutions and the brake is rated for 6 operations per minute.

See pages 26-35.

## Quick Reversible motors

When power is removed from Reversible motors, braking torque will be generated due to a built-in constant friction braking system resulting in quick stopping.

The amount of overrun is dependant upon inertia and type of load being driven. The overrun values in the table are guide values at the motor and do not include gearbox ratio or load inertia.

See pages 8-17.



Output (W)	Braking torque (Ncm)	Overrun (revolution)
6	0.5	5.0
15	0.8	4.5
25	1.0	5.5
40	2.0	6.0
60	3.9	6.0
90	3.9	6.0

For constant speed applications, Panasonic offer a range of standard induction and brake motors for both single and three phase supplies. Quick reversible motors are only available for single phase supplies.

## **1 phase standard induction motors (pages 8-17)**

- continuous rating S1
- thermally or impedance protected
- class B insulation

All the induction motors in the range are highly efficient and quiet in operation. The same high quality design and basic construction is used throughout the range. All motors are 4 pole with a nominal speed of 1500 r/min at 50 Hz.



## **1 phase quick reversible motors (pages 8-17)**

- built-in constant friction braking system
- reduced overrun and fast stopping
- ideal for quick reversing or stop/start applications

A friction plate attached to the end of the rotor is constantly under friction via four cylindrical brake pads and springs. The resulting braking torque is continuously applied to the motor even during motor running. When power is removed, this friction results in faster stopping of the motor.



## **3 phase induction motors (pages 18-25)**

- continuous rating S1
- thermally protected
- class B insulation

Three phase motors deliver improved torque performance compared to single phase models.

The 230V versions suit variable speed operation when used with inverters. The 400V versions are designed to be connected directly to 3 phase supplies.



## **1 & 3 phase brake motors (pages 26-35)**

- spring applied electromagnetic brake
- built-in rectifier
- gives static holding torque with power off

The brake releases automatically when the motor is powered, leaving no residual torque. When the motor is switched off the brake re-engages. Motor overrun is typically 2-4 revolutions and the brake is rated for six operations per minute.



Variable speed operation can be achieved by combining the 230V 3 phase geared motors with an inverter. There are three readily available options:

## smd inverter

Designed for general purpose applications, Lenze smd inverters offer compact design, simple installation and fast set-up.



- Integrated RFI filter
- Innovative EPM plug-in memory chip
- Compliant CE, UL, cUL
- Quick commissioning, integrated keypad and pre-configured settings
- Options of DIN rail mounting, dc braking and remote keypad

The smd model [ESMD251X2SFA](#) has a rated output power of 0.25kW and suits any geared motors rated for 230V 3 phase input. Inverter power supply is 180-264V, 48-62Hz and dimensions are 93 wide x 146 high x 83 deep. Features include up to 3 pre-set jog speeds, voltage boost, dc injection braking, adjustable chopper frequency between 4 and 10Hz, digital and analog inputs and relay output.

## SMV inverter

The SMV inverters feature IP65 enclosure so they can be mounted on the machine without needing a panel.



- IP65 enclosure, needs no panel
- Integrated RFI filter
- Innovative EPM plug-in memory chip
- Compliant CE, UL, cUL, RoHS
- Quick commissioning, integrated keypad and pre-configured settings
- Sensorless vector high performance

The SMV model [ESV371N02SFC](#) has a rated output power of 0.37kW and suits any geared motors rated for 230V 3 phase input. Inverter power supply is 180-264V, 48-62Hz and dimensions are 160 wide, 203 high and 114 deep.

## Micro-Inverter

The Panasonic Micro-Inverter is a particularly compact drive that is simple to operate.

There are two versions available: one suitable for the 25 and 40W motors and another for the 60 and 90W motors.

Features include acceleration/deceleration ramp, built-in or external speed potentiometer and dynamic braking.

Further information available on request.



## Options

- DIN rail mounting kit [ESMD093DR](#)
- Pack of EPM memory chips [ESMD01BP](#)
- EPM programmer, battery powered [ESMD01EP](#)

For more information see [www.lenze.com](http://www.lenze.com) under Products/Frequency inverters.



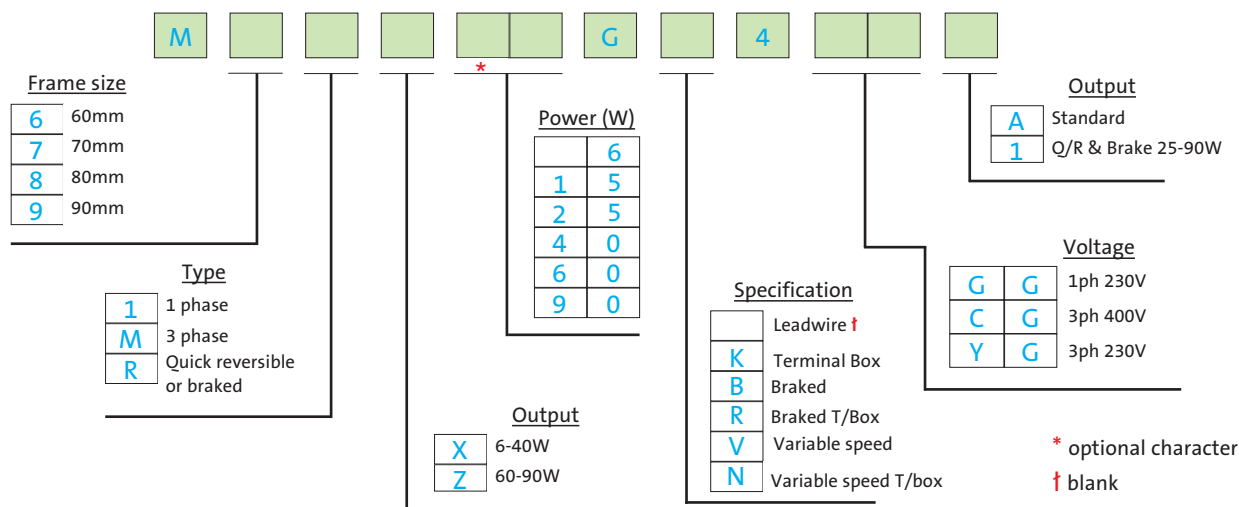
## Options

- Pack of EPM memory chips [ESMD01BP](#)
- EPM programmer, battery powered [ESMD01EP](#)

For more information see [www.lenze.com](http://www.lenze.com) under Products/Frequency inverters.

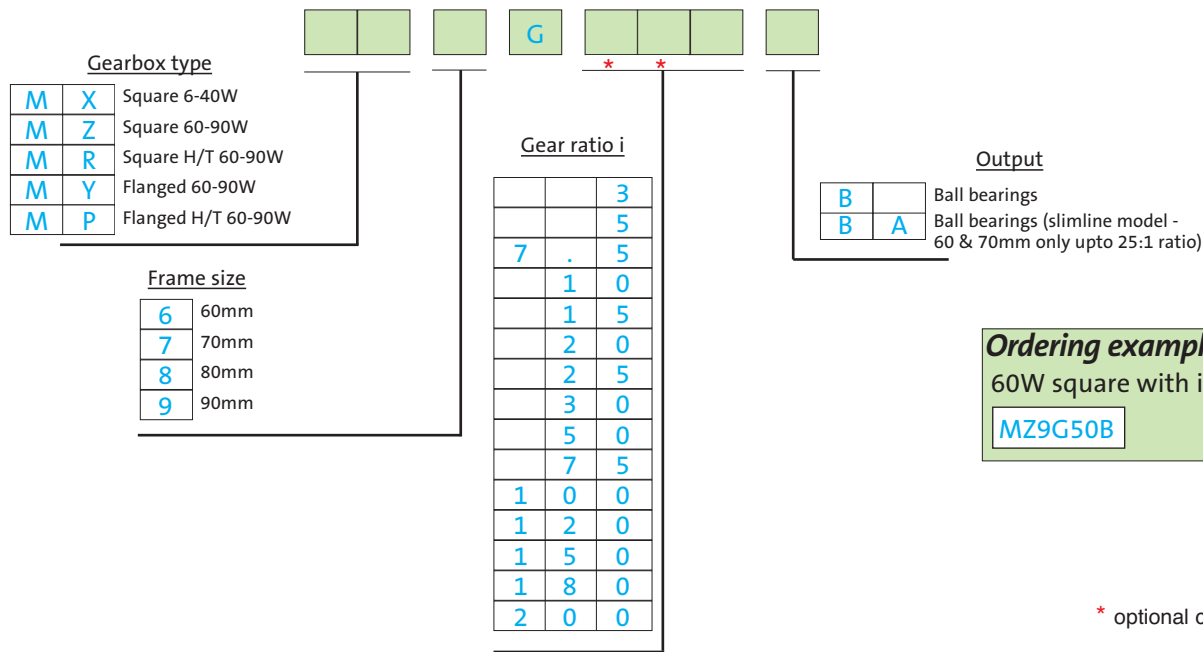


Motor



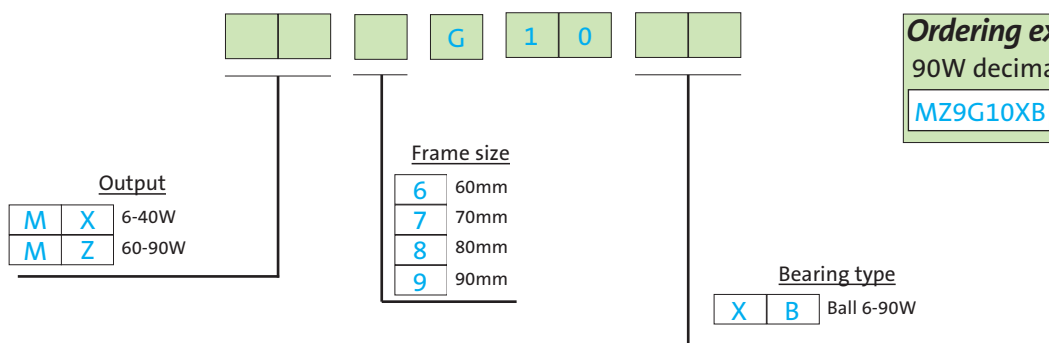
**Ordering example**  
25W 1 phase 230V brake motor with terminal box.  
**M8RX25GR4GG1**

Gearbox



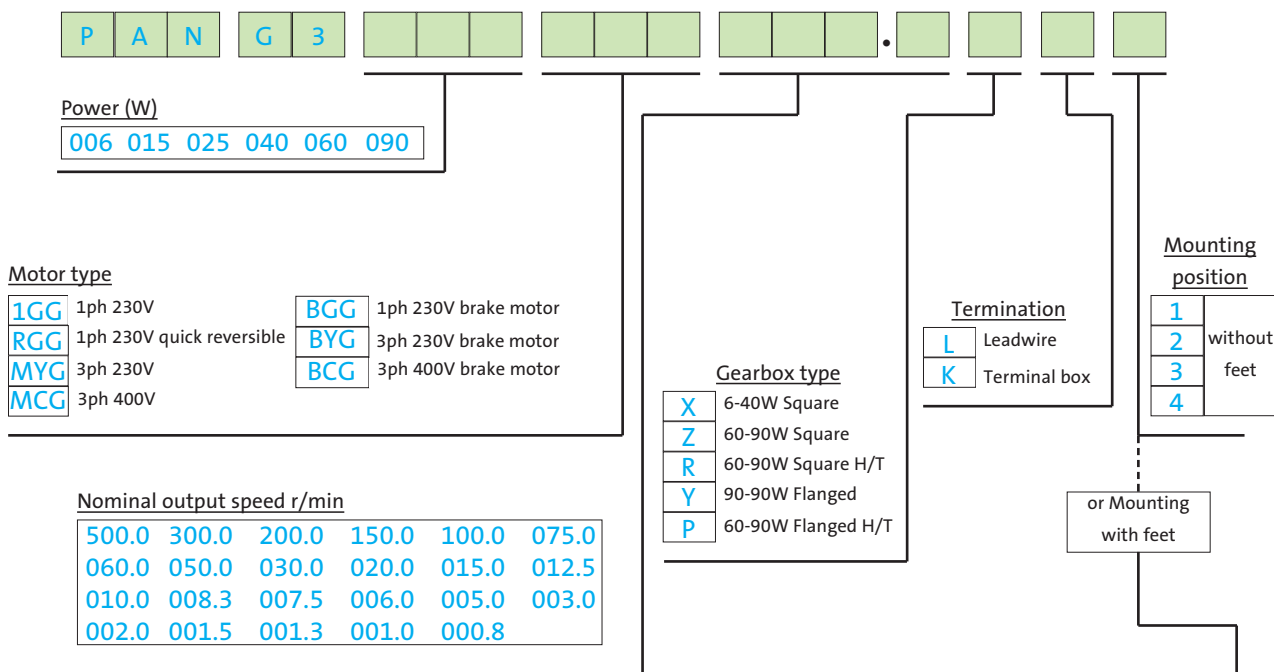
**Ordering example**  
60W square with i = 50  
**MZ9G50B**

Decimal Gearbox (additional requirement for speeds 7.5 r/min and below)



**Ordering example**  
90W decimal gearbox  
**MZ9G10XB**

# Panasonic | assembly part number coding



## Ordering example

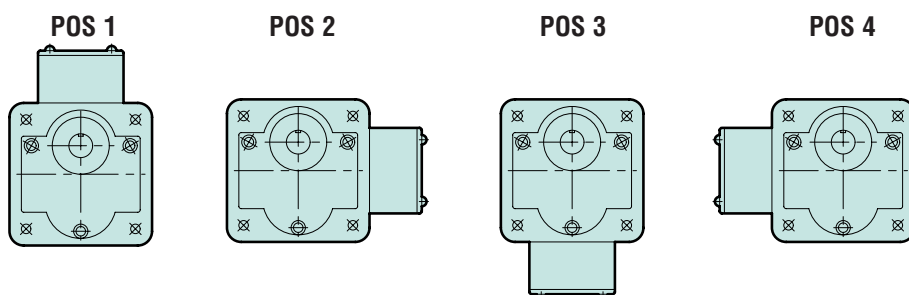
60W 230V 3 phase motor, 7.5r/min, square gearbox, mounting position 1, foot position 2.

**PAN G3 060 MYG 007.5 ZKB**

Mounting position 1	Mounting position 2	Mounting position 3	Mounting position 4
<b>A</b> Foot pos 1	<b>E</b> Foot pos 1	<b>I</b> Foot pos 1	<b>M</b> Foot pos 1
<b>B</b> Foot pos 2	<b>F</b> Foot pos 2	<b>J</b> Foot pos 2	<b>N</b> Foot pos 2
<b>C</b> Foot pos 3	<b>G</b> Foot pos 3	<b>K</b> Foot pos 3	<b>O</b> Foot pos 3
<b>D</b> Foot pos 4	<b>H</b> Foot pos 4	<b>L</b> Foot pos 4	<b>P</b> Foot pos 4

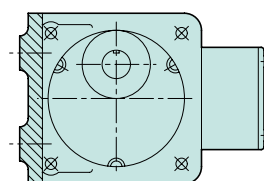
## Terminal box/lead wire positions

The terminal box position is described when viewed from the output shaft end of the geared motor. Unless specified when ordering, the standard terminal box position 1 will be supplied.



## Example

Foot position 2

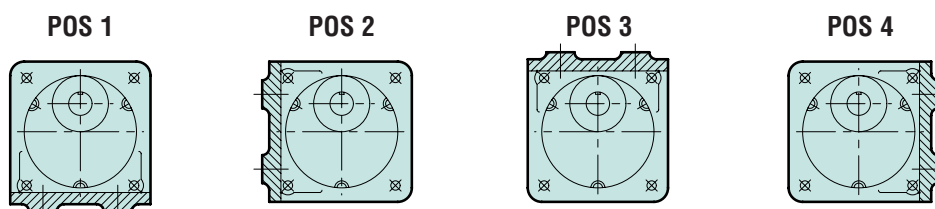


Terminal box position 2

## Foot positions

The foot position is described when viewed from the output shaft end of the geared motor.

Unless specified when ordering, the standard foot position 1 will be supplied.

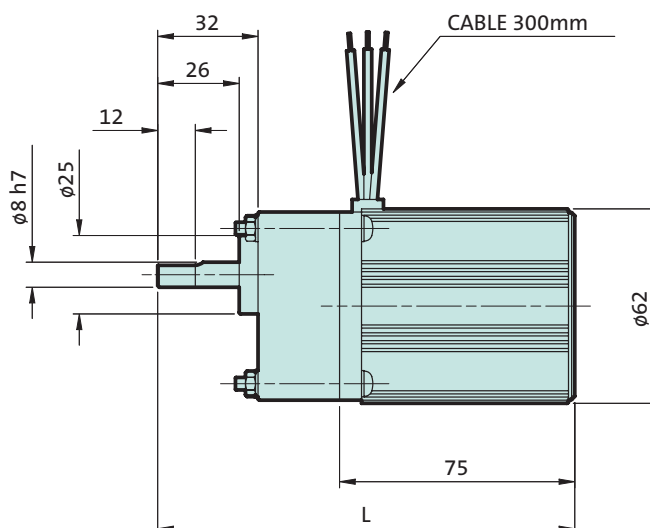
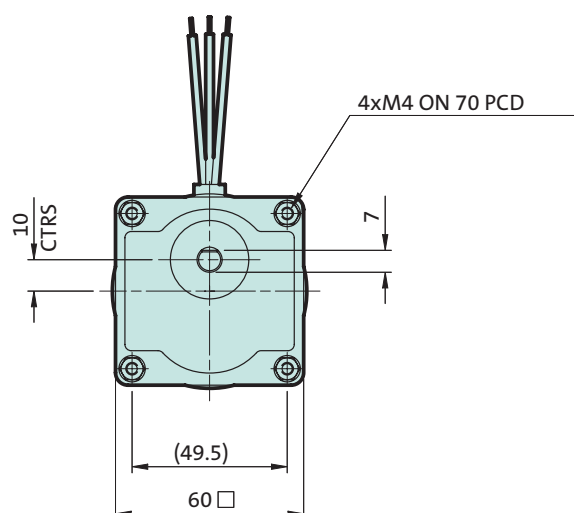


Standard induction motors are suitable for fixed speed applications. Quick Reversible motors have a built-in braking system for reduced overrun and fast reversing.



