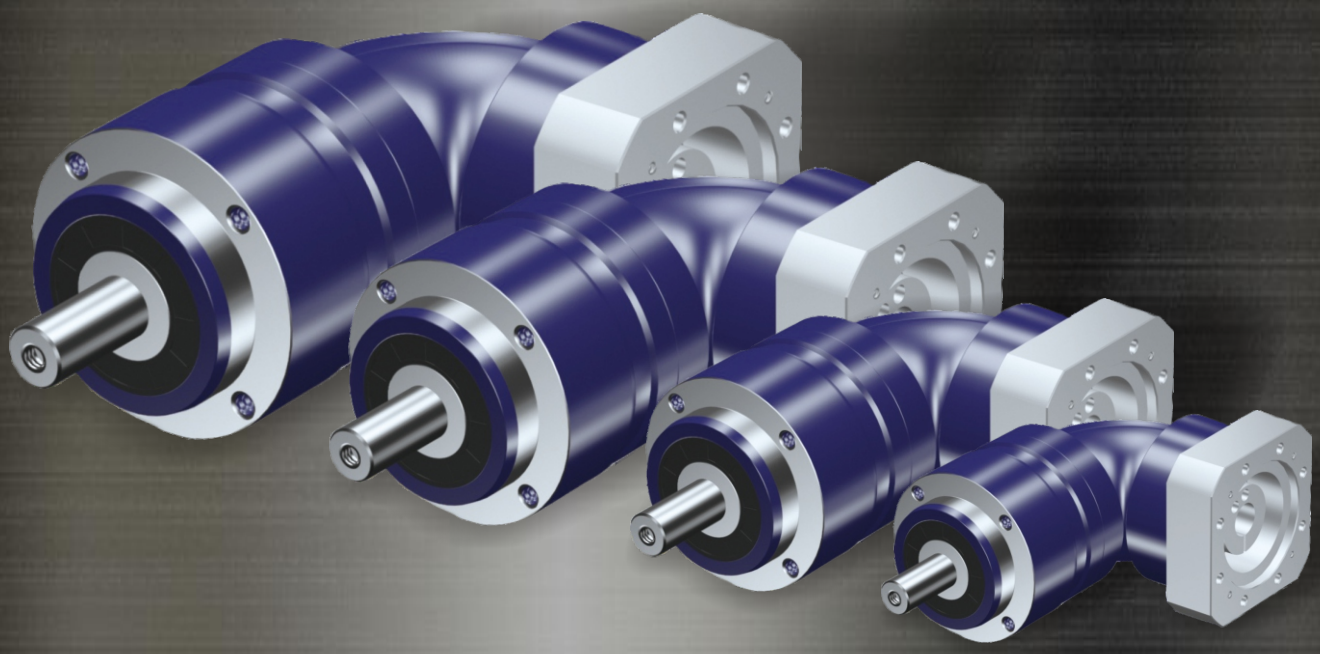
ZAL Series Highlights Overview



Higher Smoothness
Enhanced smoothness and lower noise due to adoption of Helical Gears.

Higher Precision
Fairly high precision enabled by backlash as 3arcmin.

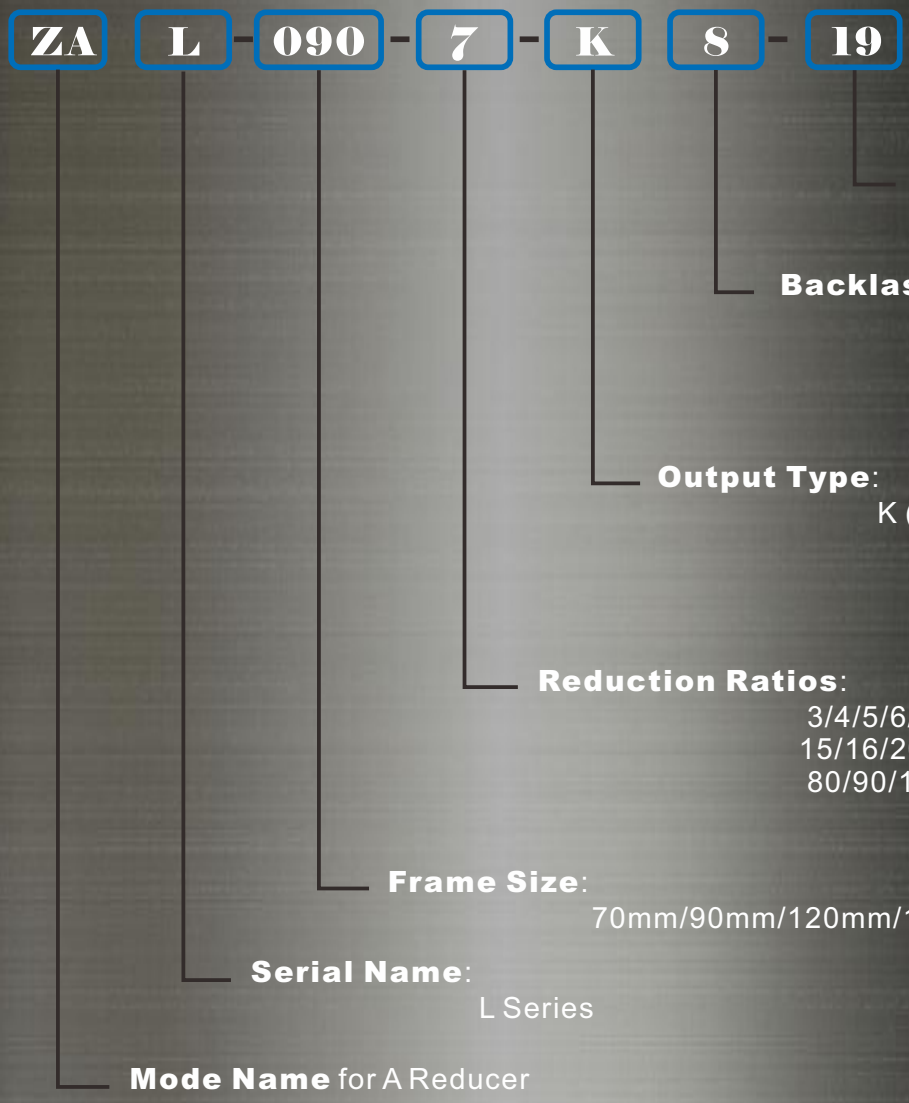
Higher Rigidity and Torque
Due to adoption of uncaged needle roller bearings.

Flexible Motor Integration
Can be integrated with any motor in the world.

Free of Maintenance
No need to replace the grease for lifelong time and maintenance of any part.

No Grease Leakage
Usage of high viscosity and anti-seperation lifetime grease.

ZAL Series Naming Rules



ZAL-070 Series Load Performance Table

Frame size	Stage	Ratio	※1 Norminal output torque [Nm]	※2 Maximum output torque [Nm]	※3 Emergency stop torque [Nm]	※4 Norminal input speed [rpm]	※5 Maximum input speed [rpm]	※6 Permitted radial load [N]	※7 Permitted axial load [N]
070	2	3	12	24	50	3000	6000	430	310
		4	16	32	65	3000	6000	470	360
		5	22	40	80	3000	6000	510	390
		6	24	45	90	3000	6000	540	430
		7	24	45	90	3000	6000	570	460
		8	24	45	90	3000	6000	600	480
		9	16	32	65	3000	6000	620	510
		10	16	32	65	3000	6000	640	530
	3	15	16	32	65	3000	6000	740	630
		16	24	45	90	3000	6000	750	650
		20	24	45	90	3000	6000	810	720
		25	24	45	90	3000	6000	870	790
		28	24	45	90	3000	6000	910	830
		30	16	32	65	3000	6000	930	860
		35	24	45	90	3000	6000	980	920
		40	24	45	90	3000	6000	1000	970
		45	16	32	65	3000	6000	1100	1000
		50	24	45	90	3000	6000	1100	1100
		60	24	45	90	3000	6000	1200	1100
		70	24	45	90	3000	6000	1200	1100
		80	24	45	90	3000	6000	1200	1100
		90	16	32	65	3000	6000	1200	1100
		100	16	32	65	3000	6000	1200	1100

