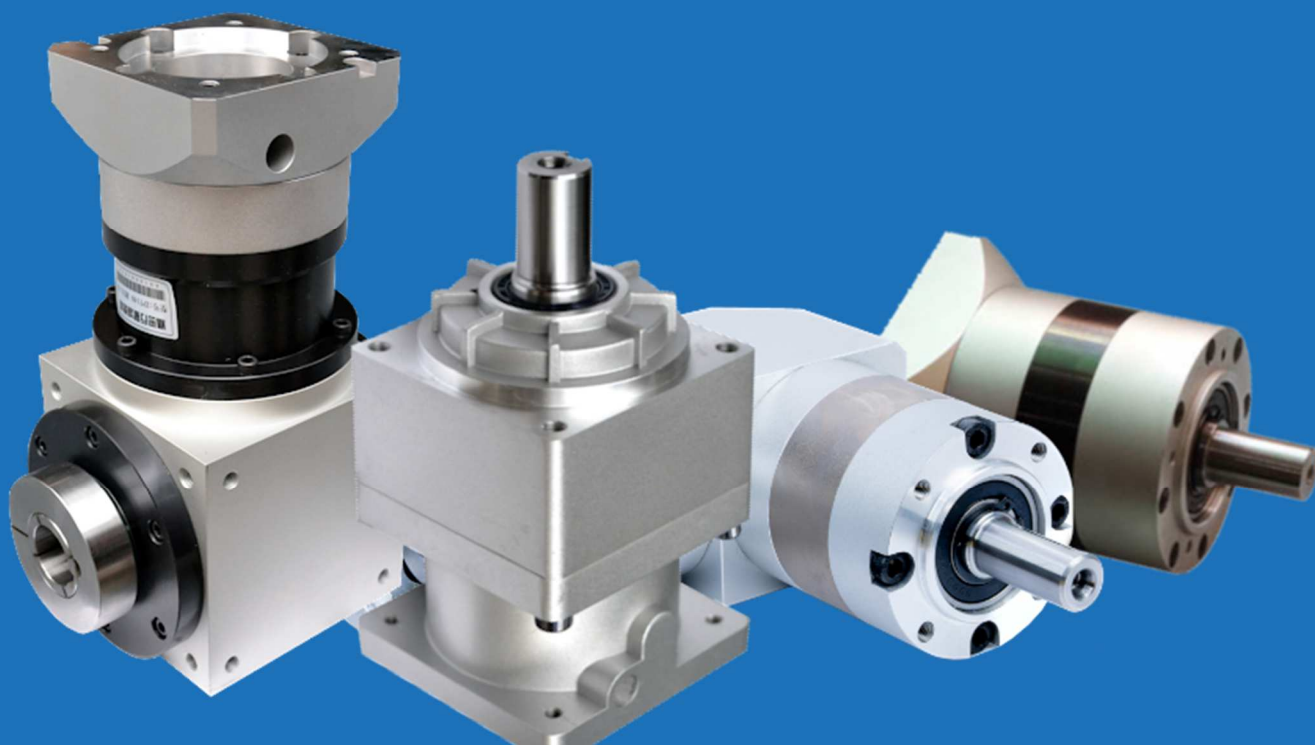




Helical tooth planetary gearboxes



Dynamic and precise motion at low price!

- ❖ Available sizes 60 – 242 mm
- ❖ Ratio up to 1000:1
- ❖ Efficiency 96%
- ❖ IP65 Standard
- ❖ Output torque 8,5-680 Nm

Product series

- SF gearboxes (SF060, SF090, SF115, SF140) (p. 4-22)**

Size [mm]		60, 90, 115, 140
Rated output torque [Nm]		18 ÷ 360
Ratio	1-stage	3, 4, 5, 6, 7, 8, 9, 10
	2-stage	15, 16, 20, 25, 28, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
Backlash [arcmin]		3



- SL gearboxes (SL070, SL090, SL120, SL155) (p. 23-41)**

Size [mm]		70, 90, 120, 155
Rated output torque [Nm]		18 ÷ 360
Ratio	1-stage	3, 4, 5, 6, 7, 8, 9, 10
	2-stage	15, 16, 20, 25, 28, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
Backlash [arcmin]		5



- SH gearboxes (SH064, SH090, SH110) (p. 42-55)**

Size [mm]		64, 90, 110
Rated output torque [Nm]		18 ÷ 180
Ratio	1-stage	3, 4, 5, 6, 7, 8, 9, 10
	2-stage	15, 16, 20, 25, 28, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
Backlash [arcmin]		3



- TSF gearboxes (TSF060, TSF090, TSF115, TSF140) (p. 56-74)**

Size [mm]		60, 90, 115, 140
Rated output torque [Nm]		12 ÷ 300
Ratio	1-stage	3, 4, 5, 6, 7, 8, 9, 10
	2-stage	15, 16, 20, 25, 28, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
Backlash [arcmin]		3

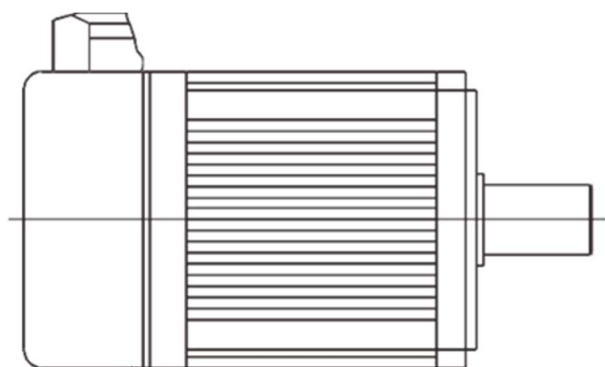


- TSL gearboxes (TSL070, TSL090, TSL120, TSL155) (p. 75-93)**

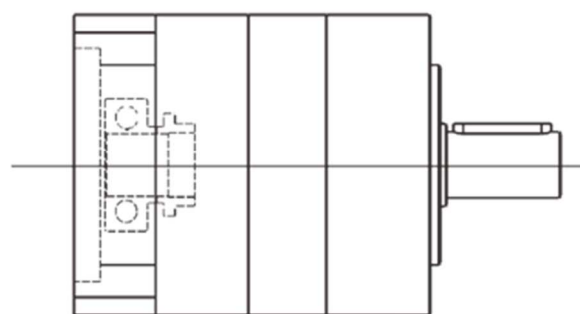
Size [mm]		70, 90, 120, 155
Rated output torque [Nm]		12 ÷ 300
Ratio	1-stage	3, 4, 5, 6, 7, 8, 9, 10
	2-stage	15, 16, 20, 25, 28, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100
Backlash [arcmin]		5



Specification

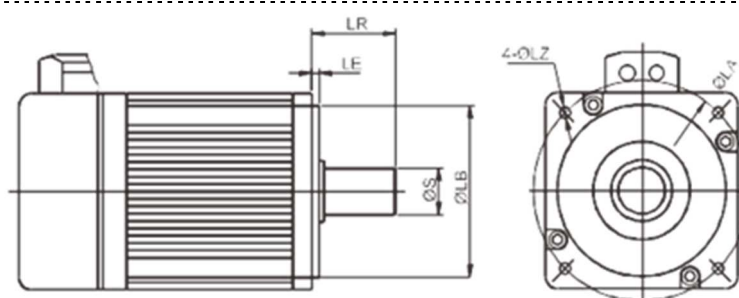


Motor data



Reducer data

With the speed reducer, the need to provide the motor mounting dimension $\varnothing S \cdot LR / \varnothing LB \cdot LE / 4 - \varnothing S \cdot LZ \varnothing LA$. To check the rationality of the motor and reducer with performance, the need to provide more detailed parameters.



SF	—	090	—	20	—	S	—	3	—	Motor size
Reducer specification	Flange size		Ratio	Output shaft		Backlash	Dimensions of motor			
SF: Square flange, SL: Round flange, SH: Plate flange, TSF: Right-angle Square flange, TSL: 90°- Right-angle Round flange			According to technical parameters	Default: shaft with key S: smooth shaft (axis)		According to technical parameters				

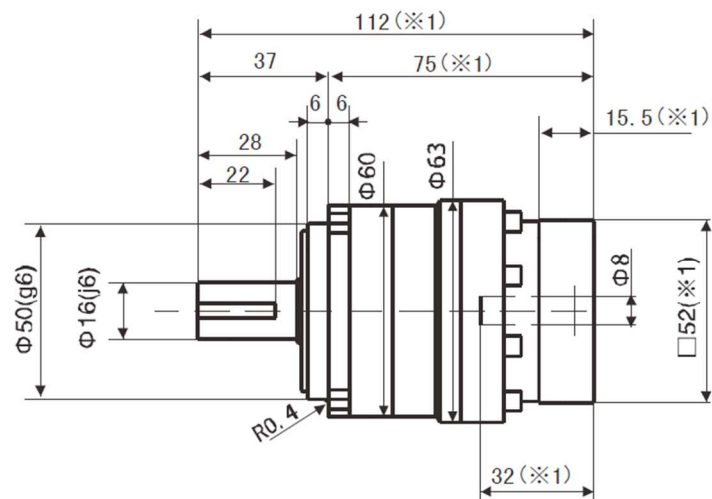
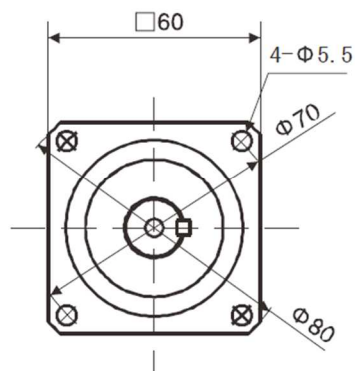
SF060 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
3	18	35	80	3000	6000	430	310
4	27	50	100	3000	6000	470	360
5	27	50	100	3000	6000	510	390
6	27	50	100	3000	6000	540	430
7	27	50	100	3000	6000	570	460
8	27	50	100	3000	6000	600	480
9	18	35	80	3000	6000	620	510
10	18	35	80	3000	6000	640	530
15	18	35	80	3000	6000	740	630
16	27	50	100	3000	6000	750	650
20	27	50	100	3000	6000	810	720
25	27	50	100	3000	6000	870	790
28	27	50	100	3000	6000	910	830
30	18	35	80	3000	6000	930	860
35	27	50	100	3000	6000	980	920
40	27	50	100	3000	6000	1000	970
45	18	35	80	3000	6000	1100	1000
50	27	50	100	3000	6000	1100	1100
60	27	50	100	3000	6000	1200	1100
70	27	50	100	3000	6000	1200	1100
80	27	50	100	3000	6000	1200	1100
90	18	35	80	3000	6000	1200	1100
100	18	35	80	3000	6000	1200	1100

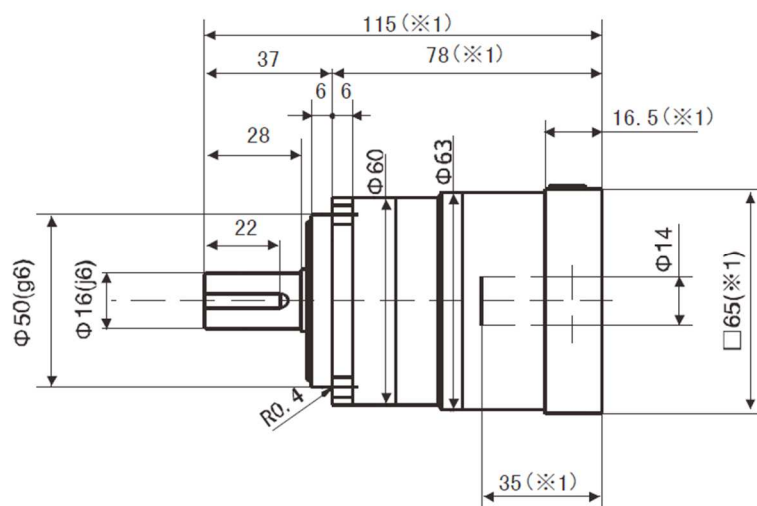
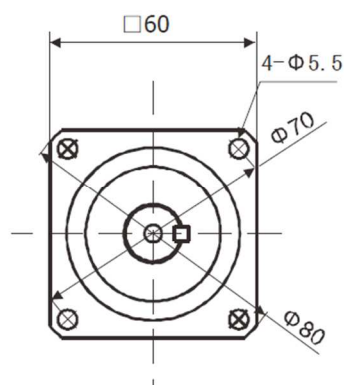
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \phi 8$) [kgcm ²]	Inertia ($\leq \phi 14$) [kgcm ²]	Inertia ($\leq \phi 19$) [kgcm ²]	
3	1200	1100	1,4	0,14	0,22	0,38	
4	1200	1100		0,095	0,17	0,36	
5	1200	1100		0,077	0,16	0,36	
6	1200	1100		0,068	0,15	0,35	
7	1200	1100		0,062	0,14	0,35	
8	1200	1100		0,059	0,14	0,34	
9	1200	1100		0,057	0,14	0,34	
10	1200	1100		0,056	0,14	0,38	
15	1200	1100	1,6	0,055	0,14	-	
16	1200	1100		0,057	0,14	-	
20	1200	1100		0,054	0,13	-	
25	1200	1100		0,053	0,13	-	
28	1200	1100		0,055	0,14	-	
30	1200	1100		0,049	0,13	-	
35	1200	1100		0,053	0,13	-	
40	1200	1100		0,049	0,13	-	
45	1200	1100		0,053	0,13	-	
50	1200	1100		0,049	0,13	-	
60	1200	1100		0,049	0,13	-	
70	1200	1100		0,049	0,13	-	
80	1200	1100		0,049	0,13	-	
90	1200	1100		0,049	0,13	-	
100	1200	1100		0,049	0,13	-	

SF060 – Dimensions

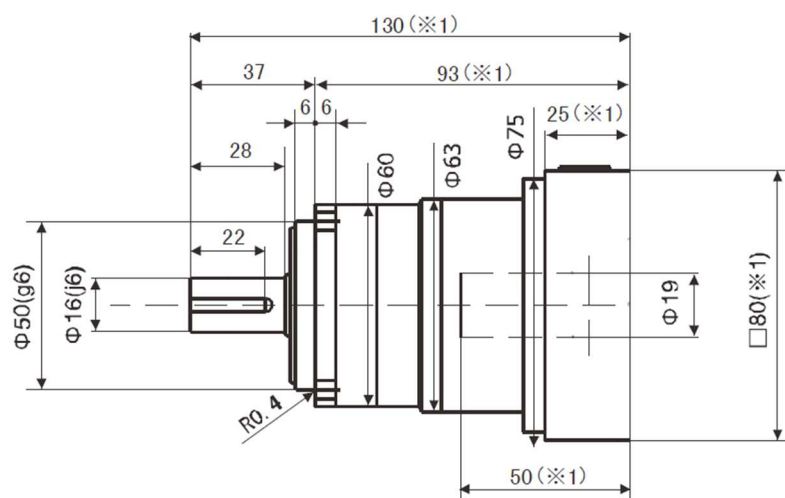
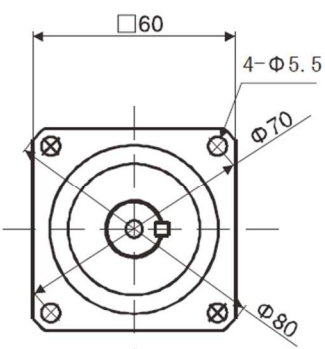
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$

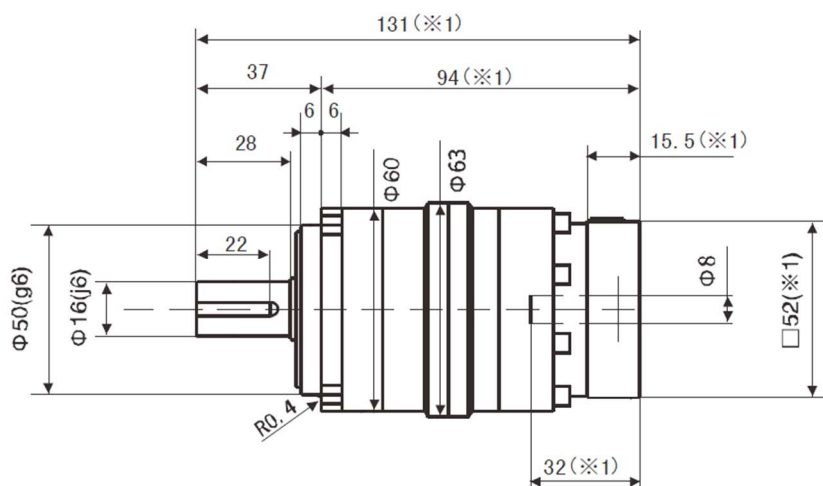


Input shaft bore $\leq \phi 19$

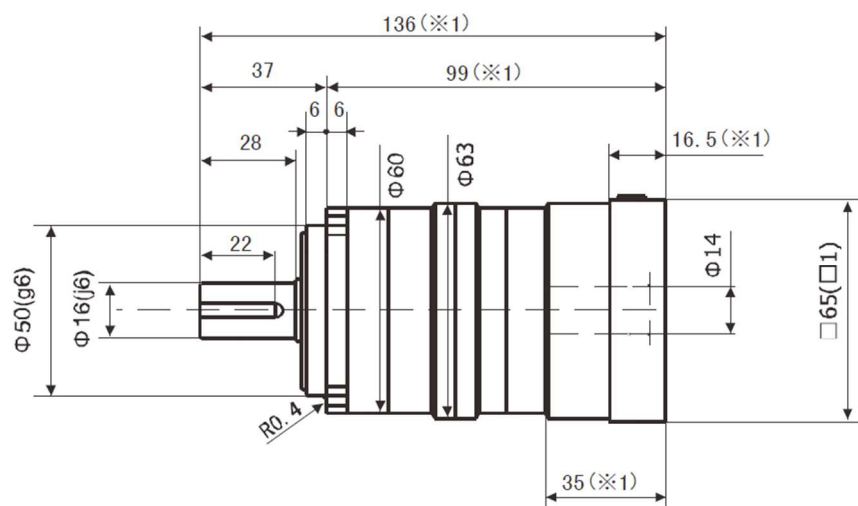


(※1) Długość zależy do silnika, tuleja zostanie włożona, aby dostosować otwór do wału silnika

Technical drawing of a square flange. The outer square has a side length of 60. The central hole has a diameter of 70. There are four corner holes, each with a diameter of 5.5. The flange has a thickness of 80.



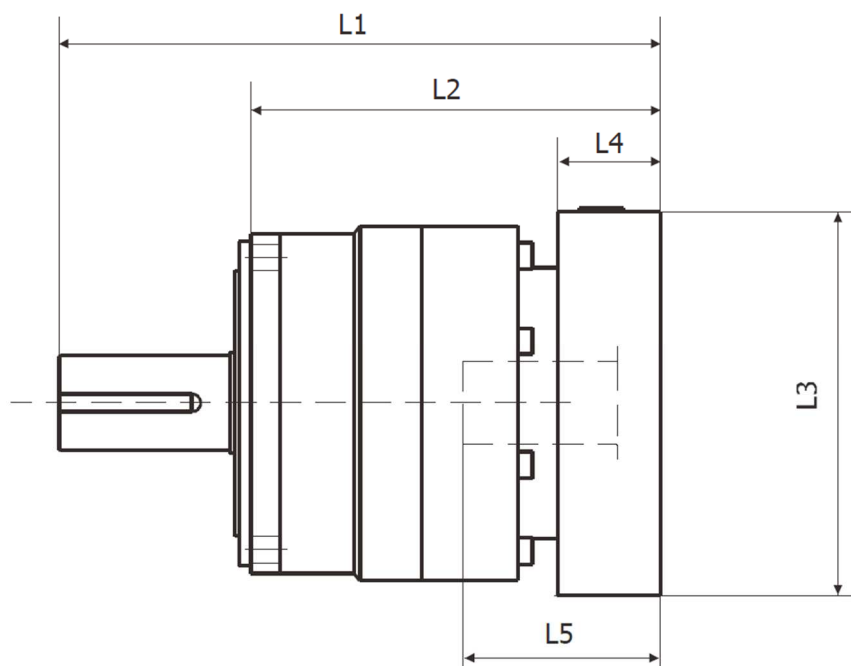
Technical drawing of a square flange with a central hole and four mounting holes. The square has a side length of 60. The central hole has a diameter of 70. There are four mounting holes, each with a diameter of 5.5, arranged in a square pattern. The outermost circle has a diameter of 80.



M5深度12.5

Depth

The diagram shows a circular hole with a smaller concentric circle inside. A dimension line with arrows at both ends is drawn vertically through the center of the hole. The text 'M5深度12.5' is positioned to the left of the top of the dimension line. A leader line points from the text 'Depth' to the dimension line.



Model number	Adapter code	1-stage					2-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
SF-060-□-□-8 (Input shaft bore ≤ø8)	AA·AC·AD·SF·AG	112	75	□ 52	15,5	32	131	94	□ 52	15,5	32
	AB·AE·SH·AJ·AK	117	80	□52	20,5	37	136	99	□52	20,5	37
	BA·BB·BD·BE	112	75	□60	15,5	32	131	94	□60	15,5	32
	BC·BF	117	80	□60	20,5	37	136	99	□60	20,5	37
	CA	117	80	□70	20,5	37	136	99	□70	20,5	37
SF-060-□-□-14 (Input shaft bore ≤ø14)	BA·BB·BD·BE·BF·BG·BJ·BK	115	78	□65	16,5	35	136	99	□65	16,5	35
	BC·BH·BM	120	83	□65	21,5	40	141	104	□65	21,5	40
	BL	125	88	□65	26,5	45	146	109	□65	26,5	45
	CA	115	78	□70	16,5	35	136	99	□70	16,5	35
	CB	120	83	□70	21,5	40	141	104	□70	21,5	40
	DA·DB·DC·DD·DF·DH	115	78	□80	16,5	35	136	99	□80	16,5	35
	DE	120	83	□80	21,5	40	141	104	□80	21,5	40
	DG	125	88	□80	26,5	45	146	109	□80	26,5	45
	EA·EB·EC	115	78	□90	16,5	35	136	99	□90	16,5	35
	ED	125	88	□90	26,5	45	146	109	□90	26,5	45
	FA	115	78	□100	16,5	35	136	99	□100	16,5	35
	GA	115	78	□115	16,5	35	136	99	□115	16,5	35
SF-060-□-□-19 (Input shaft bore ≤ø19)	DA·DB·DC	130	93	□80	25	50	-	-	-	-	-
	DD	140	103	□80	35	60	-	-	-	-	-
	DE	135	98	□80	30	55	-	-	-	-	-
	EA	135	98	□90	30	55	-	-	-	-	-
	EB	130	93	□90	25	50	-	-	-	-	-
	EC	140	103	□90	35	60	-	-	-	-	-
	FA	130	93	□100	25	50	-	-	-	-	-
	FB	140	103	□100	35	60	-	-	-	-	-
	GA·GC	135	98	□115	30	55	-	-	-	-	-
	GB·GD	130	93	□115	25	50	-	-	-	-	-
	HA	130	93	□130	25	50	-	-	-	-	-
	HB	145	108	□130	40	65	-	-	-	-	-
	HC·HD·HE	135	98	□130	30	55	-	-	-	-	-

※ 1-stage reduction (1/3÷1/10), 2-stage reduction (1/15÷1/100)

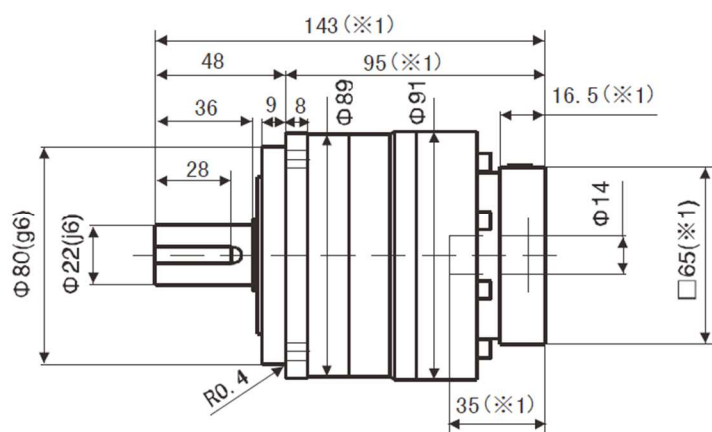
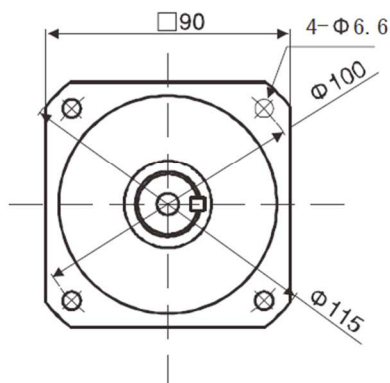
SF090 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
3	50	80	200	3000	6000	810	930
4	75	125	250	3000	6000	890	1100
5	75	125	250	3000	6000	960	1200
6	75	125	250	3000	6000	1000	1300
7	75	125	250	3000	6000	1100	1300
8	75	125	250	3000	6000	1100	1400
9	50	80	200	3000	6000	1200	1500
10	50	80	200	3000	6000	1200	1600
15	50	80	200	3000	6000	1400	1900
16	75	125	250	3000	6000	1400	1900
20	75	125	250	3000	6000	1500	2100
25	75	125	250	3000	6000	1600	2200
28	75	125	250	3000	6000	1700	2200
30	50	80	200	3000	6000	1700	2200
35	75	125	250	3000	6000	1800	2200
40	75	125	250	3000	6000	1900	2200
45	50	80	200	3000	6000	2000	2200
50	75	125	250	3000	6000	2100	2200
60	75	125	250	3000	6000	2200	2200
70	75	125	250	3000	6000	2300	2200
80	75	125	250	3000	6000	2400	2200
90	50	80	200	3000	6000	2400	2200
100	50	80	200	3000	6000	2400	2200

