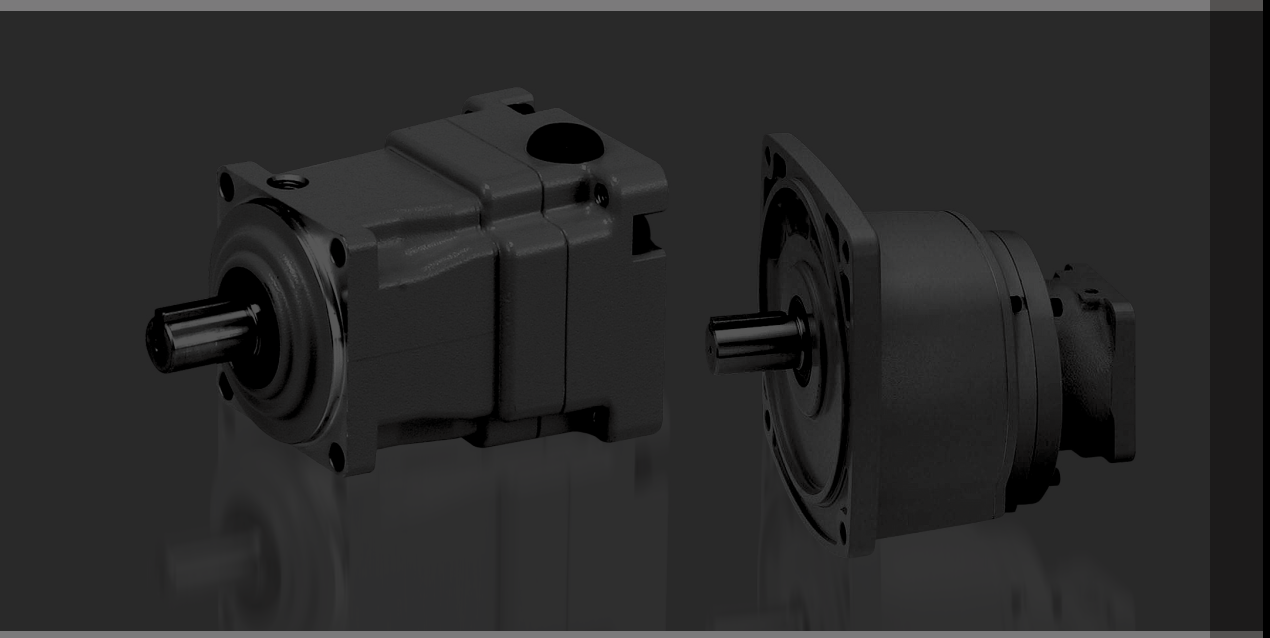
APG/AG3 Type

Parallel Shaft

Model and Type Codes
Standard Model Lineup



Model and Type Codes

For representative examples of servo motors of respective manufacturers that can be installed and applicable types by flange type, refer to the Motor Matching / Motor Power Design Lists on pages 674 to 677. For more details, please contact your nearest Sales Office or the CS Center.

APG Type

Mounting Type	Motor Type	Frame Size	Shaft Arrangement		Reduction Ratio	Backlash	Motor Power Class	Type	IP Protection Rating	Option
APG	Z	12	K	–	3	M	100	S1	N	X
APG	Z	22	K	–	100	Q	200	S3	N	
APG	Z	28	K	–	20	M	2000	K31	W	
①	②	③	④		⑤	⑥	⑦	⑧	⑨	⑩

①Mounting Type	APG : Parallel Shaft/Planetary Type (Compact Flange Mount)
②Motor Type	Z : High Precision Reducers for Servo Motor (Z Type Reducer)
③Frame Size and Output Shaft Diameter	Output Shaft Diameter
④Shaft Arrangement	K : Output Shaft with Key
⑤Reduction Ratio	3:1/3 20:1/20 100:1/100
⑥Backlash	M : Backlash 3 arc min
	Q : Backlash 15 arc min
⑦Motor Power Class	100 : 100 W Class
	200 : 200 W Class
	400 : 400 W Class
	750 : 750 W Class
	1000 : 1000 W Class
	1500 : 1500 W Class
	2000 : 2000 W Class
	3000 : 3000 W Class
⑧Flange Type for Servo Motor Mounting (Note 1)	S1/K13, etc.
⑨IP Protection Rating	N : IP44 Class
	W : IP65 Class
⑩Option	Blank : Standard Specification
	X : Special Specification Code

Note 1: Please refer to the Motor Matching / Motor Power Design Lists on pages 674 to 677.

For representative examples of servo motors of respective manufacturers that can be installed and applicable types by flange type, refer to the Motor Matching / Motor Power Design Lists on pages 682 to 685. For more details, please contact your nearest Sales Office or the CS Center.

AG3 Type

Mounting Type	Motor Type	Frame Size	Shaft Arrangement		Reduction Ratio	Backlash	Motor Power Class	Type	Option	Option Code
AG3L	Z	22		–	30	L	200	S1		
AG3K	Z	32		–	30	L	750	S4		
AG3F	Z	40		–	60	L	2000	K21	X	B3
①	②	③	④		⑤	⑥	⑦	⑧	⑨	⑩

①Mounting Type	AG3L : Parallel Shaft (Foot Mount)
	AG3F : Parallel Shaft (Flange Mount)
	AG3K : Parallel Shaft (Small Flange Mount, Up to Frame Sizes 32)
②Motor Type	Z : High Precision Reducers for Servo Motor (Z Type Reducer)
③Frame Size and Output Shaft Diameter	Output Shaft Diameter
④Shaft Arrangement	Blank
⑤Reduction Ratio	5:1/5 to 240:1/240
⑥Backlash	L : Low Backlash
⑦Motor Power Class	100 : 100 W Class
	200 : 200 W Class
	400 : 400 W Class
	750 : 750 W Class
	2000 : 2000 W Class
⑧Flange Type for Servo Motor Mounting (Note 1)	F1/S1/K31, etc.
⑨Option	Blank : Standard Specification
	X : Special Specification Code
⑩Option Code (Note 2)	Position Code of Wrench Hole for Input Shaft Joint Tightening For details, please refer to the list of option codes on page 840.

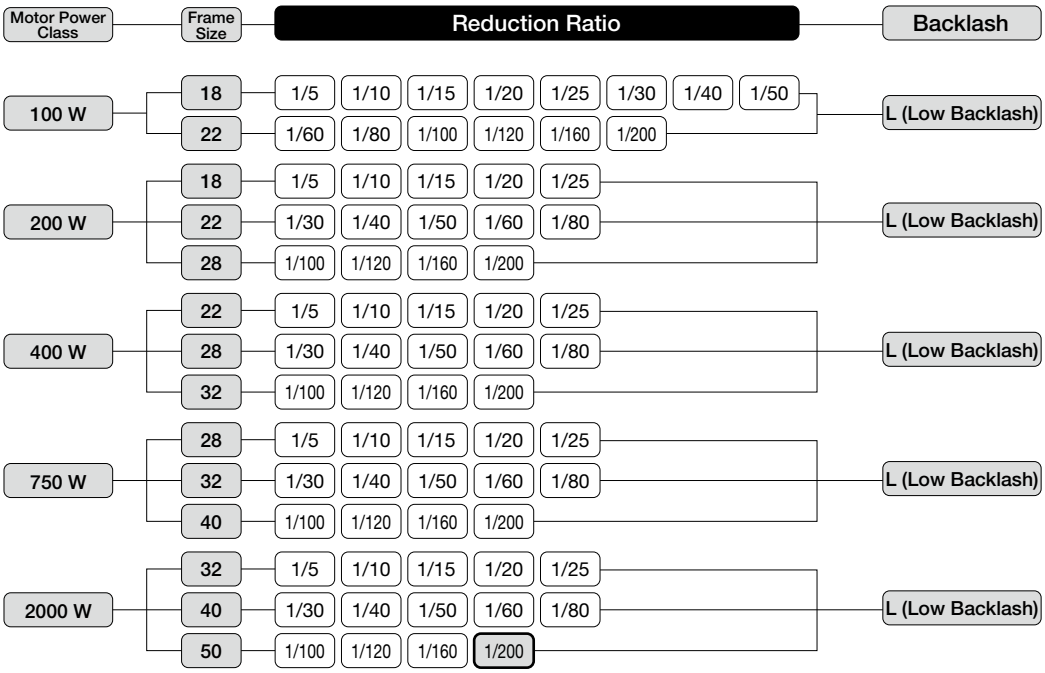
Note 1: Please refer to the Motor Matching / Motor Power Design Lists on pages 682 to 685.
Note 2: The option code will not be shown in the nomenclature on the nameplate. But it will be shown in the Option code row of the nameplate.

Standard Model Lineup

APG Type Backlash 3 arc min/15 arc min Specifications

Motor Power Class	Frame Size	Reduction Ratio	Backlash
100 W	12	1/3, 1/5, 1/10, 1/15, 1/20, 1/30	M (3 arc min)
	18	1/40, 1/50, 1/60, 1/100	Q (15 arc min)
200 W	12	1/3, 1/5, 1/10, 1/15, 1/20	M (3 arc min)
	18	1/30, 1/40, 1/50, 1/60	Q (15 arc min)
	22	1/100	
400 W	12	1/3, 1/5	M (3 arc min)
	18	1/10, 1/15, 1/20, 1/30	Q (15 arc min)
	22	1/40, 1/50, 1/60	
	28	1/100	
750 W	18	1/3, 1/5, 1/10	M (3 arc min)
	22	1/15, 1/20, 1/30	Q (15 arc min)
	28	1/40, 1/50, 1/60	
1000 W	22	1/3, 1/5, 1/10	M (3 arc min)
	28	1/15, 1/20, 1/30, 1/40, 1/50	Q (15 arc min)
1500 W	22	1/3, 1/5, 1/10	M (3 arc min)
	28	1/15, 1/20, 1/30	Q (15 arc min)
2000 W	22	1/3, 1/5, 1/10	M (3 arc min)
	28	1/15, 1/20	Q (15 arc min)
3000 W	28	1/3, 1/5, 1/10	M (3 arc min)
			Q (15 arc min)

AG3 Type Low Backlash Specification



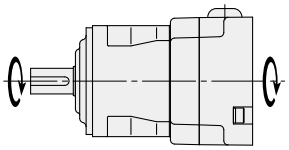
Note 1: ( ) indicates a limited torque type. Please make sure to check the allowable torque in the performance table.
Note 2: For the precision of low backlash types, refer to the performance table.
Note 3: Select a 2000 W class reducer for 1000 W and 1500 W servo motors.
Note 4: AG3 is not available in 1 arc min and 3 arc min specifications.
Note 5: Please note that small flange mount (AG3K) is available only for frame sizes 18 to 32.