- Rated 230V  $\pm$  10% and 50 Hz
- Continuous duty S1
- Enclosure IP22 (cable downwards)
- Supplied with run capacitor (0.6 $\mu$ F Standard, 0.8 $\mu$ F QR)
- Thermal protection by impedance current limiting
- RoHS compliant

MX6G gearbox



Nominal speed r/min	Gearbox model number	Standard Induction Motor Model Number : M61X6G4GGA			Quick Reversible Motor Model Number : M6RX6G4GGA			Length L	Weight kg
		Actual speed @230V	Rated torque Nm	Assembly number	Actual speed @230V	Rated torque Nm	Assembly number		
500	MX6G 3BA	417	0.1	PAN G3 006 1GG 500.0 XL1	433	0.1	PAN G3 006 RGG 500.0 XL1	133	1.0
300	MX6G 5BA	250	0.2	PAN G3 006 1GG 300.0 XL1	260	0.2	PAN G3 006 RGG 300.0 XL1	133	
200	MX6G 7.5BA	167	0.3	PAN G3 006 1GG 200.0 XL1	173	0.3	PAN G3 006 RGG 200.0 XL1	133	
150	MX6G 10BA	125	0.4	PAN G3 006 1GG 150.0 XL1	130	0.4	PAN G3 006 RGG 150.0 XL1	133	
100	MX6G 15BA	83	0.6	PAN G3 006 1GG 100.0 XL1	87	0.5	PAN G3 006 RGG 100.0 XL1	133	
75	MX6G 20BA	63	0.7	PAN G3 006 1GG 075.0 XL1	65	0.7	PAN G3 006 RGG 075.0 XL1	133	
60	MX6G 25BA	50	0.9	PAN G3 006 1GG 060.0 XL1	52	0.9	PAN G3 006 RGG 060.0 XL1	133	
50	MX6G 30B	42	1.0	PAN G3 006 1GG 050.0 XL1	43	1.0	PAN G3 006 RGG 050.0 XL1	140	
30	MX6G 50B	25	1.7	PAN G3 006 1GG 030.0 XL1	26	1.7	PAN G3 006 RGG 030.0 XL1	140	
20	MX6G 75B*	17	2.3	PAN G3 006 1GG 020.0 XL1	17	2.5	PAN G3 006 RGG 020.0 XL1	140	
15	MX6G 100B*	13	2.5	PAN G3 006 1GG 015.0 XL1	13	2.5	PAN G3 006 RGG 015.0 XL1	140	
12.5	MX6G 120B*	10	2.5	PAN G3 006 1GG 012.5 XL1	11	2.5	PAN G3 006 RGG 012.5 XL1	140	
10	MX6G 150B*	8.3	2.5	PAN G3 006 1GG 010.0 XL1	8.7	2.5	PAN G3 006 RGG 010.0 XL1	140	
8.3	MX6G 180B*	6.9	2.5	PAN G3 006 1GG 008.3 XL1	7.2	2.5	PAN G3 006 RGG 008.3 XL1	140	
	MX6G 10XB*	Additional gearbox MX6G 10XB is included for speeds of 7.5 r/min and below							
7.5	MX6G 20BA*	6.3	2.5	PAN G3 006 1GG 007.5 XL1	6.5	2.5	PAN G3 006 RGG 007.5 XL1	157.5	1.2
6.0	MX6G 25BA*	5.0	2.5	PAN G3 006 1GG 006.0 XL1	5.2	2.5	PAN G3 006 RGG 006.0 XL1	157.5	
5.0	MX6G 30B*	4.2	2.5	PAN G3 006 1GG 005.0 XL1	4.3	2.5	PAN G3 006 RGG 005.0 XL1	164.5	
3.0	MX6G 50B*	2.5	2.5	PAN G3 006 1GG 003.0 XL1	2.6	2.5	PAN G3 006 RGG 003.0 XL1	164.5	
2.0	MX6G 75B*	1.7	2.5	PAN G3 006 1GG 002.0 XL1	1.7	2.5	PAN G3 006 RGG 002.0 XL1	164.5	
1.5	MX6G 100B*	1.3	2.5	PAN G3 006 1GG 001.5 XL1	1.3	2.5	PAN G3 006 RGG 001.5 XL1	164.5	
1.3	MX6G 120B*	1.0	2.5	PAN G3 006 1GG 001.3 XL1	1.1	2.5	PAN G3 006 RGG 001.3 XL1	164.5	
1.0	MX6G 150B*	0.8	2.5	PAN G3 006 1GG 001.0 XL1	0.9	2.5	PAN G3 006 RGG 001.0 XL1	164.5	
0.8	MX6G 180B*	0.7	2.5	PAN G3 006 1GG 000.8 XL1	0.7	2.5	PAN G3 006 RGG 000.8 XL1	164.5	

\* torque limiter recommended

The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

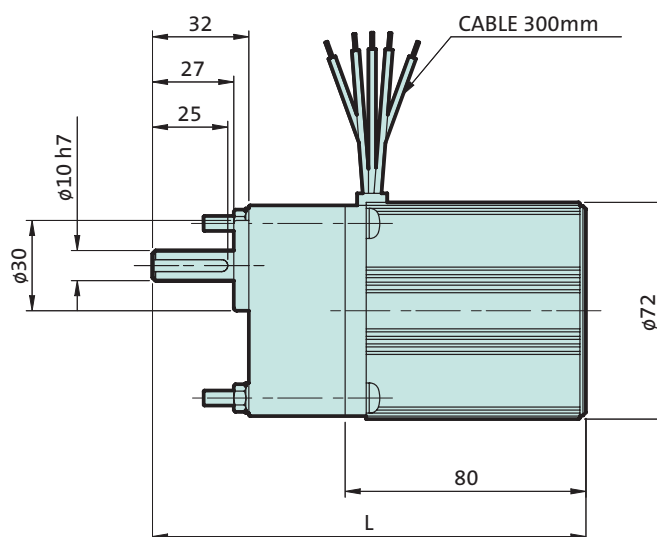
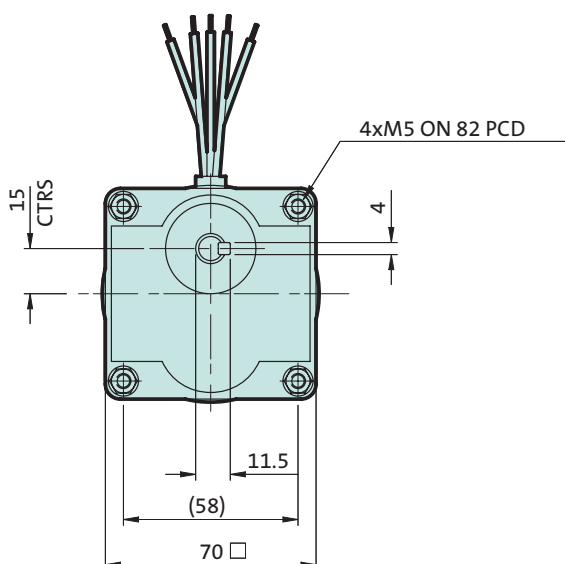
Motor details see page 38.

Standard induction motors are suitable for fixed speed applications. Quick Reversible motors have a built-in braking system for reduced overrun and fast reversing.



- Rated 230V  $\pm$  10% and 50 Hz
- Continuous duty S1
- Enclosure IP22 (cable downwards)
- Supplied with run capacitor (Standard 1.2 $\mu$ F, 1.3 $\mu$ F for Quick Reversible)
- Integrated thermal protection switch (For external connection)
- RoHS compliant

MX7G gearbox



Nominal speed r/min	Gearbox model number	Standard Induction Motor Model Number : M71X15G4GGA			Quick Reversible Motor Model Number : M7RX15G4GGA			Length L	Weight kg
		Actual speed @230V	Rated torque Nm	Assembly number	Actual speed @230V	Rated torque Nm	Assembly number		
500	MX7G 3BA	433	0.3	PAN G3 015 1GG 500.0 XL1	433	0.3	PAN G3 015 RGG 500.0 XL1	142	1.6
300	MX7G 5BA	260	0.4	PAN G3 015 1GG 300.0 XL1	260	0.4	PAN G3 015 RGG 300.0 XL1	142	
200	MX7G 7.5BA	173	0.7	PAN G3 015 1GG 200.0 XL1	173	0.7	PAN G3 015 RGG 200.0 XL1	142	
150	MX7G 10BA	130	0.9	PAN G3 015 1GG 150.0 XL1	130	0.9	PAN G3 015 RGG 150.0 XL1	142	
100	MX7G 15BA	87	1.3	PAN G3 015 1GG 100.0 XL1	87	1.3	PAN G3 015 RGG 100.0 XL1	142	
75	MX7G 20BA	65	1.8	PAN G3 015 1GG 075.0 XL1	65	1.8	PAN G3 015 RGG 075.0 XL1	142	
60	MX7G 25BA	52	2.2	PAN G3 015 1GG 060.0 XL1	52	2.2	PAN G3 015 RGG 060.0 XL1	142	
50	MX7G 30B	43	2.5	PAN G3 015 1GG 050.0 XL1	43	2.5	PAN G3 015 RGG 050.0 XL1	148	
30	MX7G 50B	26	4.1	PAN G3 015 1GG 030.0 XL1	26	4.1	PAN G3 015 RGG 030.0 XL1	148	
20	MX7G 75B*	17	4.9	PAN G3 015 1GG 020.0 XL1	17	4.9	PAN G3 015 RGG 020.0 XL1	148	
15	MX7G 100B*	13	4.9	PAN G3 015 1GG 015.0 XL1	13	4.9	PAN G3 015 RGG 015.0 XL1	148	
12.5	MX7G 120B*	11	4.9	PAN G3 015 1GG 012.5 XL1	11	4.9	PAN G3 015 RGG 012.5 XL1	148	
10	MX7G 150B*	8.7	4.9	PAN G3 015 1GG 010.0 XL1	8.7	4.9	PAN G3 015 RGG 010.0 XL1	148	
8.3	MX7G 180B*	7.2	4.9	PAN G3 015 1GG 008.3 XL1	7.2	4.9	PAN G3 015 RGG 008.3 XL1	148	
	MX7G 10XB*	Additional gearbox MX7G 10XB is included for speeds of 7.5 r/min and below							
7.5	MX7G 20BA*	6.5	4.9	PAN G3 015 1GG 007.5 XL1	6.5	4.9	PAN G3 015 RGG 007.5 XL1	170	2.0
6.0	MX7G 25BA*	5.2	4.9	PAN G3 015 1GG 006.0 XL1	5.2	4.9	PAN G3 015 RGG 006.0 XL1	170	
5.0	MX7G 30B*	4.3	4.9	PAN G3 015 1GG 005.0 XL1	4.3	4.9	PAN G3 015 RGG 005.0 XL1	176	
3.0	MX7G 50B*	2.6	4.9	PAN G3 015 1GG 003.0 XL1	2.6	4.9	PAN G3 015 RGG 003.0 XL1	176	
2.0	MX7G 75B*	1.7	4.9	PAN G3 015 1GG 002.0 XL1	1.7	4.9	PAN G3 015 RGG 002.0 XL1	176	
1.5	MX7G 100B*	1.3	4.9	PAN G3 015 1GG 001.5 XL1	1.3	4.9	PAN G3 015 RGG 001.5 XL1	176	
1.3	MX7G 120B*	1.1	4.9	PAN G3 015 1GG 001.3 XL1	1.1	4.9	PAN G3 015 RGG 001.3 XL1	176	
1.0	MX7G 150B*	0.9	4.9	PAN G3 015 1GG 001.0 XL1	0.9	4.9	PAN G3 015 RGG 001.0 XL1	176	
0.8	MX7G 180B*	0.7	4.9	PAN G3 015 1GG 000.8 XL1	0.7	4.9	PAN G3 015 RGG 000.8 XL1	176	

\* torque limiter recommended

The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

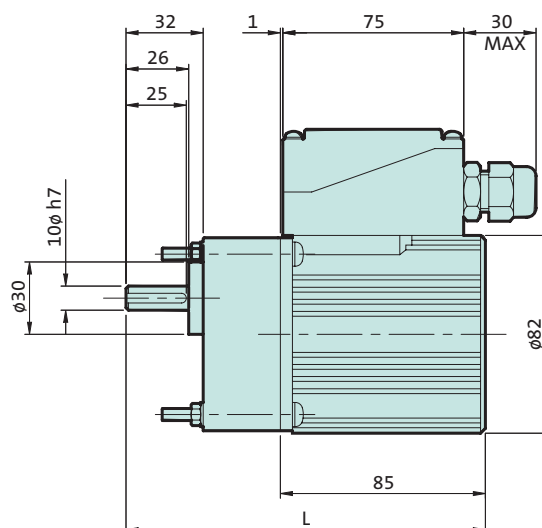
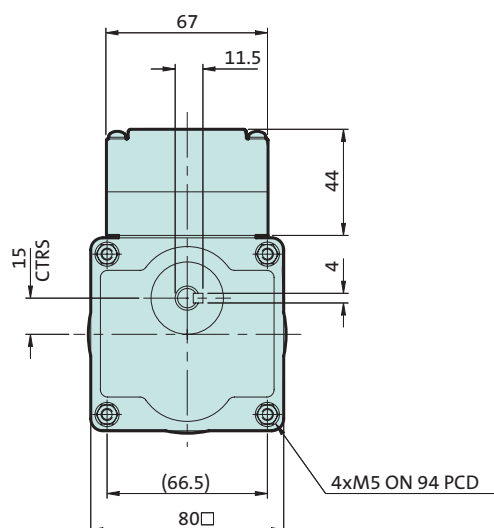
Motor details see page 38.

Standard induction motors are suitable for fixed speed applications. Quick Reversible motors have a built-in braking system for reduced overrun and fast reversing.



- Rated 230V  $\pm$  10% and 50 Hz
- Continuous duty S1
- Enclosure IP54
- Supplied with run capacitor (1.5 $\mu$ F for standard, 2.0 $\mu$ F for Quick Reversible)
- Integrated thermal protection switch (For external connection)
- RoHS compliant

MX8G gearbox



Nominal speed r/min	Gearbox model number	Standard Induction Motor Model Number : M81X25GK4GGA			Quick Reversible Motor Model Number : M8RX25GK4GG1			Length L	Weight kg
		Actual speed @230V	Rated torque Nm	Assembly number	Actual speed @230V	Rated torque Nm	Assembly number		
500	MX8G 3B	417	0.5	PAN G3 025 1GG 500.0 XK1	425	0.5	PAN G3 025 RGG 500.0 XK1	147	2.2
300	MX8G 5B	250	0.8	PAN G3 025 1GG 300.0 XK1	255	0.8	PAN G3 025 RGG 300.0 XK1	147	
200	MX8G 7.5B	167	1.2	PAN G3 025 1GG 200.0 XK1	170	1.2	PAN G3 025 RGG 200.0 XK1	147	
150	MX8G 10B	125	1.5	PAN G3 025 1GG 150.0 XK1	128	1.5	PAN G3 025 RGG 150.0 XK1	147	
100	MX8G 15B	83	2.3	PAN G3 025 1GG 100.0 XK1	85	2.3	PAN G3 025 RGG 100.0 XK1	147	
75	MX8G 20B	63	3.1	PAN G3 025 1GG 075.0 XK1	64	3.1	PAN G3 025 RGG 075.0 XK1	147	
60	MX8G 25B	50	3.8	PAN G3 025 1GG 060.0 XK1	51	3.8	PAN G3 025 RGG 060.0 XK1	147	
50	MX8G 30B	42	4.3	PAN G3 025 1GG 050.0 XK1	43	4.3	PAN G3 025 RGG 050.0 XK1	147	
30	MX8G 50B	25	7.1	PAN G3 025 1GG 030.0 XK1	26	7.1	PAN G3 025 RGG 030.0 XK1	147	
20	MX8G 75B*	17	7.8	PAN G3 025 1GG 020.0 XK1	17	7.8	PAN G3 025 RGG 020.0 XK1	147	
15	MX8G 100B*	13	7.8	PAN G3 025 1GG 015.0 XK1	13	7.8	PAN G3 025 RGG 015.0 XK1	147	
12.5	MX8G 120B*	10	7.8	PAN G3 025 1GG 012.5 XK1	11	7.8	PAN G3 025 RGG 012.5 XK1	147	
10	MX8G 150B*	8.3	7.8	PAN G3 025 1GG 010.0 XK1	8.5	7.8	PAN G3 025 RGG 010.0 XK1	147	
8.3	MX8G 180B*	6.9	7.8	PAN G3 025 1GG 008.3 XK1	7.1	7.8	PAN G3 025 RGG 008.3 XK1	147	
MX8G 10XB* Additional gearbox MX8G 10XB is included for speeds of 7.5 r/min and below									
7.5	MX8G 20B*	6.3	7.8	PAN G3 025 1GG 007.5 XK1	6.4	7.8	PAN G3 025 RGG 007.5 XK1	177	2.6
6.0	MX8G 25B*	5.0	7.8	PAN G3 025 1GG 006.0 XK1	5.1	7.8	PAN G3 025 RGG 006.0 XK1	177	
5.0	MX8G 30B*	4.2	7.8	PAN G3 025 1GG 005.0 XK1	4.3	7.8	PAN G3 025 RGG 005.0 XK1	177	
3.0	MX8G 50B*	2.5	7.8	PAN G3 025 1GG 003.0 XK1	2.6	7.8	PAN G3 025 RGG 003.0 XK1	177	
2.0	MX8G 75B*	1.7	7.8	PAN G3 025 1GG 002.0 XK1	1.7	7.8	PAN G3 025 RGG 002.0 XK1	177	
1.5	MX8G 100B*	1.3	7.8	PAN G3 025 1GG 001.5 XK1	1.3	7.8	PAN G3 025 RGG 001.5 XK1	177	
1.3	MX8G 120B*	1.0	7.8	PAN G3 025 1GG 001.3 XK1	1.1	7.8	PAN G3 025 RGG 001.3 XK1	177	
1.0	MX8G 150B*	0.8	7.8	PAN G3 025 1GG 001.0 XK1	0.9	7.8	PAN G3 025 RGG 001.0 XK1	177	
0.8	MX8G 180B*	0.7	7.8	PAN G3 025 1GG 000.8 XK1	0.7	7.8	PAN G3 025 RGG 000.8 XK1	177	

\* torque limiter recommended

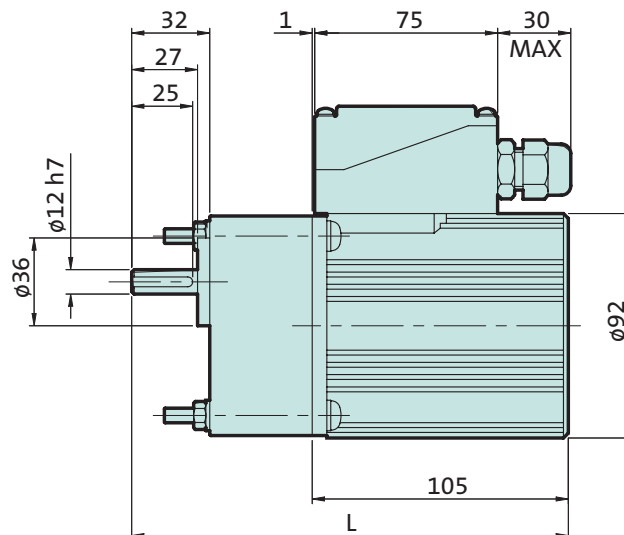
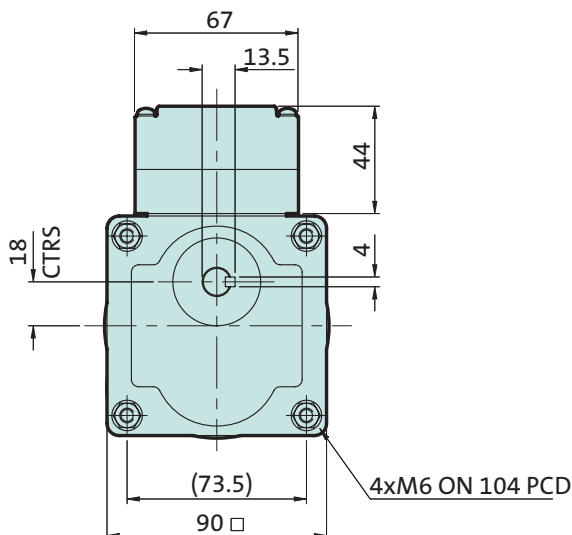
The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

Motor details see page 38.

Standard induction motors are suitable for fixed speed applications. Quick Reversible motors have a built-in braking system for reduced overrun and fast reversing.

- Rated 230V  $\pm$  10% and 50 Hz
- Standard induction motor rated S1, Quick Reversible S2 intermittent duty
- Enclosure IP54
- Supplied with run capacitor (Standard Induction 2.5  $\mu$ F, Quick Reversible 3.5 $\mu$ F)
- Integrated thermal protection switch (For external connection)
- RoHS compliant

MX9G gearbox



Nominal speed r/min	Gearbox model number	Standard Induction Motor Model Number : M91X40GK4GGA			Quick Reversible Motor Model Number : M9RX40GK4GG1			Length L	Weight kg
		Actual speed @230V	Rated torque Nm	Assembly number	Actual speed @230V	Rated torque Nm	Assembly number		
500	MX9G 3B	425	0.7	PAN G3 040 1GG 500.0 XK1	434	0.8	PAN G3 040 RGG 500.0 XK1	174	3.6
300	MX9G 5B	255	1.1	PAN G3 040 1GG 300.0 XK1	260	1.3	PAN G3 040 RGG 300.0 XK1	174	
200	MX9G 7.5B	170	1.7	PAN G3 040 1GG 200.0 XK1	173	2.0	PAN G3 040 RGG 200.0 XK1	174	
150	MX9G 10B	128	2.3	PAN G3 040 1GG 150.0 XK1	130	2.7	PAN G3 040 RGG 150.0 XK1	174	
100	MX9G 15B	85	3.4	PAN G3 040 1GG 100.0 XK1	87	4.0	PAN G3 040 RGG 100.0 XK1	174	
75	MX9G 20B	64	4.2	PAN G3 040 1GG 075.0 XK1	65	5.0	PAN G3 040 RGG 075.0 XK1	174	
60	MX9G 25B	51	5.3	PAN G3 040 1GG 060.0 XK1	52	6.2	PAN G3 040 RGG 060.0 XK1	174	
50	MX9G 30B	43	6.3	PAN G3 040 1GG 050.0 XK1	43	7.4	PAN G3 040 RGG 050.0 XK1	174	
30	MX9G 50B	26	9.8	PAN G3 040 1GG 030.0 XK1	26	9.8	PAN G3 040 RGG 030.0 XK1	174	
20	MX9G 75B*	17	9.8	PAN G3 040 1GG 020.0 XK1	17	9.8	PAN G3 040 RGG 020.0 XK1	174	
15	MX9G 100B*	13	9.8	PAN G3 040 1GG 015.0 XK1	13	9.8	PAN G3 040 RGG 015.0 XK1	174	
12.5	MX9G120B*	11	9.8	PAN G3 040 1GG 012.5 XK1	11	9.8	PAN G3 040 RGG 012.5 XK1	174	
10	MX9G 150B*	8.5	9.8	PAN G3 040 1GG 010.0 XK1	8.7	9.8	PAN G3 040 RGG 010.0 XK1	174	
8.3	MX9G 180B*	7.1	9.8	PAN G3 040 1GG 008.3 XK1	7.2	9.8	PAN G3 040 RGG 008.3 XK1	174	
<b>MX9G 10XB*</b>		<b>Additional gearbox MX9G 10XB is included for speeds of 7.5 r/min and below</b>							4.1
7.5	MX9G 20B*	6.4	9.8	PAN G3 040 1GG 007.5 XK1	6.5	9.8	PAN G3 040 RGG 007.5 XK1	209	
6.0	MX9G 25B*	5.1	9.8	PAN G3 040 1GG 006.0 XK1	5.2	9.8	PAN G3 040 RGG 006.0 XK1	209	
5.0	MX9G 30B*	4.3	9.8	PAN G3 040 1GG 005.0 XK1	4.3	9.8	PAN G3 040 RGG 005.0 XK1	209	
3.0	MX9G 50B*	2.6	9.8	PAN G3 040 1GG 003.0 XK1	2.6	9.8	PAN G3 040 RGG 003.0 XK1	209	
2.0	MX9G 75B*	1.7	9.8	PAN G3 040 1GG 002.0 XK1	1.7	9.8	PAN G3 040 RGG 002.0 XK1	209	
1.5	MX9G 100B*	1.3	9.8	PAN G3 040 1GG 001.5 XK1	1.3	9.8	PAN G3 040 RGG 001.5 XK1	209	
1.3	MX9G 120B*	1.1	9.8	PAN G3 040 1GG 001.3 XK1	1.1	9.8	PAN G3 040 RGG 001.3 XK1	209	
1.0	MX9G 150B*	0.9	9.8	PAN G3 040 1GG 001.0 XK1	0.9	9.8	PAN G3 040 RGG 001.0 XK1	209	
0.8	MX9G 180B*	0.7	9.8	PAN G3 040 1GG 000.8 XK1	0.7	9.8	PAN G3 040 RGG 000.8 XK1	209	

\* torque limiter recommended

The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

Motor details see page 38.