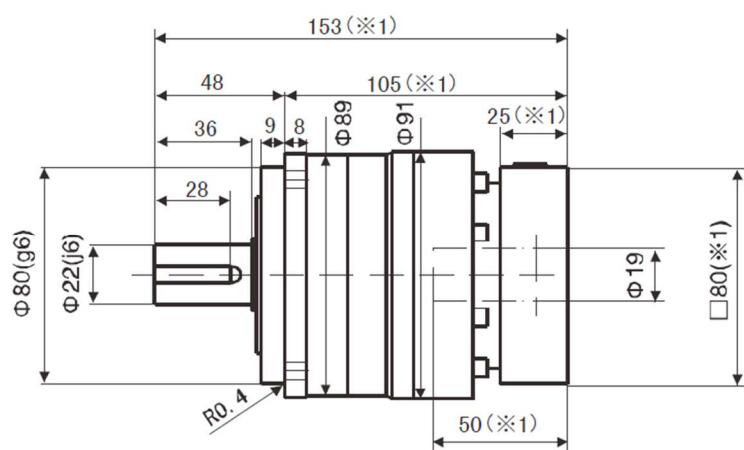
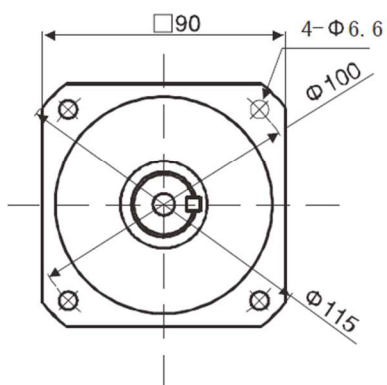
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \varnothing 8$) [kgcm ²]	Inertia ($\leq \varnothing 14$) [kgcm ²]	Inertia ($\leq \varnothing 19$) [kgcm ²]	Inertia ($\leq \varnothing 28$) [kgcm ²]
3	2400	2200	3,7	-	0,72	1,2	3,2
4	2400	2200		-	0,49	0,95	3,0
5	2400	2200		-	0,40	0,86	2,9
6	2400	2200		-	0,36	0,82	2,8
7	2400	2200		-	0,32	0,79	2,8
8	2400	2200		-	0,31	0,77	2,8
9	2400	2200		-	0,29	0,76	2,8
10	2400	2200		-	0,29	0,75	2,8
15	2400	2200	4,2	0,13	0,28	0,72	-
16	2400	2200		0,15	0,30	0,74	-
20	2400	2200		0,13	0,28	0,72	-
25	2400	2200		0,12	0,28	0,71	-
28	2400	2200		0,14	0,29	0,73	-
30	2400	2200		0,10	0,25	0,70	-
35	2400	2200		0,12	0,27	0,71	-
40	2400	2200		0,099	0,25	0,70	-
45	2400	2200		0,12	0,27	0,71	-
50	2400	2200		0,098	0,25	0,69	-
60	2400	2200		0,098	0,25	0,69	-
70	2400	2200		0,097	0,25	0,69	-
80	2400	2200		0,097	0,25	0,69	-
90	2400	2200		0,097	0,25	0,69	-
100	2400	2200		0,097	0,25	0,69	-

SF090 – Dimensions

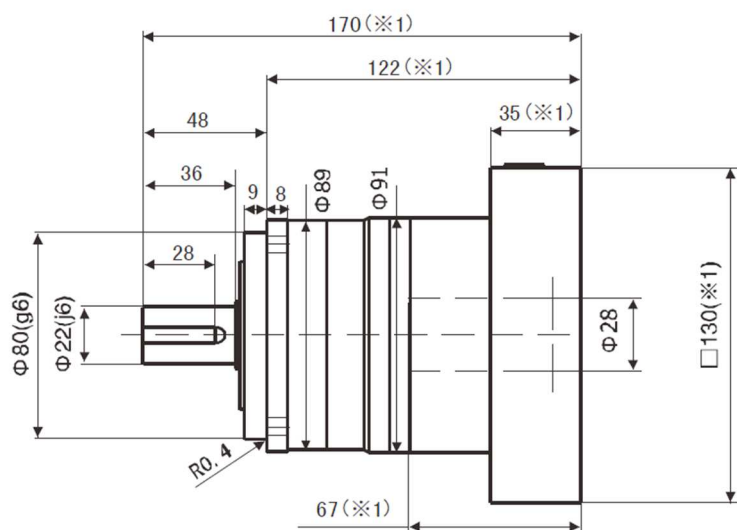
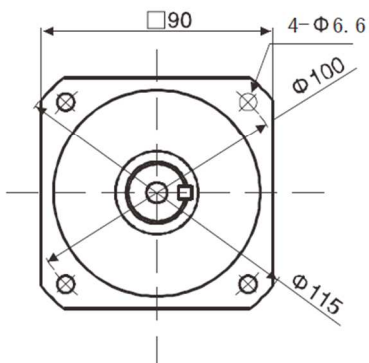
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$

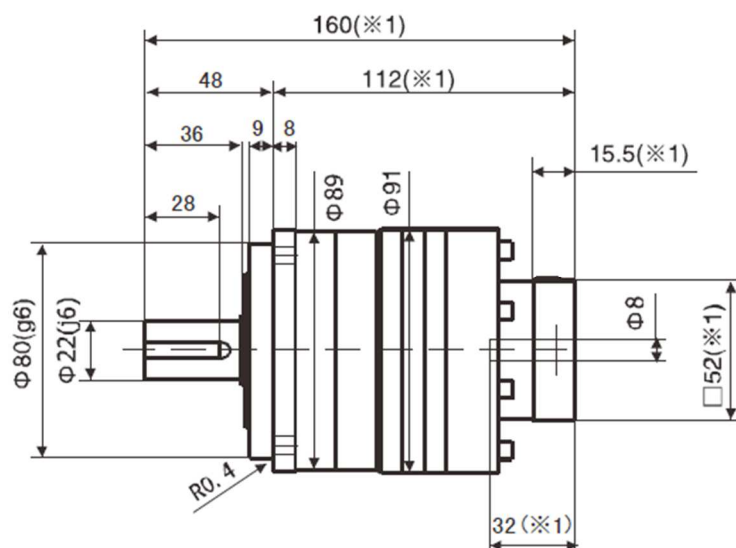
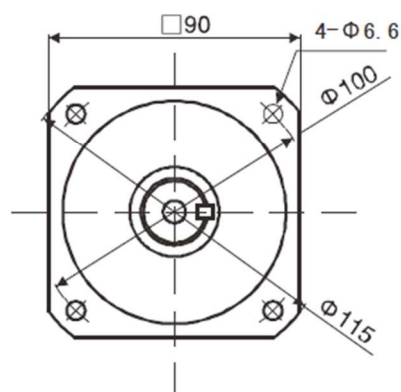


Input shaft bore $\leq \phi 28$

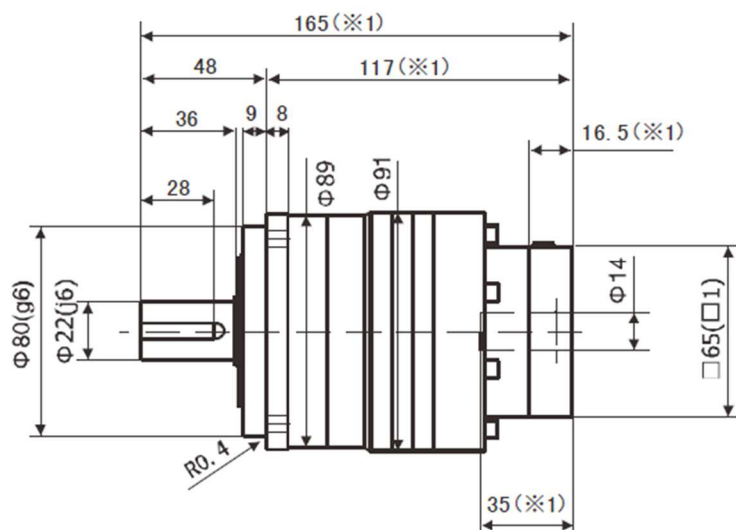
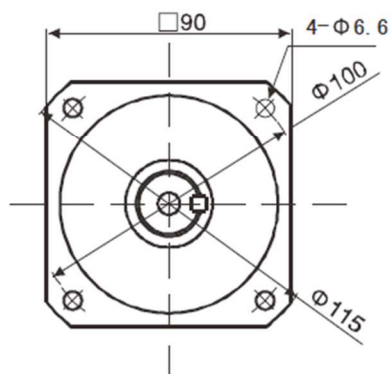


(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

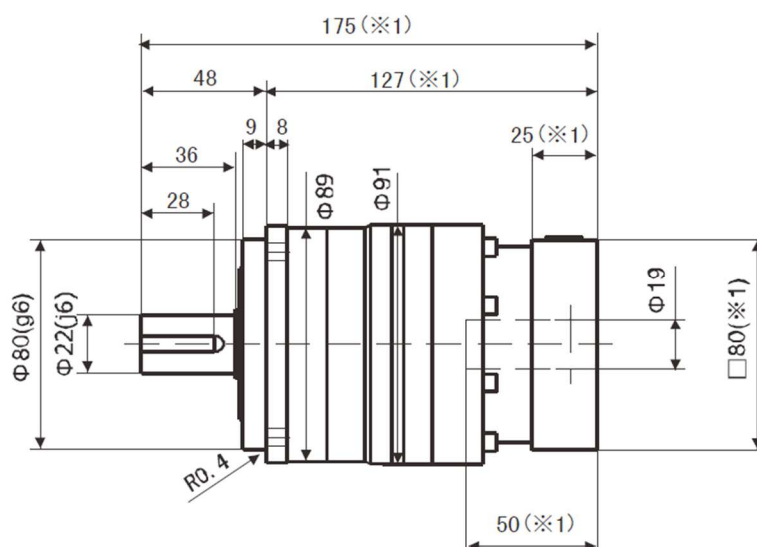
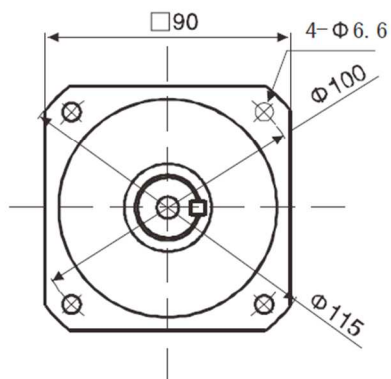
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$

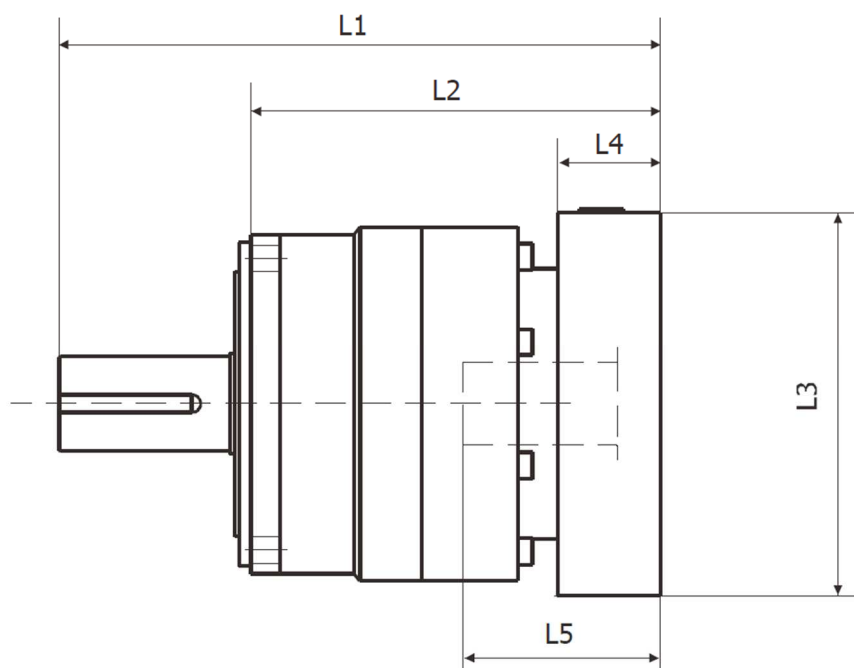
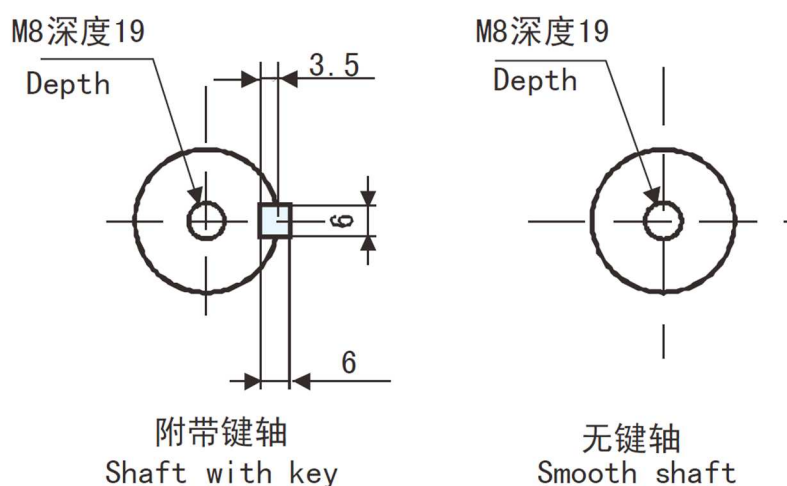


Input shaft bore $\leq \phi 19$



(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Gearbox output shaft



Model number	Adapter code	1-stage					2-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
SF-090-□-□-8 (Input shaft bore ≤ø8)	AA·AC·AD·SF·AG	-	-	-	-	-	160	112	□52	15.5	32
	AB·AE·SH·AJ·AK	-	-	-	-	-	165	117	□52	20.5	37
	BA·BB·BD·BE	-	-	-	-	-	160	112	□60	15.5	32
	BC·BF	-	-	-	-	-	165	117	□60	20.5	37
	CA	-	-	-	-	-	165	117	□70	20.5	37
SF-090-□-□-14 (Input shaft bore ≤ø14)	BA·BB·BD·BE·BF·BG·BJ·BK	143	95	□65	16,5	35	165	117	□65	16.5	35
	BC·BH·BM	148	100	□65	21,5	40	170	122	□65	21.5	40
	BL	153	105	□65	26,5	45	175	127	□65	26.5	45
	CA	143	95	□70	16,5	35	165	117	□70	16.5	35
	CB	148	100	□70	21,5	40	170	122	□70	21.5	40
	DA·DB·DC·DD·DF·DH	143	95	□80	16,5	35	165	117	□80	16.5	35
	DE	148	100	□80	21,5	40	170	122	□80	21.5	40
	DG	153	105	□80	26,5	45	175	127	□80	26.5	45
	EA·EB·EC	143	95	□90	16,5	35	165	117	□90	16.5	35
	ED	153	105	□90	26,5	45	175	127	□90	26.5	45

	FA	143	95	□100	16,5	35	165	117	□100	16.5	35
	GA	143	95	□115	16,5	35	165	117	□115	16.5	35
SF-090-□-□-19 (Input shaft bore ≤ø19)	DA·DB·DC	153	105	□80	25	50	175	127	□80	25	50
	DD	163	115	□80	35	60	185	137	□80	35	60
	DE	158	110	□80	30	55	180	132	□80	30	55
	EA	158	110	□90	30	55	180	132	□90	30	55
	EB	153	105	□90	25	50	175	127	□90	25	50
	EC	163	115	□90	35	60	185	137	□90	35	60
	FA	153	105	□100	25	50	175	127	□100	25	50
	FB	163	115	□100	35	60	185	137	□100	35	60
	GA·GC	158	110	□115	30	55	180	132	□115	30	55
	GB·GD	153	105	□115	25	50	175	127	□115	25	50
	HA	153	105	□130	25	50	175	127	□130	25	50
	HB	168	120	□130	40	65	190	142	□130	40	65
	HC·HD·HE	158	110	□130	30	55	180	132	□130	30	55
SF-090-□-□-28 (Input shaft bore ≤ø28)	FA·FB·FC	170	122	□100	35	67	-	-	-	-	-
	GA·GB·GC·GD·GE·GF·GG	170	122	□115	35	67	-	-	-	-	-
	HA·HC·HD	170	122	□130	35	67	-	-	-	-	-
	HB	180	132	□130	45	77	-	-	-	-	-
	JA·JB·JC	170	122	□150	35	67	-	-	-	-	-
	KA·KB	170	122	□180	35	67	-	-	-	-	-
	KD	180	132	□180	45	77	-	-	-	-	-
	LA	170	122	□200	35	67	-	-	-	-	-
	MA	170	122	□220	35	67	-	-	-	-	-

※ 1-stage reduction (1/3÷1/10), 2-stage reduction (1/15÷1/100)

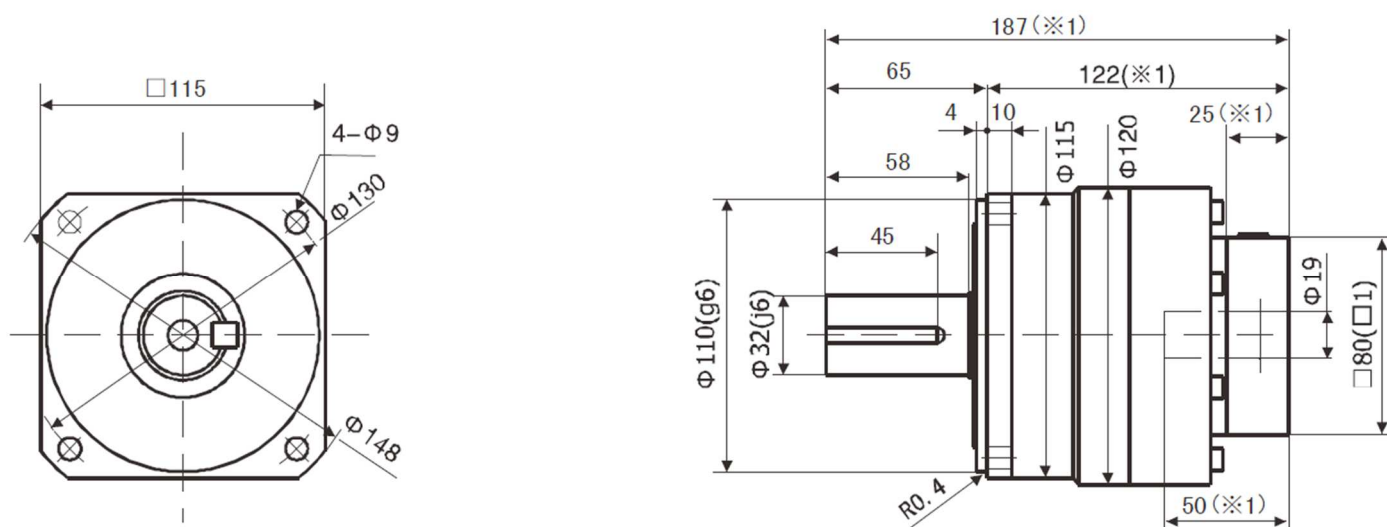
SF115 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
3	120	225	500	3000	6000	1300	1500
4	120	330	625	3000	6000	1500	1700
5	180	330	625	3000	6000	1600	1900
6	180	330	625	3000	6000	1700	2000
7	180	330	625	3000	6000	1800	2100
8	180	330	625	3000	6000	1900	2300
9	120	225	500	3000	6000	1900	2400
10	120	225	500	3000	6000	2000	2500
15	120	225	500	3000	6000	2300	3000
16	180	330	625	3000	6000	2300	3100
20	180	330	625	3000	6000	2500	3400
25	180	330	625	3000	6000	2700	3700
28	180	330	625	3000	6000	2800	3900
30	120	225	500	3000	6000	2900	3900
35	180	330	625	3000	6000	3000	3900
40	180	330	625	3000	6000	3200	3900
45	120	225	500	3000	6000	3300	3900
50	180	330	625	3000	6000	3400	3900
60	180	330	625	3000	6000	3600	3900
70	180	330	625	3000	6000	3800	3900
80	180	330	625	3000	6000	4000	3900
90	120	225	500	3000	6000	4200	3900
100	120	225	500	3000	6000	4300	3900

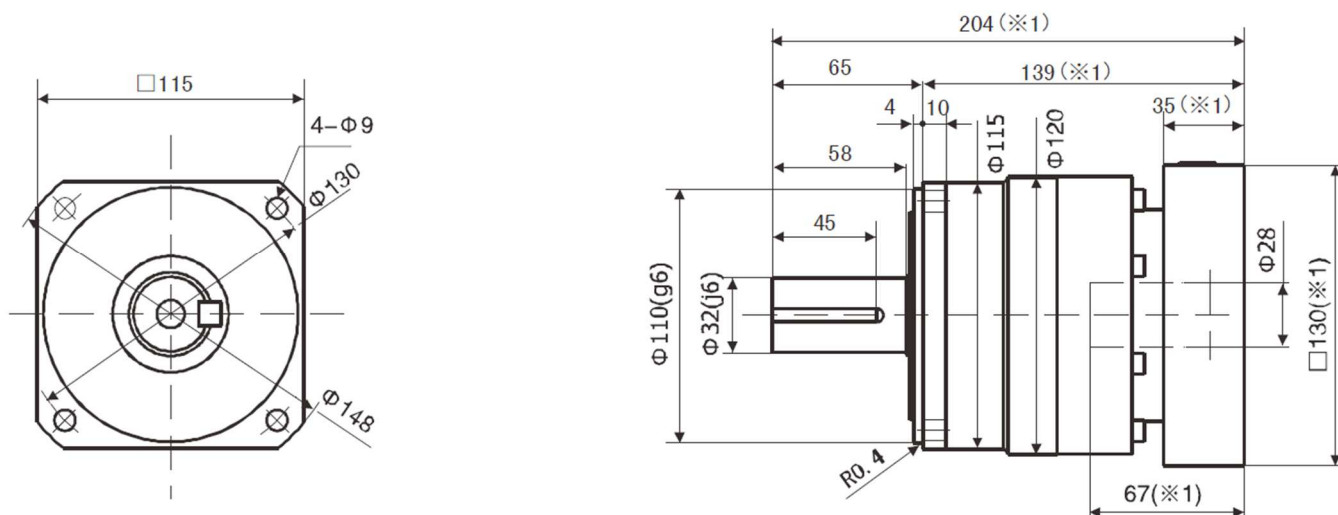
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \phi 14$) [kgcm ²]	Inertia ($\leq \phi 19$) [kgcm ²]	Inertia ($\leq \phi 28$) [kgcm ²]	Inertia ($\leq \phi 38$) [kgcm ²]
3	4300	3900	8	-	3,3	5,3	13
4	4300	3900		-	2,0	4,1	12
5	4300	3900		-	1,6	3,6	11
6	4300	3900		-	1,3	3,3	11
7	4300	3900		-	1,1	3,2	11
8	4300	3900		-	1,0	3,2	11
9	4300	3900		-	0,98	3,0	11
10	4300	3900		-	0,95	3,0	11
15	4300	3900	8,9	0,43	0,86	2,8	-
16	4300	3900		0,48	0,92	2,9	-
20	4300	3900		0,40	0,83	2,8	-
25	4300	3900		0,38	0,82	2,8	-
28	4300	3900		0,44	0,88	2,8	-
30	4300	3900		0,29	0,74	2,7	-
35	4300	3900		0,37	0,81	2,7	-
40	4300	3900		0,28	0,73	2,7	-
45	4300	3900		0,37	0,80	2,7	-
50	4300	3900		0,28	0,73	2,7	-
60	4300	3900		0,28	0,73	2,7	-
70	4300	3900		0,28	0,73	2,7	-
80	4300	3900		0,28	0,73	2,7	-
90	4300	3900		0,27	0,73	2,7	-
100	4300	3900		0,27	0,73	2,7	-

SF115 – Dimensions

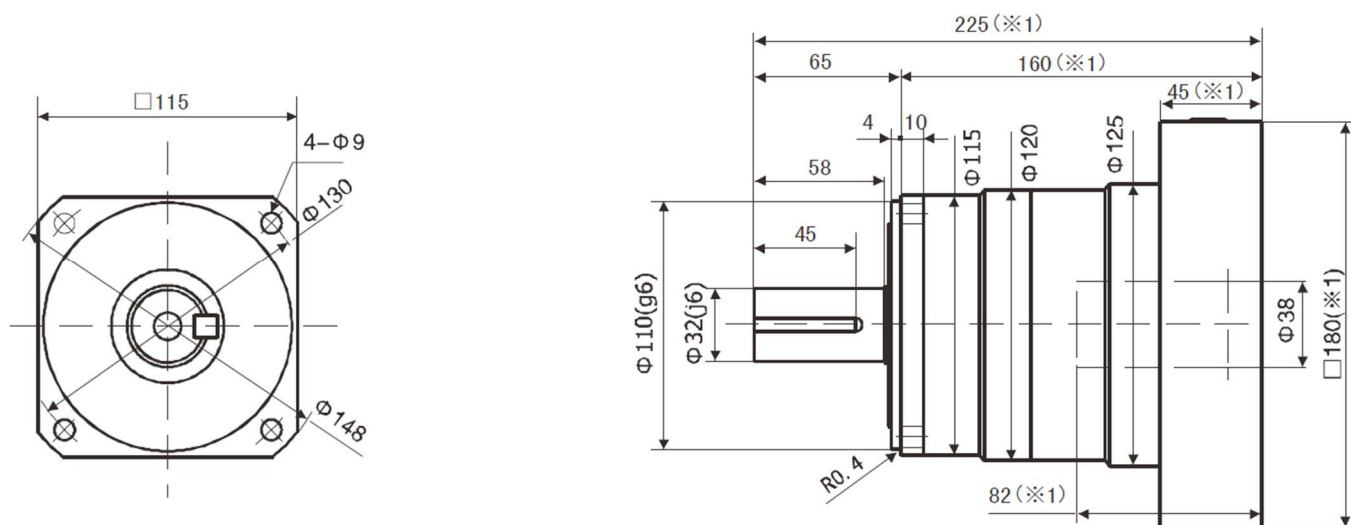
Input shaft bore $\leq \phi 19$



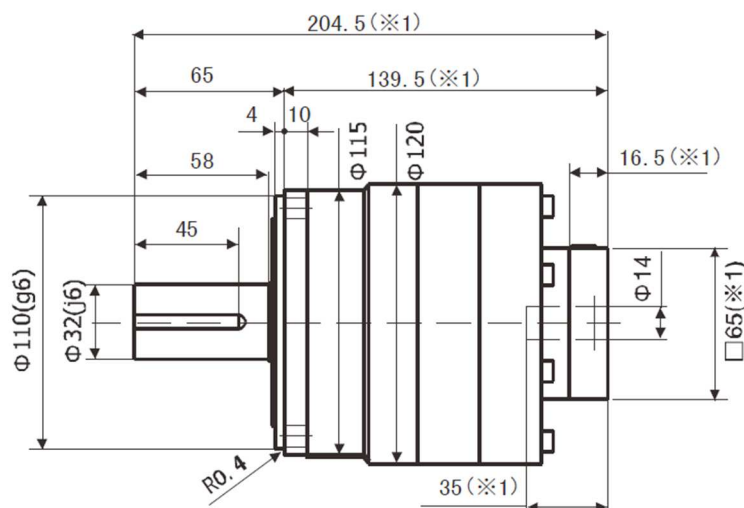
Input shaft bore $\leq \phi 28$



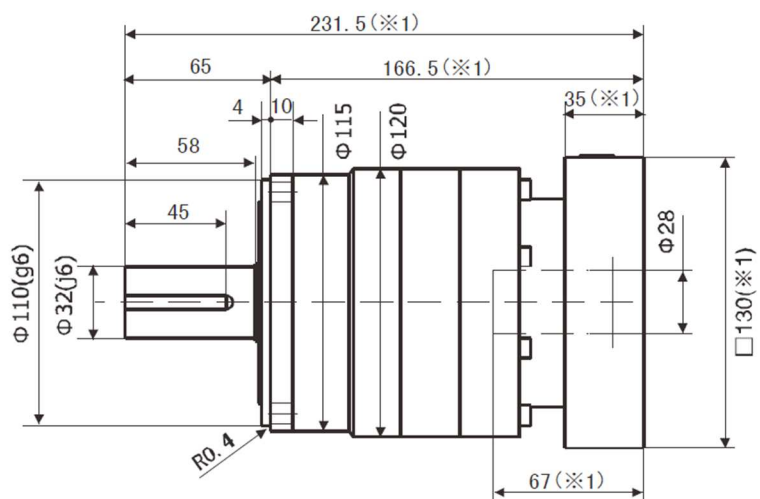
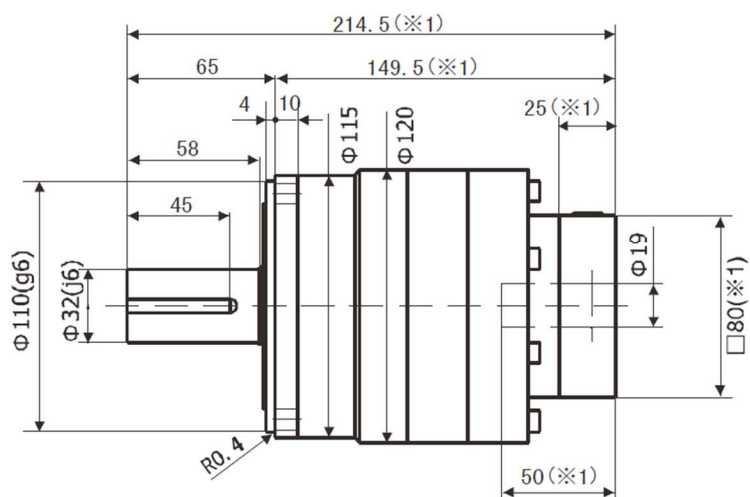
Input shaft bore $\leq \phi 38$



