

Notes for Dimensions

■Tolerances for Shaft and Hole Dimension

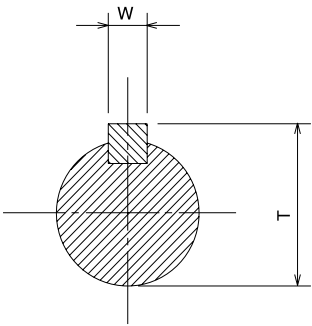
[mm]

Nominal Size	Shaft			Hole	
	h6	h7	h8	H7	H8
Over 10 to 18	-0.011~0	-0.018~0	-0.027~0	0~+0.018	0~+0.027
Over 18 to 30	-0.013~0	-0.021~0	-0.033~0	0~+0.021	0~+0.033
Over 30 to 50	-0.016~0	-0.025~0	-0.039~0	0~+0.025	0~+0.039
Over 50 to 80	-0.019~0	-0.030~0	-0.046~0	0~+0.030	0~+0.046
Over 80 to 120	-0.022~0	-0.035~0	-0.054~0	0~+0.035	0~+0.054
Over 120 to 180	-0.025~0	-0.040~0	-0.063~0	0~+0.040	0~+0.063
Over 180 to 250	-0.029~0	-0.046~0	-0.072~0	0~+0.046	0~+0.072
Over 250 to 315	-0.032~0	-0.052~0	-0.081~0	0~+0.052	0~+0.081

■Tolerances for Output (solid) Shaft Dimension

[mm]

Output Shaft Dia.	W		T	
	Nominal Dim.	Tolerance	Nominal Dim.	Tolerance
12	4	-0.030~0	13.5	-0.23~0
15	5	-0.030~0	17	-0.23~0
18	6	-0.030~0	20.5	-0.23~0
22	6	-0.030~0	24.5	-0.23~0
28	8	-0.036~0	31	-0.29~0
32	10	-0.036~0	35	-0.29~0
40	12	-0.043~0	43	-0.29~0
50	14	-0.043~0	53.5	-0.29~0



Dimensions

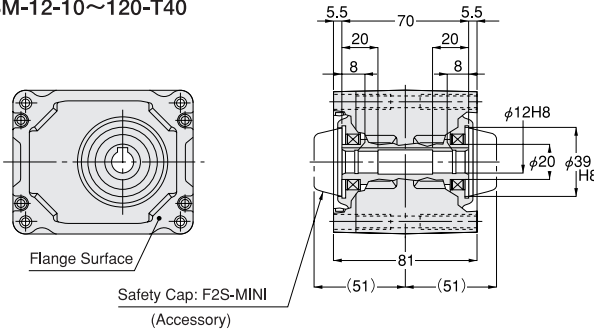
Concentric Hollow Shaft Type 15W~90W

3 Phase

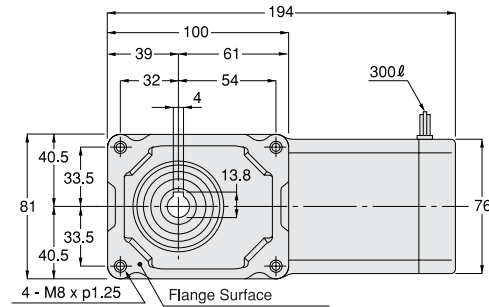
1 Phase

3phase
F2SM-12-10~240-T15
F2SM-12-10~240-T15W
F2SM-12-10~240-T25
F2SM-12-10~240-T25W
F2SM-12-10~120-T40

1phase
F2SM-12-10~240-S15
F2SM-12-10~240-S15W
F2SM-12-10~240-S25
F2SM-12-10~240-S25W



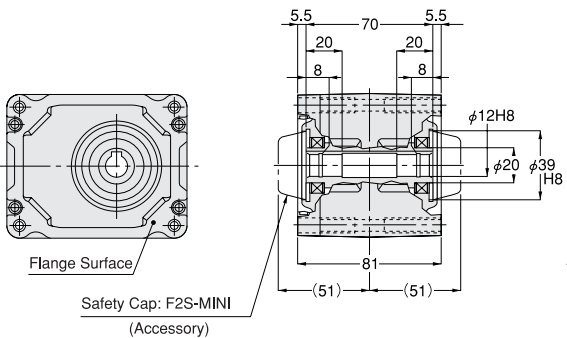
[Round Wt. 3kg]



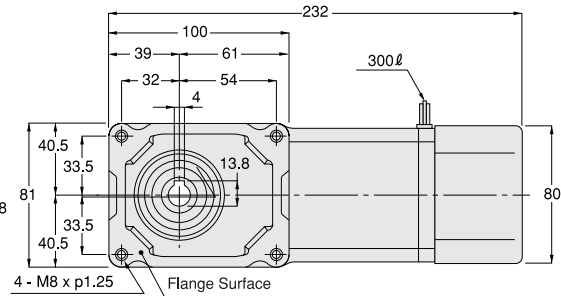
- Note:
1. Keyway size conforms to the latest standard: JIS B1301-1976.
 2. Keys for output shaft are not included in the accessories.
 3. C type retaining ring should conform to JIS B2804-1978.
 4. All dimensions are in millimeters.

3phase
F2SM-12-10~120-T40W
F2SM-12-10~ 60-T60

1phase
F2SM-12-10~120-S40
F2SM-12-10~120-S40W



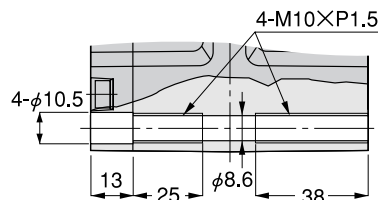
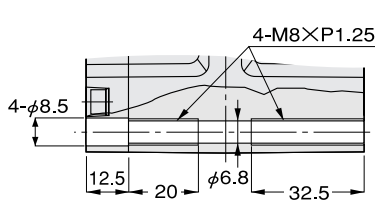
[Round Wt. 3kg]

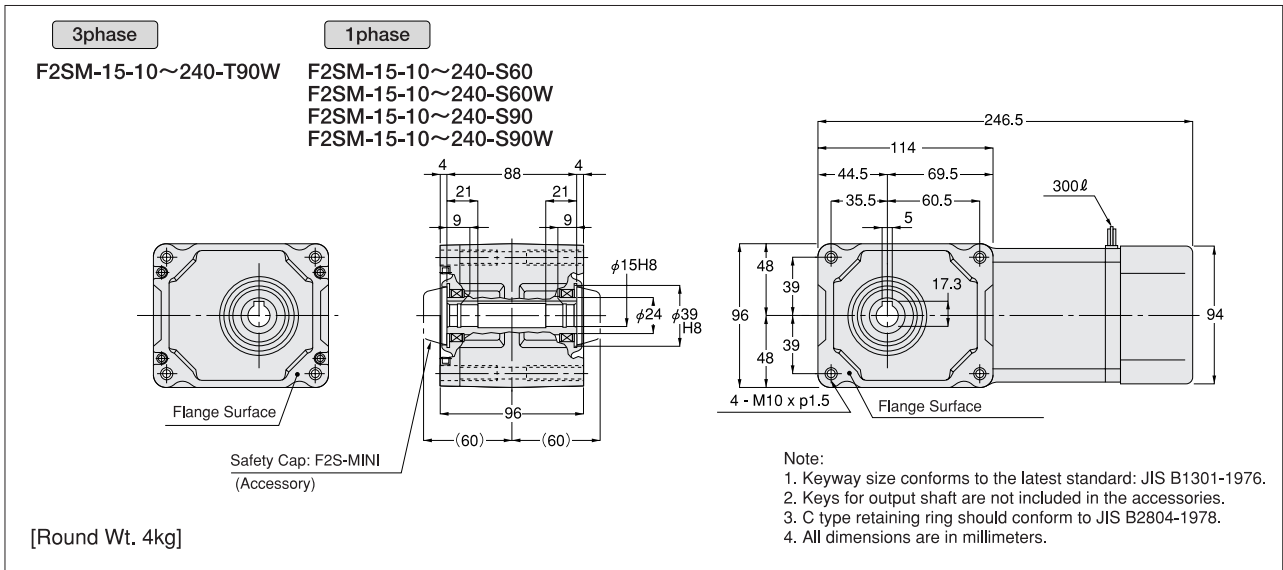
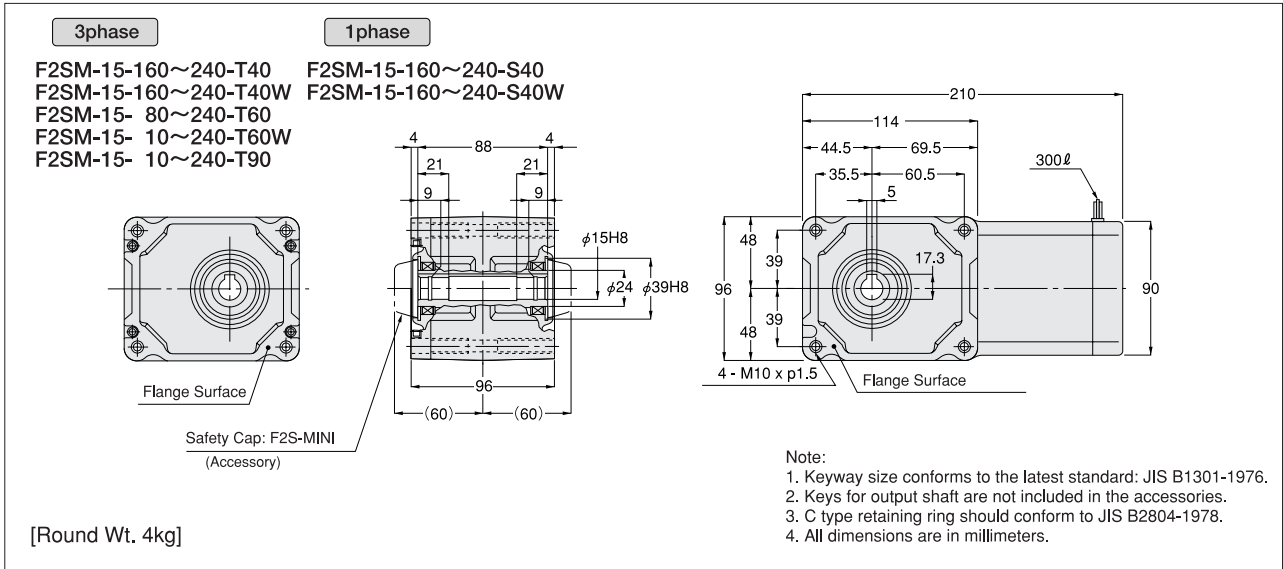


- Note:
1. Keyway size conforms to the latest standard: JIS B1301-1976.
 2. Keys for output shaft are not included in the accessories.
 3. C type retaining ring should conform to JIS B2804-1978.
 4. All dimensions are in millimeters.

Detail Drawings of Tapped Holes for Face Mounting (Standard Specs)

●Frame No. 12 (Output Shaft Bore: $\phi 12$) ●Frame No. 15 (Output Shaft Bore: $\phi 15$)





Dimensions

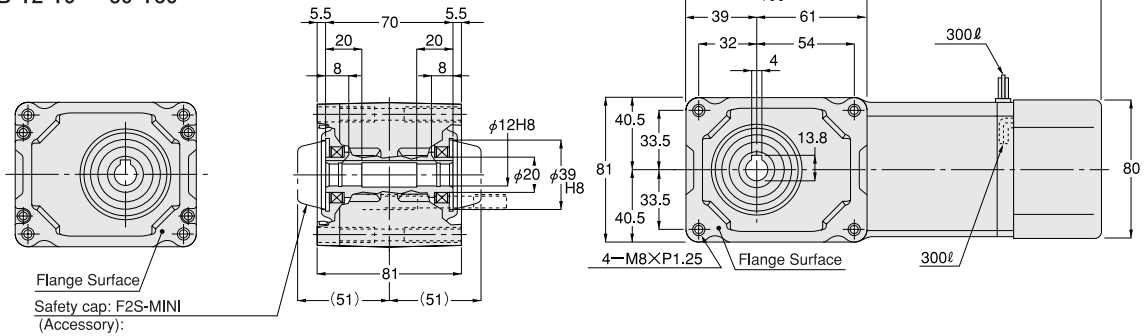
Concentric Hollow Shaft Type 15W~90W

3 Phase

1 Phase

3phase
 F2SB-12-10~240-T15
 F2SB-12-10~240-T15W
 F2SB-12-10~240-T25
 F2SB-12-10~240-T25W
 F2SB-12-10~120-T40
 F2SB-12-10~120-T40W
 F2SB-12-10~ 60-T60

1phase
 F2SB-12-10~240-S15
 F2SB-12-10~240-S15W
 F2SB-12-10~240-S25
 F2SB-12-10~240-S25W
 F2SB-12-10~120-S40
 F2SB-12-10~120-S40W



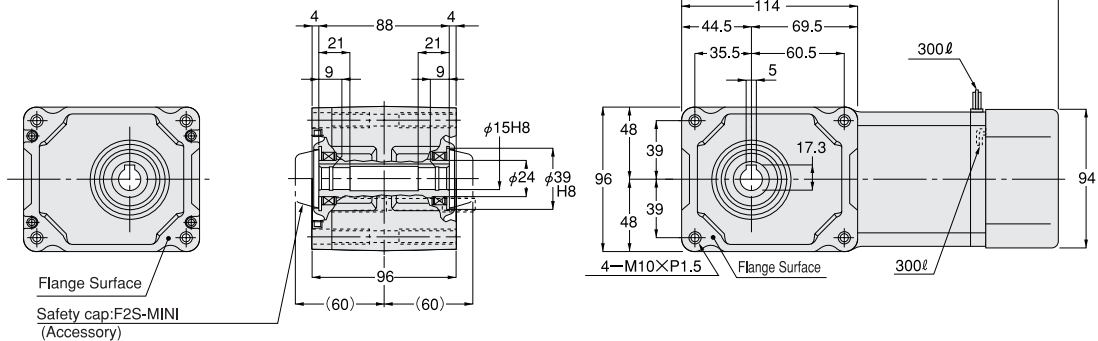
[Round Wt. 3.5kg]

Note:

1. Keyway size conforms to the latest standard: JIS B1301-1976.
2. Keys for output shaft are not included in the accessories.
3. C type retaining ring should conform to JIS B2804-1978.
4. All dimensions are in millimeters.

3phase
 F2SB-15-160~240-T40
 F2SB-15-160~240-T40W
 F2SB-15- 80~240-T60
 F2SB-15- 10~240-T60W
 F2SB-15- 10~240-T90
 F2SB-15- 10~240-T90W

1phase
 F2SB-15-160~240-S40
 F2SB-15-160~240-S40W
 F2SB-15- 10~240-S60
 F2SB-15- 10~240-S60W
 F2SB-15- 10~240-S90
 F2SB-15- 10~240-S90W



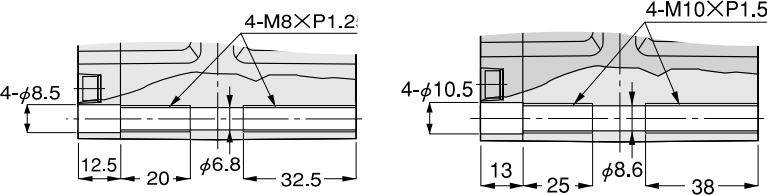
[Round Wt. 4.5kg]

Note:

1. Keyway size conforms to the latest standard: JIS B1301-1976.
2. Keys for output shaft are not included in the accessories.
3. C type retaining ring should conform to JIS B2804-1978.
4. All dimensions are in millimeters.

