APG/AG3 Type

Parallel Shaft

Model and Type Codes
Standard Model Lineup

P.756

HIGH PRECISION GEARBOXES FOR SERVO MOTORS

1. Compact High Precision Gearboxes for Servo Motors

1-1. Performance Tables

1-2. Drawings

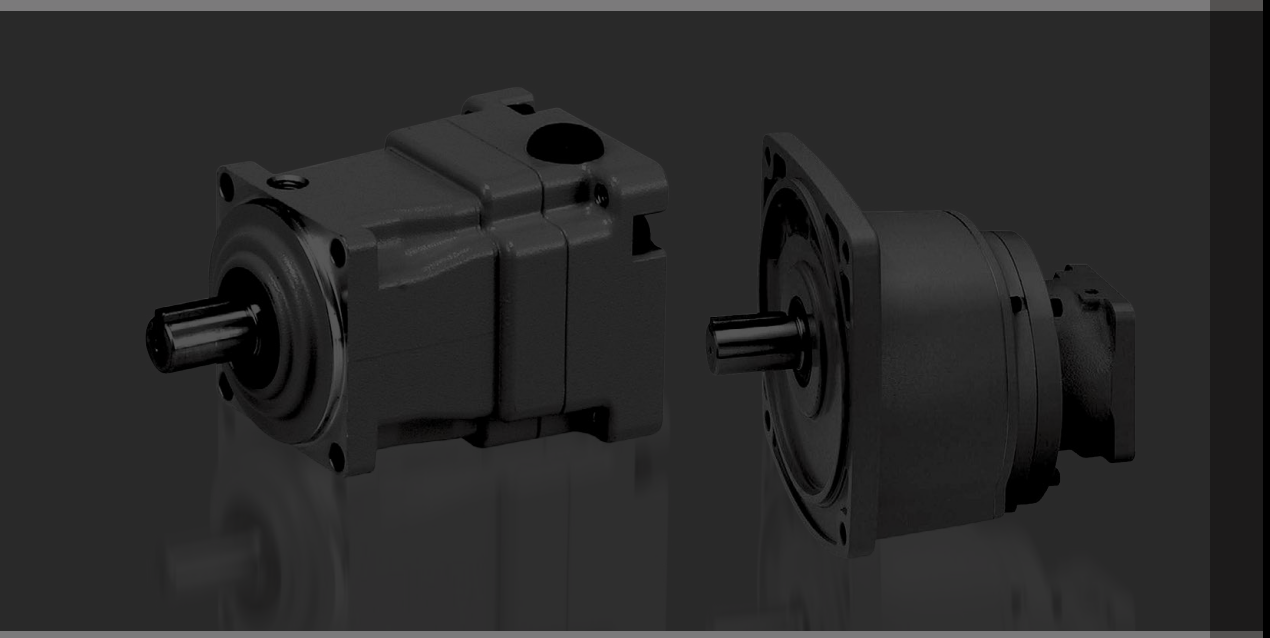
1-3. Low Temperature Startup Characteristics (No Load Running Torque (Input Shaft))

P.780

2. Low Backlash High Precision Gearboxes for Servo Motors

2-1. Performance Tables

2-2. Drawings



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 728 to 735. 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	18	J	–	30	Q	150	S1	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 Gearboxes for Servo Motor (Z Type Gearbox)
③Frame Size and Output Shaft Diameter	Output Shaft Diameter
④Shaft Arrangement	K : Output shaft with key and shaft end tapped
	J : Straight Shaft
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
	150 : 150 W Class
	200 : 200 W Class
	400 : 400 W Class
	600 : 600 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 728 to 735.

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 744 to 750. For more details, please contact your nearest Sales Office or the CS Center.

AG3 Type

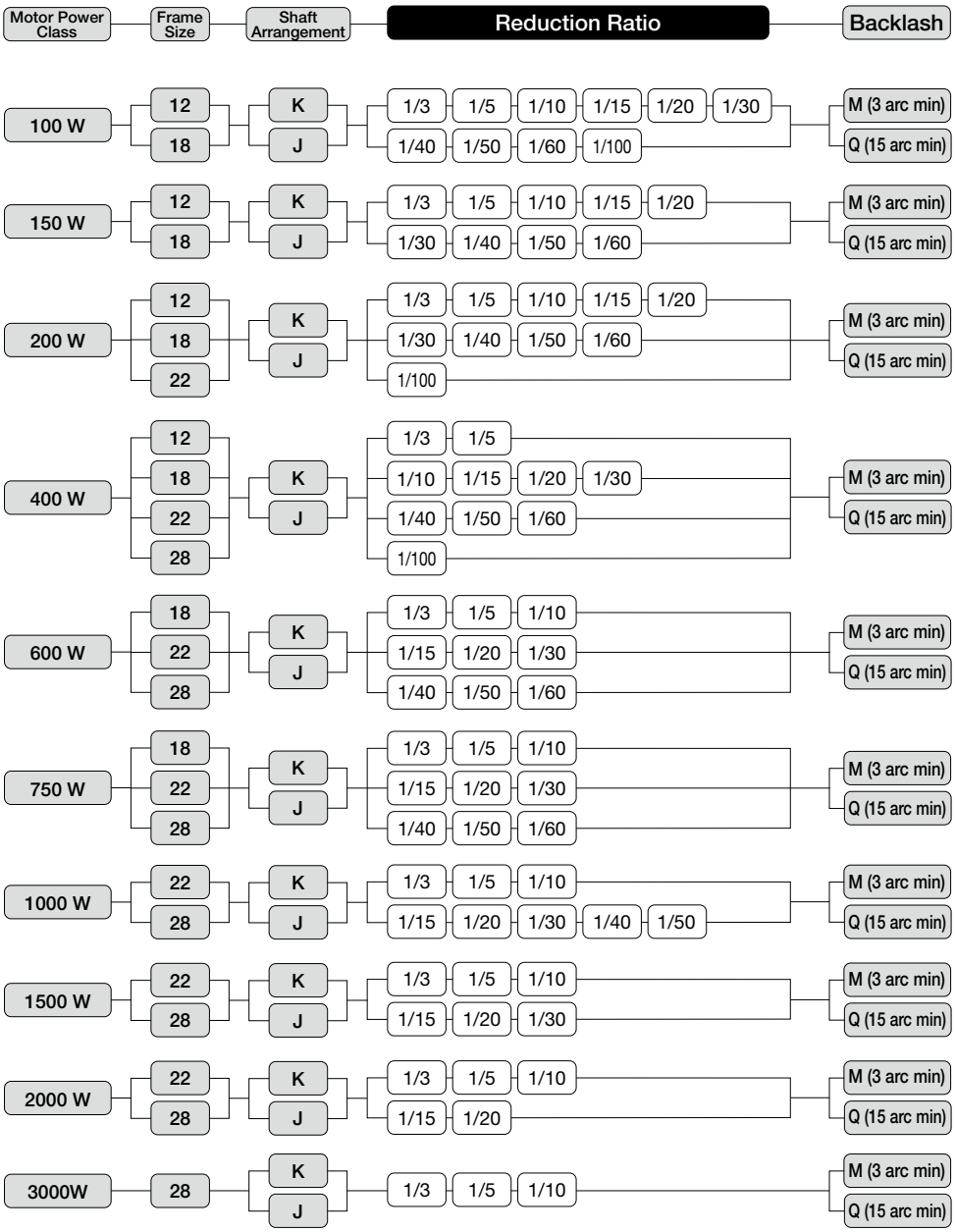
Mounting Type	Motor Type	Frame Size	Shaft Arrangement		Reduction Ratio	Backlash	Motor Power Class	Type	Option	Option Code
AG3L	Z	22		–	30	L	200	S1		
AG3K	Z	32		–	30	L	750	S4		
AG3F	Z	40		–	60	L	2000	K21	X	B3
①	②	③	④		⑤	⑥	⑦	⑧	⑨	⑩

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 Gearboxes for Servo Motor (Z Type Gearbox)
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 942.

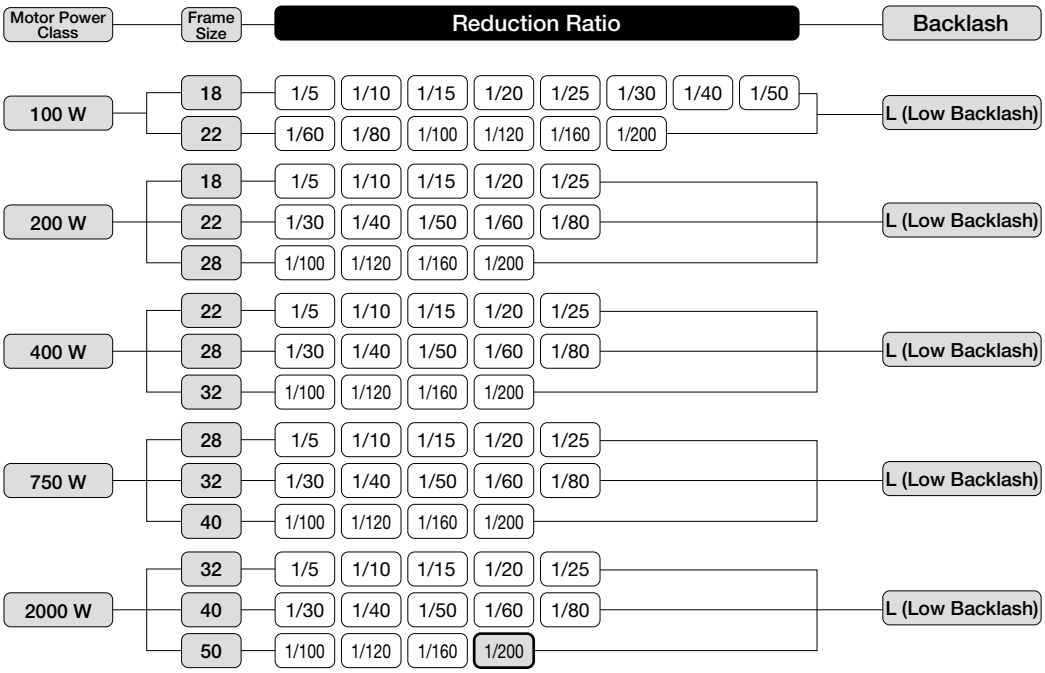
Note 1: Please refer to the Motor Matching / Motor Power Design Lists on pages 744 to 750.
Note 2: The option code will not be shown in the nomenclature on the nameplate. But it will be shown in the Option code row of the nameplate.

Standard Model Lineup

APG Type Backlash 3 arc min/15 arc min Specifications



AG3 Type Low Backlash Specification



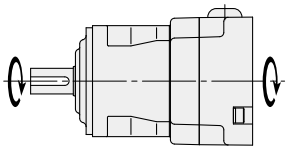
Note 1: ( ) indicates a limited torque type. Please make sure to check the allowable torque in the performance table.
Note 2: For the precision of low backlash types, refer to the performance table.
Note 3: Select a 2000 W class gearbox for 1000 W and 1500 W servo motors.
Note 4: AG3 is not available 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 Gearboxes 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 7000 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 941. In addition, for the servo motor-based motor rated output torque, please refer to page 914.
- 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 gearbox 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

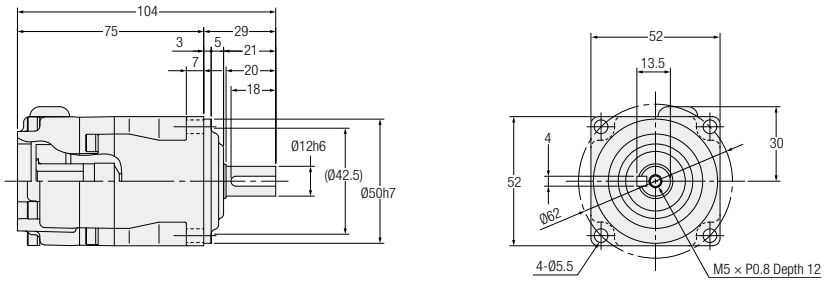
Mounting Type	Output Shaft Diameter	Shaft Arrangement	Nominal Reduction Ratio	Actual Reduction Ratio	Precision	Power Class	Allowable Average Torque (3000 r/min)	Allowable Peak Torque of Startup/Stop	Allowable Output Shaft O.H.L.	Allowable Output Shaft Thrust Load	Internal Moment of Inertia (Input Shaft Equivalent)	Drawings
							N·m	N·m	N	N	$\times 10^{-4}$kg·m^2	
APGZ	12	K/J	1/3	1/3	M/Q	100	3.4	11.9	420	210	0.163	P.758, P.759
APGZ	12	K/J	1/3	1/3	M/Q	150	3.4	11.9	420	210	0.163	
APGZ	12	K/J	1/3	1/3	M/Q	200	3.4	11.9	420	210	0.158	
APGZ	12	K/J	1/3	1/3	M/Q	400	3.4	11.9	420	210	0.158	
APGZ	18	K/J	1/3	1/3	M/Q	600	6.4	22	820	410	0.768	P.762 to P.765
APGZ	18	K/J	1/3	1/3	M/Q	750	6.4	22	820	410	0.898	
APGZ	22	K/J	1/3	1/3	M/Q	1000	17.2	60	1000	500	3.233	P.769
APGZ	22	K/J	1/3	1/3	M/Q	1500	17.2	60	1000	500	3.188	
APGZ	22	K/J	1/3	1/3	M/Q	2000	17.2	60	1000	500	3.188	
APGZ	28	K/J	1/3	1/3	M/Q	3000	25.8	90	1450	725	4.213	P.772, P.774 to P.776
APGZ	12	K/J	1/5	1/5	M/Q	100	5.7	20	510	255	0.142	P.758, P.759
APGZ	12	K/J	1/5	1/5	M/Q	150	5.7	20	510	255	0.142	
APGZ	12	K/J	1/5	1/5	M/Q	200	5.7	20	510	255	0.137	
APGZ	12	K/J	1/5	1/5	M/Q	400	5.7	20	510	255	0.137	
APGZ	18	K/J	1/5	1/5	M/Q	600	10.7	37	980	490	0.610	P.762 to P.765
APGZ	18	K/J	1/5	1/5	M/Q	750	10.7	37	980	490	0.740	
APGZ	22	K/J	1/5	1/5	M/Q	1000	28.6	100	1200	600	2.693	P.769
APGZ	22	K/J	1/5	1/5	M/Q	1500	28.6	100	1200	600	2.649	
APGZ	22	K/J	1/5	1/5	M/Q	2000	28.6	100	1200	600	2.649	
APGZ	28	K/J	1/5	1/5	M/Q	3000	43.0	151	1700	850	2.875	P.772, P.774 to P.776
APGZ	12	K/J	1/10	1/10	M/Q	100	5.1	18	650	325	0.135	P.758, P.759
APGZ	12	K/J	1/10	1/10	M/Q	150	5.1	18	510	255	0.135	
APGZ	12	K/J	1/10	1/10	M/Q	200	5.1	18	650	325	0.130	
APGZ	18	K/J	1/10	1/10	M/Q	400	21.5	75	1200	600	0.145	P.762 to P.765
APGZ	18	K/J	1/10	1/10	M/Q	600	21.5	75	1200	600	0.558	
APGZ	18	K/J	1/10	1/10	M/Q	750	21.5	75	1200	600	0.687	
APGZ	22	K/J	1/10	1/10	M/Q	1000	57.3	186	1300	650	2.534	P.769
APGZ	22	K/J	1/10	1/10	M/Q	1500	57.3	186	1300	650	2.489	
APGZ	22	K/J	1/10	1/10	M/Q	2000	57.3	186	1300	650	2.489	
APGZ	28	K/J	1/10	1/10	M/Q	3000	85.9	258	2150	1075	2.502	P.772, P.774 to P.776
APGZ	12	K/J	1/15	1/15	M/Q	100	7.6	25	784	392	0.134	P.760, P.761
APGZ	12	K/J	1/15	1/15	M/Q	150	7.6	25	784	392	0.134	
APGZ	12	K/J	1/15	1/15	M/Q	200	7.6	25	784	392	0.128	
APGZ	18	K/J	1/15	1/15	M/Q	400	16.2	57	1470	735	0.142	P.762 to P.765
APGZ	22	K/J	1/15	1/15	M/Q	600	30.4	106	1950	975	0.210	P.766 to P.768
APGZ	22	K/J	1/15	1/15	M/Q	750	30.4	106	1950	975	0.693	
APGZ	28	K/J	1/15	1/15	M/Q	1000	81.2	284	2450	1225	2.796	P.772, P.774 to P.776
APGZ	28	K/J	1/15	1/15	M/Q	1500	81.2	284	2450	1225	2.752	P.772, P.774 to P.776
APGZ	28	K/J	1/15	1/15	M/Q	2000	81.2	284	2450	1225	2.752	

