GTR MINI SERIES GEARMOTORS

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HELICAL IN-LINE & HYPOID/HELICAL RIGHT-ANGLE

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WITH BROTHER GEARMOTORS...
Your Options are Standard!

About Brother
Brother International Corporation, with its corporate headquarters located in Bridgewater, NJ, was established in the U.S. on April 21, 1954. Brother markets many industrial products, home appliances, and business products manufactured by its parent company, Brother Industries, Ltd. of Nagoya, Japan. Currently, Brother and its subsidiaries employ over 1,100 people in the Americas and recorded consolidated net sales of $1.5 billion for the fiscal year ending December 2008.

Brother Industries Ltd. began manufacturing sewing machines in 1928 and took its present corporate form in 1934 as a multinational, diversified sales, distribution, engineering and manufacturing company. With an aggressive program for boosting worldwide sales while providing quality products and superior customer service, the company aims to tighten the focus on core competencies and boost global competitiveness.

About Brother Gearmotors
The line of gearmotors and reducers, detailed in this catalog, is an example of advanced technology brought to industry by Brother. The GTR Series of gearmotors was designed in response to industrial demand for smaller, lighter, more reliable, and energy efficient power transmission. Our energy efficient High Ratio Hypoid right-angle gearing, CBN grinding process, and quality aluminum die cast housings are examples of superior technology brought to you by Brother.

Manufactured using the best machinery available in the World, Brother gears are processed on equipment by Gleason Pfauter, Mikron, Reishauer, Kashifuji, Koyo-Lindberg, and Zeiss. The quality equipment, fifty plus years of experience in gear manufacturing, combined with our commitment to advanced technology, make Brother second to none in gear and gearmotor manufacturing technology. We invite you to challenge us with your power transmission needs.

The Brother line of gearmotors offer more voltage choices, a wider range of mounting configurations and greater efficiency (for smaller drive packages).

With Brother Gearmotors, you can design a more efficient machine at a lower overall cost.

Our Helical and Hypoid gearmotors feature:

- Steel carbonitrided and die quenched gears which translates into longer life.
- A selection of 1/50 HP to 3 HP.
- 9 voltage choices in 50hz or 60hz.
- 28 ratio choices.
- Flexibility in mounting styles—with over 10 mounting configurations—helical in-line and hypoid right-angle.
- Hypoid gearing in our right-angle units is the same gearing used in an automobile differential—which allows Brother Gearmotors to boast the most efficient and durable right-angle package commercially available!
- European and other worldwide voltages are available.
- Lubricated for life with high grade synthetic grease and sealed with machine slip fit “O” rings eliminating costly downtime for lubrication changes!
- Two Year Warranty!

Design your machine around your goals, not your gearmotor.

Brother Gearmotors—your options are standard.

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Mini Type G In-line Torque Table (in-lb) (Frame / Torque)

Ratio	RPM	1/50 Hp	1/30 Hp	1/20 Hp	1/15 Hp	1/10 Hp	1/6 Hp
5	360	3	5	8	12	18	25
7.5	240	4	7	12	18	28	37
10	180	6	10	16	25	37	49
15	120	9	14	23	37	55	74
20	90	12	19	31	49	74	98
25	72	14	24	39	61	92	123
30	60	17	29	47	74	110	147
40	45	23	39	62	98	147	196
50	36	29	48	78	123	184	245
60	30	35	58	94	147	221	294
80	22.5	44	73	119	186	279	
100	18	55	91	148	233	349	
120	15	66	110	178	279	419	
160	11.2	88	146	237	373	477	
200	9	110	183	296	466	477	
240	7.5	132	220	356	477	477	
300	6	148	247	400	629	943	
375	4.8	185	309	500	786	1179	
450	4	222	370	600	943	1415	
600	3	296	494	800	1258	1887	
750	2.4	370	617	1000	1572	2358	
900	2	445	741	1200	1887	2830	
1200	1.5	593	988	1600	2515	3726	
1500	1.2	741	1235	2000	3144	4682	
1800	1	868	1476	2430	3732	5638	

Mini Type H Rt-Angle Torque Table (in-lb) (Frame / Torque)

Ratio	RPM	1/50 Hp	1/30 Hp	1/20 Hp	1/15 Hp	1/10 Hp
10	170	6	10	16	25	37
15	120	9	14	23	37	55
20	90	12	19	31	49	74
25	72	14	24	39	61	92
30	60	17	29	47	74	110
40	45	23	39	62	98	147
50	36	29	48	78	123	184
60	30	35	58	94	147	221
80	22.5	44	73	119	186	279
100	18	55	91	148	233	349
120	15	66	110	178	279	419
160	11.2	88	146	237	373	477
200	9	110	183	296	466	477
240	7.5	132	220	356	477	477
300	6	148	247	400	629	943
375	4.8	185	309	500	786	1179
450	4	222	370	600	943	1415
600	3	296	494	800	1258	1887
750	2.4	370	617	1000	1572	2358
900	2	445	741	1200	1887	2830
1200	1.5	593	988	1600	2515	3726
1500	1.2	741	1235	2000	3144	4682
1800	1	868	1476	2430	3732	5638

Mini Type F2 Rt-Angle Holllow Bore Torque Table (in-lb) (Frame / Torque)

Ratio	RPM	1/50 Hp	1/30 Hp	1/20 Hp	1/15 Hp	1/10 Hp
10	170	6	10	16	25	37
15	120	9	14	23	37	55
20	90	12	19	31	49	74
25	72	14	24	39	61	92
30	60	17	29	47	74	110
40	45	23	39	62	98	147
50	36	29	48	78	123	184
60	30	35	58	94	147	221
80	22.5	44	73	119	186	279
100	18	55	91	148	233	349
120	15	66	110	178	279	419
160	11.2	88	146	237	373	477
200	9	110	183	296	466	477
240	7.5	132	220	356	477	477

Foot Mount	Flange Mount	Description
		5:1~240:1 3 Ph Std 1 Ph Std Optional Brake Pages 16~27
		300:1~1800:1 3 Ph Std 1 Ph Std Optional Brake Pages 16~25
		5:1~240:1 3 Ph Std 1 Ph Std Optional Brake Pages 16~25

Foot Mount	Flange Mount	Description
		10:1~240:1 3 Ph Std 1 Ph Std Optional Brake Pages 28~37
		300:1~1800:1 3 Ph Std 1 Ph Std Optional Brake Pages 28~37
		10:1~240:1 3 Ph Std 1 Ph Std Optional Brake Pages 28~37

Shaft Mount		Description
		10:1~240:1 3 Ph Std 1 Ph Std Optional Brake Pages 38~47
		10:1~240:1 3 Ph Std 1 Ph Std Optional Brake Pages 38~47

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Part Numbers GTR Mini Series

G	F	12	N	240	–	B	M	LC	1	C	X
H	L	18	T	030	–	B	M	RF	2	A	
F2	S	15	N	060	–	B	M	RG	2	A	

Type
G: G Series
H: H Series
F2: F2 Series

Mount Form
L: Foot Mount
F: Flange Mount (5:1~240:1)
K: Flange Mount (300:1~1800:1)
S: Hollow Shaft (F2 Series)

Frame

G	H	F2
12	15	12
15	18	15
18	22	
22	28	
28	32	
40	40	

Shaft/Bore Arrangement
G Series
N: Common Code
H Series
L: Left Extension
R: Right Extension
T: Double Extension
F2 Series
N: Common Code

Gear Ratio
007 : 7.5:1
010 : 10:1
012 : 12.5:1
120 : 120:1
12X : 1200:1

UL/CSA
B : UL/CSA
N : Not UL/CSA

Motor Type
M: Motor
B: Brakemotor
WM: Motor (Washdown !P-65)
WB: Brakemotor (Washdown !P-65)

Supply Voltage
1: 115V,60Hz,1ph
2: 208/230,60Hz,3ph
3: 460V, 60Hz, 3ph
5: 220V, 60Hz, 1ph
6: 230V, 60Hz, 1ph
7: OEM Spec. 1ph
8: OEM Spec. 3ph

Terminal Box/Leads
A: Die Cast Box
C: Plastic Box
N: Leads

Special Spec
X: Provided
Blank: Std

Code	Hp	Watts	Frame
LC:	1/50HP	15W	G-12,22, H-15,22, F2-12
LD:	1/30HP	25W	G-12,22, H-15,22, F2-12
RD:	1/30HP	25W	G-15, G-28, H-28
RE:	1/20HP	40W	G-15,28,32, H-18,28,32, F2-15
YE:	1/20HP	40W	G-18
RF	1/15HP	60W	G-15,28,32, H-18,28,32, F2-15
YF:	1/15HP	60W	G-18
RG:	1/10HP	90W	G-15,28,32, H-18,28,32, F2-15
YG:	1/10HP	90W	G-18, H-40
YJ:	1/6HP	.12Kw	G-18

Other Products

GTR Mid Series, 1/8~3 Hp

Please contact Brother for a GTR Mid Series catalog or visit www.BrotherGearmotors.com

GTR Mini Series, 1/50~1/10 Hp, 300:1 to 1800:1, "GF" Series

Alternative IEC Output Flange with Circular Pilot and Mounting Holes

Please contact Brother for details or visit www.BrotherGearmotors.com

Right-Angle Gearmotors

- **Longer Life**
- **High Reductions/Small Size**
- **Mounting in Any Direction**
- **Lightweight and Compact**
- **Low-Noise Brake**
- **Maintenance Free**
- **Brother Hypoid Gearing**

Longer Life
Brother Hypoid gearmotors and reducers use hardened steel gears throughout. This gives Hypoid gearing far superior wear life compared to worm gears which use softer bronze on the output gear.

High Reductions/Small Size
Brother offers reductions up to 1800:1 in most sizes. Hypoid gearing makes our high reductions significantly more compact and light weight compared to worm/worm and helical/worm designs.

Mounting in Any Direction
Brother gearboxes are sealed with machine "slip" fit "o" rings and double lip spring shaft seals on both the motor input shaft and output drive shaft. They do not require breather plugs or expansion bladders. They can be mounted in any conceivable direction without concern for lubrication leakage.

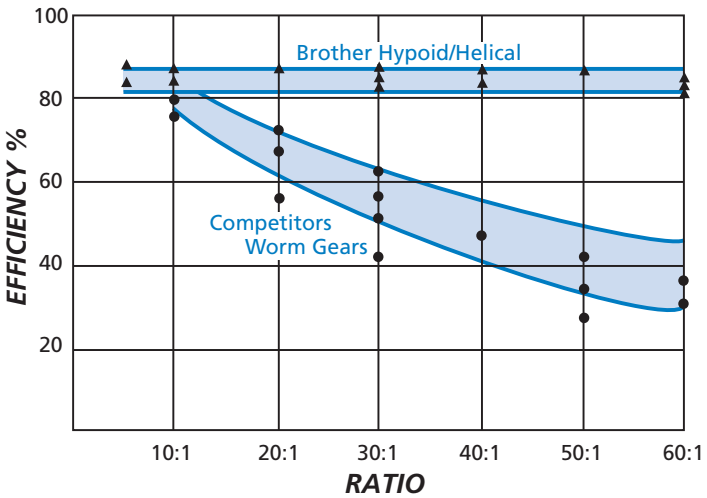
Lightweight and Compact
Die cast aluminum gearmotors and reducers are light in weight allowing engineers to design more economical mounting provisions.

Low-Noise Brake
The brake system developed exclusively by Brother, uses vibration damping sheet steel for the armature, which dramatically reduces noise associated with the brake.

Maintenance Free
High-quality synthetic grease is used in all Brother gearboxes. It is filled at the factory and does not require maintenance filling or level checks. This saves valuable set-up and maintenance time compared to worm gear boxes. With no oil changes required, there is less concern for the costly disposal of oil as required by the EPA.

Brother Hypoid Gearing
As the world's largest fine pitch gear manufacturer, Brother provides highly efficient Hypoid gearing in all right-angle designs. Gears are made of chromium molybdenum steel that has undergone precision carbonitriding. The superior efficiency, gear materials, and heat treatment allows engineers to design-in the most compact gearmotor per output torque.

Gearbox Efficiency Comparison – Right-Angle Hypoid/Helical vs. Worm Gear



Input Speed – 1800 RPM
Hypoid – Grease Lubrication
Worm – Oil Lubrication

The graph at left shows actual measured efficiency, 1/50 Hp to 1/10 Hp.

Because of the high efficiency of the Hypoid/Helical combination, there is no self-locking in the back drive direction.

Big Energy Savings, Smaller Motor Hp Input
Due to the superior efficiency, it is often possible to replace worm gearbox/motor combination with a smaller Hp input in a Hypoid and actually receive greater torque at the driven shaft. Also, with smaller motor Hp, less electrical current is required, resulting in big savings on electric bills.

Industry Leader
Brother is the pioneer and leading manufacturer of Hypoid Bevel gearmotors. This unique right-angle type gearmotor has much higher power transmission efficiency than conventional worm gears. Growing demand is due to its COMPACTNESS, HIGH EFFICIENCY, and superior wear life, which meet the latest primary requirements for industrial applications.

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In-Line Gearmotors

- Lightweight and Compact
- Longer Life
- Low-Noise Brake
- Maintenance Free
- Mounting in Any Direction
- Brother Helical Gearing

Lightweight and Compact
Die cast aluminum gear housings and motors make Brother gearmotors and reducers light in weight, allowing engineers to design more economical mounting provisions.

Longer Life
Compared to a spur gear of approximately the same pitch diameter, Helical gears can transfer higher loads at greater speeds. This is due to the gradual engagement of the teeth and smooth transfer of the load. Size for size Brother all Helical gearmotors will out perform the competition.

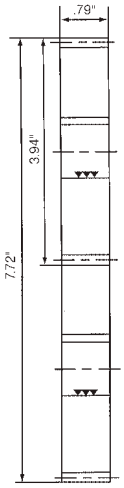
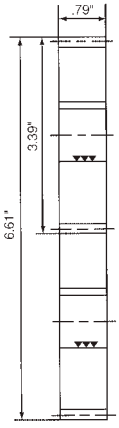
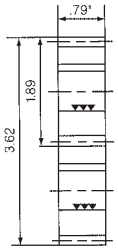
Low-Noise Brake
The brake system developed exclusively by Brother uses vibration damping sheet steel for the armature, which dramatically reduces noise associated with the brake.

Maintenance Free
High-quality synthetic grease is used in all Brother gearboxes. They are filled at the factory and do not require maintenance filling or level checks. This saves valuable time at set-up and eliminates concern for costly oil disposal required by the EPA!

Mounting in Any Direction
Brother gearboxes are sealed with machine "slip" fit "O" rings and double lip spring shaft seals on both the motor input shaft and output drive shaft. Thus, they can be mounted in any conceivable direction without concern for the position of a breather plug.

Brother Helical Gearing
As the world's largest fine pitch gear manufacturer, Brother provides all Helical gearing for in-line designs. Gears are made of chromium molybdenum steel that has undergone precision carbonitriding. Brother Helical gears out-perform spur gears by a great margin as shown in the chart below. Most of our competition use a combination of Spur/Helical.

Spur vs. Helical Gear Comparison

Condition	Same Load Rating, 1800 RPM Speed Ration 1:1 Based on Bending Moment Strength		
Gear Type	Spur Gear	Spur Gear	Helical Gear
Material	S-45C	S45C	SCM415
Hardness/ Heat Treatment	None (typical for Spur type gear)	HRC 50	HRC 60
Helix Angle	0	0	15°
Size Ratios			 Diagrams and size comparisons reveal that a Spur type gear must be significantly larger to have the same load capacity as the Helical gear.
Size Comparison	113% Larger	82% Larger	Reference

Design Standards

Brother gearmotors and reducers are designed to run quiet and maintenance free with a high degree of reliability. Ratings are based on the following criteria.

1. 10 Hours per day continuous operation (AGMA 1.0 service factor).
2. Uniform to moderate impact loading (AGMA 1.0 service factor).
3. Ambient temperature 14 to 104 F (-10 to 40 C). Keep motor case temperature below 90 C.
4. Ambient humidity 85%.
5. Maximum altitude 3280 feet (1000 m).
6. The environment should be free of corrosive or flammable gas, water vapor, and condensation. The product should be installed indoors in a location where there is good ventilation and is free of excessive dust and dirt.
7. Load inertia (GD_L) not to exceed allowable value. Consult Brother for high inertia applications.
8. Starts and stops not to exceed allowable frequency.
9. Overhung load (OHL) not to exceed allowable value.
10. Load torque (T_L) not to exceed allowable value.

If conditions exist that go beyond these core criteria, design life may be reduced.

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Mini Series AC Gearmotors

Mini G

Gearing: 100% Hardened steel helical gearing
Helical gearing runs quieter and provides greater torque and shock load capacity than competitive spur/helical selectively hardened combinations.

Bearings: Ball (Output shaft ball/sleeve comb.)
Premium ball bearings provide quiet efficient torque transfer and overhung load capacity.

Lubricant: High-grade synthetic grease
Synthetic grease provides extended lubrication life over a wide temperature range. The viscosity resists leakage and does not require breather holes.

Shaft seals: NBR Rubber, lip type spring loaded
Provides a good seal over a wide range of operating temperatures.

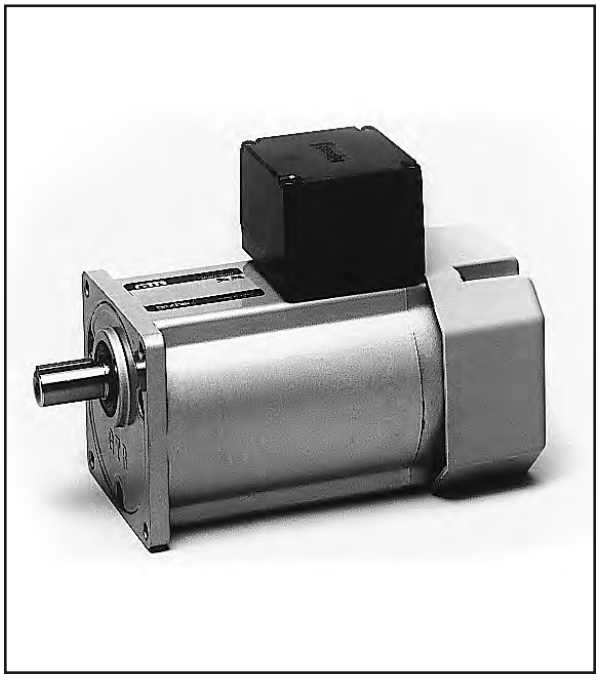
Housing seals: Machine "slip-fit" O ring
O-ring seals provide a longer and more reliable housing seal compared to competitive gasket sealed housings.

Mounting: Universal mounting in any position and at any angle!
The combination of synthetic grease, NBR shaft seals, O ring housing seals, and the lack of breather holes allows for fast, safe mounting in any position.

Housing: Die cast aluminum
Aluminum is light weight, corrosion resistant, and provides good heat dissipation, strength and durability.

UL/CSA File Numbers
Single phase E153713, Three phase E172017
Thermal Protector: Auto-reset (1 ph units only).

▼



Mini H ▲

Gearing: 100% Hardened steel Hypoid/Helical gearing
Hypoid gearing is up to 80% more efficient than competitive worm gears. The Brother all steel Hypoid/Helical combination has much better wear properties than softer bronze worm gearing. Brother Hypoid gearmotors last longer! Hypoid gearing runs cooler than worm gears.

Bearings: Premium
Premium ball bearings provide quiet efficient torque transfer and high overhung load capacity.

Lubricant: High-grade synthetic
Synthetic grease provides extended lubrication life over a wide range. The viscosity resists leakage and does not require breather holes. Brother Hypoid gearmotors do not leak!

Shaft seals: NBR Rubber, lip type spring loaded
Provides a good seal over a wide range of operating temperatures.

Housing seals: Machine "slip-fit" O ring
O-ring seals provide a longer and more reliable housing seal compared competitive gasket sealed housings.

Mounting: Universal mounting in any position and at any angle!
The combination of synthetic grease, NBR shaft seals, O ring housing seals, and the lack of breather holes allows for fast, safe mounting in any position.

Housing: Die cast aluminum
Aluminum is light weight, corrosion resistant, and provides good heat dissipation, strength and durability.

UL/CSA File Numbers
Single phase E153713, Three phase E172017
Thermal Protector: Auto-reset (1 ph units only).

Mini F2

Gearing: 100% Hardened steel Hypoid/Helical gearing
Hypoid gearing is up to 80% more efficient than competitive worm gears. The Brother all steel Hypoid/Helical combination has much better wear properties than softer bronze worm gearing. Brother Hypoid gearmotors last longer! Hypoid gearing runs cooler than worm gears.

Bearings: Premium
Premium ball bearings provide quiet efficient torque transfer and high overhung load capacity.

Lubricant: High-grade synthetic
Synthetic grease provides extended lubrication life over a wide range. The viscosity resists leakage and does not require breather holes. Brother Hypoid gearmotors do not leak!

Shaft seals: NBR Rubber, lip type spring loaded
Provides a good seal over a wide range of operating temperatures.

Housing seals: Machine "slip-fit" O ring
O-ring seals provide a longer and more reliable housing seal compared competitive gasket sealed housings.

Mounting: Universal mounting in any position and at any angle!
The combination of synthetic grease, NBR shaft seals, O ring housing seals, and the lack of breather holes allows for fast, safe mounting in any position.

Housing: Die cast aluminum
Aluminum is light weight, corrosion resistant, and provides good heat dissipation, strength and durability.

UL/CSA File Numbers
Single phase E153713, Three phase E172017
Thermal Protector: Auto-reset (1 ph units only).

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IP-65 Washdown Mini G

Gearing: 100% Hardened steel helical gearing
Helical gearing runs quieter and provides greater torque and shock load capacity than competitive spur/helical selectively hardened combinations.

Bearings: Ball (Output shaft ball/sleeve comb.)
Premium ball bearings provide quiet efficient torque transfer and overhung load capacity.

Lubricant: High-grade synthetic grease
Synthetic grease provides extended lubrication life over a wide temperature range. The viscosity resists leakage and does not require breather holes.

Shaft seals: NBR Rubber, lip type spring loaded
Provides a good seal over a wide range of operating temperatures.

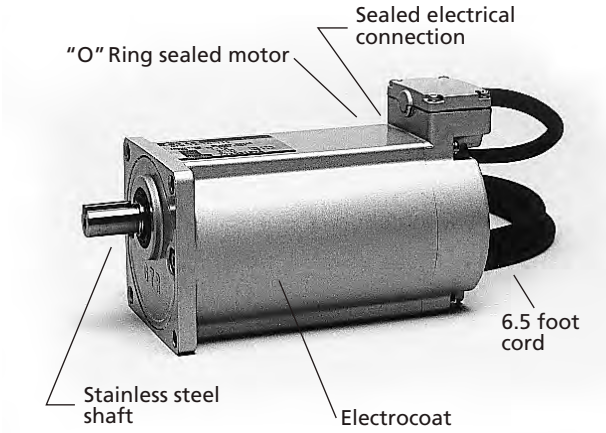
Housing seals: Machine "slip-fit" O ring
O-ring seals provide a longer and more reliable housing seal compared to competitive gasket sealed housings.

Mounting: Universal mounting in any position and at any angle!
The combination of synthetic grease, NBR shaft seals, O ring housing seals, and the lack of breather holes allows for fast, safe mounting in any position.

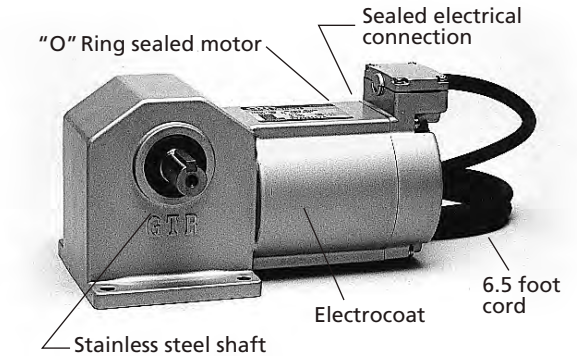
Housing: Sealed to meet an IP-65 rating
These units feature stainless steel hardware, O-ring sealed gear housing and motor shield. The IP-65 rating means that these units are protected against dust and jets of water, from all directions. The factory sealed 6.5 foot cord provides flexibility in connection, without the concern of proper sealing at installation.

▼

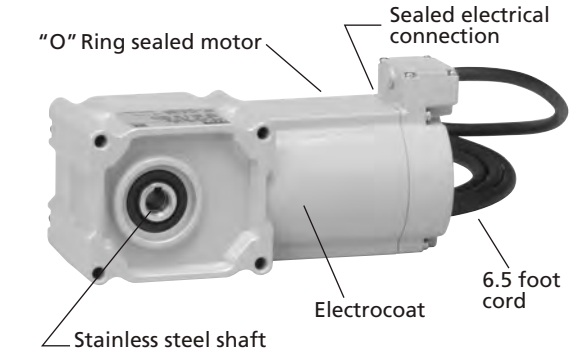
IP-65 Washdown Mini G



IP-65 Washdown Mini H



IP-65 Washdown Mini F2



IP-65 Washdown Mini H, F2 ▲

Gearing: 100% Hardened steel Hypoid/Helical gearing
Hypoid gearing is up to 80% more efficient than competitive worm gears. The Brother all steel Hypoid/Helical combination has much better wear properties than softer bronze worm gearing. Brother Hypoid gearmotors last longer! Hypoid gearing runs cooler than worm gears.