($\times 1$) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

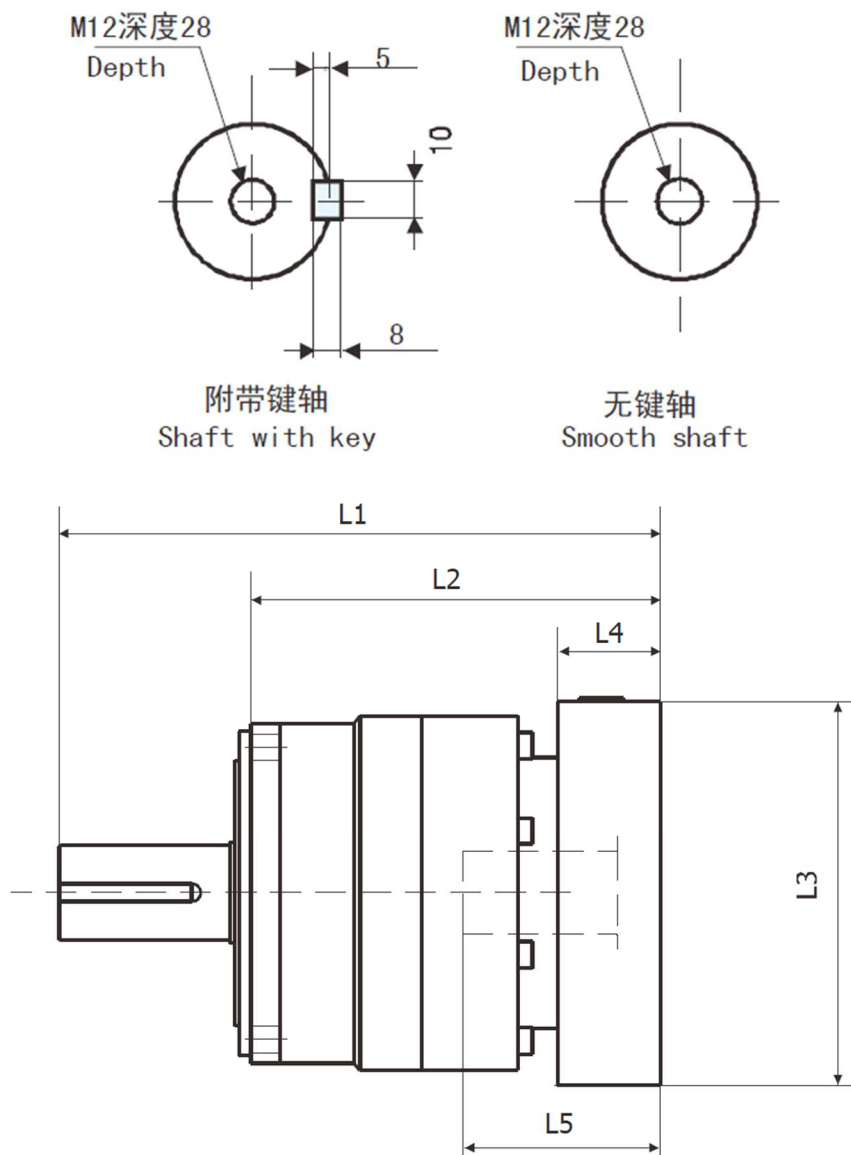


Technical drawing of a circular mechanical part. The drawing shows a top view of a circular component with a square feature in the center. The outer diameter is labeled as $\phi 148$. The inner diameter is labeled as $\phi 130$. The central square feature has a side length of 115. There are four holes, each with a diameter of $\phi 9$, arranged in a square pattern. The drawing includes dimension lines and arrows indicating the measurements.



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Gearbox output shaft



Model number	Adapter code	1-stage					2-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
SF-115-□-□-14 (Input shaft bore ≤φ14)	BA·BB·BD·BE·BF·BG·BJ·BK	-	-	-	-	-	204,5	139,5	□65	16,5	35
	BC·BH·BM	-	-	-	-	-	209,5	144,5	□65	21,5	40
	BL	-	-	-	-	-	214,5	149,5	□65	26,5	45
	CA	-	-	-	-	-	204,5	139,5	□70	16,5	35
	CB	-	-	-	-	-	209,5	144,5	□70	21,5	40
	DA·DB·DC·DD·DF·DH	-	-	-	-	-	204,5	139,5	□80	16,5	35
	DE	-	-	-	-	-	209,5	144,5	□80	21,5	40
	DG	-	-	-	-	-	214,5	149,5	□80	26,5	45
	EA·EB·EC	-	-	-	-	-	204,5	139,5	□90	16,5	35
	ED	-	-	-	-	-	214,5	149,5	□90	26,5	45
	FA	-	-	-	-	-	204,5	139,5	□100	16,5	35
	GA	-	-	-	-	-	204,5	139,5	□115	16,5	35
SF-115-□-□-19 (Input shaft bore ≤φ19)	DA·DB·DC	187	122	□80	25	50	214,5	149,5	□80	25	50
	DD	197	132	□80	35	60	224,5	159,5	□80	35	60
	DE	192	127	□80	30	55	219,5	154,5	□80	30	55
	EA	192	127	□90	30	55	219,5	154,5	□90	30	55
	EB	187	122	□90	25	50	214,5	149,5	□90	25	50
	EC	197	132	□90	35	60	224,5	159,5	□90	35	60

	FA	187	122	□100	25	50	214,5	149,5	□100	25	50
	FB	197	132	□100	35	60	224,5	159,5	□100	35	60
	GA·GC	192	127	□115	30	55	219,5	154,5	□115	30	55
	GB·GD	187	122	□115	25	50	214,5	149,5	□115	25	50
	HA	187	122	□130	25	50	214,5	149,5	□130	25	50
	HB	202	137	□130	40	65	229,5	164,5	□130	40	65
	HC·HD·HE	192	127	□130	30	55	219,5	154,5	□130	30	55
SF-115-□-□-28 (Input shaft bore ≤ø28)	FA·FB·FC	204	139	□100	35	67	231,5	166,5	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	204	139	□115	35	67	231,5	166,5	□115	35	67
	HA·HC·HD	204	139	□130	35	67	231,5	166,5	□130	35	67
	HB	214	149	□130	45	77	241,5	175,5	□130	45	77
	JA·JB·JC	204	139	□150	35	67	231,5	166,5	□150	35	67
	KA·KB	204	139	□180	35	67	231,5	166,5	□180	35	67
	KD	214	149	□180	45	77	241,5	176,5	□180	45	77
	LA	204	139	□200	35	67	231,5	166,5	□200	35	67
	MA	204	139	□220	35	67	231,5	166,5	□220	35	67
SF-115-□-□-38 (Input shaft bore ≤ø38)	HA	225	160	□130	45	82	-	-	-	-	-
	HB	220	155	□130	40	77	-	-	-	-	-
	JA	225	160	□150	45	82	-	-	-	-	-
	KA·KB·KC	225	160	□180	45	82	-	-	-	-	-
	LA	225	160	□200	45	82	-	-	-	-	-
	LB	235	170	□200	55	92	-	-	-	-	-
	MA·MB	225	160	□220	45	82	-	-	-	-	-
	NA	225	160	□250	45	82	-	-	-	-	-

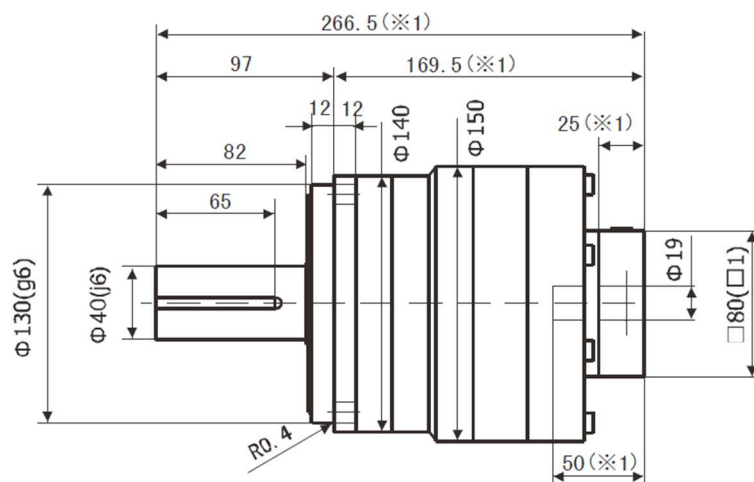
※ 1-stage reduction (1/3÷1/10), 2-stage reduction (1/15÷1/100)

SF140 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
3	240	470	1000	2000	4000	3200	2400
4	240	700	1250	2000	4000	3500	2700
5	360	700	1250	2000	4000	3800	3000
6	360	700	1250	2000	4000	4000	3300
7	360	700	1250	2000	4000	4200	3500
8	360	700	1250	2000	4000	4400	3700
9	240	470	1000	2000	4000	4600	3900
10	240	470	1000	2000	4000	4700	4100
15	240	470	1000	2000	4000	5400	4900
16	360	700	1250	2000	4000	5500	5000
20	360	700	1250	2000	4000	6000	5500
25	360	700	1250	2000	4000	6400	6100
28	360	700	1250	2000	4000	6700	6400
30	240	470	1000	2000	4000	6800	6600
35	360	700	1250	2000	4000	7200	7000
40	360	700	1250	2000	4000	7500	7500
45	240	470	1000	2000	4000	7800	7900
50	360	700	1250	2000	4000	8100	8200
60	360	700	1250	2000	4000	8600	8200
70	360	700	1250	2000	4000	9100	8200
80	360	700	1250	2000	4000	9100	8200
90	240	470	1000	2000	4000	9100	8200
100	240	470	1000	2000	4000	9100	8200

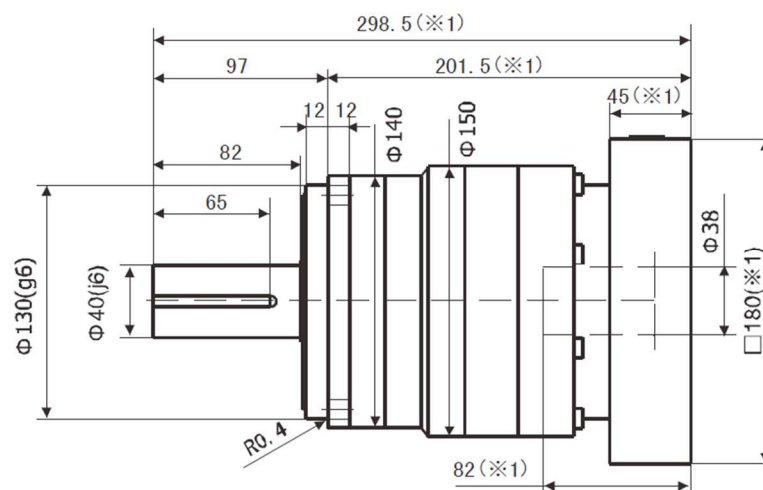
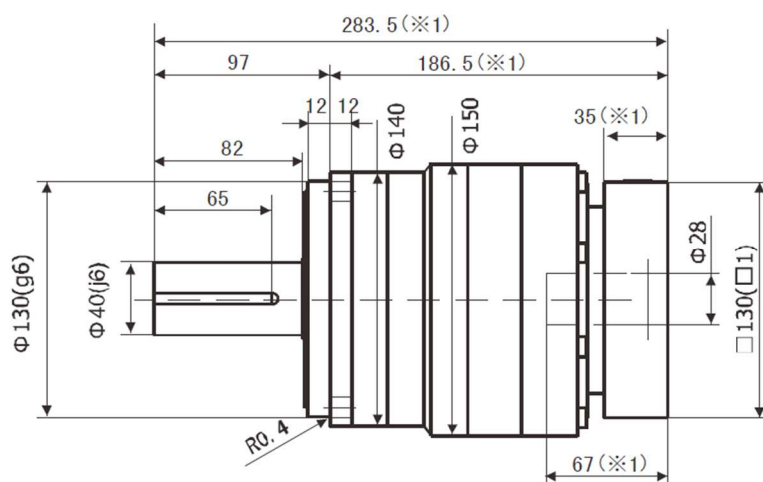
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \phi 19$) [kgcm ²]	Inertia ($\leq \phi 28$) [kgcm ²]	Inertia ($\leq \phi 38$) [kgcm ²]	Inertia ($\leq \phi 48$) [kgcm ²]
3	9100	8200	16	-	12	20	42
4	9100	8200		-	7,5	15	37
5	9100	8200		-	5,8	14	36
6	9100	8200		-	4,9	13	35
7	9100	8200		-	4,1	12	34
8	9100	8200		-	3,8	12	34
9	9100	8200		-	3,6	11	34
10	9100	8200		-	3,5	11	34
15	9100	8200	17	1,3	3,2	11	-
16	9100	8200		1,5	3,5	11	-
20	9100	8200		1,2	3,1	11	-
25	9100	8200		1,1	3,1	11	-
28	9100	8200		1,4	3,3	11	-
30	9100	8200		0,85	2,8	10	-
35	9100	8200		1,1	3,1	11	-
40	9100	8200		0,83	2,8	10	-
45	9100	8200		1,1	3,0	11	-
50	9100	8200		0,81	2,8	10	-
60	9100	8200		0,81	2,8	10	-
70	9100	8200		0,80	2,8	10	-
80	9100	8200		0,80	2,8	10	-
90	9100	8200		0,80	2,8	10	-
100	9100	8200		0,80	2,8	10	-

Technical drawing of a square flange. The outer square has a side length of 140. The central hole has a diameter of $\Phi 165$. There are four mounting holes, each with a diameter of $\Phi 11$, spaced at $\Phi 185$ from the center. A small rectangular feature is visible on the inner circle.



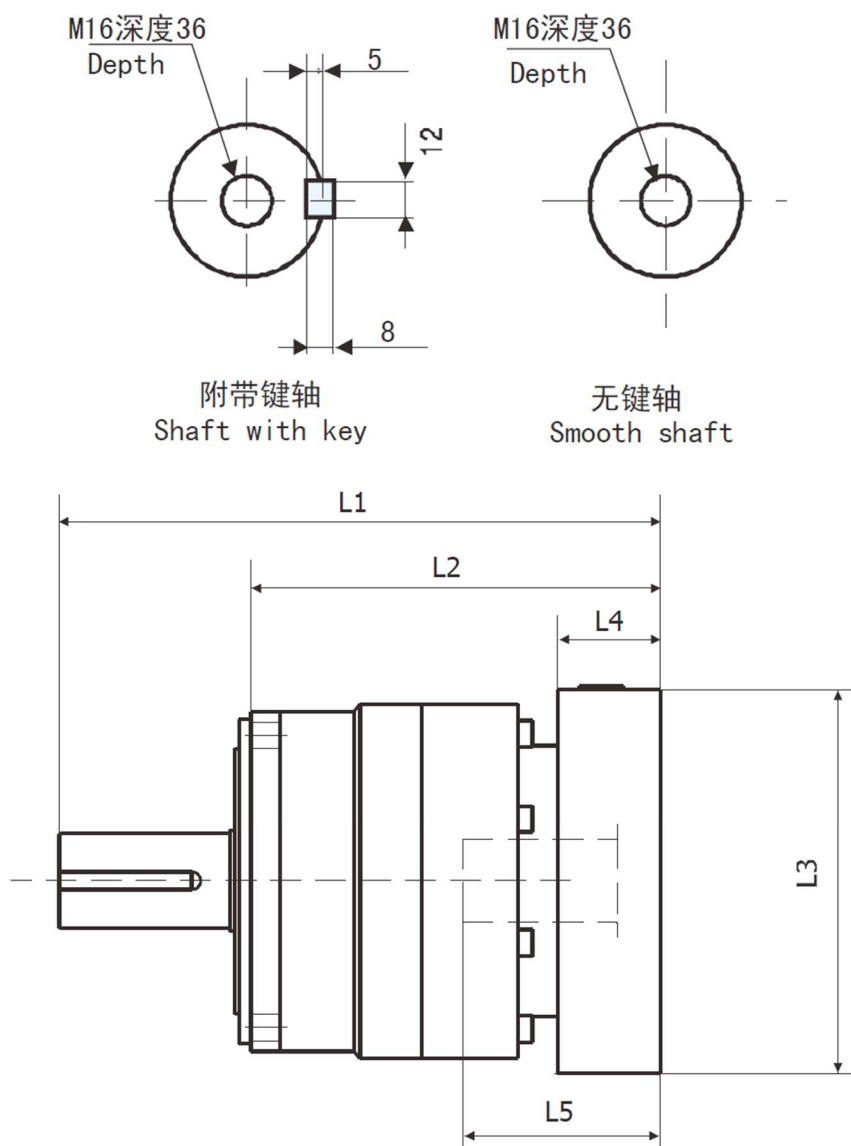
Technical drawing of the front view of a mechanical part. The part is a square flange with rounded corners. It features a central circular hole and four smaller circular holes, one in each corner. The drawing includes the following dimensions and features:

- A square symbol with the number 140, indicating the overall width.
- The text 4-Φ11, indicating four holes with a diameter of 11 mm.
- The dimension Φ165, indicating the diameter of the central hole.
- The dimension Φ185, indicating the diameter of the outer square flange.



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Gearbox output shaft



Model number	Adapter code	1-stage					2-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
SF-140-□-□-19 (Input shaft bore ≤φ19)	DA·DB·DC	-	-	-	-	-	266.5	169.5	□80	25	50
	DD	-	-	-	-	-	276.5	179.5	□80	35	60
	DE	-	-	-	-	-	271.5	174.5	□80	30	55
	EA	-	-	-	-	-	271.5	174.5	□90	30	55
	EB	-	-	-	-	-	266.5	169.5	□90	25	50
	EC	-	-	-	-	-	276.5	179.5	□90	35	60
	FA	-	-	-	-	-	266.5	169.5	□100	25	50
	FB	-	-	-	-	-	276.5	179.5	□100	35	60
	GA·GC	-	-	-	-	-	271.5	174.5	□115	30	55
	GB·GD	-	-	-	-	-	266.5	169.5	□115	25	50
	HA	-	-	-	-	-	266.5	169.5	□130	25	50
	HB	-	-	-	-	-	281.5	184.5	□130	40	65
	HC·HD·HE	-	-	-	-	-	271.5	174.5	□130	30	55
SF-140-□-□-28 (Input shaft bore ≤φ28)	FA·FB·FC	249	152	□100	35	67	283.5	186.5	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	249	152	□115	35	67	283.5	186.5	□115	35	67
	HA·HC·HD	249	152	□130	35	67	283.5	186.5	□130	35	67
	HB	259	162	□130	45	77	293.5	196.5	□130	45	77
	JA·JB·JC	249	152	□150	35	67	283.5	186.5	□150	35	67

	KA·KB	249	152	□180	35	67	283.5	186.5	□180	35	67
	KD	259	162	□180	45	77	293.5	196.5	□180	45	77
	LA	249	152	□200	35	67	283.5	186.5	□200	35	67
	MA	249	152	□220	35	67	283.5	186.5	□220	35	67
SF-140-□-□-38 (Input shaft bore ≤φ38)	HA	264	167	□130	45	82	298.5	201.5	□130	45	82
	HB	259	162	□130	40	77	293.5	196.5	□130	40	77
	JA	264	167	□150	45	82	298.5	201.5	□150	45	82
	KA·KB·KC	264	167	□180	45	82	298.5	201.5	□180	45	82
	LA	264	167	□200	45	82	298.5	201.5	□200	45	82
	LB	274	177	□200	55	92	308.5	211.5	□200	55	92
	MA·MB	264	167	□220	45	82	298.5	201.5	□220	45	82
	NA	264	167	□250	45	82	298.5	201.5	□250	45	82
SF-140-□-□-48 (Input shaft bore ≤φ48)	KB·KC	285	188	□180	55	98	-	-	-	-	-
	KA	305	208	□180	75	118	-	-	-	-	-
	LA	285	188	□200	55	98	-	-	-	-	-
	MA	285	188	□220	55	98	-	-	-	-	-
	MB	305	208	□220	75	118	-	-	-	-	-
	NA	305	208	□250	75	118	-	-	-	-	-
	PA	305	208	□280	75	118	-	-	-	-	-

※ 1-stage reduction (1/3÷1/10), 2-stage reduction (1/15÷1/100)

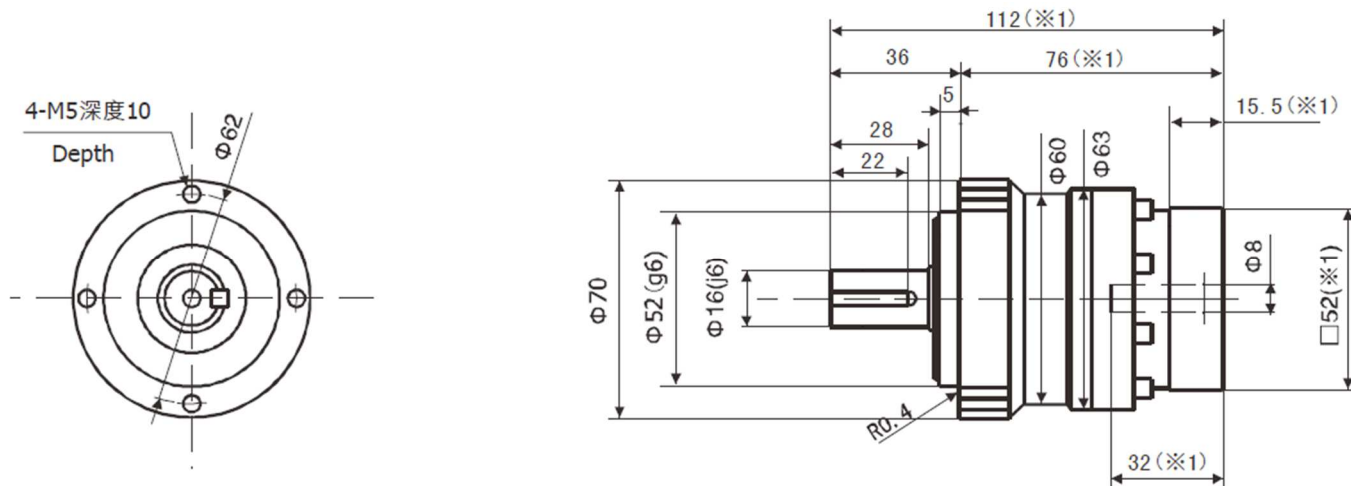
SL070 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
3	18	35	80	3000	6000	430	310
4	27	50	100	3000	6000	470	360
5	27	50	100	3000	6000	510	390
6	27	50	100	3000	6000	540	430
7	27	50	100	3000	6000	570	460
8	27	50	100	3000	6000	600	480
9	18	35	80	3000	6000	620	510
10	18	35	80	3000	6000	640	530
15	18	35	80	3000	6000	740	630
16	27	50	100	3000	6000	750	650
20	27	50	100	3000	6000	810	720
25	27	50	100	3000	6000	870	790
28	27	50	100	3000	6000	910	830
30	18	35	80	3000	6000	930	860
35	27	50	100	3000	6000	980	920
40	27	50	100	3000	6000	1000	970
45	18	35	80	3000	6000	1100	1000
50	27	50	100	3000	6000	1100	1100
60	27	50	100	3000	6000	1200	1100
70	27	50	100	3000	6000	1200	1100
80	27	50	100	3000	6000	1200	1100
90	18	35	80	3000	6000	1200	1100
100	18	35	80	3000	6000	1200	1100

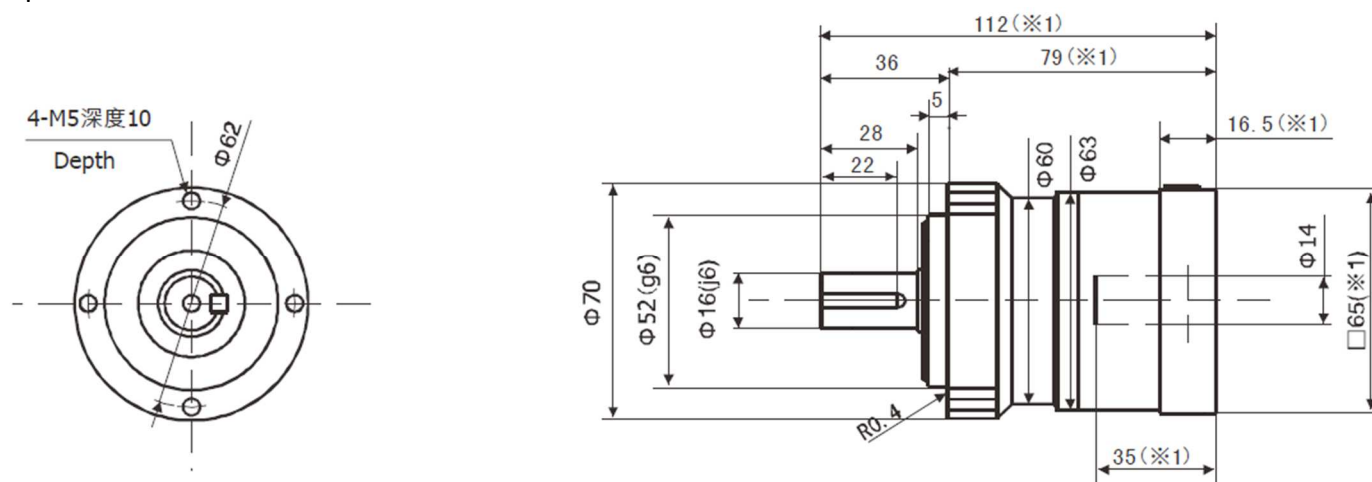
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \phi 8$) [kgcm ²]	Inertia ($\leq \phi 14$) [kgcm ²]	Inertia ($\leq \phi 19$) [kgcm ²]	
3	1200	1100	1,5	0,14	0,22	0,43	
4	1200	1100		0,095	0,17	0,38	
5	1200	1100		0,077	0,16	0,36	
6	1200	1100		0,068	0,15	0,36	
7	1200	1100		0,062	0,14	0,35	
8	1200	1100		0,059	0,14	0,35	
9	1200	1100		0,057	0,14	0,34	
10	1200	1100		0,056	0,14	0,34	
15	1200	1100	1,7	0,055	0,14	-	
16	1200	1100		0,057	0,14	-	
20	1200	1100		0,054	0,13	-	
25	1200	1100		0,053	0,13	-	
28	1200	1100		0,055	0,14	-	
30	1200	1100		0,049	0,13	-	
35	1200	1100		0,053	0,13	-	
40	1200	1100		0,049	0,13	-	
45	1200	1100		0,053	0,13	-	
50	1200	1100		0,049	0,13	-	
60	1200	1100		0,049	0,13	-	
70	1200	1100		0,049	0,13	-	
80	1200	1100		0,049	0,13	-	
90	1200	1100		0,049	0,13	-	
100	1200	1100		0,049	0,13	-	