1. Compact High Precision Reducers for Servo Motors

1-1. Performance Tables

APG Type <Backlash 3 arc min/15 arc min Specifications> Performance Table by Reduction Ratio

[Notes]
- The instantaneous input speed is 6000 r/min. The rated input speed is 3000 r/min.
- Allowable output shaft O.H.L. is the value at the middle of the output shaft.
- The rotational direction of the output shaft is the same as the input rotational direction of the motor.
- For the continuous rated input torque, please refer to page 839. In addition, for the servo motor-based motor rated output torque, please refer to page 812.
- The key dimensions and tolerances for output shafts conform to JIS B 1301-1996 (plain form).
- The internal moment of inertia (input shaft equivalent) is the value for the reducer alone, and does not include the motor's moment of inertia.
- The allowable average torque is the continuous allowable torque value.
- Adjust the gain so that the inertial load on the output shaft side does not vibrate during acceleration and deceleration.
- M in the Precision column means backlash 3 arc min, and Q means backlash 15 arc min.



■ At an input speed of 3000 r/min

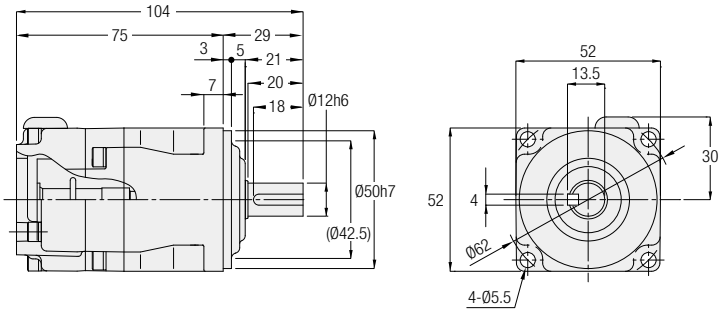
Mounting Type	Output Shaft Diameter	Shaft Arrangement	Nominal Reduction Ratio	Actual Reduction Ratio	Precision	Power Class	Allowable Average Torque (3000 r/min)	Allowable Peak Torque of Startup/Stop	Allowable Output Shaft O.H.L.	Allowable Output Shaft Thrust Load	Internal Moment of Inertia (Input Shaft Equivalent)	Drawings
							N·m	N·m	N	N	×10⁻⁴kg·m²	
APGZ	12	K	1/3	1/3	M/Q	100	3.4	10.3	420	210	0.167	P.694
APGZ	12	K	1/3	1/3	M/Q	200	3.4	10.3	420	210	0.165	
APGZ	12	K	1/3	1/3	M/Q	400	3.4	10.3	420	210	0.159	
APGZ	18	K	1/3	1/3	M/Q	750	6.4	19	820	410	0.947	P.696
APGZ	22	K	1/3	1/3	M/Q	1000	17.2	52	1000	500	3.369	P.699
APGZ	22	K	1/3	1/3	M/Q	1500	17.2	52	1000	500	3.369	
APGZ	22	K	1/3	1/3	M/Q	2000	17.2	52	1000	500	3.369	
APGZ	28	K	1/3	1/3	M/Q	3000	25.8	77	1450	725	4.549	P.700, P.701
APGZ	12	K	1/5	1/5	M/Q	100	5.7	17	510	255	0.145	P.694
APGZ	12	K	1/5	1/5	M/Q	200	5.7	17	510	255	0.143	
APGZ	12	K	1/5	1/5	M/Q	400	5.7	17	510	255	0.137	
APGZ	18	K	1/5	1/5	M/Q	750	10.7	32	980	490	0.773	P.696
APGZ	22	K	1/5	1/5	M/Q	1000	28.6	86	1200	600	2.757	P.699
APGZ	22	K	1/5	1/5	M/Q	1500	28.6	86	1200	600	2.757	
APGZ	22	K	1/5	1/5	M/Q	2000	28.6	86	1200	600	2.757	
APGZ	28	K	1/5	1/5	M/Q	3000	43.0	129	1700	850	3.050	P.700, P.701
APGZ	12	K	1/10	1/10	M/Q	100	5.1	15	650	325	0.138	P.694
APGZ	12	K	1/10	1/10	M/Q	200	5.1	15	650	325	0.135	
APGZ	18	K	1/10	1/10	M/Q	400	21.5	64	1200	600	0.557	P.696
APGZ	18	K	1/10	1/10	M/Q	750	21.5	64	1200	600	0.720	
APGZ	22	K	1/10	1/10	M/Q	1000	57.3	172	1300	650	2.601	P.699
APGZ	22	K	1/10	1/10	M/Q	1500	57.3	172	1300	650	2.601	
APGZ	22	K	1/10	1/10	M/Q	2000	57.3	172	1300	650	2.601	
APGZ	28	K	1/10	1/10	M/Q	3000	85.9	258	2150	1075	2.678	P.700, P.701
APGZ	12	K	1/15	1/15	M/Q	100	7.6	23	784	392	0.132	P.695
APGZ	12	K	1/15	1/15	M/Q	200	7.6	23	784	392	0.133	
APGZ	18	K	1/15	1/15	M/Q	400	16.2	49	1470	735	0.142	P.696
APGZ	22	K	1/15	1/15	M/Q	750	30.4	91	1950	975	0.722	P.698
APGZ	28	K	1/15	1/15	M/Q	1000	81.2	244	2450	1225	2.861	P.700
APGZ	28	K	1/15	1/15	M/Q	1500	81.2	244	2450	1225	2.861	P.700, P.701
APGZ	28	K	1/15	1/15	M/Q	2000	81.2	244	2450	1225	2.861	

Mounting Type	Output Shaft Diameter	Shaft Arrangement	Nominal Reduction Ratio	Actual Reduction Ratio	Precision	Power Class	Allowable Average Torque (3000 r/min)	Allowable Peak Torque of Startup/Stop	Allowable Output Shaft O.H.L.	Allowable Output Shaft Thrust Load	Internal Moment of Inertia (Input Shaft Equivalent)	Drawings
							N·m	N·m	N	N	$\times 10^{-4}$kg·m^2	
APGZ	12	K	1/20	1/20	M/Q	100	10.2	31	840	420	0.132	P.695
APGZ	12	K	1/20	1/20	M/Q	200	10.2	31	840	420	0.133	
APGZ	18	K	1/20	1/20	M/Q	400	21.6	65	1570	785	0.137	P.696
APGZ	22	K	1/20	1/20	M/Q	750	40.6	122	2150	1075	0.703	P.698
APGZ	28	K	1/20	1/20	M/Q	1000	108.2	325	2700	1350	2.814	P.700
APGZ	28	K	1/20	1/20	M/Q	1500	108.2	325	2700	1350	2.814	P.700, P.701
APGZ	28	K	1/20	1/20	M/Q	2000	108.2	325	2700	1350	2.814	
APGZ	12	K	1/30	1/30	M/Q	100	6.7	20	910	455	0.131	P.695
APGZ	18	K	1/30	1/30	M/Q	200	32.5	97	1750	875	0.139	P.696
APGZ	18	K	1/30	1/30	M/Q	400	32.5	97	1750	875	0.134	
APGZ	22	K	1/30	1/30	M/Q	750	60.9	183	2450	1225	0.694	P.698
APGZ	28	K	1/30	1/30	M/Q	1000	121.8	365	3100	1550	2.791	P.700
APGZ	28	K	1/30	1/30	M/Q	1500	121.8	365	3100	1550	2.791	P.700, P.701
APGZ	18	K	1/40	1/40	M/Q	100	19.1	57	1860	930	0.132	P.696
APGZ	18	K	1/40	1/40	M/Q	200	19.1	57	1860	930	0.133	
APGZ	22	K	1/40	1/40	M/Q	400	40.7	122	2550	1275	0.143	P.698
APGZ	28	K	1/40	1/40	M/Q	750	108.2	325	3450	1725	0.686	P.700
APGZ	28	K	1/40	1/40	M/Q	1000	108.2	325	3450	1725	2.673	
APGZ	18	K	1/50	1/50	M/Q	100	25.5	76	1860	930	0.132	P.696
APGZ	18	K	1/50	1/50	M/Q	200	25.5	76	1860	930	0.133	
APGZ	22	K	1/50	1/50	M/Q	400	50.9	153	2550	1275	0.141	P.698
APGZ	28	K	1/50	1/50	M/Q	750	135.3	406	3520	1760	0.682	P.700
APGZ	28	K	1/50	1/50	M/Q	1000	135.3	406	3520	1760	2.669	
APGZ	18	K	1/60	1/60	M/Q	100	28.6	86	1860	930	0.131	P.696
APGZ	18	K	1/60	1/60	M/Q	200	28.6	86	1860	930	0.132	
APGZ	22	K	1/60	1/60	M/Q	400	61.1	183	2550	1275	0.140	P.698
APGZ	28	K	1/60	1/60	M/Q	750	121.8	365	3520	1760	0.680	P.700
APGZ	18	K	1/100	1/100	M/Q	100	20.7	62	1860	930	0.131	P.696
APGZ	22	K	1/100	1/100	M/Q	200	44.6	134	2550	1275	0.144	P.698
APGZ	28	K	1/100	1/100	M/Q	400	95.5	286	3520	1760	0.140	P.700

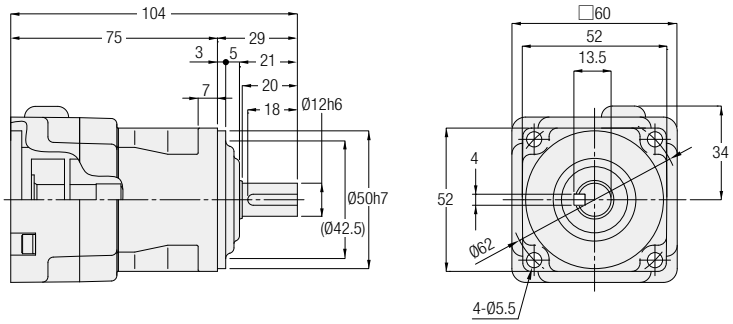
1-2. Drawings

APG Type Parallel Shaft Shaft Diameter 12 Backlash 3 arc min/15 arc min Specifications

<Figure 1>



<Figure 2>

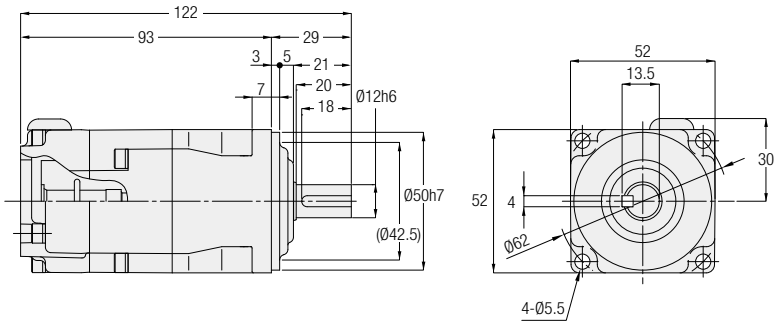


Motor Power Class	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)
100 W	APGZ12K-✱✱✱□100△N	APGZ12K-✱✱✱□100△W	3, 5, 10	S1/S3	1	0.8
200 W	APGZ12K-✱✱✱□200△N	APGZ12K-✱✱✱□200△W	3, 5, 10	S1/S2/S3	2	0.8
400 W	APGZ12K-✱✱✱□400△N	APGZ12K-✱✱✱□400△W	3, 5	S1/S3	2	0.8