Detail Drawings of Tapped Holes for Face Mounting (Standard Specs)

●Frame No. 12 (Output Shaft Bore: $\phi 12$) ●Frame No. 15 (Output Shaft Bore: $\phi 15$)

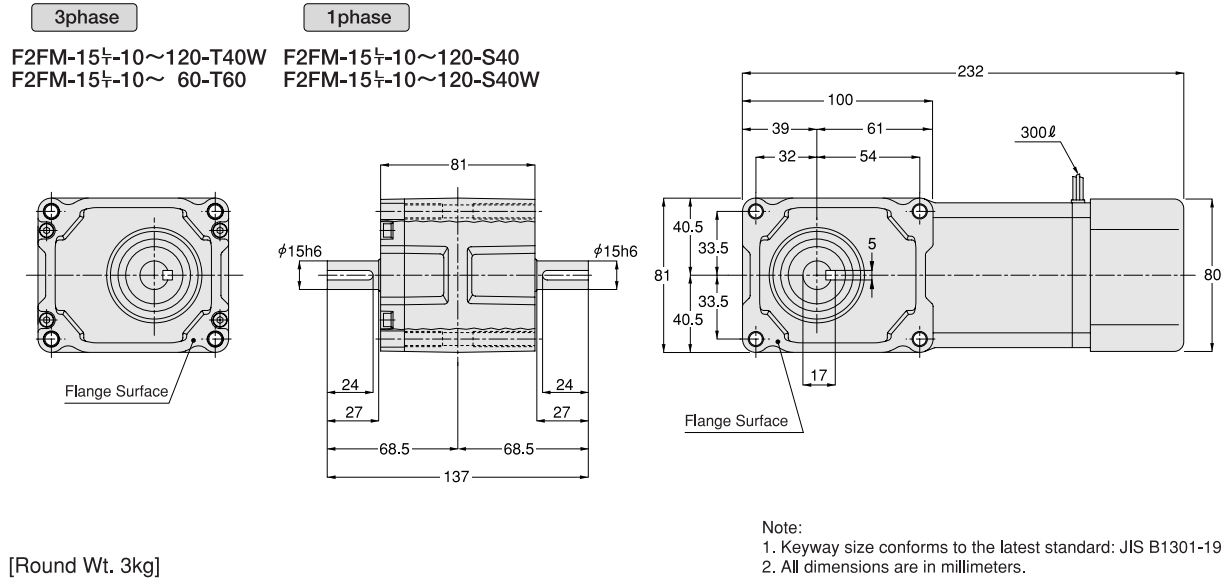
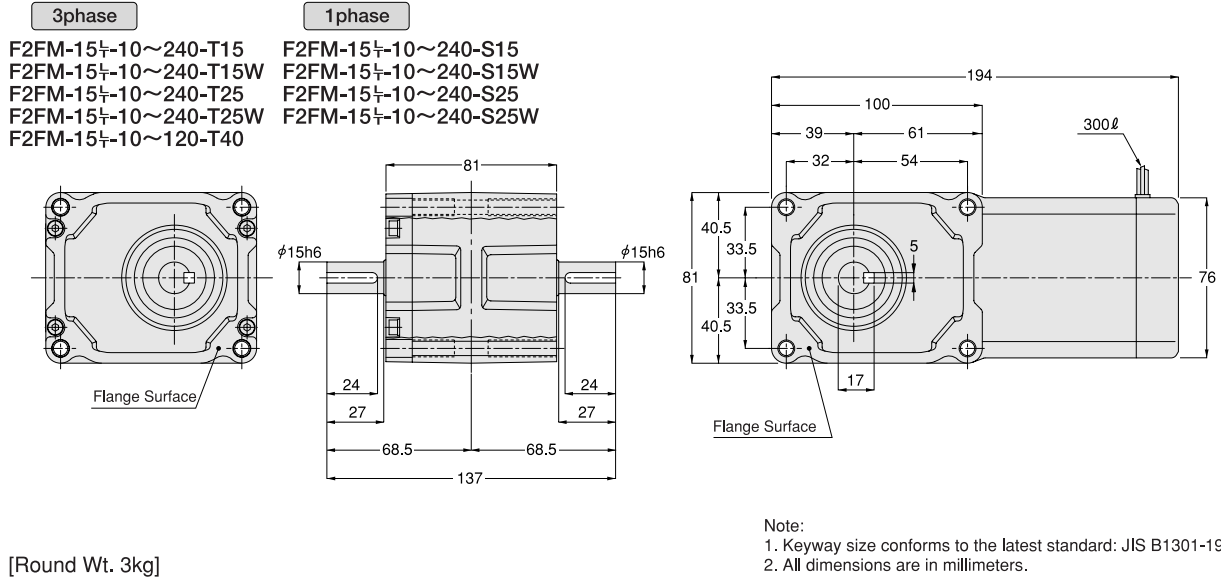


Dimensions

Concentric Solid Shaft Type 15W~90W

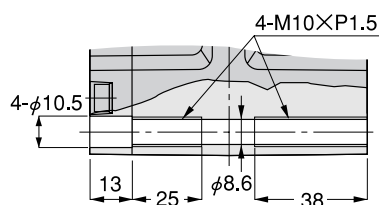
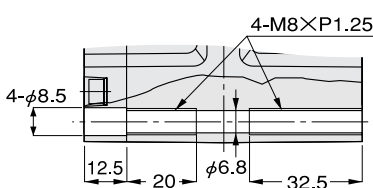
3 Phase

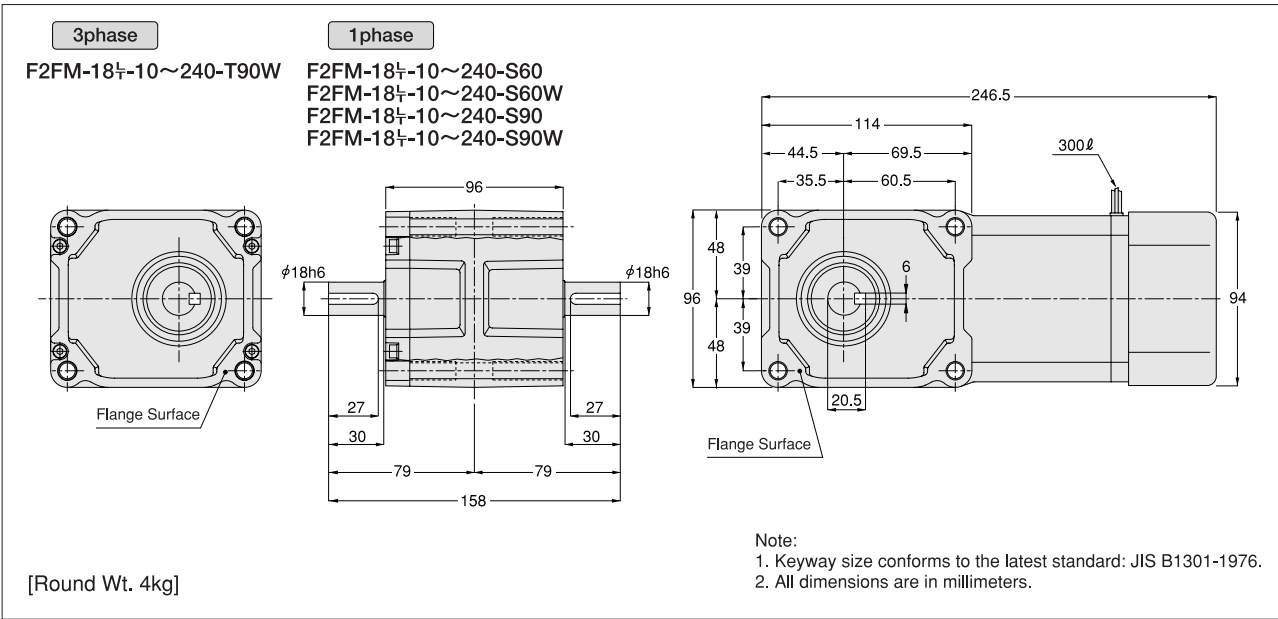
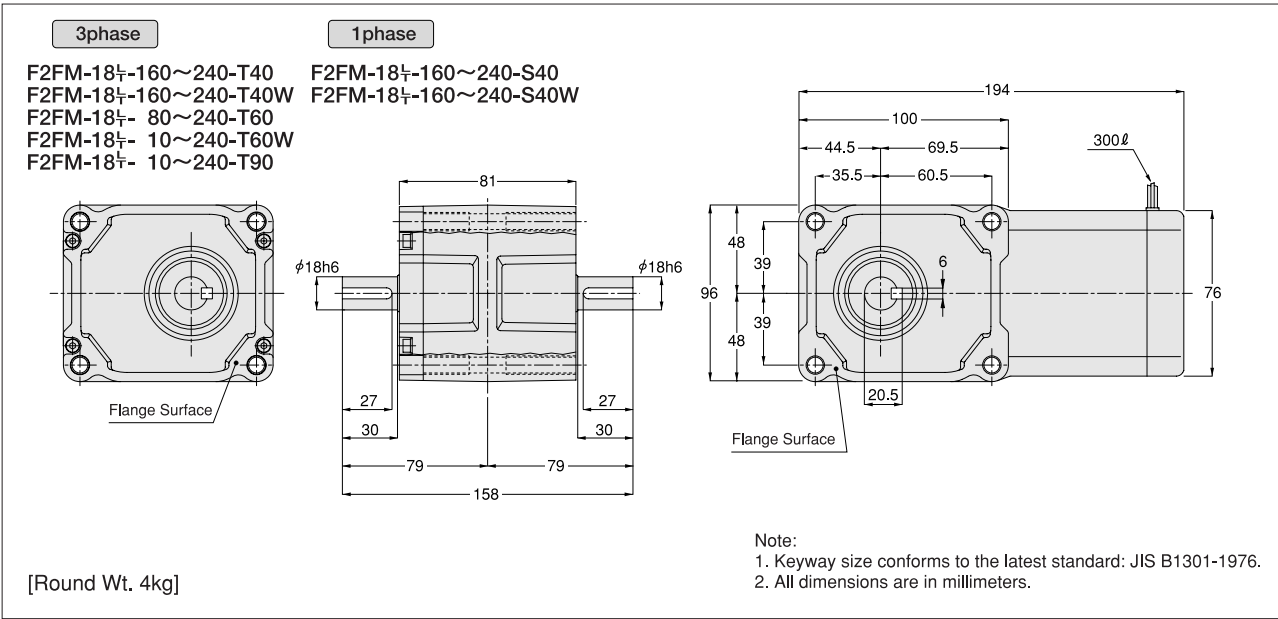
1 Phase



Detail Drawings of Tapped Holes for Face Mounting (Standard Specs)

- Frame No. 12 (Output Shaft Diameter: $\phi 15$)
- Frame No. 15 (Output Shaft Diameter: $\phi 18$)

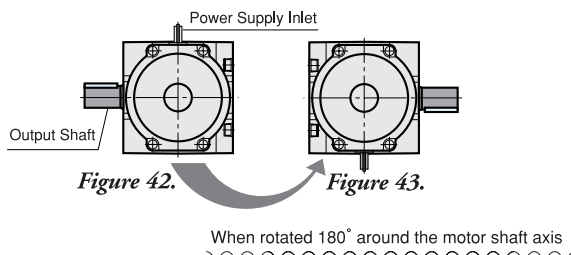




Detail Drawings of Tapped Holes for Face Mounting (Standard Specs)

On Single Extension Shaft

Viewed from the Motor End



As for the single extension shaft model, the shaft is on the left when the supply inlet is on top seeing from the motor end.

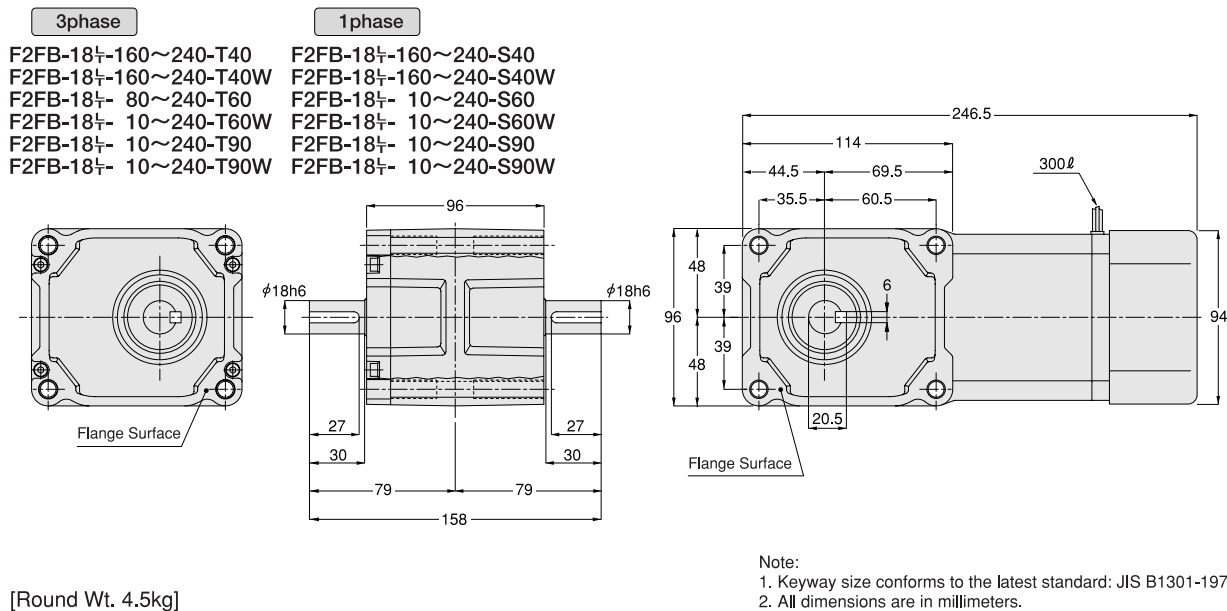
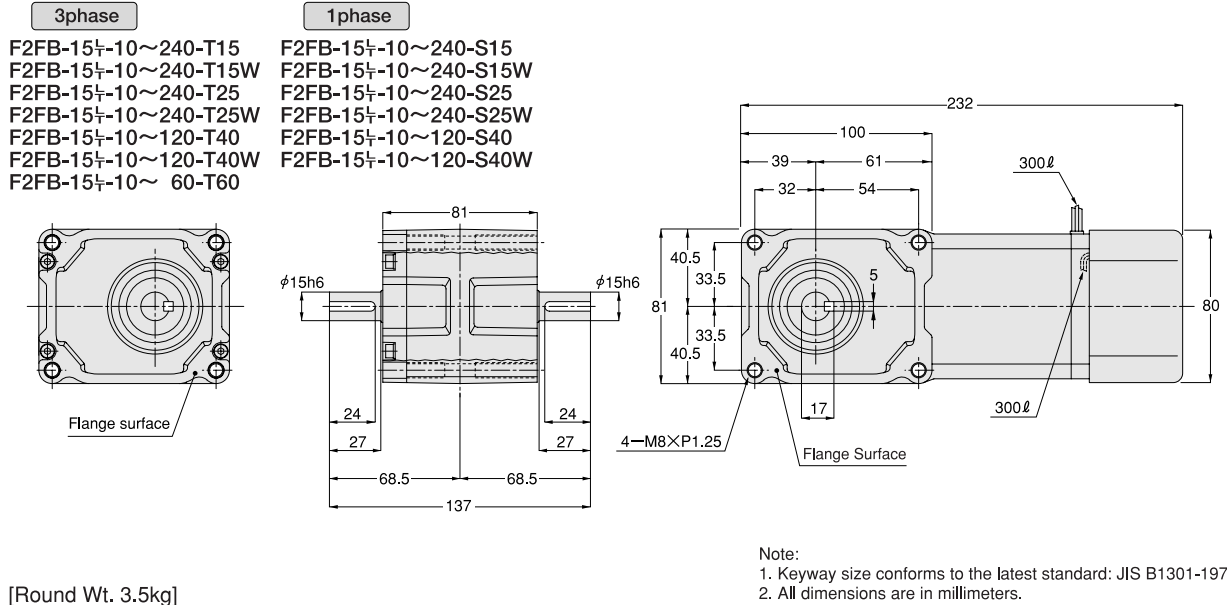
Standard shaft arrangement is as illustrated in Fig 42. If opposite extension is required, turn the unit 180° around the motor axis as shown in Fig 43. In this case, the supply inlet comes down to the bottom. If the inlet should be on top, direct us “lead-below” or “box-below” when placing an order.