Bearings: Premium
Premium ball bearings provide quiet efficient torque transfer and high overhung load capacity

Lubricant: High-grade synthetic
Synthetic grease provides extended lubrication life over a wide range. The viscosity resists leakage and does not require breather holes. Brother Hypoid gearmotors do not leak!

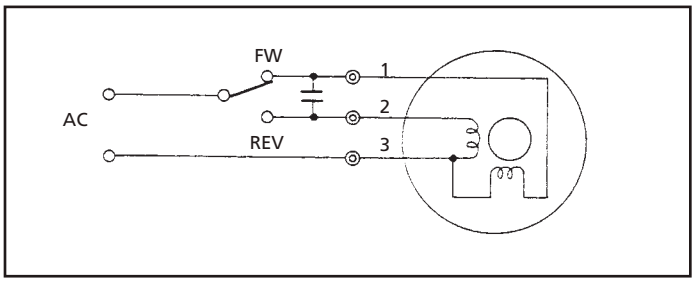
Shaft seals: NBR Rubber, lip type spring loaded
Provides a good seal over a wide range of operating temperatures.

Housing seals: Machine "slip-fit" O ring
O-ring seals provide a longer and more reliable housing seal compared competitive gasket sealed housings.

Mounting: Universal mounting in any position and at any angle!
The combination of synthetic grease, NBR shaft seals, O ring housing seals, and the lack of breather holes allows for fast, safe mounting in any position

Housing: Sealed to meet an IP-65 rating
These units feature stainless steel hardware, O-ring sealed gear housing and motor shield. The IP-65 rating means that these units are protected against dust and jets of water, from all directions. The factory sealed 6.5 foot cord provides flexibility in connection, without the concern of proper sealing at installation.

Fig 1.1: 1/50~1/6 Hp 1 Phase Wiring



Wire	Color Code 115V	Color Code 220V, 230V
1	Blue	Brown
2	Black	Black
3	Grey	Grey

Fig 1.2 UL/CSA/CE/RoHS

Voltage	Horsepower	UL/cUL File No.	RoHS	CE Details
Three Phase	1/50~1/6 Hp	E172017	Yes	Low Voltage Directive 73/23/EEC EN Standards: EN60034-1 (Regulations on motors in general)
Single Phase	1/50~1/6 Hp	E153713	Yes	

Notes:

1. Motors in File E172017 comply to UL1004 Standard for Safety Electric Motors.
2. Motors in UL File E153713 comply to UL2111 Overheating Protection for Motors.
3. Products bear the UL component recognition marking for UL and cUL (CSA).
4. Products with the cUL marking comply with CSA standards and can be legally sold in Canada.
5. Products bear the CE marking on the namplate.

Table 1.1: Single Phase 1/50~1/6 Hp Motors

Hp	G Frame	H Fame	F2 Frame	Cooling	Voltage V	Full Load (RPM)	Full Load Current (A)	Motor Torque (in-lb)	Start Torque (in-lb)	Starts per Minute	Capacitor	
						nmotor	Imotor	Tmotor	Tstart		mFd	Volts
1/50 Hp	12 22	15 22	12	TENV	115 220 230	1690 1680 1690	0.33 0.14 0.15	0.71	0.48 0.62 0.69	10	4 1 1	220 440 440
1/30 Hp	12 22	15 22	12	TENV	115 220 230	1630 1650 1650	0.44 0.23 0.20	1.17	0.76 0.87 0.76	10	5 1.5 1.2	220 440 440
	15 28	28	n/a	TENV	115 220 230	1650 1650 1650	0.45 0.23 0.21	1.17	0.82 1.15 0.83	10	5 1.5 1.2	220 440 440
1/20 Hp	15 28 32	18 28 32	15	TENV	115 220 230	1670 1640 1660	0.60 0.31 0.31	1.88	1.60 1.35 1.53	10	8 2 2	220 440 440
	18	n/a	n/a	TENV	115 220 230	1740 1730 1730	0.62 0.32 0.28	1.88	1.32 1.13 1.22	10	8 2 2	220 440 440
1/15 Hp	15 28 32	18 28 32	15	TEFC	115 220 230	1650 1660 1670	0.90 0.43 0.43	2.81	2.11 2.08 2.34	10	12 3 3	220 440 440
	18	n/a	n/a	TEFC	115 220 230	1700 1700 1700	0.87 0.45 0.45	2.81	1.97 1.91 1.91	10	12 3 3	220 440 440
1/10 Hp	15 28 32	18 28 32	15	TEFC	115 220 230	1600 1630 1640	1.20 0.62 0.62	4.23	2.96 2.78 2.78	10	15 3.5 3.5	220 440 440
	18 40	40	n/a	TEFC	115 220 230	1700 1680 1680	1.40 0.70 0.75	4.23	3.38 2.43 2.69	10	20 5 5	220 440 440
1/6 Hp	18	n/a	n/a	TEFC	115 220 230	1700 1700 1710	1.70 0.85 0.85	5.63	3.83 3.65 3.65	10	24 6 6	220 440 440

Table 1.2: Capacitors for 115V 1 Phase Motors

Part No.	mFd	Volts*	W	h	t	d	l
C4.0M220V	4	220V	1.22	1.06	0.67	1.06	0.18
C5.0M220V	5	220V	1.22	1.06	0.67	1.06	0.18
C8.0M220V	8	220V	1.50	1.14	0.75	1.14	0.18
C12M220V	12	220V	1.89	1.14	0.75	1.14	0.18
C15M220V	15	220V	2.28	1.22	0.83	1.22	0.18
C20M220V	20	220V	2.28	1.38	0.87	1.26	0.18
C24M220V	24	220V	2.28	1.46	0.93	1.52	0.28

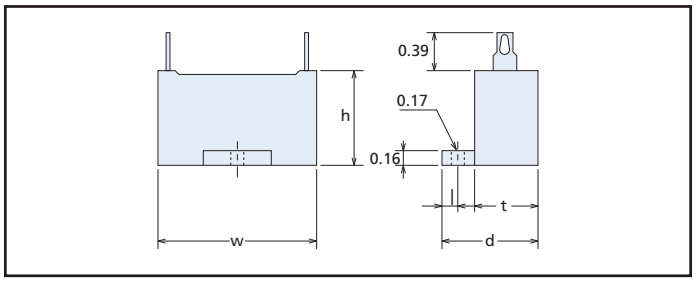
* 220V Capacitors are for operation with 115V Motors

Table 1.3: Capacitors for 220/230V 1 Phase Motors

Part No.	mFd	Volts*	W	h	t	d	l
C1.0M440V	1	440V	1.22	1.06	0.67	1.06	0.18
C1.2M440V	1.2	440V	1.46	1.06	0.71	1.10	0.18
C1.5M440V	1.5	440V	1.50	1.22	0.83	1.22	0.18
C2.0M440V	2	440V	1.89	1.14	0.75	1.14	0.18
C3.0M440V	3	440V	2.28	1.22	0.83	1.22	0.18
C3.5M440V	3.5	440V	2.28	1.22	0.83	1.22	0.18
C5.0M440V	5	440V	2.28	1.46	0.93	1.52	0.28
C6.0M440V	6	440V	2.28	1.61	1.14	1.73	0.28

* 440V Capacitors are for operation with 220V or 230V motors.

Fig 1.3: Capacitor Dimensional Drawing



Note : Capacitors are shipped with single phase motors.
They do not need to be ordered separately with gearmotors.
The part numbers are for spare parts orders only.

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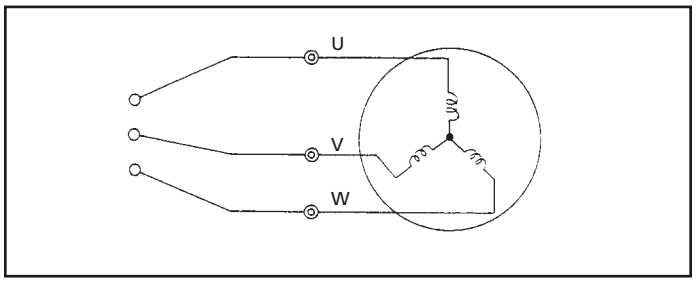
Fig 1.4: 1/50~1/6 Hp 3 Phase Wiring



	Color Code	
Wire	208/230V	460V
U	Black	Black
V	Grey	Brown
W	White	White

Table 1.4: Three Phase 1/50~1/6 Hp Motors

Hp	G Frame	H Fame	F2 Frame	Cooling	Voltage V	Full Load (RPM)	Full Load Current (A)	Motor Torque (in-lb)	Start Torque (in-lb)	Starts per Minute
						nmotor	Imotor	Tmotor	Tstart	
1/50 Hp	12 22	15 22	12	TENV	208 230 460	1610 1650 1700	0.13 0.13 0.12	0.71	1.58 2.03 3.99	10
1/30 Hp	12 22	15 22	12	TENV	208 230 460	1580 1630 1650	0.19 0.19 0.12	1.17	2.52 3.22 3.74	10
	15 28	28	n/a	TENV	208 230 460	1550 1610 1600	0.17 0.17 0.09	1.17	2.63 3.33 3.22	10
1/20 Hp	15 28 32	18 28 32	15	TENV	208 230 460	1560 1610 1650	0.26 0.28 0.14	1.88	5.17 6.20 5.64	10
	18	n/a	n/a	TENV	208 230 460	1620 1660 1650	0.21 0.19 0.10	1.88	4.51 5.45 4.89	10
1/15 Hp	15 28 32	18 28 32	15	TENV	208 230 460	1560 1610 1600	0.36 0.38 0.17	2.81	7.30 9.70 7.36	10
	18	n/a	n/a	TENV	208 230 460	1640 1670 1650	0.31 0.31 0.16	2.81	6.88 8.46 7.13	10
1/10 Hp	15 28 32	18 28 32	15	TEFC	208 230 460	1550 1610 1600	0.48 0.50 0.26	4.23	10.74 13.28 12.06	10
	18 40	40	n/a	TENV	208 230 460	1670 1690 1650	0.47 0.46 0.24	4.23	9.90 12.10 10.70	10
1/6 Hp	18	n/a	n/a	TEFC	208 230 460	1600 1650 1650	0.64 0.61 0.31	5.63	11.94 16.89 17.73	10

Note : IP-65 Models cannot be made 460V

Fig 1.5 Three Phase Special Voltages 1/50~ 1/6 Hp

Voltage	Frequency (Hz)	UL/CSA	CE
230	50	No	Yes
240	50		
360	50		
400/400/440	50/60/60		
415	50		
420	50		
440	50		
220	50	Yes	
200/200/220	50/60/60		
380/400/400/440	50/50/60/60		No
380	60		
240	60		

Note: When selecting any of the above voltages:
Use special voltage code "8" in the part number
Specifiy the voltage/frequency rating on your P.O.
Note: IP-65 models cannot be made in 380~460V

Fig 1.6 Single Phase Special Voltages 1/50~ 1/6 Hp

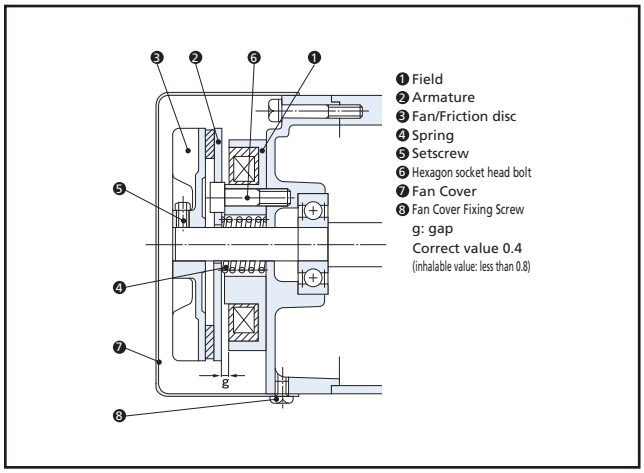
Voltage	Frequency (Hz)	UL/CSA	CE
120	60	Yes	No
220	60		
230	60		
240	60		
100/100	50/60		
200/200	50/60		
110	50	No	
115	50		
120	50		
220	50		
230	50		
240	50		

Note: When selecting any of the above voltages:
Use special voltage code "7" in the part number
Specifiy the voltage/frequency rating on your P.O.

Tabe 1.5: Standard Brake

	Specifications 220/230V Single Phase, 208/230V 3 Phase, 460V 3 Phase						115V Single Phase					
Specification	1/50 Hp	1/30 Hp	1/20 Hp	1/15 Hp	1/10 Hp	1/6 Hp	1/50 Hp	1/30 Hp	1/20 Hp	1/15 Hp	1/10 Hp	1/6 Hp
Brake Type	Power-off, Brake-on (Spring Close)											
Rated Torque (in-lb)	3.27				4.78		3.27				4.78	
Voltage	DC90V						DC45V					
Power (@ 75C)	12W						10W					
Current (@ 75C)	0.13A						0.25A					
Max Braking Frequency	10/min											

Fig 1.7: Standard Brake Structure



Specifications 220/230V Single Phase, 208/230V 3 Phase, 460V 3 Phase,115V Single Phase

Table 1.6: IP-65 Brake Specifications

Phase: Voltage	3 Ph: 208/230V		1 Ph: 220,230V		1 Ph: 115V	
Horsepower	1/50Hp 1/30 Hp	1/30 Hp 1/20 Hp 1/15 Hp 1/10 Hp	1/50Hp 1/30 Hp	1/30 Hp 1/20 Hp 1/15 Hp 1/10 Hp	1/50Hp 1/30 Hp	1/30 Hp 1/20 Hp 1/15 Hp 1/10 Hp
Specification	G-12 H-15 F2-12	G-15, G-18 H-18 F2-15	G-12 H-15 F2-12	G-15, G-18 H-18 F2-15	G-12 H-15 F2-12	G-15, G-18 H-18 F2-15
Brake Type	Power-off, Brake-on (Spring Close)					
Rated Torque (in-lb)	2.83	6.37	2.83	6.37	2.83	6.37
Voltage	DC90V				DC45V	
Power (@ 75C)	5.6W	6.5W	5.6W	6.5W	5.1W	6.4W
Current (@ 75C)	0.06A	0.07A	0.06A	0.07A	0.12A	0.14A
Max Braking Frequency	10/min					

Fig 1.7: Standard Brake Structure

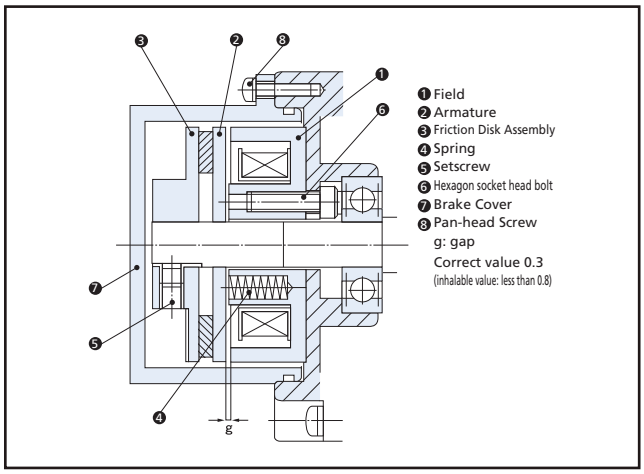


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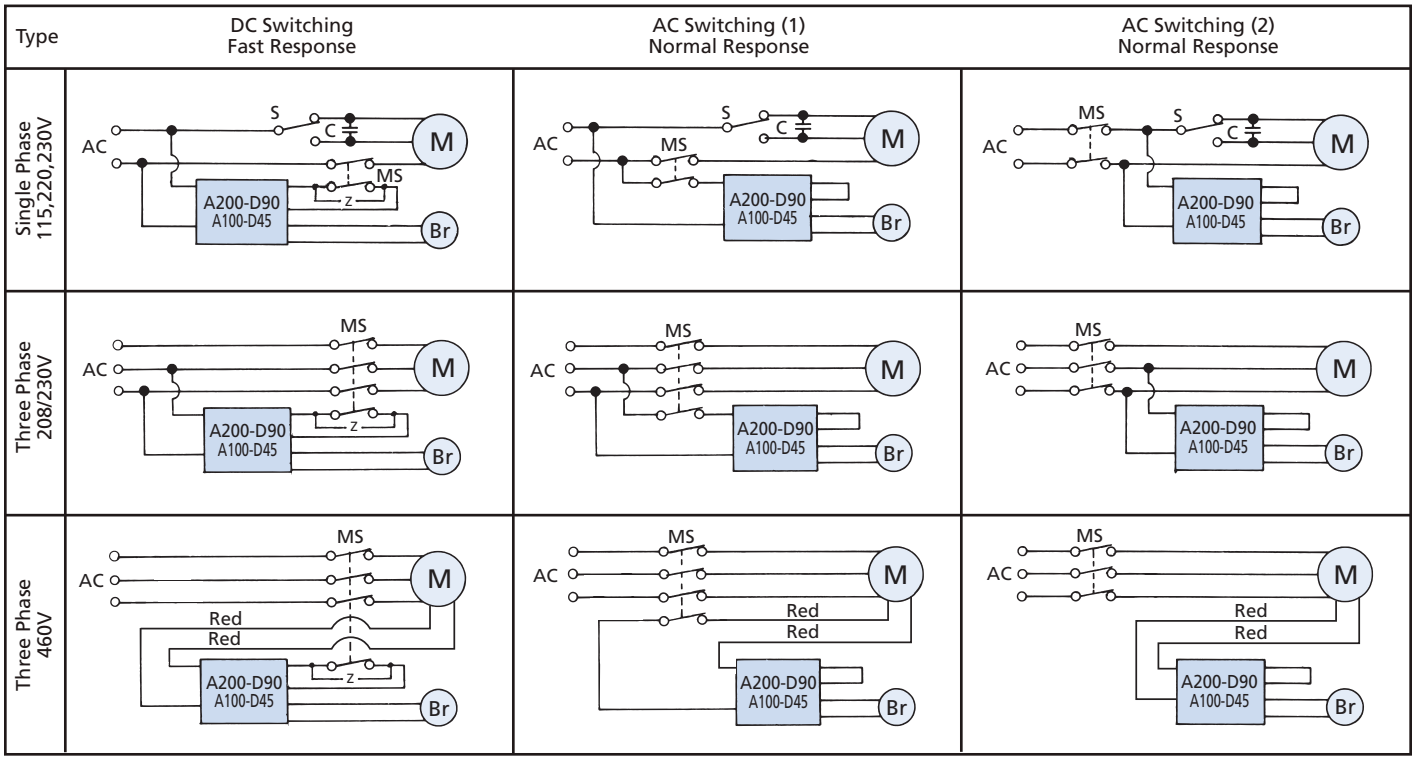
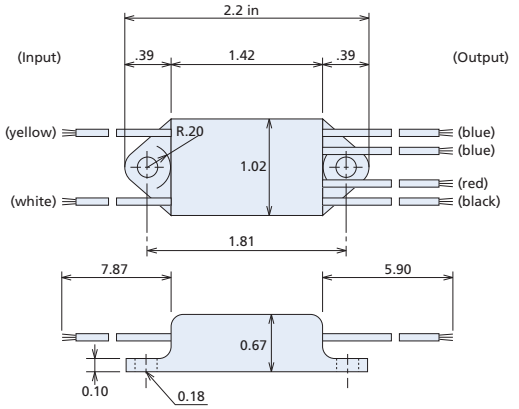
Fig 1.9: Brake Wiring without Inverter (VFD)



M: Motor Br: Brake S: Reversing switch C: Capacitor MS: Magnetic switch Z: R-C circuit (OP-CRM-2)
For Wiring a brake equipped gearmotor with an Inverter (VFD), please see page 15.

Fig 1.10: Rectifier Dimensions



Dimensions of A200-D90 Input Voltage: 200-220VAC / Output: 90VDC
(A100-D45) (Input Voltage: 100-110VAC / Output: 45VDC)

Alternate Rectifier (Same Dimensions)
A100-D90 Input Voltage: 100~120V
Output Voltage: 90VDC

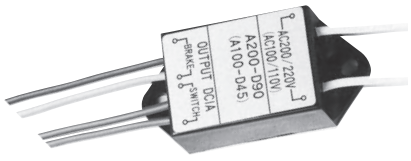
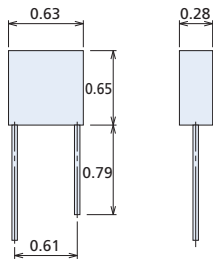
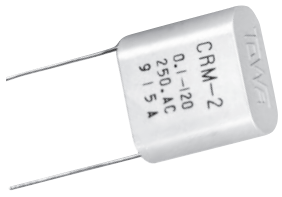


Fig 1.11: Snubber Dimensions (OP-CRM-2)



(Z) OP-CRM-2
(120 Ohm-0.1 mFd)
R-C Circuit Dimensions



Note:

1. The rectifier is shipped with the brakemotor as an accessory. It must be mounted remotely in a panel or box. It may not fit in the terminal box supplied on the gearmotor.
2. The OP-CRM-2 is an optional part. Please order it separately if it is required.

Table 1.7: C Box and A Box Dimensions

Dimension		M2 (From Motor Center)		M3 (Both "C" and "A" Box) (From End of Motor)			Box Rotation
Type	Frame	"C" Box	"A" Box	TENV	TEFC	Brakemotor	(1)(2)
BG	12	3.52	3.85	1.67	3.17	3.17	180°
	15	3.80	4.13	1.67	3.11	3.11	
	18	4.11	4.44	1.67	3.13	3.13	
	22	3.52	3.85	1.67	3.17	3.17	
	28	3.80	4.13	1.67	3.11	3.11	
	32	3.80	4.13	1.67	3.11	3.11	
BH	15	3.52	3.85	1.67	3.17	3.17	180°
	18	3.80	4.13	1.67	3.11	3.11	
	22	3.52	3.85	1.67	3.17	3.17	
	28	3.80	4.13	1.67	3.11	3.11	
	32	3.80	4.13	1.67	3.11	3.11	
	40	4.11	4.44	1.67	3.13	3.13	
BF2	12	3.52	3.85	1.67	3.17	3.17	180°
	15	3.80	4.13	1.67	3.11	3.11	

(1) Rotation is around motor centerline. Also see Fig. 2.11.
(2) The box cannot be repositioned in the field. It must be done at the factory by stator insertion.