SL070 – Dimensions

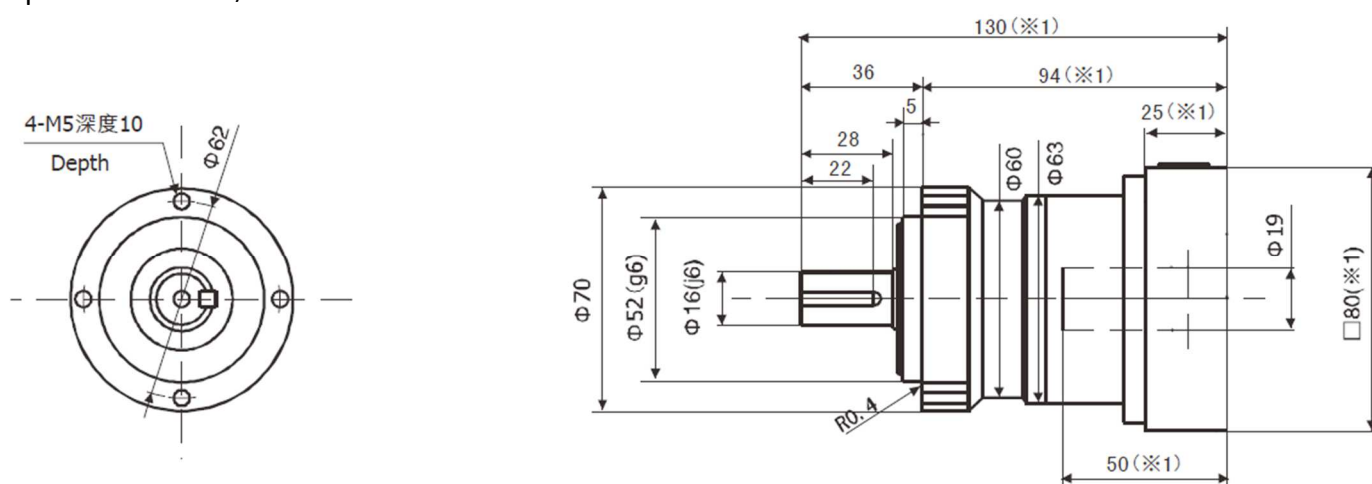
Input shaft bore $\leq \phi 8$



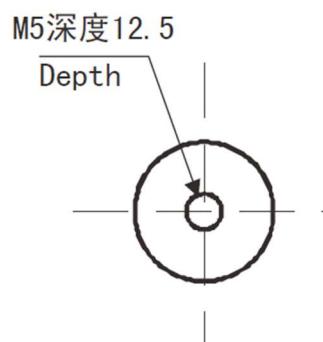
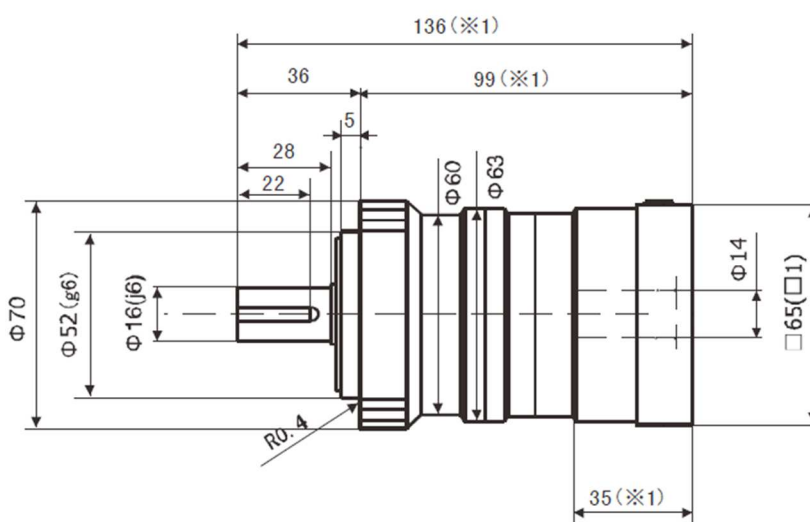
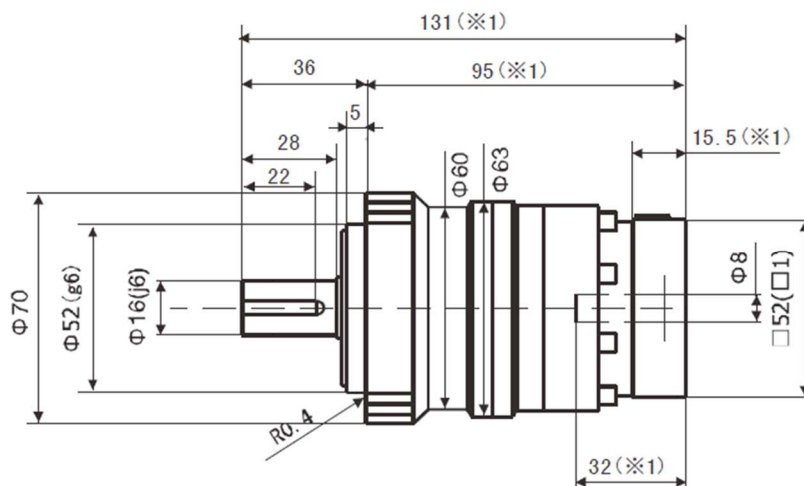
Input shaft bore $\leq \phi 14$

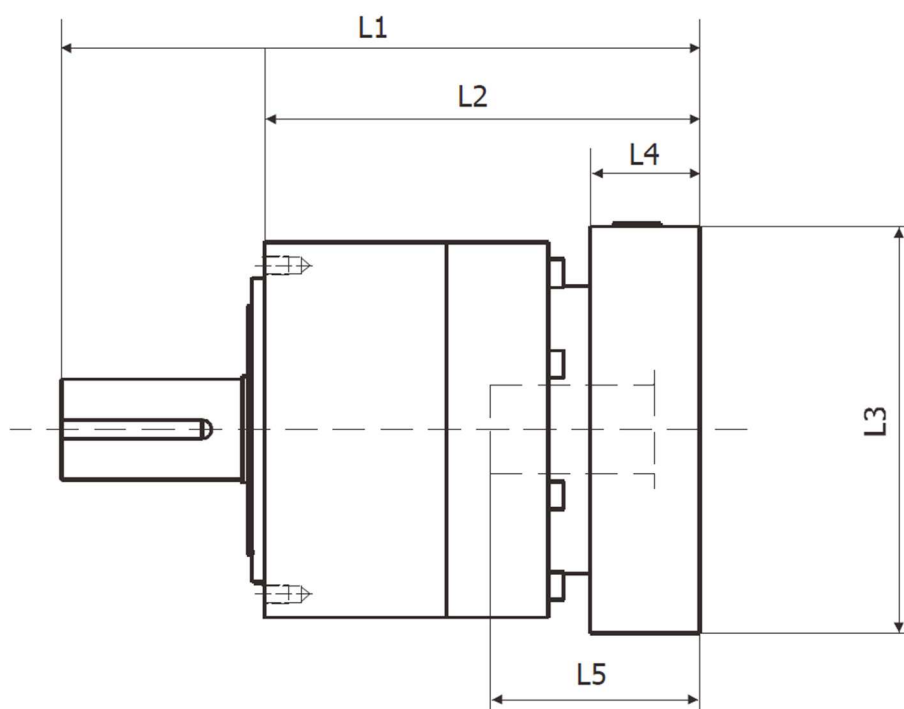


Input shaft bore $\leq \phi 19$



(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.





Model number	Adapter code	1-stage					2-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
SL-070-□-□-8 (Input shaft bore ≤ø8)	AA·AC·AD·SF·AG	112	76	□ 52	15,5	32	131	95	□ 52	15,5	32
	AB·AE·SH·AJ·AK	117	81	□52	20,5	37	136	100	□52	20,5	37
	BA·BB·BD·BE	112	76	□60	15,5	32	131	95	□60	15,5	32
	BC·BF	117	81	□60	20,5	37	136	100	□60	20,5	37
	CA	117	81	□70	20,5	37	136	100	□70	20,5	37
SL-070-□-□-14 (Input shaft bore ≤ø14)	BA·BB·BD·BE·BF·BG·BJ·BK	115	79	□65	16,5	35	136	100	□65	16,5	35
	BC·BH·BM	120	84	□65	21,5	40	141	105	□65	21,5	40
	BL	125	89	□65	26,5	45	146	110	□65	26,5	45
	CA	115	79	□70	16,5	35	136	100	□70	16,5	35
	CB	120	84	□70	21,5	40	141	105	□70	21,5	40
	DA·DB·DC·DD·DF·DH	115	79	□80	16,5	35	136	100	□80	16,5	35
	DE	120	84	□80	21,5	40	141	105	□80	21,5	40
	DG	125	89	□80	26,5	45	146	110	□80	26,5	45
	EA·EB·EC	115	79	□90	16,5	35	136	100	□90	16,5	35
	ED	125	89	□90	26,5	45	146	110	□90	26,5	45
	FA	115	79	□100	16,5	35	136	100	□100	16,5	35
	GA	115	79	□115	16,5	35	136	100	□115	16,5	35
SL-070-□-□-19 (Input shaft bore ≤ø19)	DA·DB·DC	130	94	□80	25	50	-	-	-	-	-
	DD	140	104	□80	35	60	-	-	-	-	-
	DE	135	99	□80	30	55	-	-	-	-	-
	EA	135	98	□90	30	55	-	-	-	-	-
	EB	130	94	□90	25	50	-	-	-	-	-
	EC	140	104	□90	35	60	-	-	-	-	-
	FA	130	94	□100	25	50	-	-	-	-	-
	FB	140	104	□100	35	60	-	-	-	-	-
	GA·GC	135	99	□115	30	55	-	-	-	-	-
	GB·GD	130	94	□115	25	50	-	-	-	-	-
	HA	130	94	□130	25	50	-	-	-	-	-
	HB	145	109	□130	40	65	-	-	-	-	-
	HC·HD·HE	135	99	□130	30	35	-	-	-	-	-

※ 1-stage reduction (1/3÷1/10), 2-stage reduction (1/15÷1/100)

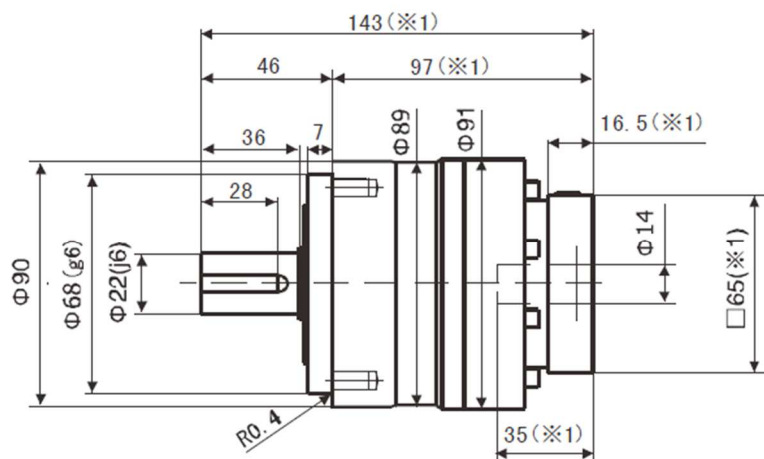
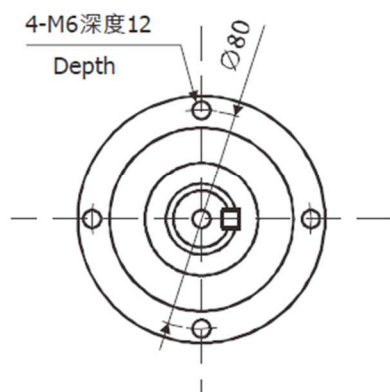
SL090 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
3	50	80	200	3000	6000	810	930
4	75	125	250	3000	6000	890	1100
5	75	125	250	3000	6000	960	1200
6	75	125	250	3000	6000	100	1300
7	75	125	250	3000	6000	1100	1300
8	75	125	250	3000	6000	1100	1400
9	50	80	200	3000	6000	1200	1500
10	50	80	200	3000	6000	1200	1600
15	50	80	200	3000	6000	1400	1900
16	75	125	250	3000	6000	1400	1900
20	75	125	250	3000	6000	1500	2100
25	75	125	250	3000	6000	1600	2200
28	75	125	250	3000	6000	1700	2200
30	50	80	200	3000	6000	1700	2200
35	75	125	250	3000	6000	1800	2200
40	75	125	250	3000	6000	1900	2200
45	50	80	200	3000	6000	2000	2200
50	75	125	250	3000	6000	2100	2200
60	75	125	250	3000	6000	2200	2200
70	75	125	250	3000	6000	2300	2200
80	75	125	250	3000	6000	2400	2200
90	50	80	200	3000	6000	2400	2200
100	50	80	200	3000	6000	2400	2200

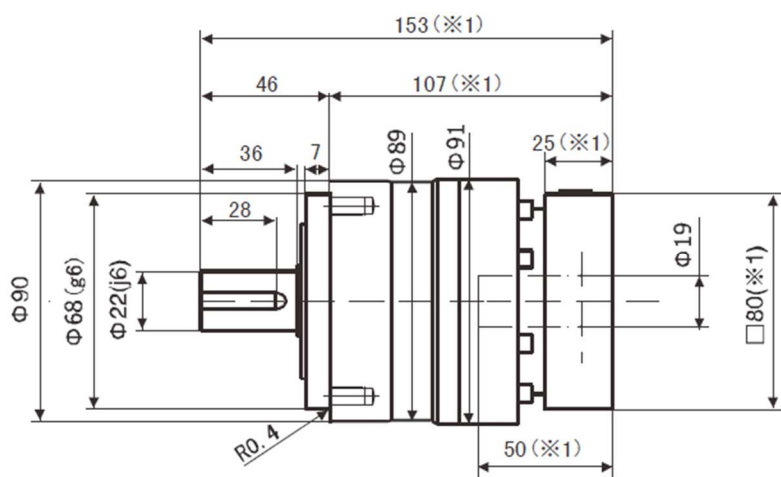
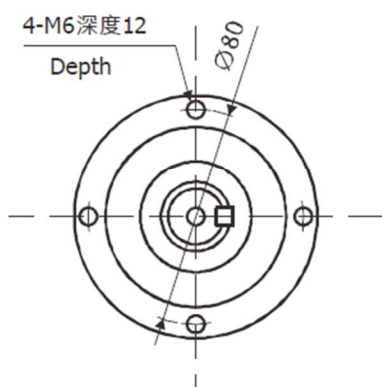
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \varnothing 8$) [kgcm ²]	Inertia ($\leq \varnothing 14$) [kgcm ²]	Inertia ($\leq \varnothing 19$) [kgcm ²]	Inertia ($\leq \varnothing 28$) [kgcm ²]
3	2400	2200	3,5	-	0.72	1.2	3.2
4	2400	2200		-	0.49	0.95	3.0
5	2400	2200		-	0.40	0.86	2.9
6	2400	2200		-	0.36	0.82	2.8
7	2400	2200		-	0.32	0.79	2.8
8	2400	2200		-	0.31	0.77	2.8
9	2400	2200		-	0.29	0.76	2.8
10	2400	2200		-	0.29	0.75	2.8
15	2400	2200	4,0	0.13	0.28	0.72	-
16	2400	2200		0.15	0.30	0.74	-
20	2400	2200		0.13	0.28	0.72	-
25	2400	2200		0.12	0.28	0.71	-
28	2400	2200		0.14	0.29	0.73	-
30	2400	2200		0.10	0.25	0.70	-
35	2400	2200		0.12	0.27	0.71	-
40	2400	2200		0.099	0.25	0.70	-
45	2400	2200		0.12	0.27	0.71	-
50	2400	2200		0.098	0.25	0.69	-
60	2400	2200		0.098	0.25	0.69	-
70	2400	2200		0.097	0.25	0.69	-
80	2400	2200		0.097	0.25	0.69	-
90	2400	2200		0.097	0.25	0.69	-
100	2400	2200		0.097	0.25	0.69	-

SL090 – Dimensions

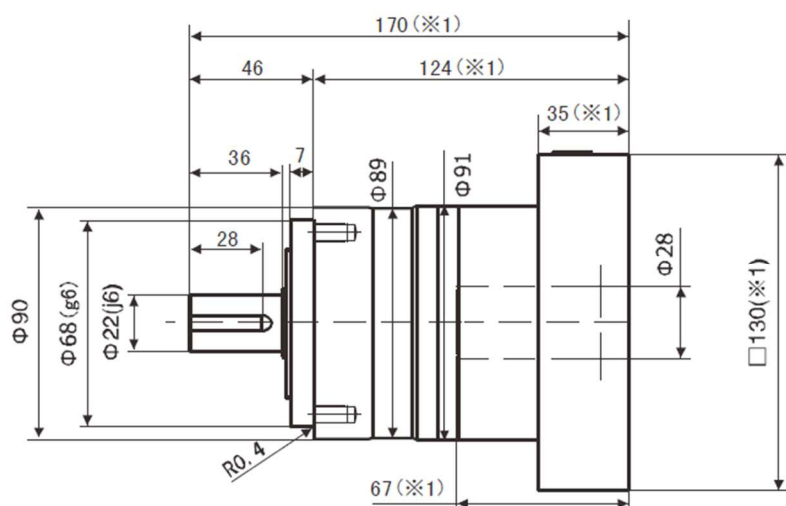
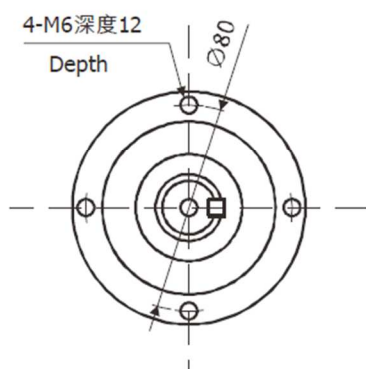
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$

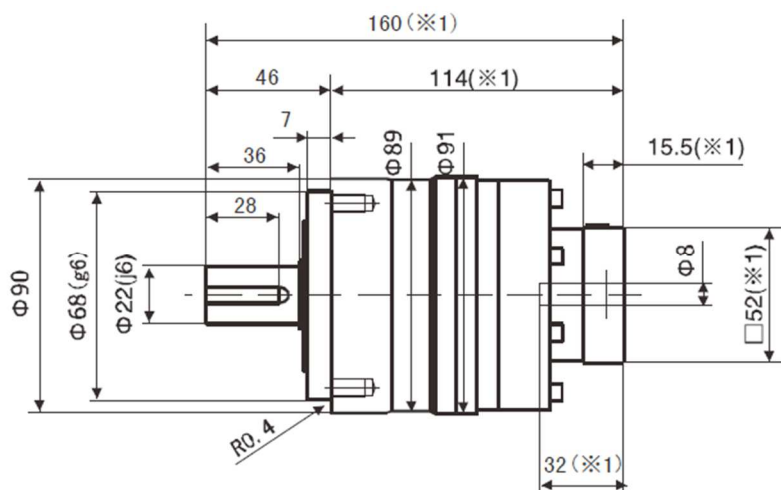
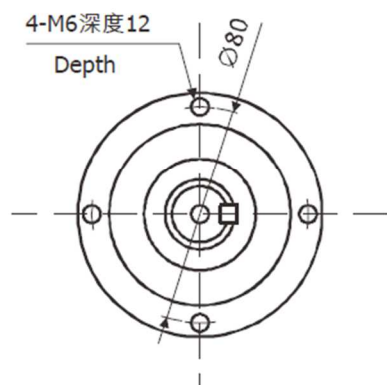


Input shaft bore $\leq \phi 28$

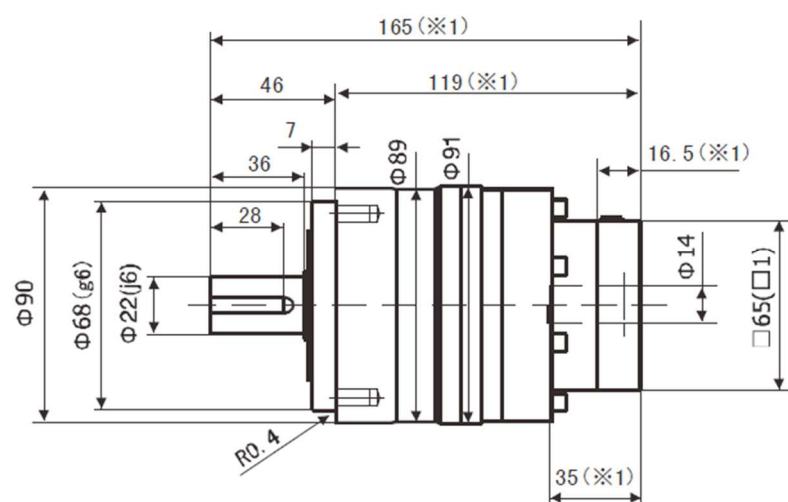
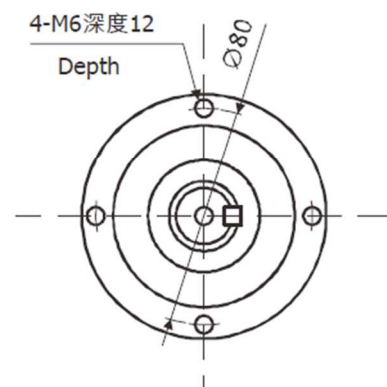


(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

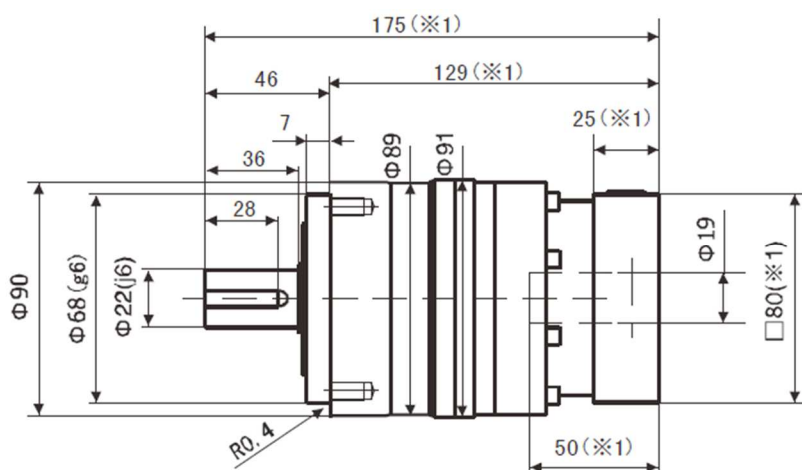
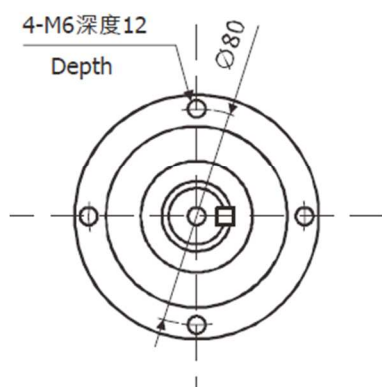
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$

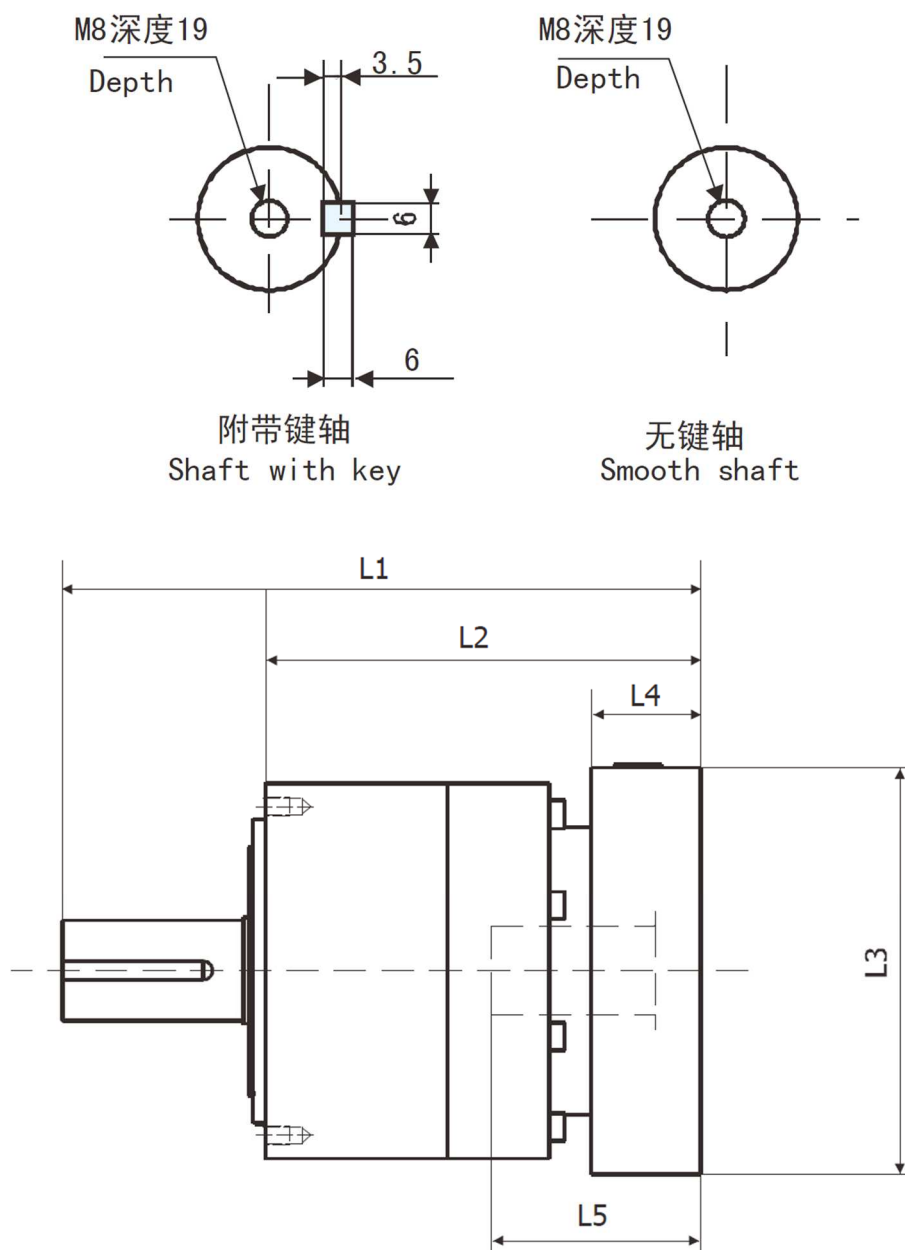


Input shaft bore $\leq \phi 19$



(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Gearbox output shaft



Model number	Adapter code	1-stage					2-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
SL-090-□-□-8 (Input shaft bore ≤ø8)	AA·AC·AD·SF·AG	-	-	-	-	-	160	114	□52	15,5	32
	AB·AE·SH·AJ·AK	-	-	-	-	-	165	119	□52	20,5	37
	BA·BB·BD·BE	-	-	-	-	-	160	114	□60	15,5	32
	BC·BF	-	-	-	-	-	165	119	□60	20,5	37
	CA	-	-	-	-	-	165	119	□70	20,5	37
SL-090-□-□-14 (Input shaft bore ≤ø14)	BA·BB·BD·BE·BF·BG·BJ·BK	143	97	□65	16,5	35	165	119	□65	16,5	35
	BC·BH·BM	148	102	□65	21,5	40	170	124	□65	21,5	40
	BL	153	107	□65	26,5	45	175	129	□65	26,5	45
	CA	143	97	□70	16,5	35	165	119	□70	16,5	35
	CB	148	102	□70	21,5	40	170	124	□70	21,5	40
	DA·DB·DC·DD·DF·DH	143	97	□80	16,5	35	165	119	□80	16,5	35
	DE	148	102	□80	21,5	40	170	124	□80	21,5	40
	DG	153	107	□80	26,5	45	175	129	□80	26,5	45
	EA·EB·EC	143	97	□90	16,5	35	165	119	□90	16,5	35
	ED	153	107	□90	26,5	45	175	129	□90	26,5	45
	FA	143	97	□100	16,5	35	165	119	□100	16,5	35