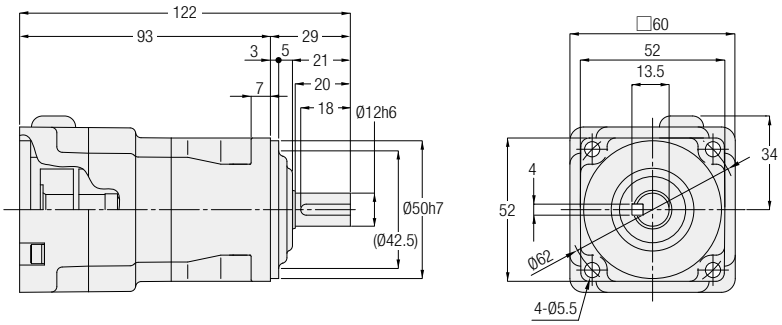
Note: A reduction ratio will be indicated as ✱✱✱ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 674 to 677.
Note: Please refer to pages 796 to 798 for the detailed dimensions of the input shaft area.
Note: Please refer to page 692 for the performance table.

APG Type Parallel Shaft Shaft Diameter 12 Backlash 3 arc min/15 arc min Specifications

<Figure 1>



<Figure 2>

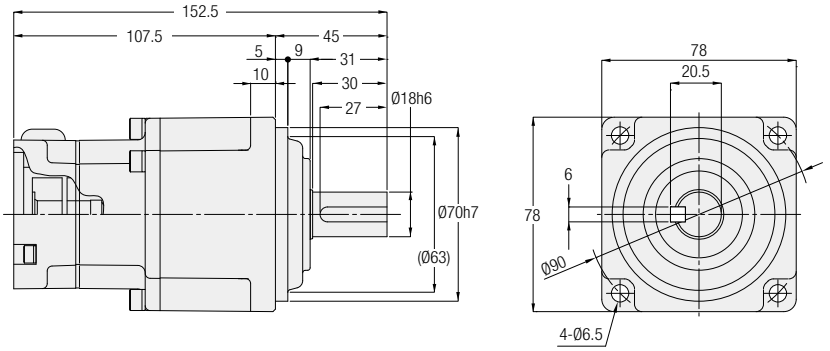


Motor Power Class	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)
100 W	APGZ12K-✻✻✻□100△N	APGZ12K-✻✻✻□100△W	15, 20, 30	S1/S3	1	0.9
200 W	APGZ12K-✻✻✻□200△N	APGZ12K-✻✻✻□200△W	15, 20	S1/S2/S3	2	0.9

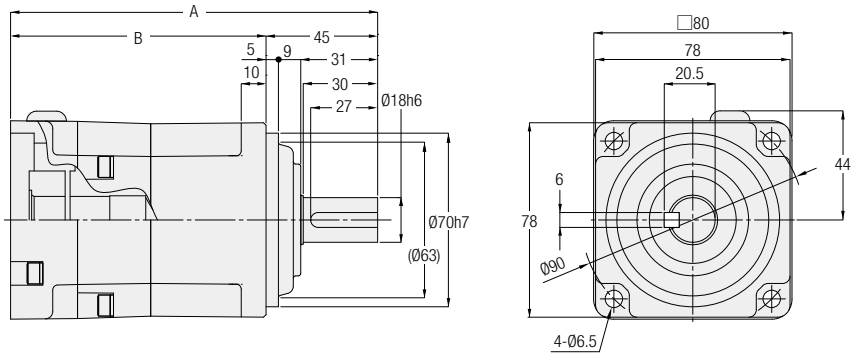
Note: A reduction ratio will be indicated as ✻✻✻ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 674 to 677.
Note: Please refer to pages 796 to 798 for the detailed dimensions of the input shaft area.
Note: Please refer to page 692 for the performance table.

APG Type Parallel Shaft Shaft Diameter 18 Backlash 3 arc min/15 arc min Specifications

<Figure 1>



<Figure 2>



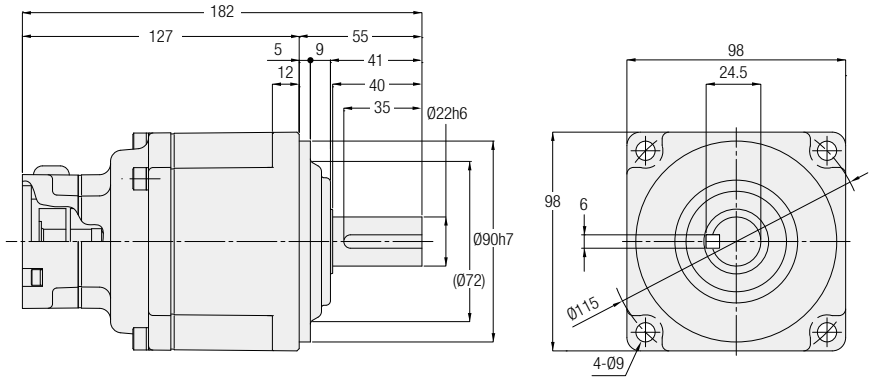
Motor Power Class	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B
100 W	APGZ18K-***□100△N	APGZ18K-***□100△W	40, 50, 60, 100	S1/S3	1	2.0	—	—
200 W	APGZ18K-***□200△N	APGZ18K-***□200△W	30, 40, 50, 60	S1/S2/S3	1	2.0	—	—
400 W	APGZ18K-***□400△N	APGZ18K-***□400△W	15, 20, 30	S1/S3	1	2.0	—	—
400 W	APGZ18K-***□400△N	APGZ18K-***□400△W	10	S1/S3	2	2.0	147	102
750 W	APGZ18K-***□750△N	APGZ18K-***□750△W	3, 5, 10	S1/S2/S3/S4	2	2.2	148	103

Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 674 to 677.
Note: Please refer to pages 796 to 798 for the detailed dimensions of the input shaft area.
Note: Please refer to page 692 for the performance table.

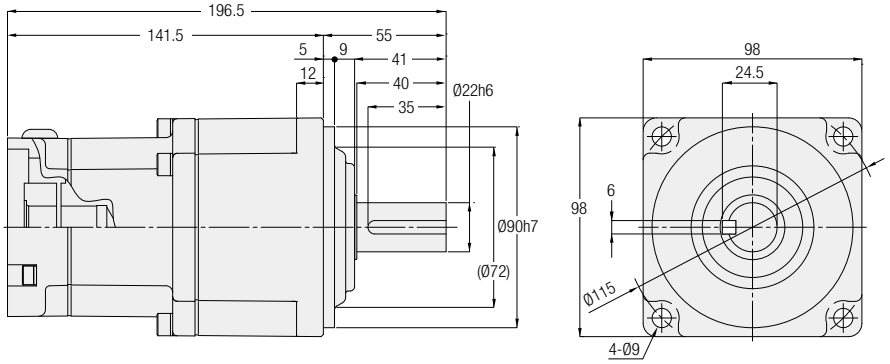
MEMO

APG Type Parallel Shaft Shaft Diameter 22 Backlash 3 arc min/15 arc min Specifications

<Figure 1>



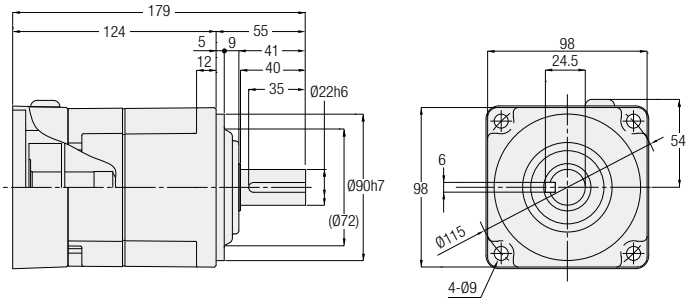
<Figure 2>



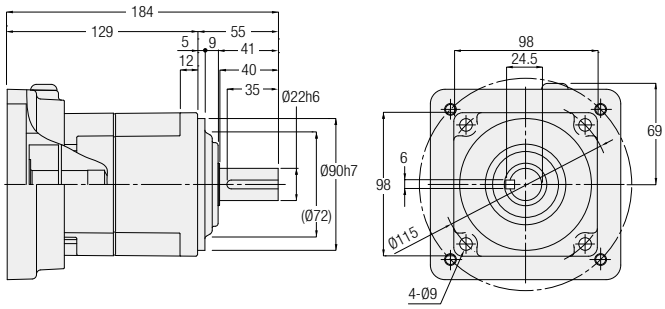
Motor Power Class	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)
200 W	APGZ22K-***□200△N	APGZ22K-***□200△W	100	S1/S2/S3	1	3.9
400 W	APGZ22K-***□400△N	APGZ22K-***□400△W	40, 50, 60	S1/S3	1	3.9
750 W	APGZ22K-***□750△N	APGZ22K-***□750△W	15, 20, 30	S1/S2/S3/S4	2	4.0

Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 674 to 677.
Note: Please refer to pages 796 to 798 for the detailed dimensions of the input shaft area.
Note: Please refer to page 693 for the performance table.