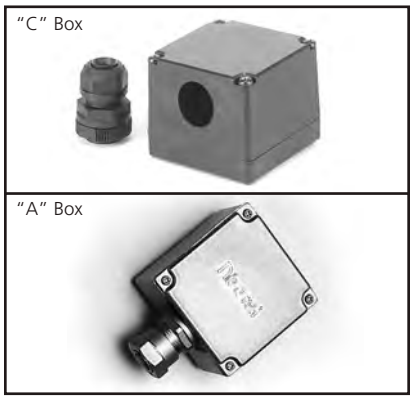


Fig 1.12: C Box Dimensions

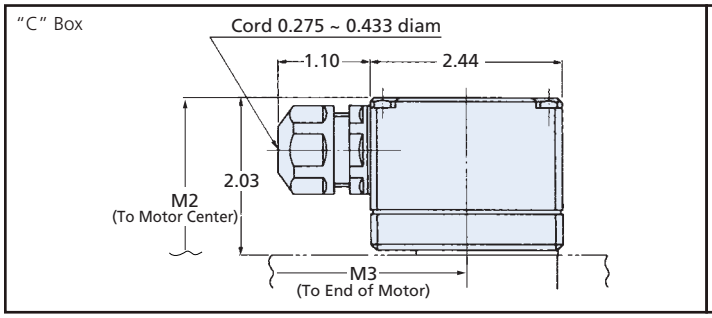


Fig 1.13: A Box Dimensions

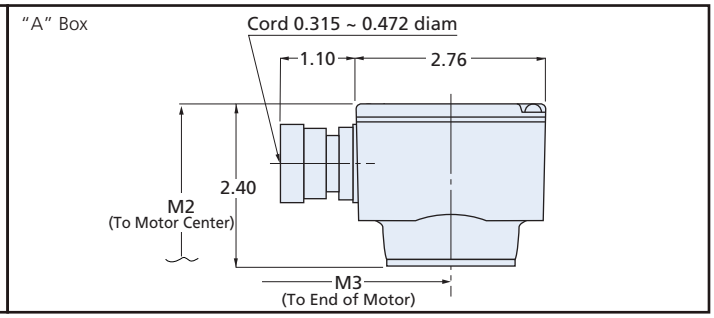


Fig 1.14: G, H Mini Lead Exit Options, Standard Motors

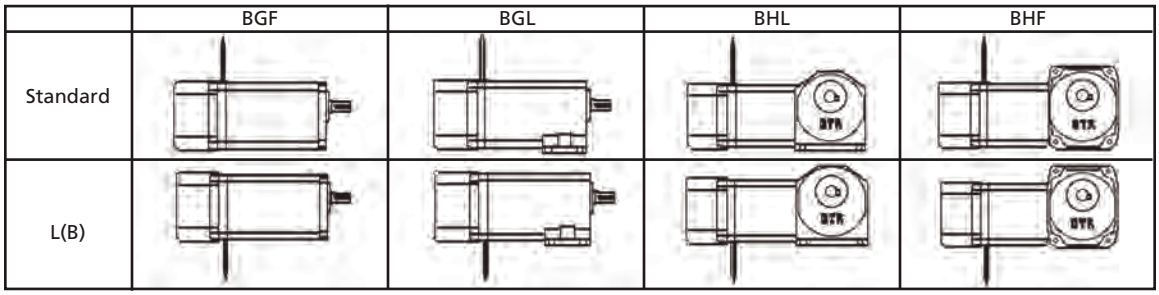


Fig 1.15: G, H Mini Terminal Box Position Options, Standard Motors

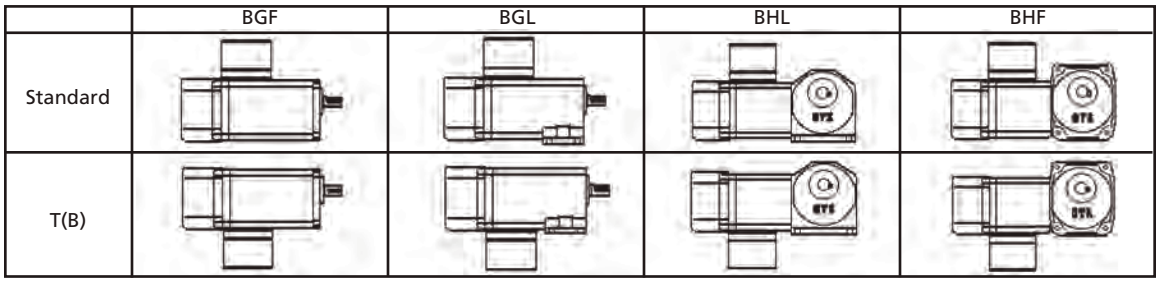
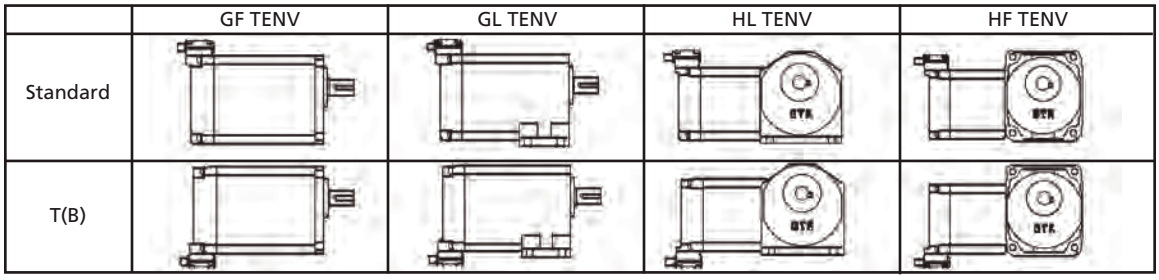


Fig 1.16: G, H Mini Cord Position Options, IP-65 Motors



Please specify on your order if you require the terminal box or lead wires in the T(B) or L(B) position.

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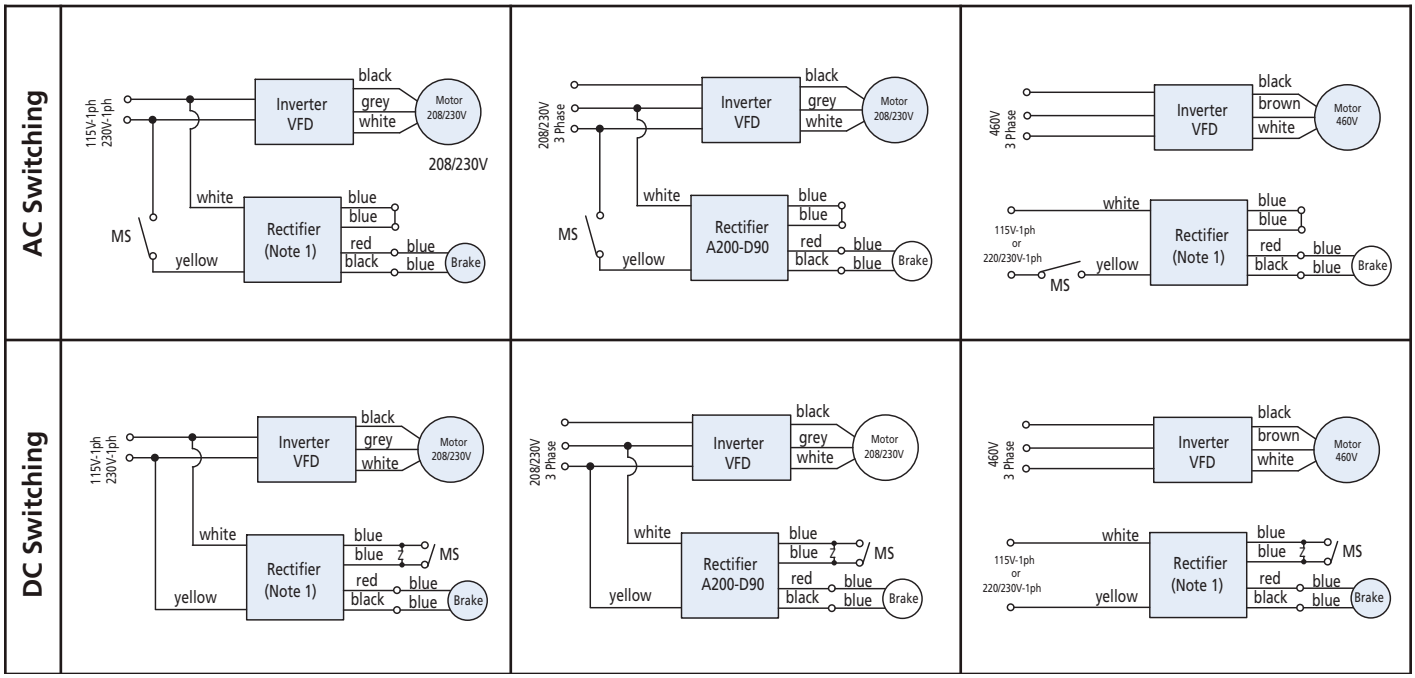
Fig 1.17A: VFD Wiring 115V 1 Phase 220/230V 1 Phase

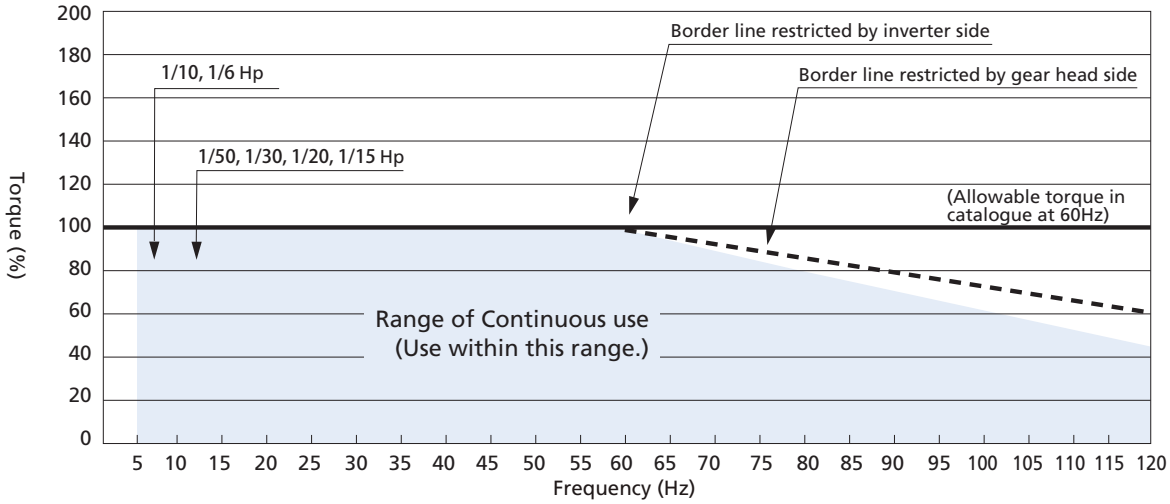
Fig 1.17B: VFD Wiring 208/230V 3 Phase

Fig 1.17C: VFD Wiring 460V



Note: If the input power is 115V 1 phase, use Rectifier A100-D90. If the input power is 220/230V 1 phase, use rectifier A200-D90. (Input power to the brake is 90vdc)
MS: Magnetic Switch (not supplied by Brother) Z : Surge Suppressor. Optional Part OP-ENE471D-10A

Fig 1.18 Speed/Torque with a VFD (1/50, 1/30, 1/20, 1/15, 1/10, and 1/6 Hp) Inverter: CIMR-J7AA20P1



Cautionary Notes for Use with a VFD:

1. In applications requiring operation above 60 hz, vibration and noise will increase. The life of the oil seal will also be reduced due to increased circumferential velocity.
2. In low speed operations the effect of the cooling fan decreases. Be sure to check the motor temperature rise remains below allowable limits. The surface temperature of the motor should not exceed 176°F (80°C).
3. The torque characteristics of the motor differ according to the VFD brand and type used. The above speed/torque curves were generated using a commercially available Volts/Hertz VFD. You should test the brand you use to confirm the performance.
4. When using a brake equipped motor, be sure to bypass the VFD and power the rectifier on the input side. Powering the rectifier using the output wires from the VFD to the motor will result in motor and/or brake failure.
5. When operating a VFD at 400~480V a repetitive surge voltage may arise and weaken the insulation of the motor causing premature failure. There are two ways to supress surge voltage…
   A. **Output Reactor:** may be effective if the lead wires are reletively short. Install it on the inverter output side.
   B. **Output Filter:** install it near the inverter output side.

The remedies A and B may be effective. However, we recommend you consult the inverter manufacturer for more detailed recommendations as the inverter settings, lead length, etc effect the recommendation.

Spec Table 1.0

Specifications						Dimensional Drawing													
						Motor				Brakemotor				Motor IP-65				Brakemotor IP-65			
						Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange
1/50	12	5	360	3	22	Dwg 1.2 A	Dwg 1.0 A	Dwg 1.2 A	Dwg 1.0 A	Dwg 1.2 A2	Dwg 1.0 A2	Dwg 1.2 A2	Dwg 1.0 A2	Dwg 1.5 A	Dwg 1.4 A	Dwg 1.5 A	Dwg 1.4 A	Dwg 1.5 A2	Dwg 1.4 A2	Dwg 1.5 A2	Dwg 1.4 A2
		7.5	240	4	44																
		10	180	6	55																
		15	120	9	77																
		20	90	12	99																
		25	72	14	110																
		30	60	17	121																
		40	45	23	132																
		50	36	29	143																
		60	30	35	154																
		80	23	44	165																
		100	18	55	165																
		120	15	66	176																
		160	11	88	176																
		200	9	110	176																
		240	7.5	132	176																
	22	300	6	148	397	Dwg 1.3 A	Dwg 1.1 A	Dwg 1.3 A	Dwg 1.1 A	Dwg 1.3 A2	Dwg 1.1 A2	Dwg 1.3 A2	Dwg 1.1 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		375	4.8	185	397																
		450	4	222	397																
		600	3	296	397																
		750	2.4	370	397																
		900	2	445	397																
		1200	1.5	593	397																
		1500	1.2	741	397																
		1800	1	868	397																

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.

Model Number for Ordering

G	L	12	N	101	–	B	M	LC	1	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
G: G Series	L: Foot Mount F: Flange Mount (5:1~240:1) K: Flange Mount (300:1~1800:1)	12 22	N: Common Code	005 : 5:1 030 : 30:1 120 : 120:1 900 : 900:1 12X : 1200:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	LC: 1/50 Hp (15w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

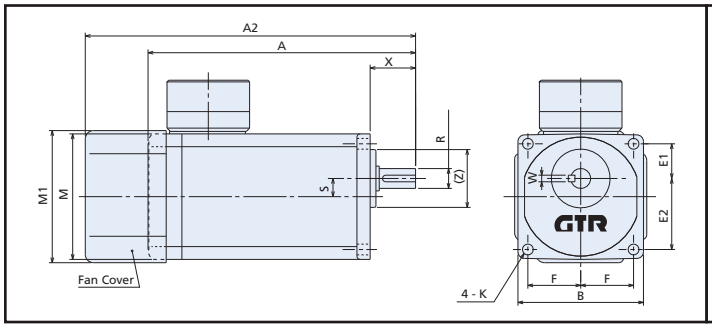
Notes:

1. Lead Wire Location: specify the code from Fig 1.14 , Page 14 on your purchase order.
2. Terminal Box Location: specify the code from Fig 1.15 Page 14 on your purchase order.
3. IP-65 Cord Location Location: specify the code from Fig 1.16 , Page 14 on your purchase order.
4. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
5. For any other special OEM requirement, please consult Brother.

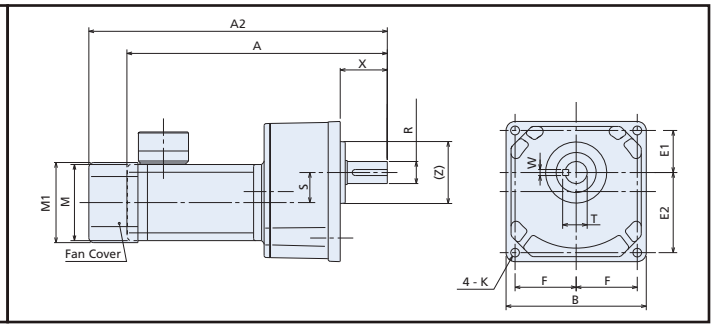
brother at your side

Frame	Drawing	A	A2	B	E1	E2	F	K	M	M1	S	Z	R	W	X	Wt (lb)
12	1.0	6.38	7.87	2.99	0.83	1.69	1.26	0.26	2.99	3.15	0.43	1.4	0.5000	0.1250	1.08	4.5
22	1.1	10.24	11.73	5.51	1.65	3.15	2.4	0.34	2.99	3.15	1.18	2.48	0.8750	0.1875	1.85	11

Dwg 1.0

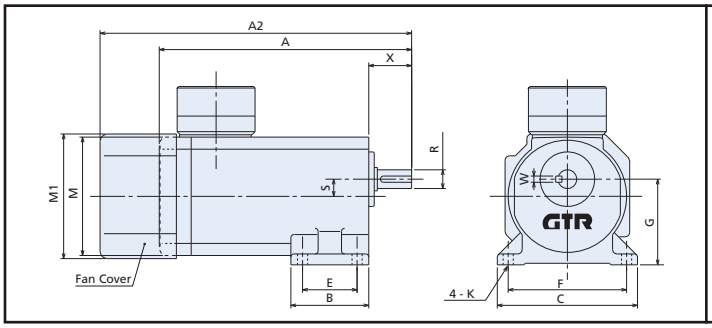


Dwg 1.1

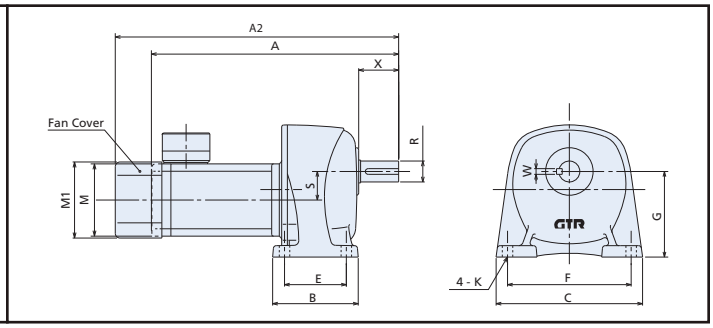


Frame	Drawing	A	A2	B	C	E	F	G	K	M	M1	S	R	W	X	Wt (lb)
12	1.2	6.38	7.87	1.97	3.54	1.38	2.99	2.17	0.26	2.99	3.15	0.43	0.5000	0.1250	1.08	4.5
22	1.3	10.24	11.73	3.54	6.06	2.56	5.12	3.54	0.43	2.99	3.15	1.18	0.8750	0.1875	1.85	11

Dwg 1.2



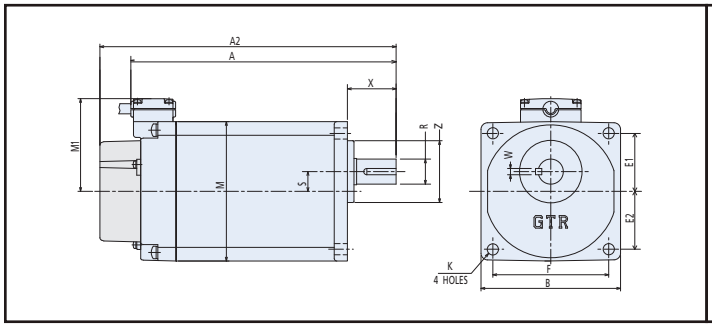
Dwg 1.3



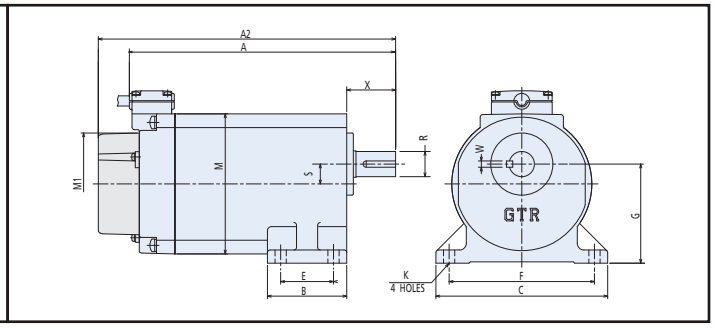
Frame	Drawing	A	A2	B	E1	E2	F	K	M	M1	S	Z	R	W	X	Wt (lb)
12	1.4	6.93	7.80	2.99	0.83	1.69	2.52	0.26	2.99	2.28	0.43	1.4	0.5000	0.1250	1.08	4.5

Frame	Drawing	A	A2	B	C	E	F	G	K	M	M1	S	R	W	X	Wt (lb)
12	1.5	6.93	7.80	1.97	3.54	1.38	2.99	2.17	0.26	2.99	2.28	0.43	0.5000	0.1250	1.08	4.5

Dwg 1.4



Dwg 1.5



Spec Table 1.1

Specifications						Dimensional Drawing															
						Motor				Brakemotor				Motor IP-65				Brakemotor IP-65			
						Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange
1/30	12	5	360	5	22	Dwg 1.8 A	Dwg 1.6 A	Dwg 1.8 A	Dwg 1.6 A	Dwg 1.8 A2	Dwg 1.6 A2	Dwg 1.8 A2	Dwg 1.6 A2	Dwg 1.11 A	Dwg 1.10 A	Dwg 1.11 A	Dwg 1.10 A	Dwg 1.11 A2	Dwg 1.10 A2	Dwg 1.11 A2	Dwg 1.10 A2
		7.5	240	7	44																
		10	180	10	55																
		15	120	14	77																
		20	90	19	99																
		25	72	24	110																
		30	60	29	121																
		40	45	39	132																
		50	36	48	143																
		60	30	58	154																
		80	23	73	165																
		100	18	91	165																
		120	15	110	176																
	15	160	11	146	243	Dwg 1.8 A	Dwg 1.6 A	Dwg 1.8 A	Dwg 1.6 A	Dwg 1.8 A2	Dwg 1.6 A2	Dwg 1.8 A2	Dwg 1.6 A2	Dwg 1.11 A	Dwg 1.10 A	Dwg 1.11 A	Dwg 1.10 A	Dwg 1.11 A2	Dwg 1.10 A2	Dwg 1.11 A2	Dwg 1.10 A2
		200	9	183	243																
		240	7.5	220	243																
	22	300	6	247	397	Dwg 1.9 A	Dwg 1.7 A	Dwg 1.9 A	Dwg 1.7 A	Dwg 1.9 A2	Dwg 1.7 A2	Dwg 1.9 A2	Dwg 1.7 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		375	4.8	309	397																
		450	4	370	397																
		600	3	494	397																
		750	2.4	617	397																
		900	2	741	397																
	28	1200	1.5	988	617	Dwg 1.9 A	Dwg 1.7 A	Dwg 1.9 A	Dwg 1.7 A	Dwg 1.9 A2	Dwg 1.7 A2	Dwg 1.9 A2	Dwg 1.7 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		1500	1.2	1235	617																
		1800	1	1476	617																

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.

Model Number for Ordering

G	L	15	N	120	–	B	M	LD	2	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
G: G Series	L: Foot Mount F: Flange Mount (5:1~240:1) K: Flange Mount (300:1~1800:1)	12 15 22 28	N: Common Code	005 : 5:1 030 : 30:1 120 : 120:1 900 : 900:1 12X : 1200:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	Frame 12, 22 LD: 1/30 Hp (25w) Frame 15,28 RD: 1/30Hp (25w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

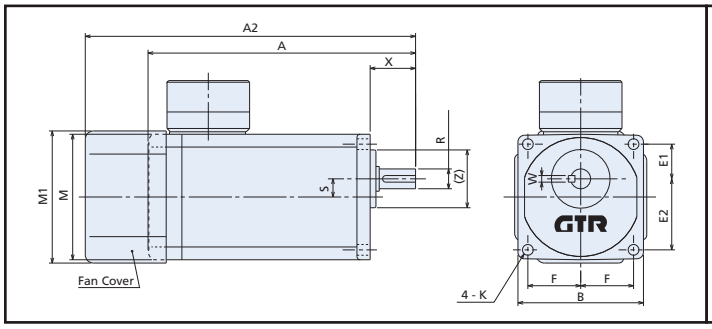
Notes:

1. Lead Wire Location: specify the code from Fig 1.14 , Page 14 on your purchase order.
2. Terminal Box Location: specify the code from Fig 1.15 Page 14 on your purchase order.
3. IP-65 Cord Location Location: specify the code from Fig 1.16 , Page 14 on your purchase order.
4. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
5. For any other special OEM requirement, please consult Brother.