# Panasonic | 60W 1 phase Standard & Quick Reversible

Standard induction motors are suitable for fixed speed applications. Quick Reversible motors have a built-in braking system for reduced overrun and fast reversing. Both models are available with flanged or square gearboxes.

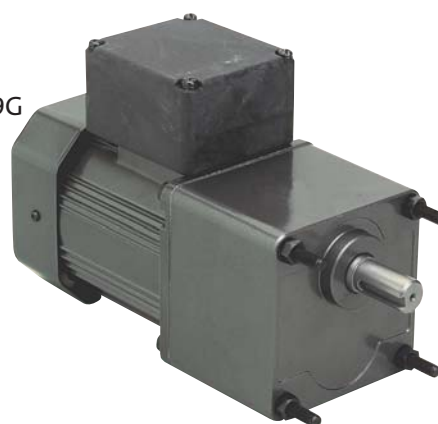


- Rated 230V  $\pm$  10% and 50 Hz
- Continuous duty S1
- Enclosure IP54
- Supplied with run capacitor (Standard 4.5 $\mu$ F, QR 5.0 $\mu$ F)
- Integrated thermal protection switch (For external connection)
- RoHS compliant

Flanged MY9G gearbox



Square MZ9G gearbox



Nominal speed r/min	Gearbox model number	Standard Induction Motor Model Number : M91Z60GK4GGA			Quick Reversible Motor Model Number : M9RZ60GK4GG1			Length L	Weight kg
		Actual speed @230V	Rated torque Nm	Assembly number	Actual speed @230V	Rated torque Nm	Assembly number		
500	M#9G 3B	408	1.1	PAN G3 060 1GG 500.0 #K1	433	1.1	PAN G3 060 RGG 500.0 # K1	218	4.2
300	M#9G 5B	260	1.8	PAN G3 060 1GG 300.0 #K1	260	1.8	PAN G3 060 RGG 300.0 # K1	218	
200	M#9G 7.5B	173	2.7	PAN G3 060 1GG 200.0 #K1	173	2.7	PAN G3 060 RGG 200.0 # K1	218	
150	M#9G 10B	130	3.5	PAN G3 060 1GG 150.0 #K1	130	3.4	PAN G3 060 RGG 150.0 # K1	218	
100	M#9G 15B	87	5.0	PAN G3 060 1GG 100.0 #K1	87	5	PAN G3 060 RGG 100.0 # K1	218	
75	M#9G 20B	65	6.6	PAN G3 060 1GG 075.0 #K1	65	6.2	PAN G3 060 RGG 075.0 # K1	218	
60	M#9G 25B	52	8.3	PAN G3 060 1GG 060.0 #K1	52	7.7	PAN G3 060 RGG 060.0 # K1	218	
50	M#9G 30B	43	9.9	PAN G3 060 1GG 050.0 #K1	43	9.2	PAN G3 060 RGG 050.0 # K1	218	
30	M#9G 50B	26	15.4	PAN G3 060 1GG 030.0 #K1	26	15.4	PAN G3 060 RGG 030.0 # K1	218	
20	M#9G 75B*	17	19.6	PAN G3 060 1GG 020.0 #K1	17.3	19.6	PAN G3 060 RGG 020.0 # K1	218	
15	M#9G 100B*	13	19.6	PAN G3 060 1GG 015.0 #K1	13.0	19.6	PAN G3 060 RGG 015.0 # K1	218	
12.5	M#9G 120B*	11	19.6	PAN G3 060 1GG 012.5 #K1	10.8	19.6	PAN G3 060 RGG 012.5 # K1	218	
10	M#9G 150B*	8.7	19.6	PAN G3 060 1GG 010.0 #K1	8.7	19.6	PAN G3 060 RGG 010.0 # K1	218	
7.5	M#9G 200B*	6.5	19.6	PAN G3 060 1GG 007.5 #K1	6.5	19.6	PAN G3 060 RGG 007.5 # K1	218	
MZ9G 10XB* Additional gearbox MZ9G 10XB is included for speeds of 6.0 r/min and below									
6.0	M#9G 25B*	5.2	19.6	PAN G3 060 1GG 006.0 #K1	5.2	19.6	PAN G3 060 RGG 007.5 # K1	261	4.9
5.0	M#9G 30B*	4.3	19.6	PAN G3 060 1GG 005.0 #K1	4.3	19.6	PAN G3 060 RGG 005.0 # K1	261	
3.0	M#9G 50B*	2.6	19.6	PAN G3 060 1GG 003.0 #K1	2.6	19.6	PAN G3 060 RGG 003.0 # K1	261	
2.0	M#9G 75B*	1.7	19.6	PAN G3 060 1GG 002.0 #K1	1.7	19.6	PAN G3 060 RGG 002.0 # K1	261	
1.5	M#9G 100B*	1.3	19.6	PAN G3 060 1GG 001.5 #K1	1.3	19.6	PAN G3 060 RGG 001.5 # K1	261	
1.3	M#9G 120B*	1.1	19.6	PAN G3 060 1GG 001.3 #K1	1.1	19.6	PAN G3 060 RGG 001.3 # K1	261	
1.0	M#9G 150B*	0.9	19.6	PAN G3 060 1GG 001.0 #K1	0.9	19.6	PAN G3 060 RGG 001.0 # K1	261	
0.8	M#9G 180B*	0.7	19.6	PAN G3 060 1GG 000.8 #K1	0.7	19.6	PAN G3 060 RGG 000.8 # K1	261	
0.7	M#9G 200B*	0.7	19.6	PAN G3 060 1GG 000.7 #K1	0.6	19.6	PAN G3 060 RGG 000.7 # K1	261	

HIGHER TORQUES – available from 30 r/min and slower speeds, see following 60W high torque pages.

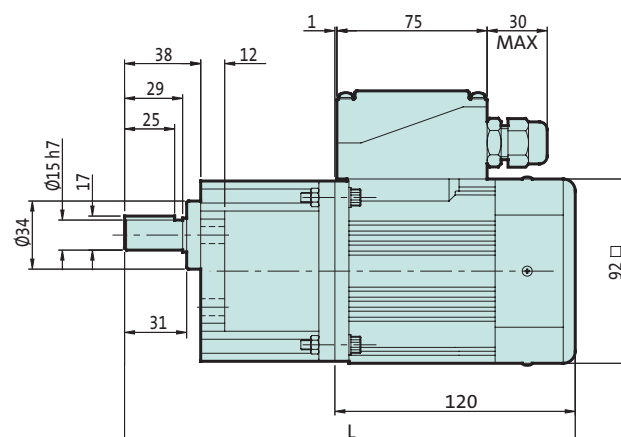
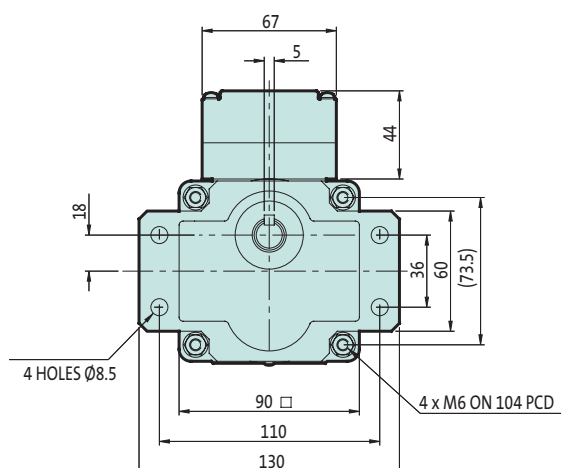
\* torque limiter recommended

The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

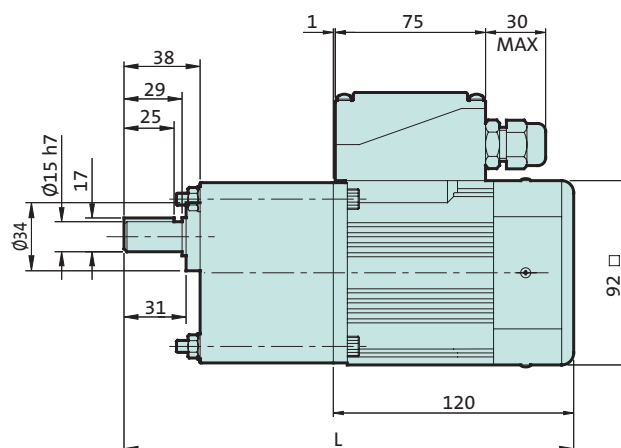
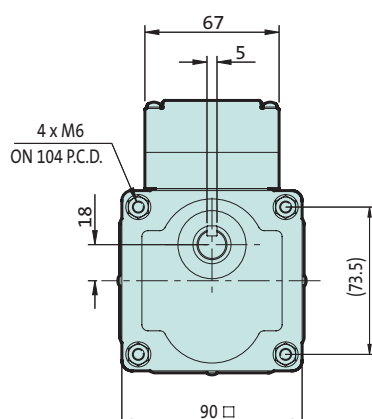
Motor details see page 38.

**60W  
1 phase**

### Flanged gearbox



### Square gearbox



### Ordering specification and example

Replace the letter # from the assembly number with a 'Y' for flanged gearbox or 'Z' for square gearbox as required. Examples:

100 r/min flanged with Standard Induction motor

5 r/min square with Quick Reversible motor

PAN G3 060 1GG 100.0 Y K1

PAN G3 060 RGG 005.0 Z K1

See page 7 for terminal box positions and feet.

# Panasonic | 60W HT 1 phase Standard & Quick Reversible

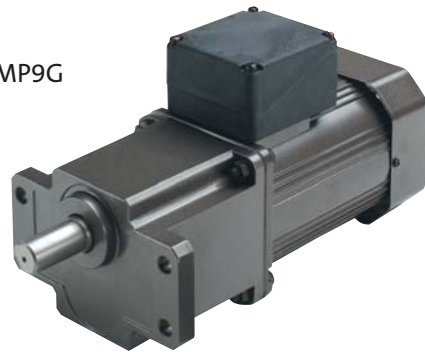
For speeds of 30 r/min and below a high torque gearbox is available, giving torques up to 29.4 Nm. Standard induction motors suit fixed speed applications.

Quick Reversible motors have a built-in braking system for reduced overrun and fast reversing. Both models are available with flanged or square gearboxes.



- Rated 230V  $\pm$  10% and 50 Hz
- Continuous duty S1
- Enclosure IP54
- Supplied with run capacitor (Standard 4.5 $\mu$ F, QR 5.0 $\mu$ F)
- Integrated thermal protection switch (For external connection)
- RoHS compliant

Flanged MP9G gearbox



Square MR9G gearbox



Nominal speed r/min	Gearbox model number	Standard Induction Motor Model Number : M91Z60GK4GGA			Quick Reversible Motor Model Number : M9RZ60GK4GG1			Length L	Weight kg
		Actual speed @230V	Rated torque Nm	Assembly number	Actual speed @230V	Rated torque Nm	Assembly number		
30	M#9G 50B	26	15.4	PAN G3 060 1GG 030.0 #K1	26	15.8	PAN G3 060 RGG 030.0 #K1	240	4.4
20	M#9G 75B*	17	23.1	PAN G3 060 1GG 020.0 #K1	17	23.6	PAN G3 060 RGG 020.0 #K1	240	
15	M#9G 100B*	13	29.4	PAN G3 060 1GG 015.0 #K1	13	29.4	PAN G3 060 RGG 015.0 #K1	240	
12.5	M#9G 120B*	11	29.4	PAN G3 060 1GG 012.5 #K1	11	29.4	PAN G3 060 RGG 012.5 #K1	240	
10	M#9G 150B*	9	29.4	PAN G3 060 1GG 010.0 #K1	9	29.4	PAN G3 060 RGG 010.0 #K1	240	
7.5	M#9G 200B*	7	29.4	PAN G3 060 1GG 007.5 #K1	7	29.4	PAN G3 060 RGG 007.5 #K1	240	
MZ9G 10XB* Additional gearbox MZ9G 10XB is included for speeds of 3.0 r/min and below									
3.0	M#9G 50B*	2.6	29.4	PAN G3 060 1GG 003.0 #K1	2.6	29.4	PAN G3 060 RGG 003.0 #K1	283	5.1
2.0	M#9G 75B*	1.7	29.4	PAN G3 060 1GG 002.0 #K1	1.7	29.4	PAN G3 060 RGG 002.0 #K1	283	
1.5	M#9G 100B*	1.3	29.4	PAN G3 060 1GG 001.5 #K1	1.3	29.4	PAN G3 060 RGG 001.5 #K1	283	
1.3	M#9G 120B*	1.1	29.4	PAN G3 060 1GG 001.3 #K1	1.1	29.4	PAN G3 060 RGG 001.3 #K1	283	
1.0	M#9G 150B*	0.9	29.4	PAN G3 060 1GG 001.0 #K1	0.9	29.4	PAN G3 060 RGG 001.0 #K1	283	
0.8	M#9G 200B*	0.7	29.4	PAN G3 060 1GG 000.8 #K1	0.7	29.4	PAN G3 060 RGG 000.8 #K1	283	

**HIGHER SPEEDS – see the 60W and 90W selections on adjacent pages**

\* torque limiter recommended

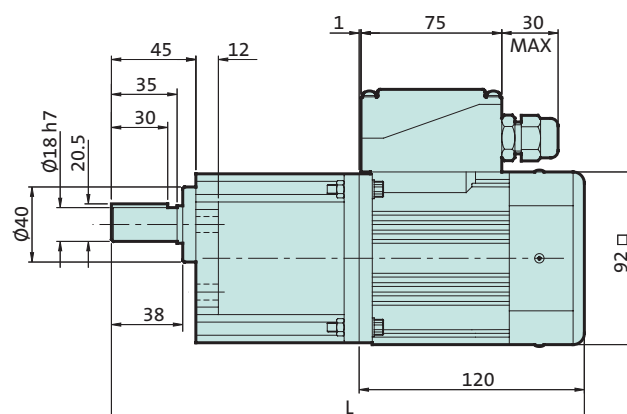
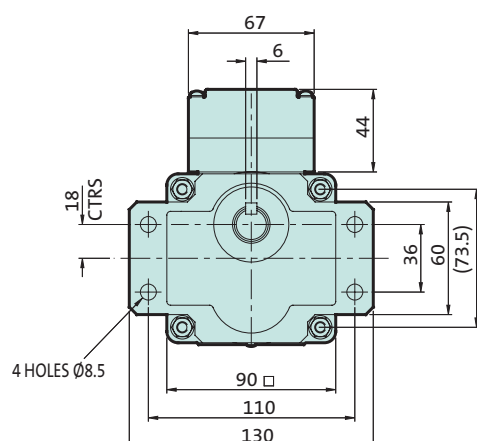
The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

Motor details see page 38.

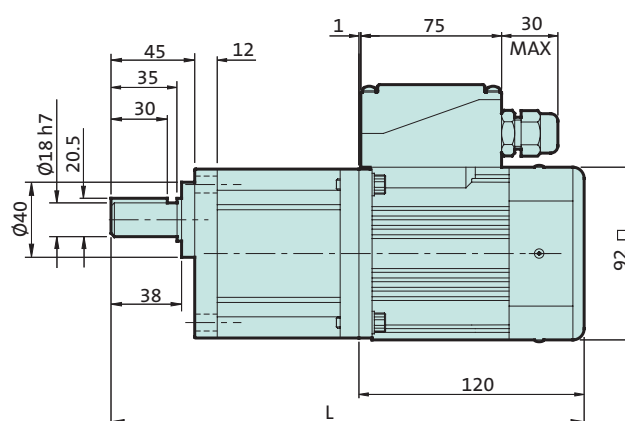
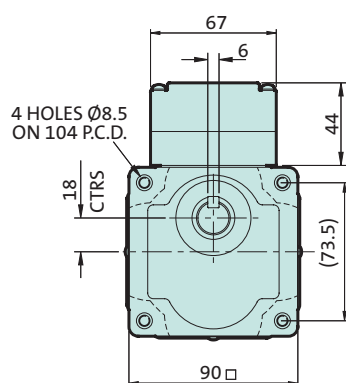
90W motors can be used with high torque gearboxes to increase torque for speeds of 20 and 30 r/min.

**60W**  
**1 phase**  
**high torque**

### Flanged gearbox



### Square gearbox



### Ordering specification and example

Replace the letter # from the assembly number with a 'P' for flanged gearbox or 'R' for square gearbox as required. Examples:

30 r/min flanged with Standard Induction motor

1.5 r/min square with Quick Reversible motor

PAN G3 060 1GG 030.0 P K1

PAN G3 060 RGG 001.5 R K1

See page 7 for terminal box positions and feet.

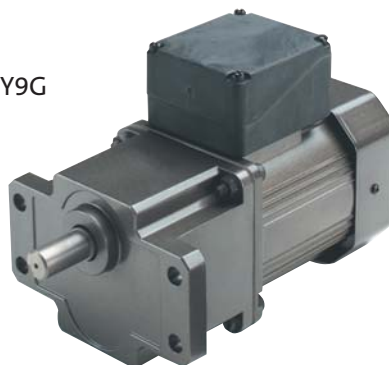
# Panasonic | 90W 1 phase Standard & Quick Reversible

Standard induction motors suit fixed speed applications. Quick Reversible motors have a built-in braking system for reduced overrun and fast reversing. Both models are available with flanged or square gearboxes.