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/J	1/20	1/20	M/Q	100	10.2	31	840	420	0.133	P.760, P.761
APGZ	12	K/J	1/20	1/20	M/Q	150	10.2	31	840	420	0.133	
APGZ	12	K/J	1/20	1/20	M/Q	200	10.2	31	840	420	0.128	
APGZ	18	K/J	1/20	1/20	M/Q	400	21.6	76	1570	785	0.137	P.762 to P.765
APGZ	22	K/J	1/20	1/20	M/Q	600	40.6	142	2150	1075	0.192	P.766 to P.768
APGZ	22	K/J	1/20	1/20	M/Q	750	40.6	142	2150	1075	0.675	
APGZ	28	K/J	1/20	1/20	M/Q	1000	108.2	379	2700	1350	2.751	P.772, P.774 to P.776
APGZ	28	K/J	1/20	1/20	M/Q	1500	108.2	379	2700	1350	2.706	P.772, P.774 to P.776
APGZ	28	K/J	1/20	1/20	M/Q	2000	108.2	379	2700	1350	2.706	
APGZ	12	K/J	1/30	1/30	M/Q	100	6.7	20	910	455	0.132	P.760, P.761
APGZ	18	K/J	1/30	1/30	M/Q	150	32.5	97	1750	875	0.139	P.762 to P.765
APGZ	18	K/J	1/30	1/30	M/Q	200	32.5	97	1750	875	0.134	
APGZ	18	K/J	1/30	1/30	M/Q	400	32.5	97	1750	875	0.134	
APGZ	22	K/J	1/30	1/30	M/Q	600	60.9	183	2450	1225	0.183	P.766 to P.768
APGZ	22	K/J	1/30	1/30	M/Q	750	60.9	183	2450	1225	0.666	
APGZ	28	K/J	1/30	1/30	M/Q	1000	121.8	365	3100	1550	2.728	P.772, P.774 to P.776
APGZ	28	K/J	1/30	1/30	M/Q	1500	121.8	365	3100	1550	2.684	P.762 to P.765
APGZ	18	K/J	1/40	1/40	M/Q	100	19.1	67	1860	930	0.133	P.766 to P.768
APGZ	18	K/J	1/40	1/40	M/Q	150	19.1	67	1860	930	0.133	
APGZ	18	K/J	1/40	1/40	M/Q	200	19.1	67	1860	930	0.128	
APGZ	22	K/J	1/40	1/40	M/Q	400	40.7	142	2550	1275	0.143	P.771, P.773
APGZ	28	K/J	1/40	1/40	M/Q	600	108.2	379	3450	1725	0.148	P.762 to P.765
APGZ	28	K/J	1/40	1/40	M/Q	750	108.2	379	3450	1725	0.660	
APGZ	28	K/J	1/40	1/40	M/Q	1000	108.2	379	3450	1725	2.610	
APGZ	18	K/J	1/50	1/50	M/Q	100	25.5	89	1860	930	0.133	P.766 to P.768
APGZ	18	K/J	1/50	1/50	M/Q	150	25.5	89	1860	930	0.133	
APGZ	18	K/J	1/50	1/50	M/Q	200	25.5	89	1860	930	0.128	
APGZ	22	K/J	1/50	1/50	M/Q	400	50.9	178	2550	1275	0.141	P.771, P.773
APGZ	28	K/J	1/50	1/50	M/Q	600	135.3	406	2550	1275	0.144	P.772, P.774 to P.776
APGZ	28	K/J	1/50	1/50	M/Q	750	135.3	406	3520	1760	0.656	
APGZ	28	K/J	1/50	1/50	M/Q	1000	135.3	406	3520	1760	2.606	
APGZ	18	K/J	1/60	1/60	M/Q	100	28.6	93	1860	930	0.133	P.762 to P.765
APGZ	18	K/J	1/60	1/60	M/Q	150	28.6	93	1860	930	0.133	
APGZ	18	K/J	1/60	1/60	M/Q	200	28.6	93	1860	930	0.127	
APGZ	22	K/J	1/60	1/60	M/Q	400	61.1	189	2550	1275	0.141	P.766 to P.768
APGZ	28	K/J	1/60	1/60	M/Q	600	121.8	365	3520	1760	0.143	P.771, P.773
APGZ	28	K/J	1/60	1/60	M/Q	750	121.8	365	3520	1760	0.654	
APGZ	18	K/J	1/100	1/100	M/Q	100	20.7	62	1860	930	0.132	P.762 to P.765
APGZ	22	K/J	1/100	1/100	M/Q	200	44.6	134	2550	1275	0.140	P.766 to P.768
APGZ	28	K/J	1/100	1/100	M/Q	400	95.5	286	3520	1760	0.140	P.771, P.773

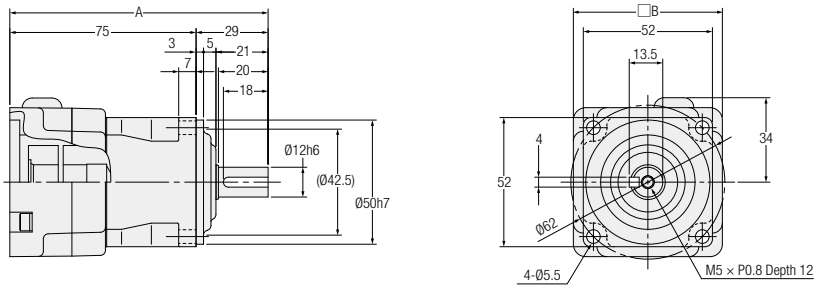
1-2. Drawings

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

<Figure 1>



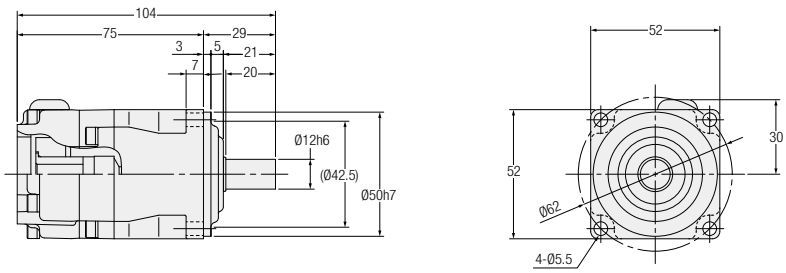
<Figure 2>



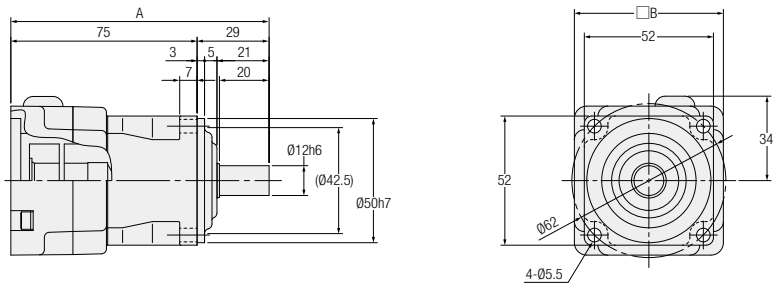
Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B
100 W	K: Output shaft with Shaft end tapped	APGZ12K-***□100△N	APGZ12K-***□100△W	3, 5, 10	S1/S3	1	0.8	—	—
100 W		APGZ12K-***□100△N	APGZ12K-***□100△W	3, 5, 10	S6	2	0.8	104	55
150 W		APGZ12K-***□150△N	APGZ12K-***□150△W	3, 5, 10	S1	1	0.8	—	—
200 W		APGZ12K-***□200△N	APGZ12K-***□200△W	3, 5, 10	S1/S2/S3/S5	2	0.8	104	60
200 W		APGZ12K-***□200△N	APGZ12K-***□200△W	3, 5, 10	S6	2	0.8	104	55
200 W		APGZ12K-***□200△N	APGZ12K-***□200△W	3, 5, 10	S7	2	0.8	104	70
400 W		APGZ12K-***□400△N	APGZ12K-***□400△W	3, 5	S1/S3	2	0.8	104	60
400 W		APGZ12K-***□400△N	APGZ12K-***□400△W	3, 5	S6	2	0.8	104	55
400 W		APGZ12K-***□400△N	APGZ12K-***□400△W	3, 5	S7	2	0.8	104	70

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 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

<Figure 3>



<Figure 4>

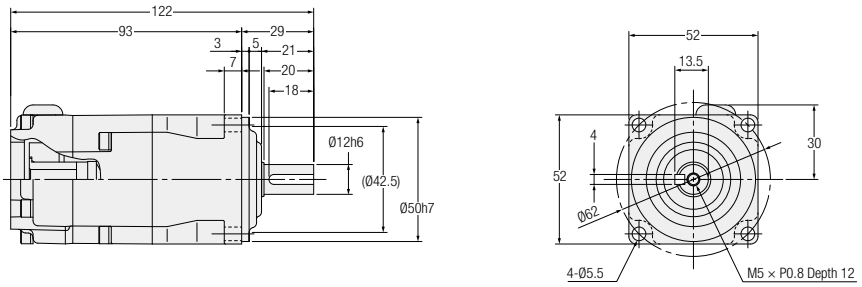


Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B
100 W	J: Straight shaft	APGZ12J-∗∗∗□100△N	APGZ12J-∗∗∗□100△W	3, 5, 10	S1/S3	3	0.8	—	—
100 W		APGZ12J-∗∗∗□100△N	APGZ12J-∗∗∗□100△W	3, 5, 10	S6	4	0.8	104	55
150 W		APGZ12J-∗∗∗□150△N	APGZ12J-∗∗∗□150△W	3, 5, 10	S1	3	0.8	—	—
200 W		APGZ12J-∗∗∗□200△N	APGZ12J-∗∗∗□200△W	3, 5, 10	S1/S2/S3/S5	4	0.8	104	60
200 W		APGZ12J-∗∗∗□200△N	APGZ12J-∗∗∗□200△W	3, 5, 10	S6	4	0.8	104	55
200 W		APGZ12J-∗∗∗□200△N	APGZ12J-∗∗∗□200△W	3, 5, 10	S7	4	0.8	104	70
400 W		APGZ12J-∗∗∗□400△N	APGZ12J-∗∗∗□400△W	3, 5	S1/S3	4	0.8	104	60
400 W		APGZ12J-∗∗∗□400△N	APGZ12J-∗∗∗□400△W	3, 5	S6	4	0.8	104	55
400 W		APGZ12J-∗∗∗□400△N	APGZ12J-∗∗∗□400△W	3, 5	S7	4	0.8	104	70

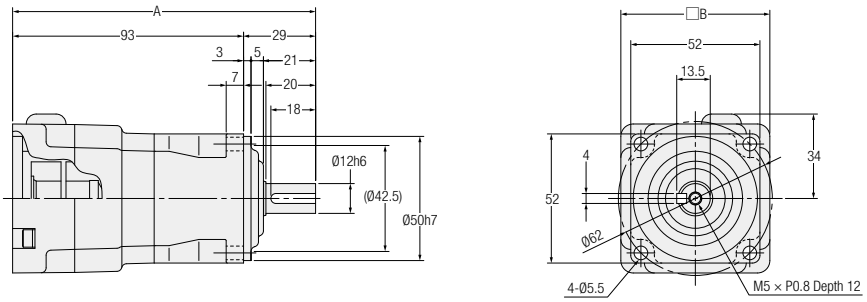
Note: A reduction ratio will be indicated as ∗∗∗ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

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

<Figure 1>



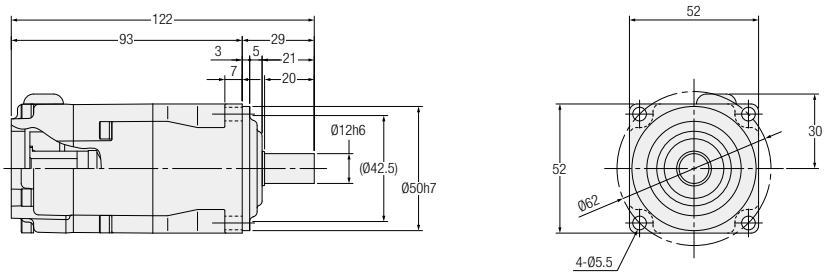
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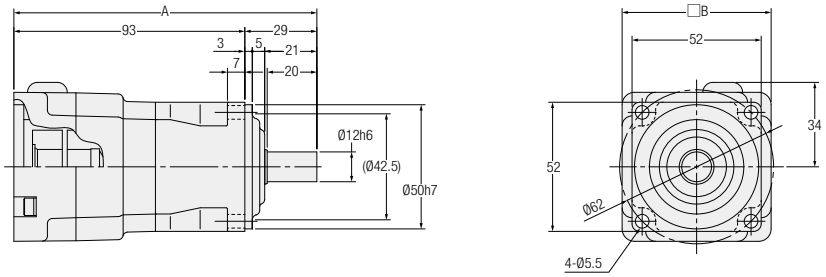
Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B
100 W	K: Output shaft with Shaft end tapped	APGZ12K-***□100△N	APGZ12K-***□100△W	15, 20, 30	S1/S3	1	0.9	—	—
100 W		APGZ12K-***□100△N	APGZ12K-***□100△W	15, 20, 30	S6	2	0.9	122	55
150 W		APGZ12K-***□150△N	APGZ12K-***□150△W	15, 20	S1	1	0.9	—	—
200 W		APGZ12K-***□200△N	APGZ12K-***□200△W	15, 20	S1/S2/S3/S5	2	0.9	122	60
200 W		APGZ12K-***□200△N	APGZ12K-***□200△W	15, 20	S6	2	0.9	122	55
200 W		APGZ12K-***□200△N	APGZ12K-***□200△W	15, 20	S7	2	0.9	122	70

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 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

<Figure 3>



<Figure 4>

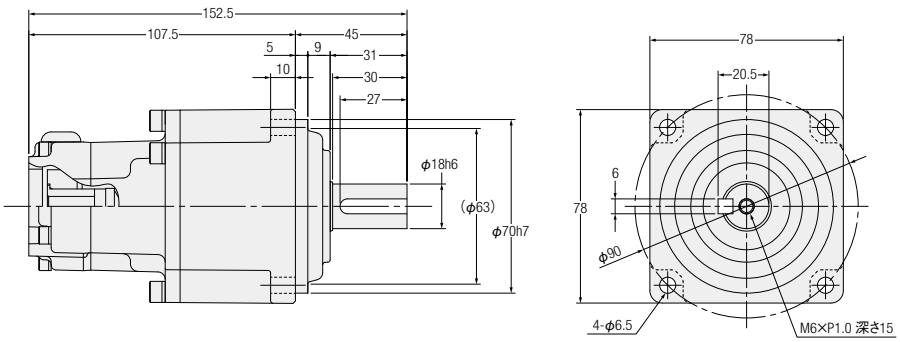


Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B
100 W	J: Straight shaft	APGZ12J-✻✻✻□100△N	APGZ12J-✻✻✻□100△W	15, 20, 30	S1/S3	3	0.9	—	—
100 W		APGZ12J-✻✻✻□100△N	APGZ12J-✻✻✻□100△W	15, 20, 30	S6	4	0.9	122	55
150 W		APGZ12J-✻✻✻□150△N	APGZ12J-✻✻✻□150△W	15, 20	S1	3	0.9	—	—
200 W		APGZ12J-✻✻✻□200△N	APGZ12J-✻✻✻□200△W	15, 20	S1/S2/S3/S5	4	0.9	122	60
200 W		APGZ12J-✻✻✻□200△N	APGZ12J-✻✻✻□200△W	15, 20	S6	4	0.9	122	55
200 W		APGZ12J-✻✻✻□200△N	APGZ12J-✻✻✻□200△W	15, 20	S7	4	0.9	122	70