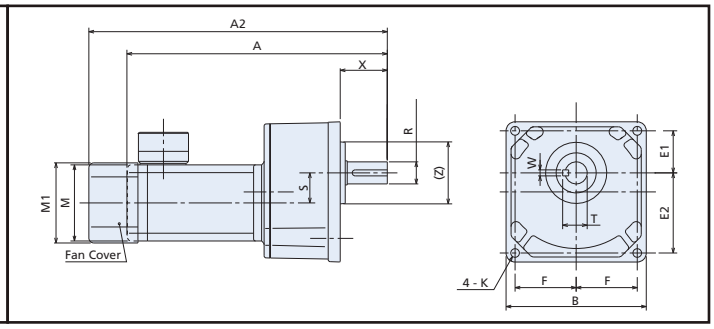
brother at your side

Frame	Drawing	A	A2	B	E1	E2	F	K	M	M1	S	Z	R	W	X	Wt (lb)
12	1.6	6.38	7.87	2.99	0.83	1.69	1.26	0.26	2.99	3.15	0.43	1.4	0.5000	0.1250	1.08	4.5
15	1.6	6.81	8.25	3.54	0.98	2.01	1.50	0.26	3.54	3.70	0.51	1.59	0.6250	0.1875	1.30	7
22	1.7	10.24	11.73	5.51	1.65	3.15	2.40	0.34	2.99	3.15	1.18	2.48	0.8750	0.1875	1.85	11
28	1.7	11.12	12.56	6.46	1.87	3.72	2.80	0.43	3.54	3.70	1.44	3.27	1.1250	0.2500	1.85	15.5

Dwg 1.6

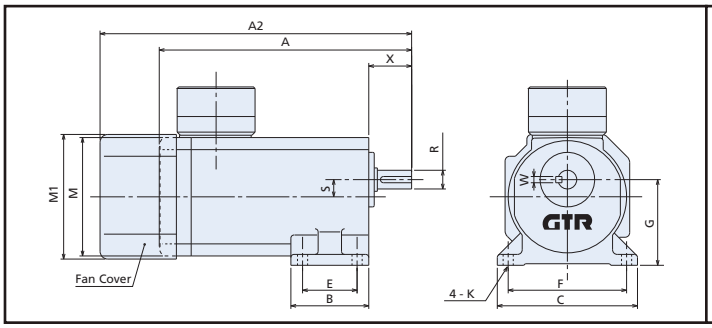


Dwg 1.7

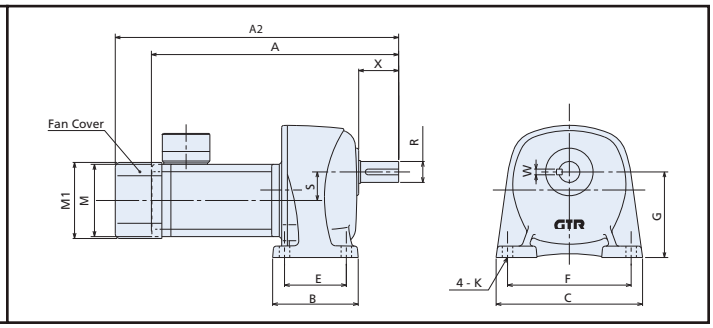


Frame	Drawing	A	A2	B	C	E	F	G	K	M	M1	S	R	W	X	Wt (lb)
12	1.8	6.38	7.87	1.97	3.54	1.38	2.99	2.17	0.26	2.99	3.15	0.43	0.5000	0.1250	1.08	4.5
15	1.8	6.81	8.25	2.20	4.09	1.57	3.54	2.56	0.26	3.54	3.70	0.51	0.6250	0.1875	1.30	7
22	1.9	10.24	11.73	3.54	6.06	2.56	5.12	3.54	0.43	2.99	3.15	1.18	0.8750	0.1875	1.85	11
28	1.9	11.20	12.56	4.92	6.89	3.54	5.51	4.33	0.43	3.54	3.70	1.44	1.1250	0.2500	1.85	15.5

Dwg 1.8



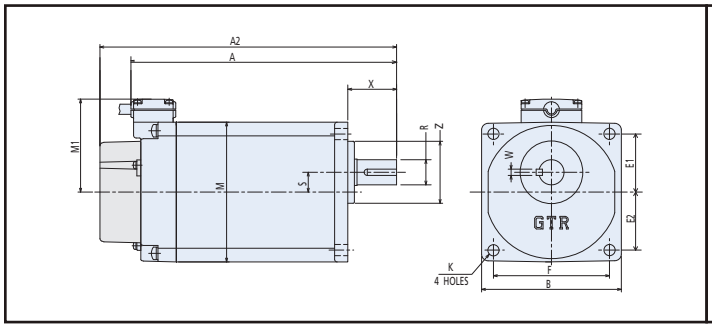
Dwg 1.9



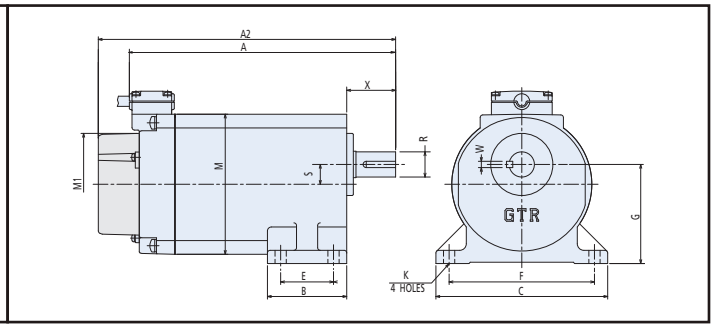
Frame	Drawing	A	A2	B	E1	E2	F	K	M	M1	S	Z	R	W	X	Wt (lb)
12	1.10	6.93	7.80	2.99	0.83	1.69	2.52	0.26	2.99	2.28	0.43	1.4	0.5000	0.1250	1.08	4.5
15	1.10	7.34	8.27	3.54	0.98	2.01	2.99	0.26	3.54	2.54	0.51	1.59	0.6250	0.1875	1.3	7

Frame	Drawing	A	A2	B	C	E	F	G	K	M	M1	S	R	W	X	Wt (lb)
12	1.11	6.93	7.80	1.97	3.54	1.38	2.99	2.17	0.26	2.99	2.28	0.43	0.5000	0.1250	1.08	4.5
15	1.11	7.34	8.27	2.20	4.09	1.57	3.54	2.56	0.26	3.54	2.54	0.51	0.6250	0.1875	1.3	7

Dwg 1.10



Dwg 1.11



Spec Table 1.2

Specifications						Dimensional Drawing															
						Motor				Brakemotor				Motor IP-65				Brakemotor IP-65			
						Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange
1/20	15	5	360	8	22	Dwg 1.14 A	Dwg 1.12 A	Dwg 1.14 A	Dwg 1.12 A	Dwg 1.14 A2	Dwg 1.12 A2	Dwg 1.14 A2	Dwg 1.12 A2	Dwg 1.17 A	Dwg 1.16 A	Dwg 1.17 A	Dwg 1.16 A	Dwg 1.17 A2	Dwg 1.16 A2	Dwg 1.17 A2	Dwg 1.16 A2
		7.5	240	12	44																
		10	180	16	55																
		15	120	23	77																
		20	90	31	99																
		25	72	39	110																
		30	60	47	121																
		40	45	62	132																
		50	36	78	143																
		60	30	94	154																
		80	23	119	220																
		100	18	148	220																
		120	15	178	243																
	18	160	11	237	308	Dwg 1.14 A	Dwg 1.12 A	Dwg 1.14 A	Dwg 1.12 A	Dwg 1.14 A2	Dwg 1.12 A2	Dwg 1.14 A2	Dwg 1.12 A2	Dwg 1.17 A	Dwg 1.16 A	Dwg 1.17 A	Dwg 1.16 A	Dwg 1.17 A2	Dwg 1.16 A2	Dwg 1.17 A2	Dwg 1.16 A2
		200	9	296	308																
		240	7.5	356	308																
	28	300	6	400	617	Dwg 1.15 A	Dwg 1.13 A	Dwg 1.15 A	Dwg 1.13 A	Dwg 1.15 A2	Dwg 1.13 A2	Dwg 1.15 A2	Dwg 1.13 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		375	4.8	500	617																
		450	4	600	617																
		600	3	800	617																
		750	2.4	1000	617																
		900	2	1200	617																
	32	1200	1.5	1600	617	Dwg 1.15 A	Dwg 1.13 A	Dwg 1.15 A	Dwg 1.13 A	Dwg 1.15 A2	Dwg 1.13 A2	Dwg 1.15 A2	Dwg 1.13 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		1500	1.2	2000	617																
		1800	1	2430	617																

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.

Model Number for Ordering

G	F	15	N	005	-	B	M	RE	2	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
G: G Series	L: Foot Mount F: Flange Mount (5:1~240:1) K: Flange Mount (300:1~1800:1)	15 18 28 32	N: Common Code	005 : 5:1 030 : 30:1 120 : 120:1 900 : 900:1 12X : 1200:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	Frame 15, 28, 32 RE: 1/20 Hp (40w) Frame 18 YE: 1/20Hp (40w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

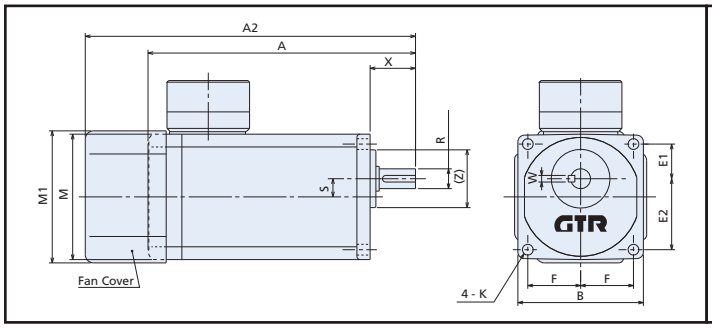
Notes:

1. Lead Wire Location: specify the code from Fig 1.14 , Page 14 on your purchase order.
2. Terminal Box Location: specify the code from Fig 1.15 Page 14 on your purchase order.
3. IP-65 Cord Location Location: specify the code from Fig 1.16 , Page 14 on your purchase order.
4. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
5. For any other special OEM requirement, please consult Brother.

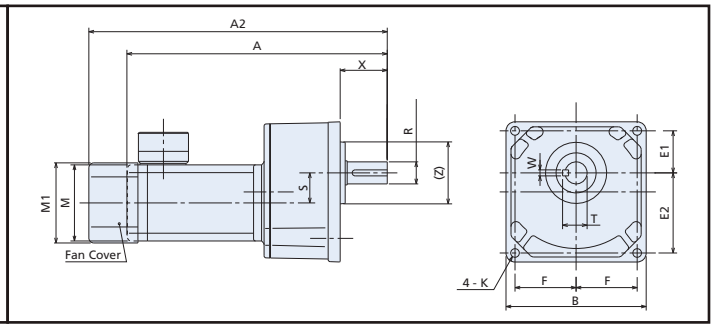
brother at your side

Frame	Drawing	A	A2	B	E1	E2	F	K	M	M1	S	Z	R	W	X	Wt (lb)
15	1.12	6.81	8.25	3.54	0.98	2.01	1.50	0.26	3.54	3.70	0.51	1.59	0.6250	0.1875	1.30	7
18	1.12	7.40	8.88	4.17	1.14	2.32	1.73	0.33	4.17	4.33	0.59	1.87	0.7500	0.1875	1.46	9
28	1.13	11.12	12.56	6.46	1.87	3.72	2.80	0.43	3.54	3.70	1.44	3.27	1.1250	0.2500	1.85	15.5
32	1.13	12.32	13.76	7.80	2.30	4.47	3.39	0.51	3.54	3.70	1.63	3.62	1.2500	0.2500	2.28	24.5

Dwg 1.12

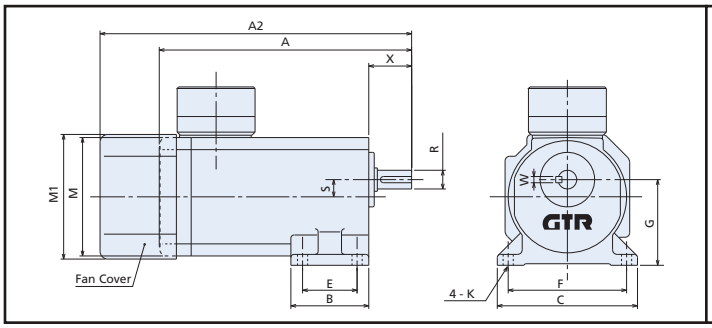


Dwg 1.13

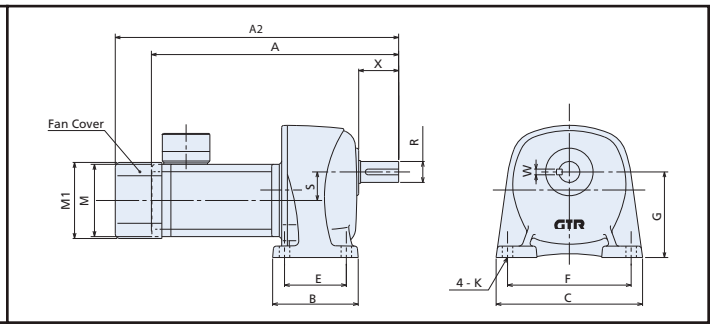


Frame	Drawing	A	A2	B	C	E	F	G	K	M	M1	S	R	W	X	Wt (lb)
15	1.14	6.81	8.25	2.20	4.09	1.57	3.54	2.56	0.26	3.54	3.70	0.51	0.6250	0.1875	1.30	7
18	1.14	7.40	8.88	2.36	5.12	1.57	4.33	2.95	0.33	4.17	4.33	0.59	0.7500	0.1875	1.46	9
28	1.15	11.20	12.56	4.92	6.89	3.54	5.51	4.33	0.43	3.54	3.70	1.44	1.1250	0.2500	1.85	15.5
32	1.15	12.32	13.76	6.61	8.19	5.12	6.69	5.12	0.51	3.54	3.70	1.63	1.2500	0.2500	2.28	24.5

Dwg 1.14



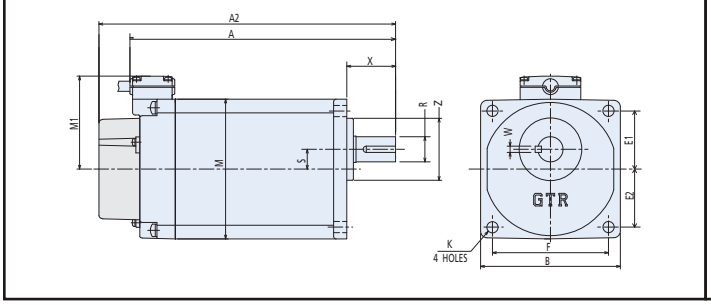
Dwg 1.15



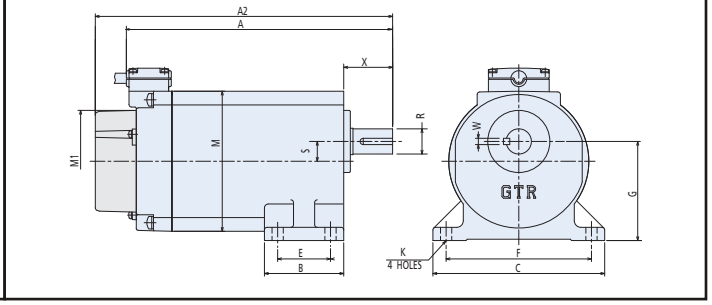
Frame	Drawing	A	A2	B	E1	E2	F	K	M	M1	S	Z	R	W	X	Wt (lb)
15	1.16	7.34	8.27	3.54	0.98	2.01	2.99	0.26	3.54	2.54	0.51	1.59	0.6250	0.1875	1.3	7
18	1.16	7.93	8.86	4.17	1.14	2.32	3.46	0.33	4.17	2.74	0.59	1.87	0.7500	0.1875	1.46	9

Frame	Drawing	A	A2	B	C	E	F	G	K	M	M1	S	R	W	X	Wt (lb)
15	1.17	7.34	8.27	2.20	4.09	1.57	3.54	2.56	0.26	3.54	2.54	0.51	0.6250	0.1875	1.3	7
18	1.17	7.93	8.86	2.36	5.12	1.57	4.33	2.95	0.33	4.17	2.74	0.59	0.7500	0.1875	1.46	9

Dwg 1.16



Dwg 1.17



Spec Table 1.3

Specifications						Dimensional Drawing															
						Motor				Brakemotor				Motor IP-65				Brakemotor IP-65			
						Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange
1/15	(15) (18)	5	360	12	22	Dwg 1.20 (15) A2	Dwg 1.18 (15) A2	Dwg 1.20 (15) A	Dwg 1.18 (15) A	Dwg 1.20 (15) A2	Dwg 1.18 (15) A2	Dwg 1.20 (15) A2	Dwg 1.18 (15) A2	Dwg 1.23 (18) A	Dwg 1.22 (18) A	Dwg 1.22 (15) A	Dwg 1.23 (15) A	Dwg 1.23 (18) A2	Dwg 1.22 (18) A2	Dwg 1.22 (15) A2	Dwg 1.23 (15) A2
		7.5	240	18	44																
		10	180	25	55																
		15	120	37	77																
		20	90	49	99																
		25	72	61	110																
		30	60	74	121																
		40	45	98	176																
		50	36	123	198																
		60	30	147	198																
	18	80	23	186	286	Dwg 1.20 A2	Dwg 1.18 A2	Dwg 1.20 A	Dwg 1.18 A	Dwg 1.20 A2	Dwg 1.18 A2	Dwg 1.20 A2	Dwg 1.18 A2	Dwg 1.23 A	Dwg 1.22 A	Dwg 1.23 A	Dwg 1.22 A	Dwg 1.23 A2	Dwg 1.22 A2	Dwg 1.23 A2	Dwg 1.22 A2
		100	18	233	286																
		120	15	279	308																
		160	11	373	308																
		200	9	466	308																
		240	7.5	477	308																
	28	300	6	629	617	Dwg 1.21 A2	Dwg 1.19 A2	Dwg 1.21 A	Dwg 1.19 A	Dwg 1.21 A2	Dwg 1.19 A2	Dwg 1.21 A2	Dwg 1.19 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		375	4.8	786	617																
		450	4	943	617																
		600	3	1258	617																
		750	2.4	1572	617																
		900	2	1887	617																
	32	1200	1.5	2515	1146	Dwg 1.21 A2	Dwg 1.19 A2	Dwg 1.21 A	Dwg 1.19 A	Dwg 1.21 A2	Dwg 1.19 A2	Dwg 1.21 A2	Dwg 1.19 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		1500	1.2	3144	1146																
		1800	1	3732	1146																

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.

Model Number for Ordering

G	F	15	N	005	-	B	M	RF	2	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
G: G Series	L: Foot Mount F: Flange Mount (5:1~240:1) K: Flange Mount (300:1~1800:1)	15 18 28 32	N: Common Code	005 : 5:1 030 : 30:1 120 : 120:1 900 : 900:1 12X : 1200:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	Frame 15, 28, 32 RF: 1/15 Hp (60w)) Frame 18 YF: 1/15Hp (60w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

Notes:

1. Lead Wire Location: specify the code from Fig 1.14 , Page 14 on your purchase order.
2. Terminal Box Location: specify the code from Fig 1.15 Page 14 on your purchase order.
3. IP-65 Cord Location Location: specify the code from Fig 1.16 , Page 14 on your purchase order.
4. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
5. For any other special OEM requirement, please consult Brother.

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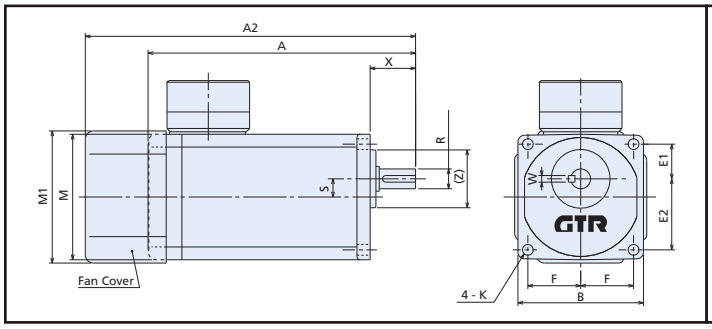
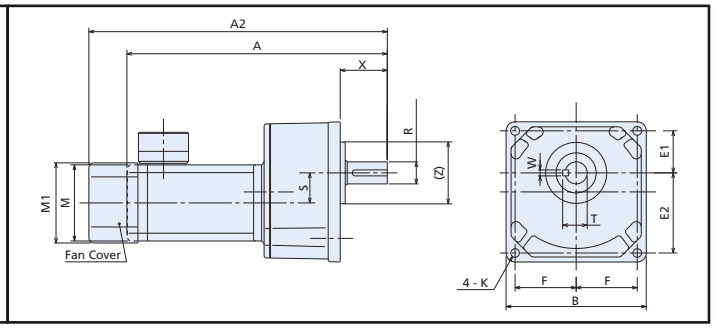
Frame	Drawing	A	A2	B	E1	E2	F	K	M	M1	S	Z	R	W	X	Wt (lb)
15	1.18	6.81	8.25	3.54	0.98	2.01	1.50	0.26	3.54	3.70	0.51	1.59	0.6250	0.1875	1.30	7
18	1.18	7.40	8.88	4.17	1.14	2.32	1.73	0.33	4.17	4.33	0.59	1.87	0.7500	0.1875	1.46	9
28	1.19	11.12	12.56	6.46	1.87	3.72	2.80	0.43	3.54	3.70	1.44	3.27	1.1250	0.2500	1.85	15.5
32	1.19	12.32	13.76	7.80	2.30	4.47	3.39	0.51	3.54	3.70	1.63	3.62	1.2500	0.2500	2.28	24.5

Dwg 1.18

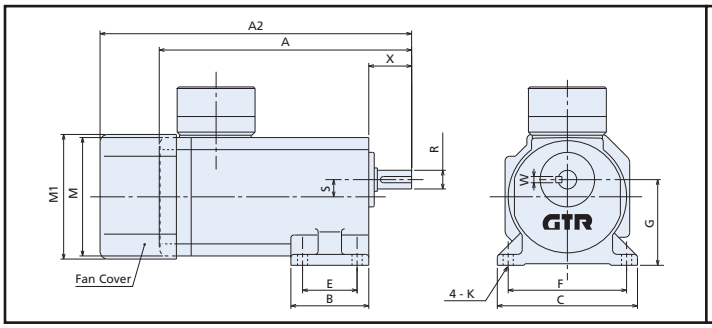


Dwg 1.19

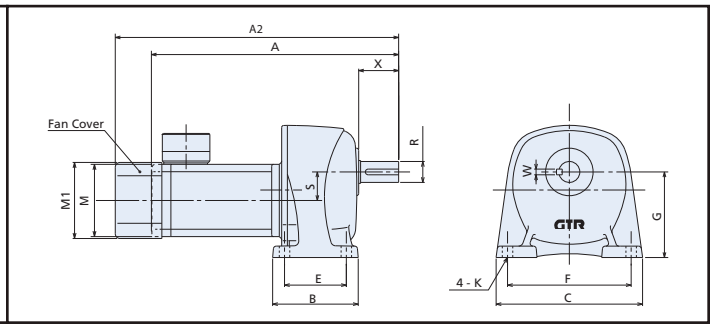


Frame	Drawing	A	A2	B	C	E	F	G	K	M	M1	S	R	W	X	Wt (lb)
15	1.20	6.81	8.25	2.20	4.09	1.57	3.54	2.56	0.26	3.54	3.70	0.51	0.6250	0.1875	1.30	7
18	1.20	7.40	8.88	2.36	5.12	1.57	4.33	2.95	0.33	4.17	4.33	0.59	0.7500	0.1875	1.46	9
28	1.21	11.20	12.56	4.92	6.89	3.54	5.51	4.33	0.43	3.54	3.70	1.44	1.1250	0.2500	1.85	15.5
32	1.21	12.32	13.76	6.61	8.19	5.12	6.69	5.12	0.51	3.54	3.70	1.63	1.2500	0.2500	2.28	24.5

Dwg 1.20



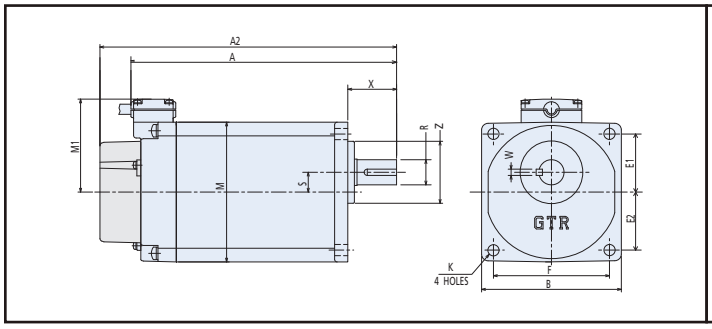
Dwg 1.21



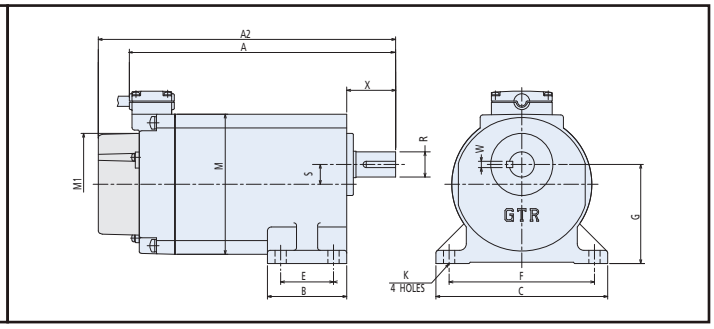
Frame	Drawing	A	A2	B	E1	E2	F	K	M	M1	S	Z	R	W	X	Wt (lb)
15	1.22	7.34	8.27	3.54	0.98	2.01	2.99	0.26	3.54	2.54	0.51	1.59	0.6250	0.1875	1.3	7
18	1.22	7.93	8.86	4.17	1.14	2.32	3.46	0.33	4.17	2.74	0.59	1.87	0.7500	0.1875	1.46	9

Frame	Drawing	A	A2	B	C	E	F	G	K	M	M1	S	R	W	X	Wt (lb)
15	1.23	7.34	8.27	2.20	4.09	1.57	3.54	2.56	0.26	3.54	2.54	0.51	0.6250	0.1875	1.3	7
18	1.23	7.93	8.86	2.36	5.12	1.57	4.33	2.95	0.33	4.17	2.74	0.59	0.7500	0.1875	1.46	9

Dwg 1.22



Dwg 1.23



Spec Table 1.4

Specifications						Dimensional Drawing													
						Motor				Brakemotor				Motor IP-65				Brakemotor IP-65			
						Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange
1/10	(15) (18)	5	360	18	33	Dwg 1.26 (15) A2	Dwg 1.24 (15) A2	Dwg 1.26 (15) A2	Dwg 1.24 (15) A2	Dwg 1.26 (15) A2	Dwg 1.24 (15) A2	Dwg 1.26 (15) A2	Dwg 1.24 (15) A2	n/a	n/a	Dwg 1.29 (18) A	Dwg 1.28 (18) A	n/a	n/a	Dwg 1.28 (18) A2	Dwg 1.28 (18) A2
		7.5	240	28	55																
		10	180	37	77																
		15	120	55	99																
		20	90	74	121																
		25	72	92	132																
		30	60	110	154																
	18	40	45	147	242	Dwg 1.26 A	Dwg 1.24 A	Dwg 1.26 A	Dwg 1.24 A	Dwg 1.26 A2	Dwg 1.24 A2	Dwg 1.26 A2	Dwg 1.24 A2	n/a	n/a	Dwg 1.29 A	Dwg 1.28 A	n/a	n/a	Dwg 1.29 A2	Dwg 1.28 A2
		50	36	184	264																
		60	30	221	264																
		80	23	279	286																
		100	18	349	286																
		120	15	419	308																
		160	11	477	396																
		200	9	477	396																
		240	7.5	477	396																
	28	300	6	943	617	Dwg 1.27 A2	Dwg 1.25 A2	Dwg 1.27 A2	Dwg 1.25 A2	Dwg 1.27 A2	Dwg 1.25 A2	Dwg 1.27 A2	Dwg 1.25 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		375	4.8	1179	617																
		450	4	1415	617																
		600	3	1887	1146																
		750	2.4	2358	1146																
		900	2	2830	1146																
	40	1200	1.5	3726	1588	Dwg 1.27 A	Dwg 1.25 A	Dwg 1.27 A	Dwg 1.25 A	Dwg 1.27 A2	Dwg 1.25 A2	Dwg 1.27 A2	Dwg 1.25 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		1500	1.2	4682	1588																
		1800	1	5638	1588																

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.

