GM-D Series

Output range: 3-phase 0.4~7.5kW
Gear ratio: 1/3~1/120
Moderate shock load
Service factor: 1.4

Product code nomenclature

GM	—	D	F	B
Geared motor		D: D series (SF 1.4) DD: DD series (SF 2.0) *	Blank: Horizontal type F: Flange type	Blank: Without brake B: With brake

* The DD series is for heavy shock loads.

Ordering

When making an order or an inquiry, please prepare these following basic specifications.

Model name	Output	Gear ratio (or speed)	Voltage	Frequency	Special specification
GM-D	**0.75kW**	**1/30 (or 50 r/min)**	**220/380V**	**50Hz**	**Outdoor type**

Stock & delivery

Output shaft rotation speed (r/min)			50Hz	500	300	150	100	75	60	50	37.5	30	25	18.8	15	12.5
			60Hz	600	360	180	120	90	72	60	45	36	30	22.5	18	15
Specifications			Gear ratio / Output	1/3	1/5	1/10	1/15	1/20	1/25	1/30	1/40	1/50	1/60	1/80	1/100	1/120
Foot-mount	Three phase	Without brake	0.4kW	○D	●D	●D	●D	●D	○D	●D	●D	○D	○G	○G	△G	△J
			0.75kW	○F	●F	●F	●F	●F	○F	●F	●G	○G	○J	○J	△J	△L
			1.5kW	○H	●H	●H	●H	●H	○H	●H	●J	○J	○L	○L	△L	△M
			2.2kW	○J	●J	●J	●J	●J	○J	●J	●L	○L	○M	○M	△M	△N
			3.7kW	○L	●L	●L	●L	●L	○L	●L	●M	○M	○N	○N	△N	
			5.5kW	○M	●M	●M	●M	●M	○M	●M	●N	○N				
			7.5kW		●M	●M	●M	●M	○N	●N						
		With brake	0.4kW	○D	○D	○D	○D	○D	○D	○D	○D	○D	○G	○G	△G	
			0.75kW	○F	○F	○F	○F	○F	○F	○F	○G	○G	○J	○J	△J	
			1.5kW	○H	○H	○H	○H	○H	○H	○H	○J	○J	○L	○L	△L	
			2.2kW	○J	○J	○J	○J	○J	○J	○J	○L	○L	○M			
			3.7kW	○L	○L	○L	○L	○L	○L	○L	○M	○M	○N			
			5.5kW	○M	○M	○M	○M	○M	○M	○M	○N	○N				
			7.5kW	○M	○M	○M	○M	○M	○N	○N						

● In stock
○ Upon request and delivery within 60 day
△ Upon request and delivery within 90 day

Grease lubricant type
Oil lubricant type
Gear size

Motor detail dimensions

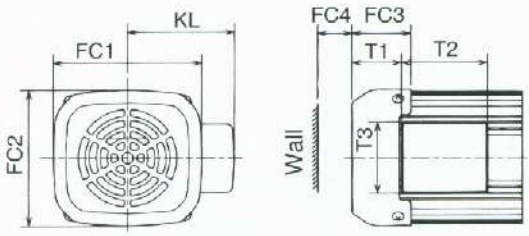

Fig. 10 - Motor dimension

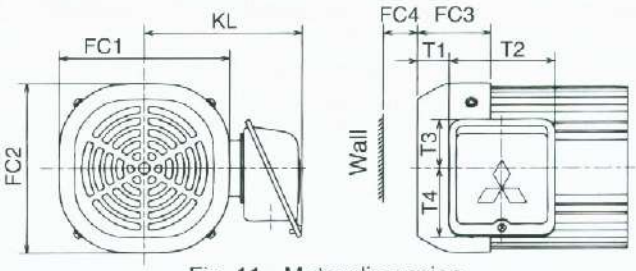

Fig. 11 - Motor dimension

Table 12 Dimensions in mm of motor

Output (kW)	Fig.	Terminal box				Fan cover				
		T1	T2	T3	T4	KL	FC1	FC2	FC3	FC4
0.4	10	31 (83)	93	44	60	119	130	120	51 (103)	20
0.75	11	28 (91)				138	148	148	64 (127)	
1.5		37 (109)				148	175	175	73 (145)	40
2.2		52 (119)				160	204	204	83 (150)	
3.7		64 (139)				174	235	235	95 (170)	
5.5		88 (168)	96	40	64	194	275	275	117 (197)	
7.5										

Remarks: 1. FC4 is minimum ventilation gap from wall. But, for easy maintenance, FC3 + 5mm(take off) is prefered
2. ( ) indicates with brake.
3. Terminal box installation position and lead-wire pull out direction is shown below