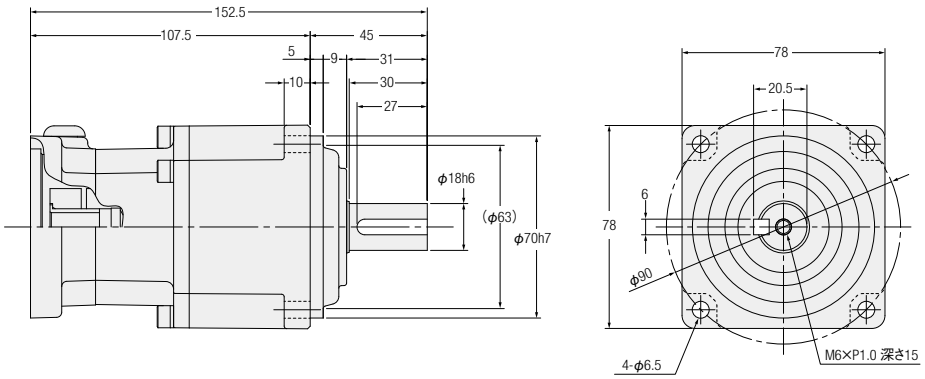
Note: A reduction ratio will be indicated as ✻✻✻ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

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

<Figure 1>



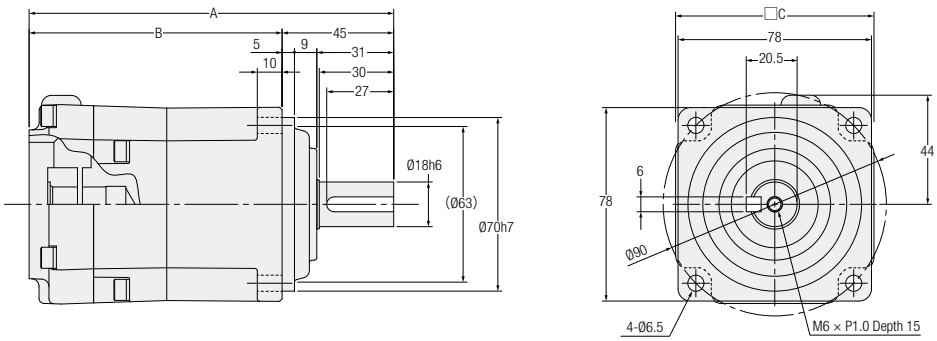
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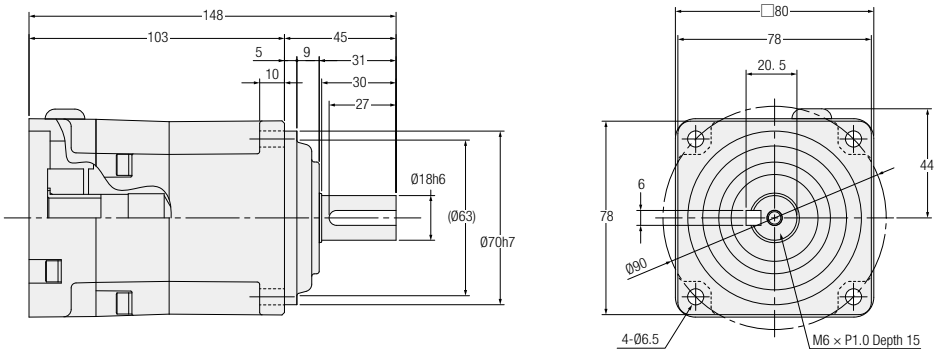
Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)
100 W	K: Output shaft with Shaft end tapped	APGZ18K-∗∗∗□100△N	APGZ18K-∗∗∗□100△W	40, 50, 60, 100	S1/S3/S6	1	2.0
150 W		APGZ18K-∗∗∗□150△N	APGZ18K-∗∗∗□150△W	30, 40, 50, 60	S1	1	2.0
200 W		APGZ18K-∗∗∗□200△N	APGZ18K-∗∗∗□200△W	30, 40, 50, 60	S1/S2/S3/S5/S6	1	2.0
200 W		APGZ18K-∗∗∗□200△N	APGZ18K-∗∗∗□200△W	30, 40, 50, 60	S7	2	2.0
400 W		APGZ18K-∗∗∗□400△N	APGZ18K-∗∗∗□400△W	15, 20, 30	S1/S3/S6	1	2.0
400 W		APGZ18K-∗∗∗□400△N	APGZ18K-∗∗∗□400△W	15, 20, 30	S7	2	2.0

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 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

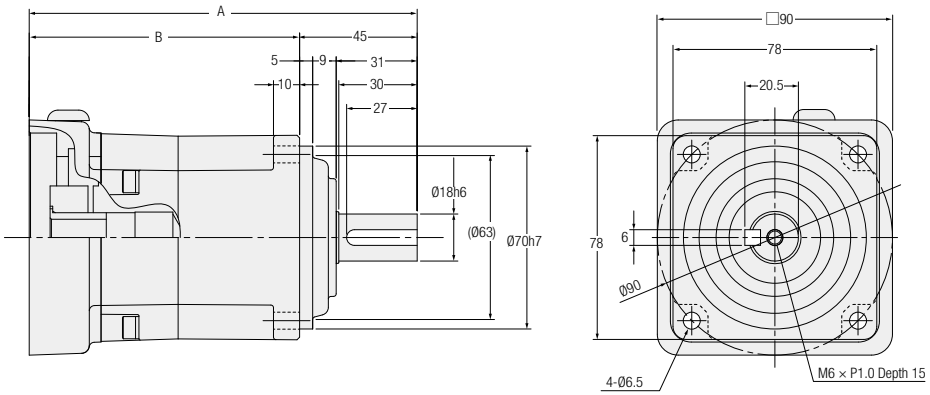
<Figure 3>



<Figure 4>



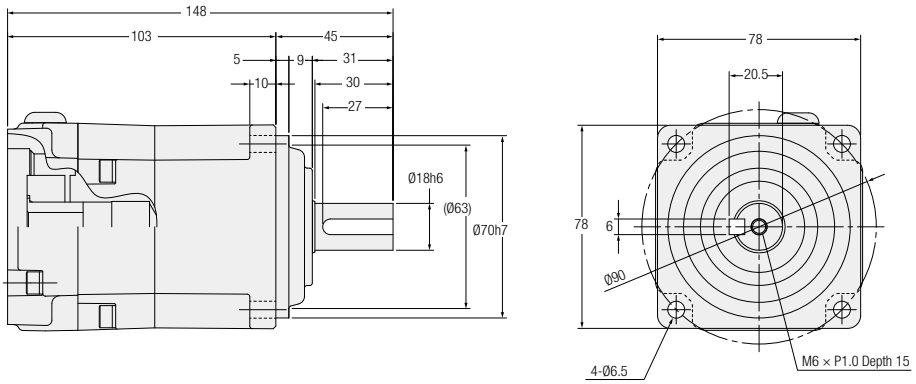
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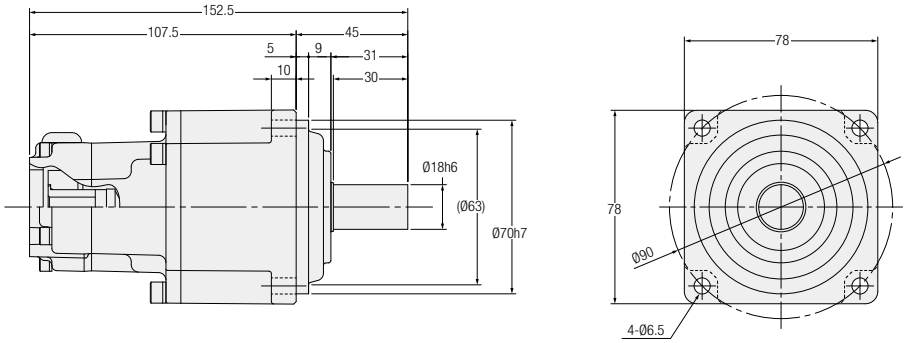
Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B	C
400 W	K: Output shaft with Shaft end tapped	APGZ18K-✱✱✱□400△N	APGZ18K-✱✱✱□400△W	10	S1/S3	3	2.0	128	102	80
400 W		APGZ18K-✱✱✱□400△N	APGZ18K-✱✱✱□400△W	10	S6/S7	3	1.7	128	83	60
600 W		APGZ18K-✱✱✱□600△N	APGZ18K-✱✱✱□600△W	3, 5, 10	S1	3	2.0	147	103	60
750 W		APGZ18K-✱✱✱□750△N	APGZ18K-✱✱✱□750△W	3, 5, 10	S1/S2/S3/S4	4	2.2	—	—	—
750 W		APGZ18K-✱✱✱□750△N	APGZ18K-✱✱✱□750△W	3, 5, 10	F6/F7	5	2.2	153.5	108.5	—
750 W		APGZ18K-✱✱✱□750△N	APGZ18K-✱✱✱□750△W	3, 5, 10	S6	5	2.2	148.5	103.5	—
750 W		APGZ18K-✱✱✱□750△N	APGZ18K-✱✱✱□750△W	3, 5, 10	S9	5	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 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

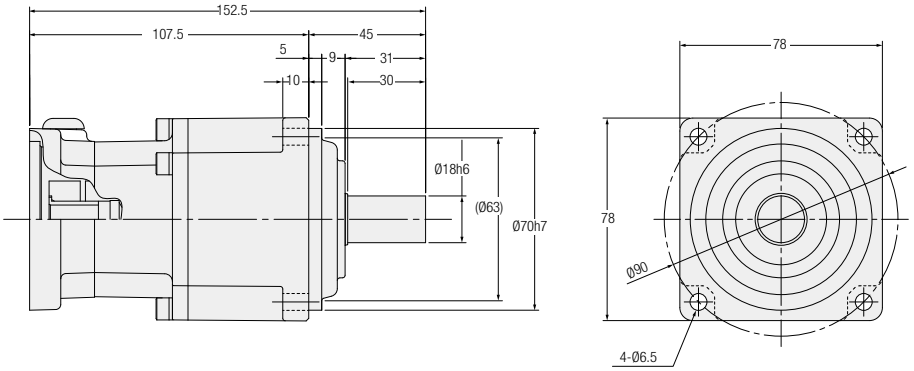
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<Figure 7>



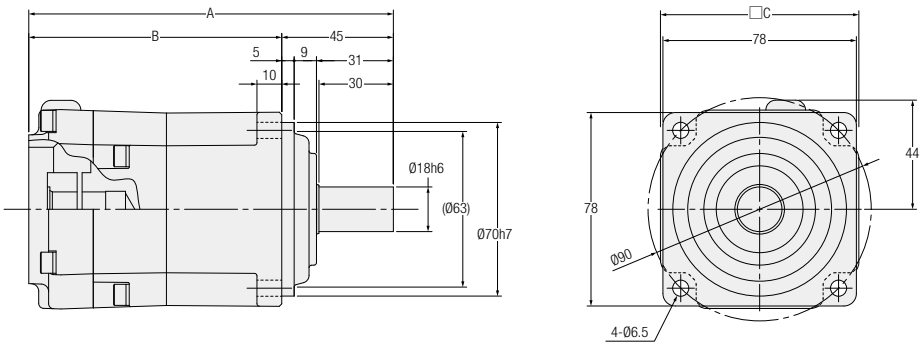
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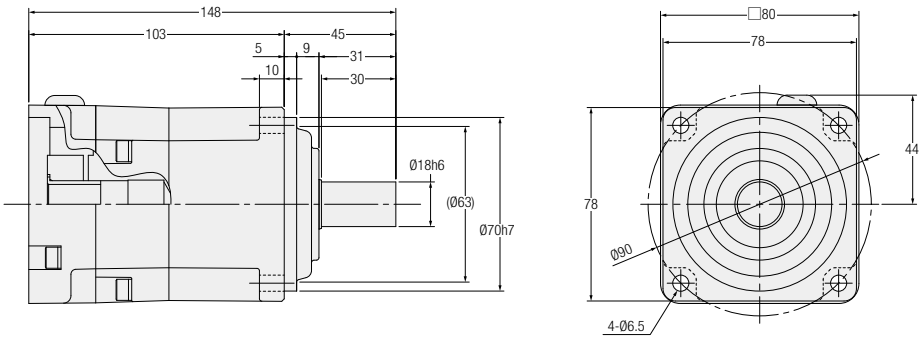
Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)
750 W	K: Output shaft with Shaft end tapped	APGZ18K-✱✱✱□750△N	APGZ18K-✱✱✱□750△W	3, 5, 10	S8	6	2.2
100 W	J: Straight shaft	APGZ18J-✱✱✱□100△N	APGZ18J-✱✱✱□100△W	40, 50, 60, 100	S1/S3/S6	7	2.0
150 W		APGZ18J-✱✱✱□150△N	APGZ18J-✱✱✱□150△W	30, 40, 50, 60	S1	7	2.0
200 W		APGZ18J-✱✱✱□200△N	APGZ18J-✱✱✱□200△W	30, 40, 50, 60	S1/S2/S3/S5/S6	7	2.0
200 W		APGZ18J-✱✱✱□200△N	APGZ18J-✱✱✱□200△W	30, 40, 50, 60	S7	8	2.0
400 W		APGZ18J-✱✱✱□400△N	APGZ18J-✱✱✱□400△W	15, 20, 30	S1/S3/S6	7	2.0
400 W		APGZ18J-✱✱✱□400△N	APGZ18J-✱✱✱□400△W	15, 20, 30	S7	8	2.0

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 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

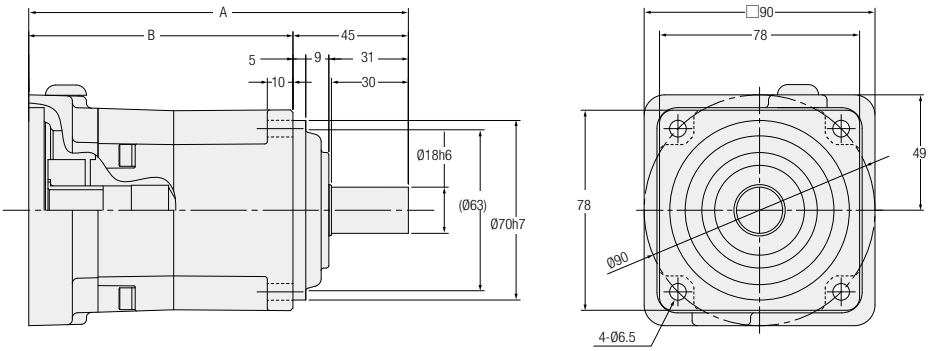
<Figure 9>



<Figure 11>



<Figure 11>

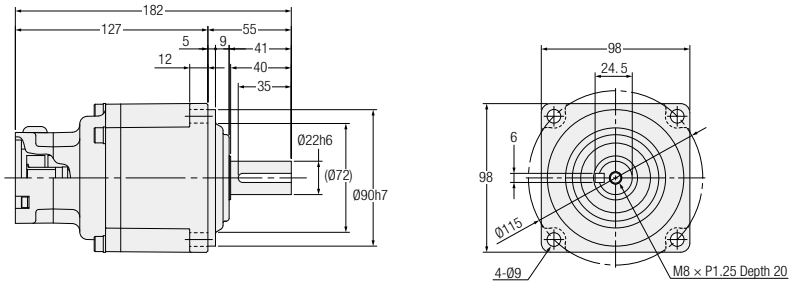


Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B	C
400 W	J: Straight shaft	APGZ18J-***□400△N	APGZ18J-***□400△W	10	S1/S3	9	1.7	128	83	80
400 W		APGZ18J-***□400△N	APGZ18J-***□400△W	10	S6/S7	9	1.7	128	83	60
600 W		APGZ18J-***□600△N	APGZ18J-***□600△W	3, 5, 10	S1	9	2.0	147	103	60
750 W		APGZ18J-***□750△N	APGZ18J-***□750△W	3, 5, 10	S1/S2/S3/S4	10	2.2	—	—	—
750 W		APGZ18J-***□750△N	APGZ18J-***□750△W	3, 5, 10	S8	9	2.2	148	103	80
750 W		APGZ18J-***□750△N	APGZ18J-***□750△W	3, 5, 10	F6/F7	11	2.2	153.5	108.5	—
750 W		APGZ18J-***□750△N	APGZ18J-***□750△W	3, 5, 10	S6	11	2.2	—	—	—
750 W		APGZ18J-***□750△N	APGZ18J-***□750△W	3, 5, 10	S9	11	2.2	148	103	—