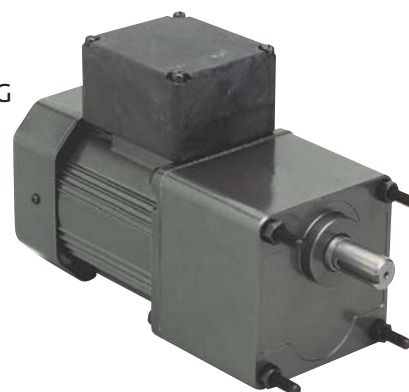


- Rated 230V  $\pm$  10% and 50 Hz
- Standard motor rated continuous duty S1, quick reversing duty S2
- Enclosure IP54
- Supplied with run capacitor (Standard 6.0 $\mu$ F, QR 7.0 $\mu$ F)
- Integrated thermal protection switch (For external connection)
- RoHS compliant

Flanged MY9G gearbox



Square MZ9G gearbox



Nominal speed r/min	Gearbox model number	Standard Induction Motor Model Number : M91Z90GK4GGA			Quick Reversible Motor Model Number : M9RZ90GK4GG1			Length L	Weight kg
		Actual speed @230V	Rated torque Nm	Assembly number	Actual speed @230V	Rated torque Nm	Assembly number		
500	M#9G 3B	442	1.1	PAN G3 090 1GG 500.0 #K1	417	1.7	PAN G3 090 RGG 500.0 #K1	233	4.7
300	M#9G 5B	265	2.8	PAN G3 090 1GG 300.0 #K1	250	2.8	PAN G3 090 RGG 300.0 #K1	233	
200	M#9G 7.5B	177	4.2	PAN G3 090 1GG 200.0 #K1	167	4.2	PAN G3 090 RGG 200.0 #K1	233	
150	M#9G 10B	133	5.6	PAN G3 090 1GG 150.0 #K1	125	5.6	PAN G3 090 RGG 150.0 #K1	233	
100	M#9G 15B	88	7.8	PAN G3 090 1GG 100.0 #K1	83	7.8	PAN G3 090 RGG 100.0 #K1	233	
75	M#9G 20B	66	10.4	PAN G3 090 1GG 075.0 #K1	63	10.4	PAN G3 090 RGG 075.0 #K1	233	
60	M#9G 25B	53	12.9	PAN G3 090 1GG 060.0 #K1	50	12.9	PAN G3 090 RGG 060.0 #K1	233	
50	M#9G 30B	44	15.5	PAN G3 090 1GG 050.0 #K1	42	15.5	PAN G3 090 RGG 050.0 #K1	233	
30	M#9G 50B	27	19.6	PAN G3 090 1GG 030.0 #K1	25	19.6	PAN G3 090 RGG 030.0 #K1	233	
20	M#9G 75B*	18	19.6	PAN G3 090 1GG 020.0 #K1	17	19.6	PAN G3 090 RGG 020.0 #K1	233	
15	M#9G 100B*	13	19.6	PAN G3 090 1GG 015.0 #K1	13	19.6	PAN G3 090 RGG 015.0 #K1	233	
12.5	M#9G 120B*	11	19.6	PAN G3 090 1GG 012.5 #K1	10	19.6	PAN G3 090 RGG 012.5 #K1	233	
10	M#9G 150B*	8.8	19.6	PAN G3 090 1GG 010.0 #K1	8.3	19.6	PAN G3 090 RGG 010.0 #K1	233	
7.5	M#9G 200B*	6.6	19.6	PAN G3 090 1GG 007.5 #K1	6.3	19.6	PAN G3 090 RGG 007.5 #K1	233	
MZ9G 10XB* Additional gearbox MZ9G 10XB is included for speeds of 6.0 r/min and below									
6.0	M#9G 25B*	5.3	19.6	PAN G3 060 1GG 006.0 #K1	5.0	19.6	PAN G3 090 RGG 006.0 #K1	276	5.4
5.0	M#9G 30B*	4.4	19.6	PAN G3 060 1GG 005.0 #K1	4.2	19.6	PAN G3 090 RGG 005.0 #K1	276	
3.0	M#9G 50B*	2.5	19.6	PAN G3 060 1GG 003.0 #K1	2.5	19.6	PAN G3 090 RGG 003.0 #K1	276	
2.0	M#9G 75B*	1.7	19.6	PAN G3 060 1GG 002.0 #K1	1.7	19.6	PAN G3 090 RGG 002.0 #K1	276	
1.5	M#9G 100B*	1.3	19.6	PAN G3 060 1GG 001.5 #K1	1.3	19.6	PAN G3 090 RGG 001.5 #K1	276	
1.3	M#9G 120B*	1.0	19.6	PAN G3 060 1GG 001.3 #K1	1.0	19.6	PAN G3 090 RGG 001.3 #K1	276	
1	M#9G 150B*	0.8	19.6	PAN G3 060 1GG 001.0 #K1	0.8	19.6	PAN G3 090 RGG 001.0 #K1	276	
0.8	M#9G 180B*	0.7	19.6	PAN G3 060 1GG 000.8 #K1	0.7	19.6	PAN G3 090 RGG 000.8 #K1	276	
0.7	M#9G 200B*	0.6	19.6	PAN G3 060 1GG 000.7 #K1	0.6	19.6	PAN G3 090 RGG 000.7 #K1	276	

**HIGHER TORQUES** – available from 30 r/min and slower speeds, contact Lenze for details.

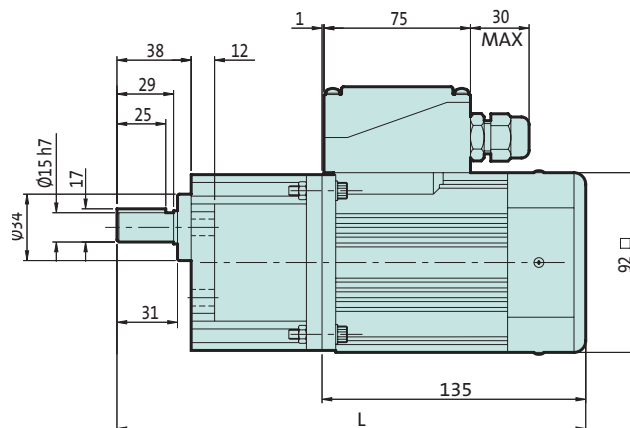
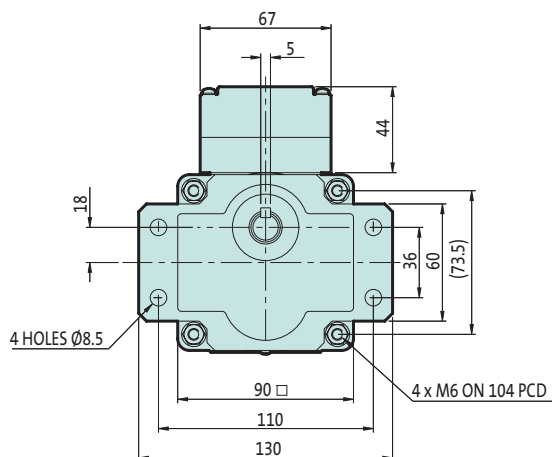
\* torque limiter recommended

The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

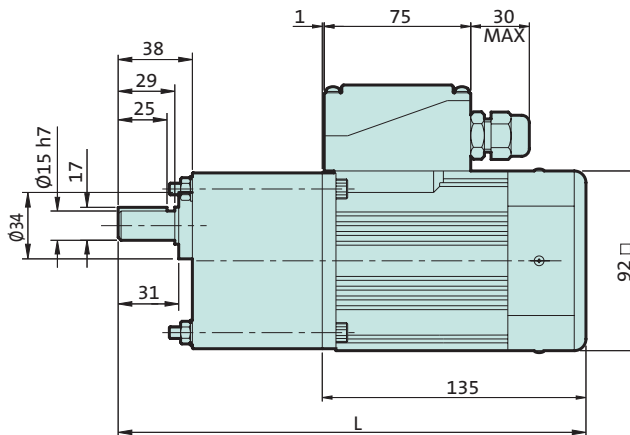
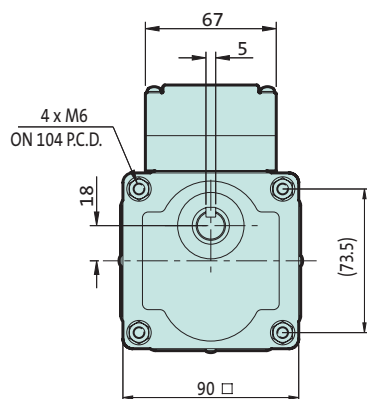
Motor details see page 38.

**90W  
1 phase**

### Flanged gearbox



### Square gearbox



### Ordering specification and example

Replace the letter # from the assembly number with a 'Y' for flanged gearbox or 'Z' for square gearbox as required. Examples:

100 r/min flanged with Standard Induction motor

5 r/min square with Quick Reversible motor

PAN G3 090 1GG 100.0 Y K1

PAN G3 090 RGG 005.0 Z K1

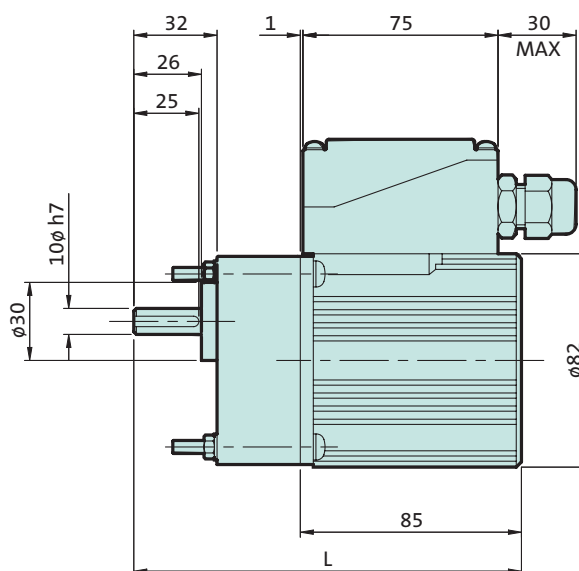
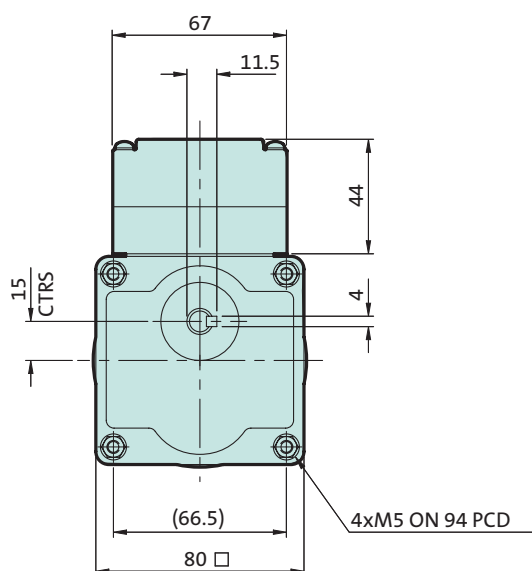
See page 7 for terminal box positions and feet.

These 3 phase induction motors deliver high starting torques. 400V versions suit fixed speed applications. 230V versions are ideal for use with inverters such as the Panasonic, smd or SMV inverters.

MX8G gearbox



- Rated 230V or 400V  $\pm 10\%$
- Continuous duty S1
- Enclosure IP54
- Integrated thermal protection switch (For external connection)
- RoHS compliant



Nominal speed r/min	Gearbox model number	230V 3 phase Motor Model Number : M8MX25GK4YGA			400V 3 phase Motor Model Number : M8MX25GK4CGA			Length L	Weight kg
		Actual speed @230V	Rated torque Nm	Assembly number	Actual speed @400V	Rated torque Nm	Assembly number		
500	MX8G 3B	440	0.4	PAN G3 025 MYG 500.0 XK1	442	0.4	PAN G3 025 MCG 500.0 XK1	147	2.5
300	MX8G 5B	264	0.6	PAN G3 025 MYG 300.0 XK1	266	0.7	PAN G3 025 MCG 300.0 XK1	147	
200	MX8G 7.5B	176	1.0	PAN G3 025 MYG 200.0 XK1	177	1.1	PAN G3 025 MCG 200.0 XK1	147	
150	MX8G 10B	132	1.3	PAN G3 025 MYG 150.0 XK1	133	1.5	PAN G3 025 MCG 150.0 XK1	147	
100	MX8G 15B	88	1.9	PAN G3 025 MYG 100.0 XK1	88	2.2	PAN G3 025 MCG 100.0 XK1	147	
75	MX8G 20B	66	2.6	PAN G3 025 MYG 075.0 XK1	66	2.9	PAN G3 025 MCG 075.0 XK1	147	
60	MX8G 25B	53	3.2	PAN G3 025 MYG 060.0 XK1	53	3.6	PAN G3 025 MCG 060.0 XK1	147	
50	MX8G 30B	44	3.6	PAN G3 025 MYG 050.0 XK1	45	4.1	PAN G3 025 MCG 050.0 XK1	147	
30	MX8G 50B	26	6.0	PAN G3 025 MYG 030.0 XK1	27	6.8	PAN G3 025 MCG 030.0 XK1	147	
20	MX8G 75B*	18	7.8	PAN G3 025 MYG 020.0 XK1	18	7.8	PAN G3 025 MCG 020.0 XK1	147	
15	MX8G 100B*	13	7.8	PAN G3 025 MYG 015.0 XK1	13	7.8	PAN G3 025 MCG 015.0 XK1	147	
12.5	MX8G 120B*	11	7.8	PAN G3 025 MYG 012.5 XK1	11	7.8	PAN G3 025 MCG 012.5 XK1	147	
10	MX8G 150B*	8.8	7.8	PAN G3 025 MYG 010.0 XK1	8.8	7.8	PAN G3 025 MCG 010.0 XK1	147	
8.3	MX8G 180B*	7.3	7.8	PAN G3 025 MYG 008.3 XK1	7.4	7.8	PAN G3 025 MCG 008.3 XK1	147	
MX8G 10XB* Additional gearbox MX8G 10XB is included for speeds of 7.5 r/min and below									
7.5	MX8G 20B*	6.6	7.8	PAN G3 025 MYG 007.5 XK1	6.6	7.8	PAN G3 025 MCG 007.5 XK1	177	2.9
6.0	MX8G 25B*	5.3	7.8	PAN G3 025 MYG 006.0 XK1	5.3	7.8	PAN G3 025 MCG 006.0 XK1	177	
5.0	MX8G 30B*	4.4	7.8	PAN G3 025 MYG 005.0 XK1	4.4	7.8	PAN G3 025 MCG 005.0 XK1	177	
3.0	MX8G 50B*	2.6	7.8	PAN G3 025 MYG 003.0 XK1	2.7	7.8	PAN G3 025 MCG 003.0 XK1	177	
2.0	MX8G 75B*	1.8	7.8	PAN G3 025 MYG 002.0 XK1	1.8	7.8	PAN G3 025 MCG 002.0 XK1	177	
1.5	MX8G 100B*	1.3	7.8	PAN G3 025 MYG 001.5 XK1	1.3	7.8	PAN G3 025 MCG 001.5 XK1	177	
1.3	MX8G 120B*	1.1	7.8	PAN G3 025 MYG 001.3 XK1	1.1	7.8	PAN G3 025 MCG 001.3 XK1	177	
1.0	MX8G 150B*	0.9	7.8	PAN G3 025 MYG 001.0 XK1	0.9	7.8	PAN G3 025 MCG 001.0 XK1	177	
0.8	MX8G 180B*	0.7	7.8	PAN G3 025 MYG 000.8 XK1	0.7	7.8	PAN G3 025 MCG 000.8 XK1	177	

\* torque limiter recommended

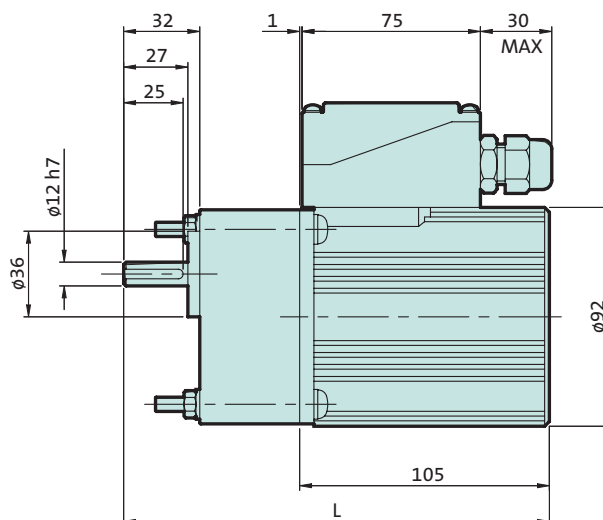
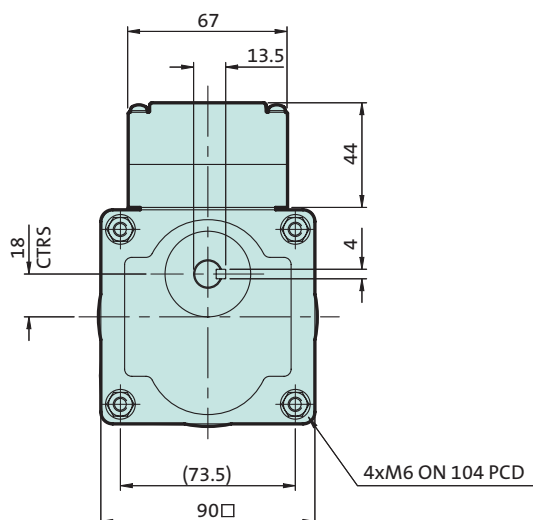
The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

Motor details see page 38.

These 3 phase induction motors deliver high starting torques. 400V versions suit fixed speed applications. 230V versions are ideal for use with inverters such as the Panasonic, smd or SMV inverters.

- Rated 230V or 400V  $\pm 10\%$
- Continuous duty S1
- Enclosure IP54
- Integrated thermal protection switch (For external connection)
- RoHS compliant

MX9G gearbox



Nominal speed r/min	Gearbox model number	230V 3 phase Motor Model Number : M9MX40GK4YGA			400V 3 phase Motor Model Number : M9MX40GK4CGA			Length L	Weight kg
		Actual speed @230V	Rated torque Nm	Assembly number	Actual speed @400V	Rated torque Nm	Assembly number		
500	MX9G 3B	447	0.7	PAN G3 040 MYG 500.0 XK1	450	0.7	PAN G3 040 MCG 500.0 XK1	174	4.0
300	MX9G 5B	277	1.1	PAN G3 040 MYG 300.0 XK1	270	1.1	PAN G3 040 MCG 300.0 XK1	174	
200	MX9G 7.5B	179	1.6	PAN G3 040 MYG 200.0 XK1	180	1.7	PAN G3 040 MCG 200.0 XK1	174	
150	MX9G 10B	134	2.2	PAN G3 040 MYG 150.0 XK1	135	2.3	PAN G3 040 MCG 150.0 XK1	174	
100	MX9G 15B	89.3	3.3	PAN G3 040 MYG 100.0 XK1	90.0	3.4	PAN G3 040 MCG 100.0 XK1	174	
75	MX9G 20B	67.0	4.1	PAN G3 040 MYG 075.0 XK1	67.5	4.2	PAN G3 040 MCG 075.0 XK1	174	
60	MX9G 25B	53.6	5.1	PAN G3 040 MYG 060.0 XK1	54.0	5.3	PAN G3 040 MCG 060.0 XK1	174	
50	MX9G 30B	44.7	6.1	PAN G3 040 MYG 050.0 XK1	45.0	6.3	PAN G3 040 MCG 050.0 XK1	174	
30	MX9G 50B	26.8	9.8	PAN G3 040 MYG 030.0 XK1	27.0	9.8	PAN G3 040 MCG 030.0 XK1	174	
20	MX9G 75B*	17.9	9.8	PAN G3 040 MYG 020.0 XK1	18.0	9.8	PAN G3 040 MCG 020.0 XK1	174	
15	MX9G 100B*	13.4	9.8	PAN G3 040 MYG 015.0 XK1	13.5	9.8	PAN G3 040 MCG 015.0 XK1	174	
12.5	MX9G 120B*	11.2	9.8	PAN G3 040 MYG 012.5 XK1	11.3	9.8	PAN G3 040 MCG 012.5 XK1	174	
10	MX9G 150B*	8.9	9.8	PAN G3 040 MYG 010.0 XK1	9.0	9.8	PAN G3 040 MCG 010.0 XK1	174	
8.3	MX9G 180B*	7.4	9.8	PAN G3 040 MYG 008.3 XK1	7.5	9.8	PAN G3 040 MCG 008.3 XK1	174	
	MX9G 10XB*	Additional gearbox MX9G 10XB is included for speeds of 7.5 r/min and below							
7.5	MX9G 20B*	6.7	9.8	PAN G3 040 MYG 007.5 XK1	6.8	9.8	PAN G3 040 MCG 007.5 XK1	209	4.5
6.0	MX9G 25B*	5.4	9.8	PAN G3 040 MYG 006.0 XK1	5.4	9.8	PAN G3 040 MCG 006.0 XK1	209	
5.0	MX9G 30B*	4.5	9.8	PAN G3 040 MYG 005.0 XK1	4.5	9.8	PAN G3 040 MCG 005.0 XK1	209	
3.0	MX9G 50B*	2.7	9.8	PAN G3 040 MYG 003.0 XK1	2.7	9.8	PAN G3 040 MCG 003.0 XK1	209	
2.0	MX9G 75B*	1.8	9.8	PAN G3 040 MYG 002.0 XK1	1.8	9.8	PAN G3 040 MCG 002.0 XK1	209	
1.5	MX9G 100B*	1.3	9.8	PAN G3 040 MYG 001.5 XK1	1.4	9.8	PAN G3 040 MCG 001.5 XK1	209	
1.3	MX9G 120B*	1.1	9.8	PAN G3 040 MYG 001.3 XK1	1.1	9.8	PAN G3 040 MCG 001.3 XK1	209	
1.0	MX9G 150B*	0.9	9.8	PAN G3 040 MYG 001.0 XK1	0.9	9.8	PAN G3 040 MCG 001.0 XK1	209	
0.8	MX9G 180B*	0.7	9.8	PAN G3 040 MYG 000.8 XK1	0.8	9.8	PAN G3 040 MCG 000.8 XK1	209	

\* torque limiter recommended

The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

Motor details see page 38.

# Panasonic | 60W 3 phase

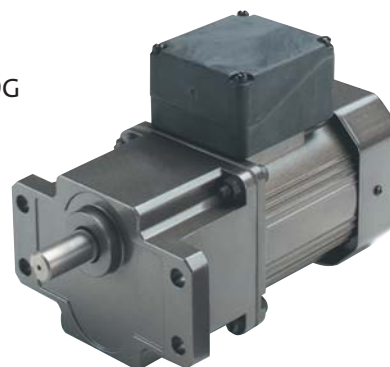
These 3 phase induction motors deliver high starting torques. 400V versions suit fixed speed applications. 230V versions are ideal for use with inverters such as the Panasonic or smd inverters.

All 60W geared motors are available with flanged or square gearboxes.