Dimensions

Concentric Solid Shaft Type 15W~90W

3 Phase

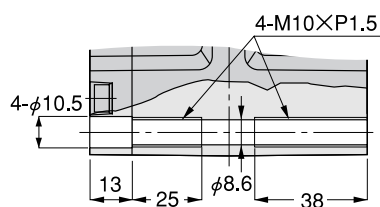
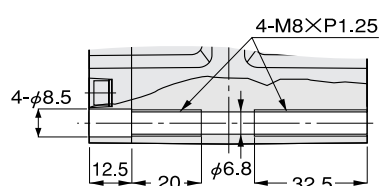
1 Phase



Detail Drawings of Tapped Holes for Face Mounting (Standard Specs)

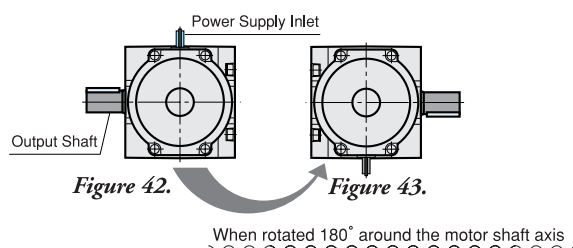
●Frame No. 12 (Output Shaft Diameter: $\phi 15$)

●Frame No. 15 (Output Shaft Diameter: $\phi 18$)



On Single Extension Shaft

Viewed from the Motor End



As for the single extension shaft model, the shaft is on the left when the supply inlet is on top seeing from the motor end.

Standard shaft arrangement is as illustrated in Fig 42. If opposite extension is required, turn the unit 180° around the motor axis as shown in Fig 43. In this case, the supply inlet comes down to the bottom. If the inlet should be on top, direct us “lead-below” or “box-below” when placing an order.

Dimensions

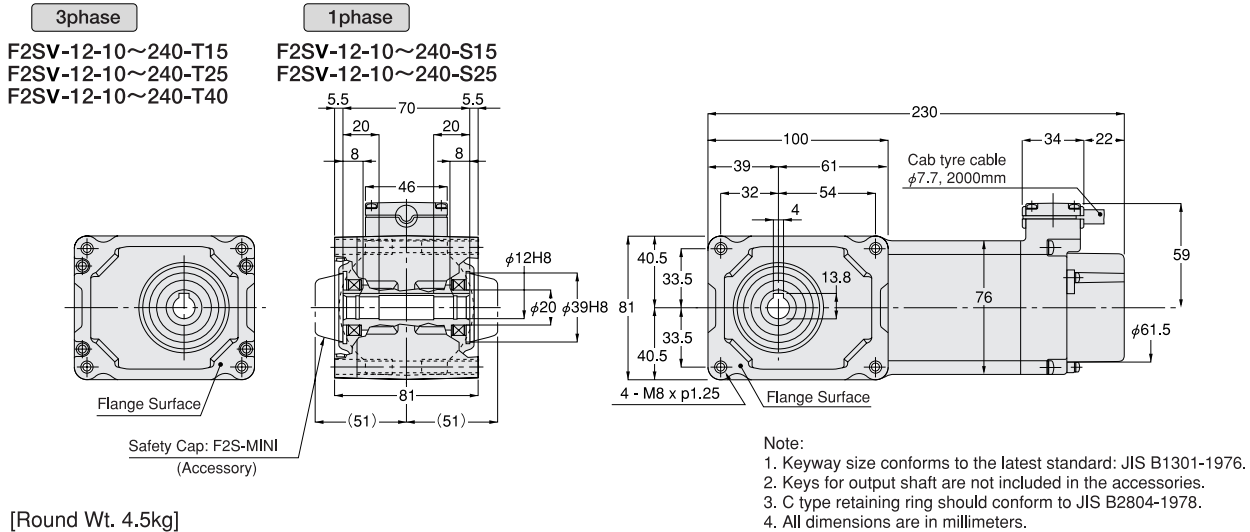
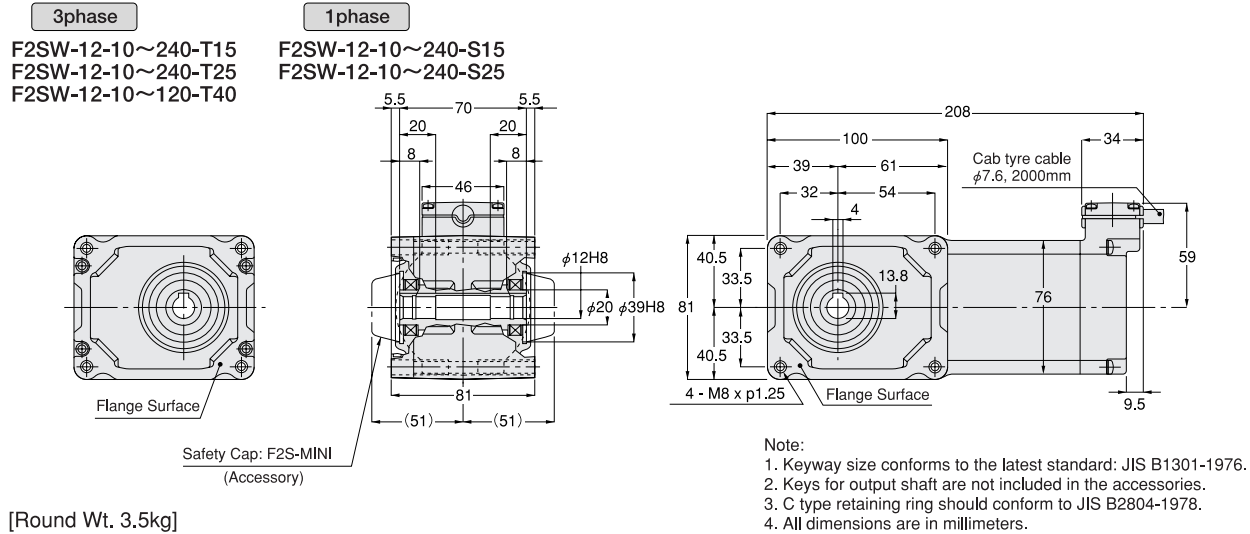
Concentric Hollow Shaft Type 15W~60W

●Water-resistant Gearmotors

●Water-resistant Brake Gearmotors

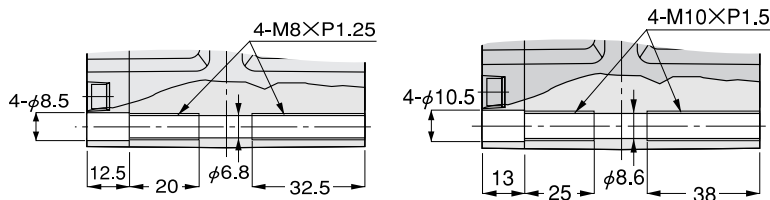
3 Phase

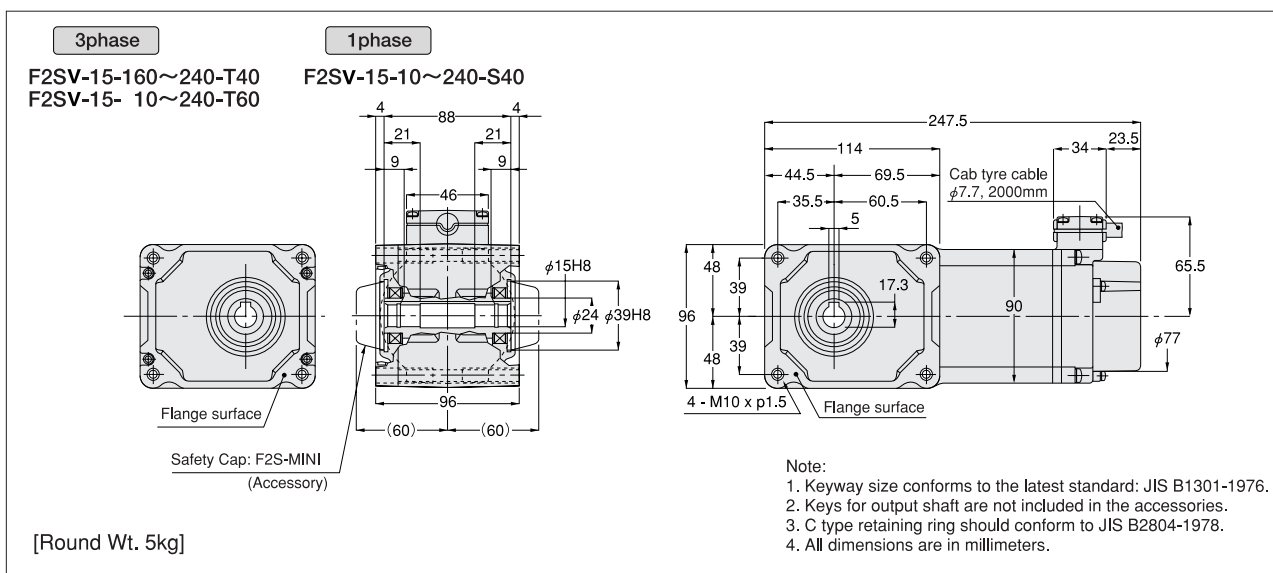
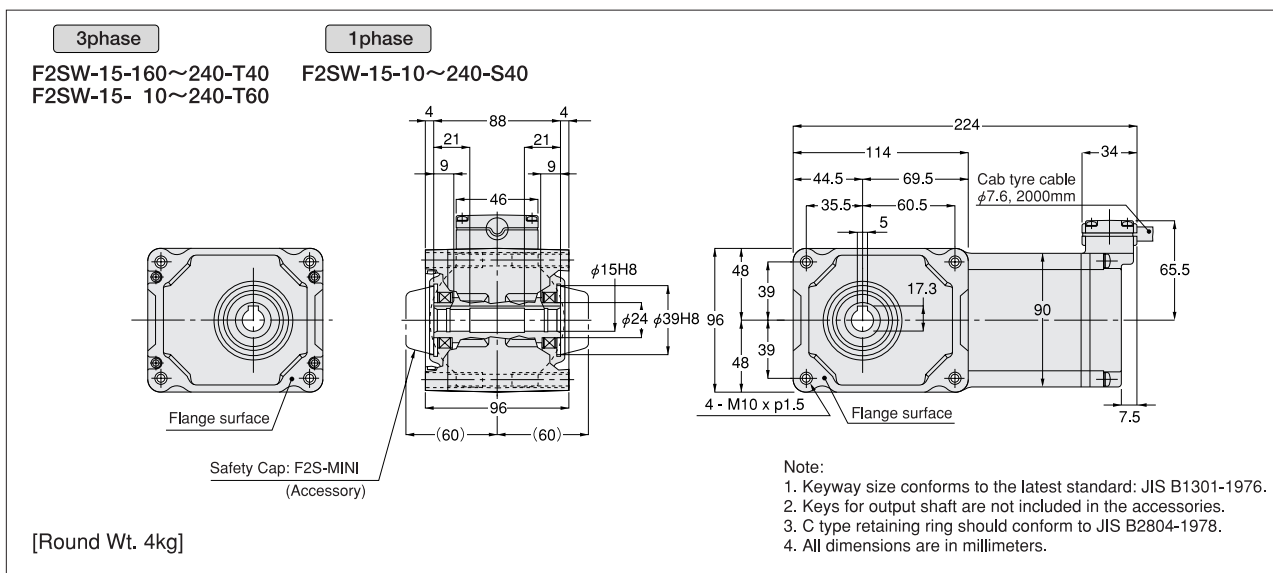
1 Phase



Detail Drawings of Tapped Holes for Face Mounting (Standard Specs)

●Frame No. 12 (Output Shaft Bore: $\phi 12$) ●Frame No. 15 (Output Shaft Bore: $\phi 15$)





Dimensions

Right Angle Shaft Type 15W~90W

3 Phase **H Type (Foot Mount)**

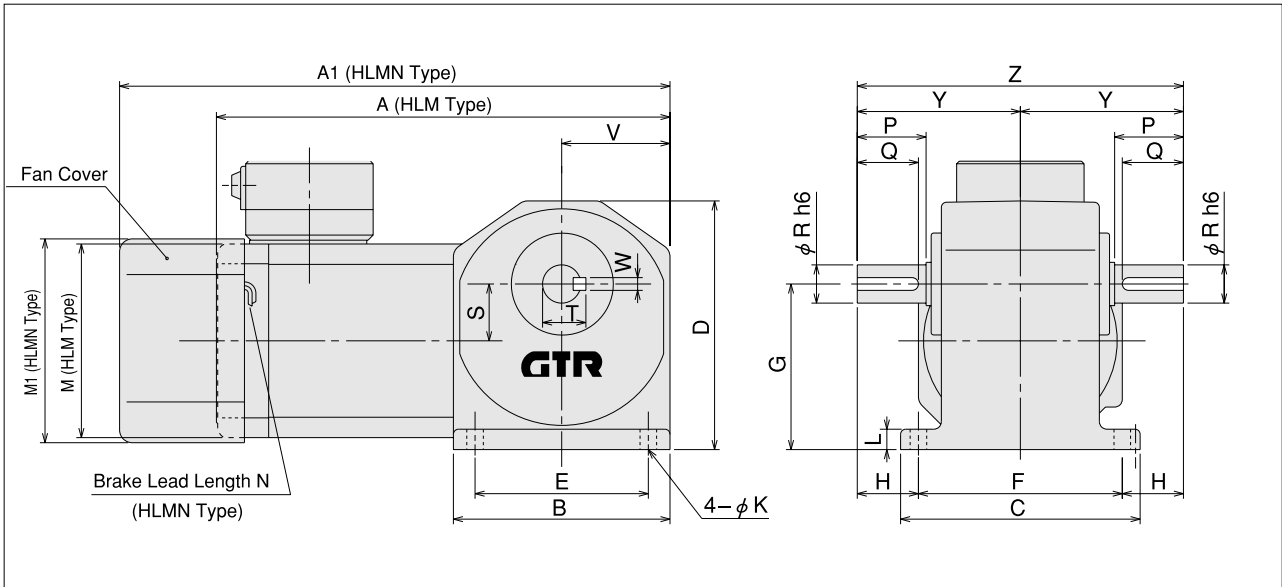


Figure 44. HLM / HLMN

Motor Capacity	Frame Number	Designation	Fig.	A	A1	B	C	D	E	F	G	H	
15W	15	HLM/MN-15L/R/T-10~240-T15(W)T	44	178	216	85	94	98	68	80	65	24	
	22	HLM/MN-22L/R/T-300~1800-T15(W)T	45	304.5	342.5	106	116	150	70	90	105	45	
25W	15	HLM/MN-15L/R/T-10~240-T25(W)T	44	178	216	85	94	98	68	80	65	24	
	22	HLM/MN-22L/R/T-300~900-T25(W)T	45	304.5	342.5	106	116	150	70	90	105	45	
	28	HLM/MN-28L/R/T-1200~1800-T25(W)T	45	339	375.5	125	126	175	80	100	120	50	
40W	15	HLM/MN-15L/R/T-10~120-T40(W)T	44	178 ♣	216	85	94	98	68	80	65	24	
	18	HLM/MN-18L/R/T-160~240-T40(W)T	44	194	230.5	101	116	113	76	96	75	26	
	22	HLM/MN-22L/R/T-300~450-T40(W)T	45	304.5 ♣	342.5	106	116	150	70	90	105	45	
	28	HLM/MN-28L/R/T-600~900-T40(W)T	45	339	375.5	125	126	175	80	100	120	50	
	32	HLM/MN-32L/R/T-1200~1800-T40(W)T	45	358	394.5	152	150	205	95	120	140	60	
60W	15	HLM/MN-15L/R/T-10~60-T60T	44	216	216	85	94	98	68	80	65	24	
	18	HLM/MN-18L/R/T-80~240-T60T	44	194	230.5	101	116	113	76	96	75	26	
	18	HLM/MN-18L/R/T-10~240-T60WT	44	194	230.5	101	116	113	76	96	75	26	
	22	HLM/MN-22L/R/T-300~450-T60(W)T	45	342.5	342.5	106	116	150	70	90	105	45	
	28	HLM/MN-28L/R/T-600~900-T60(W)T	45	339	375.5	125	126	175	80	100	120	50	
90W	32	HLM/MN-32L/R/T-1200~1800-T60(W)T	45	358	394.5	152	150	205	95	120	140	60	
	18	HLM/MN-18L/R/T-10~240-T90(W)T	44	194 ♣	230.5	101	116	113	76	96	75	26	
	28	HLM/MN-28L/R/T-300~450-T90(W)T	45	339 ♣	375.5	125	126	175	80	100	120	50	
	32	HLM/MN-32L/R/T-600~900-T90(W)T	45	358 ♣	394.5	152	150	205	95	120	140	60	
	40	HLM/MN-40L/R/T-1200~1800-T90(W)T	45	400	437	180	180	243	120	140	165	70	

Note:

- ♣ As for the high voltage models (-T□W), A = A1 and M = M1.
- 1. Above diagrams illustrate the dimensions of gearmotor with T-type terminal box.
- 2. For the dimensions of the terminal box, see page 91.
- 3. All dimensions are in millimeters.