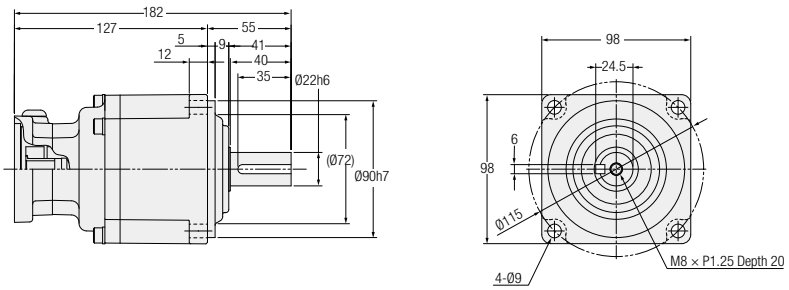
Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

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

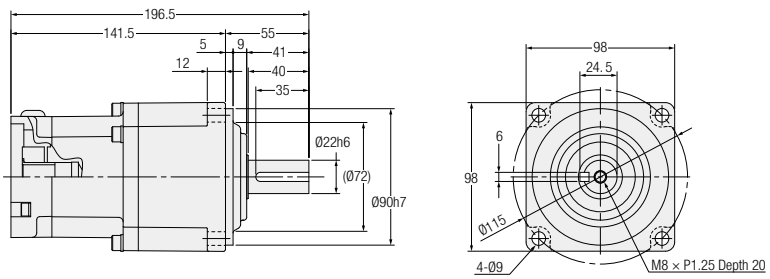
<Figure 1>



<Figure 2>



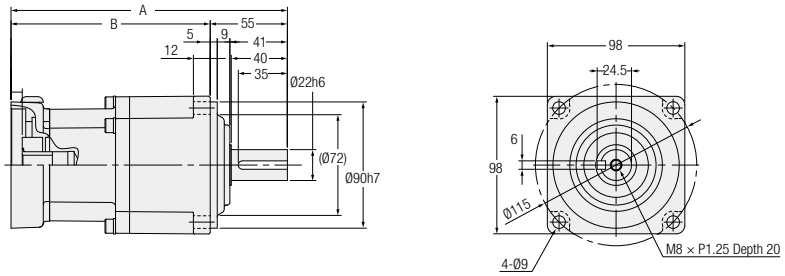
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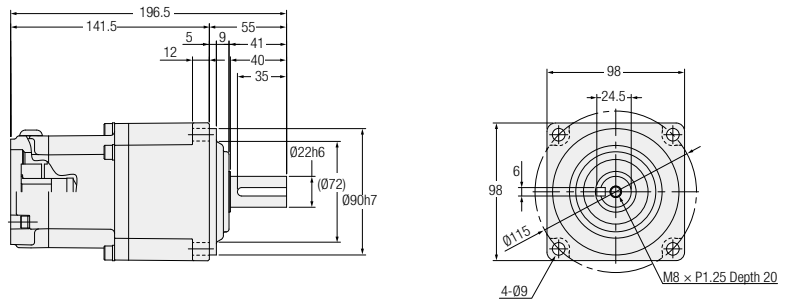
Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)
200 W	K: Output shaft with Shaft end tapped	APGZ22K-✻✻✻□200△N	APGZ22K-✻✻✻□200△W	100	S1/S2/S3/S5/S6	1	3.9
200 W		APGZ22K-✻✻✻□200△N	APGZ22K-✻✻✻□200△W	100	S7	2	3.9
400 W		APGZ22K-✻✻✻□400△N	APGZ22K-✻✻✻□400△W	40, 50, 60	S1/S3/S6	1	3.9
400 W		APGZ22K-✻✻✻□400△N	APGZ22K-✻✻✻□400△W	40, 50, 60	S7	2	3.9
600 W		APGZ22K-✻✻✻□600△N	APGZ22K-✻✻✻□600△W	15, 20, 30	S1	1	3.9
750 W		APGZ22K-✻✻✻□750△N	APGZ22K-✻✻✻□750△W	15, 20, 30	S1/S2/S3/S4	3	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 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

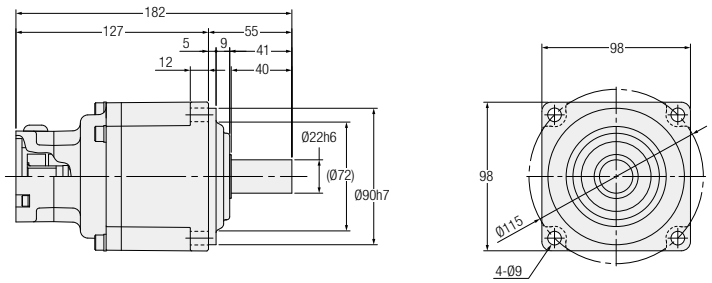
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<Figure 5>



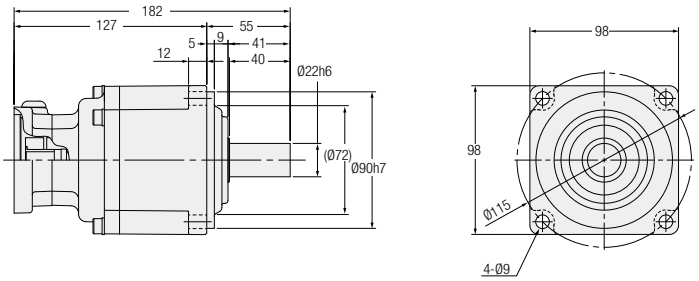
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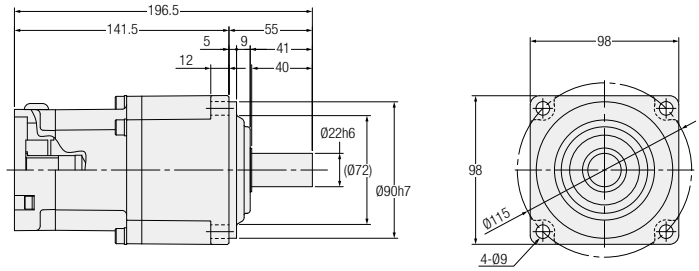
Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B
750 W	K: Output shaft with Shaft end tapped	APGZ22K-✱✱✱□750△N	APGZ22K-✱✱✱□750△W	15, 20, 30	S6	4	4.0	197	142
750 W		APGZ22K-✱✱✱□750△N	APGZ22K-✱✱✱□750△W	15, 20, 30	S9	4	4.0	196.5	141.5
750 W		APGZ22K-✱✱✱□750△N	APGZ22K-✱✱✱□750△W	15, 20, 30	F6/F7	4	4.0	202	147
750 W		APGZ22K-✱✱✱□750△N	APGZ22K-✱✱✱□750△W	15, 20, 30	S8	5	4.0	—	—
200 W	J: Straight shaft	APGZ22J-✱✱✱□200△N	APGZ22J-✱✱✱□200△W	100	S1/S2/S3/ S5/S6	6	3.9	—	—
400 W		APGZ22J-✱✱✱□400△N	APGZ22J-✱✱✱□400△W	40, 50, 60	S1/S3/S6	6	3.9	—	—
600 W		APGZ22J-✱✱✱□600△N	APGZ22J-✱✱✱□600△W	15, 20, 30	S1	6	3.9	—	—

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 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

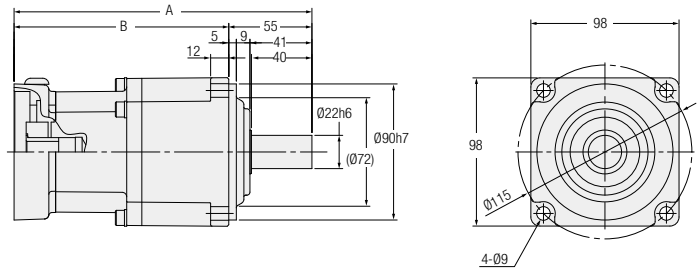
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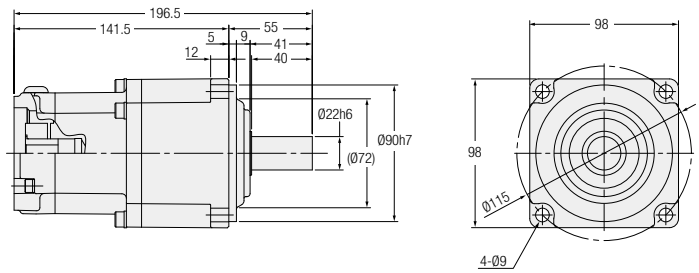
<Figure 8>



<Figure 9>



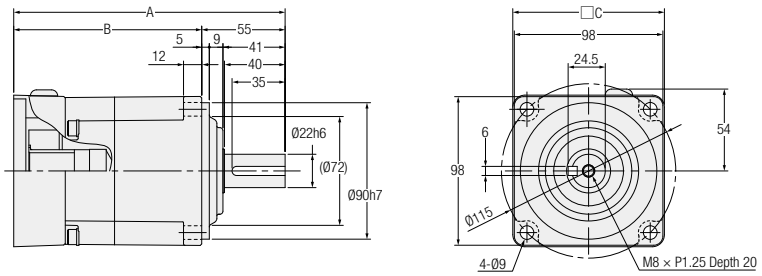
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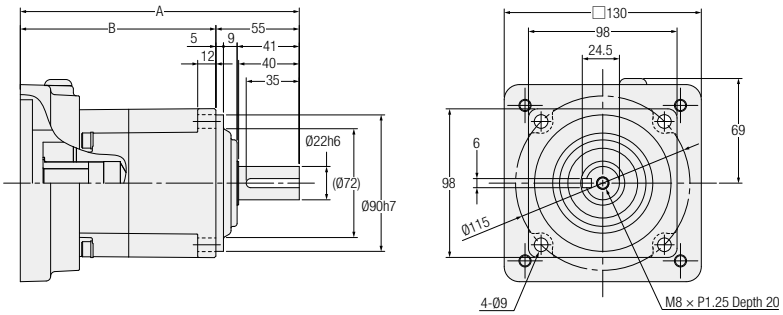
Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B	C
200 W	J: Straight shaft	APGZ22J-✱✱✱□200△N	APGZ22J-✱✱✱□200△W	100	S7	7	3.9	—	—	—
400 W		APGZ22J-✱✱✱□400△N	APGZ22J-✱✱✱□400△W	40, 50, 60	S7	7	3.9	—	—	—
750 W		APGZ22J-✱✱✱□750△N	APGZ22J-✱✱✱□750△W	15, 20, 30	S1/S2/S3/S4	8	4.0	—	—	—
750 W		APGZ22J-✱✱✱□750△N	APGZ22J-✱✱✱□750△W	15, 20, 30	S6	9	4.0	197	142	—
750 W		APGZ22J-✱✱✱□750△N	APGZ22J-✱✱✱□750△W	15, 20, 30	S8	10	4.0	—	—	—
750 W		APGZ22J-✱✱✱□750△N	APGZ22J-✱✱✱□750△W	15, 20, 30	S9	9	4.0	196.5	141.5	—
750 W		APGZ22J-✱✱✱□750△N	APGZ22J-✱✱✱□750△W	15, 20, 30	F6/F7	9	4.0	202	147	—

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 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

<Figure 11>



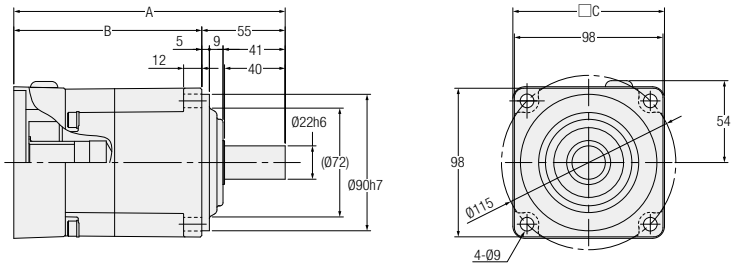
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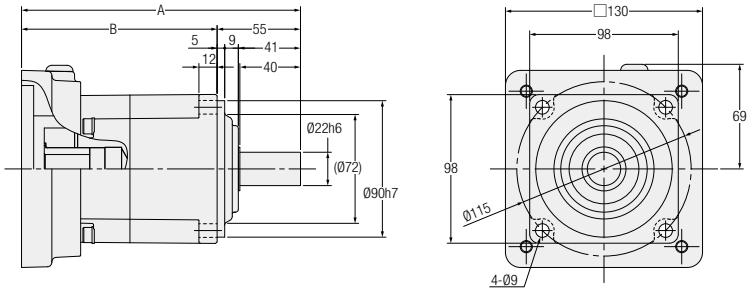
Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B	C
1000 W	K: Output shaft with Shaft end tapped	APGZ22K-***□1000△N	APGZ22K-***□1000△W	3, 5, 10	K13/K21/K22/K23	11	4.0	179	124	100
1000 W		APGZ22K-***□1000△N	APGZ22K-***□1000△W	3, 5, 10	K67/K6E/K61	11	4.0	180	125	95
					K81	11	4.0	180	125	100
1000 W		APGZ22K-***□1000△N	APGZ22K-***□1000△W	3, 5, 10	K99	11	4.0	179	124	95
1000 W		APGZ22K-***□1000△N	APGZ22K-***□1000△W	3, 5, 10	K33	12	4.5	184	129	95
1000 W		APGZ22K-***□1000△N	APGZ22K-***□1000△W	3, 5, 10	F31	12	4.5	188	133	95
1500 W		APGZ22K-***□1500△N	APGZ22K-***□1500△W	3, 5, 10	K13/K21/K22/K23/KAA	11	4.0	179	124	100
1500 W		APGZ22K-***□1500△N	APGZ22K-***□1500△W	3, 5, 10	K61/K67	11	4.0	180	125	95
1500 W		APGZ22K-***□1500△N	APGZ22K-***□1500△W	3, 5, 10	K99	11	4.0	179	124	95
1500 W		APGZ22K-***□1500△N	APGZ22K-***□1500△W	3, 5, 10	K31/K32/K33	12	4.5	184	129	—
1500 W		APGZ22K-***□1500△N	APGZ22K-***□1500△W	3, 5, 10	F31	12	4.5	188	133	—
2000 W		APGZ22K-***□2000△N	APGZ22K-***□2000△W	3, 5, 10	K13/K21/K22/K23/KAA	11	4.0	179	124	100
2000 W		APGZ22K-***□2000△N	APGZ22K-***□2000△W	3, 5, 10	K61/K67	11	4.0	180	125	95
2000 W		APGZ22K-***□2000△N	APGZ22K-***□2000△W	3, 5, 10	K31/K32/K33	12	4.5	184	129	—
2000 W		APGZ22K-***□2000△N	APGZ22K-***□2000△W	3, 5, 10	F31/F32/F33	12	4.5	188	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 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