Model Number for Ordering

G	K	32	N	900	-	B	B	RG	2	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
G: G Series	L: Foot Mount F: Flange Mount (5:1~240:1) K: Flange Mount (300:1~1800:1)	15 18 28 40	N: Common Code	005 : 5:1 030 : 30:1 120 : 120:1 900 : 900:1 12X : 1200:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	Frame 15, 28, 32 RG: 1/10 Hp (90w) Frame 18 YG: 1/10Hp (90w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

Notes:

1. Lead Wire Location: specify the code from Fig 1.14 , Page 14 on your purchase order.
2. Terminal Box Location: specify the code from Fig 1.15 Page 14 on your purchase order.
3. IP-65 Cord Location Location: specify the code from Fig 1.16 , Page 14 on your purchase order.
4. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
5. For any other special OEM requirement, please consult Brother.

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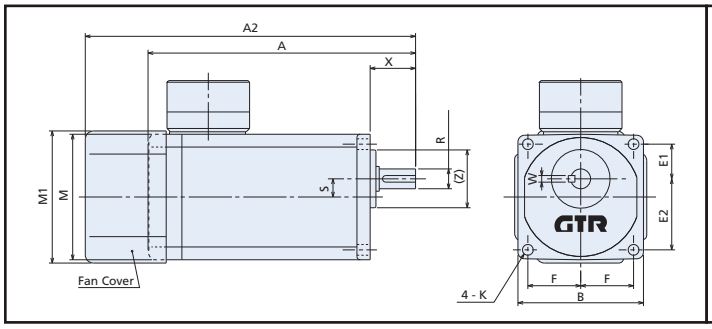
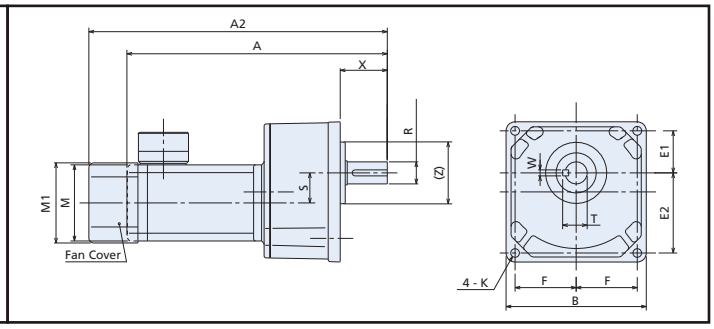
Frame	Drawing	A	A2	B	E1	E2	F	K	M	M1	S	Z	R	W	X	Wt (lb)
15	1.24	6.81	8.25	3.54	0.98	2.01	1.50	0.26	3.54	3.70	0.51	1.59	0.6250	0.1875	1.30	7
18	1.24	7.40	8.88	4.17	1.14	2.32	1.73	0.33	4.17	4.33	0.59	1.87	0.7500	0.1875	1.46	9
28	1.25	11.12	12.56	6.46	1.87	3.72	2.80	0.43	3.54	3.70	1.44	3.27	1.1250	0.2500	1.85	15.5
32	1.25	12.32	13.76	7.80	2.30	4.47	3.39	0.51	3.54	3.70	1.63	3.62	1.2500	0.2500	2.28	24.5

Dwg 1.24

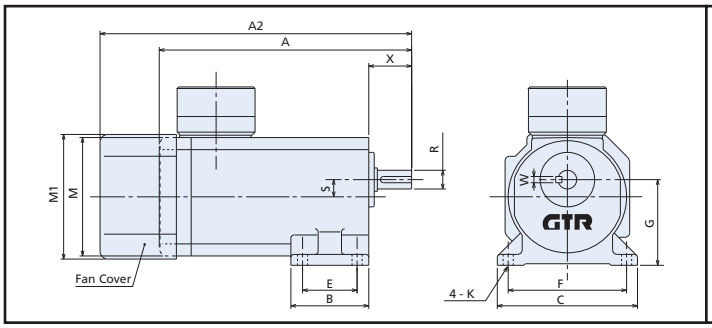


Dwg 1.25

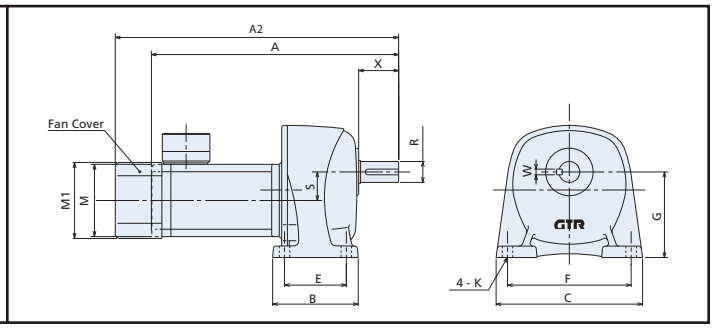


Frame	Drawing	A	A2	B	C	E	F	G	K	M	M1	S	R	W	X	Wt (lb)
15	1.26	6.81	8.25	2.20	4.09	1.57	3.54	2.56	0.26	3.54	3.70	0.51	0.6250	0.1875	1.30	7
18	1.26	7.40	8.88	2.36	5.12	1.57	4.33	2.95	0.33	4.17	4.33	0.59	0.7500	0.1875	1.46	9
28	1.27	11.20	12.56	4.92	6.89	3.54	5.51	4.33	0.43	3.54	3.70	1.44	1.1250	0.2500	1.85	15.5
32	1.27	12.32	13.76	6.61	8.19	5.12	6.69	5.12	0.51	3.54	3.70	1.63	1.2500	0.2500	2.28	24.5

Dwg 1.26



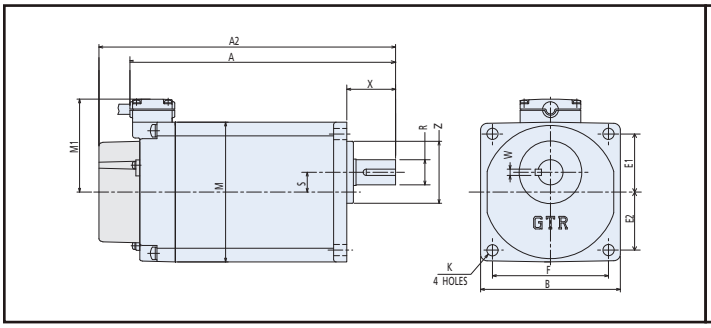
Dwg 1.27



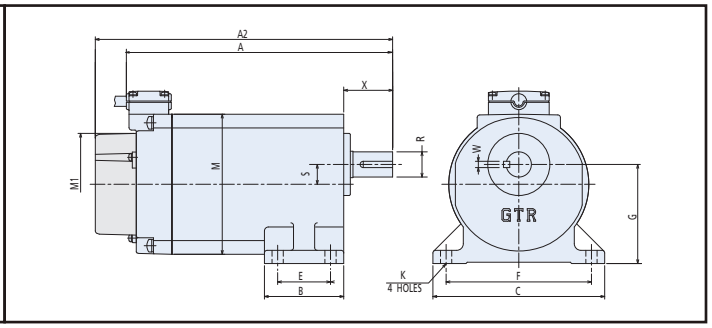
Frame	Drawing	A	A2	B	E1	E2	F	K	M	M1	S	Z	R	W	X	Wt (lb)
15	1.28	7.34	8.27	3.54	0.98	2.01	2.99	0.26	3.54	2.54	0.51	1.59	0.6250	0.1875	1.3	7
18	1.28	7.93	8.86	4.17	1.14	2.32	3.46	0.33	4.17	2.74	0.59	1.87	0.7500	0.1875	1.46	9

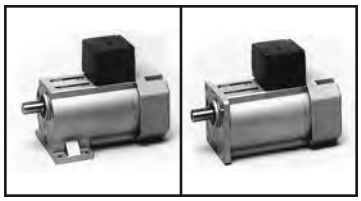
Frame	Drawing	A	A2	B	C	E	F	G	K	M	M1	S	R	W	X	Wt (lb)
15	1.29	7.34	8.27	2.20	4.09	1.57	3.54	2.56	0.26	3.54	2.54	0.51	0.6250	0.1875	1.3	7
18	1.29	7.93	8.86	2.36	5.12	1.57	4.33	2.95	0.33	4.17	2.74	0.59	0.7500	0.1875	1.46	9

Dwg 1.28



Dwg 1.29





Spec Table 1.6

Specifications						Dimensional Drawing													
						Motor				Brakemotor				Motor IP-65				Brakemotor IP-65			
						Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange
1/6 Hp	18	5	360	25	44	Dwg 1.31 A2	Dwg 1.30 A2	Dwg 1.31 A2	Dwg 1.30 A2	Dwg 1.31 A2	Dwg 1.30 A2	Dwg 1.31 A2	Dwg 1.30 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		7.5	240	37	66																
		10	180	49	99																
		15	120	74	132																
		20	90	98	165																
		25	72	123	198																
		30	60	147	220																
		40	45	196	243																
		50	36	245	265																
		60	30	294	265																

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.

Model Number for Ordering

G	F	18	N	030	-	B	M	YJ	3	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
G: G Series	L: Foot Mount F: Flange Mount (5:1~60:1)	18	N: Common Code	005 : 5:1 030 : 30:1		B: UL/CSA	M: Motor B: Brakemotor	Frame 18 YJ: 1/6 Hp (120w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz 8: OEM Spec (Fig 1.5, Pg 11)	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

Notes:

1. Lead Wire Location: specify the code from Fig 1.14 , Page 14 on your purchase order.
2. Terminal Box Location: specify the code from Fig 1.15 Page 14 on your purchase order.
3. IP-65 Cord Location Location: specify the code from Fig 1.16 , Page 14 on your purchase order.
4. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
5. For any other special OEM requirement, please consult Brother.

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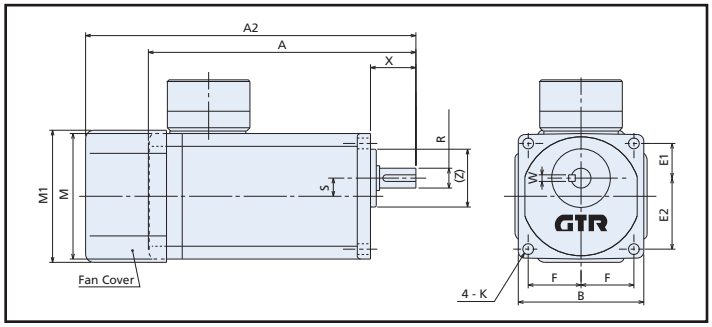
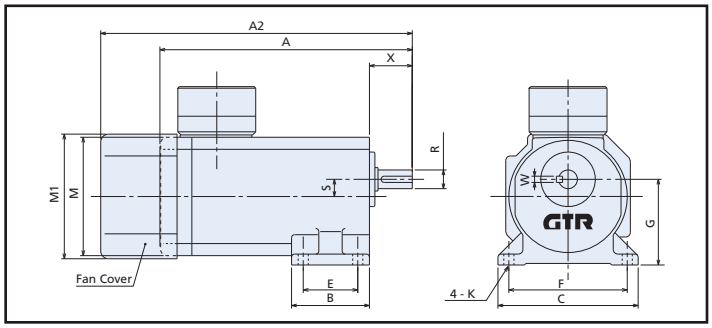
Frame	Drawing	A	A2	B	E1	E2	F	K	M	M1	S	Z	R	W	X	Wt (lb)
18	1.30	7.40	8.88	4.17	1.14	2.32	1.73	0.33	4.17	4.33	0.59	1.87	0.7500	0.1875	1.46	9

Dwg 1.30



Frame	Drawing	A	A2	B	C	E	F	G	K	M	M1	S	R	W	X	Wt (lb)
32	1.27	12.32	13.76	6.61	8.19	5.12	6.69	5.12	0.51	3.54	3.70	1.63	1.2500	0.2500	2.28	24.5

Dwg 1.31



Spec Table 2.0

Specifications						Dimensional Drawing													
						Motor				Brakemotor				Motor IP-65				Brakemotor IP-65			
						Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange
1/50	15	10	180	6	77	Dwg 2.0 A	Dwg 2.2 A	Dwg 2.0 A	Dwg 2.2 A	Dwg 2.0 A2	Dwg 2.2 A2	Dwg 2.0 A2	Dwg 2.2 A2	Dwg 2.4 A	Dwg 2.5 A	Dwg 2.4 A	Dwg 2.5 A	Dwg 2.4 A2	Dwg 2.5 A2	Dwg 2.4 A2	Dwg 2.5 A2
		15	120	9	99																
		20	90	12	121																
		25	72	14	132																
		30	60	17	154																
		40	45	23	176																
		50	36	29	198																
		60	30	35	220																
		80	23	44	220																
		100	18	55	243																
		120	15	66	243																
		160	11	88	243																
		200	9	110	243																
		240	7.5	132	243																
	22	300	6	148	397	Dwg 2.1 A	Dwg 2.3 A	Dwg 2.1 A	Dwg 2.3 A	Dwg 2.1 A2	Dwg 2.3 A2	Dwg 2.1 A2	Dwg 2.3 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		375	4.8	185	397																
		450	4	222	397																
		600	3	296	397																
		750	2.4	370	397																
		900	2	445	397																
		1200	1.5	593	397																
		1500	1.2	741	397																
		1800	1	868	397																
		1500	1.2	741	397																
		1800	1	868	397																

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.

Model Number for Ordering

H	L	15	R	030	-	B	M	LC	2	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
H: H Series	L: Foot Mount F: Flange Mount	15 22	R: Right Shaft L: Left Shaft T: Double Shaft Ref: Fig 2.1	030 : 30:1 120 : 120:1 900 : 900:1 12X : 1200:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	Frame 15, 22 LC: 1/50 Hp (15w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

Notes:

1. Lead Wire Location: specify the code from Fig 1.14 , Page 14 on your purchase order.
2. Terminal Box Location: specify the code from Fig 1.15 Page 14 on your purchase order.
3. IP-65 Cord Location Location: specify the code from Fig 1.16 , Page 14 on your purchase order.
4. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
5. For any other special OEM requirement, please consult Brother.

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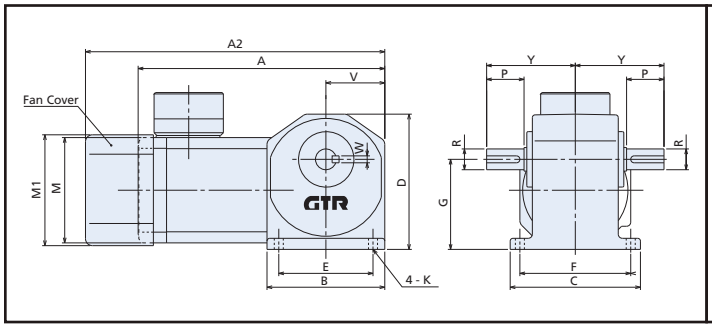
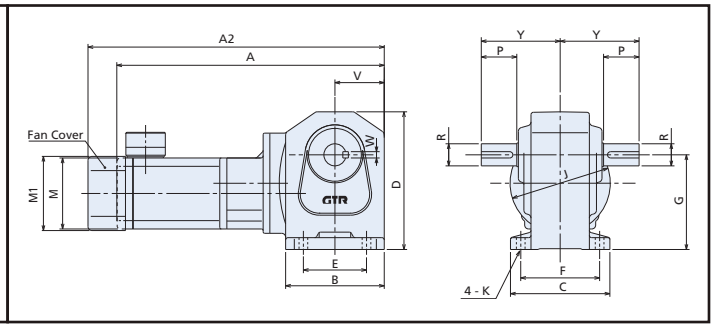
Frame	Drawing	A	A2	B	C	D	E	F	G	K	M	M1	V	Y	P	R	W	Wt (lb)
15	2.0	7.01	8.50	3.35	3.70	3.86	2.68	3.15	2.56	0.26	2.99	3.15	1.67	2.52	1.06	0.6250	0.1875	7
22	2.1	11.99	13.48	4.17	4.57	5.91	2.76	3.54	4.13	0.43	2.99	3.15	2.09	3.54	1.57	0.8750	0.1875	13.5

Dwg 2.0

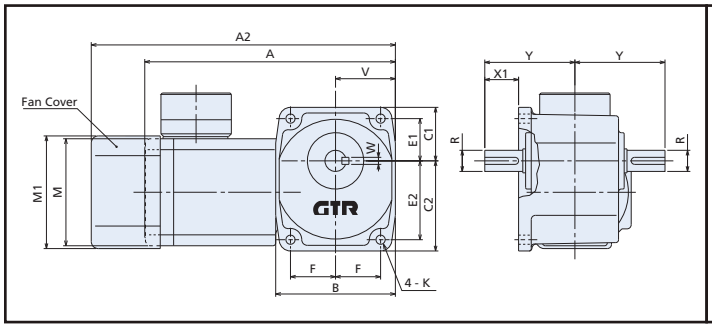


Dwg 2.1

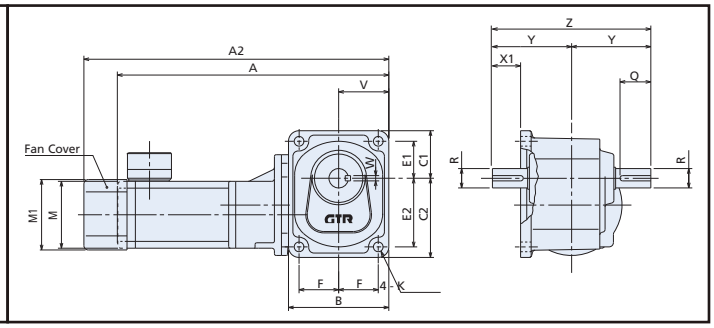


Frame	Drawing	A	A2	B	C1	C2	E1	E2	F	K	M	M1	V	Y	X1	R	W	Wt (lb)
15	2.2	7.01	8.5	3.35	1.5	2.52	1.18	2.2	1.26	0.26	2.99	3.15	1.67	2.52	0.94	0.625	0.1875	7
22	2.3	12.14	13.64	4.49	2.13	3.54	1.65	3.07	1.77	0.43	2.99	3.15	2.24	3.54	1.26	0.875	0.1875	13.5

Dwg 2.2



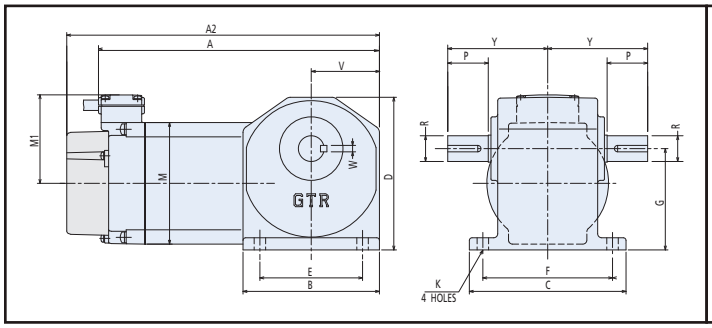
Dwg 2.3



Frame	Drawing	A	A2	B	C	D	E	F	G	K	M	M1	V	Y	P	R	W	Wt (lb)
15	2.4	7.56	8.43	3.35	3.70	3.86	2.68	3.15	2.56	0.26	2.99	2.28	1.67	2.52	1.06	0.6250	0.1875	7

Frame	Drawing	A	A2	B	C1	C2	E1	E2	F	K	M	M1	V	Y	X1	R	W	Wt (lb)
15	2.5	7.56	8.43	3.35	1.50	2.52	1.18	2.20	1.26	0.26	2.99	2.28	0.94	1.57	0.94	0.6250	0.1875	7

Dwg 2.4



Dwg 2.5

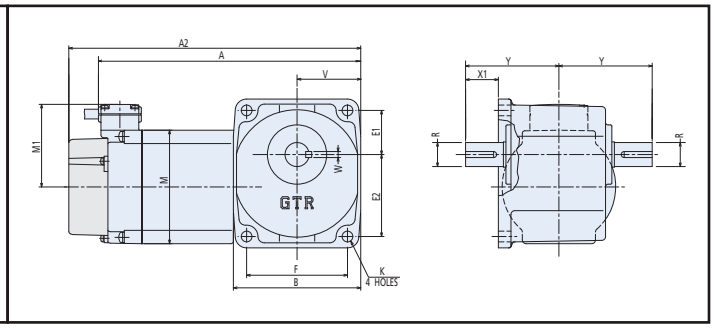
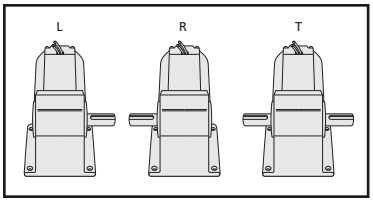


Fig. 2.1



Spec Table 2.1

Specifications						Dimensional Drawing													
						Motor				Brakemotor				Motor IP-65				Brakemotor IP-65			
						Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange
1/30	15	10	180	10	121	Dwg 2.6 A	Dwg 2.8 A	Dwg 2.6 A	Dwg 2.8 A	Dwg 2.6 A2	Dwg 2.8 A2	Dwg 2.6 A2	Dwg 2.8 A2	Dwg 2.10 A	Dwg 2.11 A	Dwg 2.10 A	Dwg 2.11 A	Dwg 2.10 A2	Dwg 2.11 A2	Dwg 2.10 A2	Dwg 2.11 A2
		15	120	14	132																
		20	90	19	154																
		25	72	24	176																
		30	60	29	198																
		40	45	39	220																
		50	36	48	220																
		60	30	58	243																
		80	23	73	243																
		100	18	91	243																
		120	15	110	243																
		160	11	146	243																
		200	9	183	243																
		240	7.5	220	243																
	22	300	6	247	397	Dwg 2.7 A	Dwg 2.9 A	Dwg 2.7 A	Dwg 2.9 A	Dwg 2.7 A2	Dwg 2.9 A2	Dwg 2.7 A2	Dwg 2.9 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		375	4.8	309	397																
		450	4	370	397																
		600	3	494	397																
		750	2.4	617	397																
		900	2	741	397																
	28	1200	1.5	988	617	Dwg 2.7 A	Dwg 2.9 A	Dwg 2.7 A	Dwg 2.9 A	Dwg 2.7 A2	Dwg 2.9 A2	Dwg 2.7 A2	Dwg 2.9 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		1500	1.2	1235	617																
		1800	1	1476	617																

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.

Model Number for Ordering

H	L	15	R	030	-	B	M	LD	2	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
H: H Series	L: Foot Mount F: Flange Mount	15 22 28	R: Right Shaft L: Left Shaft T: Double Shaft Ref: Fig 2.1	030 : 30:1 120 : 120:1 900 : 900:1 12X : 1200:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	Frame 15, 22 LD: 1/30 Hp (25w) Frame 28 RD: 1/30Hp (25w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

Notes:

1. Lead Wire Location: specify the code from Fig 1.14 , Page 14 on your purchase order.
2. Terminal Box Location: specify the code from Fig 1.15 Page 14 on your purchase order.
3. IP-65 Cord Location Location: specify the code from Fig 1.16 , Page 14 on your purchase order.
4. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
5. For any other special OEM requirement, please consult Brother.