- Rated 230V or 400V  $\pm 10\%$
- Continuous duty S1
- Enclosure IP54
- Integrated thermal protection switch (For external connection)
- RoHS compliant
- 230V 3phase for use with an inverter  
400V for fixed speed application

Flanged MY9G gearbox



Square MZ9G gearbox



Nominal speed r/min	Gearbox model number	230V 3 phase Motor Model Number : M9MZ60GK4YGA			400V 3 phase Motor Model Number : M9MZ60GK4CGA			Length L	Weight kg
		Actual speed @230V	Rated torque Nm	Assembly number	Actual speed @400V	Rated torque Nm	Assembly number		
500	M#9G 3B	447	1	PAN G3 060 MYG 500.0 #K1	442	1	PAN G3 060 MCG 500.0 #K1	218	4.5
300	M#9G 5B	268	1.7	PAN G3 060 MYG 300.0 #K1	265	1.7	PAN G3 060 MCG 300.0 #K1	218	
200	M#9G 7.5B	17.7	2.5	PAN G3 060 MYG 200.0 #K1	177	2.6	PAN G3 060 MCG 200.0 #K1	218	
150	M#9G 10B	134	3.3	PAN G3 060 MYG 150.0 #K1	132	3.5	PAN G3 060 MCG 150.0 #K1	218	
100	M#9G 15B	89.3	4.6	PAN G3 060 MYG 100.0 #K1	88.3	4.8	PAN G3 060 MCG 100.0 #K1	218	
75	M#9G 20B	67.0	6.2	PAN G3 060 MYG 075.0 #K1	66.3	6.5	PAN G3 060 MCG 075.0 #K1	218	
60	M#9G 25B	53.6	7.7	PAN G3 060 MYG 060.0 #K1	53.0	8.1	PAN G3 060 MCG 060.0 #K1	218	
50	M#9G 30B	44.7	9.2	PAN G3 060 MYG 050.0 #K1	44.2	9.7	PAN G3 060 MCG 050.0 #K1	218	
30	M#9G 50B	26.8	14.4	PAN G3 060 MYG 030.0 #K1	26.5	15.1	PAN G3 060 MCG 030.0 #K1	218	
20	M#9G 75B*	17.9	19.6	PAN G3 060 MYG 020.0 #K1	17.7	19.6	PAN G3 060 MCG 020.0 #K1	218	
15	M#9G 100B*	13.4	19.6	PAN G3 060 MYG 015.0 #K1	13.3	19.6	PAN G3 060 MCG 015.0 #K1	218	
12.5	M#9G 120B*	11.2	19.6	PAN G3 060 MYG 012.5 #K1	11.0	19.6	PAN G3 060 MCG 012.5 #K1	218	
10	M#9G 150B*	8.9	19.6	PAN G3 060 MYG 010.0 #K1	8.8	19.6	PAN G3 060 MCG 010.0 #K1	218	
7.5	M#9G 200B*	6.7	19.6	PAN G3 060 MYG 008.3 #K1	6.6	19.6	PAN G3 060 MCG 008.3 #K1	218	
MZ9G 10XB*		Additional gearbox MZ9G 10XB is included for speeds of 6.0 r/min and below							
6.0	M#9G 20B*	5.4	19.6	PAN G3 060 MYG 007.5 #K1	5.3	19.6	PAN G3 060 MCG 007.5 #K1	261	5.2
5.0	M#9G 25B*	4.5	19.6	PAN G3 060 MYG 006.0 #K1	4.4	19.6	PAN G3 060 MCG 006.0 #K1	261	
3.0	M#9G 30B*	2.7	19.6	PAN G3 060 MYG 005.0 #K1	2.7	19.6	PAN G3 060 MCG 005.0 #K1	261	
2.0	M#9G 50B*	1.8	19.6	PAN G3 060 MYG 003.0 #K1	1.8	19.6	PAN G3 060 MCG 003.0 #K1	261	
1.5	M#9G 75B*	1.3	19.6	PAN G3 060 MYG 002.0 #K1	1.3	19.6	PAN G3 060 MCG 002.0 #K1	261	
1.3	M#9G 100B*	1.1	19.6	PAN G3 060 MYG 001.5 #K1	1.1	19.6	PAN G3 060 MCG 001.5 #K1	261	
1.0	M#9G 120B*	0.9	19.6	PAN G3 060 MYG 001.3 #K1	0.9	19.6	PAN G3 060 MCG 001.3 #K1	261	
0.8	M#9G 150B*	0.7	19.6	PAN G3 060 MYG 001.0 #K1	0.7	19.6	PAN G3 060 MCG 001.0 #K1	261	
0.7	M#9G 200B*	0.7	19.6	PAN G3 060 MYG 000.8 #K1	0.7	19.6	PAN G3 060 MCG 000.8 #K1	261	

HIGHER TORQUES – available from 30 r/min and slower speeds, see following 60W high torque pages.

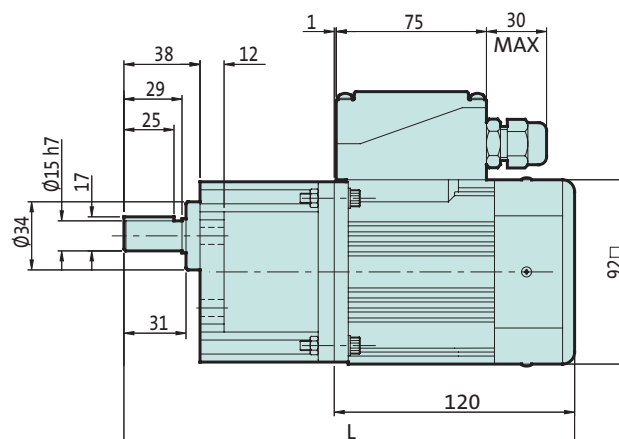
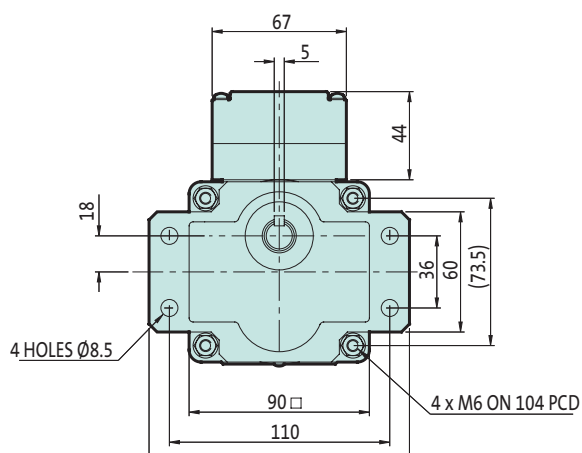
\* torque limiter recommended

The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

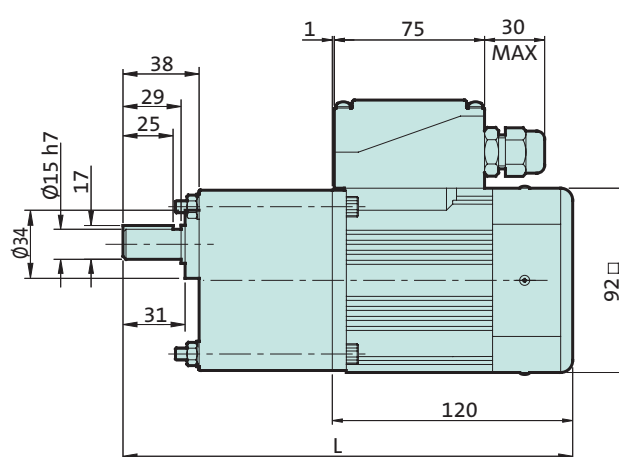
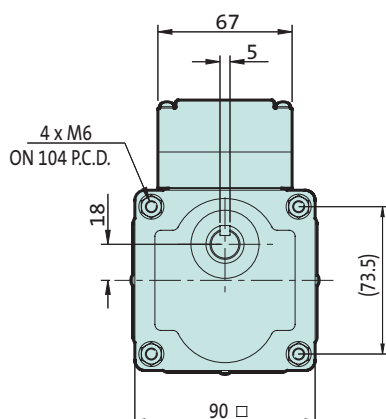
Motor details see page 38.

**60W**  
**3 phase**

### Flanged gearbox



### Square gearbox



### Ordering specification and example

Replace the letter # from the assembly number with a 'Y' for flanged gearbox or 'Z' for square gearbox as required. Examples:

100 r/min flanged with 230V 3 phase motor

5 r/min square with 400V 3 phase motor

PAN G3 060 MYG 100.0 Y K1

PAN G3 060 MCG 005.0 Z K1

**See page 7** for terminal box positions and feet.

## Panasonic | 60 HT 3 phase

For speeds of 30 r/min and below a high torque gearbox is available to give torque up to 29.4 Nm.

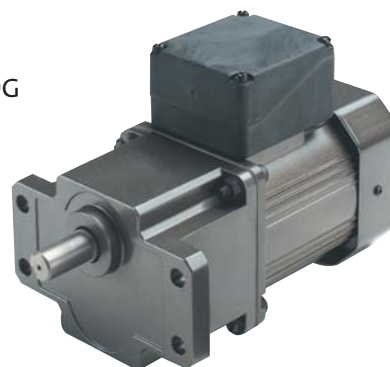
These 3 phase induction motors deliver high starting torques. 400V versions suit fixed speed applications. 230V versions are ideal for use with inverters such as the Panasonic, smd or SMV inverters.

All 60W geared motors are available with flanged or square gearboxes.



- Rated 230V or 400V  $\pm 10\%$
- Continuous duty S1
- Enclosure IP54
- Integrated thermal protection switch (For external connection)
- RoHS compliant
- 230V 3phase for use with an inverter  
400V for fixed speed application

Flanged MP9G gearbox



Square MR9G gearbox



Nominal speed r/min	Gearbox model number	230V 3 phase Motor Model Number : M9MZ60GK4YGA			400V 3 phase Motor Model Number : M9MZ60GK4CGA			Length L	Weight kg
		Actual speed @230V	Rated torque Nm	Assembly number	Actual speed @400V	Rated torque Nm	Assembly number		
30	M#9G 50B	26.8	14.4	PAN G3 060 MYG 030.0 #K1	26.5	15.1	PAN G3 060 MCG 030.0 #K1	240	4.7
20	M#9G 75B*	17.9	21.5	PAN G3 060 MYG 020.0 #K1	17.7	22.6	PAN G3 060 MCG 020.0 #K1	240	
15	M#9G 100B*	13.4	28.7	PAN G3 060 MYG 015.0 #K1	13.3	29.4	PAN G3 060 MCG 015.0 #K1	240	
12.5	M#9G 120B*	11.2	29.4	PAN G3 060 MYG 012.5 #K1	11.0	29.4	PAN G3 060 MCG 012.5 #K1	240	
10	M#9G 150B*	8.9	29.4	PAN G3 060 MYG 010.0 #K1	8.8	29.4	PAN G3 060 MCG 010.0 #K1	240	
7.5	M#9G 200B*	6.7	29.4	PAN G3 060 MYG 007.5 #K1	6.6	29.4	PAN G3 060 MCG 007.5 #K1	240	
MZ9G 10XB*		Additional gearbox MZ9G 10XB is included for speeds of 3.0 r/min and below							
3.0	M#9G 50B*	2.7	29.4	PAN G3 060 MYG 003.0 #K1	2.7	29.4	PAN G3 060 MCG 003.0 #K1	283	5.4
2.0	M#9G 75B*	1.8	29.4	PAN G3 060 MYG 002.0 #K1	1.8	29.4	PAN G3 060 MCG 002.0 #K1	283	
1.5	M#9G 100B*	1.3	29.4	PAN G3 060 MYG 001.5 #K1	1.3	29.4	PAN G3 060 MCG 001.5 #K1	283	
1.3	M#9G 120B*	1.1	29.4	PAN G3 060 MYG 001.3 #K1	1.1	29.4	PAN G3 060 MCG 001.3 #K1	283	
1.0	M#9G 150B*	0.9	29.4	PAN G3 060 MYG 001.0 #K1	0.9	29.4	PAN G3 060 MCG 001.0 #K1	283	
0.7	M#9G 180B*	0.7	29.4	PAN G3 060 MYG 000.8 #K1	0.7	29.4	PAN G3 060 MCG 000.8 #K1	283	

**HIGHER SPEEDS – see the 60W and 90W selections on adjacent pages**

\* torque limiter recommended

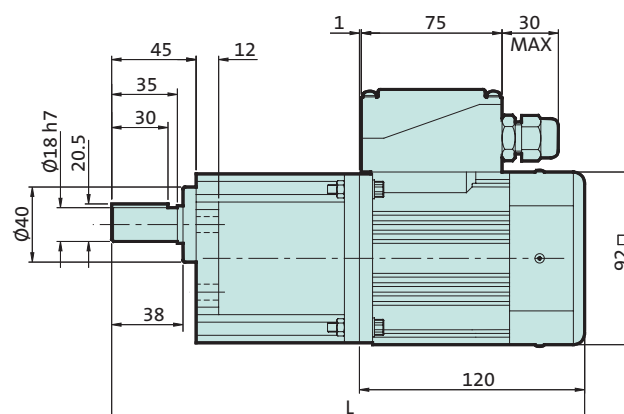
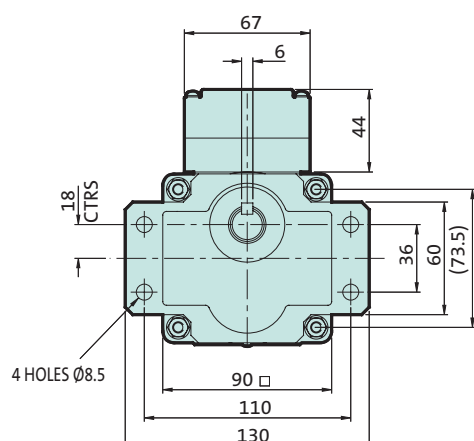
The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

Motor details see page 38.

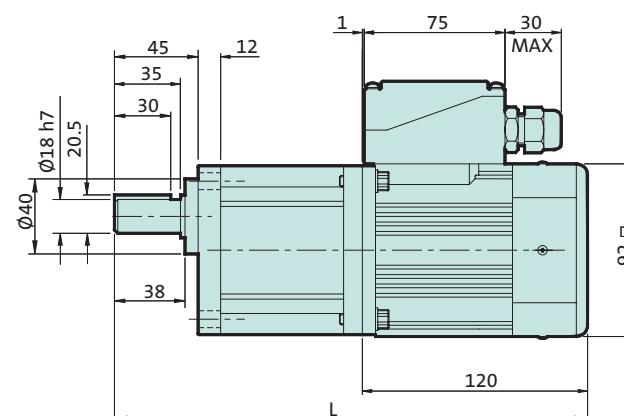
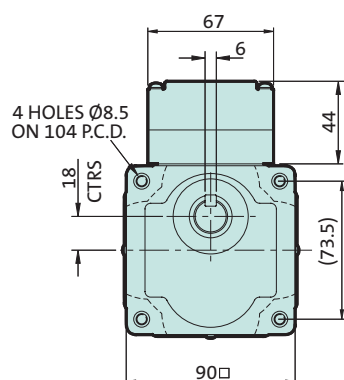
90W motors can be used with high torque gearboxes to increase torque for speeds of 20 and 30 r/min.

**60W**  
**3 phase**  
**high torque**

### Flanged gearbox



### Square gearbox



### Ordering specification and example

Replace the letter # from the assembly number with a 'P' for flanged gearbox or 'R' for square gearbox as required. Examples:

30 r/min flanged with 230V 3 phase motor

1.5 r/min square with 400V 3 phase motor

PAN G3 060 MYG 030.0 P K1

PAN G3 060 MCG 001.5 R K1

See page 7 for terminal box positions.

# Panasonic | 90W 3 phase

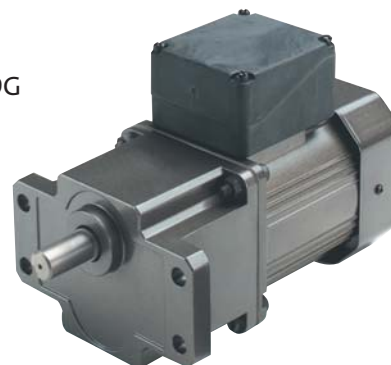
These 3 phase induction motors deliver high starting torques. 400V versions suit fixed speed applications. 230V versions are ideal for use with inverters such as the Panasonic, smd or SMV inverters.

All 90W geared motors are available with flanged or square gearboxes.



- Rated 230V  $\pm 10\%$
- Continuous duty S1
- Enclosure IP54
- Integrated thermal protection switch (For external connection)
- RoHS compliant
- 230V 3phase for use with an inverter  
400V for fixed speed application

Flanged MY9G gearbox



Square MZ9G gearbox



Nominal speed r/min	Gearbox model number	230V 3 phase Motor Model Number : M9MZ90GK4YGA			400V 3 phase Motor Model Number : M9MZ90GK4CGA			Length L	Weight kg
		Actual speed @230V	Rated torque Nm	Assembly number	Actual speed @400V	Rated torque Nm	Assembly number		
500	M#9G 3B	440	1.5	PAN G3 090 MYG 500.0 #K1	450	1.6	PAN G3 090 MCG 500.0 #K1	233	4.8
300	M#9G 5B	264	2.5	PAN G3 090 MYG 300.0 #K1	270	2.6	PAN G3 090 MCG 300.0 #K1	233	
200	M#9G 7.5B	176	3.7	PAN G3 090 MYG 200.0 #K1	180	3.9	PAN G3 090 MCG 200.0 #K1	233	
150	M#9G 10B	132	4.9	PAN G3 090 MYG 150.0 #K1	135	5.2	PAN G3 090 MCG 150.0 #K1	233	
100	M#9G 15B	88	6.9	PAN G3 090 MYG 100.0 #K1	90	7.2	PAN G3 090 MCG 100.0 #K1	233	
75	M#9G 20B	66	9.2	PAN G3 090 MYG 075.0 #K1	68	9.6	PAN G3 090 MCG 075.0 #K1	233	
60	M#9G 25B	53	11.4	PAN G3 090 MYG 060.0 #K1	54	12	PAN G3 090 MCG 060.0 #K1	233	
50	M#9G 30B	44	13.7	PAN G3 090 MYG 050.0 #K1	45	14.4	PAN G3 090 MCG 050.0 #K1	233	
30	M#9G 50B	26	19.6	PAN G3 090 MYG 030.0 #K1	27	22.4	PAN G3 090 MCG 030.0 #K1	233	
20	M#9G 75B*	18	19.6	PAN G3 090 MYG 020.0 #K1	18	19.6	PAN G3 090 MCG 020.0 #K1	233	
15	M#9G 100B*	13	19.6	PAN G3 090 MYG 015.0 #K1	14	19.6	PAN G3 090 MCG 015.0 #K1	233	
12.5	M#9G 120B*	11	19.6	PAN G3 090 MYG 012.5 #K1	11	19.6	PAN G3 090 MCG 012.5 #K1	233	
10	M#9G 150B*	8.8	19.6	PAN G3 090 MYG 010.0 #K1	9	19.6	PAN G3 090 MCG 010.0 #K1	233	
7.5	M#9G 200B*	6.6	19.6	PAN G3 090 MYG 007.5 #K1	6.8	19.6	PAN G3 090 MCG 007.5 #K1	233	
MZ9G 10XB* Additional gearbox MZ9G 10XB is included for speeds of 6.0 r/min and below									
6.0	M#9G 25B*	5.3	19.6	PAN G3 090 MYG 006.0 #K1	5.4	19.6	PAN G3 090 MCG 006.0 #K1	276	5.5
5.0	M#9G 30B*	4.4	19.6	PAN G3 090 MYG 005.0 #K1	4.5	19.6	PAN G3 090 MCG 005.0 #K1	276	
3.0	M#9G 50B*	2.6	19.6	PAN G3 090 MYG 003.0 #K1	2.7	19.6	PAN G3 090 MCG 003.0 #K1	276	
2.0	M#9G 75B*	1.8	19.6	PAN G3 090 MYG 002.0 #K1	1.8	19.6	PAN G3 090 MCG 002.0 #K1	276	
1.5	M#9G 100B*	1.3	19.6	PAN G3 090 MYG 001.5 #K1	1.4	19.6	PAN G3 090 MCG 001.5 #K1	276	
1.3	M#9G 120B*	1.1	19.6	PAN G3 090 MYG 001.3 #K1	1.1	19.6	PAN G3 090 MCG 001.3 #K1	276	
1	M#9G 150B*	0.9	19.6	PAN G3 090 MYG 001.0 #K1	0.9	19.6	PAN G3 090 MCG 001.0 #K1	276	
0.8	M#9G 180B*	0.7	19.6	PAN G3 090 MYG 000.8 #K1	0.8	19.6	PAN G3 090 MCG 000.8 #K1	276	
0.7	M#9G 200B*	0.7	19.6	PAN G3 090 MYG 000.7 #K1	0.7	19.6	PAN G3 090 MCG 000.7 #K1	276	

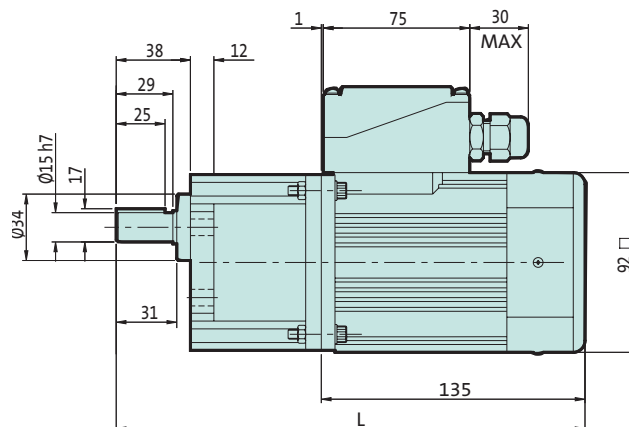
**HIGHER TORQUES** – available from 30 r/min and slower, see previous 60W high torque pages.