<Figure 3>



<Figure 4>

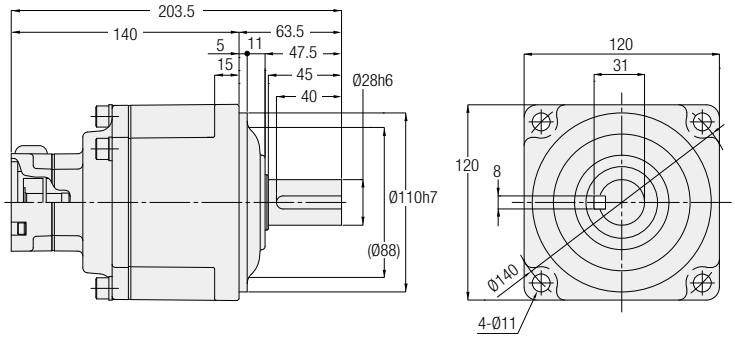


Motor Power Class	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)
1000 W	APGZ22K-***□1000△N	APGZ22K-***□1000△W	3, 5, 10	K13/K21/K22/K23	3	4.0
1500 W	APGZ22K-***□1500△N	APGZ22K-***□1500△W	3, 5, 10	K13/K21/K22/K23	3	4.0
1500 W	APGZ22K-***□1500△N	APGZ22K-***□1500△W	3, 5, 10	K31/K32/K33	4	4.5
2000 W	APGZ22K-***□2000△N	APGZ22K-***□2000△W	3, 5, 10	K13/K21/K22/K23	3	4.0
2000 W	APGZ22K-***□2000△N	APGZ22K-***□2000△W	3, 5, 10	K31/K32/K33	4	4.5

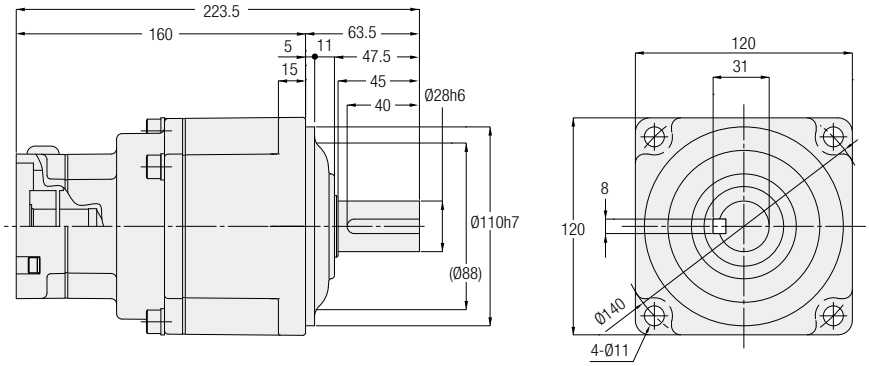
Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 674 to 677.
Note: Please refer to pages 796 to 798 for the detailed dimensions of the input shaft area.
Note: Please refer to page 692 for the performance table.

APG Type Parallel Shaft Shaft Diameter 28 Backlash 3 arc min/15 arc min Specifications

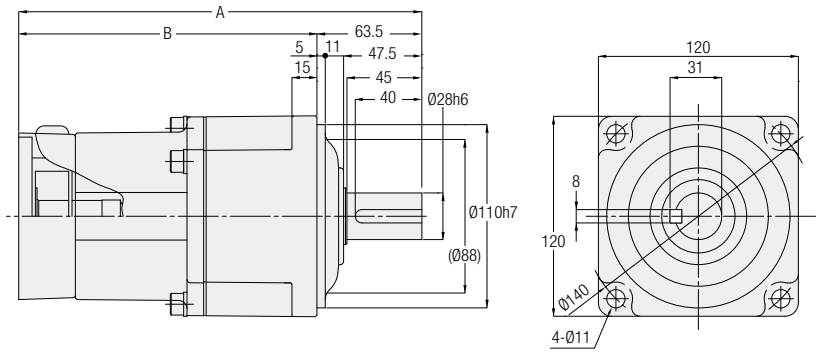
<Figure 1>



<Figure 2>



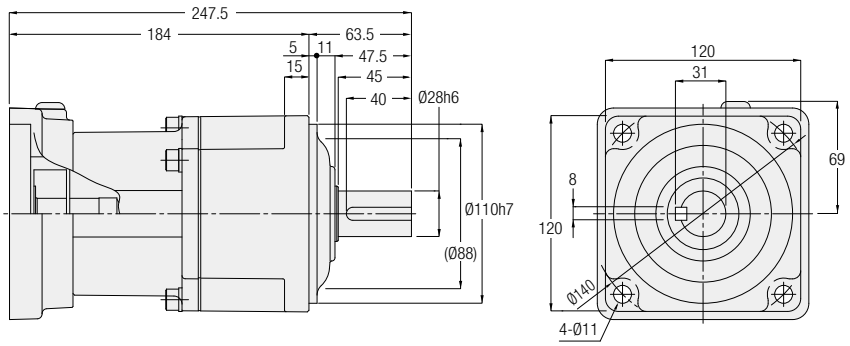
<Figure 3>



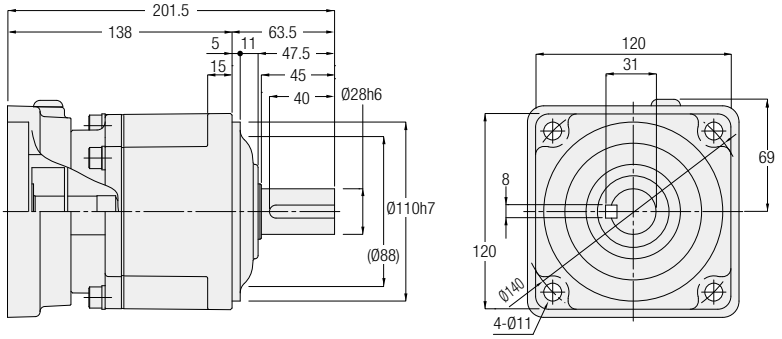
Motor Power Class	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B
400 W	APGZ28K-✱✱✱□400△N	APGZ28K-✱✱✱□400△W	100	S1/S3	1	8.0	—	—
750 W	APGZ28K-✱✱✱□750△N	APGZ28K-✱✱✱□750△W	40, 50, 60	S1/S2/S3/S4	2	8.0	—	—
1000 W	APGZ28K-✱✱✱□1000△N	APGZ28K-✱✱✱□1000△W	15, 20, 30, 40, 50	K13/K21/K22/K23	3	8.5	242.5	179
1500 W	APGZ28K-✱✱✱□1500△N	APGZ28K-✱✱✱□1500△W	15, 20, 30	K13/K21/K22/K23	3	8.5	242.5	179
2000 W	APGZ28K-✱✱✱□2000△N	APGZ28K-✱✱✱□2000△W	15, 20	K13/K21/K22/K23	3	8.5	242.5	179
3000 W	APGZ28K-✱✱✱□3000△N	APGZ28K-✱✱✱□3000△W	3, 5, 10	K13/K21/K22/K23	3	6.3	196.5	133

Note: A reduction ratio will be indicated as ✱✱✱ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 674 to 677.
Note: Please refer to pages 796 to 798 for the detailed dimensions of the input shaft area.
Note: Please refer to page 692 for the performance table.

<Figure 4>



<Figure 5>

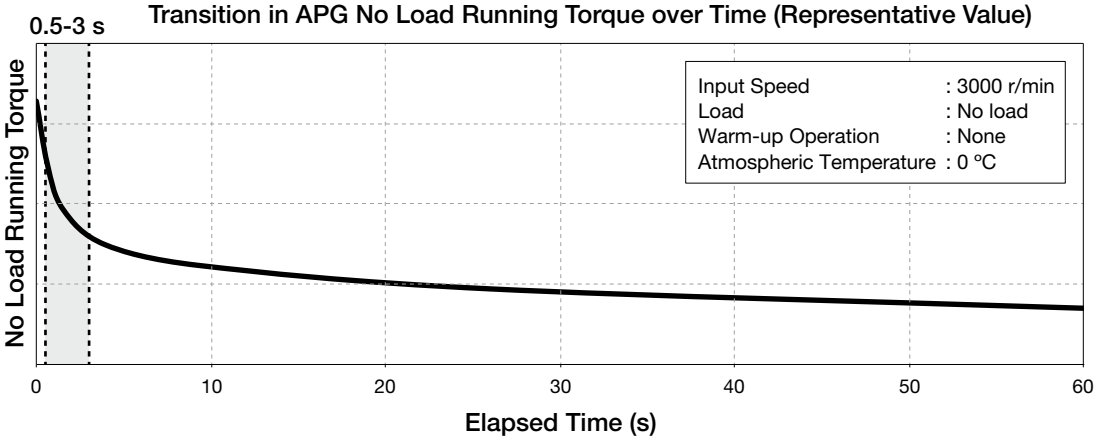


Motor Power Class	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)
1500 W	APGZ28K-✻✻✻□1500△N	APGZ28K-✻✻✻□1500△W	15, 20, 30	K31/K32/K33	4	9.0
2000 W	APGZ28K-✻✻✻□2000△N	APGZ28K-✻✻✻□2000△W	15, 20	K31/K32/K33	4	9.0
3000 W	APGZ28K-✻✻✻□3000△N	APGZ28K-✻✻✻□3000△W	3, 5, 10	K31/K32/K33/K34	5	6.8

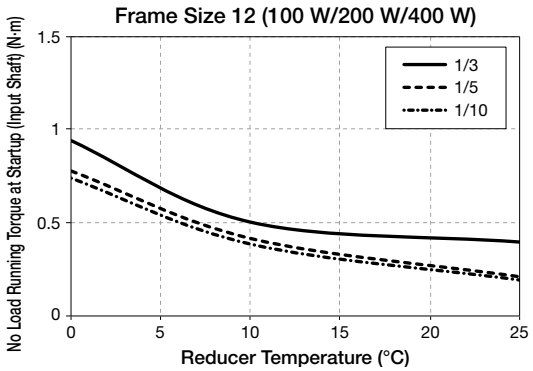
Note: A reduction ratio will be indicated as ✻✻✻ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 674 to 677.
Note: Please refer to pages 796 to 798 for the detailed dimensions of the input shaft area.
Note: Please refer to page 692 for the performance table.

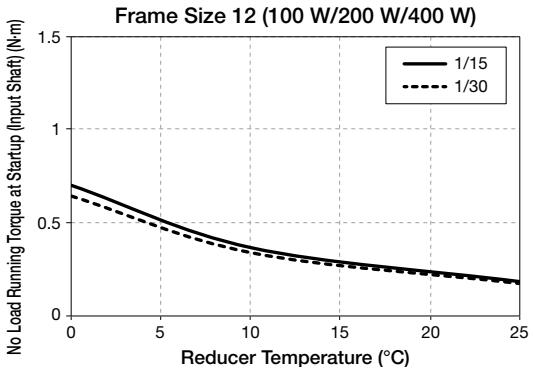
1-3. Low Temperature Startup Characteristics (No Load Running Torque (Input Shaft))

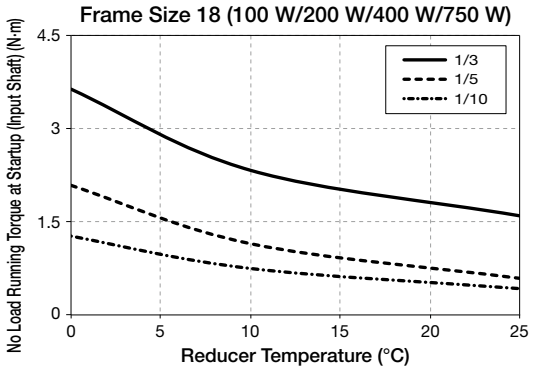
No load running torque means the input shaft torque required to run the reducer at the rated input speed (3000 r/min) under no load state.
When the reducer is used at low temperature, the no load running torque at a startup will increase.
When the operation is continued, the no load running torque will decrease with the temperature rise of the reducer.
The rate of decrease differs depending on the model and the usage environment.
The figure below shows a representative value in a state where a warm-up operation is not performed.