	GA	143	97	□115	16,5	35	165	119	□115	16,5	35
SL-090-□-□-19 (Input shaft bore ≤ø19)	DA·DB·DC	153	107	□80	25	50	175	129	□80	25	50
	DD	163	117	□80	35	60	185	139	□80	35	60
	DE	158	112	□80	30	55	180	134	□80	30	55
	EA	158	112	□90	30	55	180	134	□90	30	55
	EB	153	107	□90	25	50	175	129	□90	25	50
	EC	163	117	□90	35	60	185	139	□90	35	60
	FA	153	107	□100	25	50	175	129	□100	25	50
	FB	163	117	□100	35	60	185	139	□100	35	60
	GA·GC	158	112	□115	30	55	180	134	□115	30	55
	GB·GD	153	107	□115	25	50	175	129	□115	25	50
	HA	153	107	□130	25	50	175	129	□130	25	50
	HB	168	122	□130	40	65	190	144	□130	40	65
	HC·HD·HE	158	112	□130	30	55	180	134	□130	30	55
	FA·FB·FC	170	124	□100	35	67	-	-	-	-	-
SL-090-□-□-28 (Input shaft bore ≤ø28)	GA·GB·GC·GD·GE·GF·GG	170	124	□115	35	67	-	-	-	-	-
	HA·HC·HD	170	124	□130	35	67	-	-	-	-	-
	HB	180	124	□130	45	77	-	-	-	-	-
	JA·JB·JC	170	124	□150	35	67	-	-	-	-	-
	KA·KB	170	124	□180	35	67	-	-	-	-	-
	KD	180	134	□180	45	77	-	-	-	-	-
	LA	170	124	□200	35	67	-	-	-	-	-
	MA	170	124	□220	35	67	-	-	-	-	-

※ 1-stage reduction (1/3÷1/10), 2-stage reduction (1/15÷1/100)

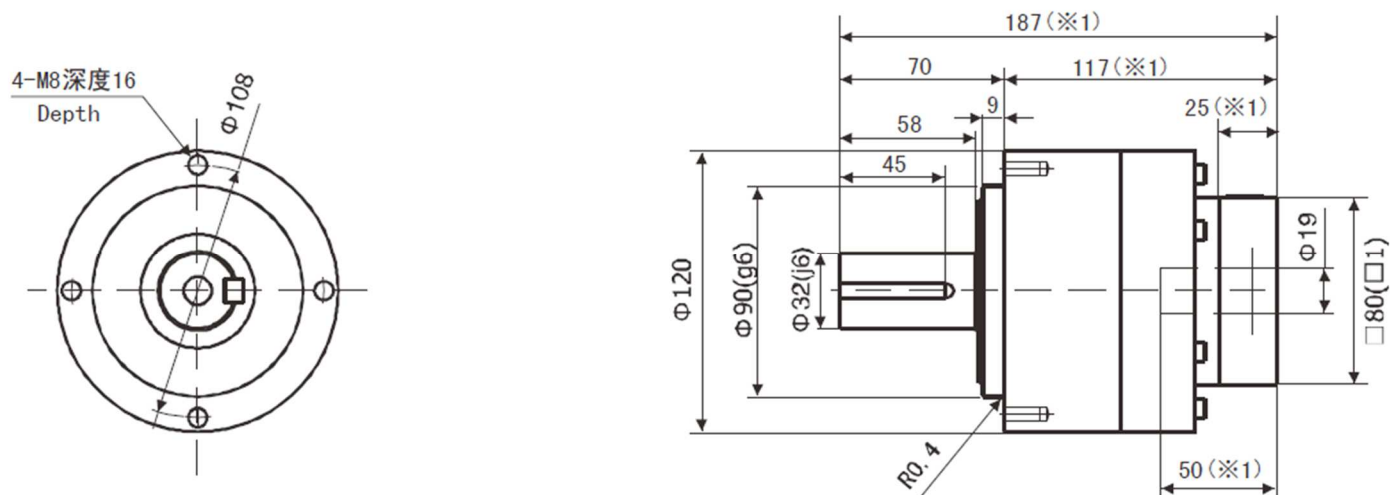
SL120 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
3	120	225	500	3000	6000	1300	1500
4	120	330	625	3000	6000	1500	1700
5	180	330	625	3000	6000	1600	1900
6	180	330	625	3000	6000	1700	2000
7	180	330	625	3000	6000	1800	2100
8	180	330	625	3000	6000	1900	2300
9	120	225	500	3000	6000	1900	2400
10	120	225	500	3000	6000	2000	2500
15	120	225	500	3000	6000	2300	3000
16	180	330	625	3000	6000	2300	3100
20	180	330	625	3000	6000	2500	3400
25	180	330	625	3000	6000	2700	3700
28	180	330	625	3000	6000	2800	3900
30	120	225	500	3000	6000	2900	3900
35	180	330	625	3000	6000	3000	3900
40	180	330	625	3000	6000	3200	3900
45	120	225	500	3000	6000	3300	3900
50	180	330	625	3000	6000	3400	3900
60	180	330	625	3000	6000	3600	3900
70	180	330	625	3000	6000	3800	3900
80	180	330	625	3000	6000	4000	3900
90	120	225	500	3000	6000	4200	3900
100	120	225	500	3000	6000	4300	3900

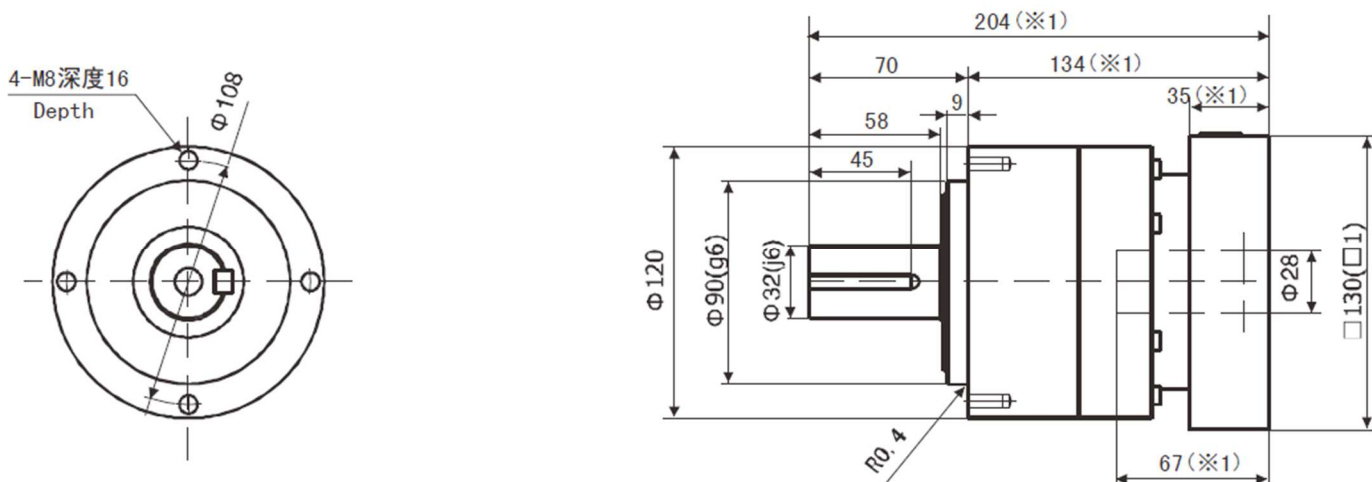
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \phi 14$) [kgcm ²]	Inertia ($\leq \phi 19$) [kgcm ²]	Inertia ($\leq \phi 28$) [kgcm ²]	Inertia ($\leq \phi 38$) [kgcm ²]
3	4300	3900	7,8	-	3,3	5,3	13
4	4300	3900		-	2,0	4,1	12
5	4300	3900		-	1,6	3,6	11
6	4300	3900		-	1,3	3,3	11
7	4300	3900		-	1,1	3,2	11
8	4300	3900		-	1,0	3,1	11
9	4300	3900		-	0,98	3,0	11
10	4300	3900		-	0,95	3,0	11
15	4300	3900	8,7	0,43	0,86	2,8	-
16	4300	3900		0,48	0,92	2,9	-
20	4300	3900		0,40	0,83	2,8	-
25	4300	3900		0,38	0,82	2,8	-
28	4300	3900		0,44	0,88	2,8	-
30	4300	3900		0,29	0,74	2,7	-
35	4300	3900		0,37	0,81	2,7	-
40	4300	3900		0,28	0,73	2,7	-
45	4300	3900		0,37	0,80	2,7	-
50	4300	3900		0,28	0,73	2,7	-
60	4300	3900		0,28	0,73	2,7	-
70	4300	3900		0,28	0,73	2,7	-
80	4300	3900		0,28	0,73	2,7	-
90	4300	3900		0,27	0,73	2,7	-
100	4300	3900		0,27	0,73	2,7	-

SL120 – Dimensions

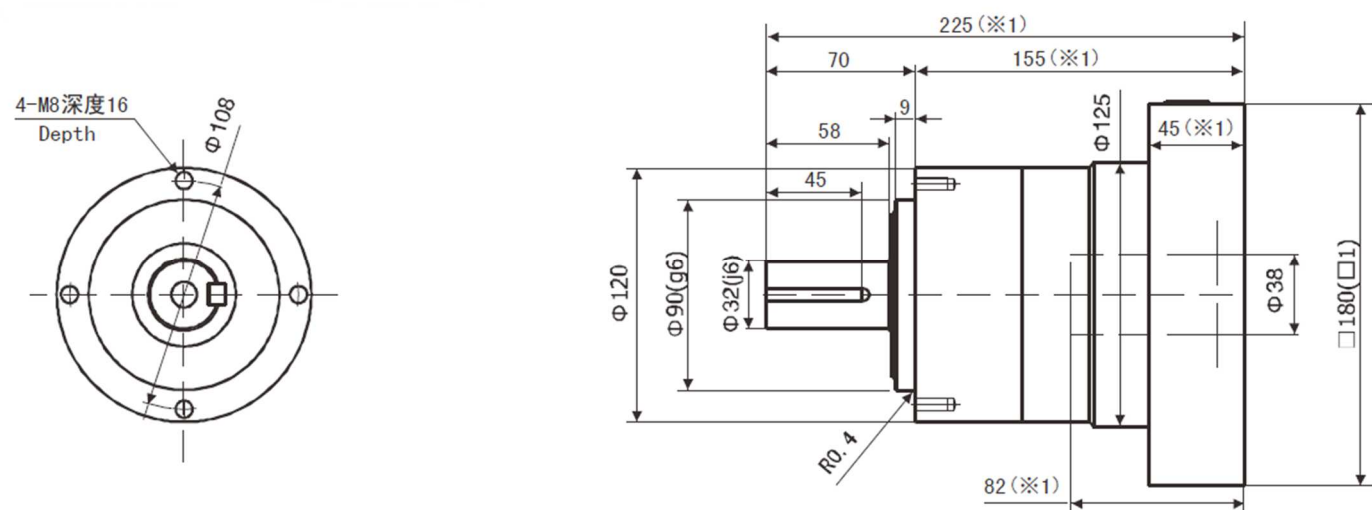
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$

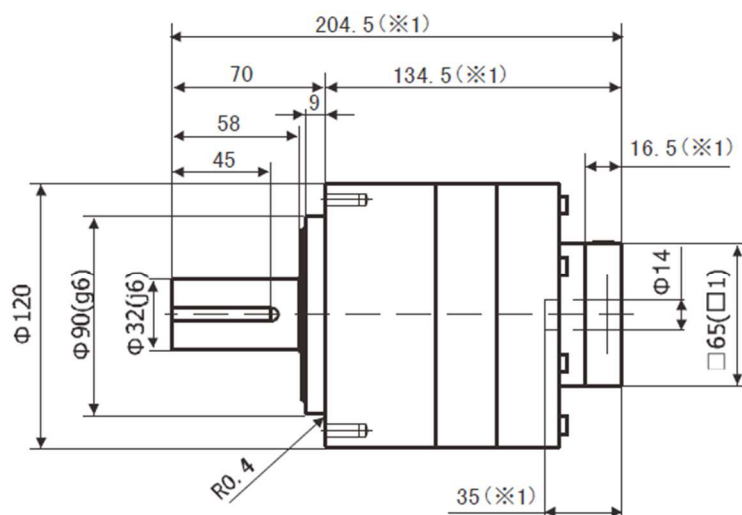


Input shaft bore $\leq \phi 38$

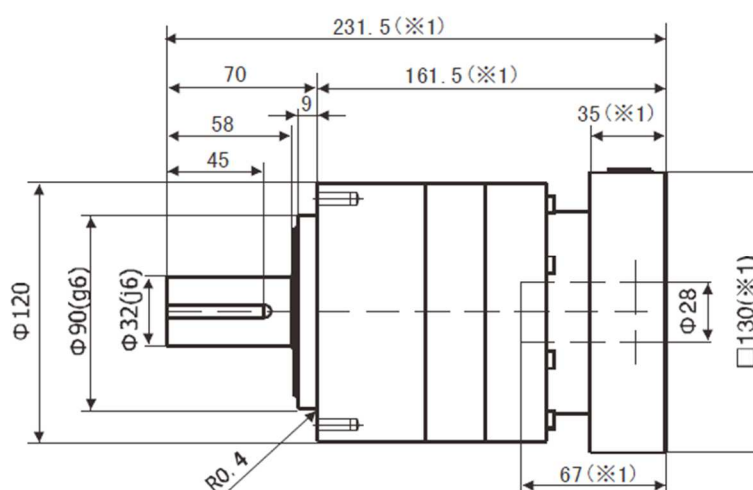
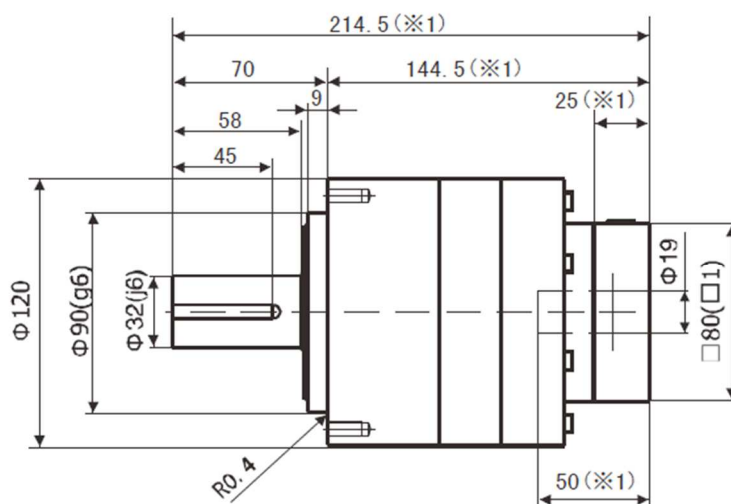


(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Technical drawing of a circular part. The drawing shows concentric circles. A dimension line points to the outermost circle with the text "4-M8深度16" and "Depth". Another dimension line points to the innermost circle with the text "Φ108".

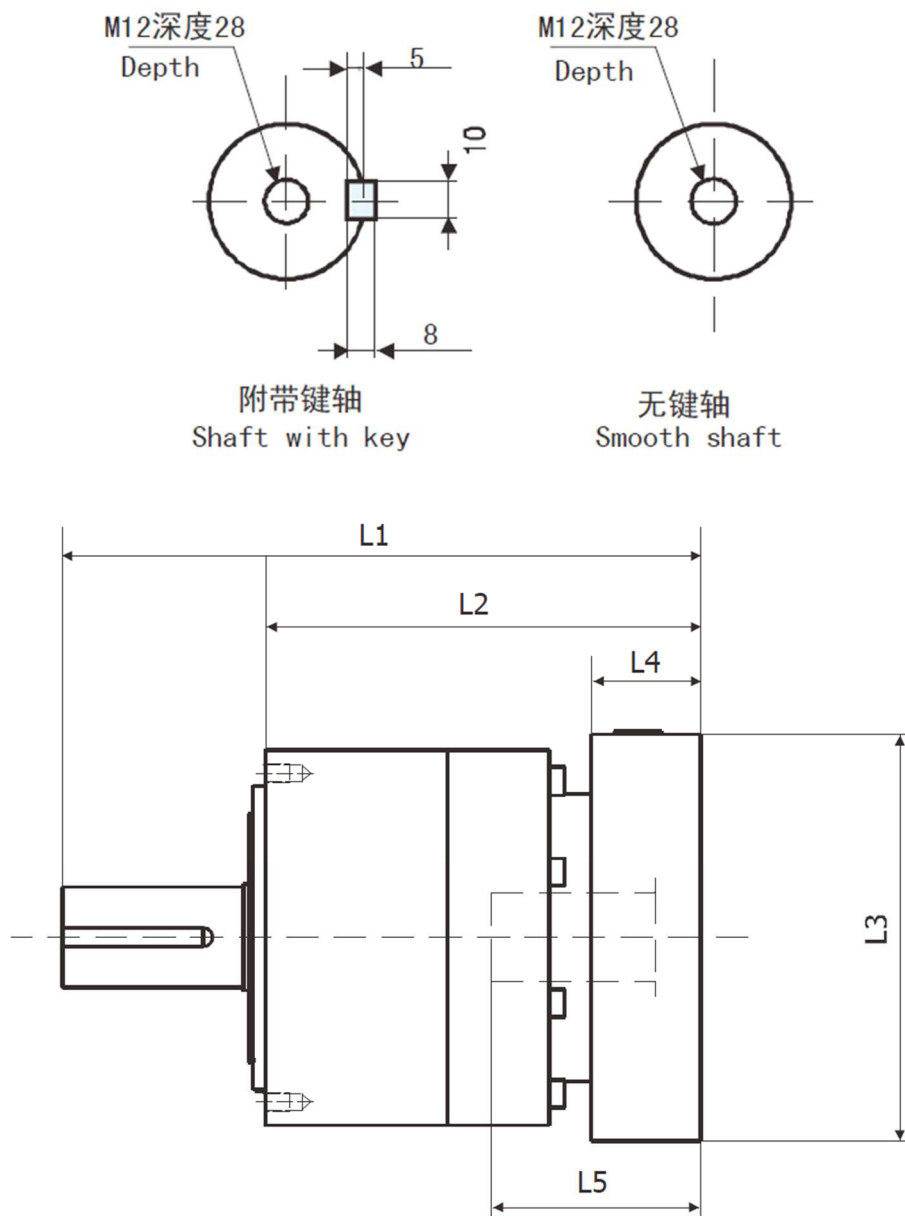


Technical drawing of a circular part. The drawing shows concentric circles. A dimension line indicates a diameter of $\phi 108$. Another dimension line indicates a depth of 4-M8深度16. A small square feature is shown on the inner circle.



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Gearbox output shaft



Model number	Adapter code	1-stage					2-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
SL-120-□-□-14 (Input shaft bore ≤φ14)	BA·BB·BD·BE·BF·BG·BJ·BK	-	-	-	-	-	204,5	134,5	□65	16,5	35
	BC·BH·BM	-	-	-	-	-	209,5	139,5	□65	21,5	40
	BL	-	-	-	-	-	214,5	144,5	□65	26,5	45
	CA	-	-	-	-	-	204,5	134,5	□70	16,5	35
	CB	-	-	-	-	-	209,5	139,5	□70	21,5	40
	DA·DB·DC·DD·DF·DH	-	-	-	-	-	204,5	134,5	□80	16,5	35
	DE	-	-	-	-	-	209,5	139,5	□80	21,5	40
	DG	-	-	-	-	-	214,5	144,5	□80	26,5	45
	EA·EB·EC	-	-	-	-	-	204,5	134,5	□90	16,5	35
	ED	-	-	-	-	-	214,5	144,5	□90	26,5	45
	FA	-	-	-	-	-	204,5	134,5	□100	16,5	35
	GA	-	-	-	-	-	204,5	134,5	□115	16,5	35

SL-120-□-□-19 (Input shaft bore ≤φ19)	DA·DB·DC	187	117	□80	25	50	214,5	144,5	□80	25	50
	DD	197	127	□80	35	60	224,5	154,5	□80	35	60
	DE	192	122	□80	30	55	219,5	149,5	□80	30	55
	EA	192	122	□90	30	55	219,5	149,5	□90	30	55
	EB	187	117	□90	25	50	214,5	144,5	□90	25	50
	EC	197	127	□90	35	60	224,5	154,5	□90	35	60
	FA	187	117	□100	25	50	214,5	144,5	□100	25	50
	FB	197	127	□100	35	60	224,5	154,5	□100	35	60
	GA·GC	192	122	□115	30	55	219,5	149,5	□115	30	55
	GB·GD	187	117	□115	25	50	214,5	144,5	□115	25	50
	HA	187	117	□130	25	50	214,5	144,5	□130	25	50
	HB	202	132	□130	40	65	229,5	159,5	□130	40	65
	HC·HD·HE	192	122	□130	30	55	219,5	149,5	□130	30	55
SL-120-□-□-28 (Input shaft bore ≤φ28)	FA·FB·FC	204	134	□100	35	67	231,5	161,5	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	204	134	□115	35	67	231,5	161,5	□115	35	67
	HA·HC·HD	204	134	□130	35	67	231,5	161,5	□130	35	67
	HB	214	144	□130	45	77	241,5	171,5	□130	45	77
	JA·JB·JC	204	134	□150	35	67	231,5	161,5	□150	35	67
	KA·KB	204	134	□180	35	67	231,5	161,5	□180	35	67
	KD	214	144	□180	45	77	241,5	171,5	□180	45	77
	LA	204	134	□200	35	67	231,5	161,5	□200	35	67
	MA	204	134	□220	35	67	231,5	161,5	□220	35	67
SL-120-□-□-38 (Input shaft bore ≤φ38)	HA	225	155	□130	45	82	-	-	-	-	-
	HB	220	150	□130	40	77	-	-	-	-	-
	JA	225	155	□150	45	82	-	-	-	-	-
	KA·KB·KC	225	155	□180	45	82	-	-	-	-	-
	LA	225	155	□200	45	82	-	-	-	-	-
	LB	235	165	□200	55	92	-	-	-	-	-
	MA·MB	225	155	□220	45	82	-	-	-	-	-
	NA	225	155	□250	45	82	-	-	-	-	-

※ 1-stage reduction (1/3÷1/10), 2-stage reduction (1/15÷1/100)

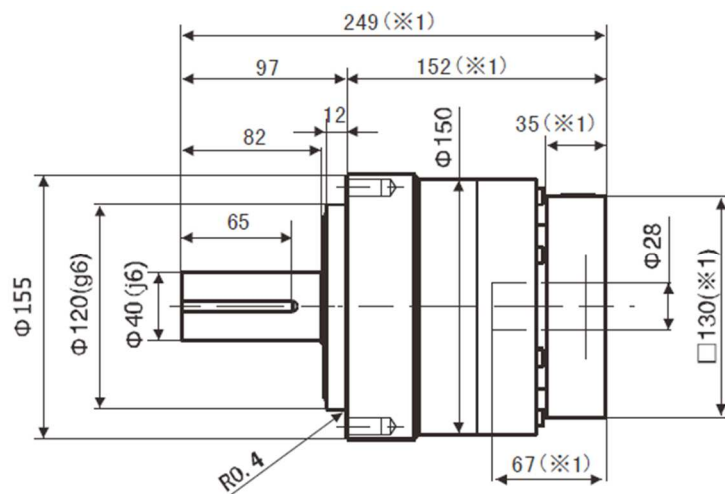
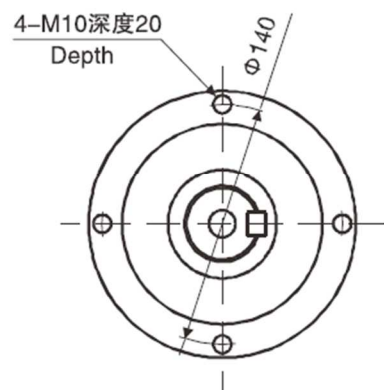
SL155 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
3	240	470	1000	2000	4000	3200	2400
4	240	700	1250	2000	4000	3500	2700
5	360	700	1250	2000	4000	3800	3000
6	360	700	1250	2000	4000	4000	3300
7	360	700	1250	2000	4000	4200	3500
8	360	700	1250	2000	4000	4400	3700
9	240	470	1000	2000	4000	4600	3900
10	240	470	1000	2000	4000	4700	4100
15	240	470	1000	2000	4000	5400	4900
16	360	700	1250	2000	4000	5500	5000
20	360	700	1250	2000	4000	6000	5500
25	360	700	1250	2000	4000	6400	6100
28	360	700	1250	2000	4000	6700	6400
30	240	470	1000	2000	4000	6800	6600
35	360	700	1250	2000	4000	7200	7000
40	360	700	1250	2000	4000	7500	7500
45	240	470	1000	2000	4000	7800	7900
50	360	700	1250	2000	4000	8100	8200
60	360	700	1250	2000	4000	8600	8200
70	360	700	1250	2000	4000	9100	8200
80	360	700	1250	2000	4000	9100	8200
90	240	470	1000	2000	4000	9100	8200
100	240	470	1000	2000	4000	9100	8200