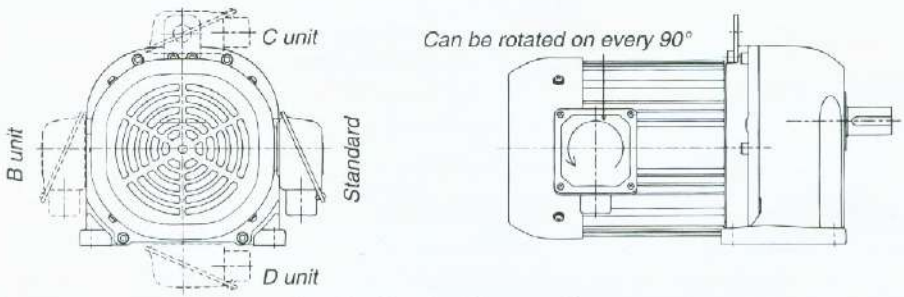

Fig. 12 - Terminal box position

Brake features and part names

1. Low noise with brake cover and o-ring, the sound of brake is decreased.
2. Surge absorption device in rectifier for surge reduction in direct quick braking circuit method and use the auxiliary contact of magnetic contactor.
3. Wiring is easy by terminal block, no aerial wiring even connect with inverter.
4. Longer life by frictional surface methods, brake has stable characteristics and long life.
5. use non-excitation braking method for safety.
6. Use non-asbestos lining with no brake abrasion powder diffusion by limit it in brake cover.

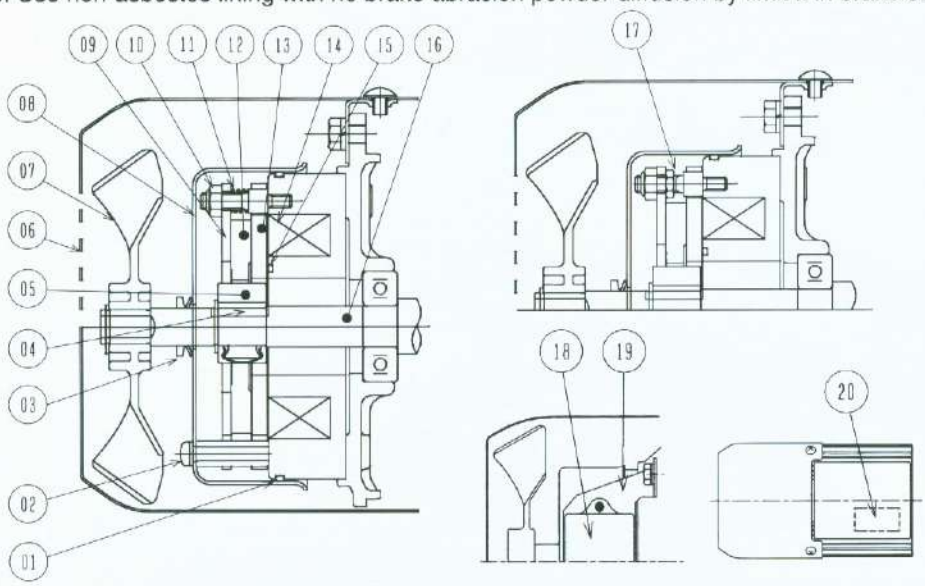

Fig. 13 - Brake parts

Table 8 - Brake part name

Item	Part name
1	O-ring
2	Screw
3	V-ring (Outdoor type)
4	Key
5	Hub
6	Fan cover
7	Fan
8	Brake cover
9	Slide plate
10	Hexagon nut
11	Spring
12	Brake lining
13	Amature
14	Field
15	O-ring
16	Pinion shaft
17	Hexagon nut
18	Rectifier (5.5~7.5kW)
19	Plate
20	Rectifier (0.1~3.7kW)

Inverter driving precautions

1. Drive torque characteristics is based on Mitsubishi inverter drive.
2. In case that geared motor comes with brake, be sure that brake is connected to power source in other circuit and brake can operate after inverter main circuit is off.
3. The noise is slightly louder in slow-speed driving with inverter. Moreover, cooling capacity of gear will decrease and the problem will occur to heating of brake coil. To operate the motor at the frequency of 25Hz or less, observe the rate time of 1 hour or 25% ED Brake capacity is limited so please operate brake at 60Hz or less.
4. In case of long wiring between geared motor and inverter, geared motor torque may decrease due to voltage drop in cable. For voltage drop, please select the cable size at rating voltage 2% or less.
5. To use inverter-driving for 400V class motor, surge voltage from wiring fixed number may occur between the terminal, and this voltage may deteriorate the insulation of motor. Please use the method below for solution.
   (1) Insulation strengthening method
   Please use 400V class inverter-driving insulation strengthening geared motor.
   In Mitsubishi geared motor, insulation strengthening motor are shown below.
   - Standard geared motor --- 0.1~2.2kW
   - Inverter-driving rating torque (V/F rating torque) geared motor---0.1kW~7.5kW
   (2) Inverter side surge voltage controlling method
   At the secondary side of inverter, please connect 850V surge voltage filter device. For Mitsubishi inverter-driving, please connect optional surge voltage controlling filter (FR-ASF-H) at the secondary side of inverter.
6. Too high frequency setting can cause damages to bearing and generate abnormal noise.