Frame size	Stage	Ratio	※8 Maximum radial load [N]	※9 Maximum axial load [N]	※10 Weight [kg]	Moment of inertia (≤Φ8) [kgcm²]	Moment of inertia (≤Φ14) [kgcm²]	Moment of inertia (≤Φ19) [kgcm²]	
070	2	3	1200	1100	1.9	0.31	0.39	0.58	
		4	1200	1100		0.27	0.34	0.53	
		5	1200	1100		0.25	0.32	0.51	
		6	1200	1100		0.24	0.31	0.50	
		7	1200	1100		0.23	0.31	0.50	
		8	1200	1100		0.23	0.31	0.50	
		9	1200	1100		0.23	0.30	0.49	
		10	1200	1100		0.23	0.30	0.49	
	3	15	1200	1100	1.7	0.073	0.118	-	
		16	1200	1100		0.079	0.124	-	
		20	1200	1100		0.071	0.116	-	
		25	1200	1100		0.071	0.115	-	
		28	1200	1100		0.077	0.122	-	
		30	1200	1100		0.062	0.106	-	
		35	1200	1100		0.070	0.115	-	
		40	1200	1100		0.061	0.106	-	
		45	1200	1100		0.070	0.115	-	
		50	1200	1100		0.061	0.106	-	
		60	1200	1100		0.061	0.106	-	
		70	1200	1100		0.061	0.105	-	
		80	1200	1100		0.061	0.105	-	
		90	1200	1100		0.061	0.105	-	
		100	1200	1100		0.061	0.105	-	

※ 1 With nominal input speed,servic life is 20,000 hours
※ 2 The maximun torque when starting and stopping
※ 3 The maximun torque when it receives shock (up to 1000times)
※ 4 The maximum average input speed.
※ 5 The maximum momentary input speed.
※ 6 With this load and nominal input speed.service life will be 20,000 hours
(Applied to the output shaft center,at axial load 0)
※ 7 With this load and nominal input speed.service life will be 20,000 hours
(Applied to the output side bearing,at radial load 0)
※ 8 The maximum radial load the reducer can accept
※ 9 The maximum axial load the reducer can accept
※ 10 The weight may vary slightly model to model.

ZAL-090 Series Load Performance Table

Frame size	Stage	Ratio	※1 Norminal output torque [Nm]	※2 Maximum output torque [Nm]	※3 Emergency stop torque [Nm]	※4 Norminal input speed [rpm]	※5 Maximum input speed [rpm]	※6 Permitted radial load [N]	※7 Permitted axial load [N]
090	2	3	45	65	130	3000	6000	810	930
		4	60	90	170	3000	6000	890	1100
		5	65	90	220	3000	6000	960	1200
		6	65	90	220	3000	6000	1000	1300
		7	65	90	220	3000	6000	1100	1300
		8	65	90	220	3000	6000	1100	1400
		9	45	65	170	3000	6000	1200	1500
		10	45	65	170	3000	6000	1200	1600
	3	15	45	65	170	3000	6000	1400	1900
		16	65	110	220	3000	6000	1400	1900
		20	65	110	220	3000	6000	1500	2100
		25	65	110	220	3000	6000	1600	2200
		28	65	110	220	3000	6000	1700	2200
		30	45	65	170	3000	6000	1700	2200
		35	65	110	220	3000	6000	1800	2200
		40	65	110	220	3000	6000	1900	2200
		45	45	65	170	3000	6000	2000	2200
		50	65	110	220	3000	6000	2100	2200
		60	65	110	220	3000	6000	2200	2200
		70	65	110	220	3000	6000	2300	2200
		80	65	110	220	3000	6000	2400	2200
		90	45	65	170	3000	6000	2400	2200
		100	45	65	170	3000	6000	2400	2200

Frame size	Stage	Ratio	※8 Maximum radial load [N]	※9 Maximum axial load [N]	※10 Weight [kg]	Moment of inertia (≤Φ8) [kgcm²]	Moment of inertia (≤Φ14) [kgcm²]	Moment of inertia (≤Φ19) [kgcm²]	Moment of inertia (≤Φ19) [kgcm²]
090	2	3	2400	2200	4.9	-	2.12	2.45	4.57
		4	2400	2200		-	1.89	2.22	4.35
		5	2400	2200		-	1.80	2.13	4.26
		6	2400	2200		-	1.76	2.09	4.21
		7	2400	2200		-	1.73	2.06	4.18
		8	2400	2200		-	1.71	2.04	4.17
		9	2400	2200		-	1.70	2.03	4.16
		10	2400	2200		-	1.69	2.02	4.15
	3	15	2400	2200	4.3	0.34	0.41	0.60	-
		16	2400	2200		0.38	0.46	0.65	-
		20	2400	2200		0.33	0.40	0.59	-
		25	2400	2200		0.32	0.40	0.59	-
		28	2400	2200		0.37	0.45	0.64	-
		30	2400	2200		0.25	0.33	0.51	-
		35	2400	2200		0.32	0.40	0.59	-
		40	2400	2200		0.25	0.32	0.51	-
		45	2400	2200		0.32	0.39	0.58	-
		50	2400	2200		0.25	0.32	0.51	-
		60	2400	2200		0.25	0.32	0.51	-
		70	2400	2200		0.25	0.32	0.51	-
		80	2400	2200		0.25	0.32	0.51	-
		90	2400	2200		0.25	0.32	0.51	-
		100	2400	2200		0.25	0.32	0.51	-

※ 1 With nominal input speed,servic life is 20,000 hours
※ 2 The maximun torque when starting and stopping
※ 3 The maximun torque when it receives shock (up to 1000times)
※ 4 The maximum average input speed.
※ 5 The maximum momentary input speed.
※ 6 With this load and nominal input speed.service life will be 20,000 hours
(Applied to the output shaft center,at axial load 0)
※ 7 With this load and nominal input speed.service life will be 20,000 hours
(Applied to the output side bearing,at radial load 0)
※ 8 The maximum radial load the reducer can accept
※ 9 The maximum axial load the reducer can accept
※ 10 The weight may vary slightly model to model.

ZAL-120 Series Load Performance Table

Frame size	Stage	Ratio	※1 Norminal output torque [Nm]	※2 Maximum output torque [Nm]	※3 Emergency stop torque [Nm]	※4 Norminal input speed [rpm]	※5 Maximum input speed [rpm]	※6 Permitted radial load [N]	※7 Permitted axial load [N]
120	2	3	75	150	320	3000	6000	1300	1500
		4	100	200	430	3000	6000	1500	1700
		5	120	240	500	3000	6000	1600	1900
		6	150	300	550	3000	6000	1700	2000
		7	150	300	550	3000	6000	1800	2100
		8	150	300	550	3000	6000	1900	2300
		9	110	200	450	3000	6000	1900	2400
		10	110	200	450	3000	6000	2000	2500
	3	15	110	200	450	3000	6000	2300	3000
		16	130	260	550	3000	6000	2300	3100
		20	150	300	550	3000	6000	2500	3400
		25	150	300	550	3000	6000	2700	3700
		28	150	300	550	3000	6000	2800	3900
		30	110	200	450	3000	6000	2900	3900
		35	150	300	550	3000	6000	3000	3900
		40	150	300	550	3000	6000	3200	3900
		45	110	200	450	3000	6000	3300	3900
		50	150	300	550	3000	6000	3400	3900
		60	150	300	550	3000	6000	3600	3900
		70	150	300	550	3000	6000	3800	3900
		80	150	300	550	3000	6000	4000	3900
		90	110	200	450	3000	6000	4200	3900
		100	110	200	450	3000	6000	4300	3900