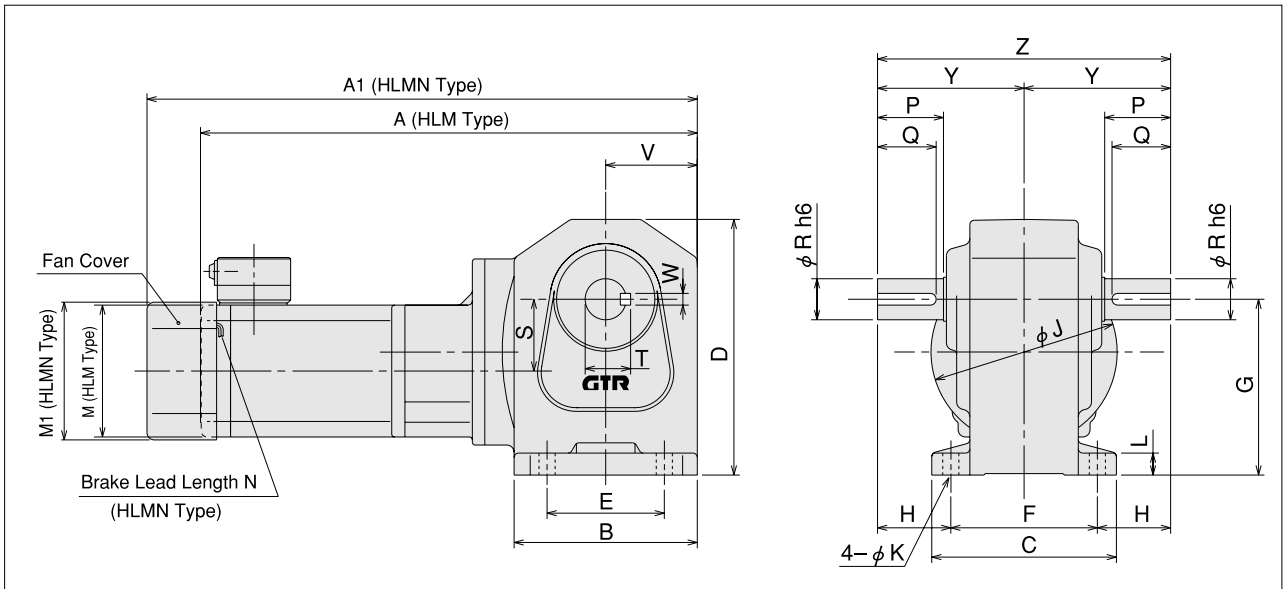


Figure 45. HLM / HLMN

[mm]

	J	K	L	M	M1	N	S	V	Y	Z	Dimensions of Output Shaft				
											P	Q	R	W	T
	—	6.5	8	76	80	300	22.3	42.5	64	128	27	24	15	5	17
	115	11	12	76	80	300	41.5	53	90	180	40	35	22	6	24.5
	—	6.5	8	76	80	300	22.3	42.5	64	128	27	24	15	5	17
	115	11	12	76	80	300	41.5	53	90	180	40	35	22	6	24.5
	127	11	15	90	94	300	49	62.5	100	200	45	40	28	8	31
	—	6.5	8	76 ♣	80	300	22.3	42.5	64	128	27	24	15	5	17
	—	8.5	9	90	94	300	25.7	50.5	74	148	30	27	18	6	20.5
	115	11	12	76 ♣	80	300	41.5	53	90	180	40	35	22	6	24.5
	127	11	15	90	94	300	49	62.5	100	200	45	40	28	8	31
	127	13	18	90	94	300	58	76	120	240	55	50	32	10	35
	—	6.5	8	80	80	300	22.3	42.5	64	128	27	24	15	5	17
	—	8.5	9	90	94	300	25.7	50.5	74	148	30	27	18	6	20.5
	—	8.5	9	90	94	300	25.7	50.5	74	148	30	27	18	6	20.5
	115	11	12	80	80	300	41.5	53	90	180	40	35	22	6	24.5
	127	11	15	90	94	300	49	62.5	100	200	45	40	28	8	31
	127	13	18	90	94	300	58	76	120	240	55	50	32	10	35
	—	8.5	9	90 ♣	94	300	25.7	50.5	74	148	30	27	18	6	20.5
	127	11	15	90 ♣	94	300	49	62.5	100	200	45	40	28	8	31
	127	13	18	90 ♣	94	300	58	76	120	240	55	50	32	10	35
	142	15	20	106	110	300	68.5	90	140	280	65	60	40	12	43

Dimensions

Right Angle Shaft Type 15W~90W

1 Phase H Type (Foot Mount)

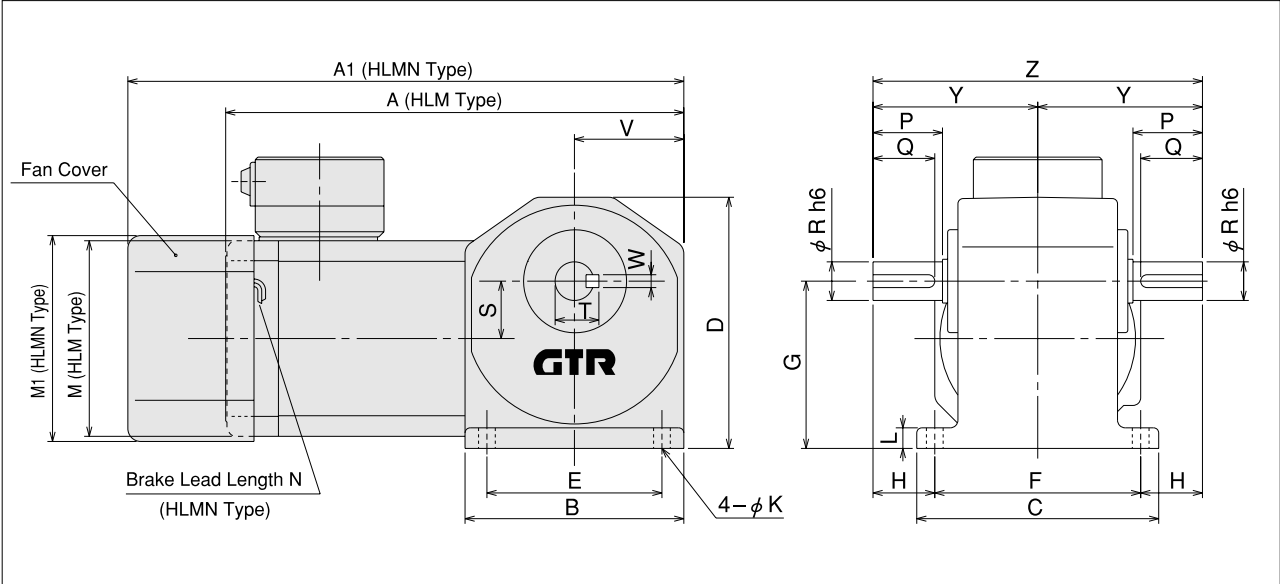


Figure 46. HLM / HLMN

Motor Capacity	Frame Number	Designation	Fig.	A	A1	B	C	D	E	F	G	H	
15W	15	HLM/MN-15L/R/T-10~240-S15(W)T	46	178	216	85	94	98	68	80	65	24	
	22	HLM/MN-22L/R/T-300~1800-S15(W)T	47	304.5	342.5	106	116	150	70	90	105	45	
25W	15	HLM/MN-15L/R/T-10~240-S25(W)T	46	178	216	85	94	98	68	80	65	24	
	22	HLM/MN-22L/R/T-300~900-S25(W)T	47	304.5	342.5	106	116	150	70	90	105	45	
	28	HLM/MN-28L/R/T-1200~1800-S25(W)T	47	339	375.5	125	126	175	80	100	120	50	
40W	15	HLM/MN-15L/R/T-10~120-S40(W)T	46	216	216	85	94	98	68	80	65	24	
	18	HLM/MN-18L/R/T-160~240-S40(W)T	46	194	230.5	101	116	113	76	96	75	26	
	22	HLM/MN-22L/R/T-300~450-S40(W)T	47	342.5	342.5	106	116	150	70	90	105	45	
	28	HLM/MN-28L/R/T-600~900-S40(W)T	47	339	375.5	125	126	175	80	100	120	50	
	32	HLM/MN-32L/R/T-1200~1800-S40(W)T	47	358	394.5	152	150	205	95	120	140	60	
60W	18	HLM/MN-18L/R/T-10~240-S60(W)T	46	230.5	230.5	101	116	113	76	96	75	26	
	22	HLM/MN-22L/R/T-300~450-S60(W)T	47	342.5	342.5	106	116	150	70	90	105	45	
	28	HLM/MN-28L/R/T-600~900-S60(W)T	47	375.5	375.5	125	126	175	80	100	120	50	
	32	HLM/MN-32L/R/T-1200~1800-S60(W)T	47	394.5	394.5	152	150	205	95	120	140	60	
90W	18	HLM/MN-18L/R/T-10~240-S90(W)T	46	230.5	230.5	101	116	113	76	96	75	26	
	28	HLM/MN-28L/R/T-300~450-S90(W)T	47	375.5	375.5	125	126	175	80	100	120	50	
	32	HLM/MN-32L/R/T-600~900-S90(W)T	47	394.5	394.5	152	150	205	95	120	140	60	
	40	HLM/MN-40L/R/T-1200~1800-S90(W)T	47	437	437	180	180	243	120	140	165	70	

- Note:
1. Above diagrams illustrate the dimensions of gearmotor with T-type terminal box.
 2. For the dimensions of the terminal box, see page 91.
 3. All dimensions are in millimeters.

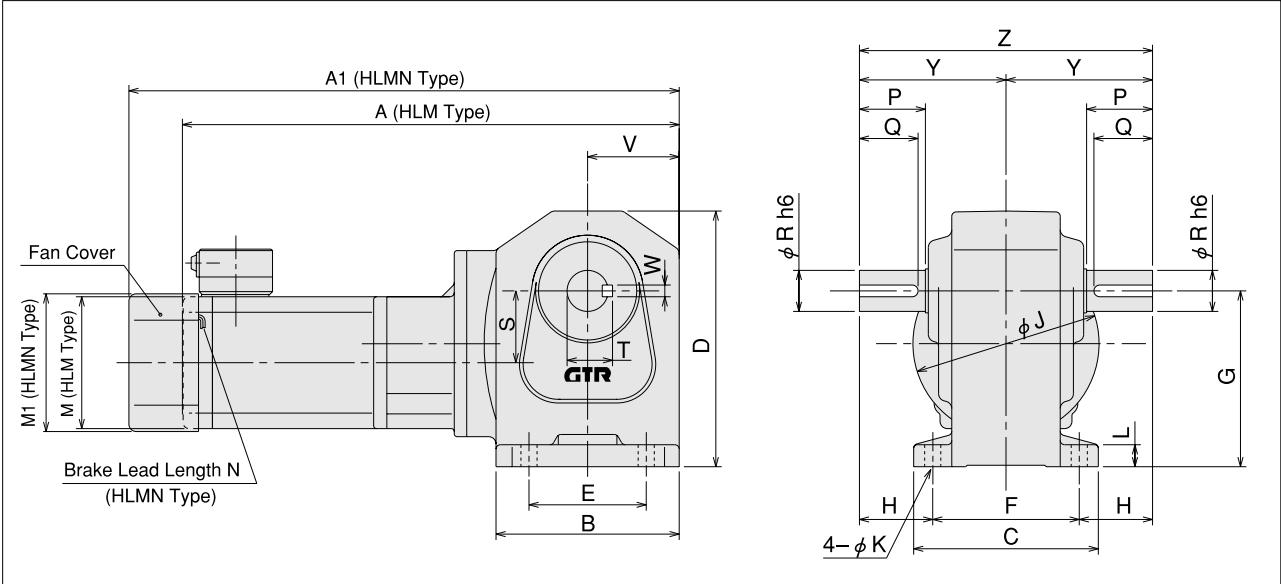


Figure 47. HLM / HLMN

[mm]															
	J	K	L	M	M1	N	S	V	Y	Z	Dimensions of Output Shaft				
											P	Q	R	W	T
	—	6.5	8	76	80	300	22.3	42.5	64	128	27	24	15	5	17
	115	11	12	76	80	300	41.5	53	90	180	40	35	22	6	24.5
	—	6.5	8	76	80	300	22.3	42.5	64	128	27	24	15	5	17
	115	11	12	76	80	300	41.5	53	90	180	40	35	22	6	24.5
	127	11	15	90	94	300	49	62.5	100	200	45	40	28	8	31
	—	6.5	8	80	80	300	22.3	42.5	64	128	27	24	15	5	17
	—	8.5	9	90	94	300	25.7	50.5	74	148	30	27	18	6	20.5
	115	11	12	80	80	300	41.5	53	90	180	40	35	22	6	24.5
	127	11	15	90	94	300	49	62.5	100	200	45	40	28	8	31
	127	13	18	90	94	300	58	76	120	240	55	50	32	10	35
	—	8.5	9	94	94	300	25.7	50.5	74	148	30	27	18	6	20.5
	115	11	12	80	80	300	41.5	53	90	180	40	35	22	6	24.5
	127	11	15	94	94	300	49	62.5	100	200	45	40	28	8	31
	127	13	18	94	94	300	58	76	120	240	55	50	32	10	35
	—	8.5	9	94	94	300	25.7	50.5	74	148	30	27	18	6	20.5
	127	11	15	94	94	300	49	62.5	100	200	45	40	28	8	31
	127	13	18	94	94	300	58	76	120	240	55	50	32	10	35
	142	15	20	110	110	300	68.5	90	140	280	65	60	40	12	43