<Figure 13>



<Figure 14>

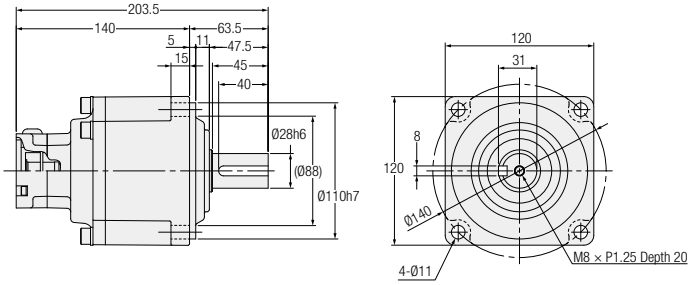


Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B	C
1000 W	J: Straight shaft	APGZ22J-***□1000△N	APGZ22J-***□1000△W	3, 5, 10	K13/K21/K22/K23	13	4.0	179	124	100
1000 W		APGZ22J-***□1000△N	APGZ22J-***□1000△W	3, 5, 10	K67/K6E/K61	13	4.0	180	125	95
					K81	13	4.0	180	125	100
1000 W		APGZ22J-***□1000△N	APGZ22J-***□1000△W	3, 5, 10	K99	13	4.0	179	124	95
1000 W		APGZ22J-***□1000△N	APGZ22J-***□1000△W	3, 5, 10	K33	14	4.0	184	129	—
1000 W		APGZ22J-***□1000△N	APGZ22J-***□1000△W	3, 5, 10	F31	14	4.5	188	133	—
1500 W		APGZ22J-***□1500△N	APGZ22J-***□1500△W	3, 5, 10	K13/K21/K22/K23/KAA	13	4.0	179	124	100
1500 W		APGZ22J-***□1500△N	APGZ22J-***□1500△W	3, 5, 10	K61/K67	13	4.0	180	125	95
1500 W		APGZ22J-***□1500△N	APGZ22J-***□1500△W	3, 5, 10	K99	13	4.0	179	124	95
1500 W		APGZ22J-***□1500△N	APGZ22J-***□1500△W	3, 5, 10	K31/K32/K33	14	4.5	184	129	—
1500 W		APGZ22J-***□1500△N	APGZ22J-***□1500△W	3, 5, 10	F31	14	4.5	188	133	—
2000 W		APGZ22J-***□2000△N	APGZ22J-***□2000△W	3, 5, 10	K13/K21/K22/K23/KAA	13	4.0	179	124	100
2000 W		APGZ22J-***□2000△N	APGZ22J-***□2000△W	3, 5, 10	K61/K67	13	4.0	180	125	95
2000 W		APGZ22J-***□2000△N	APGZ22J-***□2000△W	3, 5, 10	K31/K32/K33	14	4.5	184	129	—
2000 W		APGZ22J-***□2000△N	APGZ22J-***□2000△W	3, 5, 10	F31/F32/F33	14	4.5	188	133	—

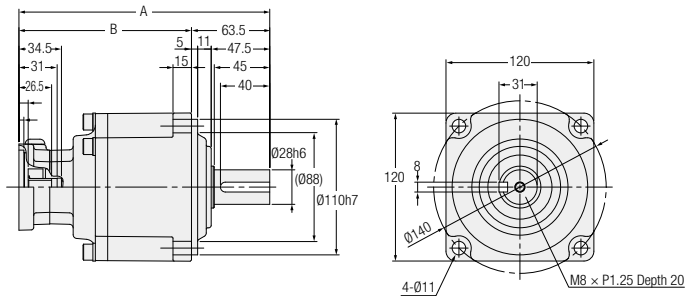
Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

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

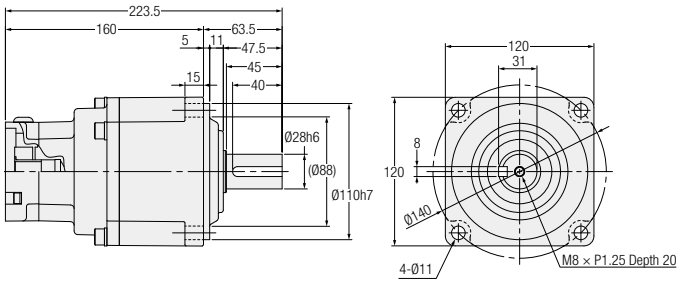
<Figure 1>



<Figure 2>



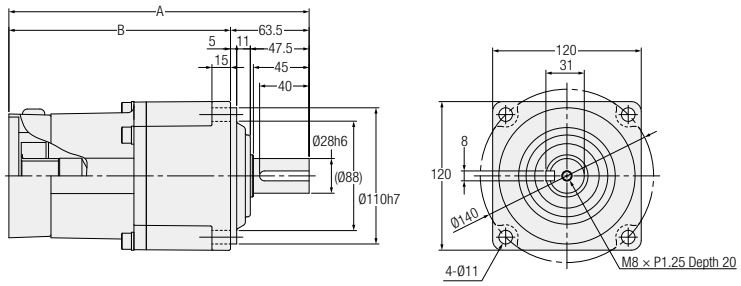
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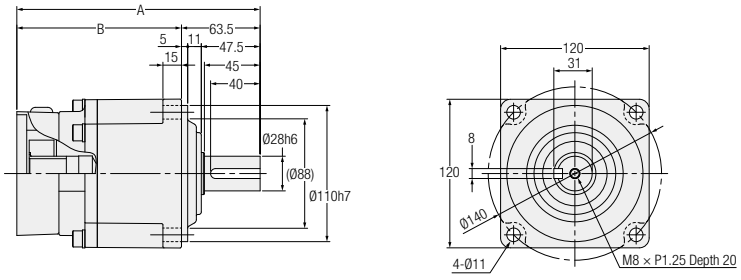
Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B
400 W	K: Output shaft with Shaft end tapped	APGZ28K-***□400△N	APGZ28K-***□400△W	100	S1/S3/S6	1	8.0	—	—
400 W		APGZ28K-***□400△N	APGZ28K-***□400△W	100	S7	2	8.0	203.5	140
600 W		APGZ28K-***□600△N	APGZ28K-***□600△W	40, 50, 60	S1	1	8.0	—	—
750 W		APGZ28K-***□750△N	APGZ28K-***□750△W	40, 50, 60	S1/S2/S3/S4	3	8.0	—	—
750 W		APGZ28K-***□750△N	APGZ28K-***□750△W	40, 50, 60	S6	2	8.0	224	160.5
750 W		APGZ28K-***□750△N	APGZ28K-***□750△W	40, 50, 60	S8	3	8.0	—	—
750 W		APGZ28K-***□750△N	APGZ28K-***□750△W	40, 50, 60	S9	2	8.0	223.5	160
750 W		APGZ28K-***□750△N	APGZ28K-***□750△W	40, 50, 60	F6/F7	2	8.0	229	165.5

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 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

<Figure 4>



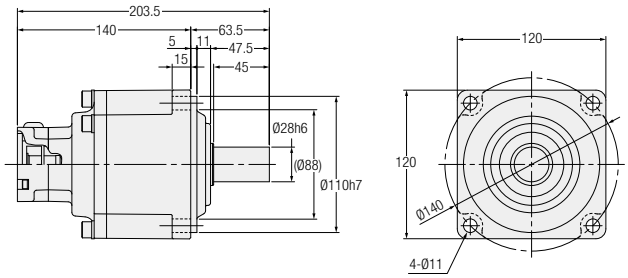
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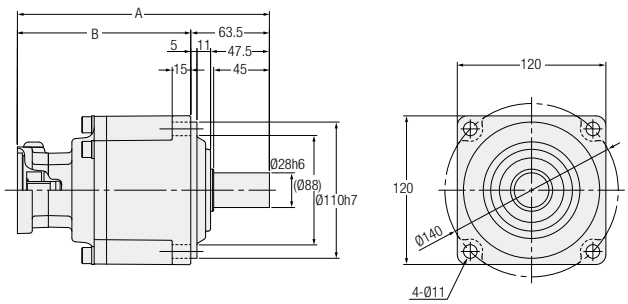
Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B
1000 W	K: Output shaft with Shaft end tapped	APGZ28K-✱✱✱□1000△N	APGZ28K-✱✱✱□1000△W	15, 20, 30, 40, 50	K13/K21/K22/ K23/K99	4	8.5	242.5	179
1000 W		APGZ28K-✱✱✱□1000△N	APGZ28K-✱✱✱□1000△W	15, 20, 30, 40, 50	K61/K67/K6E/ K81	4	8.5	243.5	180
1500 W		APGZ28K-✱✱✱□1500△N	APGZ28K-✱✱✱□1500△W	15, 20, 30	K13/K21/K22/ K23/K99/KAA	4	8.5	242.5	179
1500 W		APGZ28K-✱✱✱□1500△N	APGZ28K-✱✱✱□1500△W	15, 20, 30	K61/K67	4	8.5	243.5	180
2000 W		APGZ28K-✱✱✱□2000△N	APGZ28K-✱✱✱□2000△W	15, 20	K13/K21/K22/ K23/K99/KAA	4	8.5	242.5	179
2000 W		APGZ28K-✱✱✱□2000△N	APGZ28K-✱✱✱□2000△W	15, 20	K61/K67	4	8.5	243.5	180
3000 W		APGZ28K-✱✱✱□3000△N	APGZ28K-✱✱✱□3000△W	3, 5, 10	K13/K21/K22/ K23	5	6.3	196.5	133
3000 W		APGZ28K-✱✱✱□3000△N	APGZ28K-✱✱✱□3000△W	3, 5, 10	K61	5	6.3	197.5	134

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 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

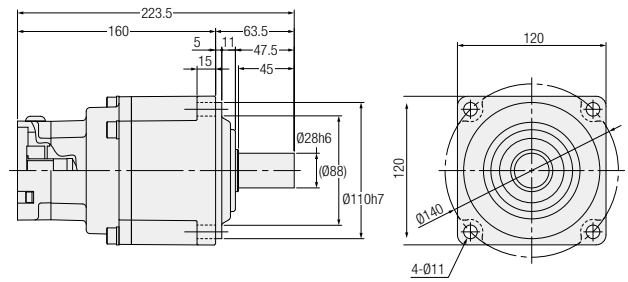
<Figure 6>



<Figure 7>



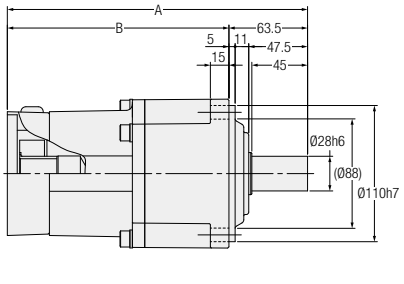
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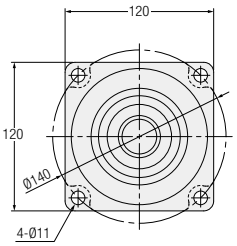


Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B
400 W	J: Straight shaft	APGZ28J-***□400△N	APGZ28J-***□400△W	100	S1/S3/S6	6	8.0	—	—
400 W		APGZ28J-***□400△N	APGZ28J-***□400△W	100	S7	7	8.0	203.5	140
600 W		APGZ28J-***□600△N	APGZ28J-***□600△W	40, 50, 60	S1	6	8.0	—	—
750 W		APGZ28J-***□750△N	APGZ28J-***□750△W	40, 50, 60	S1/S2/S3/S4	8	8.0	—	—
750 W		APGZ28J-***□750△N	APGZ28J-***□750△W	40, 50, 60	S6	7	8.0	224	160.5
750 W		APGZ28J-***□750△N	APGZ28J-***□750△W	40, 50, 60	S8	8	8.0	—	—
750 W		APGZ28J-***□750△N	APGZ28J-***□750△W	40, 50, 60	S9	7	8.0	223.5	160
750 W		APGZ28J-***□750△N	APGZ28J-***□750△W	40, 50, 60	F6/F7	7	8.0	229	165.5

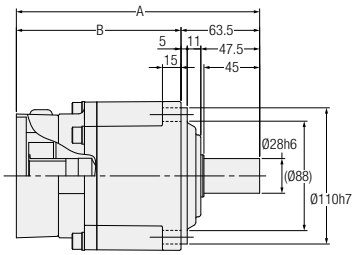
Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

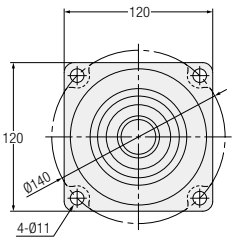
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<Figure 10>

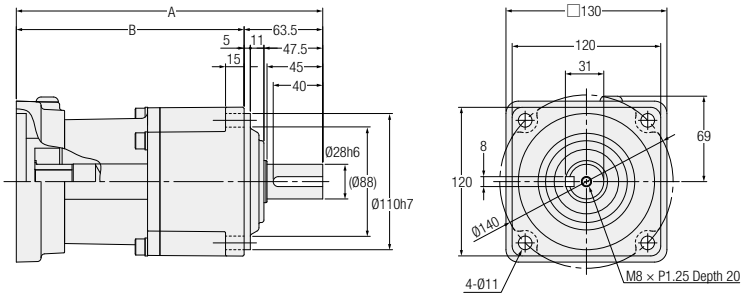




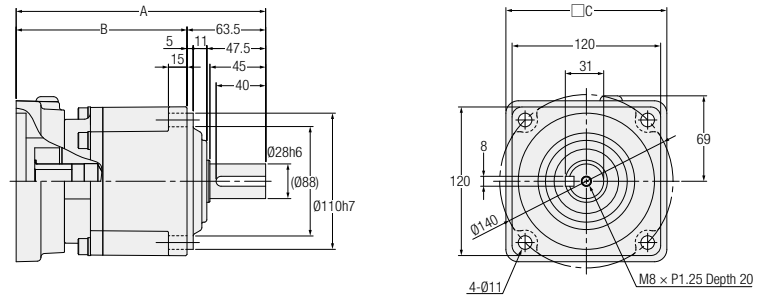
Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B
1000 W	J: Straight shaft	APGZ28J-✱✱✱□1000△N	APGZ28J-✱✱✱□1000△W	15, 20, 30, 40, 50	K13/K21/K22/ K23/K99	9	8.5	242.5	179
1000 W		APGZ28J-✱✱✱□1000△N	APGZ28J-✱✱✱□1000△W	15, 20, 30, 40, 50	K61/K67/K6E/ K81	9	8.5	243.5	180
1500 W		APGZ28J-✱✱✱□1500△N	APGZ28J-✱✱✱□1500△W	15, 20, 30	K13/K21/K22/ K23/K99/KAA	9	8.5	242.5	179
1500 W		APGZ28J-✱✱✱□1500△N	APGZ28J-✱✱✱□1500△W	15, 20, 30	K61/K67	9	8.5	243.5	180
2000 W		APGZ28J-✱✱✱□2000△N	APGZ28J-✱✱✱□2000△W	15, 20	K13/K21/K22/ K23/KAA	9	8.5	242.5	179
2000 W		APGZ28J-✱✱✱□2000△N	APGZ28J-✱✱✱□2000△W	15, 20	K61/K67	9	8.5	243.5	180
3000 W		APGZ28J-✱✱✱□3000△N	APGZ28J-✱✱✱□3000△W	3, 5, 10	K13/K21/K22/ K23	10	6.3	196.5	133
3000 W		APGZ28J-✱✱✱□3000△N	APGZ28J-✱✱✱□3000△W	3, 5, 10	K61	10	6.3	197.5	134

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 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