Frame size	Stage	Ratio	※8 Maximum radial load [N]	※9 Maximum axial load [N]	※10 Weight [kg]	Moment of inertia (≤Φ14) [kgcm²]	Moment of inertia (≤Φ19) [kgcm²]	Moment of inertia (≤Φ28) [kgcm²]	Moment of inertia (≤Φ38) [kgcm²]
120	2	3	4300	3900	10.2	-	6.74	8.34	15.41
		4	4300	3900		-	5.49	7.08	14.15
		5	4300	3900		-	5.02	6.61	13.69
		6	4300	3900		-	4.77	6.36	13.43
		7	4300	3900		-	4.65	6.24	13.31
		8	4300	3900		-	4.55	6.14	13.22
		9	4300	3900		-	4.49	6.08	13.16
		10	4300	3900		-	4.46	6.05	13.12
	3	15	4300	3900	10.0	2.25	2.58	4.70	-
		16	4300	3900		2.46	2.79	4.91	-
		20	4300	3900		2.20	2.53	4.65	-
		25	4300	3900		2.18	2.51	4.64	-
		28	4300	3900		2.40	2.73	4.86	-
		30	4300	3900		1.87	2.20	4.33	-
		35	4300	3900		2.16	2.49	4.62	-
		40	4300	3900		1.86	2.19	4.32	-
		45	4300	3900		2.15	2.48	4.61	-
		50	4300	3900		1.86	2.19	4.31	-
		60	4300	3900		1.85	2.18	4.31	-
		70	4300	3900		1.85	2.18	4.31	-
		80	4300	3900		1.85	2.18	4.31	-
		90	4300	3900		1.85	2.18	4.31	-
		100	4300	3900		1.85	2.18	4.31	-

※ 1 With nominal input speed,servic life is 20,000 hours
※ 2 The maximun torque when starting and stopping
※ 3 The maximun torque when it receives shock (up to 1000times)
※ 4 The maximum average input speed.
※ 5 The maximum momentary input speed.
※ 6 With this load and nominal input speed.service life will be 20,000 hours
(Applied to the output shaft center,at axial load 0)
※ 7 With this load and nominal input speed.service life will be 20,000 hours
(Applied to the output side bearing,at radial load 0)
※ 8 The maximum radial load the reducer can accept
※ 9 The maximum axial load the reducer can accept
※ 10 The weight may vary slightly model to model.

ZAL-155 Series Load Performance Table

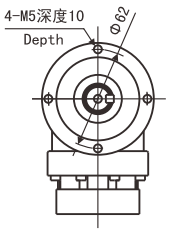
Frame size	Stage	Ratio	※1 Norminal output torque [Nm]	※2 Maximum output torque [Nm]	※3 Emergency stop torque [Nm]	※4 Norminal input speed [rpm]	※5 Maximum input speed [rpm]	※6 Permitted radial load [N]	※7 Permitted axial load [N]
155	2	3	130	260	700	2000	4000	3200	2400
		4	170	340	950	2000	4000	3500	2700
		5	200	400	1100	2000	4000	3800	3000
		6	260	520	1100	2000	4000	4000	3300
		7	300	600	1100	2000	4000	4200	3500
		8	300	600	1100	2000	4000	4400	3700
		9	200	400	750	2000	4000	4600	3900
		10	200	400	750	2000	4000	4700	4100
	3	15	200	400	750	2000	4000	5400	4900
		16	300	600	1100	2000	4000	5500	5000
		20	300	600	1100	2000	4000	6000	5500
		25	300	600	1100	2000	4000	6400	6100
		28	300	600	1100	2000	4000	6700	6400
		30	200	400	750	2000	4000	6800	6600
		35	300	600	1100	2000	4000	7200	7000
		40	300	600	1100	2000	4000	7500	7500
		45	200	400	750	2000	4000	7800	7900
		50	300	600	1100	2000	4000	8100	8200
		60	300	600	1100	2000	4000	8600	8200
		70	300	600	1100	2000	4000	9100	8200
		80	300	600	1100	2000	4000	9100	8200
		90	200	400	750	2000	4000	9100	8200
		100	200	400	750	2000	4000	9100	8200

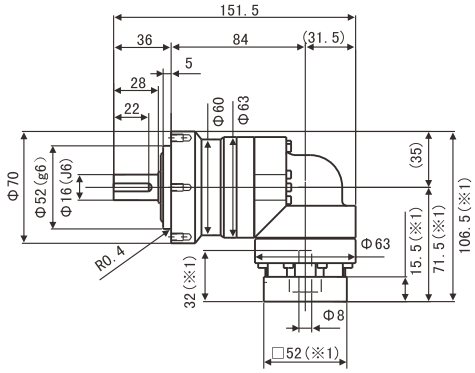
Frame size	Stage	Ratio	※8 Maximum radial load [N]	※9 Maximum axial load [N]	※10 Weight [kg]	Moment of inertia (≤Φ19 [kgcm²]	Moment of inertia (≤Φ28) [kgcm²]	Moment of inertia (≤Φ38) [kgcm²]	Moment of inertia (≤Φ48) [kgcm²]
155	2	3	9100	8200	19.8	-	23.13	27.50	40.73
		4	9100	8200		-	18.57	22.94	36.17
		5	9100	8200		-	16.91	21.28	34.51
		6	9100	8200		-	16.01	20.38	33.61
		7	9100	8200		-	15.58	19.95	33.18
		8	9100	8200		-	15.23	19.61	32.84
		9	9100	8200		-	14.77	19.41	32.37
		10	9100	8200		-	14.66	19.03	32.26
	3	15	9100	8200	20.4	6.40	8.00	15.07	-
		16	9100	8200		7.29	8.88	15.96	-
		20	9100	8200		6.22	7.81	14.89	-
		25	9100	8200		6.15	7.75	14.82	-
		28	9100	8200		7.09	8.68	15.76	-
		30	9100	8200		4.99	6.58	13.66	-
		35	9100	8200		6.09	7.69	14.76	-
		40	9100	8200		4.95	6.54	13.61	-
		45	9100	8200		6.07	7.66	14.74	-
		50	9100	8200		4.93	6.52	13.59	-
		60	9100	8200		4.92	6.51	13.59	-
		70	9100	8200		4.91	6.51	13.58	-
		80	9100	8200		4.91	6.50	13.58	-
		90	9100	8200		4.91	6.50	13.57	-
		100	9100	8200		4.91	6.50	13.57	-

※ 1 With nominal input speed,servic life is 20,000 hours
※ 2 The maximun torque when starting and stopping
※ 3 The maximun torque when it receives shock (up to 1000times)
※ 4 The maximum average input speed.
※ 5 The maximum momentary input speed.
※ 6 With this load and nominal input speed.service life will be 20,000 hours
(Applied to the output shaft center,at axial load 0)
※ 7 With this load and nominal input speed.service life will be 20,000 hours
(Applied to the output side bearing,at radial load 0)
※ 8 The maximum radial load the reducer can accept
※ 9 The maximum axial load the reducer can accept
※ 10 The weight may vary slightly model to model.

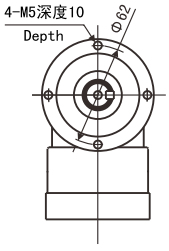
ZAL-070 2-Stage Series Mechanical Dimensions

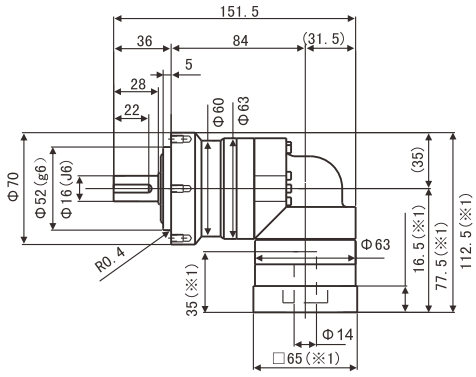
Input Shaft Diameter ≤ Φ8 (in mm)



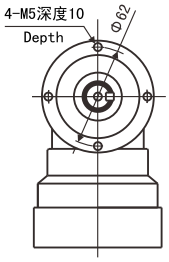


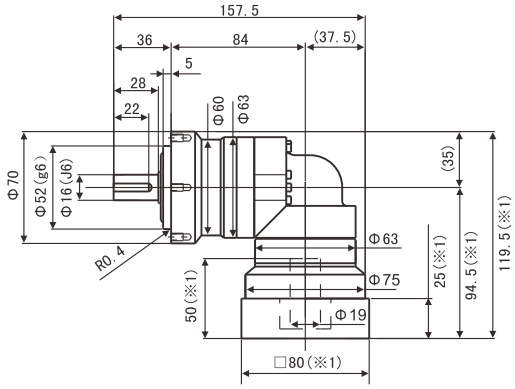
Input Shaft Diameter ≤ Φ14 (in mm)



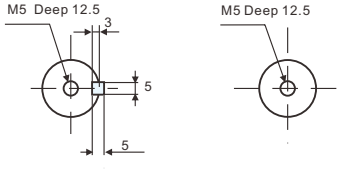


Input Shaft Diameter ≤ Φ19 (in mm)





Output Shaft Type (in mm)

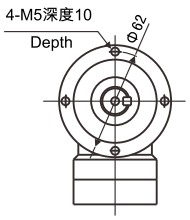


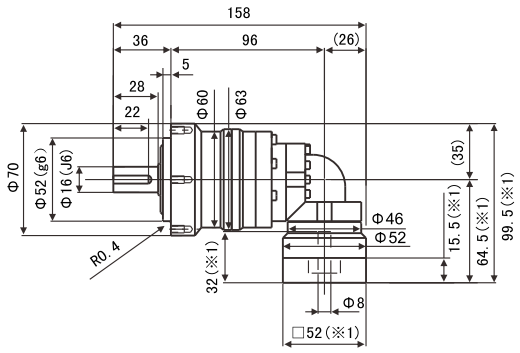
Shaft with Key **Smooth Shaft**

※1 Length may change for different motors.
※1 Adaptors available to match different input shaft diameters.