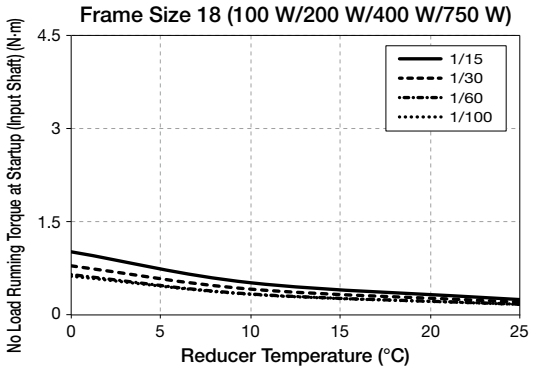


Input Speed: 3000 r/min
No Load Running Torque (Input Shaft): Average value between 0.5 and 3 seconds
The figure below shows a representative value in a state where a warm-up operation is not performed.

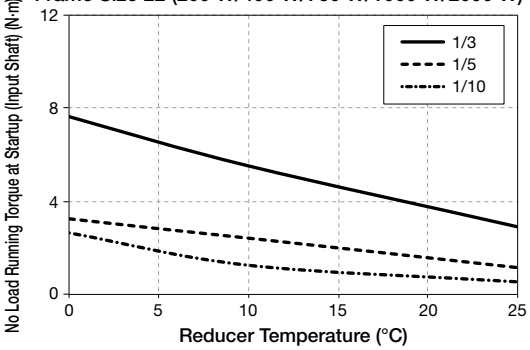




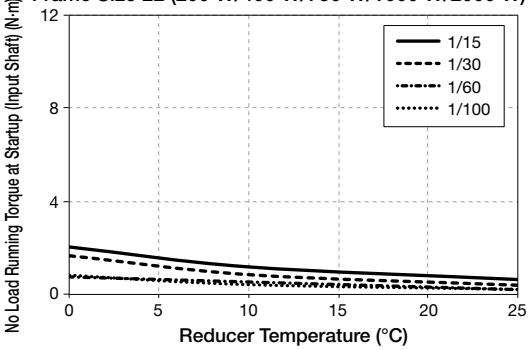




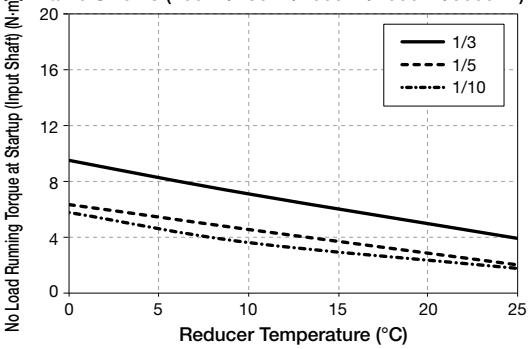
Frame Size 22 (200 W/400 W/750 W/1000 W/2000 W)



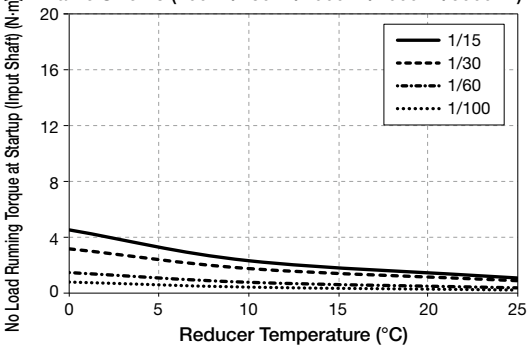
Frame Size 22 (200 W/400 W/750 W/1000 W/2000 W)



Frame Size 28 (400 W/750 W/1000 W/2000 W/3000 W)



Frame Size 28 (400 W/750 W/1000 W/2000 W/3000 W)



2. Low Backlash High Precision Reducers for Servo Motors

2-1. Performance Tables

AG3 Type <Low Backlash> Performance Table by Reduction Ratio

[Notes]

- The input speed is 3000 r/min.
- The "*" mark indicates a limited torque type. Please make sure to check the allowable average torque in the performance table.
- Allowable output shaft O.H.L. is the value at the middle of the output shaft.
- For the continuous rated input torque, please refer to page 839. In addition, for the servo motor-based motor rated output torque, please refer to page 814.
- When the output shaft faces upward, the life of backlash may decrease depending on the state of use.
- The key dimensions and tolerances for output shafts conform to JIS B 1301-1996 (plain form).
- The internal moment of inertia (input shaft equivalent) is the value for the reducer alone, and does not include the motor's moment of inertia.
- The allowable average torque is the continuous allowable torque value.
- Adjust the gain so that the inertial load on the output shaft side does not vibrate during acceleration and deceleration.
- ☐ in the performance table indicates that the input shaft and the output shaft rotate in the opposite directions. (It does not limit the rotational directions of the input shaft and the output shaft.)
- L in the Mounting Type column means foot mount, F means flange mount, and K means small flange mount (up to frame size 32).

■ At an input speed of 3000 r/min

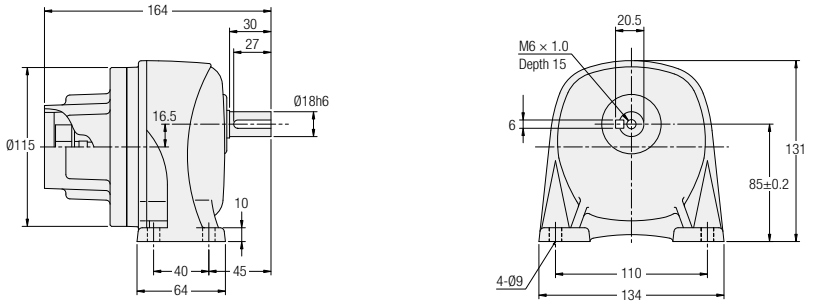
Mounting Type	Output Shaft Diameter	Nominal Reduction Ratio	Actual Reduction Ratio	Precision	Power Class	Allowable Average Torque (3000 r/min)	Allowable Peak Torque of Startup/ Stop	Allowable Output Shaft O.H.L.	Allowable Output Shaft Thrust Load	Internal Moment of Inertia (Input Shaft Equivalent)	Drawings
						N·m	N·m	N	N	×10^{-4}kg·m^2	
AG3LZ/KZ	18	1/5	33/164	L (60 arc min)	100	0.9	1.7	250	29	0.395	P.706/P.712
AG3LZ/KZ	18	1/5	33/164	L (60 arc min)	200	1.9	3.8	250	39	0.697	
AG3LZ/KZ	22	1/5	7/34	L (60 arc min)	400	4.0	8	390	69	0.744	P.707/P.713
AG3LZ/KZ	28	1/5	91/459	L (50 arc min)	750	9.6	19	900	78	1.452	P.708/P.714
AG3LZ/KZ	32	1/5	1/5	L (40 arc min)	2000	25	51	1240	147	4.889	P.709/P.715
AG3LZ/KZ	18	1/10	77/779	L (40 arc min)	100	1.9	3.9	540	78	0.382	P.706/P.712
AG3LZ/KZ	18	1/10	77/779	L (40 arc min)	200	3.9	7.7	540	88	0.683	
AG3LZ/KZ	22	1/10	7/68	L (40 arc min)	400	8.0	16	780	127	0.712	P.707/P.713
AG3LZ/KZ	28	1/10	1/10	L (30 arc min)	750	19	38	1240	167	1.377	P.708/P.714
AG3LZ/KZ	32	1/10	1/10	L (30 arc min)	2000	51	102	1720	294	4.733	P.709/P.715
AG3LZ/KZ	18	1/15	119/1804	L (40 arc min)	100	2.9	5.8	690	118	0.379	P.706/P.712
AG3LZ/KZ	18	1/15	119/1804	L (40 arc min)	200	5.8	12	690	127	0.680	
AG3LZ/KZ	22	1/15	49/748	L (30 arc min)	400	13	25	960	177	0.702	P.707/P.713
AG3LZ/KZ	28	1/15	91/1360	L (30 arc min)	750	29	57	1510	226	1.358	P.708/P.714
AG3LZ/KZ	32	1/15	1/15	L (30 arc min)	2000	76	153	1990	422	4.674	P.709/P.715
AG3LZ/KZ	18	1/20	49/984	L (30 arc min)	100	3.8	7.7	830	167	0.377	P.706/P.712
AG3LZ/KZ	18	1/20	49/984	L (30 arc min)	200	7.7	15	830	177	0.678	
AG3LZ/KZ	22	1/20	7/136	L (30 arc min)	400	16	32	1030	226	0.698	P.707/P.713
AG3LZ/KZ	28	1/20	5/102	L (30 arc min)	750	39	78	1650	294	1.345	P.708/P.714
AG3LZ/KZ	32	1/20	1/20	L (30 arc min)	2000	102	204	2270	461	4.650	P.709/P.715
AG3LZ/KZ	18	1/25	28/697	L (30 arc min)	100	4.8	10	900	196	0.376	P.706/P.712
AG3LZ/KZ	18	1/25	28/697	L (30 arc min)	200	10	19	900	196	0.677	
AG3LZ/KZ	22	1/25	7/170	L (30 arc min)	400	20	40	1170	245	0.695	P.707/P.713
AG3LZ/KZ	28	1/25	7/170	L (30 arc min)	750	46	93	1720	324	1.343	P.708/P.714
AG3LZ/KZ	32	1/25	9/230	L (30 arc min)	2000	130	260	2680	490	4.633	P.709/P.715
AG3LZ/KZ	18	1/30	35/1066	L (30 arc min)	100	5.8	12	960	226	0.375	P.706/P.712
AG3LZ/KZ	22	1/30	7/216	L (30 arc min)	200	12	24	1240	255	0.680	P.707/P.713
AG3LZ/KZ	28	1/30	1/30	L (30 arc min)	400	25	50	1790	363	0.711	P.708/P.714
AG3LZ/KZ	32	1/30	3/92	L (30 arc min)	750	59	117	2820	667	1.378	P.709/P.715
AG3LZ/FZ	40	1/30	1/30	L (30 arc min)	2000	153	305	3570	853	4.718	P.710/P.716
AG3LZ/KZ	18	1/40	35/1404	L (30 arc min)	100	7.7	15	1030	245	0.371	P.706/P.712
AG3LZ/KZ	22	1/40	91/3600	L (30 arc min)	200	16	33	1310	265	0.679	P.707/P.713
AG3LZ/KZ	28	1/40	221/8610	L (30 arc min)	400	35	69	1990	373	0.708	P.708/P.714
AG3LZ/KZ	32	1/40	13/516	L (30 arc min)	750	71	142	2950	696	1.372	P.709/P.715
AG3LZ/FZ	40	1/40	13/540	L (30 arc min)	2000	211	423	4120	883	4.694	P.710/P.716
AG3LZ/KZ	18	1/50	7/351	L (30 arc min)	100	10	19	1100	265	0.370	P.706/P.712
AG3LZ/KZ	22	1/50	11/540	L (30 arc min)	200	20	41	1380	275	0.678	P.707/P.713
AG3LZ/KZ	28	1/50	187/9030	L (30 arc min)	400	43	86	2200	392	0.705	P.708/P.714
AG3LZ/KZ	32	1/50	11/540	L (30 arc min)	750	88	176	3230	716	1.366	P.709/P.715
AG3LZ/FZ	40	1/50	11/564	L (30 arc min)	2000	261	522	4940	912	4.681	P.710/P.716