\* torque limiter recommended

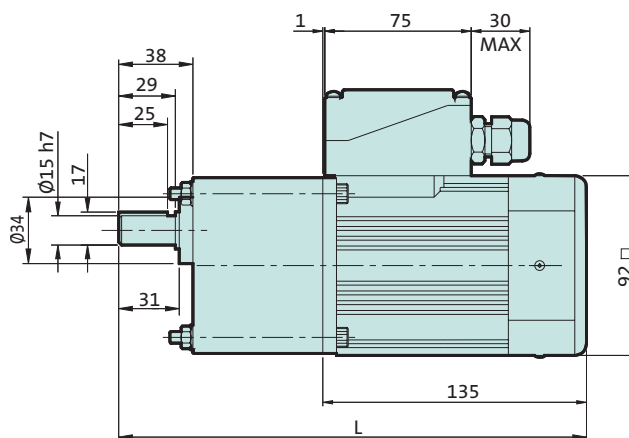
The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

Motor details see page 38.

Technical drawing of a 4-way valve. The drawing shows a top view and a side view. The top view is a square with rounded corners, with a central circular port. The side view shows the valve's profile. Dimensions are provided in millimeters (mm). The top view dimensions include a width of 110 mm, a height of 130 mm, and a central port diameter of 67 mm. The side view dimensions include a total height of 73.5 mm, a base height of 60 mm, and a top section height of 36 mm. The top view also shows four mounting holes with a diameter of 8.5 mm (4 HOLES Ø8.5) and four M6 mounting holes on a 104 mm pitch (4 x M6 ON 104 PCD). A dimension of 18 mm is shown for the distance from the center to the mounting holes. A dimension of 5 mm is shown for the central port's internal feature. A dimension of 90 mm is shown for the distance between the mounting holes.



Technical drawing of the front view of a 100mm x 100mm x 100mm cast iron motor base. The drawing shows a square base with a central circular mounting hole and four corner mounting holes. Dimensions include a total width of 100mm, a central hole diameter of 67mm, and a corner hole diameter of 18mm. The base is labeled "4 x M6 ON 104 P.C.D."



**See page 7** for terminal box positions and feet.

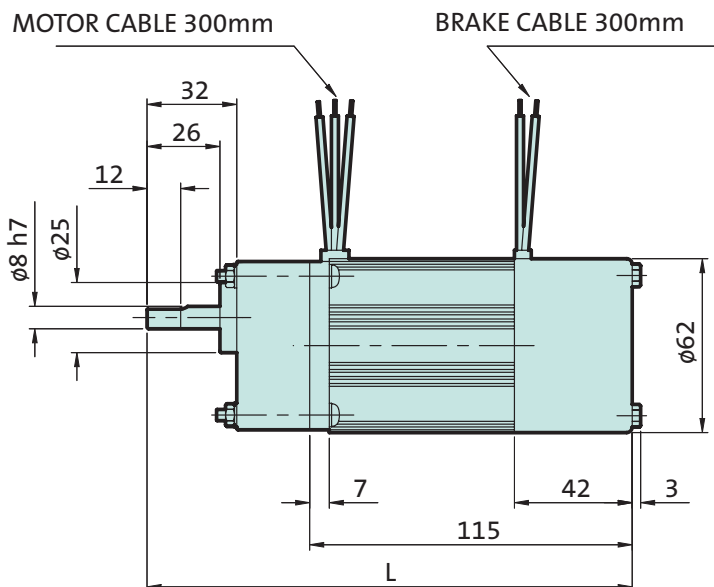
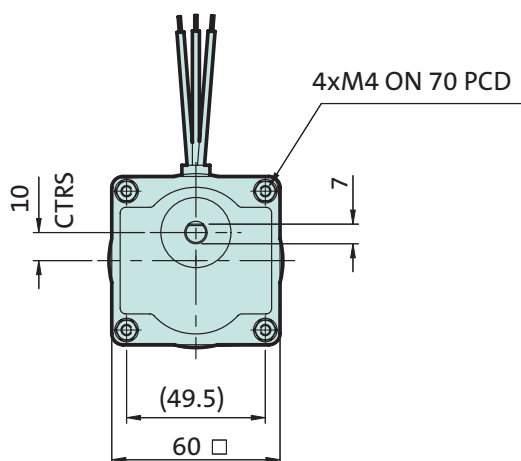
Brake motors feature a spring applied electromagnetic brake suitable for emergency stop and holding torques.

The brake is operated from mains supply connections. Up to six stops/starts per minute are possible.

MX6G gearbox



- Rated 230V  $\pm$  10% and 50 Hz
- Intermittent duty S2
- Enclosure IP22
- Supplied with 0.6 $\mu$ F run capacitor
- Thermal protection by impedance current limiting
- RoHS compliant



1 phase Brake Motor Model Number : M6RX6GB4GGA							
Nominal speed r/min	Gearbox model number	Actual speed @230V	Rated torque Nm	Braking torque Nm	Assembly number	Length L	Weight kg
500	MX6G 3BA	433	0.11	0.15	PAN G3 006 BGG 500.0 XL1	173	1.2
300	MX6G 5BA	260	0.18	0.25	PAN G3 006 BGG 300.0 XL1	173	
200	MX6G 7.5BA	173	0.27	0.36	PAN G3 006 BGG 200.0 XL1	173	
150	MX6G 10BA	130	0.36	0.49	PAN G3 006 BGG 150.0 XL1	173	
100	MX6G 15BA	87	0.53	0.73	PAN G3 006 BGG 100.0 XL1	173	
75	MX6G 20BA	65	0.64	0.98	PAN G3 006 BGG 075.0 XL1	173	
60	MX6G 25BA	52	0.89	1.2	PAN G3 006 BGG 060.0 XL1	173	
50	MX6G 30B	43	1.0	1.5	PAN G3 006 BGG 050.0 XL1	180	
30	MX6G 50B	26	1.7	2.5	PAN G3 006 BGG 030.0 XL1	180	
20	MX6G 75B*	17	2.5	2.5	PAN G3 006 BGG 020.0 XL1	180	
15	MX6G 100B*	13	2.5	2.5	PAN G3 006 BGG 015.0 XL1	180	
12.5	MX6G 120B*	11	2.5	2.5	PAN G3 006 BGG 012.5 XL1	180	
10	MX6G 150B*	9	2.5	2.5	PAN G3 006 BGG 010.0 XL1	180	
8.3	MX6G 180B*	7	2.5	2.5	PAN G3 006 BGG 008.3 XL1	180	

\* torque limiter recommended

The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7. Motor details see page 38.

Lower speeds available on request.

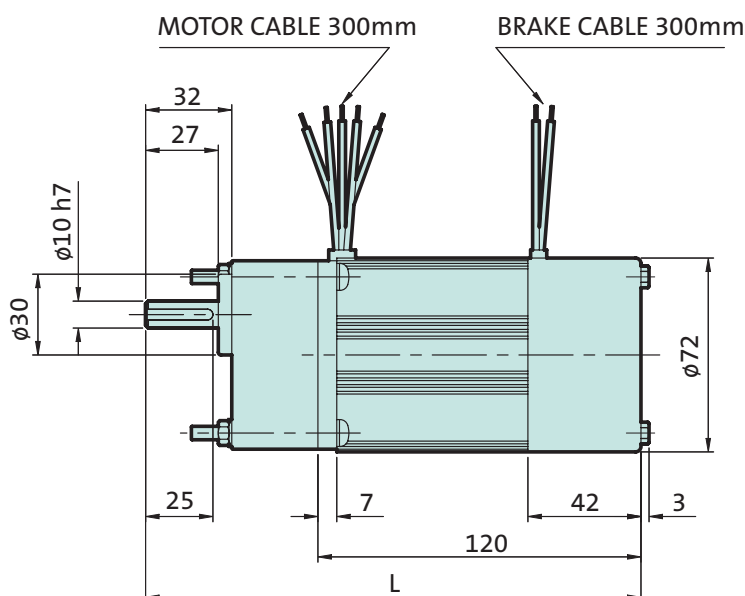
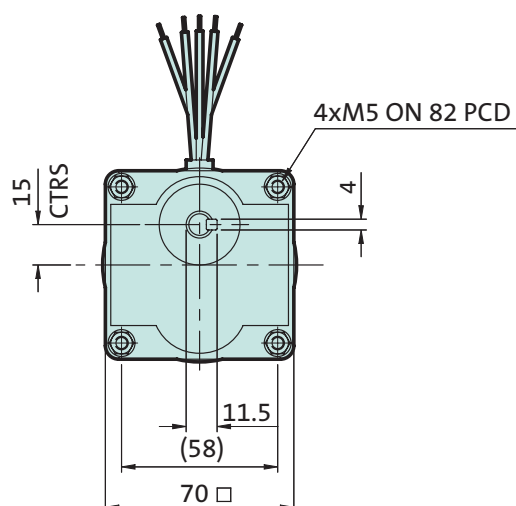
Brake motors feature a spring applied electromagnetic brake suitable for emergency stop and holding torques.

The brake is operated from mains supply connections. Up to six stops/starts per minute are possible.

MX7G gearbox



- Rated 230V  $\pm$  10% and 50 Hz
- Intermittent duty S2
- Enclosure IP22
- Supplied with 1.3 $\mu$ F run capacitor
- Integrated thermal protection switch (For external connection)
- RoHS compliant



1 phase Brake Motor Model Number : M7RX15GB4GGA							
Nominal speed r/min	Gearbox model number	Actual speed @230V	Rated torque Nm	Braking torque Nm	Assembly number	Length L	Weight kg
500	MX7G 3BA	433	0.27	0.24	PAN G3 015 BGG 500.0 XL1	182	1.6
300	MX7G 5BA	260	0.44	0.40	PAN G3 015 BGG 300.0 XL1	182	
200	MX7G 7.5BA	173	0.66	0.60	PAN G3 015 BGG 200.0 XL1	182	
150	MX7G 10BA	130	0.89	0.80	PAN G3 015 BGG 150.0 XL1	182	
100	MX7G 15BA	87	1.3	1.2	PAN G3 015 BGG 100.0 XL1	182	
75	MX7G 20BA	65	1.8	1.6	PAN G3 015 BGG 075.0 XL1	182	
60	MX7G 25BA	52	2.2	2.4	PAN G3 015 BGG 060.0 XL1	182	
50	MX7G 30B	43	2.5	4.0	PAN G3 015 BGG 050.0 XL1	188	
30	MX7G 50B	26	4.1	4.9*	PAN G3 015 BGG 030.0 XL1	188	
20	MX7G 75B*	17	4.9*	4.9*	PAN G3 015 BGG 020.0 XL1	188	
15	MX7G 100B*	13	4.9*	4.9*	PAN G3 015 BGG 015.0 XL1	188	
12.5	MX7G 120B*	11	4.9*	4.9*	PAN G3 015 BGG 012.5 XL1	188	
10	MX7G 150B*	9	4.9*	4.9*	PAN G3 015 BGG 010.0 XL1	188	
8.3	MX7G 180B*	7	4.9*	4.9*	PAN G3 015 BGG 008.3 XL1	188	

\* torque limiter recommended

The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7. Motor details see page 38.

Lower speeds available on request.

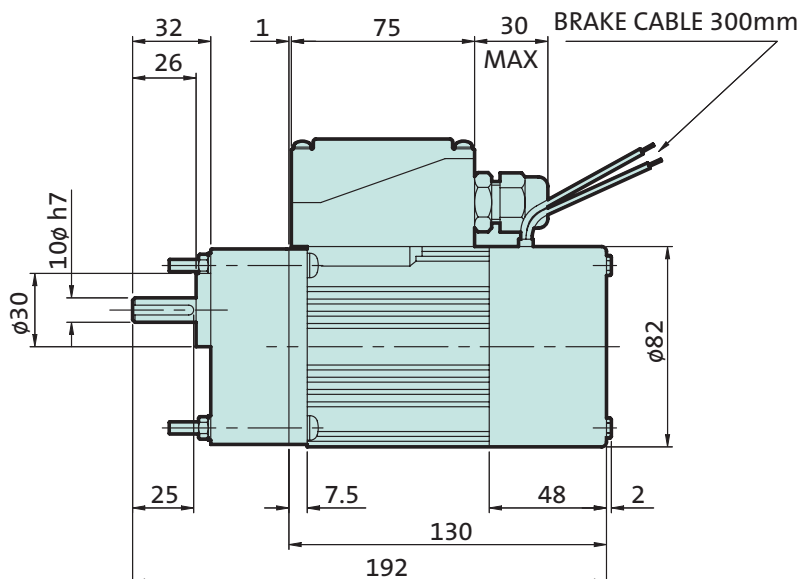
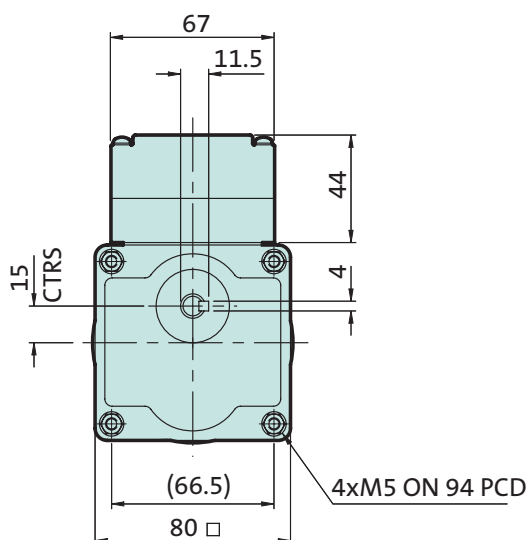
Brake motors feature a spring applied electromagnetic brake suitable for emergency stop and holding torques.

The brake is operated from mains supply connections. Up to six stops/starts per minute are possible.

MX8G gearbox



- Rated 230V  $\pm$  10% and 50 Hz
- 1 phase models intermittent duty S2  
3 phase models, continuous duty S1
- Enclosure IP44
- Supplied phase model supplied with 2.0 $\mu$ F run capacitor
- Integrated thermal protection switch (For external connection)
- RoHS compliant



Nominal speed r/min	Gearbox model number	1 phase Brake Motor Model Number : M8RX25GR4GG1				3 phase Brake Motor Model Number : M8MX25GR4YG1			
		Actual speed @230V	Rated torque Nm	Braking torque Nm	Assembly number	Actual speed @230V	Rated torque Nm	Braking torque Nm	Assembly number
500	MX8G 3B	425	0.46	0.30	PAN G3 025 BGG 500.0 XK1	458	0.41	0.3	PAN G3 025 BYG 500.0 XK1
300	MX8G 5B	255	0.77	0.50	PAN G3 025 BGG 300.0 XK1	275	0.69	0.5	PAN G3 025 BYG 300.0 XK1
200	MX8G 7.5B	170	1.2	0.75	PAN G3 025 BGG 200.0 XK1	183	1.0	0.8	PAN G3 025 BYG 200.0 XK1
150	MX8G 10B	128	1.5	1.0	PAN G3 025 BGG 150.0 XK1	138	1.4	1.0	PAN G3 025 BYG 150.0 XK1
100	MX8G 15B	85	2.3	1.5	PAN G3 025 BGG 100.0 XK1	92	2.1	1.5	PAN G3 025 BYG 100.0 XK1
75	MX8G 20B	64	3.1	2.0	PAN G3 025 BGG 075.0 XK1	69	2.8	2.0	PAN G3 025 BYG 075.0 XK1
60	MX8G 25B	51	3.8	2.5	PAN G3 025 BGG 060.0 XK1	55	3.4	2.5	PAN G3 025 BYG 060.0 XK1
50	MX8G 30B	43	4.3	3.0	PAN G3 025 BGG 050.0 XK1	46	3.8	3.0	PAN G3 025 BYG 050.0 XK1
30	MX8G 50B	26	7.1	3.6	PAN G3 025 BGG 030.0 XK1	28	6.4	5.0	PAN G3 025 BYG 030.0 XK1
20	MX8G 75B*	17	7.8	5.0	PAN G3 025 BGG 020.0 XK1	18	7.80	7.50	PAN G3 025 BYG 020.0 XK1
15	MX8G 100B*	13	7.8	7.5	PAN G3 025 BGG 015.0 XK1	14	7.80	7.80	PAN G3 025 BYG 015.0 XK1
12.5	MX8G 120B*	11	7.8	7.8	PAN G3 025 BGG 012.5 XK1	11	7.80	7.80	PAN G3 025 BYG 012.5 XK1
10	MX8G 150B*	9	7.8	7.8	PAN G3 025 BGG 010.0 XK1	9	7.80	7.80	PAN G3 025 BYG 010.0 XK1
8.3	MX8G 180B*	7	7.8	7.8	PAN G3 025 BGG 008.3 XK1	8	7.80	7.80	PAN G3 025 BYG 008.3 XK1

\* torque limiter recommended

Geared motor weight = 2.5kg

The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

Motor details see page 38.

Lower speeds available on request.

400V available on request.

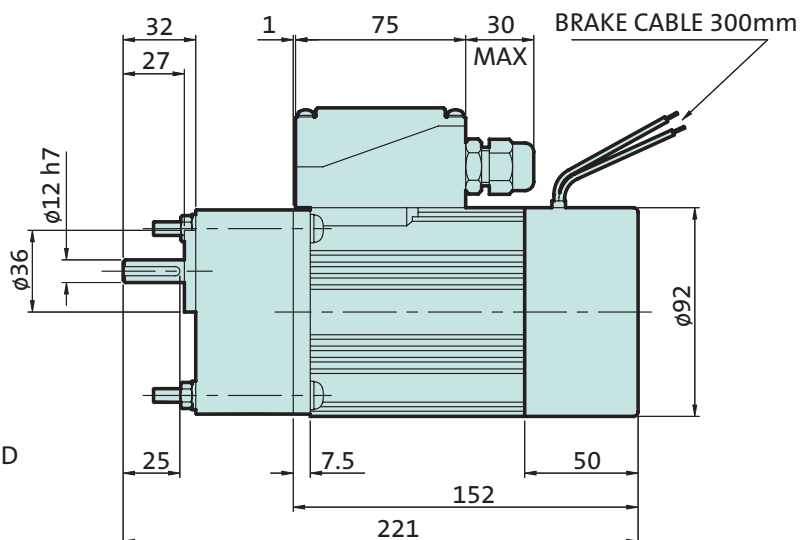
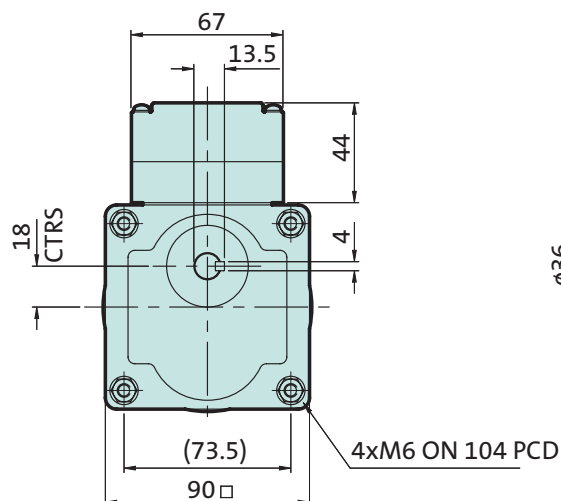
Brake motors feature a spring applied electromagnetic brake suitable for emergency stop and holding torques.

The brake is operated from mains supply connections. Up to six stops/starts per minute are possible.