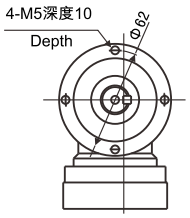
ZAL-070 3-Stage Series Mechanical Dimensions

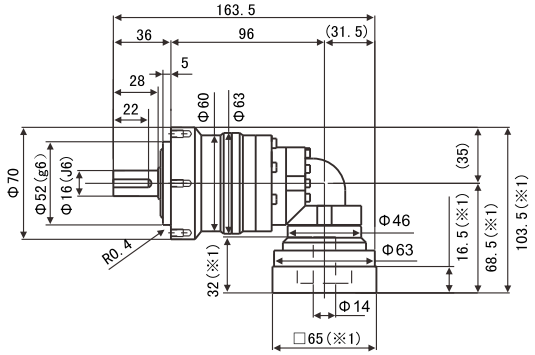
Input Shaft Diameter ≤ Φ8 (in mm)



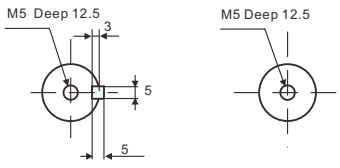


Input Shaft Diameter ≤ Φ14 (in mm)





Output Shaft Type (in mm)

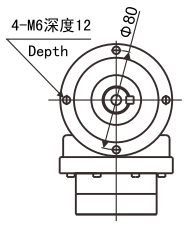


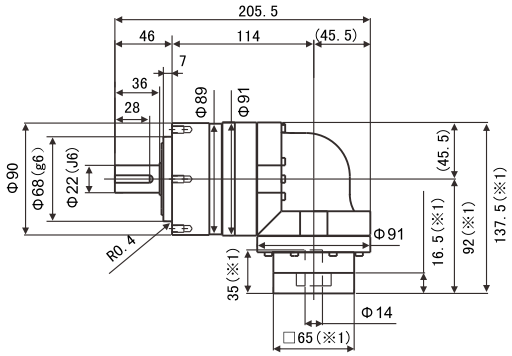
Shaft with Key **Smooth Shaft**

※1 Length may change for different motors.
※1 Adaptors available to match different input shaft diameters.

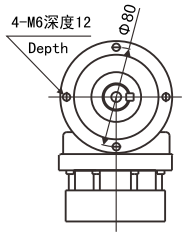
ZAL-090 2-Stage Series Mechanical Dimensions

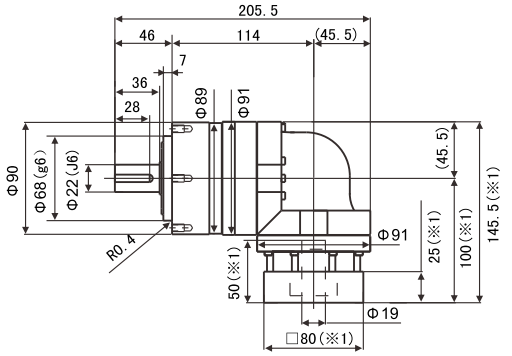
Input Shaft Diameter ≤ Φ14 (in mm)



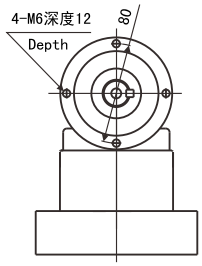


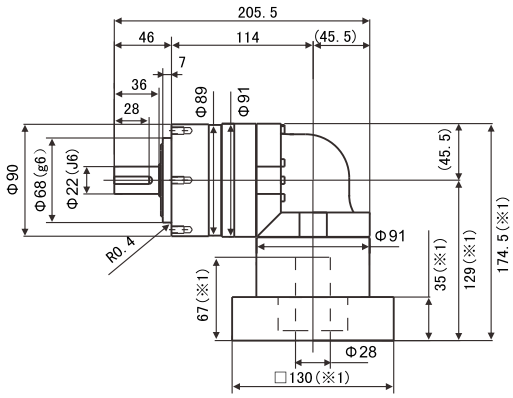
Input Shaft Diameter ≤ Φ19 (in mm)



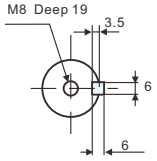


Input Shaft Diameter ≤ Φ28 (in mm)

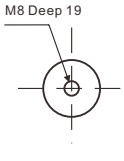




Output Shaft Type (in mm)



Shaft with Key

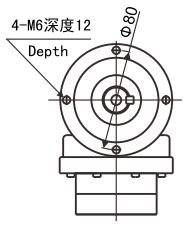


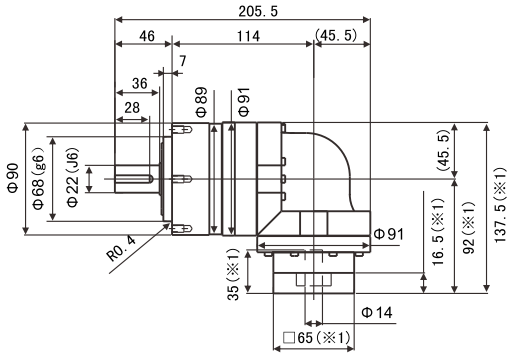
Smooth Shaft

※1 Length may change for different motors.
※1 Adaptors available to match different input shaft diameters.

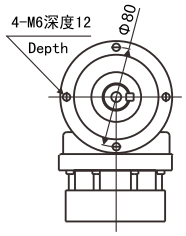
ZAL-090 2-Stage Series Mechanical Dimensions

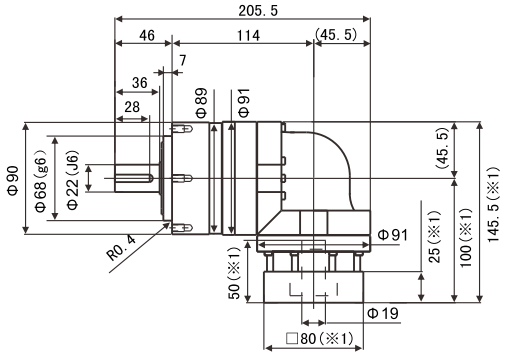
Input Shaft Diameter ≤ ϕ14 (in mm)



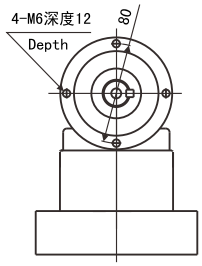


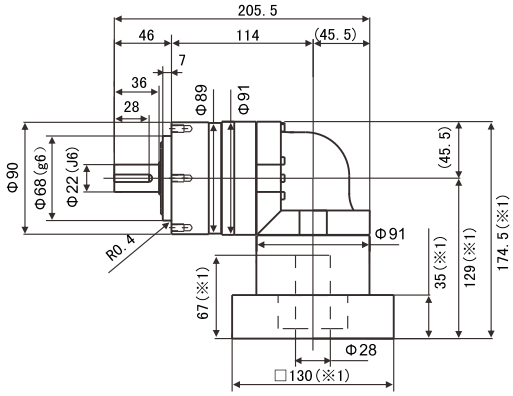
Input Shaft Diameter ≤ ϕ19 (in mm)