<Figure 11>



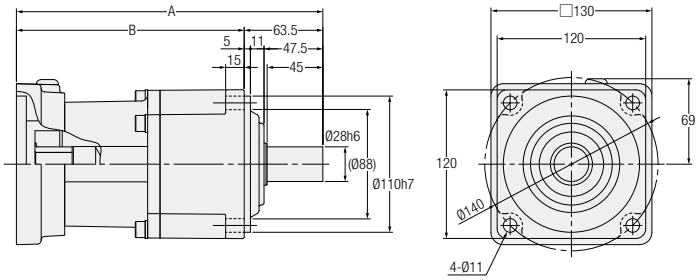
<Figure 12>



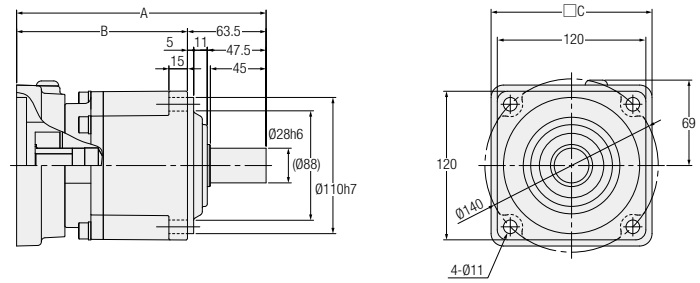
Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B	C
1000 W	K: Output shaft with Shaft end tapped	APGZ28K-✱✱✱□1000△N	APGZ28K-✱✱✱□1000△W	15, 20, 30, 40, 50	K33	11	9.0	247.5	184	—
1000 W		APGZ28K-✱✱✱□1000△N	APGZ28K-✱✱✱□1000△W	15, 20, 30, 40, 50	F31	11	9.0	251.5	188	—
1500 W		APGZ28K-✱✱✱□1500△N	APGZ28K-✱✱✱□1500△W	15, 20, 30	K31/K32/K33	11	9.0	247.5	184	—
1500 W		APGZ28K-✱✱✱□1500△N	APGZ28K-✱✱✱□1500△W	15, 20, 30	F31	11	9.0	251.5	188	—
2000 W		APGZ28K-✱✱✱□2000△N	APGZ28K-✱✱✱□2000△W	15, 20	F31/F32/F33	11	9.0	251.5	188	—
2000 W		APGZ28K-✱✱✱□2000△N	APGZ28K-✱✱✱□2000△W	15, 20	K31/K32/K33	11	9.0	247.5	184	—
3000 W		APGZ28K-✱✱✱□3000△N	APGZ28K-✱✱✱□3000△W	3, 5, 10	K31/K32/K33/ K34	12	6.8	201.5	138	130
3000 W		APGZ28K-✱✱✱□3000△N	APGZ28K-✱✱✱□3000△W	3, 5, 10	KBC	12	6.3	201.5	138	120
3000 W		APGZ28K-✱✱✱□3000△N	APGZ28K-✱✱✱□3000△W	3, 5, 10	F31/F32/F33	11	6.8	205.5	142	—

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 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

<Figure 13>



<Figure 14>

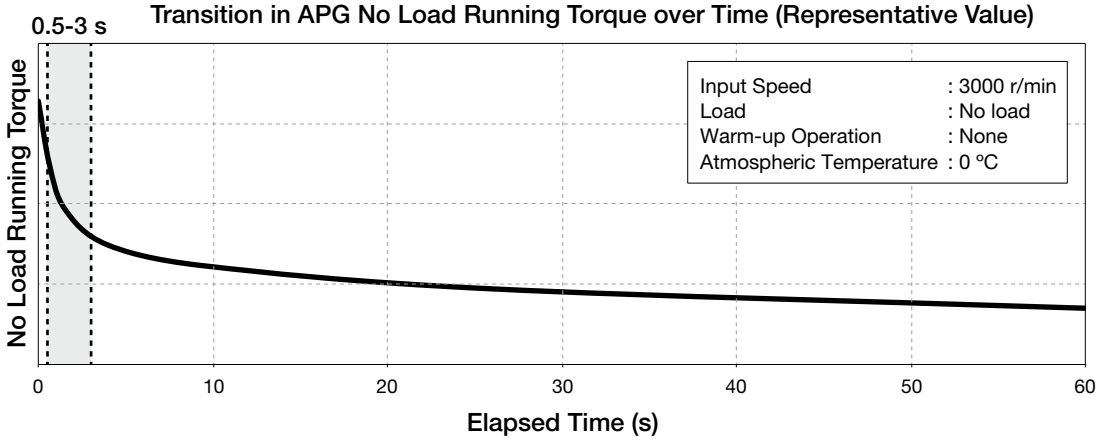


Motor Power Class	Shaft Arrangement	Ingress Protection Rating: IP44 Class	Ingress Protection Rating: IP65 Class	Reduction Ratio	Flange Type	Figure Number	Approx. Weight (kg)	A	B	C
1000 W	J: Straight shaft	APGZ28J-✻✻✻□1000△N	APGZ28J-✻✻✻□1000△W	15, 20, 30, 40, 50	K33	13	9.0	247.5	184	—
1000 W		APGZ28J-✻✻✻□1000△N	APGZ28J-✻✻✻□1000△W	15, 20, 30, 40, 50	F31	13	9.0	251.5	188	—
1500 W		APGZ28J-✻✻✻□1500△N	APGZ28J-✻✻✻□1500△W	15, 20, 30	K31/K32/K33	13	9.0	247.5	184	—
1500 W		APGZ28J-✻✻✻□1500△N	APGZ28J-✻✻✻□1500△W	15, 20, 30	F31	13	9.0	251.5	188	—
2000 W		APGZ28J-✻✻✻□2000△N	APGZ28J-✻✻✻□2000△W	15, 20	K31/K32/K33	13	9.0	247.5	184	—
2000 W		APGZ28J-✻✻✻□2000△N	APGZ28J-✻✻✻□2000△W	15, 20	F31/F32/F33	13	9.0	251.5	188	—
3000 W		APGZ28J-✻✻✻□3000△N	APGZ28J-✻✻✻□3000△W	3, 5, 10	K31/K32/K33/ K34	14	6.8	201.5	138	130
3000 W		APGZ28J-✻✻✻□3000△N	APGZ28J-✻✻✻□3000△W	3, 5, 10	KBC	14	6.3	201.5	138	120
3000 W		APGZ28J-✻✻✻□3000△N	APGZ28J-✻✻✻□3000△W	3, 5, 10	F31/F32/F33	13	6.8	205.5	142	—

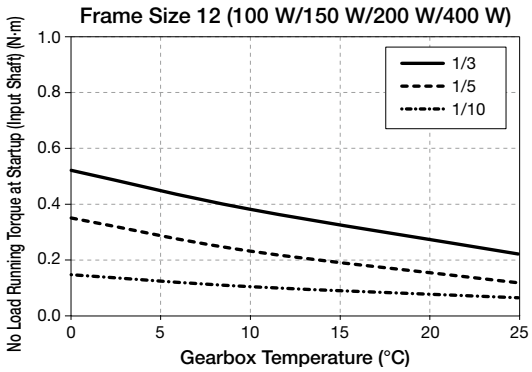
Note: A reduction ratio will be indicated as ✻✻✻ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 728 to 735.
Note: Please refer to pages 886 to 894 for the detailed dimensions of the input shaft area.
Note: Please refer to page 756 for the performance table.

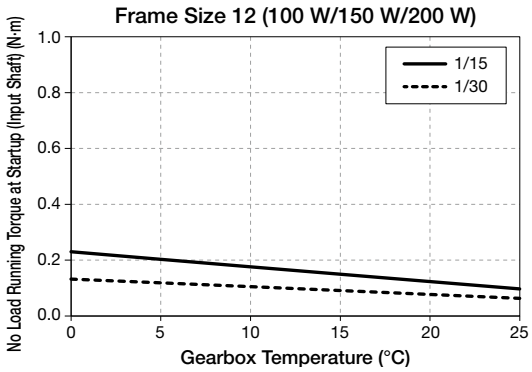
1-3. Low Temperature Startup Characteristics (No Load Running Torque (Input Shaft))

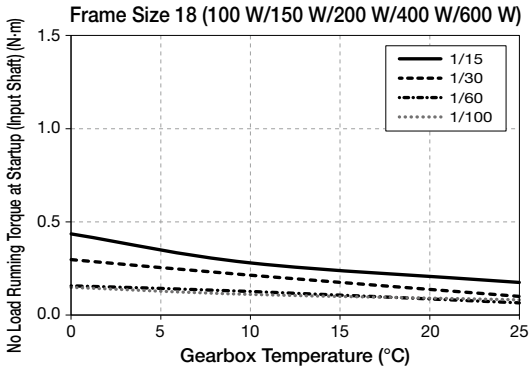
No load running torque means the input shaft torque required to run the gearbox at the rated input speed (3000 r/min) under no load state.
When the gearbox is used at low temperature, the no load running torque at a startup will increase.
When the operation is continued, the no load running torque will decrease with the temperature rise of the gearbox.
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.

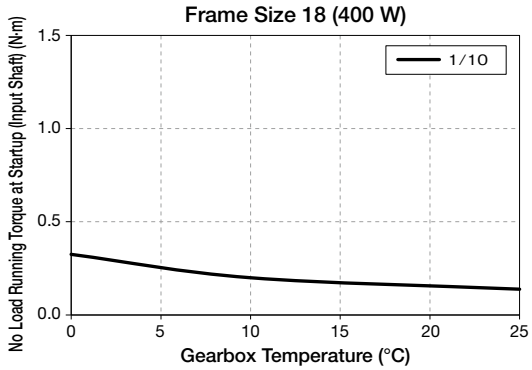


Input Speed: 3000 r/min
No Load Running Torque (Input Shaft): Average value between 0.5 and 3 seconds
The figure below shows a representative value in a state where a warm-up operation is not performed.

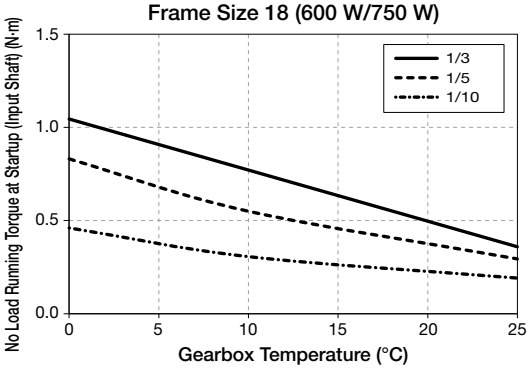




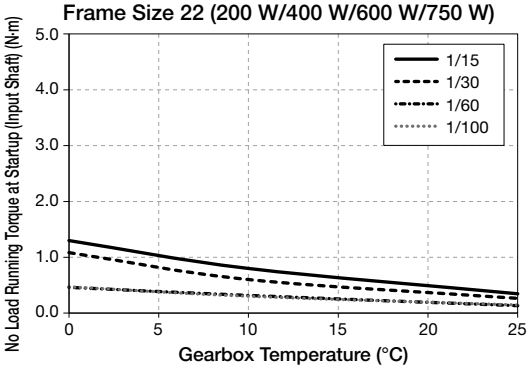




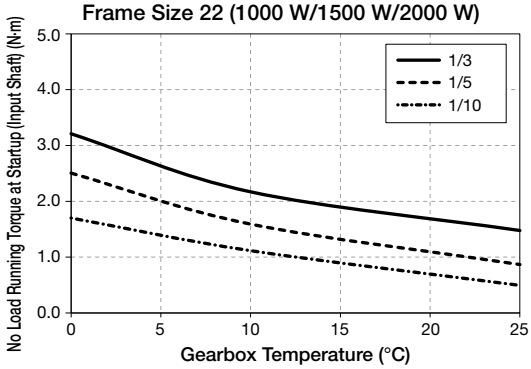
Frame Size 18 (600 W/750 W)



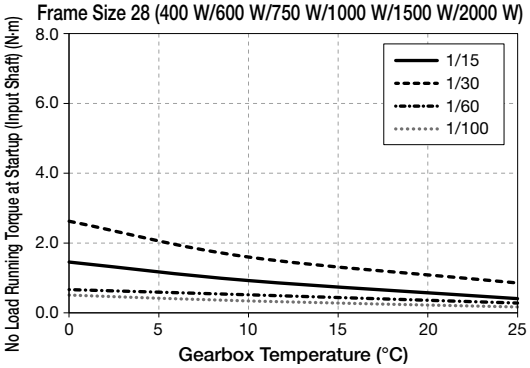
Frame Size 22 (200 W/400 W/600 W/750 W)



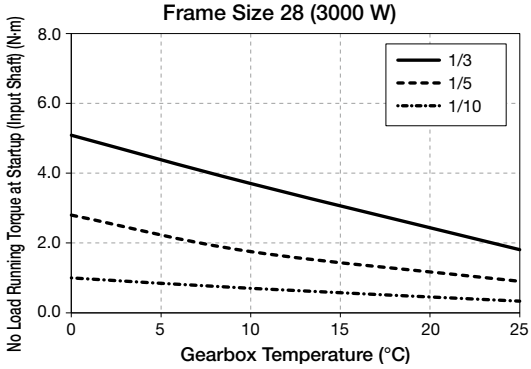
Frame Size 22 (1000 W/1500 W/2000 W)



Frame Size 28 (400 W/600 W/750 W/1000 W/1500 W/2000 W)



Frame Size 28 (3000 W)



MEMO

2. Low Backlash High Precision Gearboxes 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 941. In addition, for the servo motor-based motor rated output torque, please refer to page 916.
- 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 gearbox 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