- Rated 230V  $\pm$  10% and 50 Hz
- 1 phase models intermittent duty S2  
3 phase models, continuous duty S1
- Enclosure IP44
- Single phase model supplied with 3.5 $\mu$ F run capacitor
- Integrated thermal protection switch (For external connection)
- RoHS compliant

MX9G gearbox



Nominal speed r/min	Gearbox model number	1 phase Brake Motor Model Number : M9RX40GR4GG1				3 phase Brake Motor Model Number : M9MX40GR4YG1				Length L
		Actual speed @230V	Rated torque Nm	Braking torque Nm	Assembly number	Actual speed @230V	Rated torque Nm	Braking torque Nm	Assembly number	
500	MX9G 3B	450	0.68	0.6	PAN G3 040 BGG 500.0 XL1	467	0.66	0.6	PAN G3 040 BYG 500.0 XL1	221
300	MX9G 5B	270	1.1	1.0	PAN G3 040 BGG 300.0 XL1	280	1.1	1.0	PAN G3 040 BYG 300.0 XL1	
200	MX9G 7.5B	180	1.7	1.5	PAN G3 040 BGG 200.0 XL1	187	1.6	1.5	PAN G3 040 BYG 200.0 XL1	
150	MX9G 10B	135	2.3	2.0	PAN G3 040 BGG 150.0 XL1	140	2.2	2.0	PAN G3 040 BYG 150.0 XL1	
100	MX9G 15B	90	3.4	3.0	PAN G3 040 BGG 100.0 XL1	93	3.3	3.0	PAN G3 040 BYG 100.0 XL1	
75	MX9G 20B	68	4.2	4.0	PAN G3 040 BGG 075.0 XL1	70	4.4	4.0	PAN G3 040 BYG 075.0 XL1	
60	MX9G 25B	54	5.3	5.0	PAN G3 040 BGG 060.0 XL1	56	5.5	5.0	PAN G3 040 BYG 060.0 XL1	
50	MX9G 30B	45	6.3	6.0	PAN G3 040 BGG 050.0 XL1	47	6.1	6.0	PAN G3 040 BYG 050.0 XL1	
30	MX9G 50B*	27	9.8	9.8	PAN G3 040 BGG 030.0 XL1	28	9.8	9.8	PAN G3 040 BYG 030.0 XL1	
20	MX9G 75B*	18	9.8	9.8	PAN G3 040 BGG 020.0 XL1	19	9.8	9.8	PAN G3 040 BYG 020.0 XL1	
15	MX9G 100B*	14	9.8	9.8	PAN G3 040 BGG 015.0 XL1	14	9.8	9.8	PAN G3 040 BYG 015.0 XL1	
12.5	MX9G 120B*	11	9.8	9.8	PAN G3 040 BGG 012.5 XL1	12	9.8	9.8	PAN G3 040 BYG 012.5 XL1	
10	MX9G 150B*	9	9.8	9.8	PAN G3 040 BGG 010.0 XL1	9	9.8	9.8	PAN G3 040 BYG 010.0 XL1	
8.3	MX9G 180B*	8	9.8	9.8	PAN G3 040 BGG 008.3 XL1	8	9.8	9.8	PAN G3 040 BYG 008.3 XL1	

\* torque limiter recommended

Geared motor weight = 4.0kg

The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

Motor details see page 38.

Lower speeds available on request.

400V available on request.

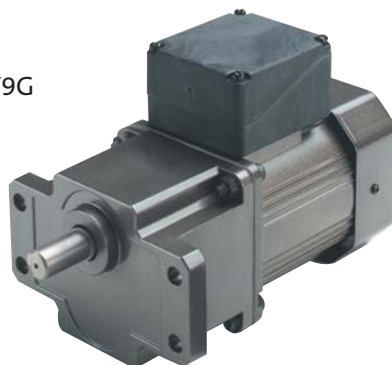
# Panasonic | geared brake motor

Brake motors feature a spring applied electromagnetic brake suitable for emergency stop and holding torques.

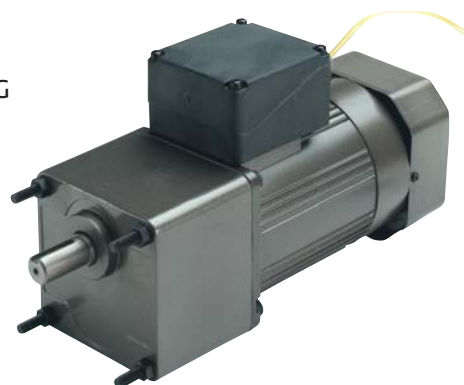
The brake incorporates an integrated brake rectifier so can be operated from mains supply. Up to six stops/starts per minute are possible. Flanged and square gearboxes are available.

For fixed speed applications 230V 1 phase versions are available. 230V 3 phase versions are available for variable speed applications and can be used with a Lenze inverter.

Flanged MY9G gearbox



Square MZ9G gearbox



- Rated 230V  $\pm$  10% and 50 Hz
- 1 phase models intermittent duty S2  
3 phase models, continuous duty S1
- Enclosure IP44
- Single phase model supplied with 5.0 $\mu$ F run capacitor
- Integrated thermal protection switch (For external connection)
- RoHS compliant

Nominal speed r/min	Gearbox model number	1 phase Brake Motor Model Number : M9RZ60GR4GG1				3 phase Brake Motor Model Number : M9MZ60GR4YG1				Weight Kg
		Actual speed @230V	Rated torque Nm	Braking torque Nm	Assembly number	Actual speed @230V	Rated torque Nm	Braking torque Nm	Assembly number	
500	M#9G 3B	433	1.1	1.2	PAN G3 060 BGG 500.0 #K1	467	1	1.2	PAN G3 060 BYG 500.0 #K1	4.6
300	M#9G 5B	260	1.8	2.0	PAN G3 060 BGG 300.0 #K1	280	1.7	2.0	PAN G3 060 BYG 300.0 #K1	
200	M#9G 7.5B	173	2.7	3.0	PAN G3 060 BGG 200.0 #K1	187	2.5	2.9	PAN G3 060 BYG 200.0 #K1	
150	M#9G 10B	130	3.6	3.9	PAN G3 060 BGG 150.0 #K1	140	3.1	3.9	PAN G3 060 BYG 150.0 #K1	
100	M#9G 15B	87	5.0	5.9	PAN G3 060 BGG 100.0 #K1	93	4.6	5.9	PAN G3 060 BYG 100.0 #K1	
75	M#9G 20B	65	6.6	7.8	PAN G3 060 BGG 075.0 #K1	70	5.7	7.8	PAN G3 060 BYG 075.0 #K1	
60	M#9G 25B	52	8.3	9.8	PAN G3 060 BGG 060.0 #K1	56	7.2	9.8	PAN G3 060 BYG 060.0 #K1	
50	M#9G 30B	43	9.9	11.7	PAN G3 060 BGG 050.0 #K1	47	8.6	11.7	PAN G3 060 BYG 050.0 #K1	
30	M#9G 50B	26	15.4	19.5	PAN G3 060 BGG 030.0 #K1	28	14.4	19.5	PAN G3 060 BYG 030.0 #K1	
20	M#9G 75B*	17	19.6	19.6	PAN G3 060 BGG 020.0 #K1	19	19.6	19.6	PAN G3 060 BYG 020.0 #K1	
15	M#9G 100B*	13	19.6	19.6	PAN G3 060 BGG 015.0 #K1	14	19.6	19.6	PAN G3 060 BYG 015.0 #K1	
12.5	M#9G 120B*	11	19.6	19.6	PAN G3 060 BGG 012.5 #K1	12	19.6	19.6	PAN G3 060 BYG 012.5 #K1	
10	M#9G 150B*	9	19.6	19.6	PAN G3 060 BGG 010.0 #K1	9	19.6	19.6	PAN G3 060 BYG 010.0 #K1	
7.5	M#9G 200B*	7	19.6	19.6	PAN G3 060 BGG 007.5 #K1	7	19.6	19.6	PAN G3 060 BYG 007.5 #K1	

HIGHER TORQUES – available from 30 r/min and slower, see following 60W high torque pages.

\* torque limiter recommended

The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

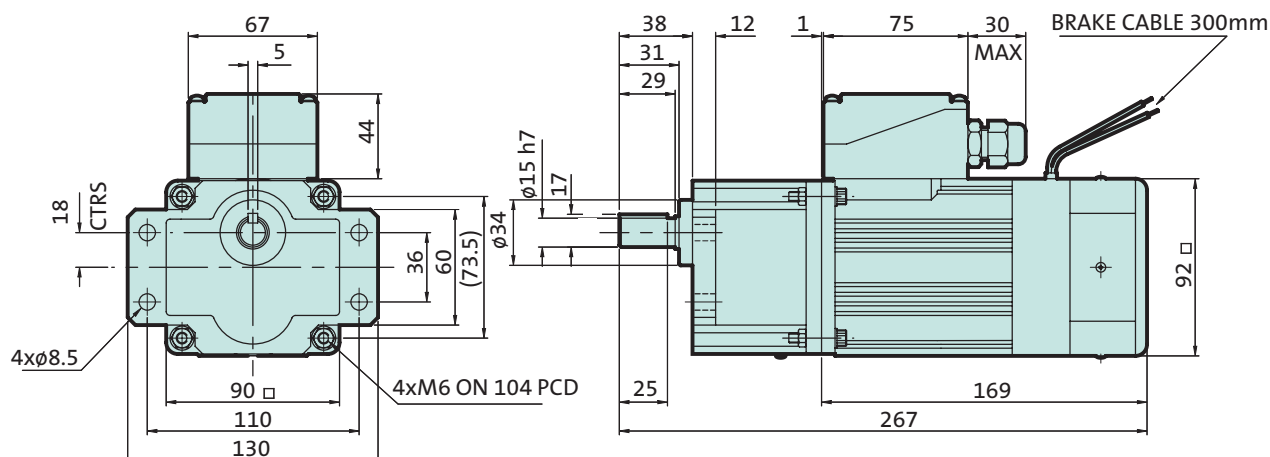
Motor details see page 38.

Lower speeds available on request.

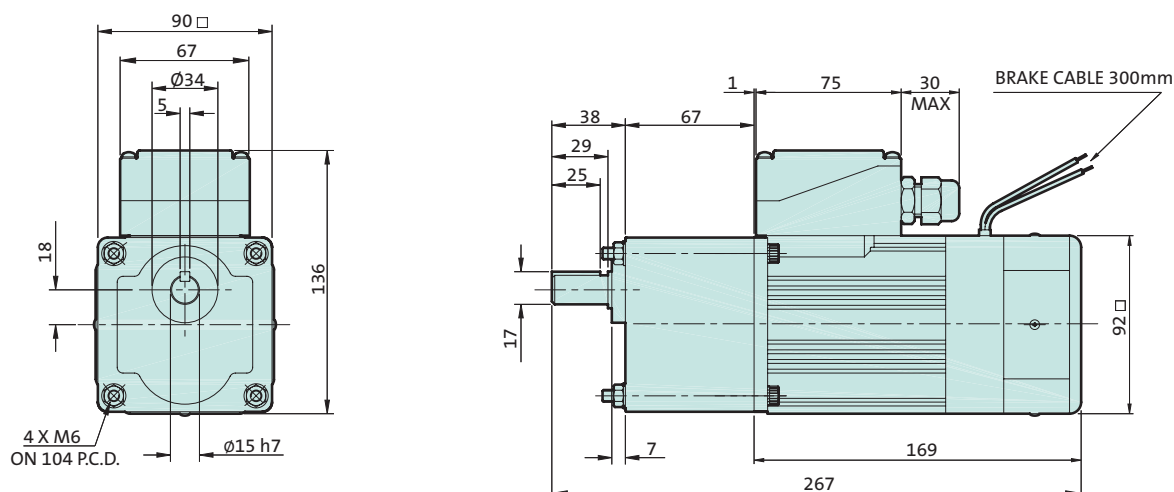
400V available on request.

**60W  
braked**

### Flanged gearbox



### Square gearbox



### Ordering specification and example

Replace the letter # from the assembly number with a 'Y' for flanged gearbox or 'Z' for square gearbox as required. Examples:

100 r/min flanged with 1 phase brake motor

10 r/min square with 3 phase brake motor

PAN G3 060 BGG 100.0 Y K1

PAN G3 060 BYG 010.0 Z K1

See page 7 for terminal box positions and feet.

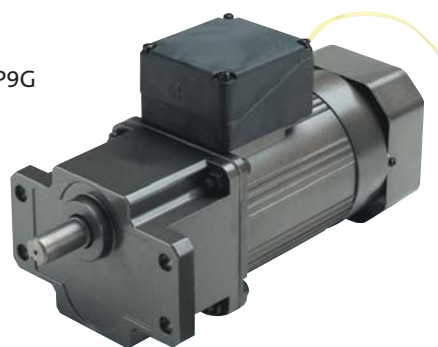
# Panasonic | geared brake motor

Brake motors feature a spring applied electromagnetic brake suitable for emergency stop and holding torques.

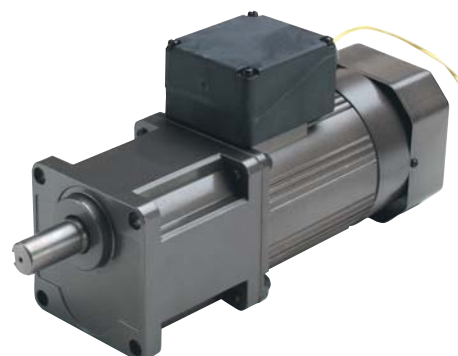
The brake is operated from mains supply connections. Up to six stops/starts per minute are possible. Flanged and square gearboxes are available.

For fixed speed applications 230V 1 phase versions are available. 230V 3 phase versions are available for variable speed applications and can be used with a Lenze inverter.

Flanged MP9G gearbox



Square MR9G gearbox



- Rated 230V  $\pm$  10% and 50 Hz
- 1 phase models intermittent duty S2
- 3 phase models, continuous duty S1
- Enclosure IP44
- Single phase models supplied with 5.0 $\mu$ F run capacitor
- Integrated thermal protection switch (For external connection)
- RoHS compliant

Nominal speed r/min	Gearbox model number	1 phase Brake Motor Model Number : M9RZ60GR4GG1				3 phase Brake Motor Model Number : M9MZ60GR4YG1				Weight Kg
		Actual speed @230V	Rated torque Nm	Braking torque Nm	Assembly number	Actual speed @230V	Rated torque Nm	Braking torque Nm	Assembly number	
30	M#9G 50B	26	15.4	19.5	PAN G3 060 BGG 030.0 #K1	26.5	15.1	19.5	PAN G3 060 BYG 030.0 #K1	5.4
20	M#9G 75B*	17	23.1	19.6	PAN G3 060 BGG 020.0 #K1	17.7	22.6	19.6	PAN G3 060 BYG 020.0 #K1	
15	M#9G 100B*	13	29.4	19.6	PAN G3 060 BGG 015.0 #K1	13.3	29.4	19.6	PAN G3 060 BYG 015.0 #K1	
12.5	M#9G 120B*	11	29.4	19.6	PAN G3 060 BGG 012.5 #K1	11	29.4	19.6	PAN G3 060 BYG 012.5 #K1	
10	M#9G 150B*	9	29.4	19.6	PAN G3 060 BGG 010.0 #K1	8.8	29.4	19.6	PAN G3 060 BYG 010.0 #K1	
7.5	M#9G 200B*	7	29.4	19.6	PAN G3 060 BGG 007.5 #K1	6.6	29.4	19.6	PAN G3 060 BYG 007.5 #K1	

**HIGHER SPEEDS – see the 60W and 90W selections on adjacent pages**

\* torque limiter recommended

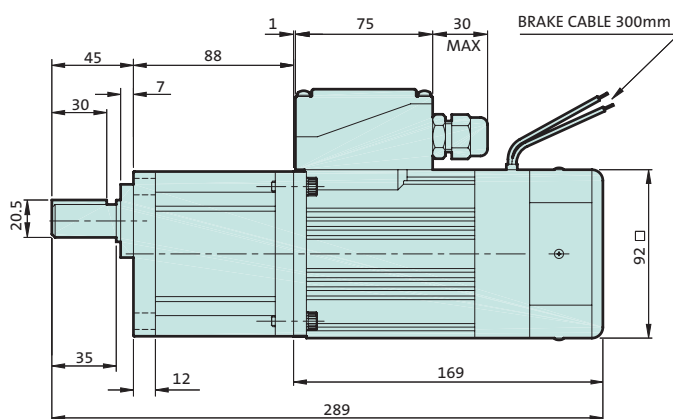
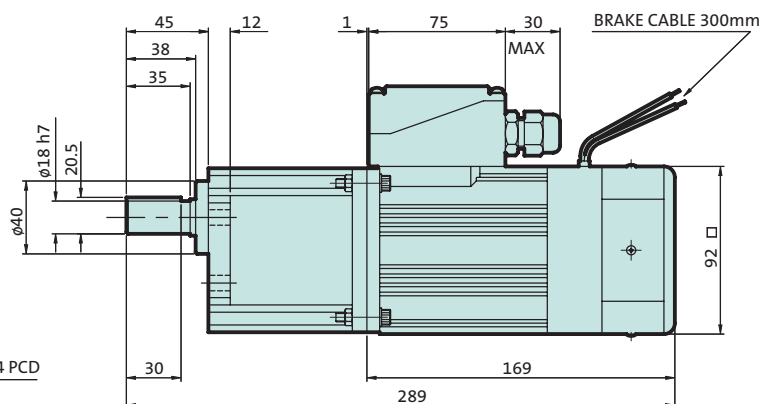
The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

Motor details see page 38.

Lower speeds available on request.

**400V brake motors also available.**

90W motors can be used for increased torque at 20 & 30 r/min.



PAN G3 060 BGG 030.0 P K1  
PAN G3 060 BYG 007.5 R K1

See page 7 for terminal box positions.

## Panasonic | geared brake motor

Brake motors feature a spring applied electromagnetic brake suitable for emergency stop and holding torques.

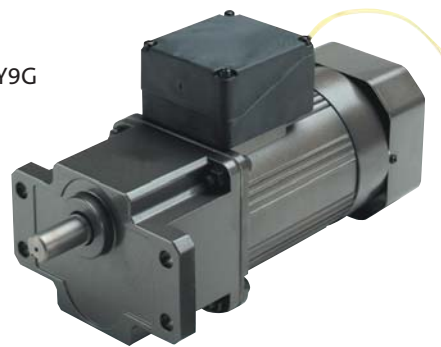
The brake is operated from mains supply connections. Up to six stops/starts per minute are possible. Flanged and square gearboxes are available.

For fixed speed applications 230V 1 phase versions are available. 230V 3 phase versions are available for variable speed applications and can be used with a Lenze inverter.

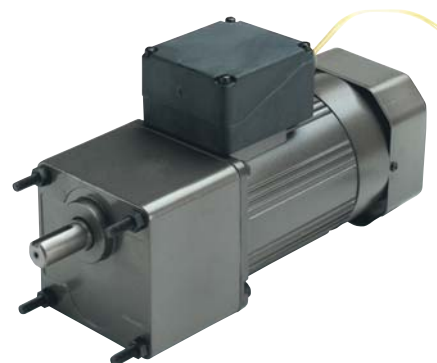


- Rated 230V  $\pm$  10% and 50 Hz
- 1 phase models intermittent duty S2  
3 phase models, continuous duty S1
- Enclosure IP44
- Single phase models supplied with  
7.0 $\mu$ F run capacitor
- Integrated thermal protection switch  
(For external connection)

Flanged MY9G  
gearbox



Square MZ9G  
gearbox



Nominal speed r/min	Gearbox model number	1 phase Brake Motor Model Number : M9RZ90GR4GG1				3 phase Brake Motor Model Number : M9MZ90GR4YG1				Weight Kg
		Actual speed @230V	Rated torque Nm	Braking torque Nm	Assembly number	Actual speed @230V	Rated torque Nm	Braking torque Nm	Assembly number	
500	M#9G 3B	425	1.6	1.2	PAN G3 090 BGG 500.0 #K1	467	1.5	1.2	PAN G3 090 BYG 500.0 #K1	5.2
300	M#9G 5B	255	2.7	2.0	PAN G3 090 BGG 300.0 #K1	280	2.5	2.0	PAN G3 090 BYG 300.0 #K1	
200	M#9G 7.5B	170	4.1	2.9	PAN G3 090 BGG 200.0 #K1	187	3.8	2.9	PAN G3 090 BYG 200.0 #K1	
150	M#9G 10B	128	5.4	3.9	PAN G3 090 BGG 150.0 #K1	140	5.0	3.9	PAN G3 090 BYG 150.0 #K1	
100	M#9G 15B	85	7.5	5.9	PAN G3 090 BGG 100.0 #K1	93	7.0	5.9	PAN G3 090 BYG 100.0 #K1	
75	M#9G 20B	64	10.1	7.8	PAN G3 090 BGG 075.0 #K1	70	9.3	7.8	PAN G3 090 BYG 075.0 #K1	
60	M#9G 25B	51	12.6	9.8	PAN G3 090 BGG 060.0 #K1	56	12	9.8	PAN G3 090 BYG 060.0 #K1	
50	M#9G 30B	43	15.1	11.7	PAN G3 090 BGG 050.0 #K1	47	14	11.7	PAN G3 090 BYG 050.0 #K1	
30	M#9G 50B*	26	19.6	19.5	PAN G3 090 BGG 030.0 #K1	28	21.7	19.5	PAN G3 090 BYG 030.0 #K1	
20	M#9G 75B*	17	19.6	19.6	PAN G3 090 BGG 020.0 #K1	19	19.6	19.6	PAN G3 090 BYG 020.0 #K1	
15	M#9G 100B*	135	19.6	19.6	PAN G3 090 BGG 015.0 #K1	14	19.6	19.6	PAN G3 090 BYG 015.0 #K1	
12.5	M#9G 120B*	118	19.6	19.6	PAN G3 090 BGG 012.5 #K1	12	19.6	19.6	PAN G3 090 BYG 012.5 #K1	
10	M#9G 150B*	9	19.6	19.6	PAN G3 090 BGG 010.0 #K1	9.3	19.6	19.6	PAN G3 090 BYG 010.0 #K1	
7.5	M#9G 200B*	6	19.6	19.6	PAN G3 090 BGG 007.5 #K1	7.0	19.6	19.6	PAN G3 090 BYG 007.5 #K1	

**HIGHER TORQUES – available from 30 r/min and slower speeds, see previous 60W high torque pages.**

\* torque limiter recommended

The last digit '1' signifies standard mounting position 1 as shown. For further mounting positions please see page 7.