Dimensions

Right Angle Shaft Type 15W~90W

3 Phase H Type (Flange Mount)

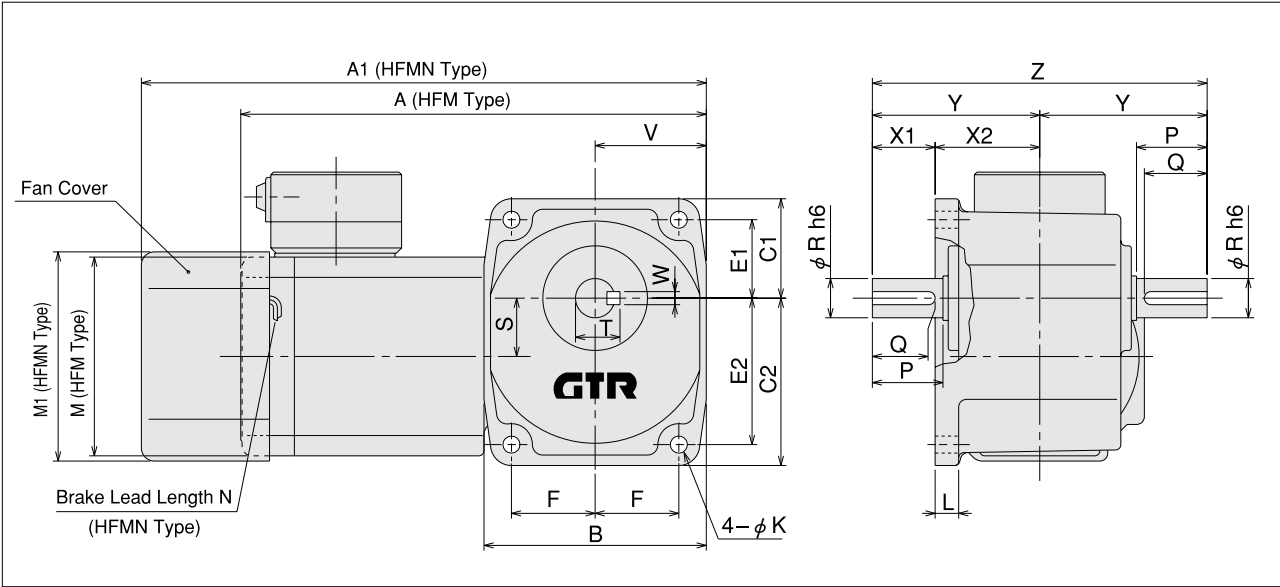


Figure 48. HFM / HFMN

Motor Capacity	Frame Number	Designation	Fig.	A	A1	B	C1	C2	E1	E2	F	J	
15W	15	HFM/MN-15L/R/T-10~240-T15(W)T	48	178	216	85	38	64	30	56	32	—	
	22	HFM/MN-22L/R/T-300~1800-T15(W)T	49	308.5	346.5	114	54	90	42	78	45	115	
25W	15	HFM/MN-15L/R/T-10~240-T25(W)T	48	178	216	85	38	64	30	56	32	—	
	22	HFM/MN-22L/R/T-300~900-T25(W)T	49	308.5	346.5	114	54	90	42	78	45	115	
40W	15	HFM/MN-15L/R/T-10~120-T40(W)T	48	178 ♣	216	85	38	64	30	56	32	—	
	18	HFM/MN-18L/R/T-160~240-T40(W)T	48	194	230.5	101	44	74	35	65	40	—	
	22	HFM/MN-22L/R/T-300~450-T40(W)T	49	308.5 ♣	346.5	114	54	90	42	78	45	115	
60W	15	HFM/MN-15L/R/T-10~60-T60T	48	216	216	85	38	64	30	56	32	—	
	18	HFM/MN-18L/R/T-80~240-T60T	48	194	230.5	101	44	74	35	65	40	—	
	18	HFM/MN-18L/R/T-10~240-T60(W)T	48	194	230.5	101	44	74	35	65	40	—	
	22	HFM/MN-22L/R/T-300~450-T60(W)T	49	346.5	346.5	114	54	90	42	78	45	115	
90W	18	HFM/MN-18L/R/T-10~240-T90(W)T	48	194 ♣	230.5	101	44	74	35	65	40	—	

Note:
♣ As for the high voltage models (-T□W), A = A1 and M = M1.
1. Above diagrams illustrate the dimensions of gearmotor with T-type terminal box.
2. For the dimensions of the terminal box, see page 91.
3. All dimensions are in millimeters.

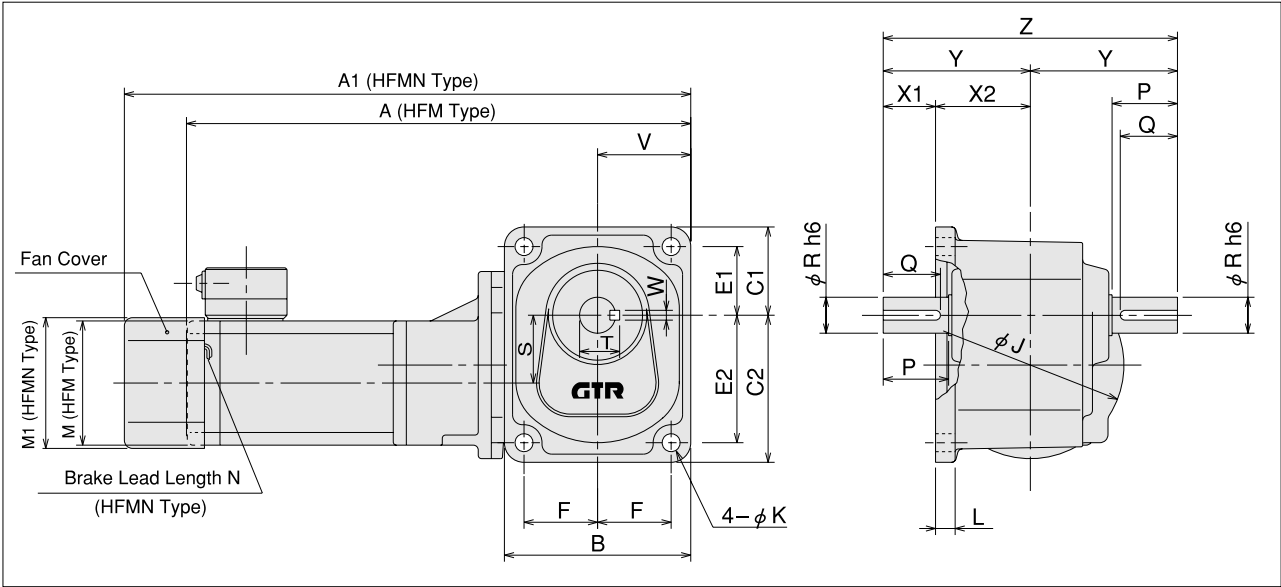


Figure49. HFM / HFMN

[mm]

	K	L	M	M1	N	S	V	X1	X2	Y	Z	Dimensions of Output Shaft				
												P	Q	R	W	T
	6.5	9	76	80	300	22.3	42.5	24	40	64	128	27	24	15	5	17
	11	12	76	80	300	41.5	57	32	58	90	180	40	35	22	6	24.5
	6.5	9	76	80	300	22.3	42.5	24	40	64	128	27	24	15	5	17
	11	12	76	80	300	41.5	57	32	58	90	180	40	35	22	6	24.5
	6.5	9	76 ♣	80	300	22.3	42.5	24	40	64	128	27	24	15	5	17
	8.5	10	90	94	300	25.7	50.5	26	48	74	148	30	27	18	6	20.5
	11	12	76 ♣	80	300	41.5	57	32	58	90	180	40	35	22	6	24.5
	6.5	9	80	80	300	22.3	42.5	24	40	64	128	27	24	15	5	17
	8.5	10	90	94	300	25.7	50.5	26	48	74	148	30	27	18	6	20.5
	8.5	10	90	94	300	25.7	50.5	26	48	74	148	30	27	18	6	20.5
	11	12	80	80	300	41.5	57	32	58	90	180	40	35	22	6	24.5
	8.5	10	90 ♣	94	300	25.7	50.5	26	48	74	148	30	27	18	6	20.5

Dimensions

Right Angle Shaft Type 15W~90W

1 Phase H Type (Flange Mount)

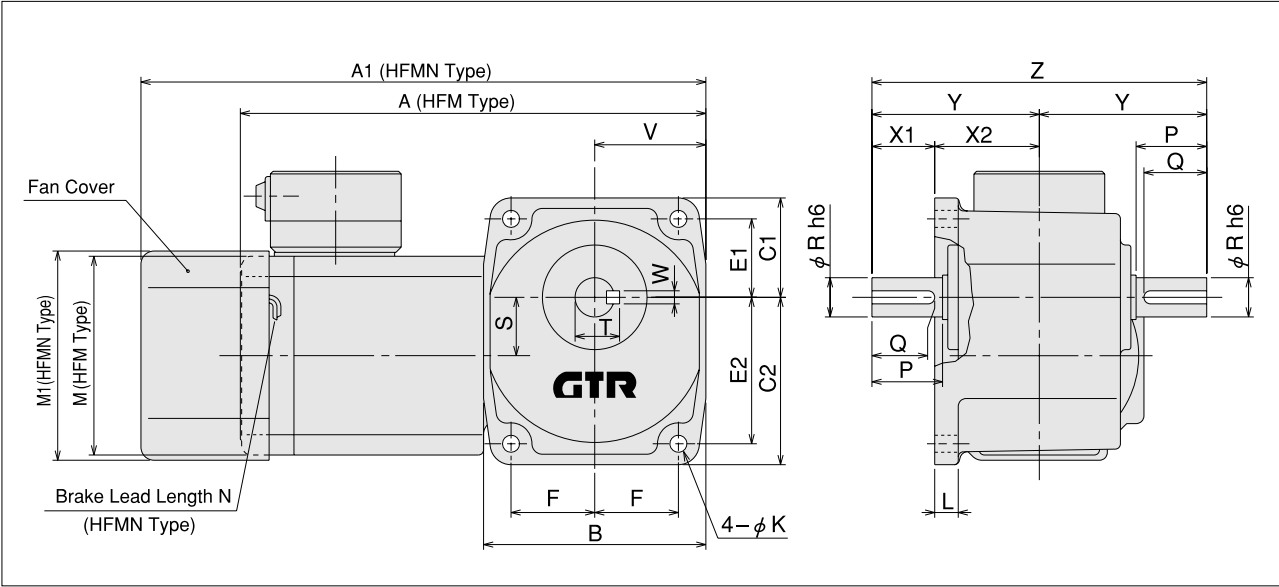


Figure 50. HFM / HFMN

Motor Capacity	Frame Number	Designation	Fig.	A	A1	B	C1	C2	E1	E2	F	J
15W	15	HFM/MN-15L/R/T-10~240-S15(W)T	50	178	216	85	38	64	30	56	32	—
	22	HFM/MN-22L/R/T-300~1800-S15(W)T	51	308.5	346.5	114	54	90	42	78	45	115
25W	15	HFM/MN-15L/R/T-10~240-S25(W)T	50	178	216	85	38	64	30	56	32	—
	22	HFM/MN-22L/R/T-300~900-S25(W)T	51	308.5	346.5	114	54	90	42	78	45	115
40W	15	HFM/MN-15L/R/T-10~120-S40(W)T	50	216	216	85	38	64	30	56	32	—
	18	HFM/MN-18L/R/T-160~240-S40(W)T	50	194	230.5	101	44	74	35	65	40	—
60W	22	HFM/MN-22L/R/T-300~450-S40(W)T	51	346.5	346.5	114	54	90	42	78	45	115
	18	HFM/MN-18L/R/T-10~240-S60(W)T	50	230.5	230.5	101	44	74	35	65	40	—
90W	22	HFM/MN-22L/R/T-300~450-S60(W)T	51	346.5	346.5	114	54	90	42	78	45	115
	18	HFM/MN-18L/R/T-10~240-S90(W)T	50	230.5	230.5	101	44	74	35	65	40	—

- Note:
1. Above diagrams illustrate the dimensions of gearmotor with T-type terminal box.
 2. For the dimensions of the terminal box, see page 91.
 3. All dimensions are in millimeters.

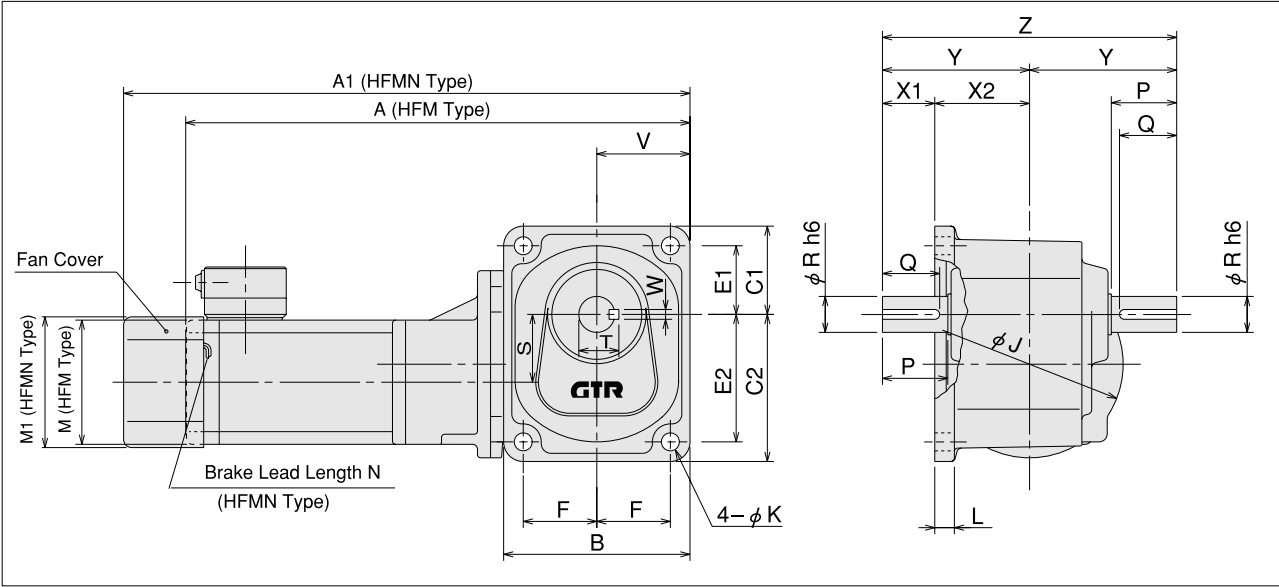


Figure 51. HFM / HFMN

[mm]

	K	L	M	M1	N	S	V	X1	X2	Y	Z	Dimensions of Output Shaft				
												P	Q	R	W	T
	6.5	9	76	80	300	22.3	42.5	24	40	64	128	27	24	15	5	17
	11	12	76	80	300	41.5	57	32	58	90	180	40	35	22	6	24.5
	6.5	9	76	80	300	22.3	42.5	24	40	64	128	27	24	15	5	17
	11	12	76	80	300	41.5	57	32	58	90	180	40	35	22	6	24.5
	6.5	9	80	80	300	22.3	42.5	24	40	64	128	27	24	15	5	17
	8.5	10	90	94	300	25.7	50.5	26	48	74	148	30	27	18	6	20.5
	11	12	80	80	300	41.5	57	32	58	90	180	40	35	22	6	24.5
	8.5	10	94	94	300	25.7	50.5	26	48	74	148	30	27	18	6	20.5
	11	12	80	80	300	41.5	57	32	58	90	180	40	35	22	6	24.5
	8.5	10	94	94	300	25.7	50.5	26	48	74	148	30	27	18	6	20.5