Gear dimensions

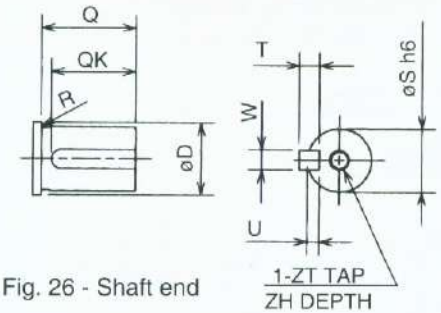

Fig. 26 - Shaft end

Table 23 - Shaft end dimensions

Gear size	Dimensions (mm)												
	Q	QK	ØS h6		W(key) h9		T(key) h9		U	ZT	ZH	R	ØD
D	36	32	22	0 -0.013	6	0 -0.030	6	0 -0.030	3.5	M8	12	0.4	24
E	42	36	28		8		7		4				29
F	50	45	32		10	0 -0.036	8	0 -0.036	5			0.8	34
G													
H													
J	60	55	40	0 -0.016	12		8		5			1.6	45
L	75	70	48		14	0 -0.043	9	0 -0.043	5.5			0.8	50
M	82	71	55		16		10		6	M10	18		58
N	90	72	60		18		11		7				63

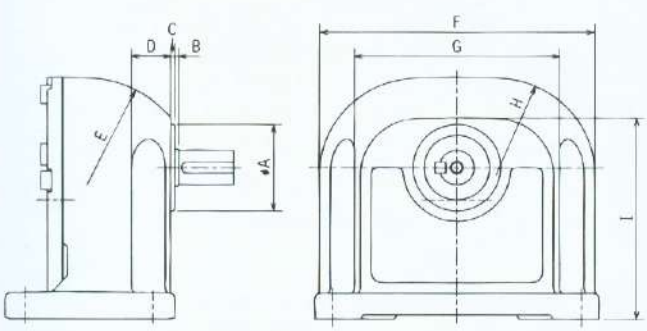

Fig. 26 - Standard type gear

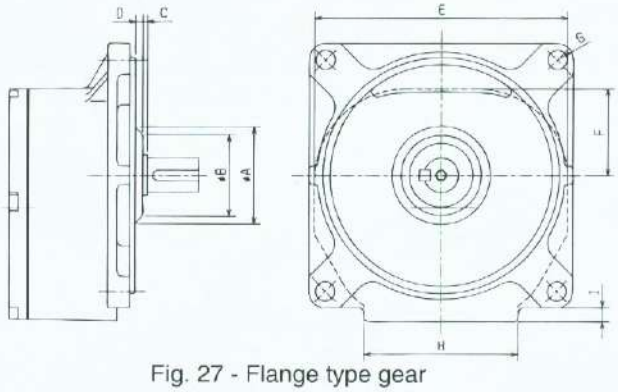

Fig. 27 - Flange type gear

Table 24 - Standard type gear dimensions

Gear size	Dimensions (mm)								
	ØA	B	C	D	E	F	G	H	I
D	44	2	2	23	65	160	124	65	138.5
E	55			26.5		159	110		135
F	67			30	70	190	140	80	166
G				28		188	141		168
H						216	171		201
J	82			40	75	234	170	85	193
L	88			38	85	270	206	110	232
M	100	5		43	90	296	210	120	258
N	105			50	100	336	243	140	298

Remarks: Please see page 2 for gear size

Table 25 - Flange type gear dimensions

Gear size	Dimensions (mm)								
	ØA	ØB	C	D	E	F	G	H	I
D	62	44	2	5.5	160	62	8	103	8
E	55	53		1.5	159	57	10	105	9
F	96	67		8	190	77	8	132	16.5
G				4	188	73		129	13
H				7	216	90	10	156	13.5
J	107	82		10.5	234	88		158	6
L	140	88		5.5	270	109	15	183	14.5
M	-	-	4	-	296	120	20	191	12
N	160	105	5	5	336	135		185	8

Remarks: Please see page 2 for gear size