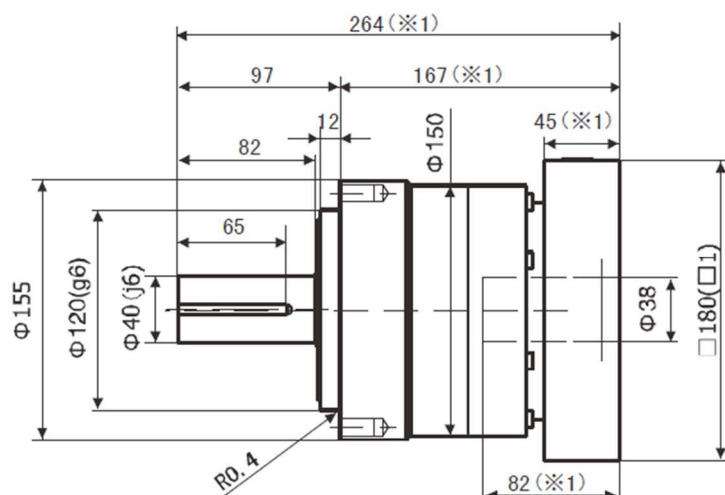
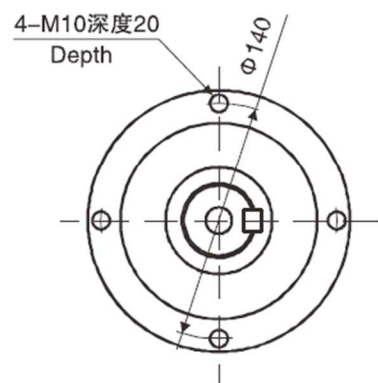
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \phi 19$) [kgcm ²]	Inertia ($\leq \phi 28$) [kgcm ²]	Inertia ($\leq \phi 38$) [kgcm ²]	Inertia ($\leq \phi 48$) [kgcm ²]
3	9100	8200	16	-	12	20	42
4	9100	8200		-	7,5	15	37
5	9100	8200		-	5,8	14	36
6	9100	8200		-	4,9	13	35
7	9100	8200		-	4,1	12	34
8	9100	8200		-	3,8	12	34
9	9100	8200		-	3,6	11	34
10	9100	8200		-	3,5	11	34
15	9100	8200	18	1,3	3,2	11	-
16	9100	8200		1,5	3,5	11	-
20	9100	8200		1,2	3,1	11	-
25	9100	8200		1,1	3,1	11	-
28	9100	8200		1,4	3,3	11	-
30	9100	8200		0,85	2,8	10	-
35	9100	8200		1,1	3,1	11	-
40	9100	8200		0,83	2,8	10	-
45	9100	8200		1,1	3,0	11	-
50	9100	8200		0,81	2,8	10	-
60	9100	8200		0,81	2,8	10	-
70	9100	8200		0,80	2,8	10	-
80	9100	8200		0,80	2,8	10	-
90	9100	8200		0,80	2,8	10	-
100	9100	8200		0,80	2,8	10	-

SL155 – Dimensions

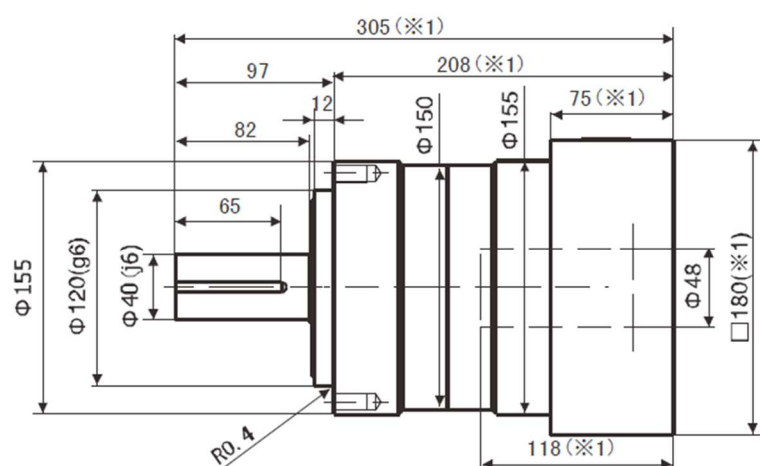
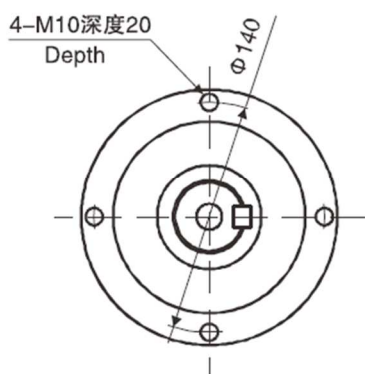
Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$

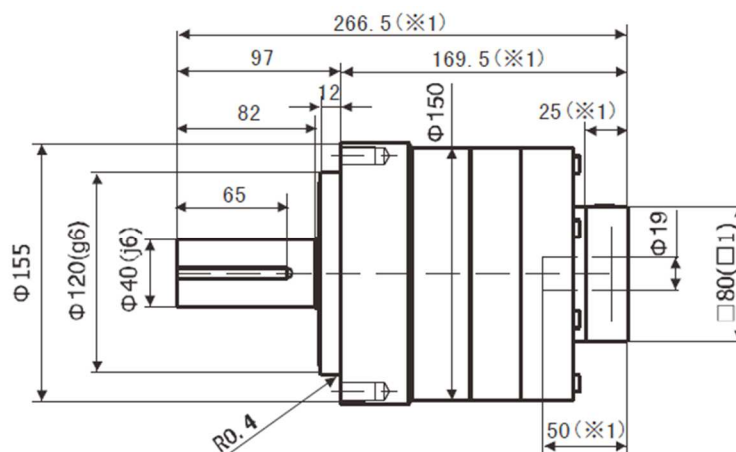
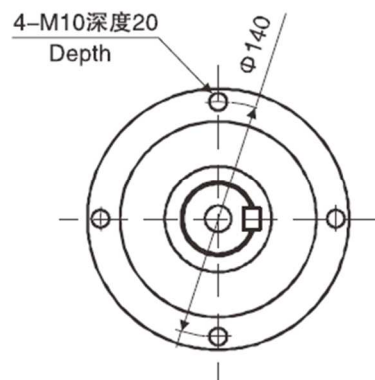


Input shaft bore $\leq \phi 48$

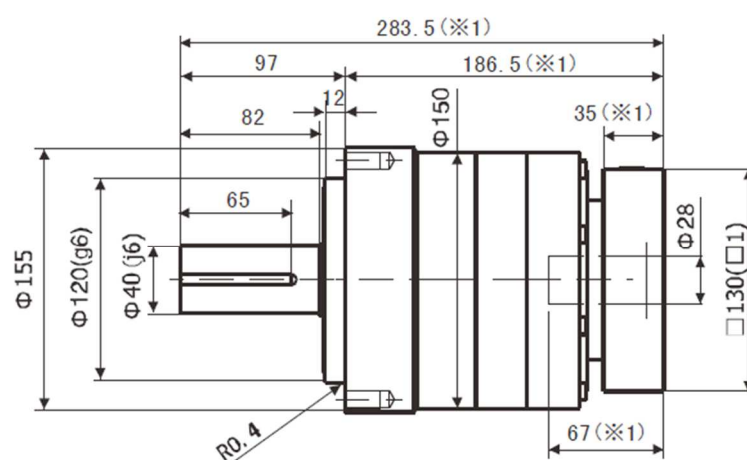
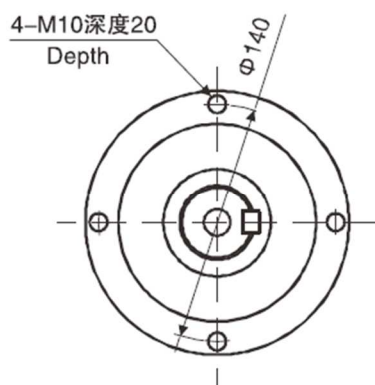


(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

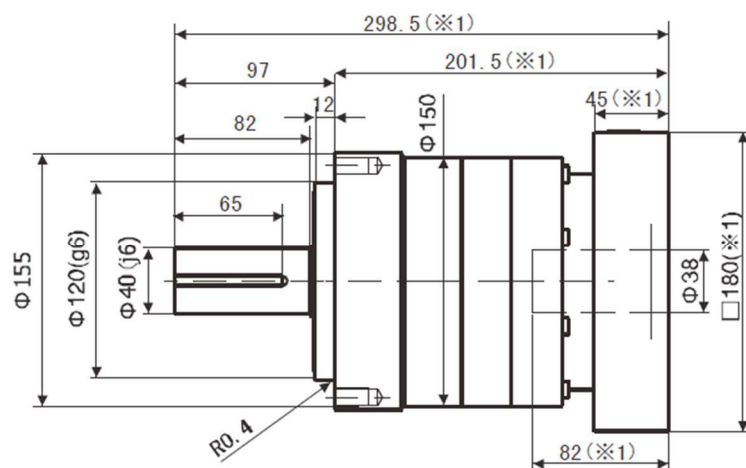
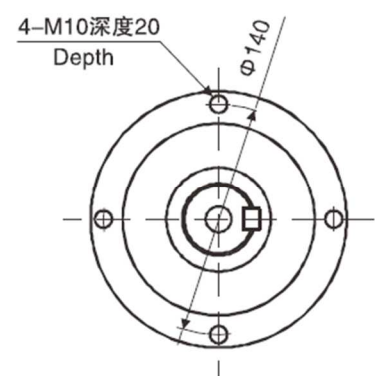
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$

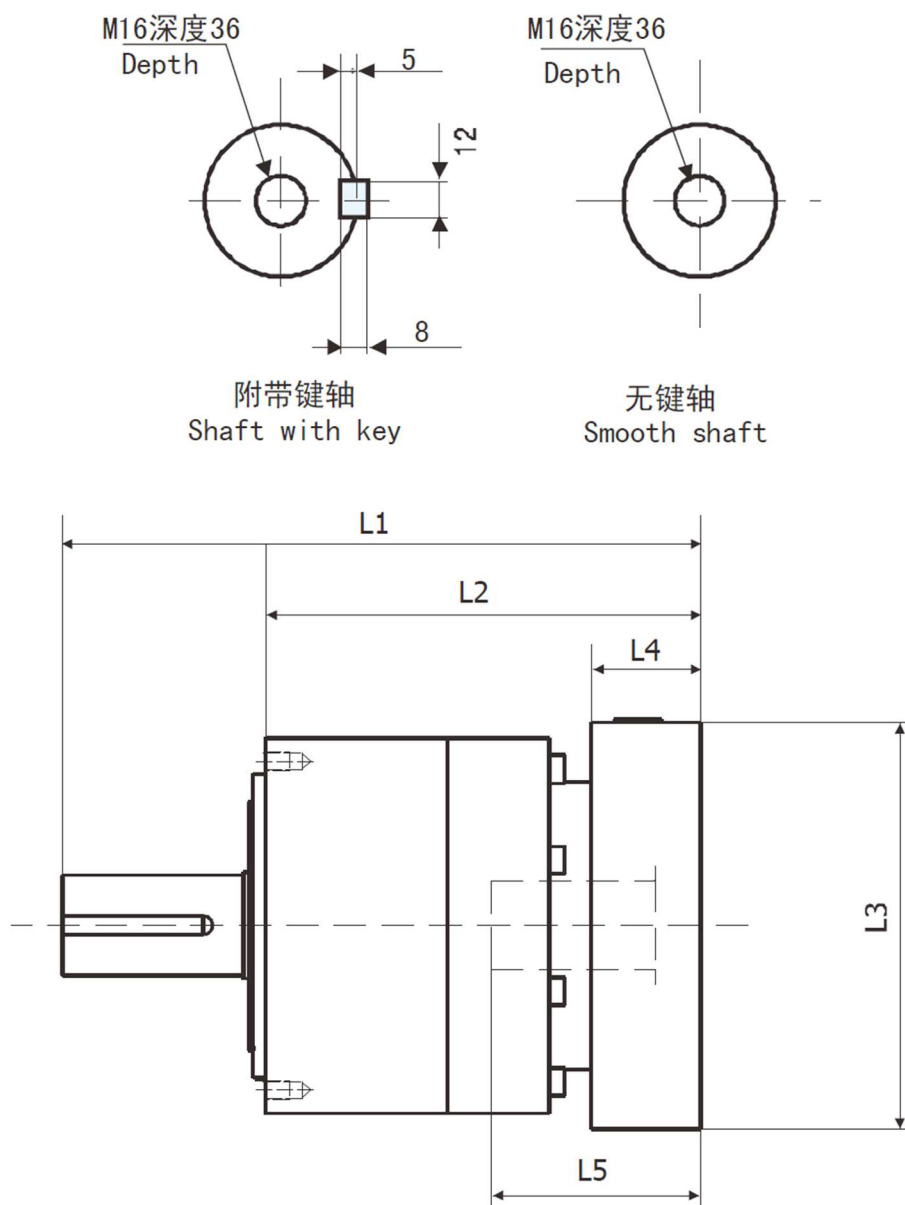


Input shaft bore $\leq \phi 38$



(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Gearbox output shaft



Model number	Adapter code	1-stage					2-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
SL-155-□-□-19 (Input shaft bore ≤ø19)	DA·DB·DC	-	-	-	-	-	266,5	169,5	□80	25	50
	DD	-	-	-	-	-	276,5	179,5	□80	35	60
	DE	-	-	-	-	-	271,5	174,5	□80	30	55
	EA	-	-	-	-	-	271,5	174,5	□90	30	55
	EB	-	-	-	-	-	266,5	169,5	□90	25	50
	EC	-	-	-	-	-	276,5	179,5	□90	35	60
	FA	-	-	-	-	-	266,5	169,5	□100	25	50
	FB	-	-	-	-	-	276,5	179,5	□100	35	60
	GA·GC	-	-	-	-	-	271,5	174,5	□115	30	55
	GB·GD	-	-	-	-	-	266,5	169,5	□115	25	50
	HA	-	-	-	-	-	266,5	169,5	□130	25	50
	HB	-	-	-	-	-	281,5	184,5	□130	40	65
	HC·HD·HE	-	-	-	-	-	271,5	174,5	□130	30	55

SL-155-□-□-28 (Input shaft bore ≤φ28)	FA·FB·FC	249	152	□100	35	67	283,5	186,5	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	249	152	□115	35	67	283,5	186,5	□115	35	67
	HA·HC·HD	249	152	□130	35	67	283,5	186,5	□130	35	67
	HB	259	162	□130	45	77	293,5	196,5	□130	45	77
	JA·JB·JC	249	152	□150	35	67	283,5	186,5	□150	35	67
	KA·KB	249	152	□180	35	67	283,5	186,5	□180	35	67
	KD	259	162	□180	45	77	293,5	196,5	□180	45	77
	LA	249	152	□200	35	67	283,5	186,5	□200	35	67
	MA	249	152	□220	35	67	283,5	186,5	□220	35	67
SL-155-□-□-38 (Input shaft bore ≤φ38)	HA	264	167	□130	45	82	298,5	201,5	□130	45	82
	HB	259	162	□130	40	77	293,5	196,5	□130	40	77
	JA	264	167	□150	45	82	298,5	201,5	□150	45	82
	KA·KB·KC	264	167	□180	45	82	298,5	201,5	□180	45	82
	LA	264	167	□200	45	82	298,5	201,5	□200	45	82
	LB	274	177	□200	55	92	308,5	211,5	□200	55	92
	MA·MB	264	167	□220	45	82	298,5	201,5	□220	45	82
	NA	264	167	□250	45	82	298,5	201,5	□250	45	82
SL-155-□-□-48 (Input shaft bore ≤φ48)	KB·KC	285	188	□180	55	98	-	-	-	-	-
	KA	305	208	□180	75	118	-	-	-	-	-
	LA	285	188	□200	55	98	-	-	-	-	-
	MA	285	188	□220	55	98	-	-	-	-	-
	MB	305	208	□220	75	118	-	-	-	-	-
	NA	305	208	□250	75	118	-	-	-	-	-
	PA	305	208	□280	75	118	-	-	-	-	-

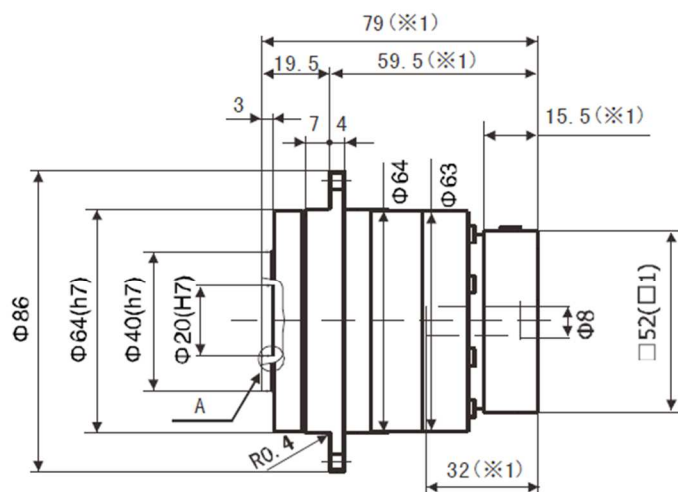
※ 1-stage reduction (1/3÷1/10), 2-stage reduction (1/15÷1/100)

SH064 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
4	27	50	100	3000	6000	370	360
5	27	50	100	3000	6000	400	390
6	27	50	100	3000	6000	420	430
7	27	50	100	3000	6000	440	460
8	27	50	100	3000	6000	460	480
9	18	35	80	3000	6000	480	510
10	18	35	80	3000	6000	500	530
16	27	50	100	3000	6000	580	650
20	27	50	100	3000	6000	630	720
25	27	50	100	3000	6000	680	750
28	27	50	100	3000	6000	700	750
35	27	50	100	3000	6000	760	750
40	27	50	100	3000	6000	790	750
45	18	35	80	3000	6000	820	750
50	27	50	100	3000	6000	850	750
60	27	50	100	3000	6000	910	750
70	27	50	100	3000	6000	950	750
80	27	50	100	3000	6000	1000	750
90	18	35	80	3000	6000	1000	750
100	18	35	80	3000	6000	1100	750

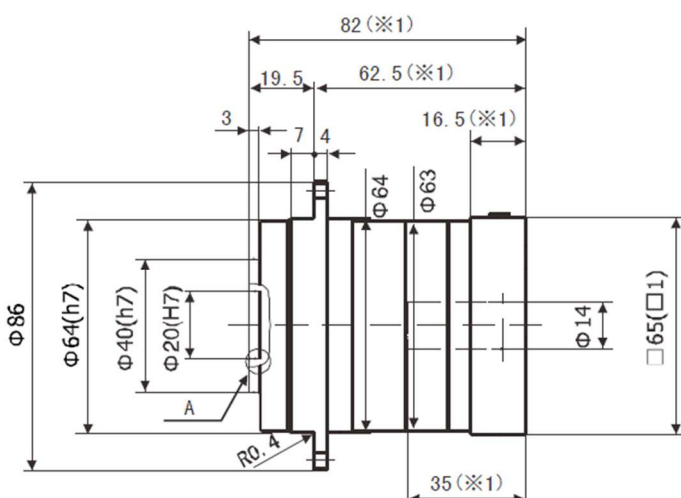
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \phi 8$) [kgcm ²]	Inertia ($\leq \phi 14$) [kgcm ²]	Inertia ($\leq \phi 19$) [kgcm ²]	
4	1500	750	1,4	0,13	0,21	0,4	
5	1500	750		0,10	0,18	0,4	
6	1500	750		0,085	0,17	0,4	
7	1500	750		0,075	0,15	0,4	
8	1500	750		0,068	0,15	0,4	
9	1500	750		0,064	0,14	0,4	
10	1500	750		0,062	0,14	0,4	
16	1500	750		0,059	0,14	-	
20	1500	750	1,6	0,055	0,14	-	
25	1500	750		0,054	0,13	-	
28	1500	750		0,056	0,14	-	
35	1500	750		0,053	0,13	-	
40	1500	750		0,049	0,13	-	
45	1500	750		0,053	0,13	-	
50	1500	750		0,049	0,13	-	
60	1500	750		0,049	0,13	-	
70	1500	750		0,049	0,13	-	
80	1500	750		0,049	0,13	-	
90	1500	750		0,049	0,13	-	
100	1500	750		0,049	0,13	-	

Input shaft bore $\leq \varnothing 8$



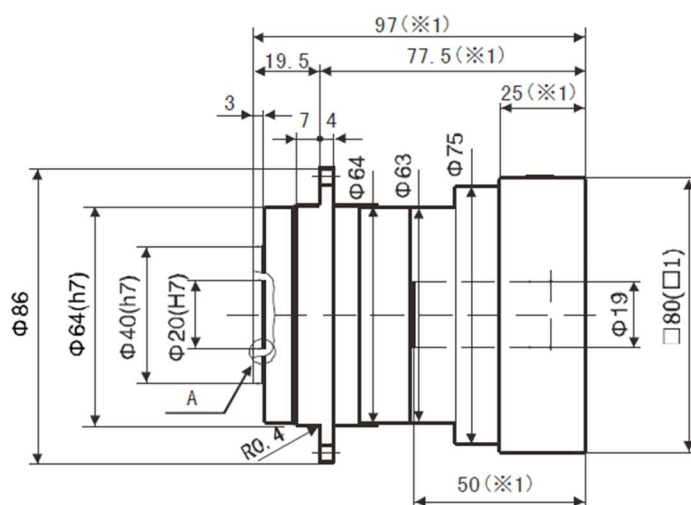
Technical drawing of a circular part with concentric circles and dimensions. The drawing includes the following labels and dimensions:

- Top left: $\Phi 4(H7) \square \square 4$
- Top center: Depth
- Top right: 45°
- Far right: $8-\Phi 4.5$
- Middle right: $\Phi 31.5$
- Bottom right: 45°
- Bottom center: 22.5°
- Bottom left: $8-M5 \text{ 深度 } 10$
- Bottom center: Depth
- Left side: $\Phi 79$

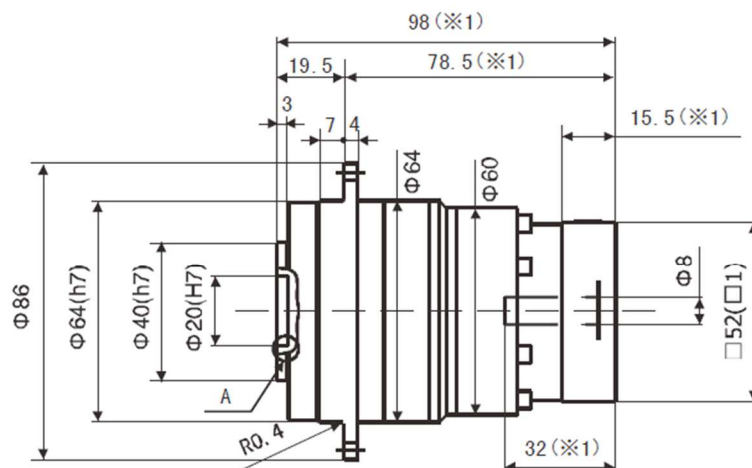
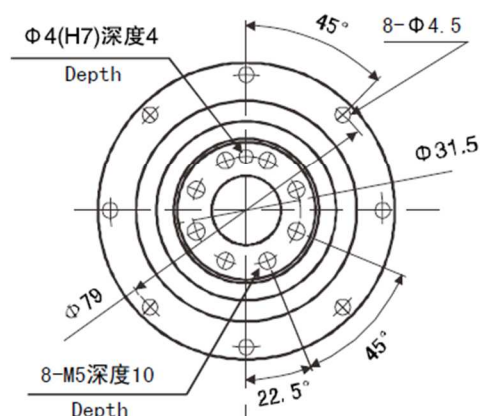


Technical drawing of a circular part with concentric circles and various dimensions. The drawing includes the following labels and dimensions:

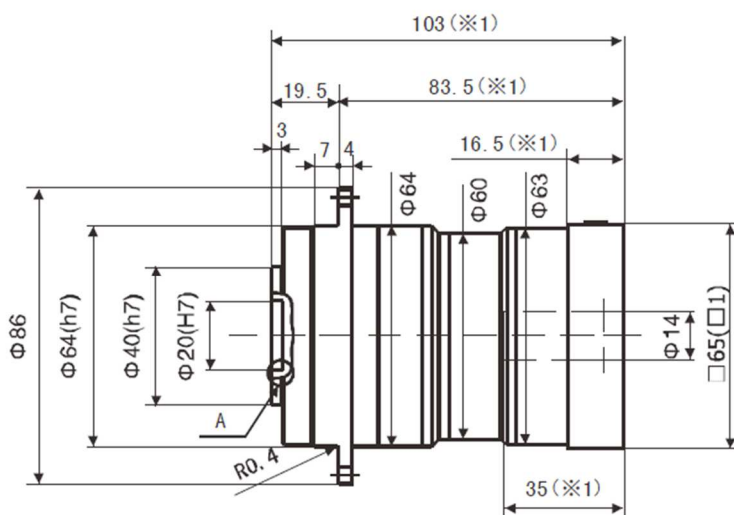
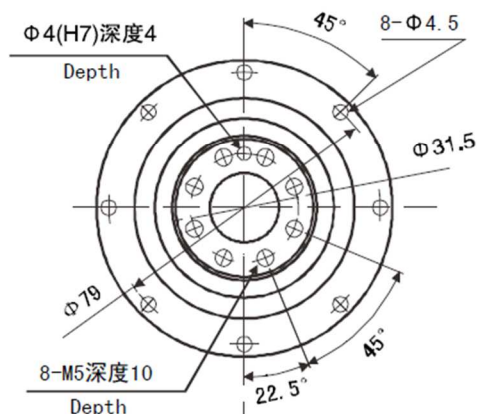
- $\Phi 4(H7)\square\square 4$ (Top left)
- Depth (Top left)
- 45° (Top right)
- $8-\Phi 4.5$ (Top right)
- $\Phi 31.5$ (Right side)
- $\Phi 79$ (Bottom left)
- $8-M5$ 深度 10 (Bottom left)
- Depth (Bottom left)
- 22.5° (Bottom center)
- 45° (Bottom right)



Input shaft bore $\leq \phi 8$

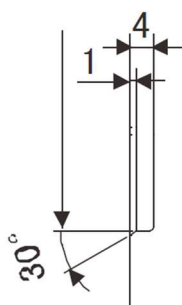


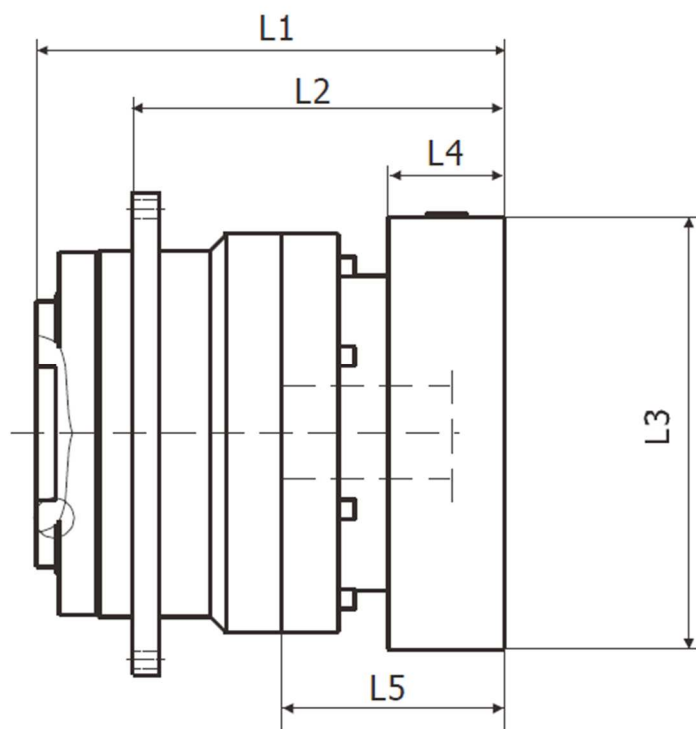
Input shaft bore $\leq \phi 14$



(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Detail A





Model number	Adapter code	1-stage					2-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
SH-064-□-□-8 (Input shaft bore ≤ø8)	AA·AC·AD·SF·AG	79	59,5	□ 52	15,5	32	98	78,5	□ 52	15,5	32
	AB·AE·SH·AJ·AK	84	64,5	□ 52	20,5	37	103	83,5	□ 52	20,5	37
	BA·BB·BD·BE	79	59,5	□ 60	15,5	32	98	78,5	□ 60	15,5	32
	BC·BF	84	64,5	□ 60	20,5	37	103	83,5	□ 60	20,5	37
	CA	84	64,5	□ 70	20,5	37	103	83,5	□ 70	20,5	37
SH-064-□-□-14 (Input shaft bore ≤ø14)	BA·BB·BD·BE·BF·BG·BJ·BK	82	62,5	□ 65	16,5	35	103	83,5	□ 65	16,5	35
	BC·BH·BM	87	67,5	□ 65	21,5	40	108	88,5	□ 65	21,5	40
	BL	92	72,5	□ 65	26,5	45	113	93,5	□ 65	26,5	45
	CA	82	62,5	□ 70	16,5	35	103	83,5	□ 70	16,5	35
	CB	87	67,5	□ 70	21,5	40	108	88,5	□ 70	21,5	40
	DA·DB·DC·DD·DF·DH	82	62,5	□ 80	16,5	35	103	83,5	□ 80	16,5	35
	DE	87	67,5	□ 80	21,5	40	108	88,5	□ 80	21,5	40
	DG	92	72,5	□ 80	26,5	45	113	93,5	□ 80	26,5	45
	EA·EB·EC	82	62,5	□ 90	16,5	35	103	83,5	□ 90	16,5	35
	ED	92	72,5	□ 90	26,5	45	113	93,5	□ 90	26,5	45
	FA	82	62,5	□ 100	16,5	35	103	83,5	□ 100	16,5	35
	GA	82	62,5	□ 115	16,5	35	103	83,5	□ 115	16,5	35
	DA·DB·DC	97	77,5	□ 80	25	50	-	-	-	-	-
SH-064-□-□-19 (Input shaft bore ≤ø19)	DD	107	87,5	□ 80	35	60	-	-	-	-	-
	DE	102	82,5	□ 80	30	55	-	-	-	-	-
	EA	102	82,5	□ 90	30	55	-	-	-	-	-
	EB	97	77,5	□ 90	25	50	-	-	-	-	-
	EC	107	87,5	□ 90	35	60	-	-	-	-	-
	FA	97	77,5	□ 100	25	50	-	-	-	-	-
	FB	107	87,5	□ 100	35	60	-	-	-	-	-
	GA·GC	102	82,5	□ 115	30	55	-	-	-	-	-
	GB·GD	97	77,5	□ 115	25	50	-	-	-	-	-
	HA	97	77,5	□ 130	25	50	-	-	-	-	-
	HB	112	92,5	□ 130	40	65	-	-	-	-	-
	HC·HD·HE	102	82,5	□ 130	30	55	-	-	-	-	-

※ 1-stage reduction (1/4÷1/10), 2-stage reduction (1/16÷1/100)

Elmark Automatyka S.A.