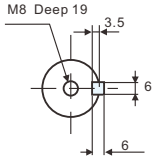


Input Shaft Diameter ≤ ϕ28 (in mm)

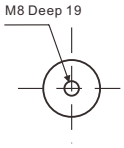




Output Shaft Type (in mm)



Shaft with Key

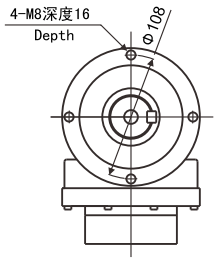


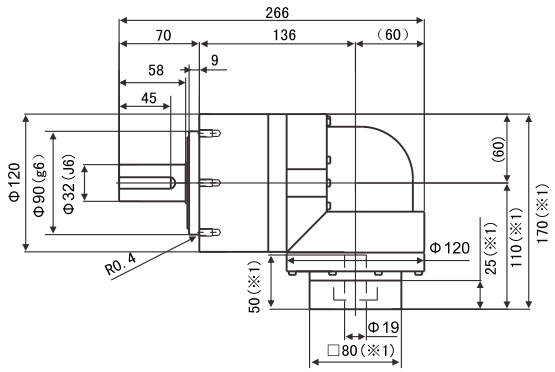
Smooth Shaft

※1 Length may change for different motors.
※1 Adaptors available to match different input shaft diameters.

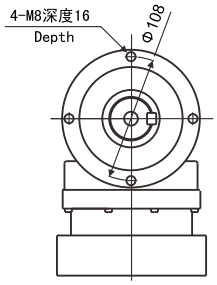
ZAL-120 2-Stage Series Mechanical Dimensions

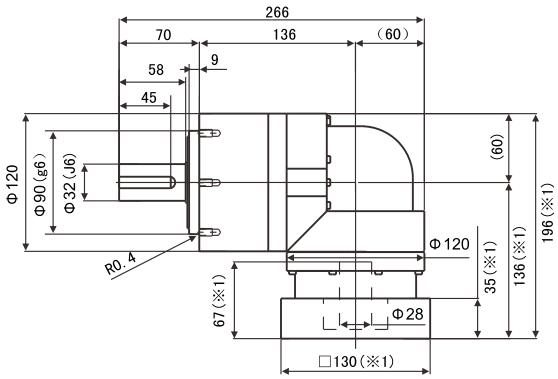
Input Shaft Diameter ≤ ϕ19 (in mm)



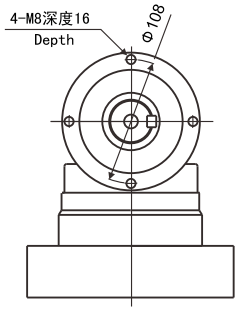


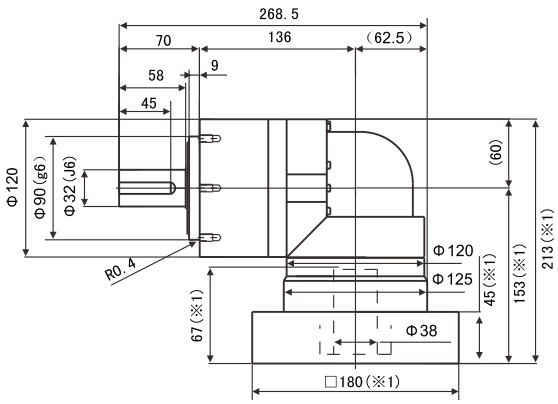
Input Shaft Diameter ≤ ϕ28 (in mm)



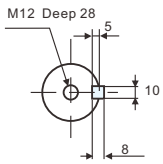


Input Shaft Diameter ≤ ϕ38 (in mm)

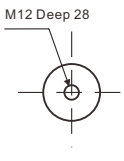




Output Shaft Type (in mm)



Shaft with Key

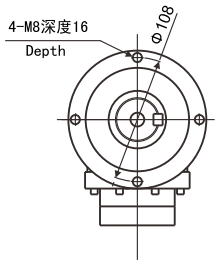


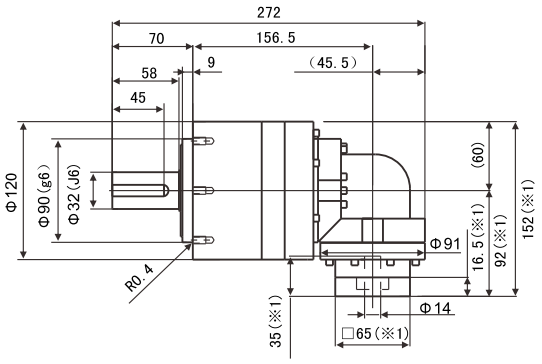
Smooth Shaft

※1 Length may change for different motors.
※1 Adaptors available to match different input shaft diameters.

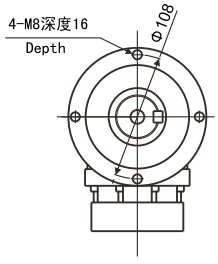
ZAL-120 3-Stage Series Mechanical Dimensions

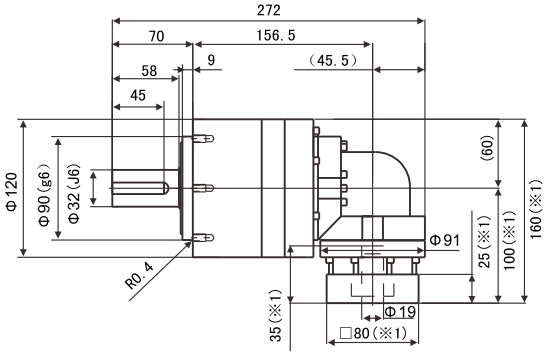
Input Shaft Diameter ≤ Φ14 (in mm)



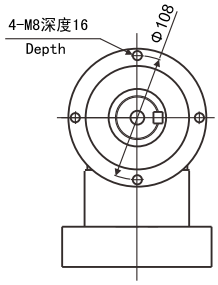


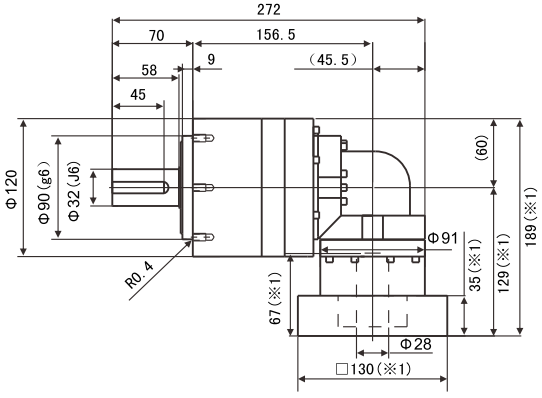
Input Shaft Diameter ≤ Φ19 (in mm)



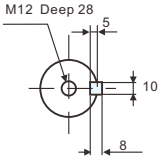


Input Shaft Diameter ≤ Φ28 (in mm)

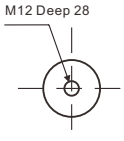




Output Shaft Type (in mm)



Shaft with Key

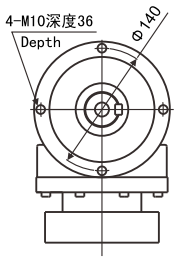


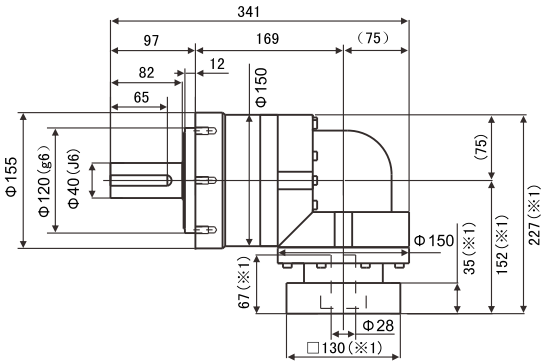
Smooth Shaft

※1 Length may change for different motors.
※1 Adaptors available to match different input shaft diameters.