Mounting Type	Output Shaft Diameter	Nominal Reduction Ratio	Actual Reduction Ratio	Precision	Power Class	Allowable Average Torque (3000 r/min)	Allowable Peak Torque of Startup/ Stop	Allowable Output Shaft O.H.L.	Allowable Output Shaft Thrust Load	Internal Moment of Inertia (Input Shaft Equivalent)	Drawings
						N·m	N·m	N	N	$\times 10^{-4}$kg·m^2	
AG3LZ/KZ	22	1/60	11/684	L (30 arc min)	100	13	26	1510	275	0.372	P.707/P.713
AG3LZ/KZ	22	1/60	637/39600	L (30 arc min)	200	26	51	1510	275	0.678	
AG3LZ/KZ	28	1/60	169/9840	L (30 arc min)	400	52	104	2410	412	0.706	P.708/P.714
AG3LZ/KZ	32	1/60	13/774	L (30 arc min)	750	107	213	3850	735	1.368	P.709/P.715
AG3LZ/FZ	40	1/60	91/5400	L (30 arc min)	2000	302	604	4940	980	4.688	P.710/P.716
AG3LZ/KZ	22	1/80	21/1634	L (30 arc min)	100	16	32	1720	275	0.371	P.707/P.713
AG3LZ/KZ	22	1/80	91/7200	L (30 arc min)	200	33	65	1720	284	0.678	
AG3LZ/KZ	28	1/80	65/5166	L (30 arc min)	400	71	142	2410	422	0.705	P.708/P.714
AG3LZ/KZ	32	1/80	13/1032	L (30 arc min)	750	142	284	4120	755	1.367	P.709/P.715
AG3LZ/FZ	40	1/80	13/1080	L (30 arc min)	2000	423	846	4940	1030	4.684	P.710/P.716
AG3LZ/KZ	22	1/100	7/684	L (30 arc min)	100	20	40	1720	294	0.371	P.707/P.713
AG3LZ/KZ	28	1/100	13/1353	L (30 arc min)	200	43	86	1990	422	0.690	P.708/P.714
AG3LZ/KZ	32	1/100	7/688	L (30 arc min)	400	88	175	3430	765	0.734	P.709/P.715
AG3LZ/FZ	40	1/100	91/9000	L (30 arc min)	750	177	354	4940	1079	1.438	P.710/P.716
AG3LZ/FZ	50	1/100	25/2618	L (30 arc min)	2000	533	1066	6860	1471	4.856	P.711/P.717
AG3LZ/KZ	22	1/120	147/17974	L (30 arc min)	100	25	51	1720	294	0.371	P.707/P.713
AG3LZ/KZ	28	1/120	91/11000	L (30 arc min)	200	50	100	2340	431	0.689	P.708/P.714
AG3LZ/KZ	32	1/120	77/9360	L (30 arc min)	400	108	217	4120	785	0.731	P.709/P.715
AG3LZ/FZ	40	1/120	77/9400	L (30 arc min)	750	218	437	4940	1079	1.431	P.710/P.716
AG3LZ/FZ	50	1/120	77/8993	L (30 arc min)	2000	594	1189	6860	1471	4.896	P.711/P.717
AG3LZ/KZ	22	1/160	21/3268	L (30 arc min)	100	32	64	1720	294	0.371	P.707/P.713
AG3LZ/KZ	28	1/160	1/165	L (30 arc min)	200	68	136	2410	451	0.688	P.708/P.714
AG3LZ/KZ	32	1/160	21/3328	L (30 arc min)	400	141	282	4120	834	0.728	P.709/P.715
AG3LZ/FZ	40	1/160	9/1400	L (30 arc min)	750	278	557	4940	1128	1.425	P.710/P.716
AG3LZ/FZ	50	1/160	33/5474	L (30 arc min)	2000	844	1688	6860	1520	4.821	P.711/P.717
AG3LZ/KZ	22	1/200	21/4085	L (30 arc min)	100	40	80	1720	294	0.371	P.707/P.713
AG3LZ/KZ	28	1/200	7/1375	L (30 arc min)	200	81	162	2410	461	0.688	P.708/P.714
AG3LZ/KZ	32	1/200	189/38272	L (30 arc min)	400	180	361	4120	853	0.728	P.709/P.715
AG3LZ/FZ	40	1/200	9/1750	L (30 arc min)	750	348	696	4940	1177	1.425	P.710/P.716
AG3LZ/FZ	50	1/200	30/5831	L (30 arc min)	2000	* 862	1725	6860	1569	4.820	P.711/P.717

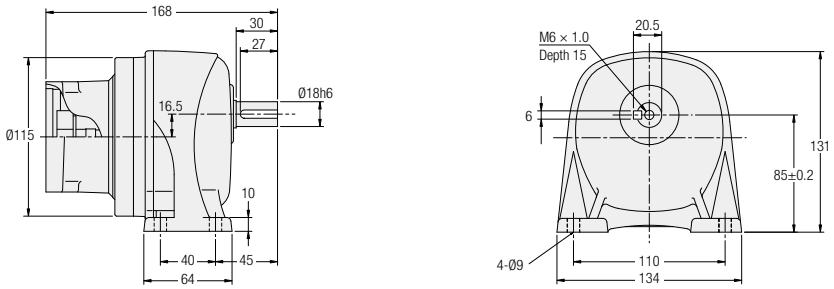
2-2. Drawings

AG3 Type Parallel Shaft | Shaft Diameter 18 | Foot Mounting | Low Backlash

<Figure 1>



<Figure 2>

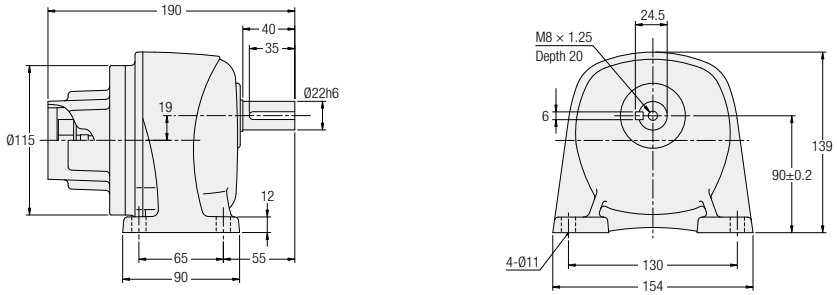


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	Approx. Weight (kg)
100 W	AG3LZ18-✱✱✱□100△	5, 10, 15, 20, 25, 30, 40, 50	1	F1/F3/S1/S3	4
200 W	AG3LZ18-✱✱✱□200△	5, 10, 15, 20, 25	2	F1/F2/F3/S1/S2/S3	4

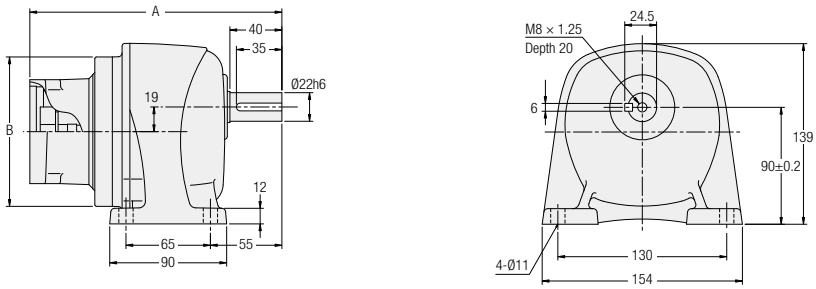
Note: A reduction ratio will be indicated as ✱✱✱ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 682 to 686.
Note: Please refer to pages 799 to 802 for the detailed dimensions of the input shaft area.
Note: Please refer to page 704 for the performance table.

AG3 Type Parallel Shaft | Shaft Diameter 22 | Foot Mounting | Low Backlash

<Figure 1>



<Figure 2>

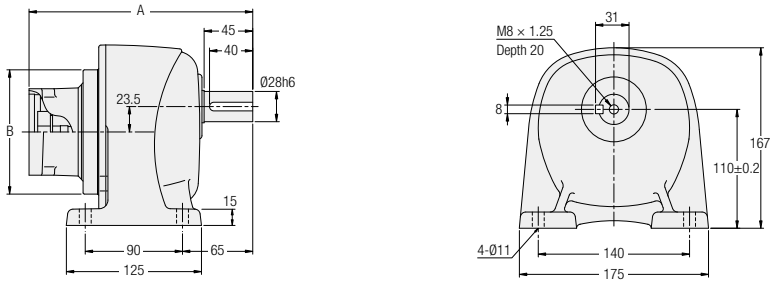


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	Approx. Weight (kg)	A	B
100 W	AG3LZ22-✱✱✱□100△	60, 80, 100, 120, 160, 200	1	F1/F3/S1/S3	5	—	—
200 W	AG3LZ22-✱✱✱□200△	30, 40, 50, 60, 80	2	F1/F2/F3/S1/S2/S3	5	194	Ø115
400 W	AG3LZ22-✱✱✱□400△	5, 10, 15, 20, 25	2	F1/F3/S1/S3	5.5	195.5	Ø128

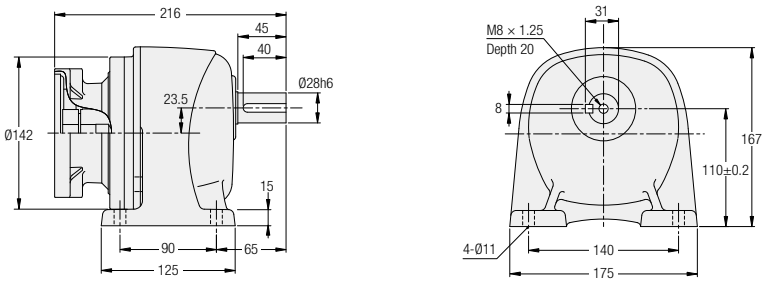
Note: A reduction ratio will be indicated as ✱✱✱ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 682 to 686.
Note: Please refer to pages 799 to 802 for the detailed dimensions of the input shaft area.
Note: Please refer to page 704 for the performance table.