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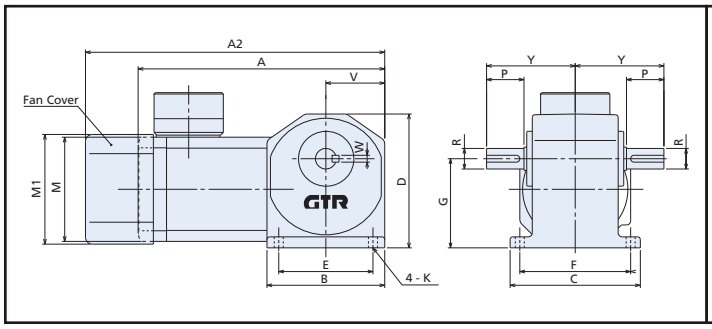
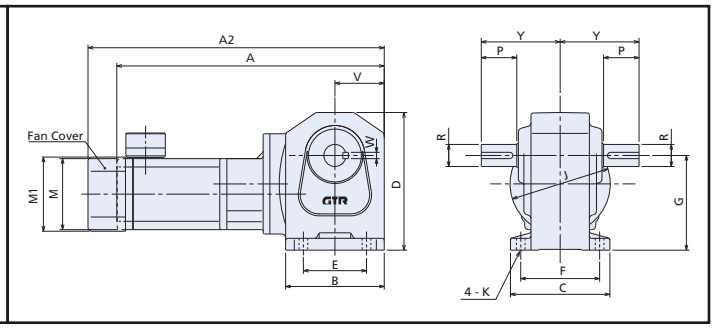
Frame	Drawing	A	A2	B	C	D	E	F	G	K	M	M1	V	Y	P	R	W	Wt (lb)
15	2.6	7.01	8.50	3.35	3.70	3.86	2.68	3.15	2.56	0.26	2.99	3.15	1.67	2.52	1.06	0.6250	0.1875	7
22	2.7	11.99	13.48	4.17	4.57	5.91	2.76	3.54	4.13	0.43	2.99	3.15	2.09	3.54	1.57	0.8750	0.1875	13.5
28	2.7	13.35	14.78	4.92	4.96	6.89	3.15	3.94	4.72	0.43	3.54	3.70	2.46	3.94	1.77	1.1250	0.2500	20

Dwg 2.6

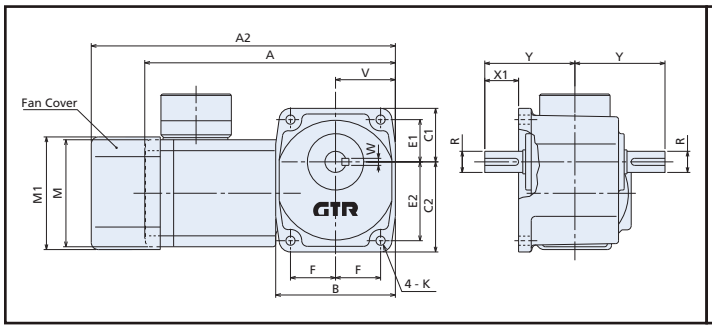


Dwg 2.7

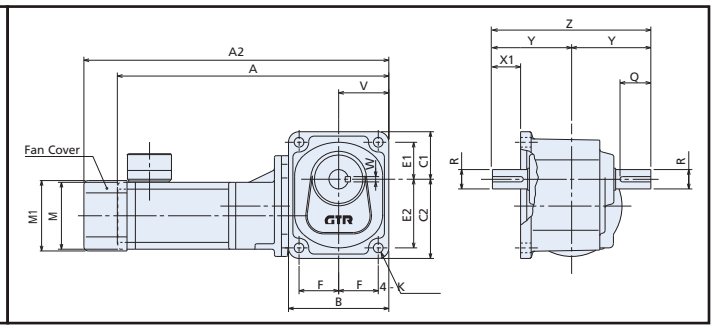


Frame	Drawing	A	A2	B	C	D	E	F	G	K	M	M1	V	Y	P	R	W	Wt (lb)
15	2.8	7.01	8.5	3.35	1.5	2.52	1.18	2.2	1.26	0.26	2.99	3.15	1.67	2.52	0.94	0.625	0.1875	7
22	2.9	12.14	13.64	4.49	2.13	3.54	1.65	3.07	1.77	0.43	2.99	3.15	2.24	3.54	1.26	0.875	0.1875	13.5

Dwg 2.8



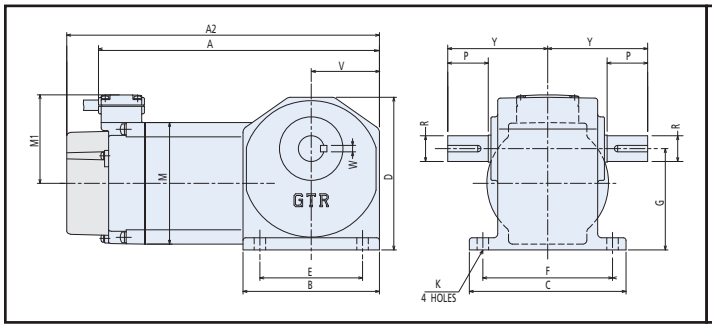
Dwg 2.9



Frame	Drawing	A	A2	B	C	D	E	F	G	K	M	M1	V	Y	P	R	W	Wt (lb)
15	2.10	7.56	8.43	3.35	3.70	3.86	2.68	3.15	2.56	0.26	2.99	2.28	1.67	2.52	1.06	0.6250	0.1875	7

Frame	Drawing	A	A2	B	C1	C2	E1	E2	F	K	M	M1	V	Y	X1	R	W	Wt (lb)
15	2.11	7.56	8.43	3.35	1.50	2.52	1.18	2.20	1.26	0.26	2.99	2.28	0.94	1.57	0.94	0.6250	0.1875	7

Dwg 2.10



Dwg 2.11

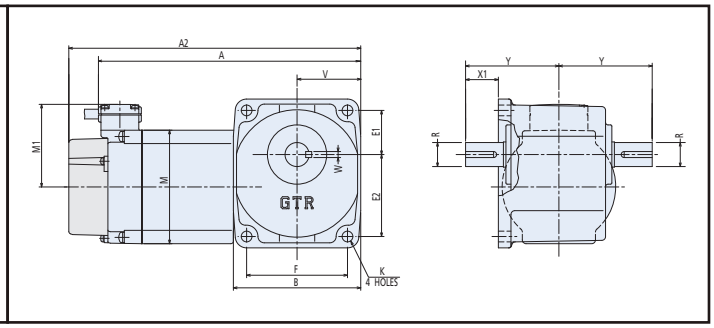
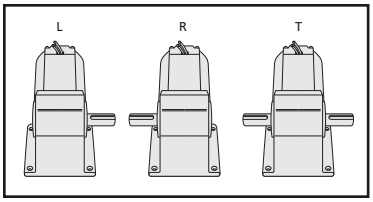


Fig. 2.1



Spec Table 2.2

Specifications						Dimensional Drawing													
						Motor				Brakemotor				Motor IP-65				Brakemotor IP-65			
						Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange
1/20	18	10	180	16	77	Dwg 2.12 A	Dwg 2.14 A	Dwg 2.12 A	Dwg 2.14 A	Dwg 2.12 A2	Dwg 2.14 A2	Dwg 2.12 A2	Dwg 2.14 A2	Dwg 2.15 A	Dwg 2.16 A	Dwg 2.15 A	Dwg 2.16 A	Dwg 2.15 A2	Dwg 2.16 A2	Dwg 2.15 A2	Dwg 2.16 A2
		15	120	23	99																
		20	90	31	121																
		25	72	39	132																
		30	60	47	154																
		40	45	62	176																
		50	36	78	198																
		60	30	94	220																
		80	23	119	220																
		100	18	148	243																
		120	15	178	243																
		160	11	237	309																
		200	9	296	309																
		240	7.5	356	309																
	28	300	6	400	617	Dwg 2.13 A	n/a	Dwg 2.13 A	n/a	Dwg 2.13 A2	n/a	Dwg 2.13 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		375	4.8	500	617																
		450	4	600	617																
		600	3	800	617																
		750	2.4	1000	617																
		900	2	1200	617																
	32	1200	1.5	1600	1146	Dwg 2.13 A	n/a	Dwg 2.13 A	n/a	Dwg 2.13 A2	n/a	Dwg 2.13 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		1500	1.2	2000	1146																
		1800	1	2430	1146																

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.

Model Number for Ordering

H	F	18	R	010	-	B	B	RE	2	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
H: H Series	L: Foot Mount F: Flange Mount	18 28 32	R: Right Shaft L: Left Shaft T: Double Shaft Ref: Fig 2.1	030 : 30:1 120 : 120:1 900 : 900:1 12X : 1200:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	Frame 18, 28, 32 RE: 1/20 Hp (40w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

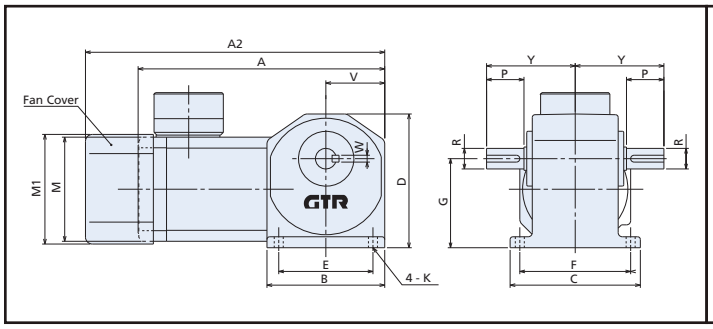
Notes:

1. Lead Wire Location: specify the code from Fig 1.14 , Page 14 on your purchase order.
2. Terminal Box Location: specify the code from Fig 1.15 Page 14 on your purchase order.
3. IP-65 Cord Location Location: specify the code from Fig 1.16 , Page 14 on your purchase order.
4. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
5. For any other special OEM requirement, please consult Brother.

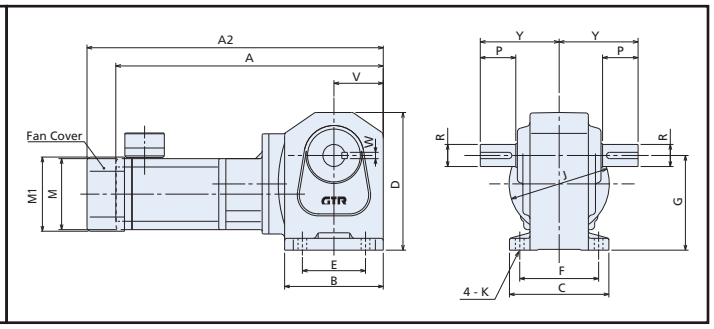
brother at your side

Frame	Drawing	A	A2	B	C	D	E	F	G	K	M	M1	V	Y	P	R	W	Wt (lb)
18	2.12	7.64	9.07	3.98	4.57	4.45	2.99	3.78	2.95	0.33	3.54	3.70	1.99	2.91	1.18	0.7500	0.1875	9
28	2.13	13.35	14.78	4.92	4.96	6.89	3.15	3.94	4.72	0.43	3.54	3.70	2.46	3.94	1.77	1.1250	0.2500	20
32	2.13	14.09	15.53	5.98	5.91	8.07	3.74	4.72	5.51	0.51	3.54	3.70	2.99	4.72	2.17	1.2500	0.2500	33

Dwg 2.12

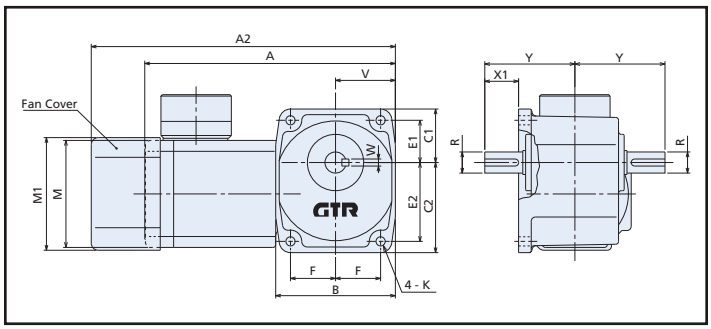


Dwg 2.13



Frame	Drawing	A	A2	B	C1	C2	E1	E2	F	K	M	M1	V	Y	X1	R	W	Wt (lb)
18	2.14	7.64	9.07	3.98	1.73	2.91	1.38	2.56	1.57	0.33	3.54	3.7	1.99	2.91	1.02	0.75	0.1875	9

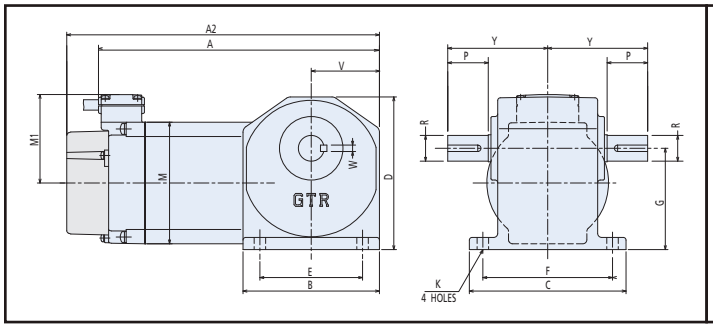
Dwg 2.14



Frame	Drawing	A	A2	B	C	D	E	F	G	K	M	M1	V	Y	P	R	W	Wt (lb)
18	2.15	8.19	9.11	3.98	4.57	4.45	2.99	3.78	2.95	0.33	3.54	2.54	1.99	2.91	1.18	0.7500	0.1875	9

Frame	Drawing	A	A2	B	C1	C2	E1	E2	F	K	M	M1	V	Y	X1	R	W	Wt (lb)
18	2.16	8.19	9.11	3.98	1.73	2.91	1.38	2.56	1.57	0.33	3.54	2.54	1.02	1.89	1.02	0.7500	0.1875	9

Dwg 2.15



Dwg 2.16

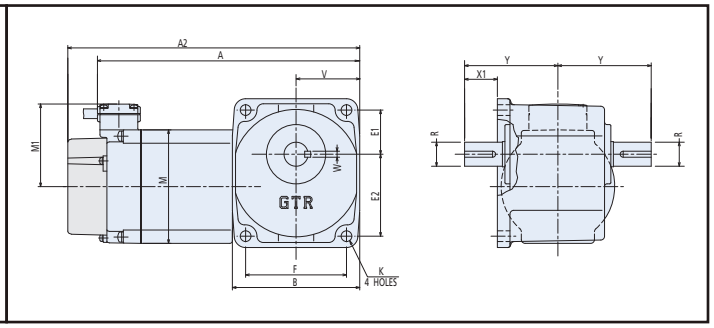
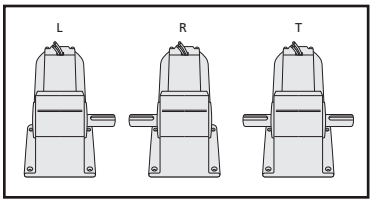


Fig. 2.1



Spec Table 2.3

Specifications						Dimensional Drawing													
						Motor				Brakemotor				Motor IP-65				Brakemotor IP-65			
						Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange
1/15	18	10	180	25	77	Dwg 2.17 A2	Dwg 2.19 A2	Dwg 2.17 A	Dwg 2.19 A	Dwg 2.17 A2	Dwg 2.19 A2	Dwg 2.17 A2	Dwg 2.19 A2	n/a	n/a	Dwg 2.20 A	Dwg 2.21 A	n/a	n/a	Dwg 2.20 A2	Dwg 2.21 A2
		15	120	37	99																
		20	90	49	121																
		25	72	61	132																
		30	60	74	154																
		40	45	98	176																
		50	36	123	198																
		60	30	147	198																
		80	23	186	286																
		100	18	233	286																
		120	15	279	308																
		160	11	373	308																
		200	9	466	308																
		240	7.5	477	308																
	28	300	6	629	617	Dwg 2.18 A2	n/a	Dwg 2.18 A	n/a	Dwg 2.18 A2	n/a	Dwg 2.18 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		375	4.8	786	617																
		450	4	943	617																
		600	3	1258	617																
		750	2.4	1572	617																
		900	2	1887	617																
	32	1200	1.5	2515	1146	Dwg 2.18 A2	n/a	Dwg 2.18 A	n/a	Dwg 2.18 A2	n/a	Dwg 2.18 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		1500	1.2	3144	1146																
		1800	1	3732	1146																

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.

Model Number for Ordering

H	L	18	R	010	-	B	B	RF	2	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
H: H Series	L: Foot Mount F: Flange Mount	18 28 32	R: Right Shaft L: Left Shaft T: Double Shaft Ref: Fig 2.1	030 : 30:1 120 : 120:1 900 : 900:1 12X : 1200:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	Frame 18, 28, 32 RF: 1/15 Hp (60w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

Notes:

1. Lead Wire Location: specify the code from Fig 1.14 , Page 14 on your purchase order.
2. Terminal Box Location: specify the code from Fig 1.15 Page 14 on your purchase order.
3. IP-65 Cord Location Location: specify the code from Fig 1.16 , Page 14 on your purchase order.
4. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
5. For any other special OEM requirement, please consult Brother.

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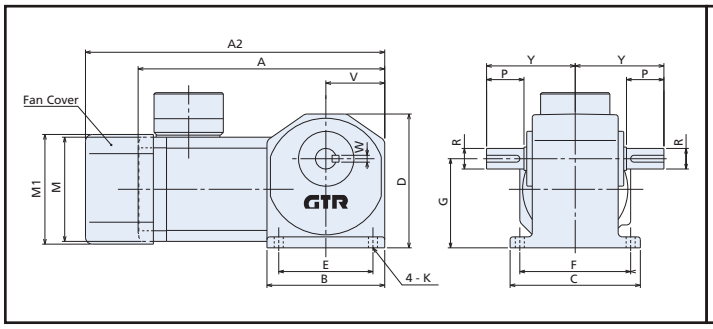
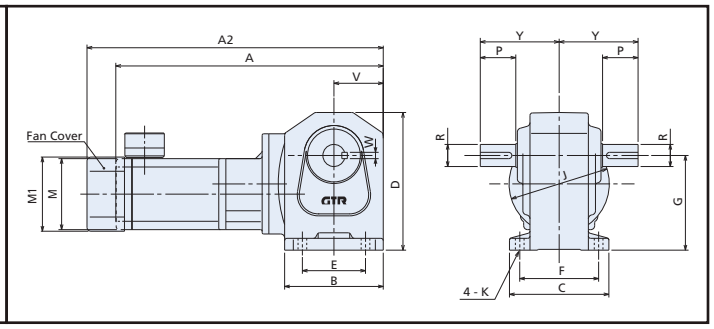
Frame	Drawing	A	A2	B	C	D	E	F	G	K	M	M1	V	Y	P	R	W	Wt (lb)
18	2.17	7.64	9.07	3.98	4.57	4.45	2.99	3.78	2.95	0.33	3.54	3.70	1.99	2.91	1.18	0.7500	0.1875	9
28	2.18	13.35	14.78	4.92	4.96	6.89	3.15	3.94	4.72	0.43	3.54	3.70	2.46	3.94	1.77	1.1250	0.2500	20
32	2.18	14.09	15.53	5.98	5.91	8.07	3.74	4.72	5.51	0.51	3.54	3.70	2.99	4.72	2.17	1.2500	0.2500	33

Dwg 2.17

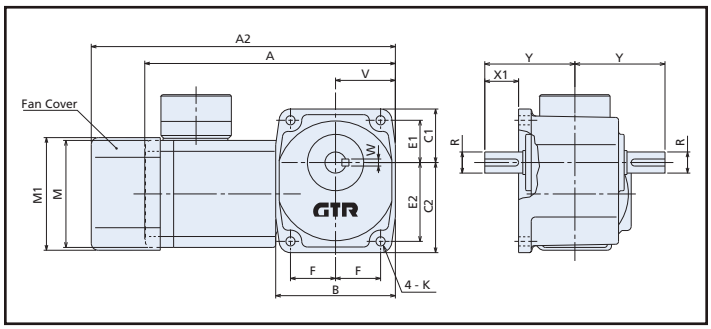


Dwg 2.18



Frame	Drawing	A	A2	B	C1	C2	E1	E2	F	K	M	M1	V	Y	X1	R	W	Wt (lb)
18	2.19	7.64	9.07	3.98	1.73	2.91	1.38	2.56	1.57	0.33	3.54	3.7	1.99	2.91	1.02	0.75	0.1875	9

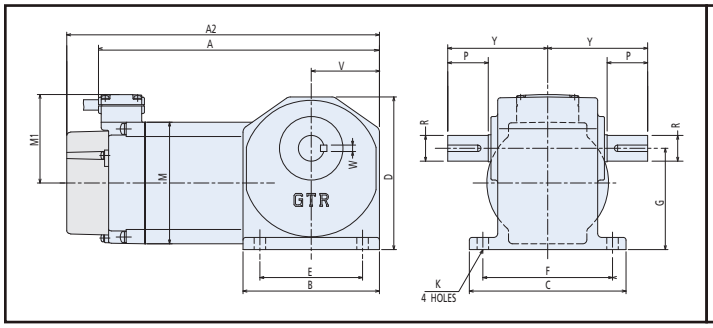
Dwg 2.19



Frame	Drawing	A	A2	B	C	D	E	F	G	K	M	M1	V	Y	P	R	W	Wt (lb)
18	2.20	8.19	9.11	3.98	4.57	4.45	2.99	3.78	2.95	0.33	3.54	2.54	1.99	2.91	1.18	0.7500	0.1875	9

Frame	Drawing	A	A2	B	C1	C2	E1	E2	F	K	M	M1	V	Y	X1	R	W	Wt (lb)
18	2.21	8.19	9.11	3.98	1.73	2.91	1.38	2.56	1.57	0.33	3.54	2.54	1.02	1.89	1.02	0.7500	0.1875	9

Dwg 2.20



Dwg 2.21

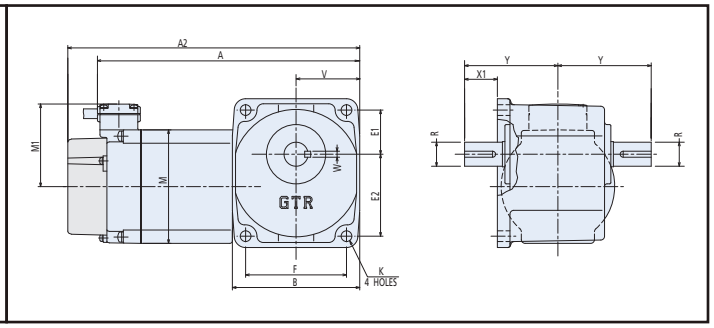
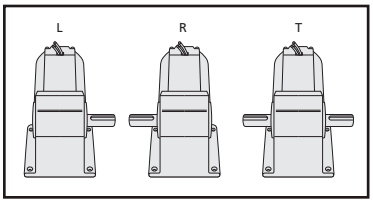


Fig. 2.1



Spec Table 2.4

Specifications						Dimensional Drawing															
						Motor				Brakemotor				Motor IP-65				Brakemotor IP-65			
						Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase		Single Phase		Three Phase	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange	Foot	Flange
1/10	18	10	180	37	99	Dwg 2.22 A2	Dwg 2.24 A2	Dwg 2.22 A2	Dwg 2.24 A2	Dwg 2.22 A2	Dwg 2.24 A2	Dwg 2.22 A2	Dwg 2.24 A2	n/a	n/a	Dwg 2.25 A	Dwg 2.26 A	n/a	n/a	Dwg 2.25 A2	Dwg 2.26 A2
		15	120	55	132																
		20	90	74	165																
		25	72	92	198																
		30	60	110	220																
		40	45	147	242																
		50	36	184	264																
		60	30	221	264																
		80	23	279	396																
		100	18	349	396																
		120	15	419	396																
		160	11	477	396																
		200	9	477	396																
		240	7.5	477	396																
	28	300	6	943	617	Dwg 2.23 A2	n/a	Dwg 2.23 A2	n/a	Dwg 2.23 A2	n/a	Dwg 2.23 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		375	4.8	1179	617																
		450	4	1415	617																
	32	600	3	1887	1146	Dwg 2.23 A2	n/a	Dwg 2.23 A2	n/a	Dwg 2.23 A2	n/a	Dwg 2.23 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		750	2.4	2358	1146																
		900	2	2830	1146																
	40	1200	1.5	3726	1587	Dwg 2.23 A2	n/a	Dwg 2.23 A	n/a	Dwg 2.23 A2	n/a	Dwg 2.23 A2	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		1500	1.2	4682	1587																
		1800	1	5638	1587																

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.

Model Number for Ordering

H	L	18	R	010	-	B	B	RG	2	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
H: H Series	L: Foot Mount F: Flange Mount	18 28 32 40	R: Right Shaft L: Left Shaft T: Double Shaft Ref: Fig 2.1	030 : 30:1 120 : 120:1 900 : 900:1 12X : 1200:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	Frame 18, 28, 32 RG: 1/10 Hp (90w) Frame 40 YG: 1/10 Hp (90w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

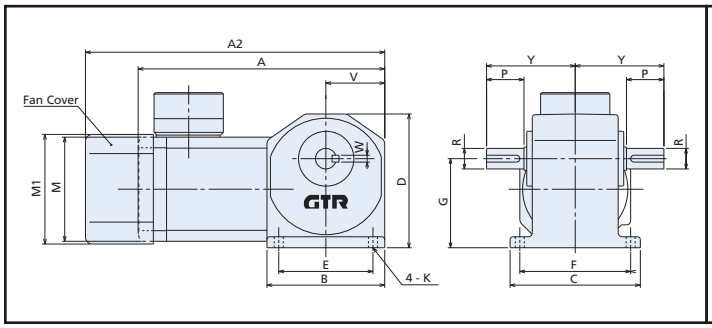
Notes:

1. Lead Wire Location: specify the code from Fig 1.14 , Page 14 on your purchase order.
2. Terminal Box Location: specify the code from Fig 1.15 Page 14 on your purchase order.
3. IP-65 Cord Location Location: specify the code from Fig 1.16 , Page 14 on your purchase order.
4. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
5. For any other special OEM requirement, please consult Brother.