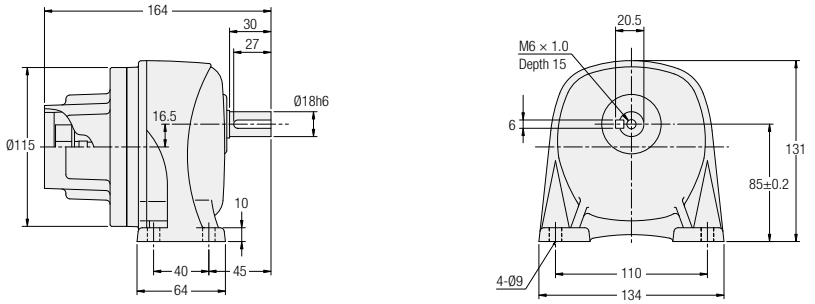
Mounting Type	Output Shaft Diameter	Nominal Reduction Ratio	Actual Reduction Ratio	Precision	Power Class	Allowable Average Torque (3000 r/min)	Allowable Peak Torque of Startup/ Stop	Allowable Output Shaft O.H.L.	Allowable Output Shaft Thrust Load	Internal Moment of Inertia (Input Shaft Equivalent)	Drawings
						N·m	N·m	N	N	$\times 10^{-4}$kg·m^2	
AG3LZ/KZ	18	1/5	33/164	L (60 arc min)	100	0.9	1.7	250	29	0.395	P.782/P.788
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.783/P.789
AG3LZ/KZ	28	1/5	91/459	L (50 arc min)	750	9.6	19	900	78	1.452	P.784/P.790
AG3LZ/KZ	32	1/5	1/5	L (40 arc min)	2000	25	51	1240	147	4.889	P.785/P.791
AG3LZ/KZ	18	1/10	77/779	L (40 arc min)	100	1.9	3.9	540	78	0.382	P.782/P.788
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.783/P.789
AG3LZ/KZ	28	1/10	1/10	L (30 arc min)	750	19	38	1240	167	1.377	P.784/P.790
AG3LZ/KZ	32	1/10	1/10	L (30 arc min)	2000	51	102	1720	294	4.733	P.785/P.791
AG3LZ/KZ	18	1/15	119/1804	L (40 arc min)	100	2.9	5.8	690	118	0.379	P.782/P.788
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.783/P.789
AG3LZ/KZ	28	1/15	91/1360	L (30 arc min)	750	29	57	1510	226	1.358	P.784/P.790
AG3LZ/KZ	32	1/15	1/15	L (30 arc min)	2000	76	153	1990	422	4.674	P.785/P.791
AG3LZ/KZ	18	1/20	49/984	L (30 arc min)	100	3.8	7.7	830	167	0.377	P.782/P.788
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.783/P.789
AG3LZ/KZ	28	1/20	5/102	L (30 arc min)	750	39	78	1650	294	1.345	P.784/P.790
AG3LZ/KZ	32	1/20	1/20	L (30 arc min)	2000	102	204	2270	461	4.650	P.785/P.791
AG3LZ/KZ	18	1/25	28/697	L (30 arc min)	100	4.8	10	900	196	0.376	P.782/P.788
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.783/P.789
AG3LZ/KZ	28	1/25	7/170	L (30 arc min)	750	46	93	1720	324	1.343	P.784/P.790
AG3LZ/KZ	32	1/25	9/230	L (30 arc min)	2000	130	260	2680	490	4.633	P.785/P.791
AG3LZ/KZ	18	1/30	35/1066	L (30 arc min)	100	5.8	12	960	226	0.375	P.782/P.788
AG3LZ/KZ	22	1/30	7/216	L (30 arc min)	200	12	24	1240	255	0.680	P.783/P.789
AG3LZ/KZ	28	1/30	1/30	L (30 arc min)	400	25	50	1790	363	0.711	P.784/P.790
AG3LZ/KZ	32	1/30	3/92	L (30 arc min)	750	59	117	2820	667	1.378	P.785/P.791
AG3LZ/FZ	40	1/30	1/30	L (30 arc min)	2000	153	305	3570	853	4.718	P.786/P.792
AG3LZ/KZ	18	1/40	35/1404	L (30 arc min)	100	7.7	15	1030	245	0.371	P.782/P.788
AG3LZ/KZ	22	1/40	91/3600	L (30 arc min)	200	16	33	1310	265	0.679	P.783/P.789
AG3LZ/KZ	28	1/40	221/8610	L (30 arc min)	400	35	69	1990	373	0.708	P.784/P.790
AG3LZ/KZ	32	1/40	13/516	L (30 arc min)	750	71	142	2950	696	1.372	P.785/P.791
AG3LZ/FZ	40	1/40	13/540	L (30 arc min)	2000	211	423	4120	883	4.694	P.786/P.792
AG3LZ/KZ	18	1/50	7/351	L (30 arc min)	100	10	19	1100	265	0.370	P.782/P.788
AG3LZ/KZ	22	1/50	11/540	L (30 arc min)	200	20	41	1380	275	0.678	P.783/P.789
AG3LZ/KZ	28	1/50	187/9030	L (30 arc min)	400	43	86	2200	392	0.705	P.784/P.790
AG3LZ/KZ	32	1/50	11/540	L (30 arc min)	750	88	176	3230	716	1.366	P.785/P.791
AG3LZ/FZ	40	1/50	11/564	L (30 arc min)	2000	261	522	4940	912	4.681	P.786/P.792

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.783/P.789
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.784/P.790
AG3LZ/KZ	32	1/60	13/774	L (30 arc min)	750	107	213	3850	735	1.368	P.785/P.791
AG3LZ/FZ	40	1/60	91/5400	L (30 arc min)	2000	302	604	4940	980	4.688	P.786/P.792
AG3LZ/KZ	22	1/80	21/1634	L (30 arc min)	100	16	32	1720	275	0.371	P.783/P.789
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.784/P.790
AG3LZ/KZ	32	1/80	13/1032	L (30 arc min)	750	142	284	4120	755	1.367	P.785/P.791
AG3LZ/FZ	40	1/80	13/1080	L (30 arc min)	2000	423	846	4940	1030	4.684	P.786/P.792
AG3LZ/KZ	22	1/100	7/684	L (30 arc min)	100	20	40	1720	294	0.371	P.783/P.789
AG3LZ/KZ	28	1/100	13/1353	L (30 arc min)	200	43	86	1990	422	0.690	P.784/P.790
AG3LZ/KZ	32	1/100	7/688	L (30 arc min)	400	88	175	3430	765	0.734	P.785/P.791
AG3LZ/FZ	40	1/100	91/9000	L (30 arc min)	750	177	354	4940	1079	1.438	P.786/P.792
AG3LZ/FZ	50	1/100	25/2618	L (30 arc min)	2000	533	1066	6860	1471	4.856	P.787/P.793
AG3LZ/KZ	22	1/120	147/17974	L (30 arc min)	100	25	51	1720	294	0.371	P.783/P.789
AG3LZ/KZ	28	1/120	91/11000	L (30 arc min)	200	50	100	2340	431	0.689	P.784/P.790
AG3LZ/KZ	32	1/120	77/9360	L (30 arc min)	400	108	217	4120	785	0.731	P.785/P.791
AG3LZ/FZ	40	1/120	77/9400	L (30 arc min)	750	218	437	4940	1079	1.431	P.786/P.792
AG3LZ/FZ	50	1/120	77/8993	L (30 arc min)	2000	594	1189	6860	1471	4.896	P.787/P.793
AG3LZ/KZ	22	1/160	21/3268	L (30 arc min)	100	32	64	1720	294	0.371	P.783/P.789
AG3LZ/KZ	28	1/160	1/165	L (30 arc min)	200	68	136	2410	451	0.688	P.784/P.790
AG3LZ/KZ	32	1/160	21/3328	L (30 arc min)	400	141	282	4120	834	0.728	P.785/P.791
AG3LZ/FZ	40	1/160	9/1400	L (30 arc min)	750	278	557	4940	1128	1.425	P.786/P.792
AG3LZ/FZ	50	1/160	33/5474	L (30 arc min)	2000	844	1688	6860	1520	4.821	P.787/P.793
AG3LZ/KZ	22	1/200	21/4085	L (30 arc min)	100	40	80	1720	294	0.371	P.783/P.789
AG3LZ/KZ	28	1/200	7/1375	L (30 arc min)	200	81	162	2410	461	0.688	P.784/P.790
AG3LZ/KZ	32	1/200	189/38272	L (30 arc min)	400	180	361	4120	853	0.728	P.785/P.791
AG3LZ/FZ	40	1/200	9/1750	L (30 arc min)	750	348	696	4940	1177	1.425	P.786/P.792
AG3LZ/FZ	50	1/200	30/5831	L (30 arc min)	2000	* 862	1725	6860	1569	4.820	P.787/P.793

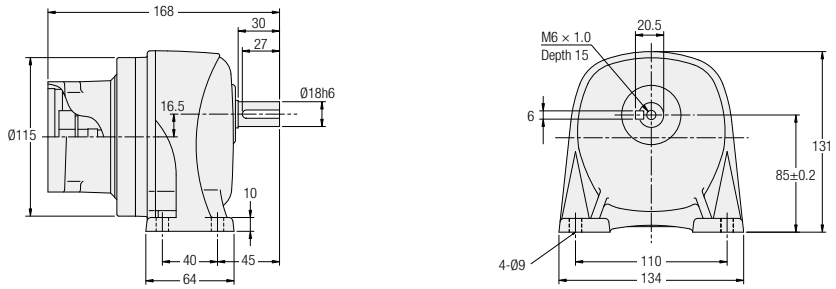
2-2. Drawings

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

<Figure 1>



<Figure 2>

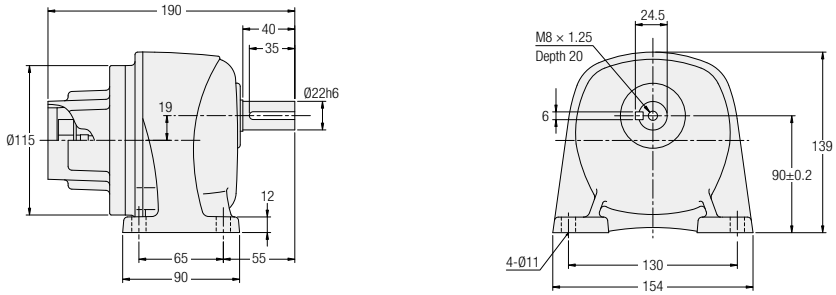


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	Approx. Weight (kg)
100 W	AG3LZ18-***□100△	5, 10, 15, 20, 25, 30, 40, 50	1	F1/F3/S1/S3	4
200 W	AG3LZ18-***□200△	5, 10, 15, 20, 25	2	F1/F2/F3/S1/S2/S3	4

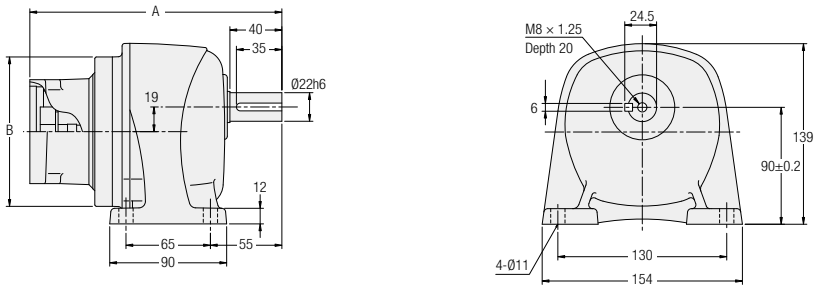
Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 744 to 750.
Note: Please refer to pages 895 to 898 for the detailed dimensions of the input shaft area.
Note: Please refer to page 780 for the performance table.

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

<Figure 1>



<Figure 2>

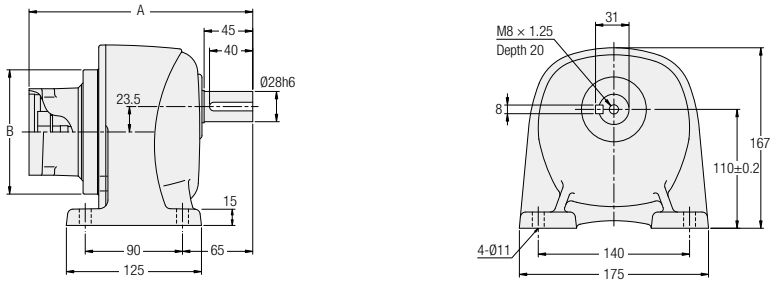


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	Approx. Weight (kg)	A	B
100 W	AG3LZ22-✱✱✱□100△	60, 80, 100, 120, 160, 200	1	F1/F3/S1/S3	5	—	—
200 W	AG3LZ22-✱✱✱□200△	30, 40, 50, 60, 80	2	F1/F2/F3/S1/S2/S3	5	194	Ø115
400 W	AG3LZ22-✱✱✱□400△	5, 10, 15, 20, 25	2	F1/F3/S1/S3	5.5	195.5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

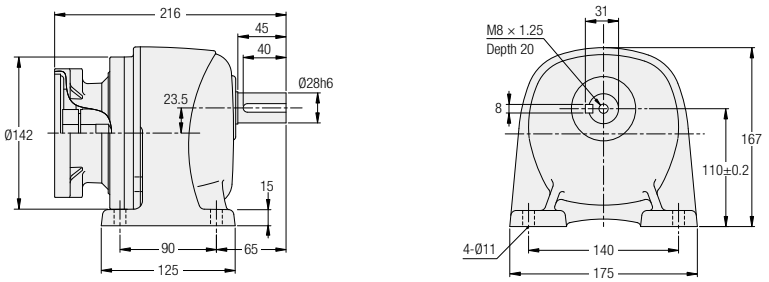
Note: A reduction ratio will be indicated as ✱✱✱ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 744 to 750.
Note: Please refer to pages 895 to 898 for the detailed dimensions of the input shaft area.
Note: Please refer to page 780 for the performance table.

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

<Figure 1>



<Figure 2>

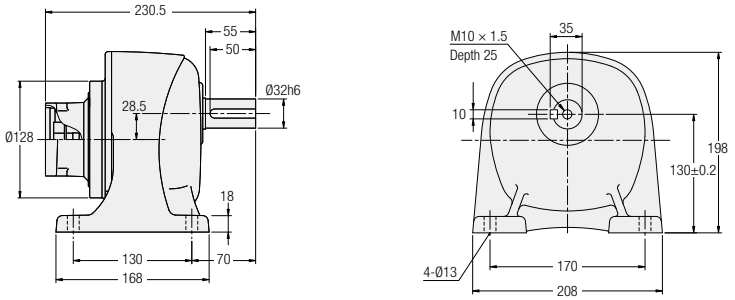


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	Approx. Weight (kg)	A	B
200 W	AG3LZ28-***□200△	100, 120, 160, 200	1	F1/F2/F3/S1/S2/S3	7	207	Ø115
400 W	AG3LZ28-***□400△	30, 40, 50, 60, 80	1	F1/F3/S1/S3	7.5	211.5	Ø128
750 W	AG3LZ28-***□750△	5, 10, 15, 20, 25	2	F1/F2/S1/S2/S3/S4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

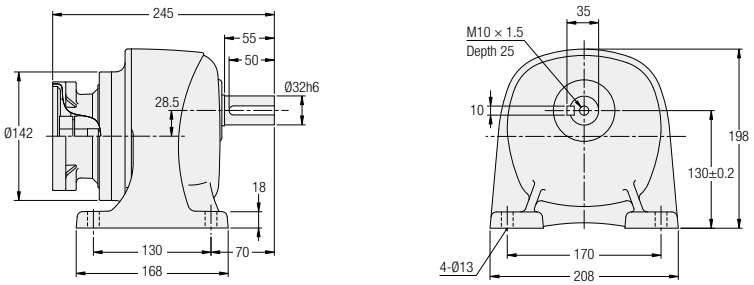
Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 744 to 750.
Note: Please refer to pages 895 to 898 for the detailed dimensions of the input shaft area.
Note: Please refer to page 780 for the performance table.

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

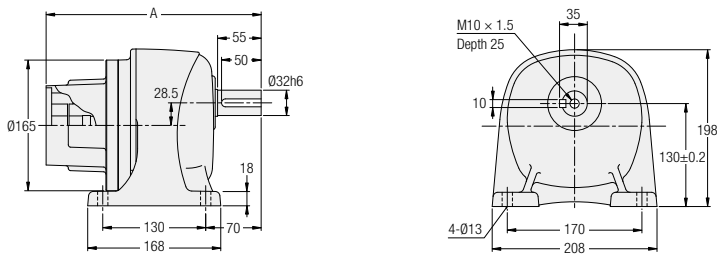
<Figure 1>



<Figure 2>



<Figure 3>

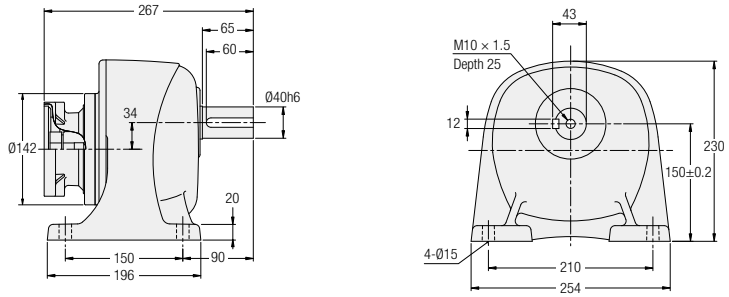


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	A	Approx. Weight (kg)
400 W	AG3LZ32-***□400△	100, 120, 160, 200	1	F1/F3/S1/S3	—	10.5
750 W	AG3LZ32-***□750△	30, 40, 50, 60, 80	2	F1/F2/S1/S2/S3/S4	—	10.5
2000 W	AG3LZ32-***□2000△	5, 10, 15, 20, 25	3	K21/K22/K23	271.5	12
				K31/K32/K33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

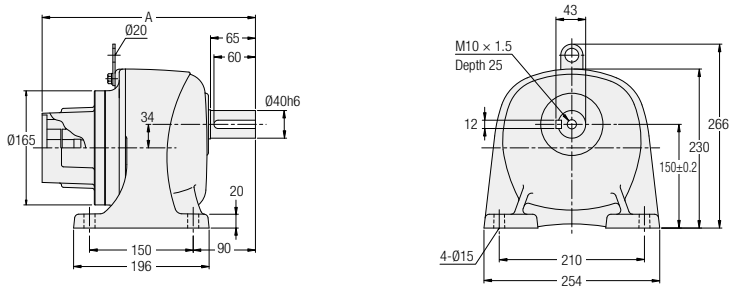
Note: A reduction ratio will be indicated as *** in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 744 to 750.
Note: Please refer to pages 895 to 898 for the detailed dimensions of the input shaft area.
Note: Please refer to page 780 for the performance table.