AG3 Type Parallel Shaft | Shaft Diameter 28 | Foot Mounting | Low Backlash

<Figure 1>



<Figure 2>

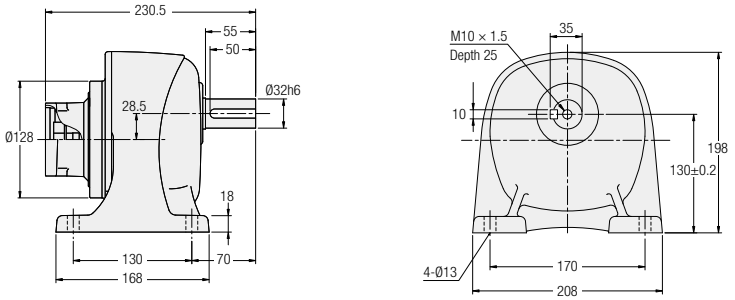


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	Approx. Weight (kg)	A	B
200 W	AG3LZ28-***□200△	100, 120, 160, 200	1	F1/F2/F3/S1/S2/S3	7	207	Ø115
400 W	AG3LZ28-***□400△	30, 40, 50, 60, 80	1	F1/F3/S1/S3	7.5	211.5	Ø128
750 W	AG3LZ28-***□750△	5, 10, 15, 20, 25	2	F1/F2/S1/S2/S3/S4	7	—	—

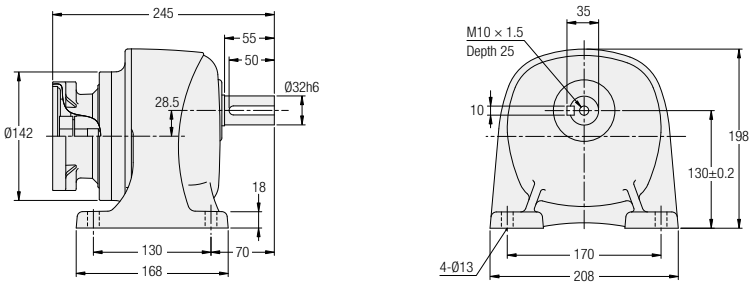
Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 682 to 686.
Note: Please refer to pages 799 to 802 for the detailed dimensions of the input shaft area.
Note: Please refer to page 704 for the performance table.

AG3 Type Parallel Shaft | Shaft Diameter 32 | Foot Mounting | Low Backlash

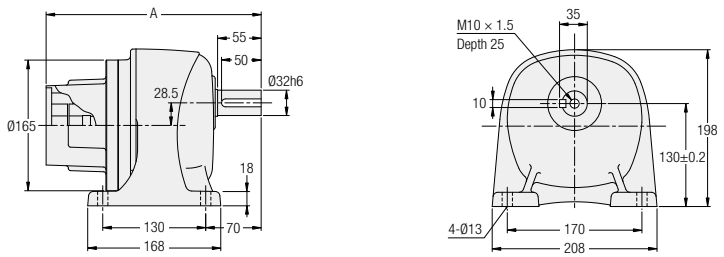
<Figure 1>



<Figure 2>



<Figure 3>

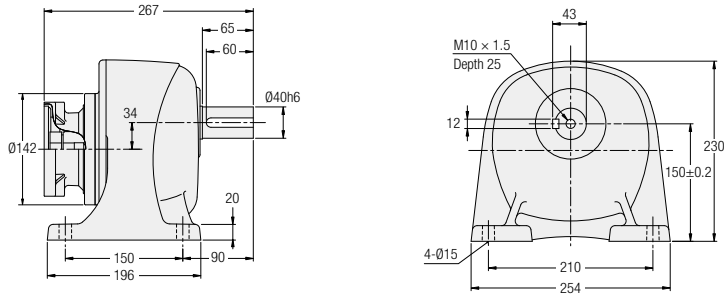


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	A	Approx. Weight (kg)
400 W	AG3LZ32-***□400△	100, 120, 160, 200	1	F1/F3/S1/S3	—	10.5
750 W	AG3LZ32-***□750△	30, 40, 50, 60, 80	2	F1/F2/S1/S2/S3/S4	—	10.5
2000 W	AG3LZ32-***□2000△	5, 10, 15, 20, 25	3	K21/K22/K23	271.5	12
				K31/K32/K33	271.5	
				F31/F33	281.5	

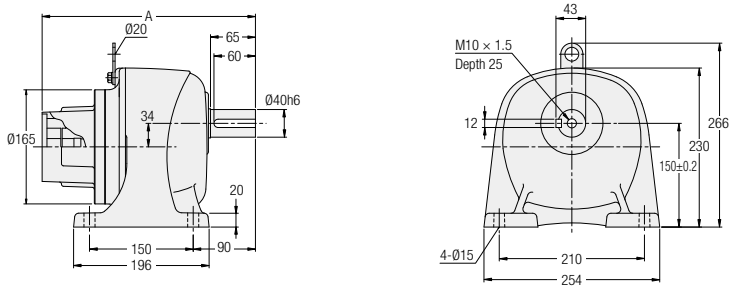
Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 682 to 686.
Note: Please refer to pages 799 to 802 for the detailed dimensions of the input shaft area.
Note: Please refer to page 704 for the performance table.

AG3 Type Parallel Shaft | Shaft Diameter 40 | Foot Mounting | Low Backlash

<Figure 1>



<Figure 2>

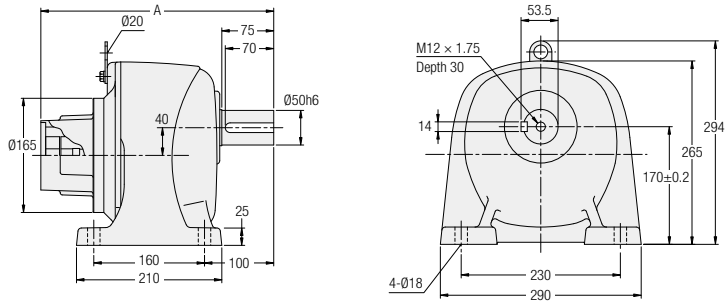


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	A	Approx. Weight (kg)
750 W	AG3LZ40-***□750△	100, 120, 160, 200	1	F1/F2/S1/S2/S3/S4	—	18
2000 W	AG3LZ40-***□2000△	30, 40, 50, 60, 80	2	K21/K22/K23	308.5	20
				K31/K32/K33	308.5	
				F31/F33	318.5	

Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 682 to 686.
Note: Please refer to pages 799 to 802 for the detailed dimensions of the input shaft area.
Note: Please refer to page 704 for the performance table.

AG3 Type Parallel Shaft | Shaft Diameter **50** | **Foot** Mounting | Low Backlash

<Figure 1>

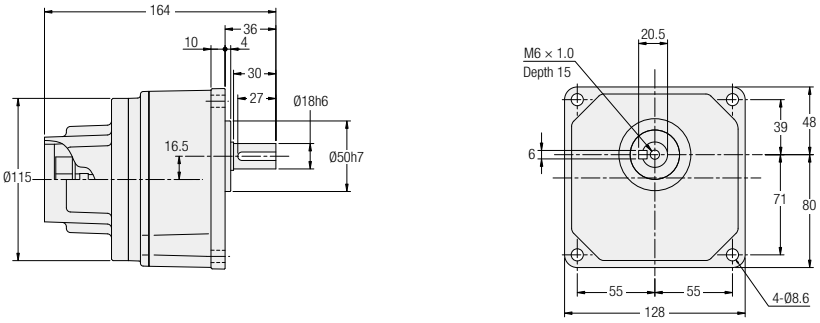


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	A	Approx. Weight (kg)
2000 W	AG3LZ50-✻✻✻□2000△	100, 120, 160, 200	1	K21/K22/K23	336.5	53
				K31/K32/K33	336.5	
				F31/F33	346.5	

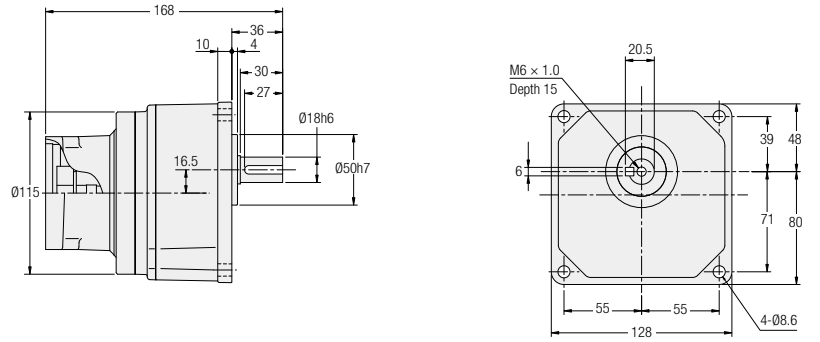
Note: A reduction ratio will be indicated as ✻✻✻ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 682 to 686.
Note: Please refer to pages 799 to 802 for the detailed dimensions of the input shaft area.
Note: Please refer to page 705 for the performance table.

AG3 Type Parallel Shaft | Shaft Diameter 18 | Small Flange Mounting | Low Backlash

<Figure 1>



<Figure 2>

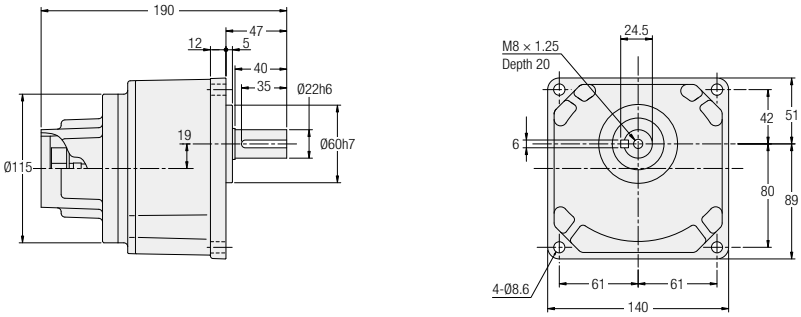


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	Approx. Weight (kg)
100 W	AG3KZ18-✻✻✻□100△	5, 10, 15, 20, 25, 30, 40, 50	1	F1/F3/S1/S3	4
200 W	AG3KZ18-✻✻✻□200△	5, 10, 15, 20, 25	2	F1/F2/F3/S1/S2/S3	4

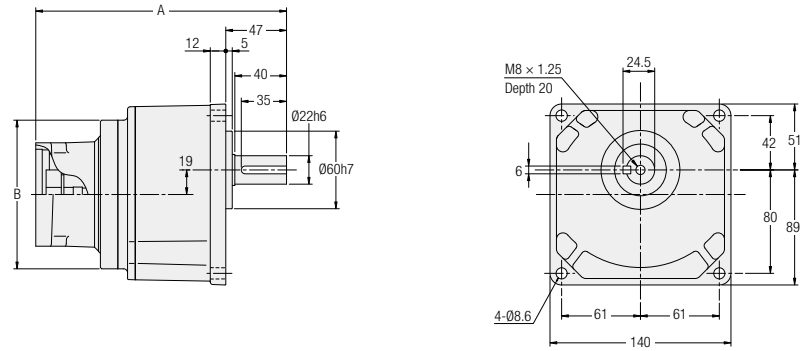
Note: A reduction ratio will be indicated as ✻✻✻ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 682 to 686.
Note: Please refer to pages 799 to 802 for the detailed dimensions of the input shaft area.
Note: Please refer to page 704 for the performance table.