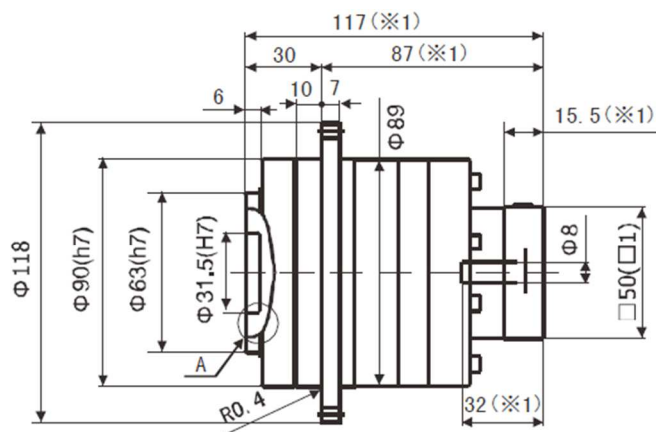
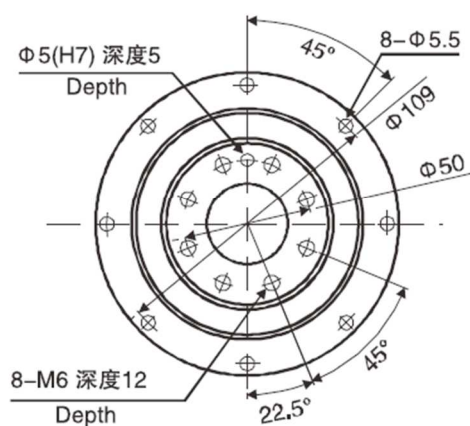
ul. Niemcewicza 76, 05-075 Warszawa, tel. (+48) 22 773 79 37; elmark@elmark.com.pl; www.elmark.com.pl
 NIP: 5252072585; KRS: 0000803828, Sąd Rejonowy dla M-St. Warszawy, XIV Wydział Gosp. KRS; Kapitał Zakładowy 525.000 zł, w pełni opłacony

SH090 - Parameters

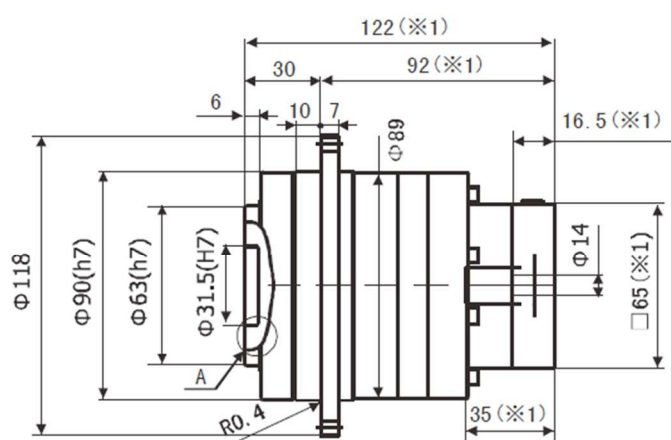
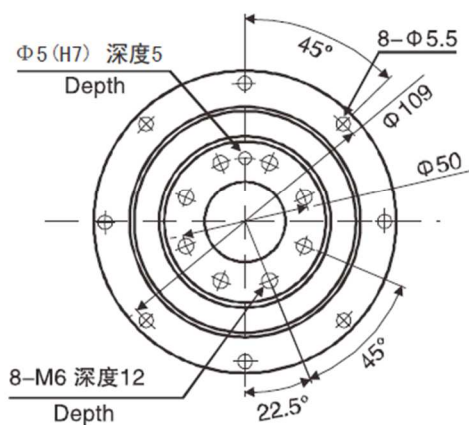
Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
4	75	125	250	3000	6000	720	620
5	75	125	250	3000	6000	780	680
6	75	125	250	3000	6000	830	740
7	75	125	250	3000	6000	870	790
8	75	125	250	3000	6000	910	830
9	50	80	200	3000	6000	950	880
10	50	80	200	3000	6000	980	920
16	75	125	250	3000	6000	1200	1100
20	75	125	250	3000	6000	1200	1200
25	75	125	250	3000	6000	1300	1400
28	75	125	250	3000	6000	1400	1400
35	75	125	250	3000	6000	1500	1600
40	75	125	250	3000	6000	1600	1700
45	50	80	200	3000	6000	1600	1700
50	75	125	250	3000	6000	1700	1700
60	75	125	250	3000	6000	1800	1700
70	75	125	250	3000	6000	1900	1700
80	75	125	250	3000	6000	2000	1700
90	50	80	200	3000	6000	2000	1700
100	50	80	200	3000	6000	2100	1700

Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \varnothing 8$) [kgcm ²]	Inertia ($\leq \varnothing 14$) [kgcm ²]	Inertia ($\leq \varnothing 19$) [kgcm ²]	Inertia ($\leq \varnothing 28$) [kgcm ²]
4	3300	1700	3,6	-	0,77	1,2	2,9
5	3300	1700		-	0,58	1,0	2,9
6	3300	1700		-	0,48	0,94	2,8
7	3300	1700		-	0,41	0,88	2,8
8	3300	1700		-	0,37	0,84	2,8
9	3300	1700		-	0,35	0,81	2,8
10	3300	1700		-	0,33	0,80	2,8
16	3300	1700	4,0	0,16	0,31	0,75	-
20	3300	1700		0,14	0,29	0,73	-
25	3300	1700		0,13	0,28	0,72	-
28	3300	1700		0,14	0,30	0,73	-
35	3300	1700		0,13	0,28	0,72	-
40	3300	1700		0,10	0,25	0,70	-
45	3300	1700		0,12	0,27	0,71	-
50	3300	1700		0,10	0,25	0,70	-
60	3300	1700		0,099	0,25	0,70	-
70	3300	1700		0,098	0,25	0,69	--
80	3300	1700		0,098	0,25	0,69	-
90	3300	1700		0,098	0,25	0,69	-
100	3300	1700		0,098	0,25	0,69	-

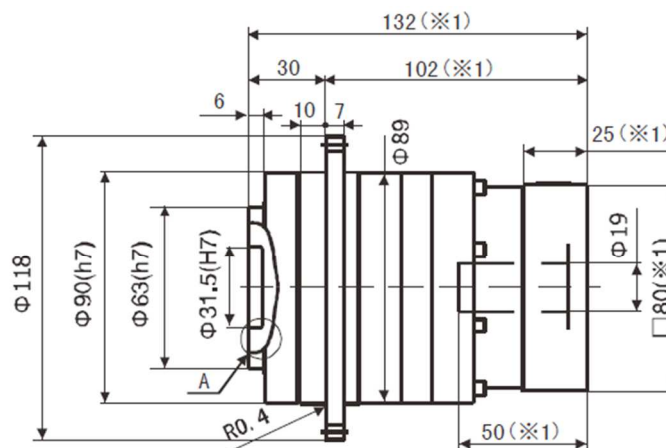
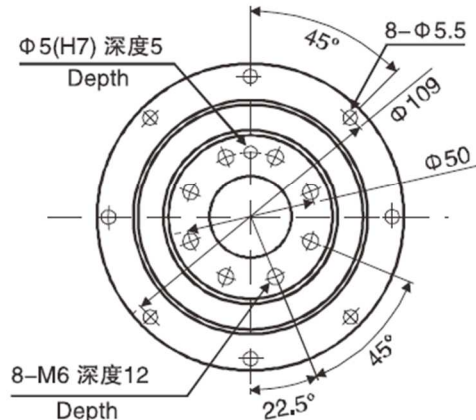
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$

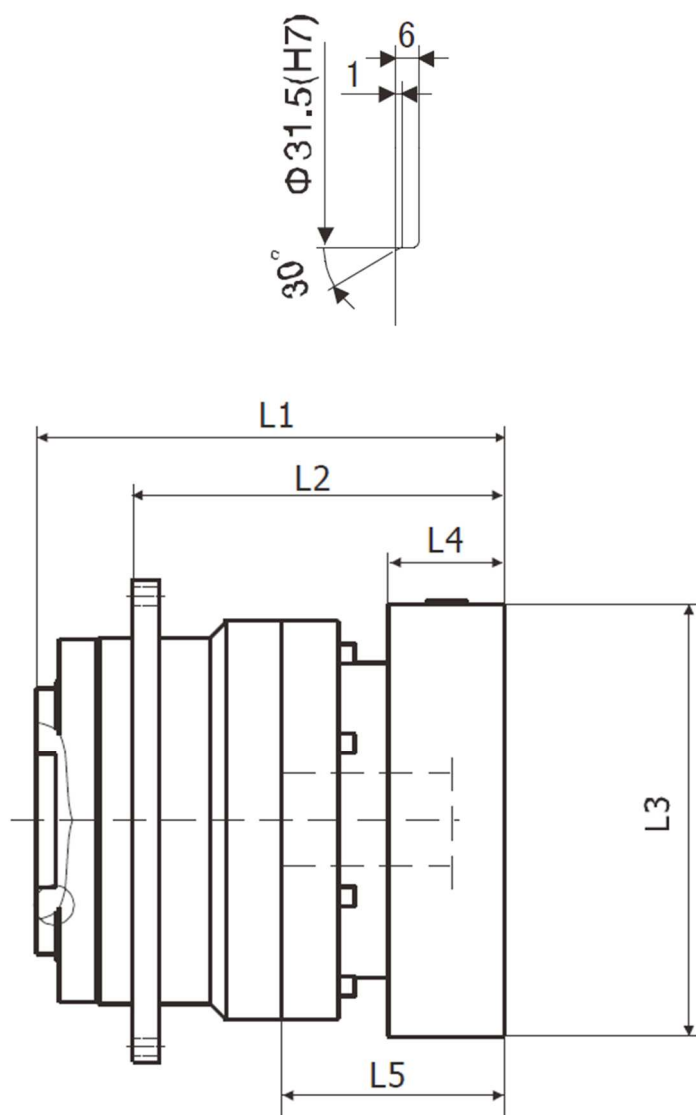


Input shaft bore $\leq \phi 19$



(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Detail A



Model number	Adapter code	1-stage					2-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
SH-090-□-□-8 (Input shaft bore ≤ø8)	AA·AC·AD·SF·AG	-	-	-	-	-	117	87	□52	15,5	32
	AB·AE·SH·AJ·AK	-	-	-	-	-	122	92	□52	20,5	37
	BA·BB·BD·BE	-	-	-	-	-	117	87	□60	15,5	32
	BC·BF	-	-	-	-	-	122	92	□60	20,5	37
	CA	-	-	-	-	-	122	92	□70	20,5	37
SH-090-□-□-14 (Input shaft bore ≤ø14)	BA·BB·BD·BE·BF·BG·BJ·BK	100	70	□65	16,5	35	122	92	□65	16,5	35
	BC·BH·BM	105	75	□65	21,5	40	127	97	□65	21,5	40
	BL	110	80	□65	26,5	45	132	102	□65	26,5	45
	CA	100	70	□70	16,5	35	122	92	□70	16,5	35
	CB	105	75	□70	21,5	40	127	97	□70	21,5	40
	DA·DB·DC·DD·DF·DH	100	70	□80	16,5	35	122	92	□80	16,5	35
	DE	105	75	□80	21,5	40	127	97	□80	21,5	40
	DG	110	80	□80	26,5	45	132	102	□80	26,5	45
	EA·EB·EC	100	70	□90	16,5	35	122	92	□90	16,5	35
	ED	110	80	□90	26,5	45	132	102	□90	26,5	45
	FA	100	70	□100	16,5	35	122	92	□100	16,5	35
	GA	100	70	□115	16,5	35	122	92	□115	16,5	35

SH-090-□-□-19 (Input shaft bore ≤φ19)	DA·DB·DC	110	80	□80	25	50	132	102	□80	25	50
	DD	120	90	□80	35	60	142	112	□80	35	60
	DE	115	85	□80	30	55	137	107	□80	30	55
	EA	115	85	□90	30	55	137	107	□90	30	55
	EB	110	80	□90	25	50	132	102	□90	25	50
	EC	120	90	□90	35	60	142	112	□90	35	60
	FA	110	80	□100	25	50	132	102	□100	25	50
	FB	120	90	□100	35	60	142	112	□100	35	60
	GA·GC	115	85	□115	30	55	137	107	□115	30	55
	GB·GD	110	80	□115	25	50	132	102	□115	25	50
	HA	110	80	□130	25	50	132	102	□130	25	50
	HB	125	95	□130	40	65	147	117	□130	40	65
	HC·HD·HE	115	85	□130	30	55	137	107	□130	30	55
SH-090-□-□-28 (Input shaft bore ≤φ28)	FA·FB·FC	127	97	□100	35	67	-	-	-	-	-
	GA·GB·GC·GD·GE·GF·GG	127	97	□115	35	67	-	-	-	-	-
	HA·HC·HD	127	97	□130	35	67	-	-	-	-	-
	HB	127	107	□130	45	77	-	-	-	-	-
	JA·JB·JC	127	97	□150	35	67	-	-	-	-	-
	KA·KB	127	97	□180	35	67	-	-	-	-	-
	KD	137	107	□180	45	77	-	-	-	-	-
	LA	127	97	□200	35	67	-	-	-	-	-
	MA	127	97	□220	35	67	-	-	-	-	-

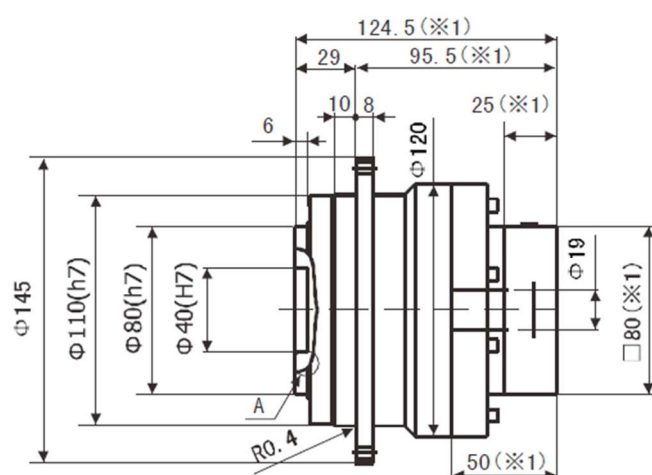
※ 1-stage reduction (1/4÷1/10), 2-stage reduction (1/16÷1/100)

SH110 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
4	120	330	625	3000	6000	4100	3500
5	180	330	625	3000	6000	4400	3800
6	180	330	625	3000	6000	4600	4000
7	180	330	625	3000	6000	4800	4200
8	180	330	625	3000	6000	5000	4300
9	120	225	500	3000	6000	5200	4300
10	120	225	500	3000	6000	5400	4300
16	180	330	625	3000	6000	6200	4300
20	180	330	625	3000	6000	6600	4300
25	180	330	625	3000	6000	7100	4300
28	180	330	625	3000	6000	7300	4300
35	180	330	625	3000	6000	7800	4300
40	180	330	625	3000	6000	8200	4300
45	120	225	500	3000	6000	8400	4300
50	180	330	625	3000	6000	8500	4300
60	180	330	625	3000	6000	8500	4300
70	180	330	625	3000	6000	8500	4300
80	180	330	625	3000	6000	8500	4300
90	120	225	500	3000	6000	8500	4300
100	120	225	500	3000	6000	8500	4300

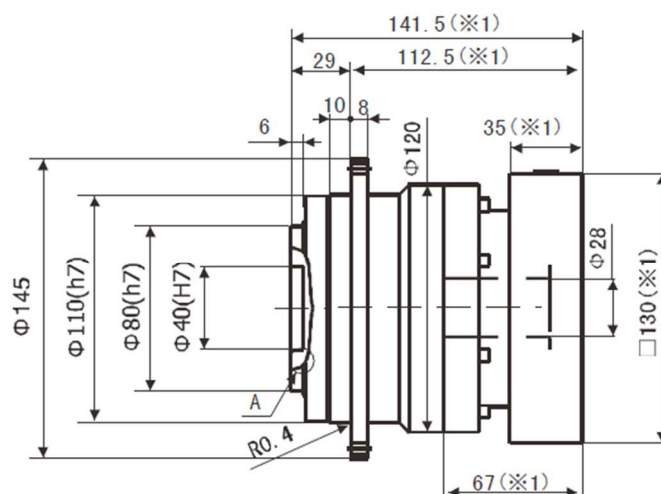
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \varnothing 14$) [kgcm ²]	Inertia ($\leq \varnothing 19$) [kgcm ²]	Inertia ($\leq \varnothing 28$) [kgcm ²]	Inertia ($\leq \varnothing 38$) [kgcm ²]
4	8500	4300	7,0	-	2,5	4,6	12
5	8500	4300		-	1,9	3,9	12
6	8500	4300		-	1,5	3,6	11
7	8500	4300		-	1,3	3,3	11
8	8500	4300		-	1,2	3,2	11
9	8500	4300		-	1,1	3,1	11
10	8500	4300		-	1,0	3,0	11
16	8500	4300	7,7	0,51	0,95	2,9	-
20	8500	4300		0,42	0,85	2,8	-
25	8500	4300		0,40	0,83	2,8	-
28	8500	4300		0,45	0,89	2,8	-
35	8500	4300		0,38	0,81	2,8	-
40	8500	4300		0,29	0,74	2,7	-
45	8500	4300		0,37	0,81	2,7	-
50	8500	4300		0,28	0,73	2,7	-
60	8500	4300		0,28	0,73	2,7	-
70	8500	4300		0,28	0,73	2,7	-
80	8500	4300		0,28	0,73	2,7	-
90	8500	4300		0,28	0,73	2,7	-
100	8500	4300		0,28	0,73	2,7	-

Input shaft bore $\leq \varnothing 19$

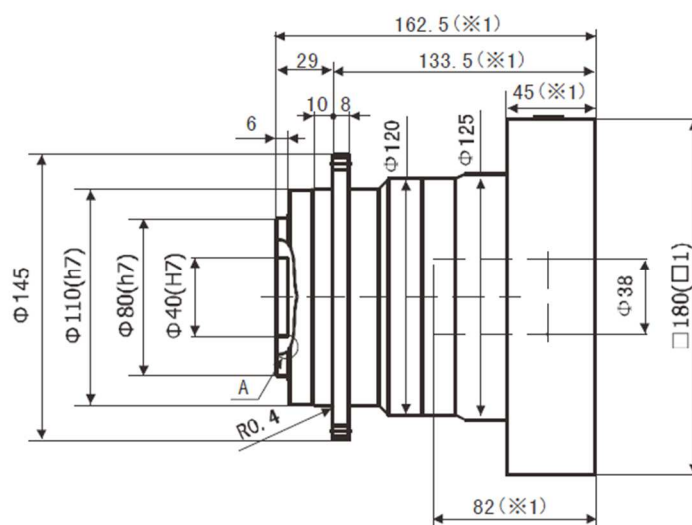


Technical drawing of a circular plate with the following specifications:

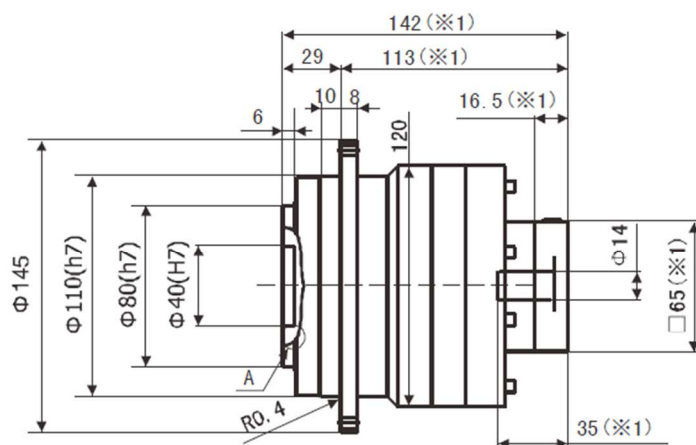
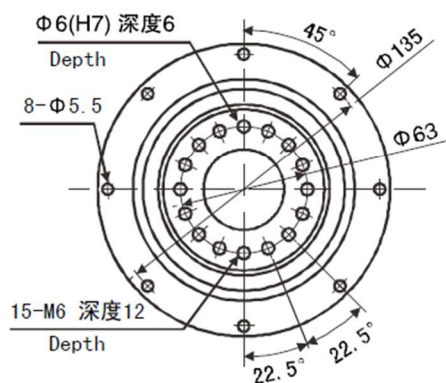
- Outer diameter: $\Phi 135$
- Inner diameter: $\Phi 63$
- Central hole: $\Phi 6(H7)$ Depth 6
- 8 holes: $\Phi 5.5$
- 15 holes: M6 Depth 12
- Angles: 45° and 22.5°



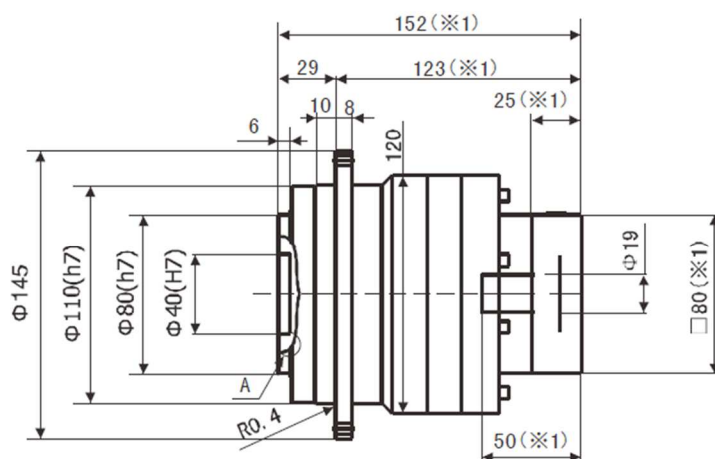
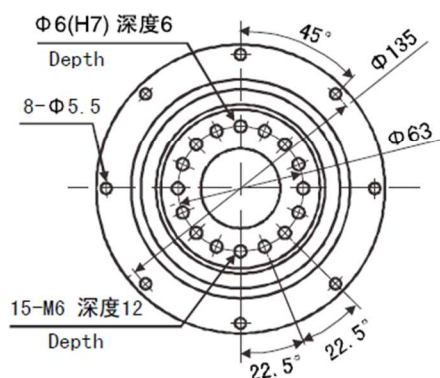
Technical drawing of a circular plate with concentric circles and holes. The drawing shows a central circle with 8 holes, surrounded by a ring with 8 holes, and an outer ring with 8 holes. Dimensions include diameters of 6, 5.5, 63, and 135, and depths of 6 and 12. Angles of 45 and 22.5 degrees are also indicated.