Dimensions

Parallel Shaft Type 15W~90W

3Phase **G Type (Foot Mount)**

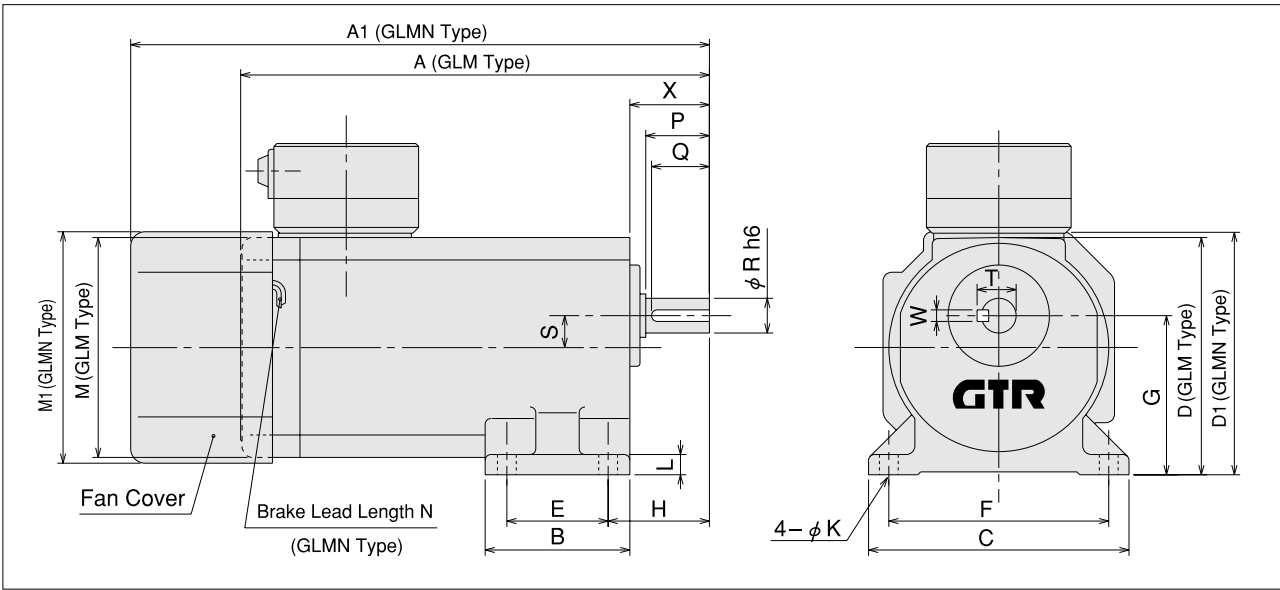


Figure 52. GLM / GLMN

Motor Capacity	Frame Number	Designation	Fig.	A	A1	B	C	D	D1	E	F	
15W	12	GLM/MN-12-5~240-T15(W)T	52	162	200	50	90	82	84	35	76	
	22	GLM/MN-22-300~1800-T15(W)T	53	260	298	90	154	139	—	65	130	
25W	12	GLM/MN-12-5~120-T25(W)T	52	162	200	50	90	82	84	35	76	
	15	GLM/MN-15-160~240-T25(W)T	52	173	209.5	56	104	97	99	40	90	
	22	GLM/MN-22-300~900-T25(W)T	53	260	298	90	154	139	—	65	130	
	28	GLM/MN-28-1200~1800-T25(W)T	53	282.5	319	125	175	167	—	90	140	
40W	12	GLM/MN-12-5~60-T40(W)T	52	162 ♣	200	50	90	82 ♣	84	35	76	
	15	GLM/MN-15-80~120-T40(W)T	52	173	209.5	56	104	97	99	40	90	
	18	GLM/MN-18-160~240-T40(W)T	52	188	225.5	60	130	113	115	40	110	
	22	GLM/MN-22-300~450-T40(W)T	53	260 ♣	298	90	154	139	—	65	130	
	28	GLM/MN-28-600~900-T40(W)T	53	282.5	319	125	175	167	—	90	140	
	32	GLM/MN-32-1200~1800-T40(W)T	53	313	349.5	168	208	198	—	130	170	
60W	12	GLM/MN-12-5~30-T60T	52	200	200	50	90	84	84	35	76	
	15	GLM/MN-15-40~60-T60T	52	173	209.5	56	104	97	99	40	90	
	15	GLM/MN-15-5~60-T60WT	52	173	209.5	56	104	97	99	40	90	
	18	GLM/MN-18-80~240-T60(W)T	52	188	225.5	60	130	113	115	40	110	
	22	GLM/MN-22-300~450-T60(W)T	53	298	298	90	154	139	—	65	130	
	28	GLM/MN-28-600~900-T60(W)T	53	282.5	319	125	175	167	—	90	140	
90W	32	GLM/MN-32-1200~1800-T60(W)T	53	313	349.5	168	208	198	—	130	170	
	15	GLM/MN-15-5~30-T90(W)T	52	173 ♣	209.5	56	104	97 ♣	99	40	90	
	18	GLM/MN-18-40~240-T90(W)T	52	188	225.5	60	130	113	115	40	110	
	28	GLM/MN-28-300~450-T90(W)T	53	282.5 ♣	319	125	175	167	—	90	140	
	32	GLM/MN-32-600~900-T90(W)T	53	313 ♣	349.5	168	208	198	—	130	170	
	40	GLM/MN-40-1200~1800-T90(W)T	53	357	394	196	254	230	—	150	210	

Note:
 ♣. As for the high voltage model (-T□W), A = A1, D = D1 and M = M1.
 1. All dimensions are in millimeters.
 2. Above diagrams illustrate the dimensions of gearmotor with T-type terminal box.
 3. For the dimensions of the terminal box, see page 91.

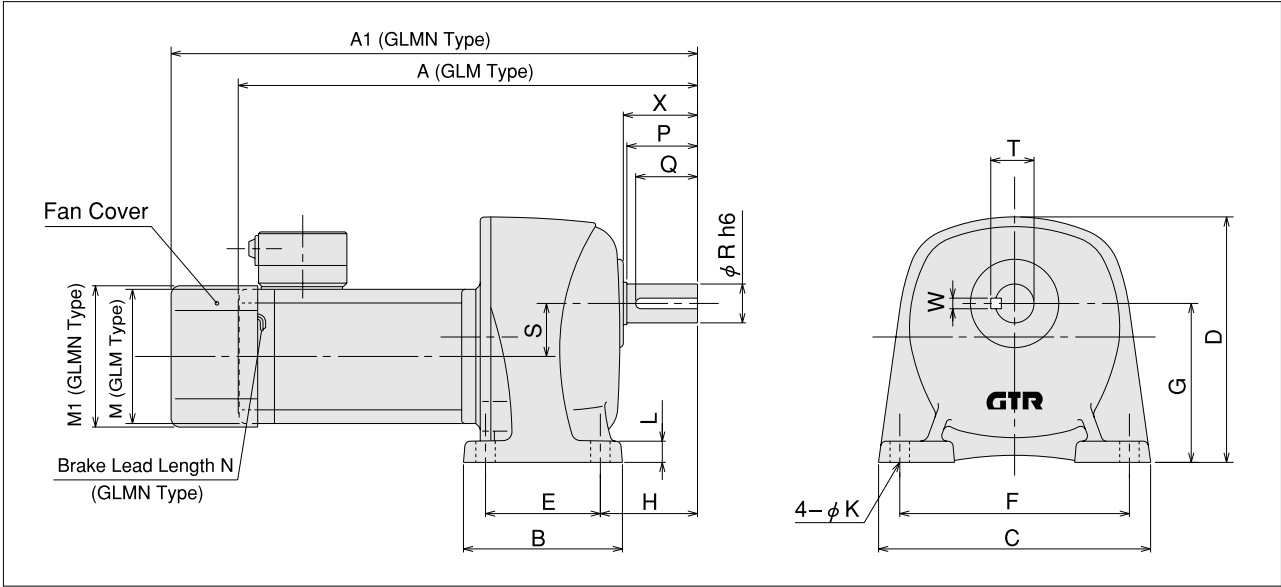


Figure 53. GLM / GLMN

	G	H	K	L	M	M1	N	S	Dimensions of Output Shaft					
									P	Q	R	W	T	X
	55	35	6.5	7	76	80	300	11	22	20	12	4	13.5	27.5
	90	55	11	12	76	80	300	30	40	35	22	6	24.5	42
	55	35	6.5	7	76	80	300	11	22	20	12	4	13.5	27.5
	65	41	6.5	8	90	94	300	13	27	24	15	5	17	33
	90	55	11	12	76	80	300	30	40	35	22	6	24.5	42
	110	65	11	15	90	94	300	36.5	45	40	28	8	31	47
	55	35	6.5	7	76 $\clubsuit$	80	300	11	22	20	12	4	13.5	27.5
	65	41	6.5	8	90	94	300	13	27	24	15	5	17	33
	75	47	8.5	10	106	110	300	15	30	27	18	6	20.5	37
	90	55	11	12	76 $\clubsuit$	80	300	30	40	35	22	6	24.5	42
	110	65	11	15	90	94	300	36.5	45	40	28	8	31	47
	130	70	13	18	90	94	300	41.5	55	50	32	10	35	58
	55	35	6.5	7	80	80	300	11	22	20	12	4	13.5	27.5
	65	41	6.5	8	90	94	300	13	27	24	15	5	17	33
	65	41	6.5	8	90	94	300	13	27	24	15	5	17	33
	75	47	8.5	10	106	110	300	15	30	27	18	6	20.5	37
	90	55	11	12	80	80	300	30	40	35	22	6	24.5	42
	110	65	11	15	90	94	300	36.5	45	40	28	8	31	47
	130	70	13	18	90	94	300	41.5	55	50	32	10	35	58
	65	41	6.5	8	90 $\clubsuit$	94	300	13	27	24	15	5	17	33
	75	47	8.5	10	106	110	300	15	30	27	18	6	20.5	37
	110	65	11	15	90 $\clubsuit$	94	300	36.5	45	40	28	8	31	47
	130	70	13	18	90 $\clubsuit$	94	300	41.5	55	50	32	10	35	58
	150	90	15	20	106	110	300	49	65	60	40	12	43	68

[mm]

Dimensions

Parallel Shaft Type 15W~90W

1Phase G Type (Foot Mount)

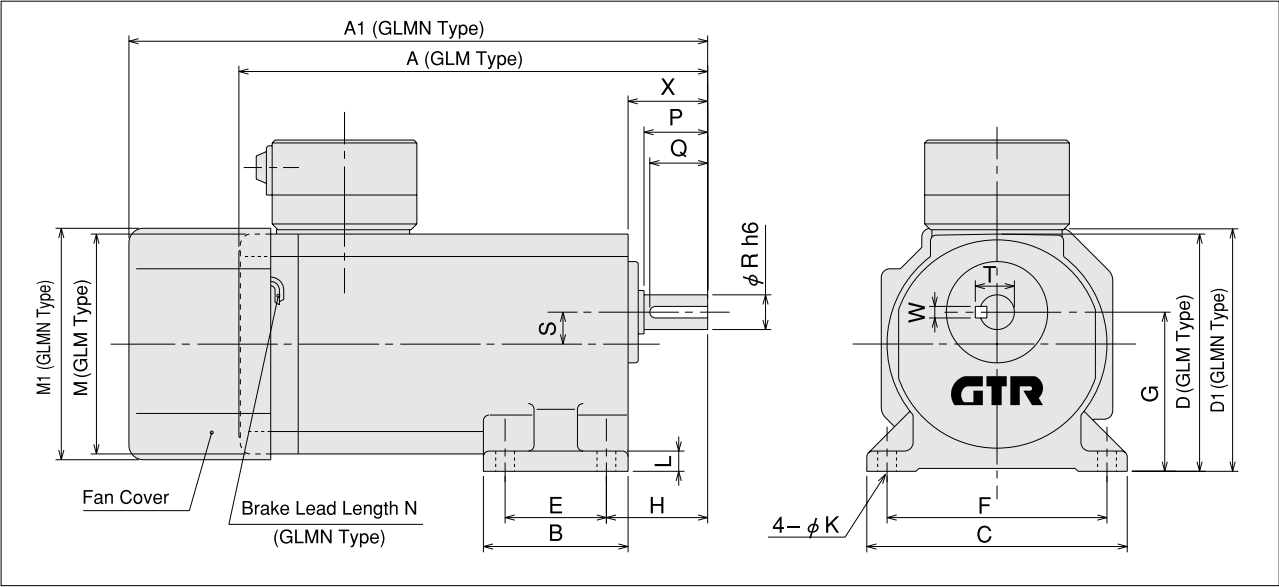


Figure 54. GLM / GLMN

Motor Capacity	Frame Number	Designation	Fig.	A	A1	B	C	D	D1	E	F	
15W	12	GLM/MN-12-5~240-S15(W)T	54	162	200	50	90	82	84	35	76	
	22	GLM/MN-22-300~1800-S15(W)T	55	260	298	90	154	139	—	65	130	
25W	12	GLM/MN-12-5~120-S25(W)T	54	162	200	50	90	82	84	35	76	
	15	GLM/MN-15-160~240-S25(W)T	54	173	209.5	56	104	97	99	40	90	
	22	GLM/MN-22-300~900-S25(W)T	55	260	298	90	154	139	—	65	130	
	28	GLM/MN-28-1200~1800-S25(W)T	55	282.5	319	125	175	167	—	90	140	
40W	12	GLM/MN-12-5~60-S40(W)T	54	200	200	50	90	84	84	35	76	
	15	GLM/MN-15-80~120-S40(W)T	54	173	209.5	56	104	97	99	40	90	
	18	GLM/MN-18-160~240-S40(W)T	54	188	225.5	60	130	113	115	40	110	
	22	GLM/MN-22-300~450-S40(W)T	55	298	298	90	154	139	—	65	130	
	28	GLM/MN-28-600~900-S40(W)T	55	282.5	319	125	175	167	—	90	140	
	32	GLM/MN-32-1200~1800-S40(W)T	55	313	349.5	168	208	198	—	130	170	
60W	15	GLM/MN-15-5~60-S60(W)T	54	209.5	209.5	56	104	99	99	40	90	
	18	GLM/MN-18-80~240-S60(W)T	54	188	225.5	60	130	113	115	40	110	
	22	GLM/MN-22-300~450-S60(W)T	55	298	298	90	154	139	—	65	130	
	28	GLM/MN-28-600~900-S60(W)T	55	319	319	125	175	167	—	90	140	
	32	GLM/MN-32-1200~1800-S60(W)T	55	349.5	349.5	168	208	198	—	130	170	
90W	15	GLM/MN-15-5~30-S90(W)T	54	209.5	209.5	56	104	99	99	40	90	
	18	GLM/MN-18-40~240-S90(W)T	54	225.5	225.5	60	130	115	115	40	110	
	28	GLM/MN-28-300~450-S90(W)T	55	319	319	125	175	167	—	90	140	
	32	GLM/MN-32-600~900-S90(W)T	55	349.5	349.5	168	208	198	—	130	170	
	40	GLM/MN-40-1200~1800-S90(W)T	55	394	394	196	254	230	—	150	210	

Note:

1. Above diagrams illustrate the dimensions of gearmotor with T-type terminal box.
2. For the dimensions of the terminal box, see page 91.
3. All dimensions are in millimeters.

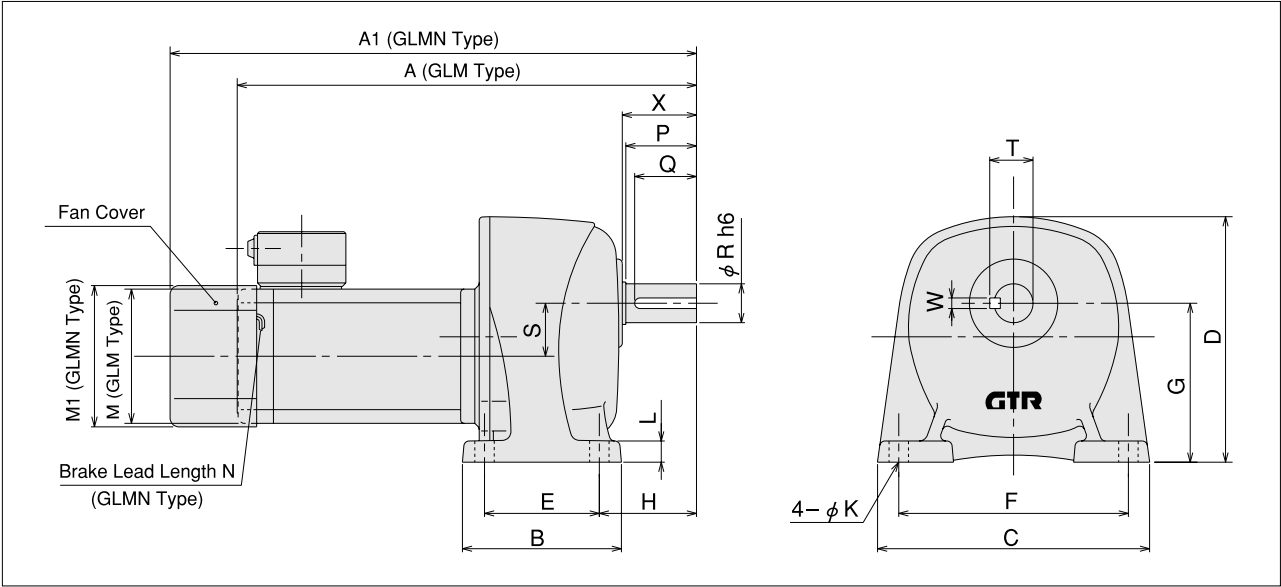


Figure 55. GLM / GLMN

	G	H	K	L	M	M1	N	S	Dimensions of Output Shaft					
									P	Q	R	W	T	X
	55	35	6.5	7	76	80	300	11	22	20	12	4	13.5	27.5
	90	55	11	12	76	80	300	30	40	35	22	6	24.5	42
	55	35	6.5	7	76	80	300	11	22	20	12	4	13.5	27.5
	65	41	6.5	8	90	94	300	13	27	24	15	5	17	33
	90	55	11	12	76	80	300	30	40	35	22	6	24.5	42
	110	65	11	15	90	94	300	36.5	45	40	28	8	31	47
	55	35	6.5	7	80	80	300	11	22	20	12	4	13.5	27.5
	65	41	6.5	8	90	94	300	13	27	24	15	5	17	33
	75	47	8.5	10	106	110	300	15	30	27	18	6	20.5	37
	90	55	11	12	80	80	300	30	40	35	22	6	24.5	42
	110	65	11	15	90	94	300	36.5	45	40	28	8	31	47
	130	70	13	18	90	94	300	41.5	55	50	32	10	35	58
	65	41	6.5	8	94	94	300	13	27	24	15	5	17	33
	75	47	8.5	10	106	110	300	15	30	27	18	6	20.5	37
	90	55	11	12	80	80	300	30	40	35	22	6	24.5	42
	110	65	11	15	94	94	300	36.5	45	40	28	8	31	47
	130	70	13	18	94	94	300	41.5	55	50	32	10	35	58
	65	41	6.5	8	94	94	300	13	27	24	15	5	17	33
	75	47	8.5	10	110	110	300	15	30	27	18	6	20.5	37
	110	65	11	15	94	94	300	36.5	45	40	28	8	31	47
	130	70	13	18	94	94	300	41.5	55	50	32	10	35	58
	150	90	15	20	110	110	300	49	65	60	40	12	43	68