AG3 Type Parallel Shaft | Shaft Diameter 22 | Small Flange Mounting | Low Backlash

<Figure 1>



<Figure 2>

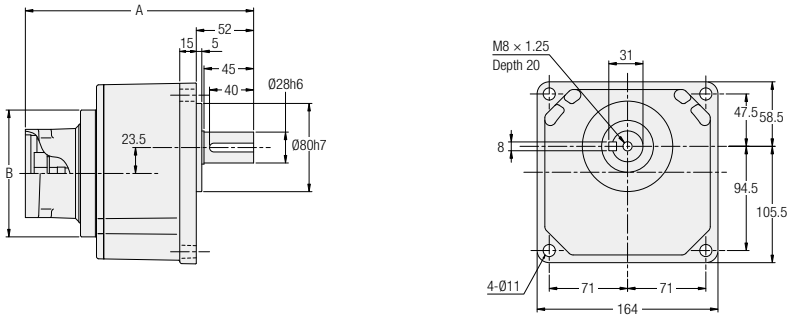


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	Approx. Weight (kg)	A	B
100 W	AG3KZ22-✱✱✱□100△	60, 80, 100, 120, 160, 200	1	F1/F3/S1/S3	5	—	—
200 W	AG3KZ22-✱✱✱□200△	30, 40, 50, 60, 80	2	F1/F2/F3/S1/S2/S3	5	194	Ø115
400 W	AG3KZ22-✱✱✱□400△	5, 10, 15, 20, 25	2	F1/F3/S1/S3	5.5	195.5	Ø128

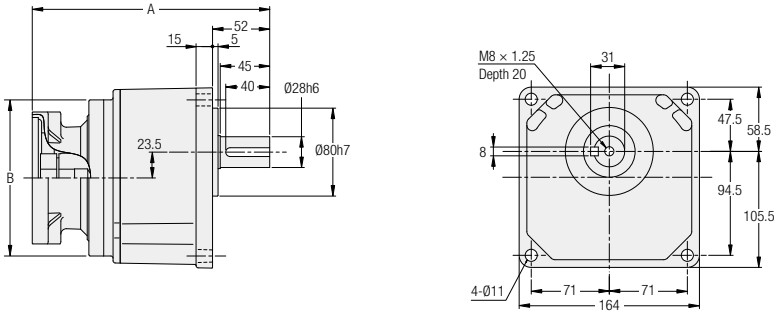
Note: A reduction ratio will be indicated as ✱✱✱ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 682 to 686.
Note: Please refer to pages 799 to 802 for the detailed dimensions of the input shaft area.
Note: Please refer to page 704 for the performance table.

AG3 Type Parallel Shaft | Shaft Diameter 28 | Small Flange Mounting | Low Backlash

<Figure 1>



<Figure 2>

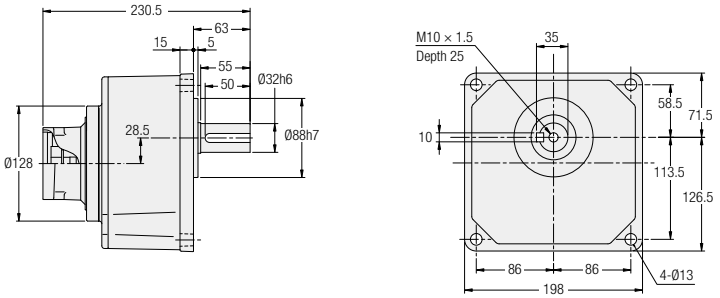


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	Approx. Weight (kg)	A	B
200 W	AG3KZ28-✻✻✻□200△	100, 120, 160, 200	1	F1/F2/F3/S1/S2/S3	7	207	Ø115
400 W	AG3KZ28-✻✻✻□400△	30, 40, 50, 60, 80	1	F1/F3/S1/S3	7.5	211.5	Ø128
750 W	AG3KZ28-✻✻✻□750△	5, 10, 15, 20, 25	2	F1/F2/S1/S2/S3/S4	7	216	Ø142

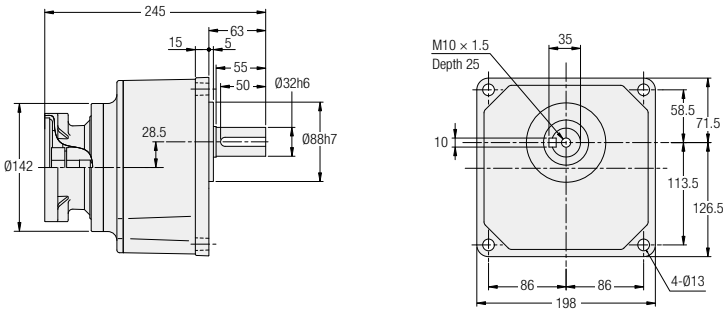
Note: A reduction ratio will be indicated as ✻✻✻ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 682 to 686.
Note: Please refer to pages 799 to 802 for the detailed dimensions of the input shaft area.
Note: Please refer to page 704 for the performance table.

AG3 Type Parallel Shaft | Shaft Diameter 32 | Small Flange Mounting | Low Backlash

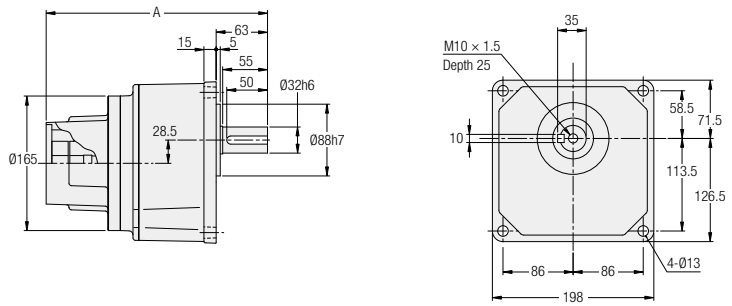
<Figure 1>



<Figure 2>



<Figure 3>

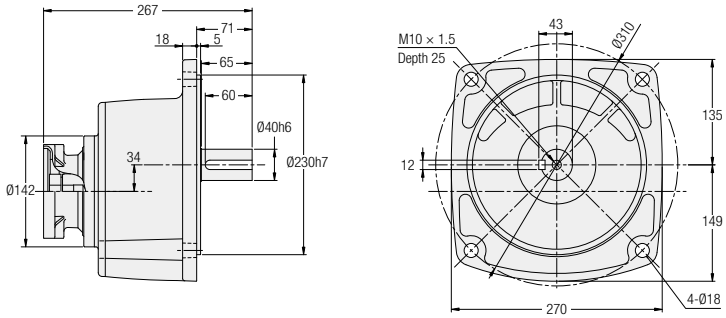


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	A	Approx. Weight (kg)
400 W	AG3KZ32-***□400△	100, 120, 160, 200	1	F1/F3/S1/S3	—	10.5
750 W	AG3KZ32-***□750△	30, 40, 50, 60, 80	2	F1/F2/S1/S2/S3/S4	—	10.5
2000 W	AG3KZ32-***□2000△	5, 10, 15, 20, 25	3	K21/K22/K23	271.5	12
				K31/K32/K33	271.5	
				F31/F33	281.5	

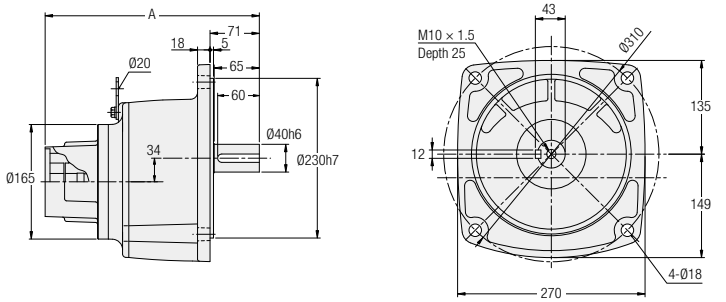
Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 682 to 686.
Note: Please refer to pages 799 to 802 for the detailed dimensions of the input shaft area.
Note: Please refer to page 704 for the performance table.

AG3 Type Parallel Shaft | Shaft Diameter 40 | Flange Mounting | Low Backlash

<Figure 1>



<Figure 2>

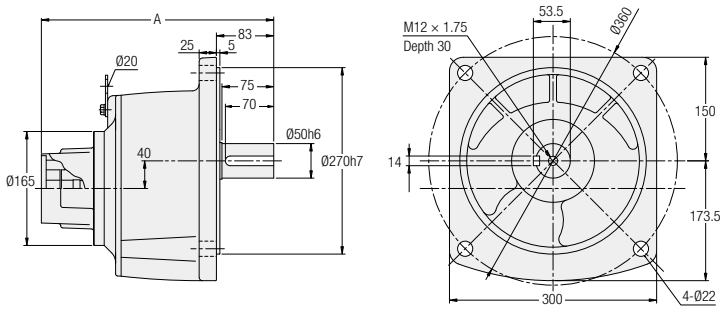


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	A	Approx. Weight (kg)
750 W	AG3FZ40-✱✱✱□750△	100, 120, 160, 200	1	F1/F2/S1/S2/S3/S4	—	19.5
2000 W	AG3FZ40-✱✱✱□2000△	30, 40, 50, 60, 80	2	K21/K22/K23	308.5	21.5
				K31/K32/K33	308.5	
				F31/F33	318.5	

Note: A reduction ratio will be indicated as ✱✱✱ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 682 to 686.
Note: Please refer to pages 799 to 802 for the detailed dimensions of the input shaft area.
Note: Please refer to page 704 for the performance table.

AG3 Type Parallel Shaft | Shaft Diameter **50** | **Flange** Mounting | Low Backlash

<Figure 1>



Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	A	Approx. Weight (kg)
2000 W	AG3FZ50-***□2000△	100, 120, 160, 200	1	K21/K22/K23	336.5	58
				K31/K32/K33	336.5	
				F31/F33	346.5	

Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 682 to 686.
Note: Please refer to pages 799 to 802 for the detailed dimensions of the input shaft area.
Note: Please refer to page 705 for the performance table.

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