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

<Figure 1>



<Figure 2>

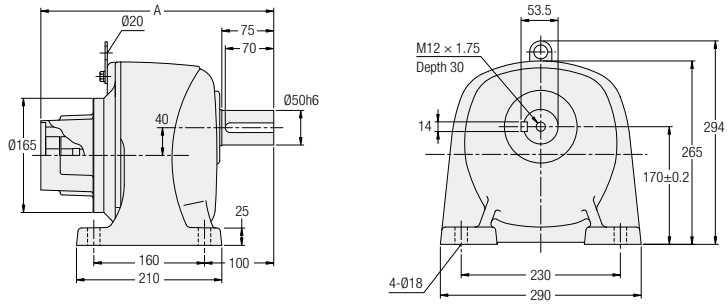


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	A	Approx. Weight (kg)
750 W	AG3LZ40-***□750△	100, 120, 160, 200	1	F1/F2/S1/S2/S3/S4	—	18
2000 W	AG3LZ40-***□2000△	30, 40, 50, 60, 80	2	K21/K22/K23	308.5	20
				K31/K32/K33	308.5	
				F31/F33	318.5	

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 744 to 750.
Note: Please refer to pages 895 to 898 for the detailed dimensions of the input shaft area.
Note: Please refer to page 780 for the performance table.

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

<Figure 1>

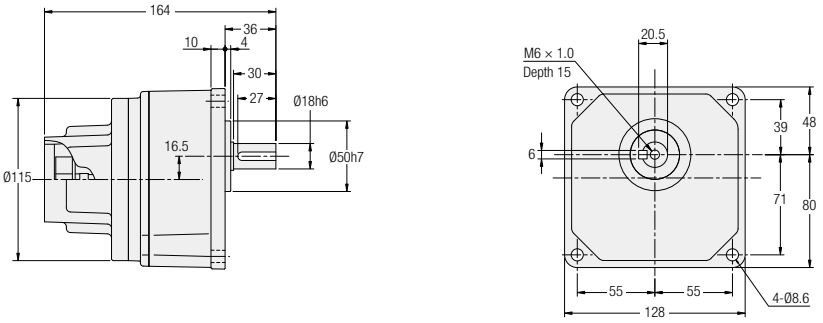


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	A	Approx. Weight (kg)
2000 W	AG3LZ50-✻✻✻□2000△	100, 120, 160, 200	1	K21/K22/K23	336.5	53
				K31/K32/K33	336.5	
				F31/F33	346.5	

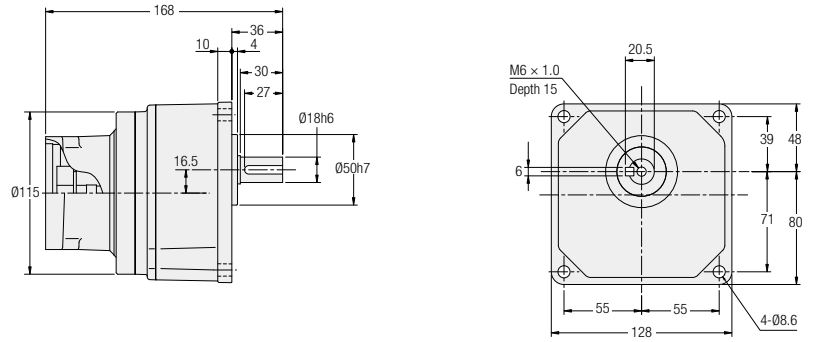
Note: A reduction ratio will be indicated as ✻✻✻ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 744 to 750.
Note: Please refer to pages 895 to 898 for the detailed dimensions of the input shaft area.
Note: Please refer to page 781 for the performance table.

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

<Figure 1>



<Figure 2>

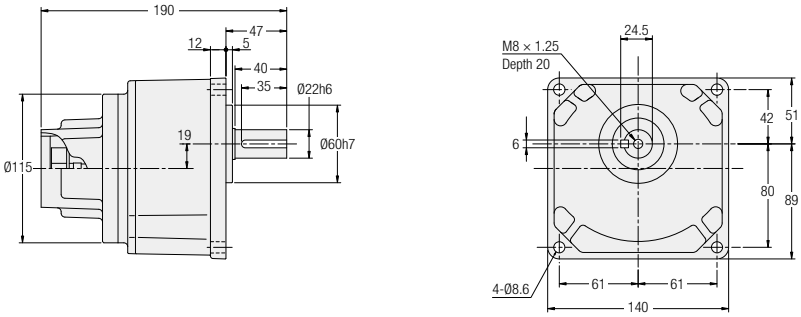


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	Approx. Weight (kg)
100 W	AG3KZ18-✻✻✻□100△	5, 10, 15, 20, 25, 30, 40, 50	1	F1/F3/S1/S3	4
200 W	AG3KZ18-✻✻✻□200△	5, 10, 15, 20, 25	2	F1/F2/F3/S1/S2/S3	4

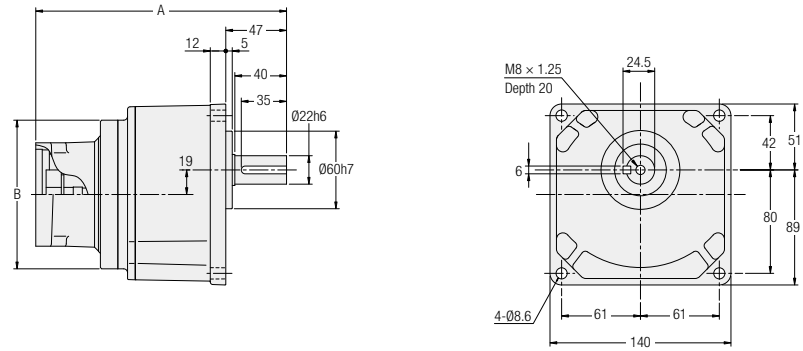
Note: A reduction ratio will be indicated as ✻✻✻ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 744 to 750.
Note: Please refer to pages 895 to 898 for the detailed dimensions of the input shaft area.
Note: Please refer to page 780 for the performance table.

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

<Figure 1>



<Figure 2>

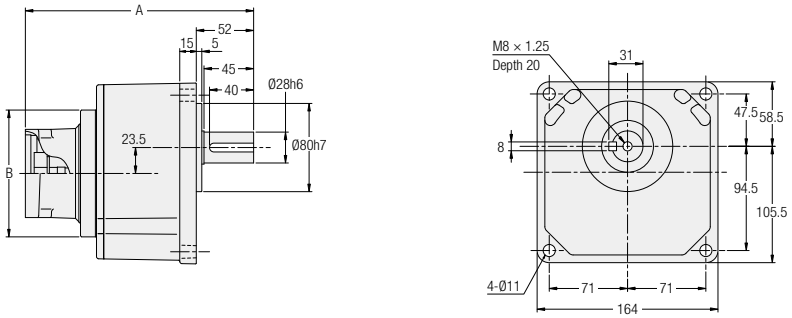


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	Approx. Weight (kg)	A	B
100 W	AG3KZ22-✱✱✱□100△	60, 80, 100, 120, 160, 200	1	F1/F3/S1/S3	5	—	—
200 W	AG3KZ22-✱✱✱□200△	30, 40, 50, 60, 80	2	F1/F2/F3/S1/S2/S3	5	194	Ø115
400 W	AG3KZ22-✱✱✱□400△	5, 10, 15, 20, 25	2	F1/F3/S1/S3	5.5	195.5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

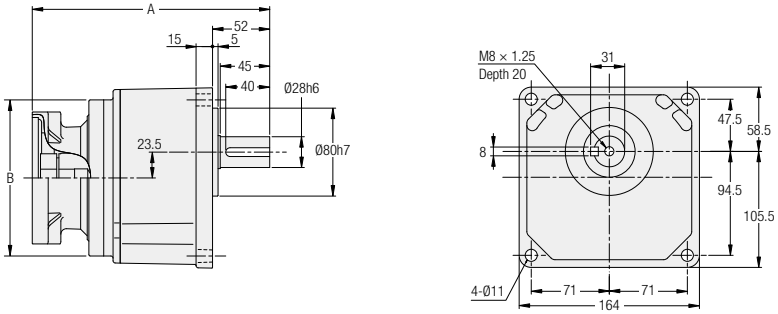
Note: A reduction ratio will be indicated as ✱✱✱ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 744 to 750.
Note: Please refer to pages 895 to 898 for the detailed dimensions of the input shaft area.
Note: Please refer to page 780 for the performance table.

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

<Figure 1>



<Figure 2>

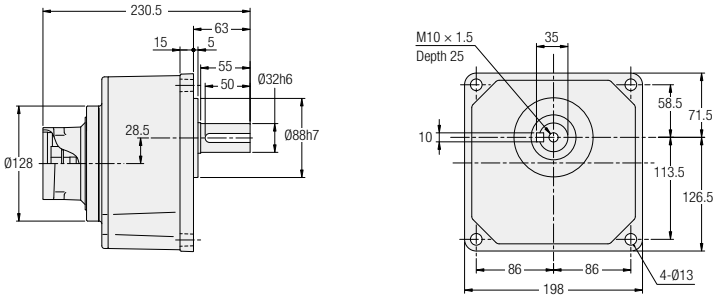


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	Approx. Weight (kg)	A	B
200 W	AG3KZ28-✱✱✱□200△	100, 120, 160, 200	1	F1/F2/F3/S1/S2/S3	7	207	Ø115
400 W	AG3KZ28-✱✱✱□400△	30, 40, 50, 60, 80	1	F1/F3/S1/S3	7.5	211.5	Ø128
750 W	AG3KZ28-✱✱✱□750△	5, 10, 15, 20, 25	2	F1/F2/S1/S2/S3/S4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

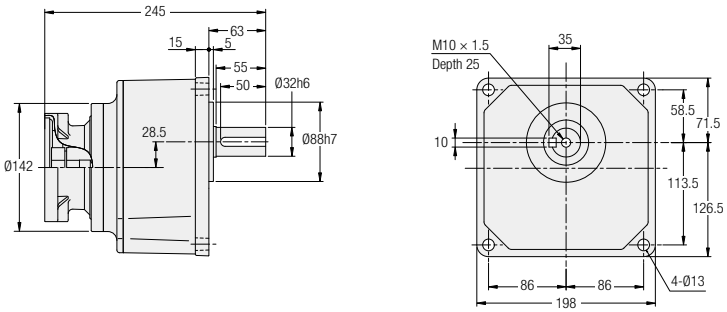
Note: A reduction ratio will be indicated as ✱✱✱ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 744 to 750.
Note: Please refer to pages 895 to 898 for the detailed dimensions of the input shaft area.
Note: Please refer to page 780 for the performance table.

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

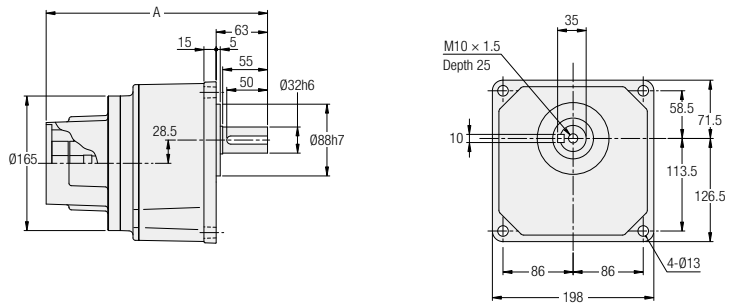
<Figure 1>



<Figure 2>



<Figure 3>

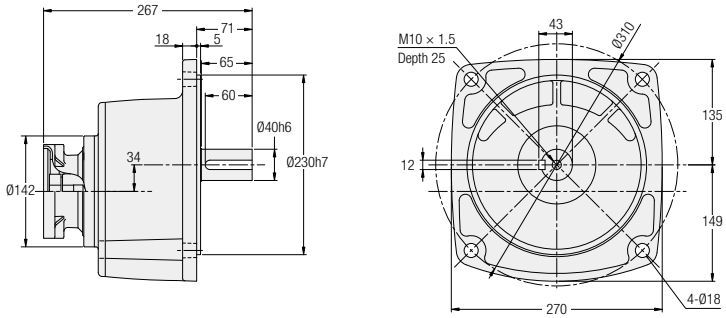


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	A	Approx. Weight (kg)
400 W	AG3KZ32-✻✻✻□400△	100, 120, 160, 200	1	F1/F3/S1/S3	—	10.5
750 W	AG3KZ32-✻✻✻□750△	30, 40, 50, 60, 80	2	F1/F2/S1/S2/S3/S4	—	10.5
2000 W	AG3KZ32-✻✻✻□2000△	5, 10, 15, 20, 25	3	K21/K22/K23	271.5	12
				K31/K32/K33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

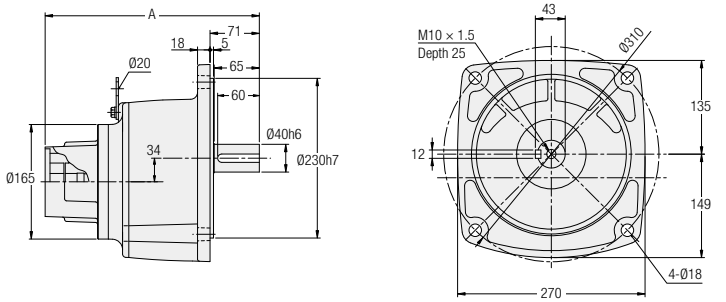
Note: A reduction ratio will be indicated as ✻✻✻ in the nomenclature. In addition, backlash will be indicated as □, and a flange type will be indicated as △.
Note: For flange type codes, please refer to the Motor Matching / Motor Power Design Lists on pages 744 to 750.
Note: Please refer to pages 895 to 898 for the detailed dimensions of the input shaft area.
Note: Please refer to page 780 for the performance table.

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

<Figure 1>



<Figure 2>

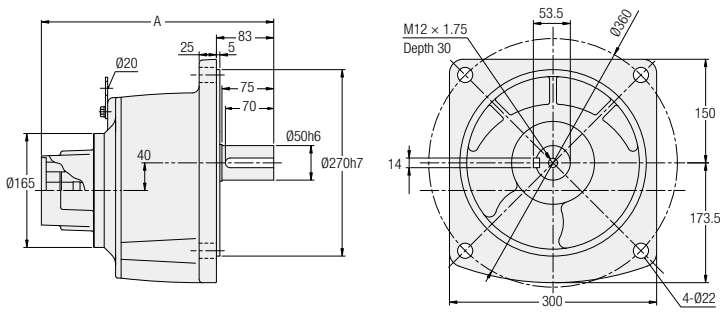


Motor Power Class	Part Number	Reduction Ratio	Figure Number	Flange Type	A	Approx. Weight (kg)
750 W	AG3FZ40-✱✱✱□750△	100, 120, 160, 200	1	F1/F2/S1/S2/S3/S4	—	19.5
2000 W	AG3FZ40-✱✱✱□2000△	30, 40, 50, 60, 80	2	K21/K22/K23	308.5	21.5
				K31/K32/K33	308.5	
				F31/F33	318.5	

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 744 to 750.
Note: Please refer to pages 895 to 898 for the detailed dimensions of the input shaft area.
Note: Please refer to page 780 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 744 to 750.
Note: Please refer to pages 895 to 898 for the detailed dimensions of the input shaft area.
Note: Please refer to page 781 for the performance table.

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