(mm)

Dimensions

Parallel Shaft Type 15W~90W

3 Phase **G Type (Flange Mount)**

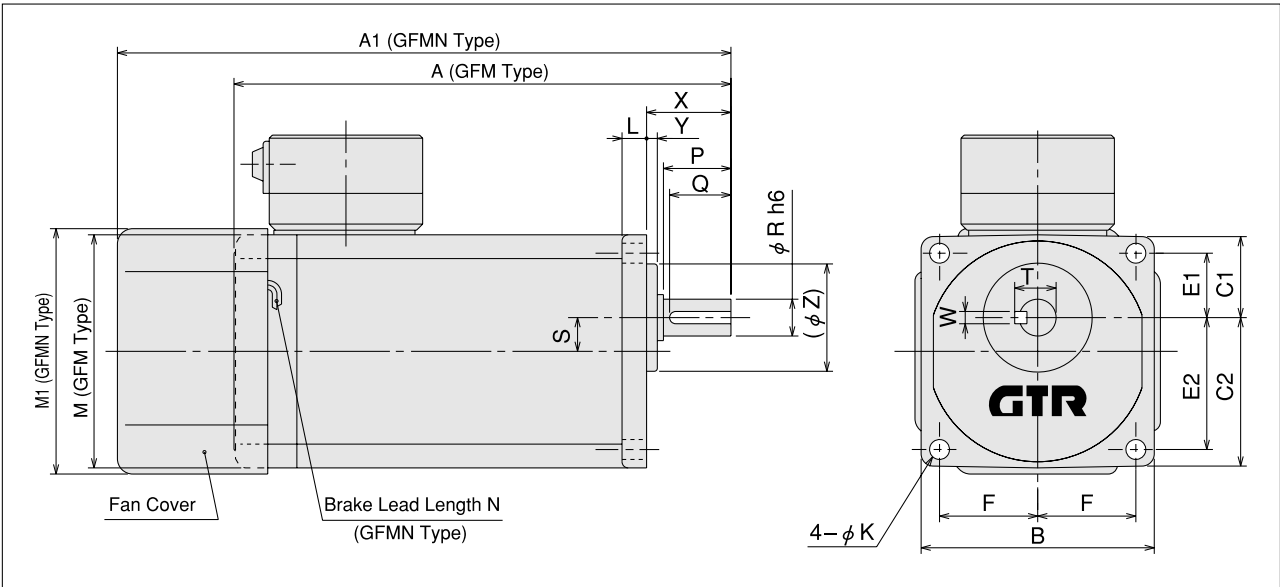


Figure 56. GFM / GFMN

Motor Capacity	Frame Number	Designation	Fig.	A	A1	B	C1	C2	E1	E2	F	
15 W	12	GFM/MN-12-5~240-T15(W)T	56	162	200	76	27	49	21	43	32	
	22	GFM/MN-22-300~1800-T15(W)T	57	260	298	164	82.5	89	—	—	—	
25 W	12	GFM/MN-12-5~120-T25(W)T	56	162	200	76	27	49	21	43	32	
	15	GFM/MN-15-160~240-T25(W)T	56	173	209.5	90	32	58	25	51	38	
	22	GFM/MN-22-300~900-T25(W)T	57	260	298	164	82.5	89	—	—	—	
	28	GFM/MN-28-1200~1800-T25(W)T	57	282.5	319	186	93	105.5	—	—	—	
40 W	12	GFM/MN-12-5~60-T40(W)T	56	162	♣	200	27	49	21	43	32	
	15	GFM/MN-15-80~120-T40(W)T	56	173	209.5	90	32	58	25	51	38	
	18	GFM/MN-18-160~240-T40(W)T	56	188	225.5	106	38	68	29	59	44	
	22	GFM/MN-22-300~450-T40(W)T	57	260	♣	298	82.5	89	—	—	—	
	28	GFM/MN-28-600~900-T40(W)T	57	282.5	319	186	93	105.5	—	—	—	
	32	GFM/MN-32-1200~1800-T40(W)T	57	313	349.5	215	107.5	126.5	—	—	—	
60 W	12	GFM/MN-12-5~30-T60T	45	200	200	76	27	49	21	43	32	
	15	GFM/MN-15-40~60-T60T	45	173	209.5	90	32	58	25	51	38	
	15	GFM/MN-15-5~60-T60WT	45	173	209.5	90	32	58	25	51	38	
	18	GFM/MN-18-80~240-T60(W)T	45	188	225.5	106	38	68	29	59	44	
	22	GFM/MN-22-300~450-T60(W)T	57	298	298	164	82.5	89	—	—	—	
	28	GFM/MN-28-600~900-T60(W)T	57	282.5	319	186	93	105.5	—	—	—	
	32	GFM/MN-32-1200~1800-S60(W)T	57	313	349.5	215	107.5	126.5	—	—	—	
90 W	15	GFM/MN-15-5~30-T90(W)T	56	173	♣	209.5	32	58	25	51	38	
	18	GFM/MN-18-40~240-T90(W)T	56	188	225.5	106	38	68	29	59	44	
	28	GFM/MN-28-300~450-T90(W)T	57	282.5	♣	319	93	105.5	—	—	—	
	32	GFM/MN-32-600~900-T90(W)T	57	313	♣	349.5	107.5	126.5	—	—	—	
	40	GFM/MN-40-1200~1800-T90(W)T	57	357	394	270	135	149	—	—	—	

Note:
♣. As for the high voltage models (-T□W), A = A1 and M = M1.
1. All dimensions are in millimeters.
2. Above diagrams illustrate the dimensions of gearmotor with T-type terminal box.
3. For the dimensions of the terminal box, see page 91.

3 Phase G Type (Flange Mount)

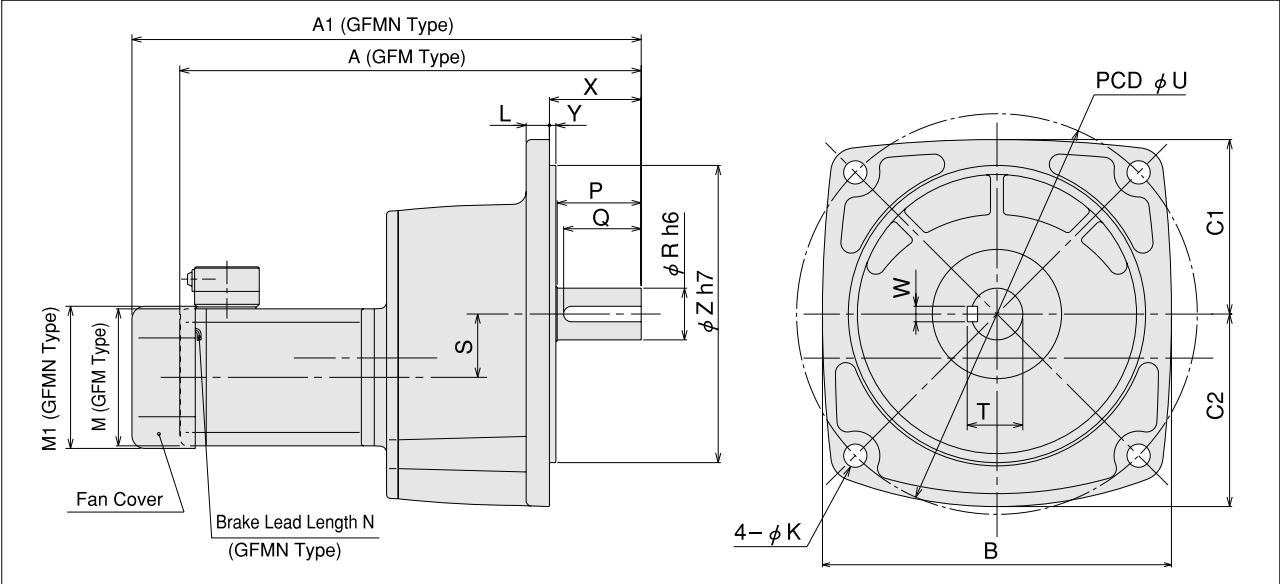


Figure 57. GFM / GFMN

[mm]															
	K	L	M	M1	N	S	Y	U	Z	Dimensions of Output Shaft					
										P	Q	R	W	T	X
	6.5	8	76	80	300	11	3.5	—	35.5	22	20	12	4	13.5	27.5
	11	12	76	80	300	30	4	185	148	40	35	22	6	24.5	47
	6.5	8	76	80	300	11	3.5	—	35.5	22	20	12	4	13.5	27.5
	6.5	9	90	94	300	13	4	—	40.5	27	24	15	5	17	33
	11	12	76	80	300	30	4	185	148	40	35	22	6	24.5	47
	11	15	90	94	300	36.5	4	215	170	45	40	28	8	31	50
	6.5	8	76 ♣	80	300	11	3.5	—	35.5	22	20	12	4	13.5	27.5
	6.5	9	90	94	300	13	4	—	40.5	27	24	15	5	17	33
	8.5	10	106	110	300	15	5	—	47.5	30	27	18	6	20.5	37.5
	11	12	76 ♣	80	300	30	4	185	148	40	35	22	6	24.5	47
	11	15	90	94	300	36.5	4	215	170	45	40	28	8	31	50
	13	15	90	94	300	41.5	4	250	180	55	50	32	10	35	60
	6.5	8	80	80	300	11	3.5	—	35.5	22	20	12	4	13.5	27.5
	6.5	9	90	94	300	13	4	—	40.5	27	24	15	5	17	33
	6.5	9	90	94	300	13	4	—	40.5	27	24	15	5	17	33
	8.5	10	106	110	300	15	5	—	47.5	30	27	18	6	20.5	37
	11	12	80	80	300	30	4	185	148	40	35	22	6	24.5	47
	11	15	90	94	300	36.5	4	215	170	45	40	28	8	31	50
	13	15	90	94	300	41.5	4	250	180	55	50	32	10	35	60
	6.5	9	90 ♣	94	300	13	4	—	40.5	27	24	15	5	17	33
	8.5	10	106	110	300	15	5	—	47.5	30	27	18	6	20.5	37
	11	15	90 ♣	94	300	36.5	4	215	170	45	40	28	8	31	50
	13	15	90 ♣	94	300	41.5	4	250	180	55	50	32	10	35	60
	18	18	106	110	300	49	5	310	230	65	60	40	12	43	71

Dimensions

Parallel Shaft Type 15W~90W

3 Phase

G Type (Small Flange Mount)

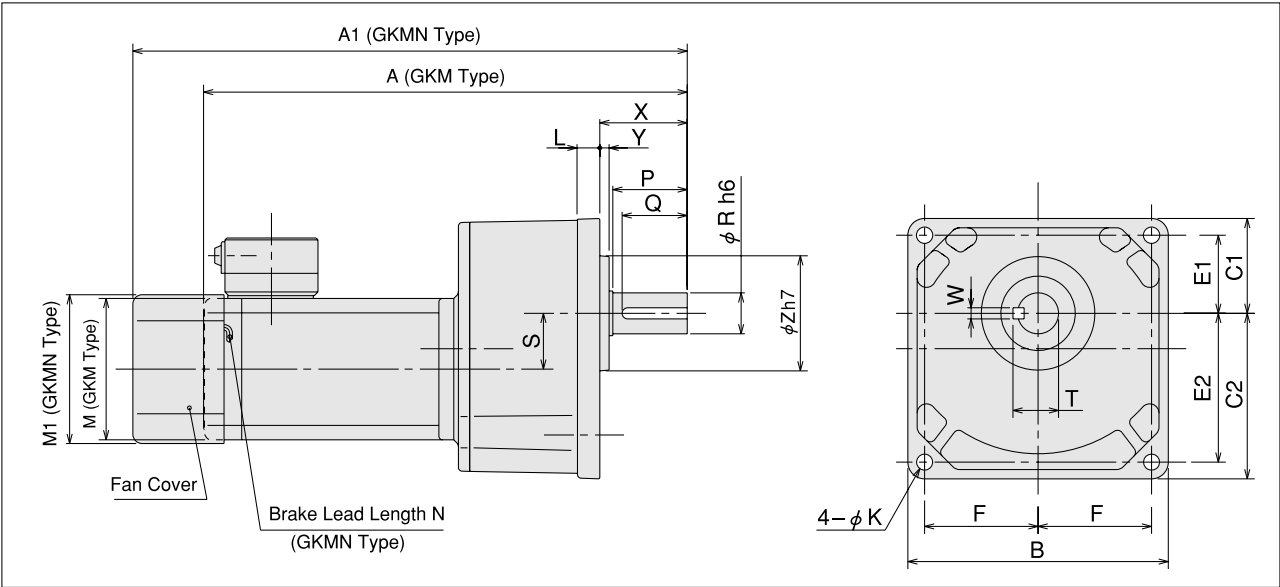


Figure 58. GKM / GKMN

Motor Capacity	Frame Number	Designation	Fig.	A	A1	B	C1	C2	E1	E2	F		
15W	22	GKM/MN-22-300~1800-T15(W)T	58	260	298	140	51	89	42	80	61		
25W	22	GKM/MN-22-300~900-T25(W)T	58	260	298	140	51	89	42	80	61		
	28	GKM/MN-28-1200~1800-T25(W)T	58	282.5	319	164	58.5	105.5	47.5	94.5	71		
40W	22	GKM/MN-22-300~450-T40(W)T	58	260 ♣	298	140	51	89	42	80	61		
	28	GKM/MN-28-600~900-T40(W)T	58	282.5	319	164	58.5	105.5	47.5	94.5	71		
	32	GKM/MN-32-1200~1800-T40(W)T	58	313	349.5	198	71.5	126.5	58.5	113.5	86		
60W	22	GKM/MN-22-300~450-T60(W)T	58	298	298	140	51	89	42	80	61		
	28	GKM/MN-28-600~900-T60(W)T	58	282.5	319	164	58.5	105.5	47.5	94.5	71		
	32	GKM/MN-32-1200~1800-T60(W)T	58	313	349.5	198	71.5	126.5	58.5	113.5	86		
90W	28	GKM/MN-28-300~450-T90(W)T	58	282.5 ♣	319	164	58.5	105.5	47.5	94.5	71		
	32	GKM/MN-32-600~900-T90(W)T	58	313 ♣	349.5	198	71.5	126.5	58.5	113.5	86		

- Note:
- ♣. As for the high voltage model (-T□W), A = A1 and M = M1.
 - 1. All dimensions are in millimeters.
 - 2. Above diagrams illustrate the dimensions of gearmotor with T-type terminal box.
 - 3. For the dimensions of the terminal box, see page 91.