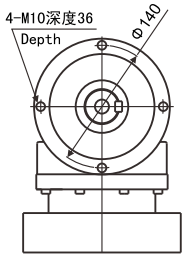
ZAL-155 2-Stage Series Mechanical Dimensions

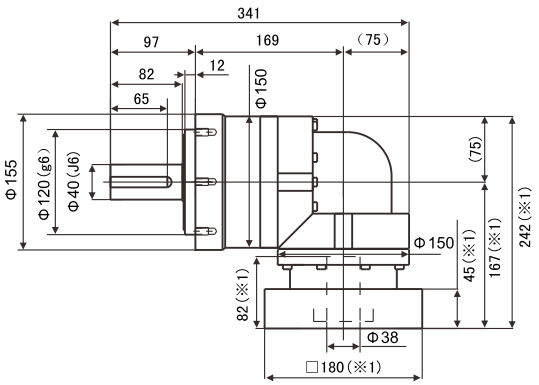
Input Shaft Diameter ≤ Φ28 (in mm)



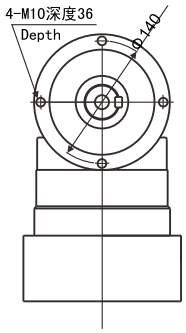


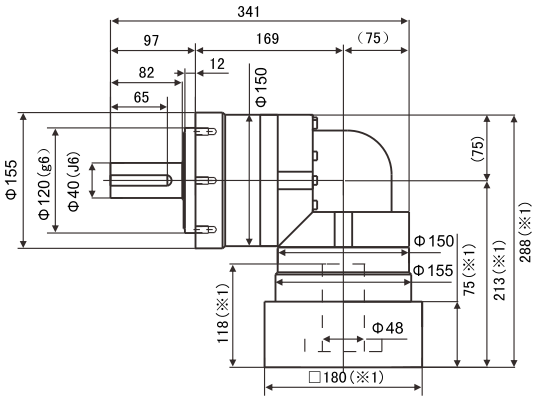
Input Shaft Diameter ≤ Φ38 (in mm)



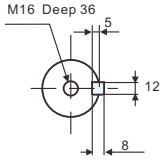


Input Shaft Diameter ≤ Φ48 (in mm)

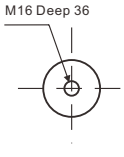




Output Shaft Type (in mm)



Shaft with Key

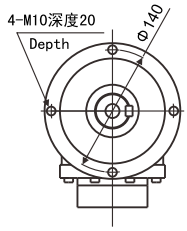


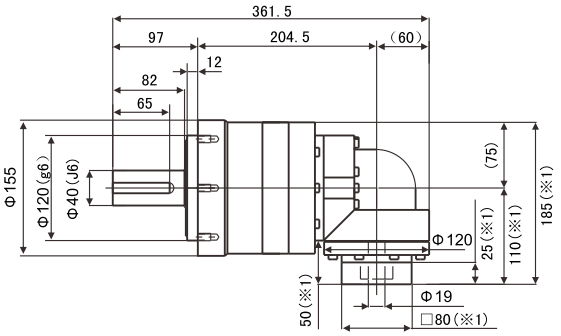
Smooth Shaft

※1 Length may change for different motors.
※1 Adaptors available to match different input shaft diameters.

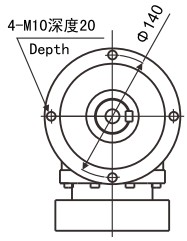
ZAL-155 3-Stage Series Mechanical Dimensions

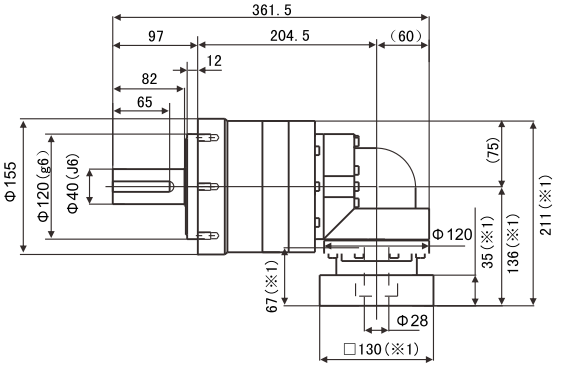
Input Shaft Diameter ≤ Φ19 (in mm)



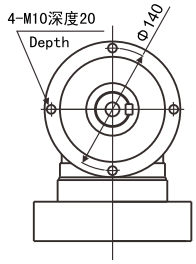


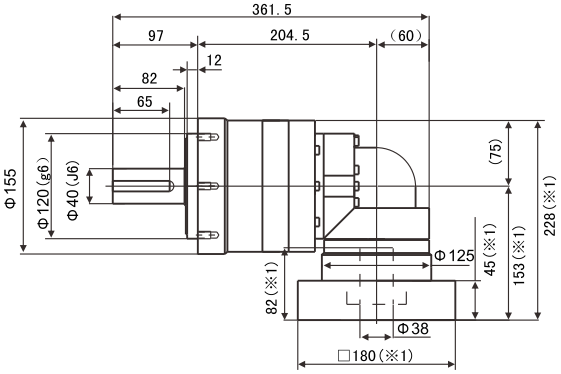
Input Shaft Diameter ≤ Φ28 (in mm)



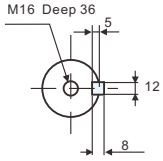


Input Shaft Diameter ≤ Φ38 (in mm)

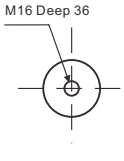




Output Shaft Type (in mm)



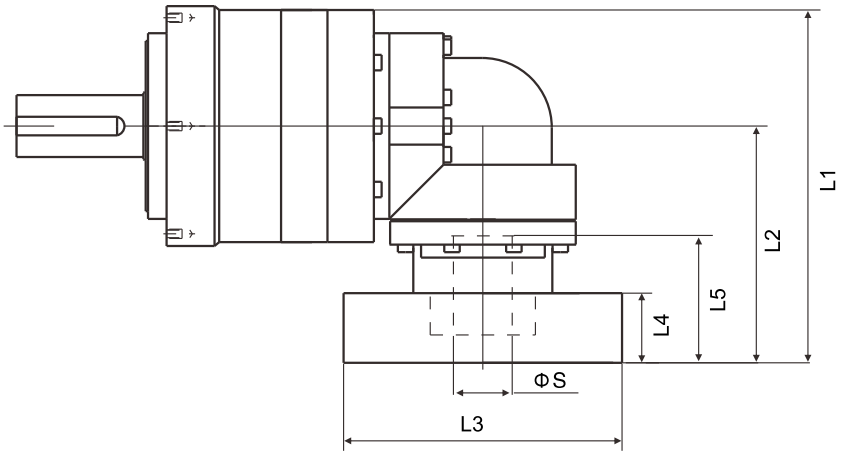
Shaft with Key



Smooth Shaft

※1 Length may change for different motors.
※1 Adaptors available to match different input shaft diameters.