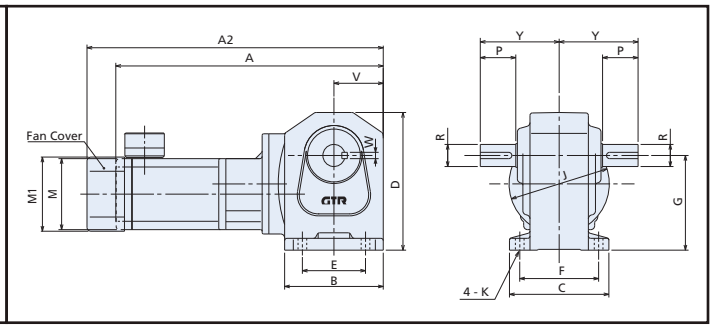
brother at your side

Frame	Drawing	A	A2	B	C	D	E	F	G	K	M	M1	V	Y	P	R	W	Wt (lb)
18	2.22	7.64	9.07	3.98	4.57	4.45	2.99	3.78	2.95	0.33	3.54	3.70	1.99	2.91	1.18	0.7500	0.1875	9
28	2.23	13.35	14.78	4.92	4.96	6.89	3.15	3.94	4.72	0.43	3.54	3.70	2.46	3.94	1.77	1.1250	0.2500	20
32	2.23	14.09	15.53	5.98	5.91	8.07	3.74	4.72	5.51	0.51	3.54	3.70	2.99	4.72	2.17	1.2500	0.2500	33
40	2.23	15.75	17.20	7.09	7.09	9.57	4.72	5.51	6.50	0.59	4.17	4.33	3.54	5.51	2.56	1.6250	0.3750	48.5

Dwg 2.22

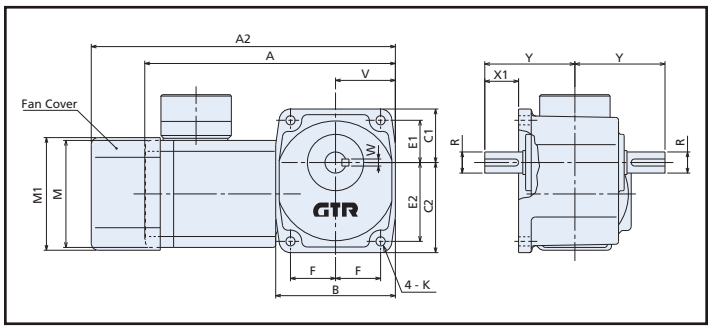


Dwg 2.23



Frame	Drawing	A	A2	B	C1	C2	E1	E2	F	K	M	M1	V	Y	X1	R	W	Wt (lb)
18	2.24	7.64	9.07	3.98	1.73	2.91	1.38	2.56	1.57	0.33	3.54	3.7	1.99	2.91	1.02	0.75	0.1875	9

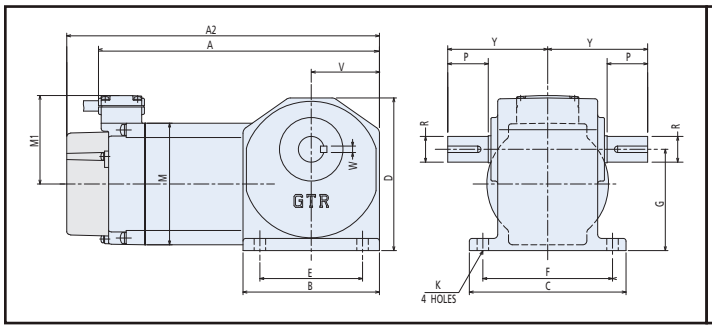
Dwg 2.24



Frame	Drawing	A	A2	B	C	D	E	F	G	K	M	M1	V	Y	P	R	W	Wt (lb)
18	2.25	8.19	9.11	3.98	4.57	4.45	2.99	3.78	2.95	0.33	3.54	2.54	1.99	2.91	1.18	0.7500	0.1875	9

Frame	Drawing	A	A2	B	C1	C2	E1	E2	F	K	M	M1	V	Y	X1	R	W	Wt (lb)
18	2.26	8.19	9.11	3.98	1.73	2.91	1.38	2.56	1.57	0.33	3.54	2.54	1.02	1.89	1.02	0.7500	0.1875	9

Dwg 2.25



Dwg 2.26

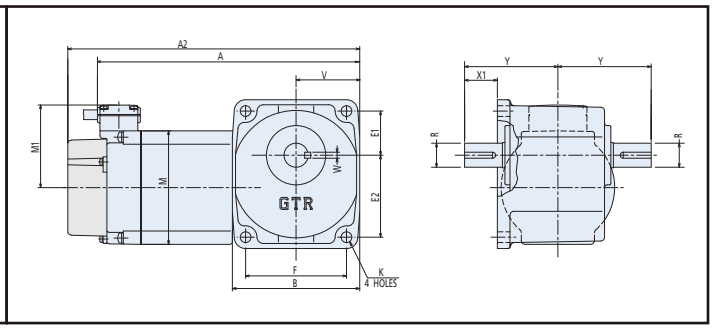
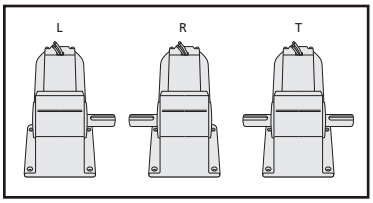
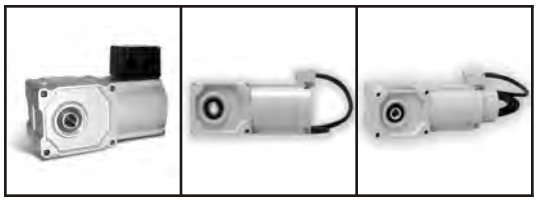


Fig. 2.1





Spec Table 3.0

Specifications						Dimensional Drawing							
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Motor		Brakemotor		Motor IP-65		Brakemotor IP-65	
						Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase
1/50	12	10	180	6	77	Dwg 3.0 A	Dwg 3.0 A	Dwg 3.0 A2	Dwg 3.0 A2	Dwg 3.2 A	Dwg 3.2 A	Dwg 3.2 A2	Dwg 3.2 A2
		15	120	9	99								
		20	90	12	121								
		25	72	14	132								
		30	60	17	154								
		40	45	23	176								
		50	36	29	198								
		60	30	35	220								
		80	23	44	220								
		100	18	55	243								
		120	15	66	243								
		160	11	88	243								
		200	9	110	243								
		240	7.5	132	243								

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.
4. Bore dimension details and options shown on Page 48 Fig 3.1.
5. Hollow bore mounting details and options shown on Pages 48~52.

Model Number for Ordering

F2	S	12	N	010	-	B	M	LC	1	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
F2: F2 Series	S: Hollow Bore	12	N: Common Code	005 : 5:1 030 : 30:1 120 : 120:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	LC: 1/50 Hp (15w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

Notes:

1. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
2. Special bore options, see Page 48, Fig 3.1.
3. For any other special OEM requirement, please consult Brother.

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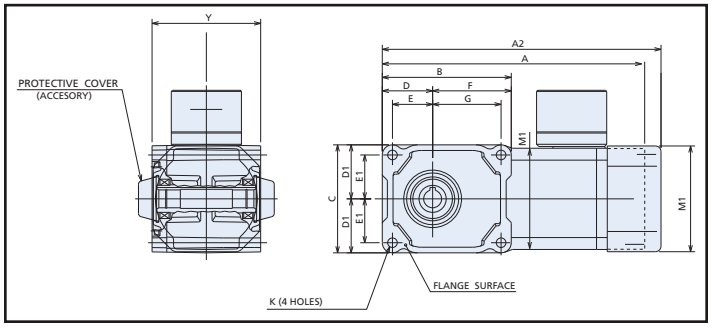
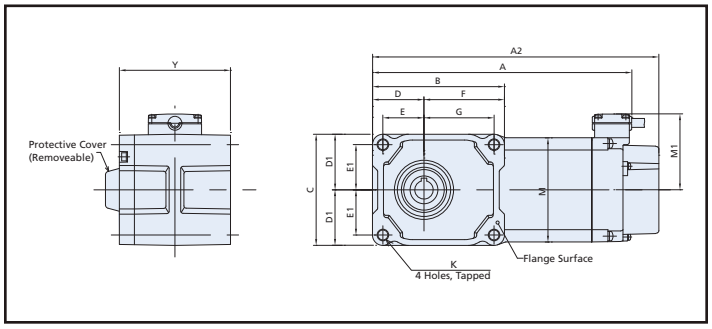
Frame	Drawing	A	A2	B	C	D	D1	E	E1	F	G	K	M	M1	Y	Wt (lb)
12	3.0	7.64	9.13	3.94	3.19	1.54	1.59	1.26	1.32	2.4	2.13	0.26	2.99	3.15	3.2	7.5

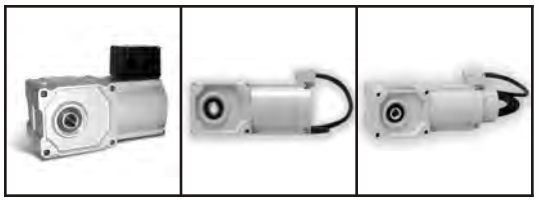
Dwg 3.0



Frame	Drawing	A	A2	B	C	D	D1	E	E1	F	G	K	M	M1	Y	Wt (lb)
12	3.1	8.19	9.06	3.94	3.19	1.54	1.59	1.26	1.32	2.4	2.13	0.26	2.99	2.32	3.2	9

Dwg 3.1





Spec Table 3.2

Specifications						Dimensional Drawing							
						Motor		Brakemotor		Motor IP-65		Brakemotor IP-65	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase
1/30	12	10	180	10	77	Dwg 3.2 A	Dwg 3.2 A	Dwg 3.2 A2	Dwg 3.2 A2	Dwg 3.3 A	Dwg 3.3 A	Dwg 3.3 A2	Dwg 3.3 A2
		15	120	14	99								
		20	90	19	121								
		25	72	24	132								
		30	60	29	154								
		40	45	39	176								
		50	36	48	198								
		60	30	58	220								
		80	23	73	220								
		100	18	91	243								
		120	15	110	243								
		160	11	146	243								
		200	9	183	243								
		240	7.5	220	243								

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.
4. Bore dimension details and options shown on Page 48 Fig 3.1.
5. Hollow bore mounting details and options shown on Pages 48~52.

Model Number for Ordering

F2	S	12	N	010	-	B	M	LD	1	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
F2: F2 Series	S: Hollow Bore	12	N: Common Code	005 : 5:1 030 : 30:1 120 : 120:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	LD: 1/30 Hp (25w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

Notes:

1. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
2. Special bore options, see Page 48, Fig 3.1.
3. For any other special OEM requirement, please consult Brother..

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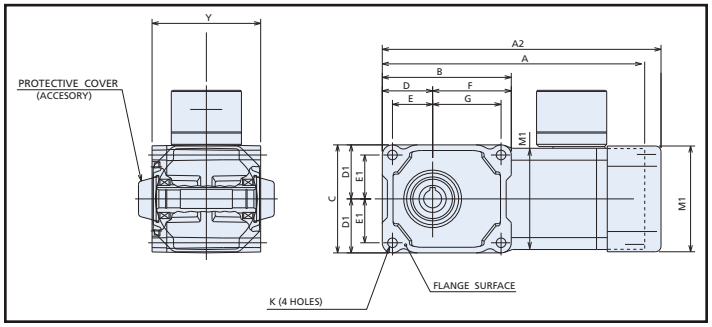
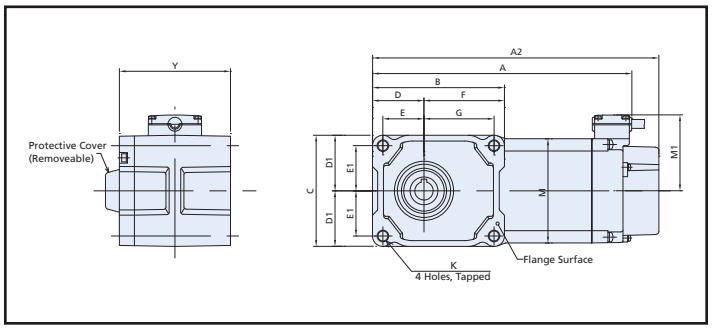
Frame	Drawing	A	A2	B	C	D	D1	E	E1	F	G	K	M	M1	Y	Wt (lb)
12	3.2	7.64	9.13	3.94	3.19	1.54	1.59	1.26	1.32	2.4	2.13	0.26	2.99	3.15	3.2	7.5

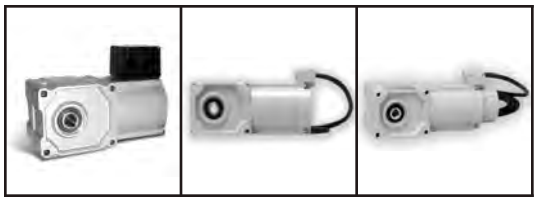
Dwg 3.2



Frame	Drawing	A	A2	B	C	D	D1	E	E1	F	G	K	M	M1	Y	Wt (lb)
12	3.3	8.19	9.06	3.94	3.19	1.54	1.59	1.26	1.32	2.4	2.13	0.26	2.99	2.32	3.2	9

Dwg 3.3





Spec Table 3.2

Specifications						Dimensional Drawing							
						Motor		Brakemotor		Motor IP-65		Brakemotor IP-65	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase
1/20	15	10	180	16	77	Dwg 3.4 A	Dwg 3.4 A	Dwg 3.4 A2	Dwg 3.4 A2	Dwg 3.5 A	Dwg 3.5 A	Dwg 3.5 A2	Dwg 3.5 A2
		15	120	23	99								
		20	90	31	121								
		25	72	39	132								
		30	60	47	154								
		40	45	62	176								
		50	36	78	198								
		60	30	94	220								
		80	23	119	220								
		100	18	148	243								
		120	15	178	243								
		160	11	237	309								
		200	9	296	309								
		240	7.5	356	309								

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.
4. Bore dimension details and options shown on Page 48 Fig 3.1.
5. Hollow bore mounting details and options shown on Pages 48~52.

Model Number for Ordering

F2	S	15	N	030	-	B	B	RE	1	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
F2: F2 Series	S: Hollow Bore	15	N: Common Code	005 : 5:1 030 : 30:1 120 : 120:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	RE: 1/20 Hp (40w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

Notes:

1. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
2. Special bore options, see Page 48, Fig 3.1.
3. For any other special OEM requirement, please consult Brother.

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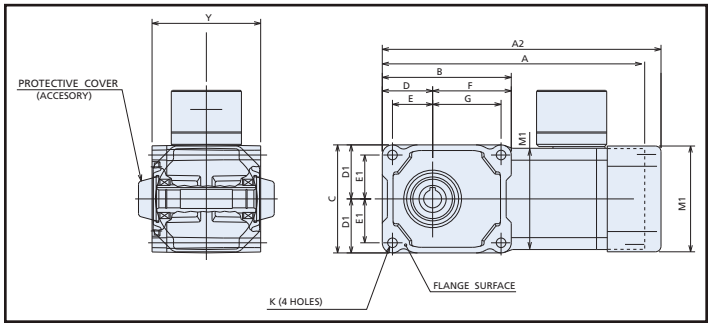
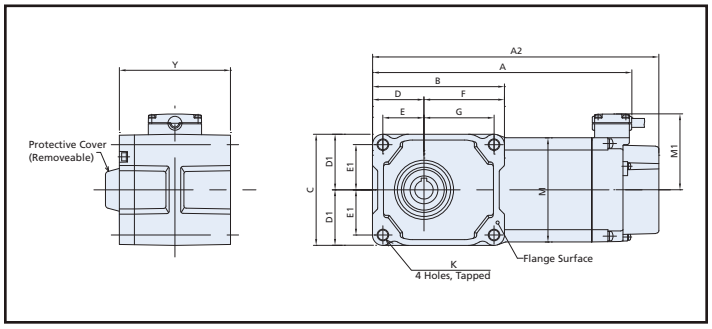
Frame	Drawing	A	A2	B	C	D	D1	E	E1	F	G	K	M	M1	Y	Wt (lb)
15	3.4	8.27	9.7	4.49	3.78	1.75	1.89	1.4	1.54	2.74	2.38	0.33	3.54	3.7	3.78	9

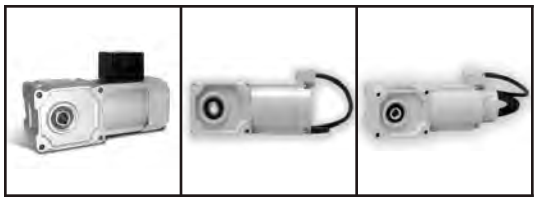
Dwg 3.4



Frame	Drawing	A	A2	B	C	D	D1	E	E1	F	G	K	M	M1	Y	Wt (lb)
15	3.5	8.82	9.75	4.49	3.78	1.75	1.89	1.4	1.54	2.74	2.38	0.33	3.54	2.58	3.78	11

Dwg 3.5





Spec Table 3.3

Specifications						Dimensional Drawing							
						Motor		Brakemotor		Motor IP-65		Brakemotor IP-65	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase
1/15	15	10	180	25	77	Dwg 3.6 A2	Dwg 3.6 A	Dwg 3.6 A2	Dwg 3.6 A2	n/a	Dwg 3.7 A	n/a	Dwg 3.7 A2
		15	120	37	99								
		20	90	49	121								
		25	72	61	132								
		30	60	74	154								
		40	45	98	176								
		50	36	123	198								
		60	30	147	286								
		80	23	186	286								
		100	18	233	308								
		120	15	279	308								
		160	11	373	308								
		200	9	466	308								
		240	7.5	477	308								

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.
4. Bore dimension details and options shown on Page 48 Fig 3.1.
5. Hollow bore mounting details and options shown on Pages 48~52.

Model Number for Ordering

F2	S	15	N	030	-	B	M	RF	2	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
F2: F2 Series	S: Hollow Bore	15	N: Common Code	005 : 5:1 030 : 30:1 120 : 120:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	RF: 1/15 Hp (60w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

Notes:

1. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
2. Special bore options, see Page 48, Fig 3.1.
3. For any other special OEM requirement, please consult Brother.

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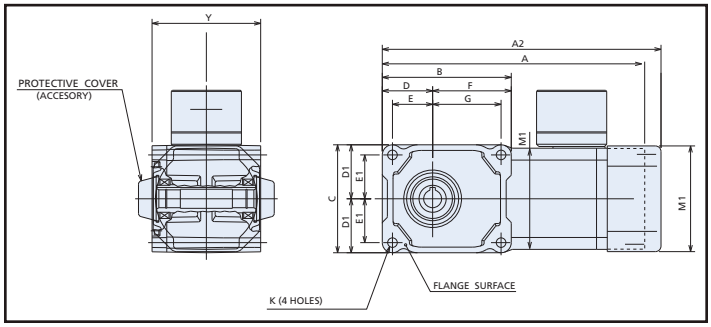
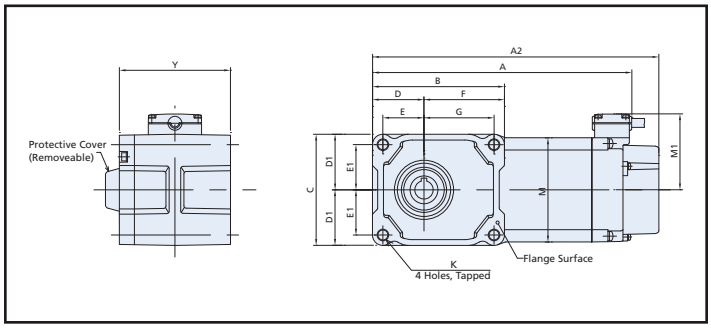
Frame	Drawing	A	A2	B	C	D	D1	E	E1	F	G	K	M	M1	Y	Wt (lb)
15	3.6	8.27	9.7	4.49	3.78	1.75	1.89	1.4	1.54	2.74	2.38	0.33	3.54	3.7	3.78	9

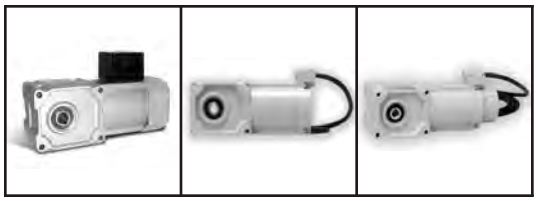
Dwg 3.6



Frame	Drawing	A	A2	B	C	D	D1	E	E1	F	G	K	M	M1	Y	Wt (lb)
15	3.7	8.82	9.75	4.49	3.78	1.75	1.89	1.4	1.54	2.74	2.38	0.33	3.54	2.58	3.78	11

Dwg 3.7





Spec Table 3.4

Specifications						Dimensional Drawing							
						Motor		Brakemotor		Motor IP-65		Brakemotor IP-65	
Hp	Frame	Ratio X:1 GR	Nominal RPM n	Torque (in-lbs) TR	O.H.L. (lbs) OHL	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase	Single Phase	Three Phase
1/10	15	10	180	37	99	Dwg 3.8 A2	Dwg 3.8 A2	Dwg 3.8 A2	Dwg 3.8 A2	n/a	Dwg 3.9 A	n/a	Dwg 3.9 A2
		15	120	55	132								
		20	90	74	165								
		25	72	92	198								
		30	60	110	220								
		40	45	147	242								
		50	36	184	264								
		60	30	221	264								
		80	23	279	396								
		100	18	349	396								
		120	15	419	396								
		160	11	477	396								
		200	9	477	396								
		240	7.5	477	396								

Notes:

1. Motor and brakemotor electrical data shown on Pages 10~13.
2. The gearmotor length dimension that applies is noted as A or A2 in the "Motor" and "Brakemotor" columns.
3. Brother 3 phase gearmotors are suitable for use with a VFD. See Fig 1.18, Page 15 for details.
4. Bore dimension details and options shown on Page 48 Fig 3.1.
5. Hollow bore mounting details and options shown on Pages 48~52.

Model Number for Ordering

F2	S	15	N	030	-	B	M	RG	2	A	X
Type	Mount Form	Frame	Shaft/Bore Arrangement	Gear Ratio		UL/CSA	Motor Type	Motor Power	Supply Voltage	Terminal Box/Leads	Special Spec
F2: F2 Series	S: Hollow Bore	15	N: Common Code	005 : 5:1 030 : 30:1 120 : 120:1		B: UL/CSA	M: Motor B: Brakemotor WM: IP-65 Motor WB: IP-65 Brakemotor	RF: 1/15 Hp (60w)	Single Phase 1: 115V, 60Hz 5: 220V, 60Hz 6: 230V, 60Hz 7: OEM Spec (Fig 1.6, Pg 11) Three Phase 2: 208/230V, 60Hz 3: 460V, 60Hz* 8: OEM Spec (Fig 1.5, Pg 11) *No 460V for IP-65	Standard Type A: Die Cast Box (IP-44) C: Plastic Box (IP-20) N: Leads 11.8 in, IP-20 IP-65 Motor N: Cord, 6 ft IP-65 Brakemotor N: Cord, 6 ft	Blank: Standard Type X: Special Spec

CAD Drawings

Go to www.BrotherGearmotors.com and enter the desired model number in the configurator. DXF, 3D, and PDF files are available to view or download.

Special Specs

Notes:

1. Special Voltage: specify the Voltage/Frequency from Page 11, Fig 1.5.(3 phase) or Fig 1.6 (1 phase) on your purchase order.
2. Special bore options, see Page 48, Fig 3.1.
3. For any other special OEM requirement, please consult Brother.