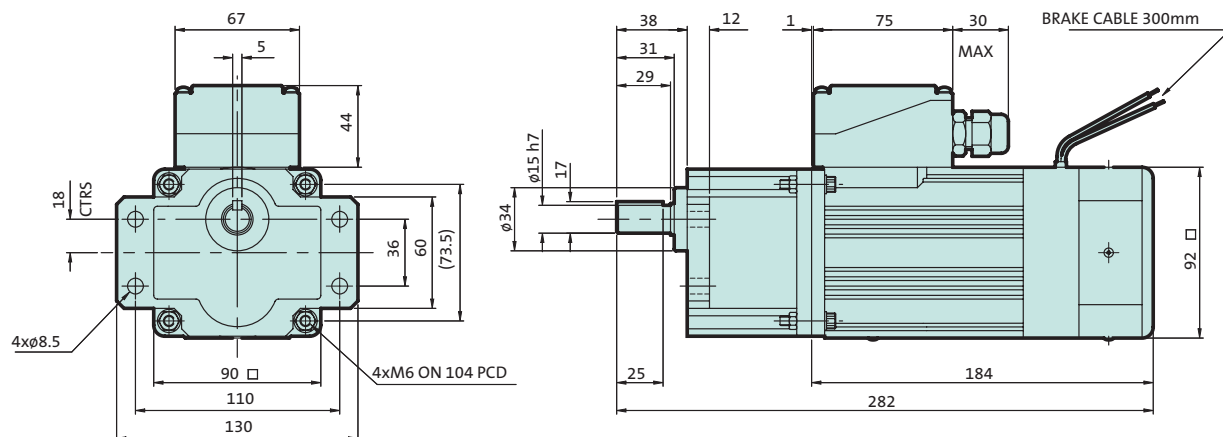
Motor details see page 38.

Lower speeds available on request.

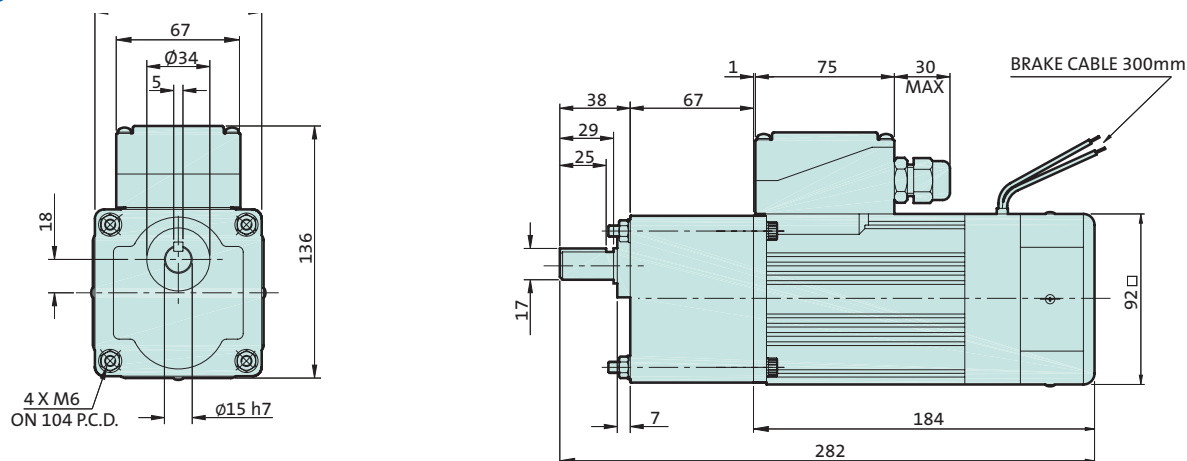
**400V brake motors also available.**

**90W  
braked**

### Flanged gearbox



### Square gearbox



### Ordering specification and example

Replace the letter # from the assembly number with a 'Y' for flanged gearbox or 'Z' for square gearbox as required. Examples:

100 r/min flanged with 1 phase brake motor

7.5 r/min square with 3 phase brake motor

PAN G3 090 BGG 100.0 Y K1

PAN G3 090 BYG 007.5 Z K1

See page 7 for terminal box positions and feet.

## Fitting and operating instructions

Panasonic AC geared motors comprise a totally enclosed standard motor with grease lubricated bearings and a grease-filled gearbox, neither of which will require any maintenance during the running of the unit under normal operating conditions. On installation, the mounting of the motor must allow a free flow of cooling air over the surface of the motor. This condition must be maintained under all circumstances. The method of mounting should also limit the radial & axial force applied to the geared output shaft.

## Fitting instructions

For models fitted with square gearboxes, it is recommended that the output shaft bearing housing should be used as a locating spigot for mounting the unit. Firstly, remove the four fixing nuts, taking care that the motor and gearbox do not separate. The four fixing bolts should be used to secure the unit to the machine. Alternatively, foot mounts can be supplied to ease mounting.

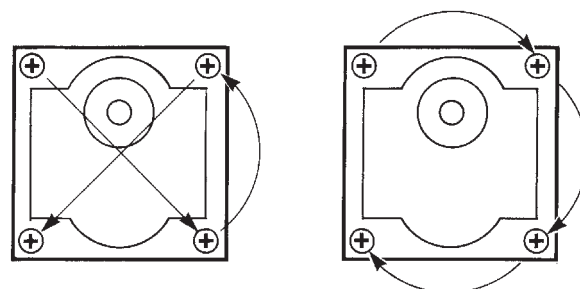
For models fitted with flanged gearboxes, it is recommended that the shaft spigot is used for location, with the four mounting clearance holes on the gearbox used for securing the unit to the machine. When tightening the fixing bolts follow the sequence shown in the diagram. In the event of the motor being separated from the gearbox, this will invalidate the warranty.

It is recommended that a new O-ring is then fitted to ensure proper sealing.

## Radial and axial loads

Radial load shows how much bending load may be applied to the output shaft of the gearbox at 1/2 length position. This applies to the application when the motor and machine are connected with a chain or

## Tightening of fixing bolts



Good example

Bad example

### IMPORTANT

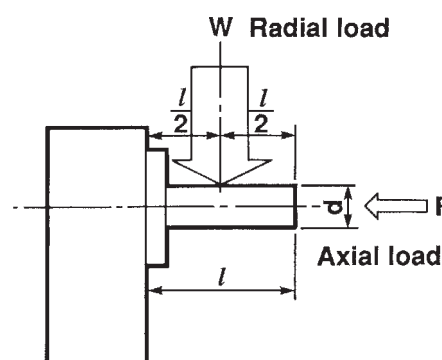
When face mounting the geared motor to an assembly, DO NOT remove or twist the gearhead from or on the motor. This will cause the O-ring to deform resulting in grease leakage when reassembled. If the mounting orientation is modified or the identification label removed from the geared motor, warranty of the goods may be invalidated.

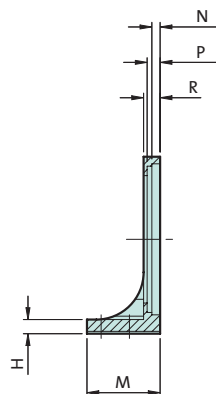
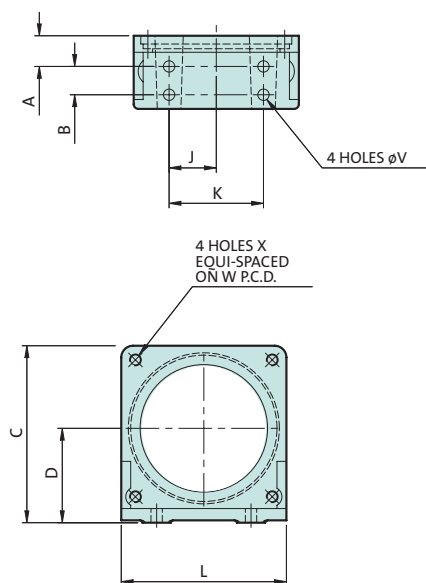
## Spare 'O' rings

Motor power	Motor size	Type number
6W	60 mm <sup>2</sup>	PAN G3 ORING 60
15W	70 mm <sup>2</sup>	PAN G3 ORING 70
25W	80 mm <sup>2</sup>	PAN G3 ORING 80
40-90W	90 mm <sup>2</sup>	PAN G3 ORING 90

	Size	Type	Max output Torque (Nm)	Radial Load (N)	Axial Load (N)
Ball Bearings	60mm <sup>2</sup>	MX6GxxxB	2.45	98	29
	70mm <sup>2</sup>	MX7GxxxB	4.90	196	39
	80mm <sup>2</sup>	MX8GxxxB	7.84	294	49
	90mm <sup>2</sup>	MX9GxxxB	9.80	392	98
		MZ9GxxxB	19.6	588	147
		MY9GxxxB	19.6	588	147
		MR9GxxxB	29.4	784	147
		MP9GxxxB	29.4	784	147

belt but does not apply when a soft flexible coupling is used. Since excessive radial and axial loads affect the life of the geared motor, please do not exceed the maximum stated loads.





Standard feet are available for all square gearboxes. These can be ordered and fitted to suit the required mounting configuration, [see page 7](#). Flanged geared motors with powers 60-90W do not accept feet.



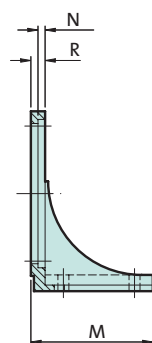
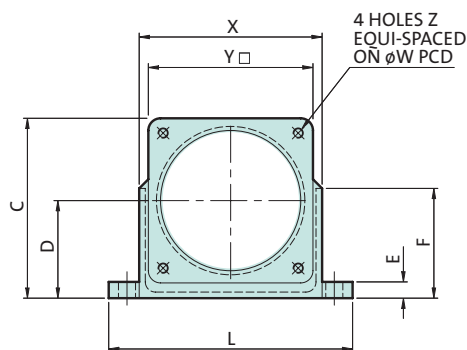
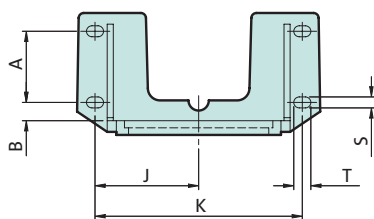
## Ordering

6W type No.	PAN G3 M6 B2
15W type No.	PAN G3 M7 B2
25W type No.	PAN G3 M8 B2
40-90W type No.	PAN G3 M9 B2

## Dimensions

	A	B	C	D	H	J	K	L	M	N	P	R	V	W	X
6W Feet	12	8	65	35	6	17	34	60	25	3	5.5	6	Ø4.8	Ø70	M4
15W Feet	13	12	75	40	6	20	40	70	31	3.5	5.5	7	Ø4.8	Ø82	M5
25W Feet	15	14	85	45	6	23	46	80	35	3.5	—	7	Ø5.5	Ø94	M5
40W-90W Feet	20	20	95	50	8	28	56	90	46	3.5	—	8	Ø7	Ø104	M6

# Panasonic | side fixing feet



Side fixing feet fit to the front of the gearbox and allow 360° access to the gearbox shaft. They are available for powers 25W and higher. [See page 7](#) to specify the mounting position required. Flanged geared motors do not accept feet.



## Ordering

25W type No.	PAN G3 M8 B3
40W-90W type No.	PAN G3 M9 B3

## Dimensions

	A	B	C	D	H	J	K	L	M	N	R	S	T	U	W	X	Y	Z
25W Feet	35	9	89	48	8	51	102	128	60	3.5	7	5.4	8.4	54	Ø94	90	81	M5
40W-90W Feet	40	9	98.5	53	10	56	112	130	67	3.5	10	5.4	8.4	60	Ø104	100	91	M6

## Motor insulation class B

	Model	Weight (kg)	Voltage (V)	Freq (Hz)	Output Power (W)	Rated Current (A)	Rated Input Power (W)	Rated Speed (r/min)	Rated Torque (Nm)	Starting Current (Nm)
Standard 1 phase 230V	M61X6G4GGA	0.67	230	50	6	0.11	23	1250	0.046	0.15
	M71X15G4GGA	1.10	230	50	15	0.16	36	1300	0.11	0.28
	M81X25GK4GGA	1.50	230	50	25	0.28	59	1250	0.19	0.48
	M91X40GK4GGA	2.40	230	50	40	0.37	79	1275	0.3	0.72
	M91Z60GK4GGA	2.70	230	50	60	0.61	129	1300	0.44	1.10
	M91Z90GK4GGA	3.20	230	50	90	0.89	185	1250	0.69	1.50
Quick Reversible 1 phase 230V	M6RX6G4GGA	0.67	230	50	6	0.12	26	1300	0.044	0.15
	M7RX15G4GGA	1.10	230	50	15	0.18	40	1275	0.11	0.28
	M8RX25GK4GG1	1.80	230	50	25	0.28	62	1275	0.19	0.49
	M9RX40GK4GG1	2.80	230	50	40	0.40	92	1300	0.33	0.74
	M9RZ60GK4GG1	3.00	230	50	60	0.66	145	1275	0.45	1.10
	M9RZ90GK4GG1	3.30	230	50	90	0.92	202	1250	0.69	1.60
Brake 1 phase 230V	M6RX6GB4GGA	0.85	230	50	6	0.12	26	1300	0.044	0.16
	M7RX15GB4GGA	1.10	230	50	15	0.17	38	1300	0.11	0.28
	M8RX25GR4GG1	1.80	230	50	25	0.27	59	1275	0.19	0.48
	M9RX40GR4GG1	2.80	230	50	40	0.36	84	1350	0.28	0.76
	M9RZ60GR4GG1	3.10	230	50	60	0.62	135	1300	0.44	1.25
	M9RZ90GR4GG1	3.70	230	50	90	0.89	192	1275	0.67	1.60
3 phase 230V	M8MX25GK4YGA	1.80	230	50	25	0.23	49	1320	0.16	0.64
	M9MX40GK4YGA	2.80	230	50	40	0.28	66	1340	0.27	0.91
	M9MZ60GK4YGA	3.00	230	50	60	0.40	98	1320	0.41	1.30
	M9MZ90GK4YGA	3.30	230	50	90	0.56	137	1320	0.61	2.00
3 phase 400V	M8MX25GK4CGA	1.80	400	50	25	0.12	52	1325	0.18	0.32
	M9MX40GK4CGA	2.80	400	50	40	0.15	66	1350	0.28	0.47
	M9MZ60GK4CGA	3.00	400	50	60	0.22	103	1325	0.43	0.65
	M9MZ90GK4CGA	3.30	400	50	90	0.31	144	1350	0.64	1.00
3 phase 230V braked	M8MX25GR4YG1	1.80	230	50	25	0.29	56	1375	0.17	0.67
	M9MX40GR4YG1	2.80	230	50	40	0.33	69	1400	0.27	1.00
	M9MZ60GR4YG1	3.10	230	50	60	0.47	98	1400	0.41	1.40
	M9MZ90GR4YG1	3.70	230	50	90	0.70	145	1400	0.62	2.10

	Starting torque (Nm)	Capacitor (uF/V)	Rating (IP)	Duty	Insulation Class	Approval	Thermal Switch	Brake Current (A)	Brake input Power (W)	Brake holding Torque (Nm)
Standard 1 phase 230V	0.05	0.6 450	20	S1	B	UL/cUL/CE/CCC	No	n/a	n/a	n/a
	0.11	1.2 450	20	S1	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	0.16	1.5 450	54	S1	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	0.28	2.5 450	54	S1	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	0.53	4.5 450	54	S1	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	0.68	6.0 450	54	S1	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
Quick Reversible 1 phase 230V	0.06	0.8 450	20	S2*	B	UL/cUL/CE/CCC	No	n/a	n/a	n/a
	0.09	1.3 450	20	S1*	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	0.19	2.0 450	44	S1*	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	0.29	3.5 450	44	S2	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	0.57	5.0 450	44	S2*	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	0.79	7.0 450	44	S2	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
Brake 1 phase 230V	0.07	0.8 450	20	S2*	B	UL/cUL/CE/CCC	No	0.02	4	0.05
	0.11	1.3 450	20	S2*	B	UL/cUL/CE/CCC	Yes	0.03	6	0.08
	0.21	2.0 450	44	S2*	B	UL/cUL/CE/CCC	Yes	0.03	6	0.10
	0.43	3.5 450	44	S2*	B	UL/cUL/CE/CCC	Yes	0.05	9	0.20
	0.62	5.0 450	44	S2*	B	UL/cUL/CE/CCC	Yes	0.05	10	0.39
	0.83	7.0 450	44	S2	B	UL/cUL/CE/CCC	Yes	0.05	10	0.39
3 phase 230V	0.50	n/a	54	S1	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	0.63	n/a	20	S1	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	0.87	n/a	20	S1	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	1.40	n/a	20	S1	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
3 phase 400V	0.56	n/a	54	S1	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	0.74	n/a	54	S1	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	1.00	n/a	54	S1	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
	1.60	n/a	54	S1	B	UL/cUL/CE/CCC	Yes	n/a	n/a	n/a
3 phase 230V braked	0.74	n/a	44	S1	B	UL/cUL/CE/CCC	Yes	0.03	6	0.1
	1.00	n/a	44	S1	B	UL/cUL/CE/CCC	Yes	0.05	7	0.2
	1.50	n/a	44	S1	B	UL/cUL/CE/CCC	Yes	0.05	7	0.39
	2.30	n/a	44	S1	B	UL/cUL/CE/CCC	Yes	0.05	7	0.39

\* Duty rating becomes S1 when combined with Panasonic gearbox.

			Max output torque (Nm)											
Size	Power (W)	Type \ Ratio	3	3.6	5	6	7.5	9	10	12.5	15	18	20	25
60mm	6	MX6GxxxB	0.1	0.12	0.16	0.19	0.25	0.29	0.33	0.4	0.49	0.59	0.66	0.79
70mm	15	MX7GxxxB	0.24	0.28	0.39	0.47	0.59	0.71	0.80	0.98	1.18	1.37	1.57	1.86
80mm	25	MX8GxxxB	0.39	0.47	0.66	0.78	0.98	1.18	1.27	1.57	1.96	2.35	2.55	3.14
90mm	40	MX9GxxxB	0.66	0.78	1.1	1.3	1.6	1.9	2.3	2.7	3.2	3.9	4.4	5.3
	60	MZ9GxxxB MY9GxxxB	0.98	1.18	1.57	1.96	2.35	2.94	3.14	3.92	4.70	5.59	6.27	10.9
	60	MR9GxxxB MP9GxxxB	High torque Gearboxes available for high ratios only											
	90	MZ9GxxxB MY9GxxxB	1.37	1.67	2.25	2.74	3.43	4.12	4.51	5.68	6.76	8.04	9.02	7.55
	90	MR9GxxxB MP9GxxxB	High torque Gearboxes available for high ratios only											

			Max output torque (Nm)										
Size	Power (W)	Ratio Type	30	36	50	60	75	90	100	120	150	180	200
60mm	6	MX6GxxxB	0.95	1.18	1.57	1.86	2.25	2.45	2.45	2.45	2.45	2.45	2.45
70mm	15	MX7GxxxB	2.25	2.74	3.82	4.61	4.90	4.90	4.90	4.90	4.90	4.90	4.90
80mm	25	MX8GxxxB	3.82	4.61	6.37	7.64	7.84	7.84	7.84	7.84	7.84	7.84	7.84
90mm	40	MX9GxxxB	6.4	7.9	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8	9.8
	60	MZ9GxxxB MY9GxxxB	13	15.7	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
	60	MR9GxxxB MP9GxxxB	-	-	15.2	18.2	22.1	26.5	29.4	29.4	29.4	29.4	29.4
	90	MZ9GxxxB MY9GxxxB	9.11	11	15.2	17.8	19.6	19.6	19.6	19.6	19.6	19.6	19.6
	90	MR9GxxxB MP9GxxxB	-	-	21.2	25.5	29.4	29.4	29.4	29.4	29.4	29.4	29.4

Values in red are limited by gearbox torque capacity

## Gearbox efficiency

	Size	Type	Weight kg	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													
Ball Bearings	60mm	MX6GxxxB	0.34	81%												75%												-											
	70mm	MX7GxxxB	0.54																																				
	80mm	MX8GxxxB	0.60																																				
	90mm	MX9GxxxB	1.2	81%												75%												70%											
		MZ9GxxxB	1.5																																				
		MY9GxxxB	1.5																																				
		MR9GxxxB	1.7	-												70%																							
MP9GxxxB		1.7																																					
Decimal Gearboxes	60mm	MX6G10XB	0.23	81%																																			
	70mm	MX7G10XB	0.35																																				
	80mm	MX8G10XB	0.39																																				
	90mm	MX9G10XB	0.53	81%																																			
		MZ9G10XB	0.65																																				



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