ZAL-070 Input Shaft Adaptors

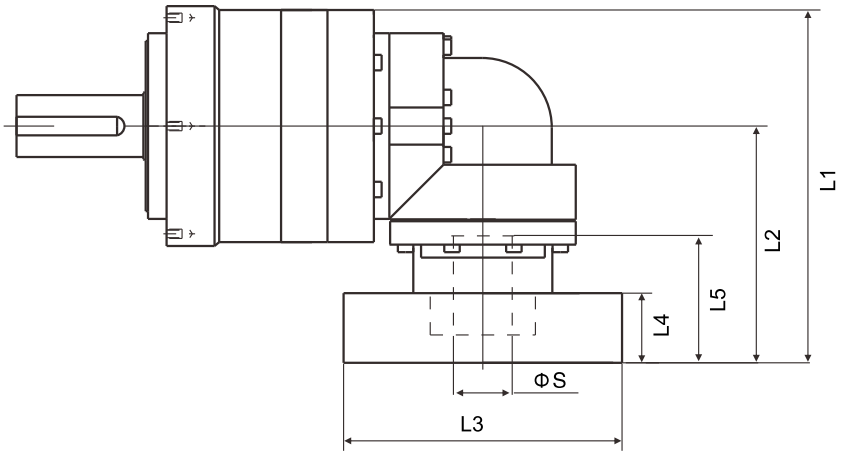


Model number	**: Adapter code	2 Stage					3 Stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
ZAL-070-[ ]-[ ]-8** Input Shaft Dia. ≤ Φ8	AA • AC • AD • AF • AG	106.5	71.5	□52	15.5	32	99.5	64.5	□52	15.5	32
	AB • AE • AH • AJ • AK	111.5	76.5	□52	20.5	37	104.5	69.5	□52	20.5	37
	BA • BB • BD • BE	106.5	71.5	□60	15.5	32	99.5	64.5	□60	15.5	32
	BC • BF	111.5	76.5	□60	20.5	37	104.5	69.5	□60	20.5	37
	CA	111.5	76.5	□70	20.5	37	104.5	69.5	□70	20.5	37
ZAL-070-[ ]-[ ]-14** Input Shaft Dia. ≤ Φ14	BA • BB • BD • BE • BF • BG • BJ • BK	112.5	77.5	□65	16.5	35	103.5	68.5	□65	16.5	35
	BC • BH	117.5	82.5	□65	21.5	40	108.5	73.5	□65	21.5	40
	BL	122.5	87.5	□65	26.5	45	113.5	78.5	□65	26.5	45
	CA	112.5	77.5	□70	16.5	35	103.5	68.5	□70	16.5	35
	CB	117.5	82.5	□70	21.5	40	108.5	73.5	□70	21.5	40
	DA • DB • DC • DD • DF • DH	112.5	77.5	□80	16.5	35	103.5	68.5	□80	16.5	35
	DE	117.5	82.5	□80	21.5	40	108.5	73.5	□80	21.5	40
	DG	122.5	87.5	□80	26.5	45	113.5	78.5	□80	26.5	45
	EA • EB • EC	112.5	77.5	□90	16.5	35	103.5	68.5	□90	16.5	35
	ED	122.5	87.5	□90	26.5	45	113.5	78.5	□90	26.5	45
	FA	112.5	77.5	□100	16.5	35	103.5	68.5	□100	16.5	35
	GA	112.5	77.5	□115	16.5	35	103.5	68.5	□115	16.5	35
ZAL-070-[ ]-[ ]-19** Input Shaft Dia. ≤ Φ19	DA • DB • DC	129.5	94.5	□80	25	50	-	-	-	-	-
	DD	139.5	104.5	□80	35	60	-	-	-	-	-
	DE	134.5	99.5	□80	30	55	-	-	-	-	-
	EA	134.5	99.5	□90	30	55	-	-	-	-	-
	EB	129.5	94.5	□90	25	50	-	-	-	-	-
	EC	139.5	104.5	□90	35	60	-	-	-	-	-
	FA	129.5	94.5	□100	25	50	-	-	-	-	-
	FB	139.5	104.5	□100	35	60	-	-	-	-	-
	GA • GC	134.5	99.5	□115	30	55	-	-	-	-	-
	GB • GD	129.5	94.5	□115	25	50	-	-	-	-	-
	HA	129.5	94.5	□130	25	50	-	-	-	-	-
	HB	144.5	109.5	□130	40	65	-	-	-	-	-
	HC • HD • HE	134.5	99.5	□130	30	35	-	-	-	-	-

※1 2-stage reduction ratios 3 to 10, 3-stages reduction ratios 15 to 100

※2 2 Adaptors available to match different input shaft diameters.

ZAL-090 Input Shaft Adaptors

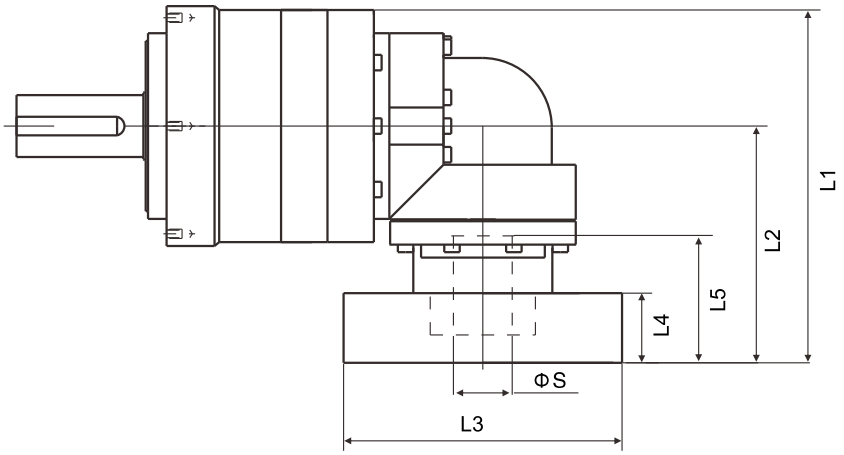


Model number	**: Adapter code	2 Stage					3 Stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
ZAL-090-[ ]-[ ]-8** Input Shaft Dia. ≤ φ8	AA • AC • AD • AF • AG	-	-	–	-	-	117	71.5	□52	15.5	32
	AB • AE • AH • AJ • AK	-	-	–	-	-	122	76.5	□52	20.5	37
	BA • BB • BD • BE	-	-	–	-	-	117	71.5	□60	15.5	32
	BC • BF	-	-	–	-	-	122	76.5	□60	20.5	37
	CA	-	-	–	-	-	122	76.5	□70	20.5	37
ZAL-090-[ ]-[ ]-14** Input Shaft Dia. ≤ φ14	BA • BB • BD • BE • BF • BG • BJ • BK	137.5	92	□65	16.5	35	123	77.5	□65	16.5	35
	BC • BH	142.5	97	□65	21.5	40	128	82.5	□65	21.5	40
	BL	147.5	102	□65	26.5	45	133	87.5	□65	26.5	45
	CA	137.5	92	□70	16.5	35	123	77.5	□70	16.5	35
	CB	142.5	97	□70	21.5	40	128	82.5	□70	21.5	40
	DA • DB • DC • DD • DF • DH	137.5	92	□80	16.5	35	123	77.5	□80	16.5	35
	DE	142.5	97	□80	21.5	40	128	82.5	□80	21.5	40
	DG	147.5	102	□80	26.5	45	133	87.5	□80	26.5	45
	EA • EB • EC	137.5	92	□90	16.5	35	123	77.5	□90	16.5	35
	ED	147.5	102	□90	26.5	45	133	87.5	□90	26.5	45
	FA	137.5	92	□100	16.5	35	123	77.5	□100	16.5	35
	GA	137.5	92	□115	16.5	35	123	77.5	□115	16.5	35
ZAL-090-[ ]-[ ]-19** Input Shaft Dia. ≤ φ19	DA • DB • DC	145.5	100	□80	25	50	140	94.5	□80	25	50
	DD	155.5	110	□80	35	60	150	104.5	□80	35	60
	DE	150.5	105	□80	30	55	145	99.5	□80	30	55
	EA	150.5	105	□90	30	55	145	99.5	□90	30	55
	EB	145.5	100	□90	25	50	140	94.5	□90	25	50
	EC	155.5	110	□90	35	60	150	104.5	□90	35	60
	FA	145.5	100	□100	25	50	140	94.5	□100	25	50
	FB	155.5	110	□100	35	60	150	104.5	□100	35	60
	GA • GC	150.5	105	□115	30	55	145	99.5	□115	30	55
	GB • GD	145.5	100	□115	25	50	140	94.5	□115	25	50
	HA	145.5	100	□130	25	50	140	94.5	□130	25	50
	HB	160.5	115	□130	40	65	155	109.5	□130	40	65
	HC • HD • HE	150.5	105	□130	30	55	145	99.5	□130	30	55
ZAL-090-[ ]-[ ]-28** Input Shaft Dia. ≤ φ28	FA • FB • FC	174.5	129	□100	35	67	-	-	–	-	-
	GA • GB • GC • GD • GE • GF • GG	174.5	129	□115	35	67	-	-	–	-	-
	HA • HC • HD	174.5	129	□130	35	67	-	-	–	-	-
	HB	184.5	139	□130	45	77	-	-	–	-	-
	JA • JB • JC	174.5	129	□150	35	67	-	-	–	-	-
	KA • KB	174.5	129	□180	35	67	-	-	–	-	-
	LA	174.5	129	□200	35	67	-	-	–	-	-
	MA	174.5	129	□220	35	67	-	-	–	-	-

※1 2-stage reduction ratios 3 to 10, 3-stages reduction ratios 15 to 100

※2 2 Adaptors available to match different input shaft diameters.