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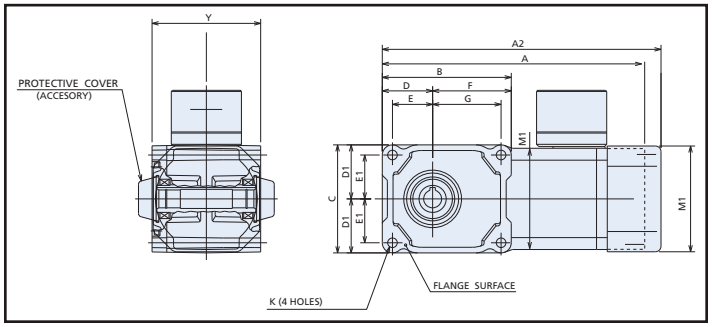
Frame	Drawing	A	A2	B	C	D	D1	E	E1	F	G	K	M	M1	Y	Wt (lb)
15	3.8	8.27	9.7	4.49	3.78	1.75	1.89	1.4	1.54	2.74	2.38	0.33	3.54	3.7	3.78	9

Dwg 3.8



Frame	Drawing	A	A2	B	C	D	D1	E	E1	F	G	K	M	M1	Y	Wt (lb)
15	3.9	8.82	9.75	4.49	3.78	1.75	1.89	1.4	1.54	2.74	2.38	0.33	3.54	2.58	3.78	11

Dwg 3.9

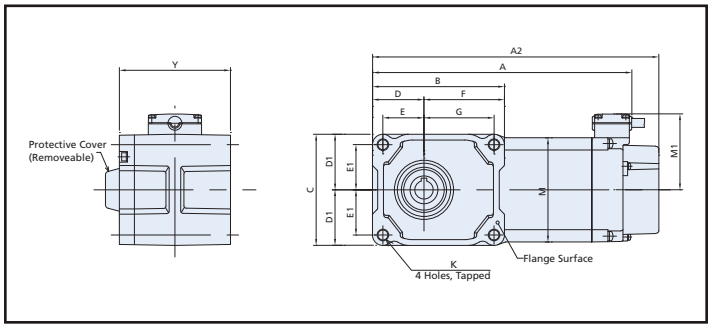
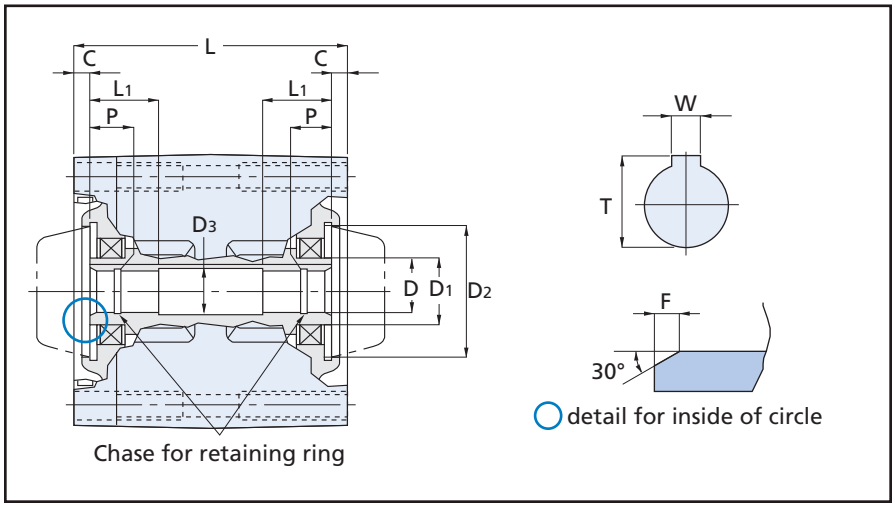


Fig 3.1: Standard Bore and Optional Bore Dimensions



Frame	Standard or Option	Special Code (Note)	D	D1	D2	D3	W	T	L	L1	P	C	F
F2S12	Standard	B05I	0.5000~0.5011 inch	0.79 in	1.54 in	0.51 in	0.125 in	0.56 in	3.19 in	0.79 in	0.31 in	0.22 in	0.08 in
	Option	B12M	12 mm H8	20 mm	39 mm H8	13 mm	4 mm	13.8 mm	81 mm	20 mm	8 mm	5.5 mm	2 mm
F2S15	Standard	B06I	0.6250~0.6261 inch	0.94 in	1.54 in	0.63 in	0.1875 in	0.71 in	3.78 in	0.83 in	0.35 in	0.16 in	0.08 in
	Option	B15M	15 mm (H8)	24 mm	39 mm H8	16 mm	5 mm	17.3 mm	96 mm	21 mm	9 mm	4 mm	2 mm

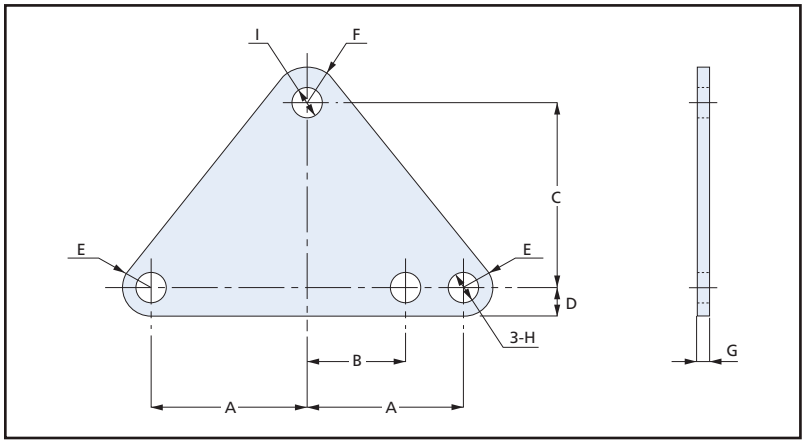
Note:

When specifying an optional bore, please use the special part code "X" at the end of the part number and designate the bore size by the code on your purchase order. There is no need to add the "X" or specify the bore code when ordering the standard designated bore.

Fig 3.2: Metric Tolerances (mm)

Dimension	Bore: H8 (Ref D)	Shaft/Pilot: H7 (Ref D2)
Over 10~18 mm	+0.027/-0.000	+0.000/-0.018
Over 18~30 mm	+0.033/-0.000	+0.000/-0.021

Fig 3.3: Optional Torque Arm



Frame	Part Number	A in (mm)	B in (mm)	C in (mm)	D in (mm)	E in (mm)	F in (mm)	G in (mm)	H in (mm)	I in (mm)
F2S12	TAF2S-12	1.69	0.94	1.48	0.28	0.28	0.35	0.13	0.33	0.28
		(43)	(24)	(37.5)	(7)	(7)	(9)	(3.2)	(8.4)	(7)
F2S15	TAF2S-15	1.89	1.18	2.22	0.35	0.35	0.43	0.13	0.41	0.35
		(48)	(30)	(56.5)	(9)	(9)	(11)	(3.2)	(10.5)	(9)

Material: SS400, Surface treatment: uni-chrome, Color: white

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Tightening Torque

When installing a reducer with a torque arm, tighten the bolt using a helical spring lock washer and plain washer. Proper tightening torques, are shown in the table.

Fig 3.4: Tightening Torque

Part Number	Bolt Size		Tightening Torque	
	Metric	Inch	N-m (kgf-m)	in-lb
TAF2S-12	M6	1/4-20	4.9 (0.5)	43
TAF2S-15	M8	5/16-18	13 (1.3)	115

Fig 3.5: How to Apply the Torque Arm Fixing Element

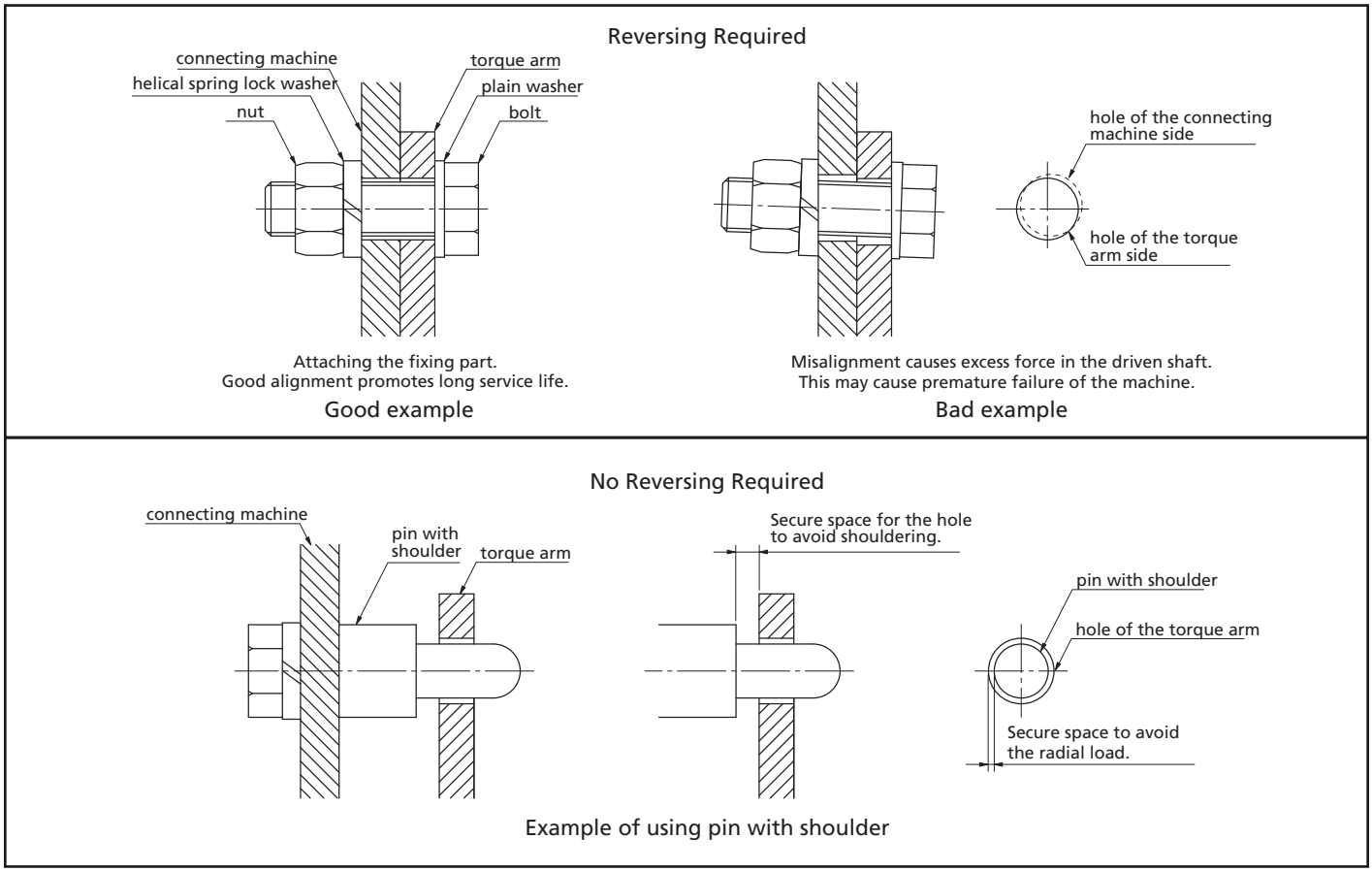
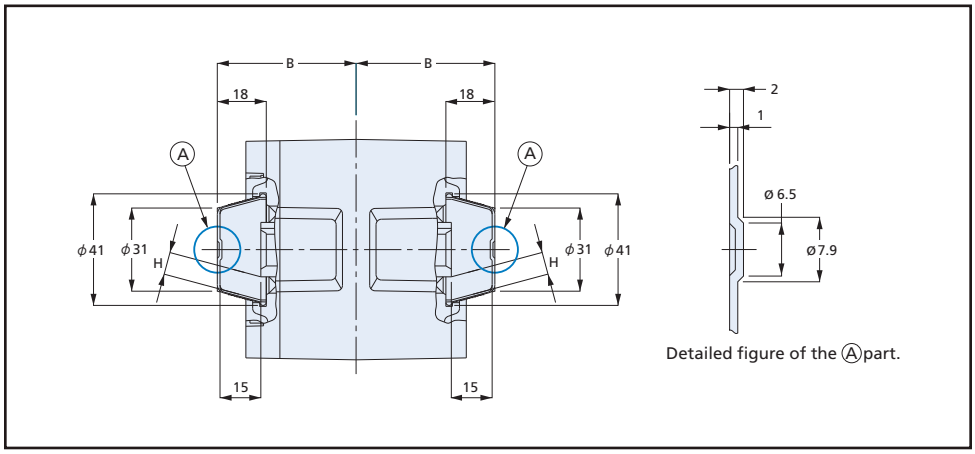


Fig 3.6: Safety Cap Diemsions



F2S Safety Cap Dimensions

Frame	A in (mm)	H in (mm)
F2S12	2.01 (51)	0.32 (8.2)
F2S15	2.36 (60)	0.25 (6.3)

Fig 3.7: Inserting the Shaft

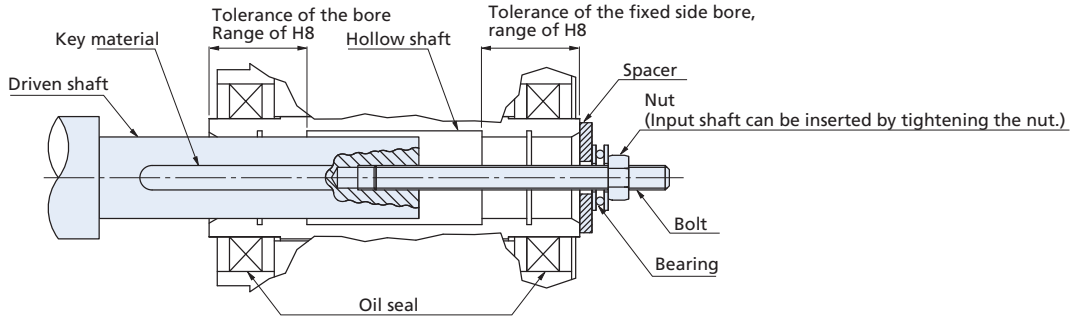
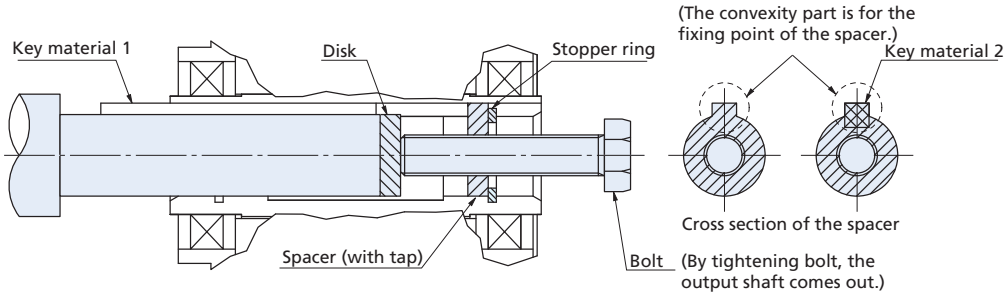
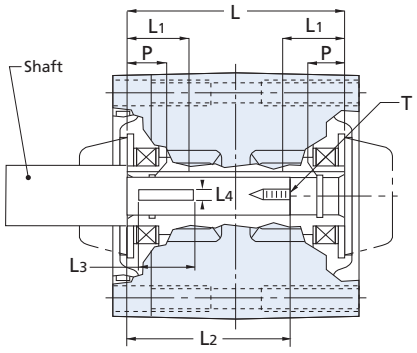


Fig 3.8: How to Remove the Shaft



* The spacer, disk, belt, stopper ring are not supplied by Brother.

Fig 3.9: Recommended Dimensions of Shaft from the Shoulder



Length of L2 can vary depending on the type of connection you select. See "Designing Your Own Shaft" below for minimum length requirements.

Note: The shaft is supplied by the OEM or User.

Frame Bore (Inch)	Shaft (Inch Dimension) O.D. (in)	L (in)	L1 (in)	L2 (in)	L3 (in)	L4 (in)	Tap T
F2S-12 0.5000	0.5000	3.19	0.79	2.50	0.750	0.1250	1/4-20X0.50
F2S-15 0.6250	0.6250	3.78	0.83	3.15	0.938	0.1875	1/4-20X0.50

Frame Bore (mm)	Shaft (Inch Dimension) O.D. (in)	L (in)	L1 (in)	L2 (in)	L3 (in)	L4 (in)	Tap T
F2S-12 12 mm	12 h_7	81	20	65	18	4	M6X12
F2S-15 15 mm	15 h_7	96	21	80	22.5	5	M6X12

Tolerances are for low impact or uniform loading. For high impact loading or high radial loading, use tighter tolerances.

Designing your Own Shaft

1. The usable key length should be greater than 1.5X the diameter of the driven shaft.
2. The Key should be engaged with at least half of the length L1.
3. The minimum length of shaft engaged inside the bore is approximately (L - L1) + ((L1-P)/2).

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Fig 3.10A Securing the Shaft with a Shoulder
Fixing by Spacer and Stopper Ring

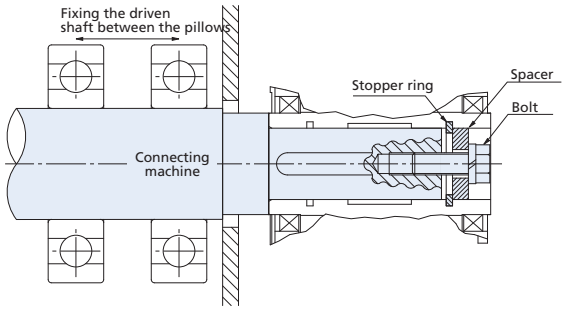


Fig 3.10B Securing the Shaft with a Shoulder
Fixing by End Plate

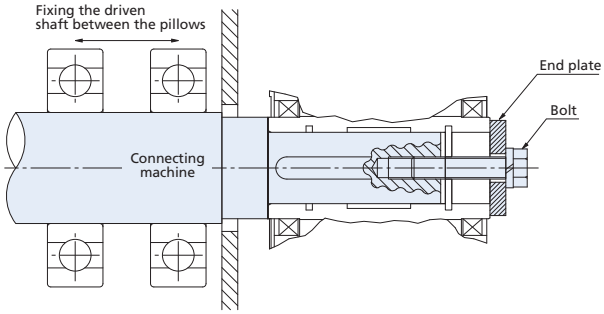


Fig 3.11A Securing the Shaft without a Shoulder
Fixing by Spacer and Stopper Ring

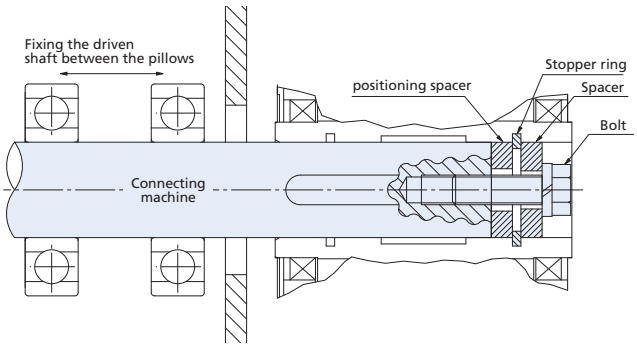


Fig 3.11B Securing the Shaft without a Shoulder
Fixing by End Plate

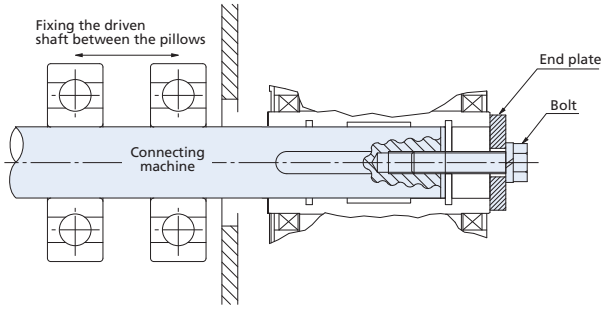


Fig 3.12A: Fixing Element Parts; Inch

Bore (mm)	Bolt		O.D. (in)	I.D. (in)	T (in)
	Internal	External			
0.5000	1/4-20X0.50	1/4-20x1.75	0.48	0.28	0.125
0.6250	1/4-20X0.50	1/4-20x1.75	0.61	0.28	0.125

Note: Fixing element parts not supplied by Brother.

Fig 3.12B: Fixing Element Parts; Metric

Bore (mm)	Bolt		O.D. (in)	I.D. (in)	T (in)
	Internal	External			
12	M6X16	M6X30	11.5	6	3
15	M6X16	M6X30	14.5	7	3

Note: Fixing element parts not supplied by Brother.

Why Use A Hypoid/Helical Hollow Bore

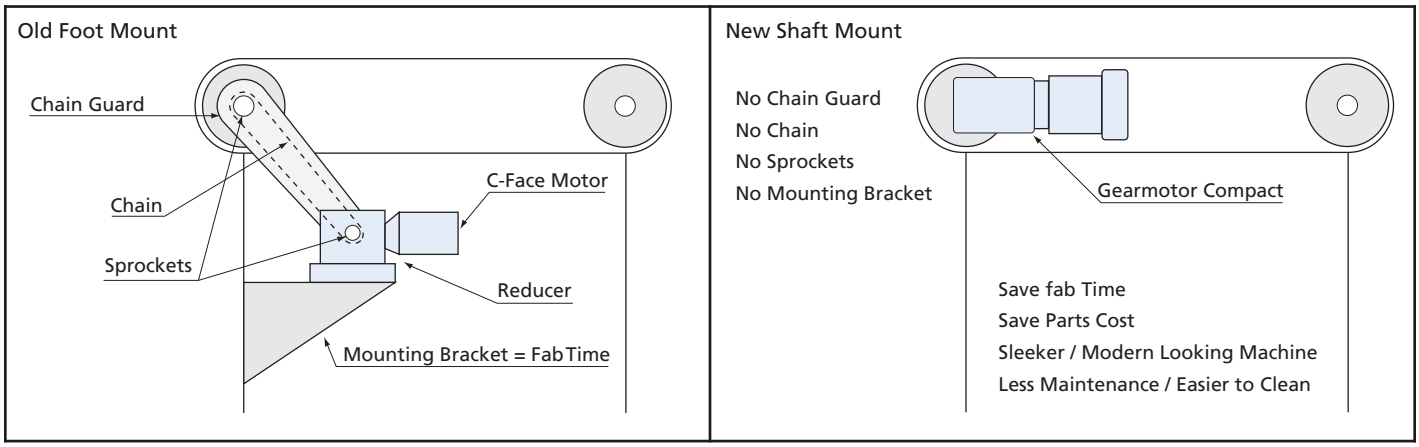
Flange Mounted

Positive Aspects

- Direct attachment to the machine is possible.
- Space is saved.
- Few parts are required.
- Base mounts, chains, sprockets, and chain guarding are not required.
- Easy to sanitize in food service environment (IP-65 Type).

Negative Aspects

- Alignment of the reducer bearings with the machine bearing is required.
- (4) bolts are needed to securing the reducer flange to the mounting surface.
- Changing the reducer may be more difficult.



Torque Arm Mounted

Positive Aspects

- Easy alignment with the connecting machine.
- Only one fixing point is needed to transmit the torque.
- Changing the reducer is simpler.
- Easy to sanitize in food service environment (IP-65 Type).

Negative Aspects

- Torque arm is needed.
- Space for attaching torque arm is needed.

Compared to a Worm

Positive Aspects

- Service Life is greater than 2X longer = superior cost of ownership.
- HRH/H is more energy efficient = lower operating cost.
- HRH/H is lighter and more compact = easier to mount.
- HRH/H is symetric = mounting is simple and flexable.
- HRH/H operating temperature is lower = longer life.
- No breather hole is required = easier to mount, no external ingress point.
- Mounting is 100% flexable, any angle any direction = easier to apply.

Negative Aspects

- HRH/H is not self locking. If backdrive is not acceptable, a brake is required.

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Terms and Conditions of Sale

BROTHER INTERNATIONAL CORPORATION
GEARMOTOR/OEM DIVISION

General
These standard Terms and Conditions of Sale shall be incorporated into any contract between Purchaser and Brother International Corporation (hereafter Brother) and shall apply to all purchase orders issued by Purchaser. Unless specifically provided herein or in a separate written agreement duly executed by Brother, the quotation and this form constitute the entire agreement between Brother and Purchaser and no other terms or conditions oral or written shall be of any effect. All orders, whether placed pursuant to a quotation or not, are accepted only upon express condition that purchaser agrees to the Terms and Conditions as specified herein.

Price and Delivery Terms
Price and delivery terms are F.O.B. Brothers nearest U.S. facility and do not include sales, use, excise, or any other taxes. Our responsibility ceases when delivery is made to the transportation company and any claims for loss or damage in transit must be handled by the Purchaser with the carrier.

Packing
No charge is made for standard boxing for domestic shipments. Purchaser will be quoted and charged separately for export or special packing requirements.

Payment Terms
To Purchasers with credit standing satisfactory to Brother, terms of payment are cash in full, net 30 days. If at any time Brother deems that by reason of financial condition of the Purchaser or otherwise, the continuance of production or shipments is not justified, Brother may revoke its extension of credit, enforce any security interest(s) created hereby on all goods furnished by Brother to the Purchaser and otherwise secure itself as to Purchasers performance of its obligation.

Cancellation
Changes, suspension or cancellation of any order by Purchaser may be made only upon written approval of an authorized officer of Brother.

Warranty
All Brother gearmotor product are warranted against defects in materials and workmanship for a period of 2 years from the date of manufacture. This constitutes Brother's only warranty in connection with this sale, and is in lieu of all other warranties expressed or implied, written or oral. There are no implied warranties of merchantability or fitness for a particular purpose that apply to this sale. If performance guarantees are requested, they should be requested in writing. Full consideration will be given to such requests when complete details of the proposed application are included.

Limitation of Remedy
Brother will repair or replace, at brother's option, F.O.B. Brother's factory, freight prepaid, any Brother gearmotor proved defective in materials or workmanship if immediate written notice of claim is made to Brother by Purchaser within 2 years from the date of manufacture. It is agreed that such repair or replacement is the exclusive remedy available from Brother. Under no circumstances shall Brother be liable to anyone for any special, incidental or consequential damages, whether the result of negligence or otherwise.

Warranty Exclusions
The Warranty of Brother gearmotor products does not cover and Brother makes no warranty with respect to:

1. Failures not reported in writing to Brother within the warranty period of 2 years after the date of manufacture.
2. Failures or damages due to miss-application, abuse, improper installation or abnormal conditions of temperature, humidity, dirt or corrosive matter.
3. Failures due to operation, either intentional or otherwise, above rated capacities or in an otherwise improper manner.
4. Product which has in any way been tampered with or altered by anyone other than an authorized representative of Brother.
5. Expenses incurred by the Purchaser in an attempt to repair or rework an allegedly defective product.
6. Product damaged in shipment or otherwise without the fault of Brother.

Returns
No product will be accepted for return unless authorized in writing with a returned merchandise authorization (RMA) number assigned. Any returned goods must be returned with transportation charges prepaid.

Regulatory Laws and/or Standards
It is the Purchaser's obligation to install and operate all Brother gearmotor products in conformance with all applicable national or local laws and safety codes.

Patents
Brother represents that its gearmotors are designed and manufactured such that they do not infringe on any United States Patent(s), and that Brother will, at its expense, defend any claim charging such infringement and will save Purchaser harmless from any adverse judgments resulting there from. Purchaser agrees to give Brother, prompt written notice of any claim of infringement and to turn over to Brother the complete control of any litigation involving such claims including the right to settle such claims. This indemnity does not apply to Products which are incorporated by the Purchaser into Products which are changed to infringe a Patent or to Product which is used by Purchaser in performance of a method or process which is charged to infringe a Patent.

Law
These Standard terms and Conditions of Sale shall be interpreted in accordance with the Laws of the State of New Jersey.

Severability
If any of the terms and Conditions shown here are determined to be invalid, illegal, or unenforceable the remainder of these Terms and Conditions shall remain in full force and effect.

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Gearmotor Division

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