[mm]															
	K	L	M	M1	N	S	Y	U	Z	Dimensions of Output Shaft					
										P	Q	R	W	T	X
	8.6	12	76	80	300	30	5	—	60	40	35	22	6	24.5	47
	8.6	12	76	80	300	30	5	—	60	40	35	22	6	24.5	47
	11	15	90	94	300	36.5	5	—	80	45	40	28	8	31	52
	8.6	12	76 ♣	80	300	30	5	—	60	40	35	22	6	24.5	47
	11	15	90	94	300	36.5	5	—	80	45	40	28	8	31	52
	13	15	90	94	300	41.5	5	—	88	55	50	32	10	35	63
	8.6	12	80	80	300	30	5	—	60	40	35	22	6	24.5	47
	11	15	90	94	300	36.5	5	—	80	45	40	28	8	31	52
	13	15	90	94	300	41.5	5	—	88	55	50	32	10	35	63
	11	15	90 ♣	94	300	36.5	5	—	80	45	40	28	8	31	52
	13	15	90 ♣	94	300	41.5	5	—	88	55	50	32	10	35	63

Dimensions

Parallel Shaft Type 15W~90W

1 Phase G Type (Flange Mount)

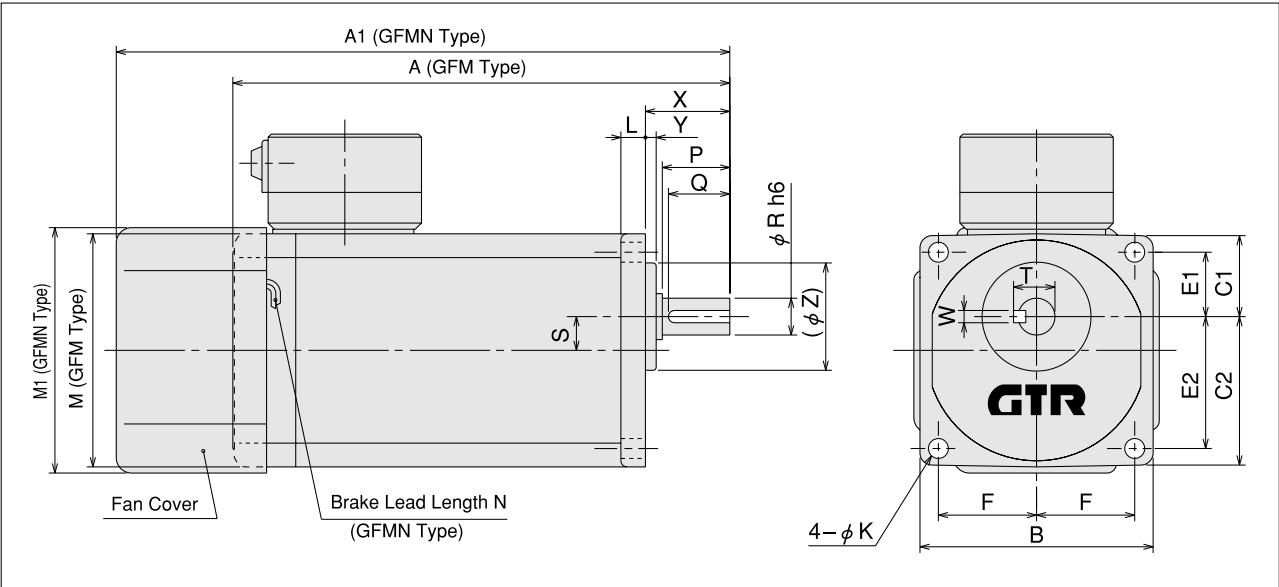


Figure 59. GFM / GFMN

Motor Capacity	Frame Number	Designation	Fig.	A	A1	B	C1	C2	E1	E2	F	
15 W	12	GFM/MN-12-5~240-S15(W)T	59	162	200	76	27	49	21	43	32	
	22	GFM/MN-22-300~1800-S15(W)T	60	260	298	164	82.5	89	—	—	—	
25 W	12	GFM/MN-12-5~120-S25(W)T	59	162	200	76	27	49	21	—	32	
	15	GFM/MN-15-160~240-S25(W)T	59	173	209.5	90	32	58	25	43	38	
	22	GFM/MN-22-300~900-S25(W)T	60	260	298	164	82.5	89	—	51	—	
	28	GFM/MN-28-1200~1800-S25(W)T	60	282.5	319	186	93	105.5	—	—	—	
40 W	12	GFM/MN-12-5~60-S40(W)T	59	200	200	76	27	49	21	43	32	
	15	GFM/MN-15-80~120-S40(W)T	59	173	209.5	90	32	58	25	51	38	
	18	GFM/MN-18-160~240-S40(W)T	59	188	225.5	106	38	68	29	59	44	
	22	GFM/MN-22-300~450-S40(W)T	60	298	298	164	82.5	89	—	—	—	
	28	GFM/MN-28-600~900-S40(W)T	60	282.5	319	186	93	105.5	—	—	—	
	32	GFM/MN-32-1200~1800-S40(W)T	60	313	349.5	215	107.5	126.5	—	—	—	
60 W	15	GFM/MN-15-5~60-S60WT	59	209.5	209.5	90	32	58	25	51	38	
	18	GFM/MN-18-80~240-S60(W)T	59	188	225.5	106	38	68	29	59	44	
	22	GFM/MN-22-300~450-S60(W)T	60	298	298	164	82.5	89	—	—	—	
	28	GFM/MN-28-600~900-S60(W)T	60	319	319	186	93	105.5	—	—	—	
90 W	32	GFM/MN-32-1200~1800-S60(W)T	60	349.5	349.5	215	107.5	126.5	—	—	—	
	15	GFM/MN-15-5~30-S90(W)T	59	209.5	209.5	90	32	58	25	51	38	
	18	GFM/MN-18-40~240-S90(W)T	59	225.5	225.5	106	38	68	29	59	44	
	28	GFM/MN-28-300~450-S90(W)T	60	319	319	186	93	105.5	—	—	—	
	32	GFM/MN-32-600~900-S90(W)T	60	349.5	349.5	215	107.5	126.5	—	—	—	
	40	GFM/MN-40-1200~1800-S90(W)T	60	394	394	270	135	149	—	—	—	

Note:
 1. All dimensions are in millimeters.
 2. Above diagrams illustrate the dimensions of gearmotor with T-type terminal box.
 3. For the dimensions of the terminal box, see page 91.

1 Phase G Type (Flange Mount)

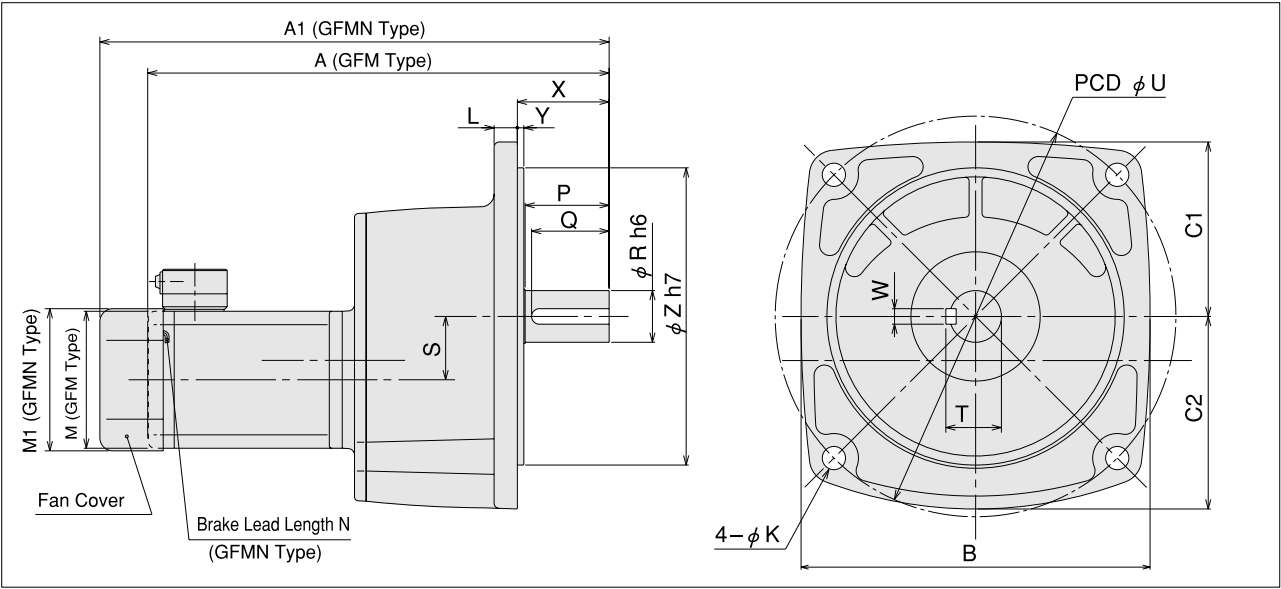


Figure 60. GFM / GFMN

[mm]															
	K	L	M	M1	N	S	Y	U	Z	Dimensions of Output Shaft					
										P	Q	R	W	T	X
	6.5	8	76	80	300	11	3.5	—	35.5	22	20	12	4	13.5	27.5
	11	12	76	80	300	30	4	185	148	40	35	22	6	24.5	47
	6.5	8	76	80	300	11	3.5	—	35.5	22	20	12	4	13.5	27.5
	6.5	9	90	94	300	13	4	—	40.5	27	24	15	5	17	33
	11	12	76	80	300	30	4	185	148	40	35	22	6	24.5	47
	11	15	90	94	300	36.5	4	215	170	45	40	28	8	31	50
	6.5	8	80	80	300	11	3.5	—	35.5	22	20	12	4	13.5	27.5
	6.5	9	90	94	300	13	4	—	40.5	27	24	15	5	17	33
	8.5	10	106	110	300	15	5	—	47.5	30	27	18	6	20.5	37
	11	12	80	80	300	30	4	185	148	40	35	22	6	24.5	47
	11	15	90	94	300	36.5	4	215	170	45	40	28	8	31	50
	13	15	90	94	300	41.5	4	250	180	55	50	32	10	35	60
	6.5	9	94	94	300	13	4	—	40.5	27	24	15	5	17	33
	8.5	10	106	110	300	15	5	—	47.5	30	27	18	6	20.5	37
	11	12	80	80	300	30	4	185	148	40	35	22	6	24.5	47
	11	15	94	94	300	36.5	4	215	170	45	40	28	8	31	50
	13	15	94	94	300	41.5	4	250	180	55	50	32	10	35	60
	6.5	9	94	94	300	13	4	—	40.5	27	24	15	5	17	33
	8.5	10	110	110	300	15	5	—	47.5	30	27	18	6	20.5	37
	11	15	94	94	300	36.5	4	215	170	45	40	28	8	31	50
	13	15	94	94	300	41.5	4	250	180	55	50	32	10	35	60
	18	18	110	110	300	49	5	310	230	65	60	40	12	43	71

Dimensions

Parallel Shaft Type 15W~90W

1 Phase (Small Flange Mount)

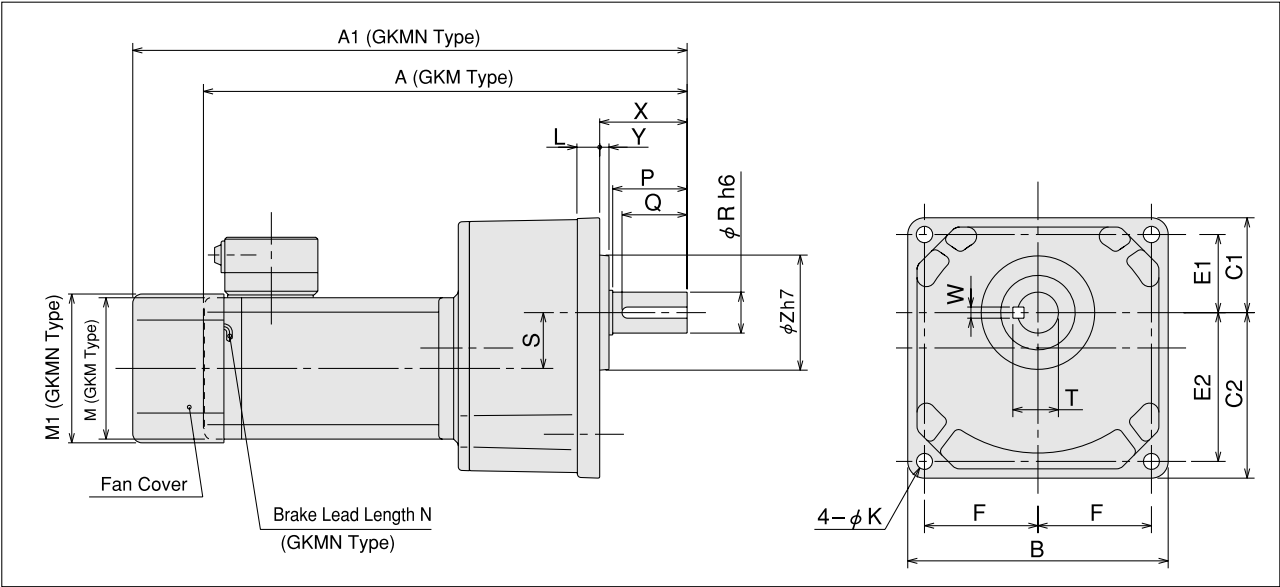


Figure 61. GKM / GKMN

Motor Capacity	Frame Number	Designation	Fig.	A	A1	B	C1	C2	E1	E2	F	
15 W	22	GKM/MN-22-300~1800-S15(W)T	61	260	298	140	51	89	42	80	61	
	28	GKM/MN-28-1200~1800-S25(W)T	61	282.5	319	164	58.5	105.5	47.5	94.5	71	
40 W	22	GKM/MN-22-300~450-S40(W)T	61	298	298	140	51	89	42	80	61	
	28	GKM/MN-28-600~900-S40(W)T	61	282.5	319	164	58.5	105.5	47.5	94.5	71	
	32	GKM/MN-32-1200~1800-S40(W)T	61	313	349.5	198	71.5	126.5	58.5	113.5	86	
60 W	22	GKM/MN-22-300~450-S60(W)T	61	298	298	140	51	89	42	80	61	
	28	GKM/MN-28-600~900-S60(W)T	61	319	319	164	58.5	105.5	47.5	94.5	71	
	32	GKM/MN-32-1200~1800-S60(W)T	61	349.5	349.5	198	71.5	126.5	58.5	113.5	86	
90 W	28	GKM/MN-28-300~450-S90(W)T	61	319	319	164	58.5	105.5	47.5	94.5	71	
	32	GKM/MN-32-600~900-S90(W)T	61	349.5	349.5	198	71.5	126.5	58.5	113.5	86	

- Note:
- 1. All dimensions are in millimeters.
 - 2. Above diagrams illustrate the dimensions of gearmotor with T-type terminal box.
 - 3. For the dimensions of the terminal box, see page 91.

[mm]

	K	L	M	M1	N	S	Y	U	Z	Dimensions of Output Shaft					
										P	Q	R	W	T	X
	8.6	12	76	80	300	30	5	—	60	40	35	22	6	24.5	47
	8.6	12	76	80	300	30	5	—	60	40	35	22	6	24.5	47
	11	15	90	94	300	36.5	5	—	80	45	40	28	8	31	52
	8.6	12	80	80	300	30	5	—	60	40	35	22	6	24.5	47
	11	15	90	94	300	36.5	5	—	80	45	40	28	8	31	52
	13	15	90	94	300	41.5	5	—	88	55	50	32	10	35	63
	8.6	12	80	80	300	30	5	—	60	40	35	22	6	24.5	47
	11	15	94	94	300	36.5	5	—	80	45	40	28	8	31	52
	13	15	94	94	300	41.5	5	—	88	55	50	32	10	35	63
	11	15	94	94	300	36.5	5	—	80	45	40	28	8	31	52
	13	15	94	94	300	41.5	5	—	88	55	50	32	10	35	63