ZAL-120 Input Shaft Adaptors

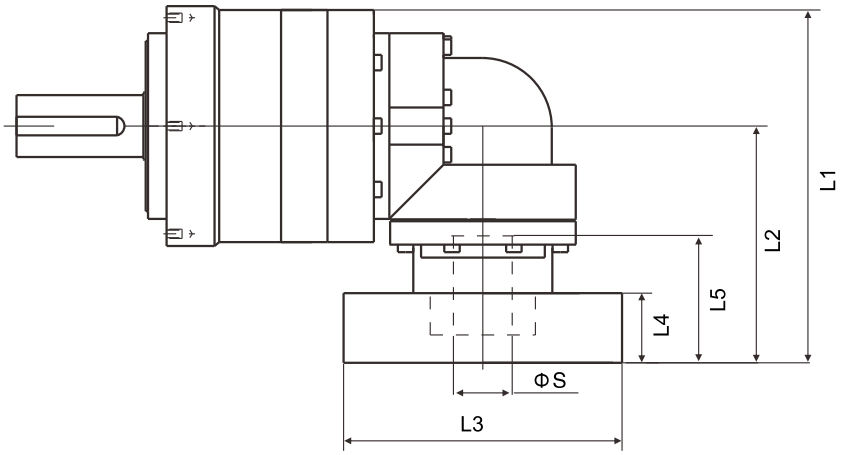


Model number	**: Adapter code	2 Stage					3 Stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
ZAL-120-[ ]-[ ]-14** Input Shaft Dia. ≤ φ14	BA • BB • BD • BE • BF • BG • BJ • BK	-	-	–	-	-	152	92	□65	16.5	35
	BC • BH	-	-	–	-	-	157	97	□65	21.5	40
	BL	-	-	–	-	-	162	102	□65	26.5	45
	CA	-	-	–	-	-	152	92	□70	16.5	35
	CB	-	-	–	-	-	157	97	□70	21.5	40
	DA • DB • DC • DD • DF • DH	-	-	–	-	-	152	92	□80	16.5	35
	DE	-	-	–	-	-	157	97	□80	21.5	40
	DG	-	-	–	-	-	162	102	□80	26.5	45
	EA • EB • EC	-	-	–	-	-	152	92	□90	16.5	35
	ED	-	-	–	-	-	162	102	□90	26.5	45
	FA	-	-	–	-	-	152	92	□100	16.5	35
	GA	-	-	–	-	-	152	92	□115	16.5	35
ZAL-120-[ ]-[ ]-19** Input Shaft Dia. ≤ φ19	DA • DB • DC	170	110	□80	25	50	160	100	□80	25	50
	DD	180	120	□80	35	60	170	110	□80	35	60
	DE	175	115	□80	30	55	165	105	□80	30	55
	EA	175	115	□90	30	55	165	105	□90	30	55
	EB	170	110	□90	25	50	160	100	□90	25	50
	EC	180	120	□90	35	60	170	110	□90	35	60
	FA	170	110	□100	25	50	160	100	□100	25	50
	FB	180	120	□100	35	60	170	110	□100	35	60
	GA • GC	175	115	□115	30	55	165	105	□115	30	55
	GB • GD	170	110	□115	25	50	160	100	□115	25	50
	HA	170	110	□130	25	50	160	100	□130	25	50
	HB	185	125	□130	40	65	175	115	□130	40	65
	HC • HD • HE	175	115	□130	30	55	165	105	□130	30	55
ZAL-120-[ ]-[ ]-28** Input Shaft Dia. ≤ φ28	FA • FB • FC	196	136	□100	35	67	189	129	□100	35	67
	GA • GB • GC • GD • GE • GF • GG	196	136	□115	35	67	189	129	□115	35	67
	HA • HC • HD	196	136	□130	35	67	189	129	□130	35	67
	HB	206	146	□130	45	77	199	139	□130	45	77
	JA • JB • JC	196	136	□150	35	67	189	129	□150	35	67
	KA • KB	196	136	□180	35	67	189	129	□180	35	67
	LA	196	136	□200	35	67	189	129	□200	35	67
	MA	196	136	□220	35	67	189	129	□220	35	67
ZAL-120-[ ]-[ ]-38** Input Shaft Dia. ≤ φ38	HA	213	153	□130	45	82	-	-	–	-	-
	HB	208	148	□130	40	77	-	-	–	-	-
	JA	213	153	□150	45	82	-	-	–	-	-
	KA • KB • KC	213	153	□180	45	82	-	-	–	-	-
	LA	213	153	□200	45	82	-	-	–	-	-
	LB	223	163	□200	55	92	-	-	–	-	-
	MA • MB	213	153	□220	45	82	-	-	–	-	-
	NA	213	153	□250	45	82	-	-	–	-	-

※1 2-stage reduction ratios 3 to 10, 3-stages reduction ratios 15 to 100

※2 2 Adaptors available to match different input shaft diameters.

ZAL-155 Input Shaft Adaptors



Model number	**: Adapter code	2 Stage					3 Stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
ZAL-155-[ ]-[ ]-19** Input Shaft Dia. ≤ ϕ19	DA • DB • DC	-	-	–	-	-	187.5	110	□80	25	50
	DD	-	-	–	-	-	197.5	120	□80	35	60
	DE	-	-	–	-	-	192.5	115	□80	30	55
	EA	-	-	–	-	-	192.5	115	□90	30	55
	EB	-	-	–	-	-	187.5	110	□90	25	50
	EC	-	-	–	-	-	197.5	120	□90	35	60
	FA	-	-	–	-	-	187.5	110	□100	25	50
	FB	-	-	–	-	-	197.5	120	□100	35	60
	GA • GC	-	-	–	-	-	192.5	115	□115	30	55
	GB • GD	-	-	–	-	-	187.5	110	□115	25	50
	HA	-	-	–	-	-	187.5	110	□130	25	50
	HB	-	–	–	-	-	202.5	125	□130	40	65
	HC • HD • HE	-	-	–	-	-	192.5	115	□130	30	55
ZAL-155-[ ]-[ ]-28** Input Shaft Dia. ≤ ϕ28	FA • FB • FC	229.5	152	□100	35	67	213.5	136	□100	35	67
	GA • GB • GC • GD • GE • GF • GG	229.5	152	□115	35	67	213.5	136	□115	35	67
	HA • HC • HD	229.5	152	□130	35	67	213.5	136	□130	35	67
	HB	239.5	162	□130	45	77	223.5	146	□130	45	77
	JA • JB • JC	229.5	152	□150	35	67	213.5	136	□150	35	67
	KA • KB	229.5	152	□180	35	67	213.5	136	□180	35	67
	LA	229.5	152	□200	35	67	213.5	136	□200	35	67
	MA	229.5	152	□220	35	67	213.5	136	□220	35	67
ZAL-155-[ ]-[ ]-38** Input Shaft Dia. ≤ ϕ38	HA	244.5	167	□130	45	82	230.5	153	□130	45	82
	HB	239.5	162	□130	40	77	225.5	148	□130	40	77
	JA	244.5	167	□150	45	82	230.5	153	□150	45	82
	KA • KB • KC	244.5	167	□180	45	82	230.5	153	□180	45	82
	LA	244.5	167	□200	45	82	230.5	153	□200	45	82
	LB	244.5	177	□200	55	92	240.5	163	□200	55	92
	MA • MB	244.5	167	□220	45	82	230.5	153	□220	45	82
	NA	244.5	167	□250	45	82	230.5	153	□250	45	82
ZAL-155-[ ]-[ ]-48** Input Shaft Dia. ≤ ϕ48	KB • KC	270.5	193	□180	55	98	-	-	–	-	
	KA	290.5	213	□180	75	118	-	-	–	-	
	LA	270.5	193	□200	55	98	-	-	–	-	
	MA	270.5	193	□220	55	98	-	-	–	-	
	MB	290.5	213	□220	75	118	-	-	–	-	
	NA	290.5	213	□250	75	118	-	-	–	-	
	PA	290.5	213	□280	75	118	-	-	–	-	

※1 2-stage reduction ratios 3 to 10, 3-stages reduction ratios 15 to 100

※2 2 Adaptors available to match different input shaft diameters.