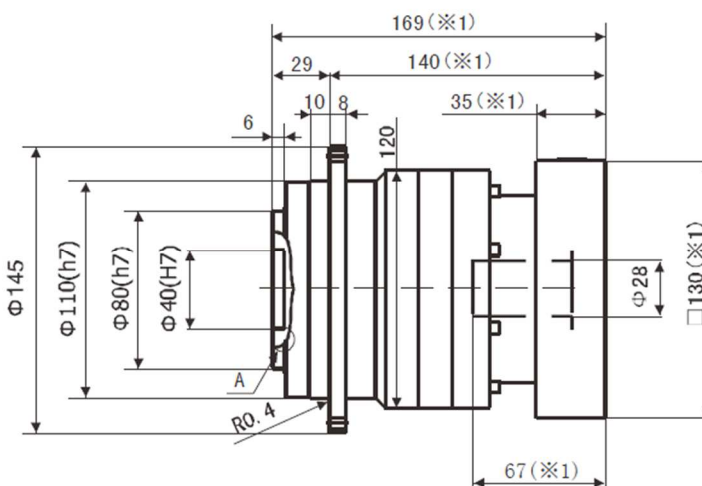
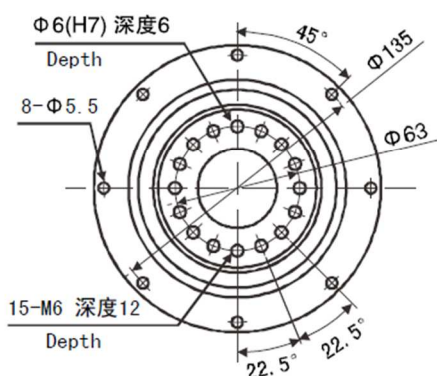
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$

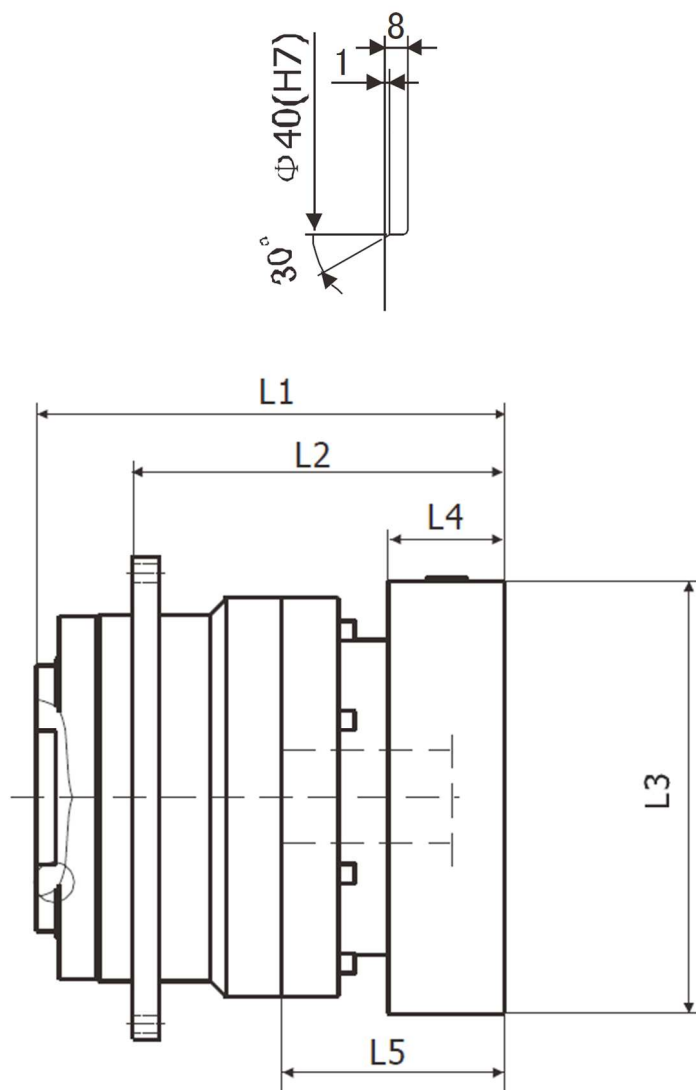


Input shaft bore $\leq \phi 28$



(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Detail A



Model number	Adapter code	1-stage					2-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
SH-110-□-□-14 (Input shaft bore ≤ø14)	BA·BB·BD·BE·BF·BG·BJ·BK	-	-	-	-	-	142	113	□65	16,5	35
	BC·BH·BM	-	-	-	-	-	147	118	□65	21,5	40
	BL	-	-	-	-	-	152	123	□65	26,5	45
	CA	-	-	-	-	-	142	113	□70	16,5	35
	CB	-	-	-	-	-	147	118	□70	21,5	40
	DA·DB·DC·DD·DF·DH	-	-	-	-	-	142	113	□80	16,5	35
	DE	-	-	-	-	-	147	118	□80	21,5	40
	DG	-	-	-	-	-	152	123	□80	26,5	45
	EA·EB·EC	-	-	-	-	-	142	113	□90	16,5	35
	ED	-	-	-	-	-	152	123	□90	26,5	45
	FA	-	-	-	-	-	142	113	□100	16,5	35
	GA	-	-	-	-	-	142	113	□115	16,5	35

SH-110-□-□-19 (Input shaft bore ≤ø19)	DA·DB·DC	124,5	95,5	□80	25	50	152	123	□80	25	50
	DD	134,5	105,5	□80	35	60	162	133	□80	35	60
	DE	129,5	100,5	□80	30	55	157	128	□80	30	55
	EA	129,5	100,5	□90	30	55	157	128	□90	30	55
	EB	124,5	95,5	□90	25	50	152	123	□90	25	50
	EC	134,5	105,5	□90	35	60	162	133	□90	35	60
	FA	124,5	95,5	□100	25	50	152	123	□100	25	50
	FB	134,5	105,5	□100	35	60	162	133	□100	35	60
	GA·GC	129,5	100,5	□115	30	55	157	128	□115	30	55
	GB·GD	124,5	95,5	□115	25	50	152	123	□115	25	50
	HA	124,5	95,5	□130	25	50	152	123	□130	25	50
	HB	139,5	110,5	□130	40	65	167	138	□130	40	65
	HC·HD·HE	129,5	100,5	□130	30	55	157	128	□130	30	55
SH-110-□-□-28 (Input shaft bore ≤ø28)	FA·FB·FC	141,5	112,5	□100	35	67	169	140	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	141,5	112,5	□115	35	67	169	140	□115	35	67
	HA·HC·HD	141,5	112,5	□130	35	67	169	140	□130	35	67
	HB	151,5	122,5	□130	45	77	179	150	□130	45	77
	JA·JB·JC	141,5	112,5	□150	35	67	169	140	□130	35	67
	KA·KB	141,5	112,5	□180	35	67	169	140	□150	35	67
	KD	151,5	122,5	□180	45	77	179	150	□180	45	77
	LA	141,5	112,5	□200	35	67	169	140	□200	35	67
	MA	141,5	112,5	□220	35	67	169	140	□220	35	67
SH-110-□-□-38 (Input shaft bore ≤ø38)	HA	162,5	133,5	□130	45	82	-	-	-	-	-
	HB	157,5	128,5	□130	40	77	-	-	-	-	-
	JA	162,5	133,5	□150	45	82	-	-	-	-	-
	KA·KB·KC	162,5	133,5	□180	45	82	-	-	-	-	-
	LA	162,5	133,5	□200	45	82	-	-	-	-	-
	LB	172,5	143,5	□200	55	92	-	-	-	-	-
	MA·MB	162,5	133,5	□220	45	82	-	-	-	-	-
	NA	162,5	133,5	□250	45	82	-	-	-	-	-

※ 1-stage reduction (1/4÷1/10), 2-stage reduction (1/16÷1/100)

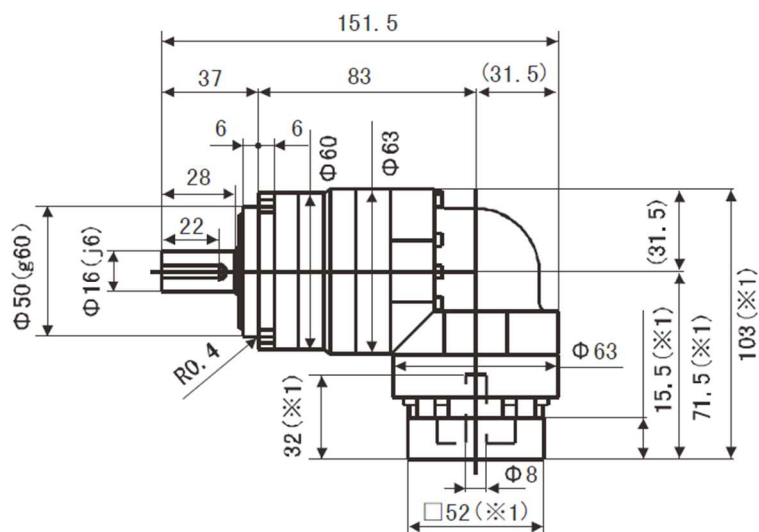
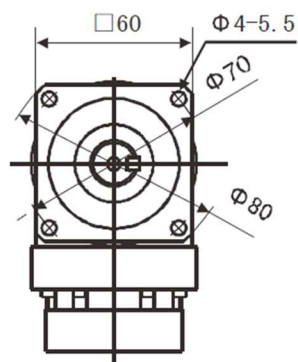
TSF060 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
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
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

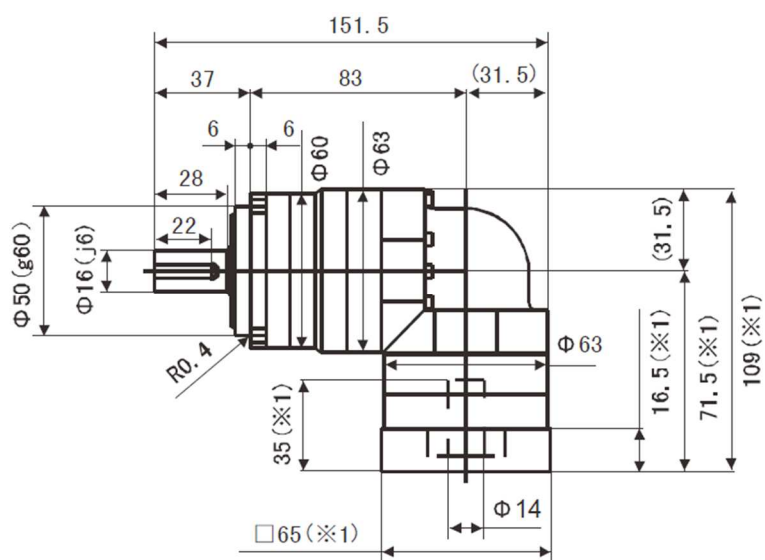
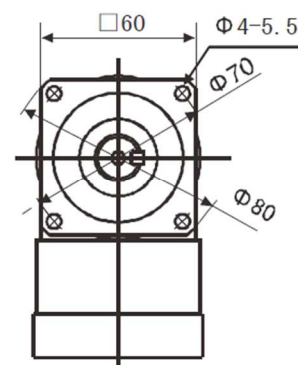
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \varnothing 8$) [kgcm ²]	Inertia ($\leq \varnothing 14$) [kgcm ²]	Inertia ($\leq \varnothing 19$) [kgcm ²]	
3	1200	1100	1,8	0,31	0,39	0,58	
4	1200	1100		0,27	0,34	0,53	
5	1200	1100		0,25	0,32	0,51	
6	1200	1100		0,24	0,31	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	
15	1200	1100	1,6	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	-	

TSF060 – Dimensions

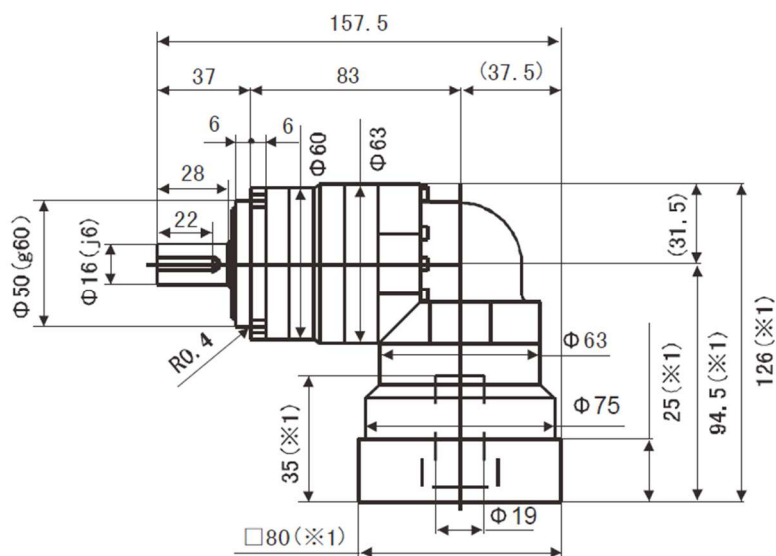
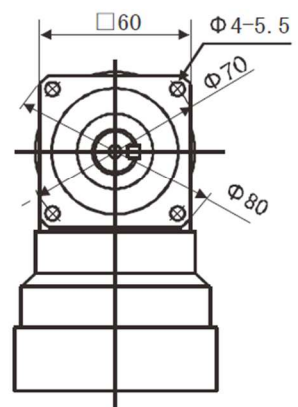
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$

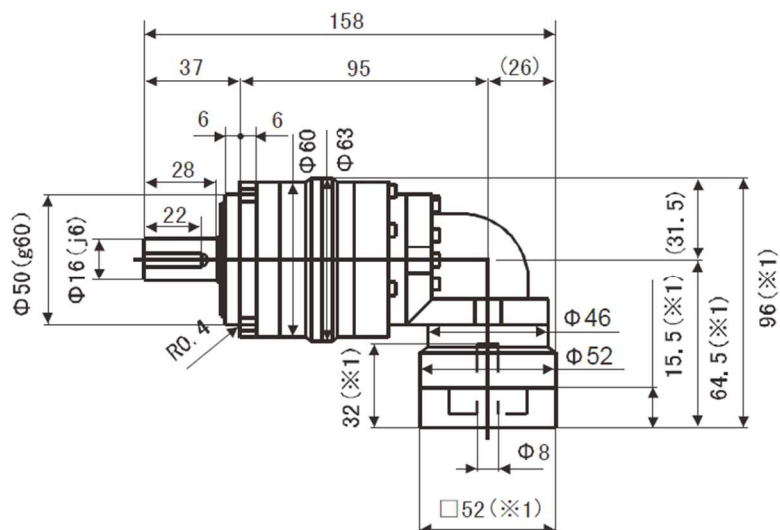
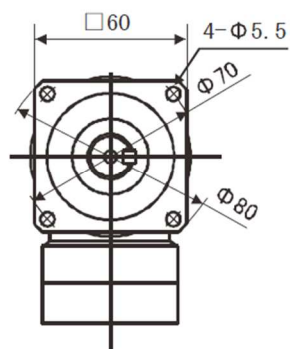


Input shaft bore $\leq \phi 19$

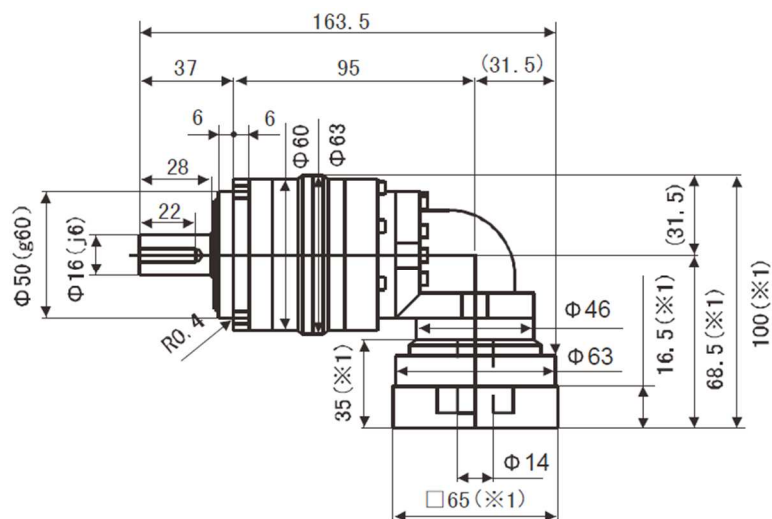
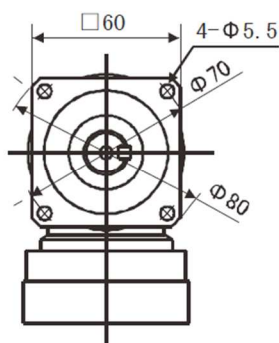


(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Input shaft bore $\leq \phi 8$

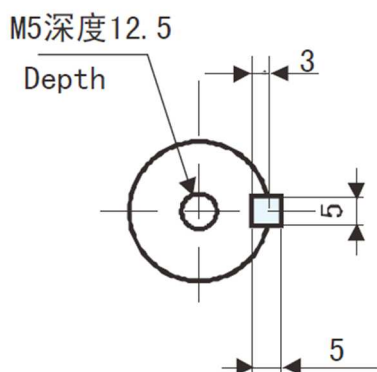


Input shaft bore $\leq \phi 14$

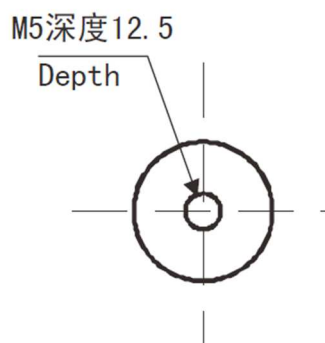


(×1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

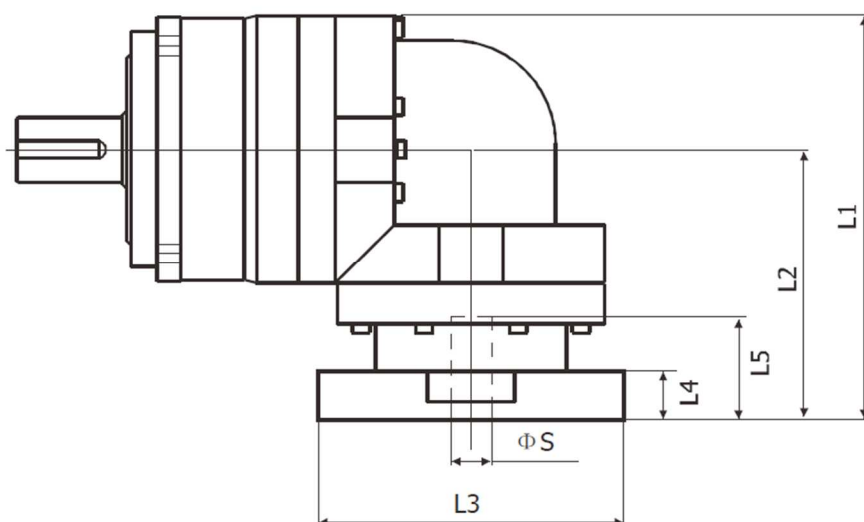
Gearbox output shaft



附带键轴
Shaft with key



无键轴
Smooth shaft



Model number	Adapter code	2-stage					3-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
TSF-060-□-□-8 (Input shaft bore ≤ø8)	AA·AC·AD·SF·AG	103	71,5	□ 52	15,5	32	96	64,5	□ 52	15,5	32
	AB·AE·SH·AJ·AK	108	76,5	□ 52	20,5	37	101	69,5	□ 52	20,5	37
	BA·BB·BD·BE	103	71,5	□ 60	15,5	32	96	64,5	□ 60	15,5	32
	BC·BF	108	76,5	□ 60	20,5	37	101	69,5	□ 60	20,5	37
	CA	108	76,5	□ 70	20,5	37	101	69,5	□ 70	20,5	37
TSF-060-□-□-14 (Input shaft bore ≤ø14)	BA·BB·BD·BE·BF·BG·BJ·BK	109	77,5	□ 65	16,5	35	100	68,5	□ 65	16,5	35
	BC·BH·BM	114	82,5	□ 65	21,5	40	105	73,5	□ 65	21,5	40
	BL	119	87,5	□ 65	26,5	45	110	78,5	□ 65	26,5	45
	CA	109	77,5	□ 70	16,5	35	100	68,5	□ 70	16,5	35
	CB	114	82,5	□ 70	21,5	40	105	73,5	□ 70	21,5	40
	DA·DB·DC·DD·DF·DH	109	77,5	□ 80	16,5	35	100	68,5	□ 80	16,5	35
	DE	114	82,5	□ 80	21,5	40	105	73,5	□ 80	21,5	40
	DG	119	87,5	□ 80	26,5	45	110	78,5	□ 80	26,5	45
	EA·EB·EC	109	77,5	□ 90	16,5	35	100	68,5	□ 90	16,5	35
	ED	119	87,5	□ 90	26,5	45	110	78,5	□ 90	26,5	45
	FA	109	77,5	□ 100	16,5	35	100	68,5	□ 100	16,5	35
	GA	109	77,5	□ 115	16,5	35	100	68,5	□ 115	16,5	35
TSF-060-□-□-19 (Input shaft bore ≤ø19)	DA·DB·DC	126	94,5	□ 80	25	50	-	-	-	-	-
	DD	136	104,5	□ 80	35	60	-	-	-	-	-
	DE	131	99,5	□ 80	30	55	-	-	-	-	-
	EA	131	99,5	□ 90	30	55	-	-	-	-	-
	EB	126	94,5	□ 90	25	50	-	-	-	-	-
	EC	136	104,5	□ 90	35	60	-	-	-	-	-
	FA	126	94,5	□ 100	25	50	-	-	-	-	-
	FB	136	104,5	□ 100	35	60	-	-	-	-	-
	GA·GC	131	99,5	□ 115	30	55	-	-	-	-	-
	GB·GD	126	94,5	□ 115	25	50	-	-	-	-	-
	HA	126	94,5	□ 130	25	50	-	-	-	-	-
	HB	141	109,5	□ 130	40	65	-	-	-	-	-
	HC·HD·HE	131	99,5	□ 130	30	55	-	-	-	-	-

※ 2-stage reduction (1/3÷1/10), 3-stage reduction (1/15÷1/100)

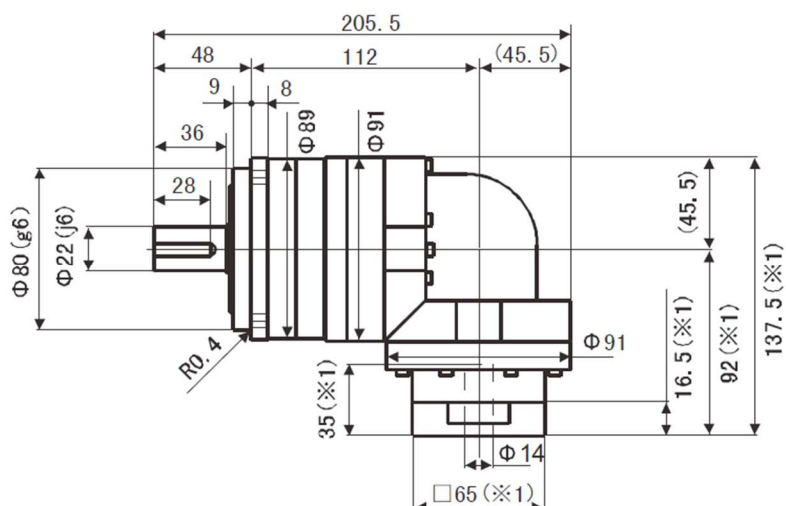
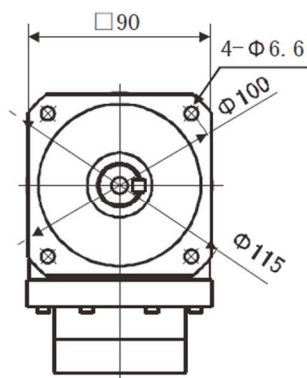
TSF090 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
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
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

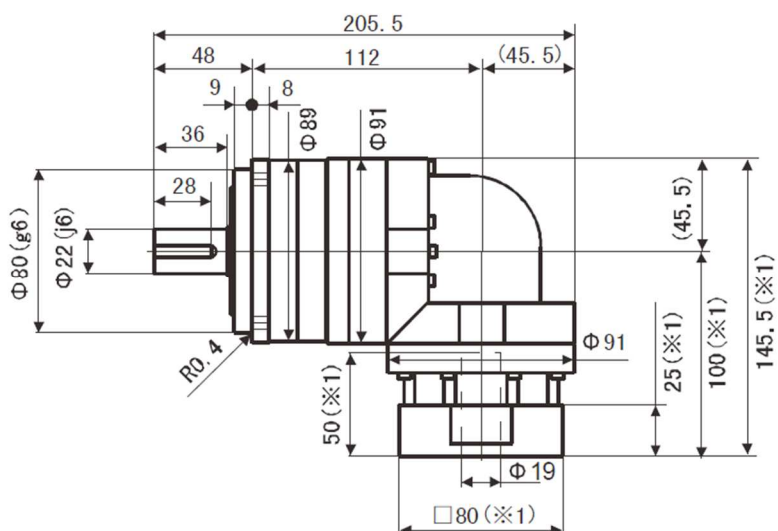
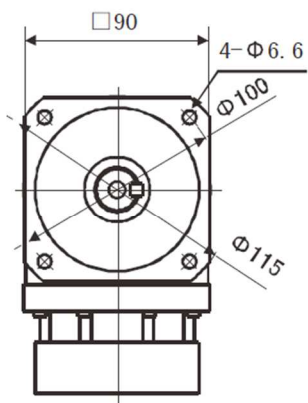
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \varnothing 8$) [kgcm ²]	Inertia ($\leq \varnothing 14$) [kgcm ²]	Inertia ($\leq \varnothing 19$) [kgcm ²]	Inertia ($\leq \varnothing 28$) [kgcm ²]
3	2400	2200	5,1	-	2,12	2,45	4,57
4	2400	2200		-	1,89	2,22	4,35
5	2400	2200		-	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
15	2400	2200	4,4	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		0,25	0,40	0,59	-
40	2400	2200		0,32	0,32	0,51	-
45	2400	2200		0,25	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	-

TSF090 – Dimensions

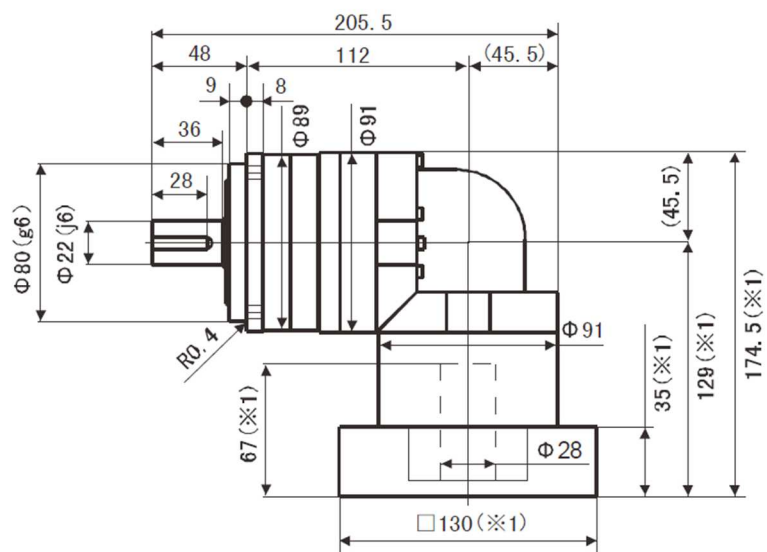
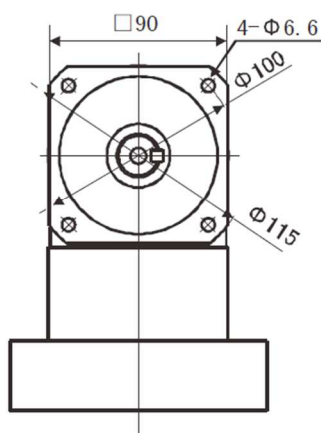
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$

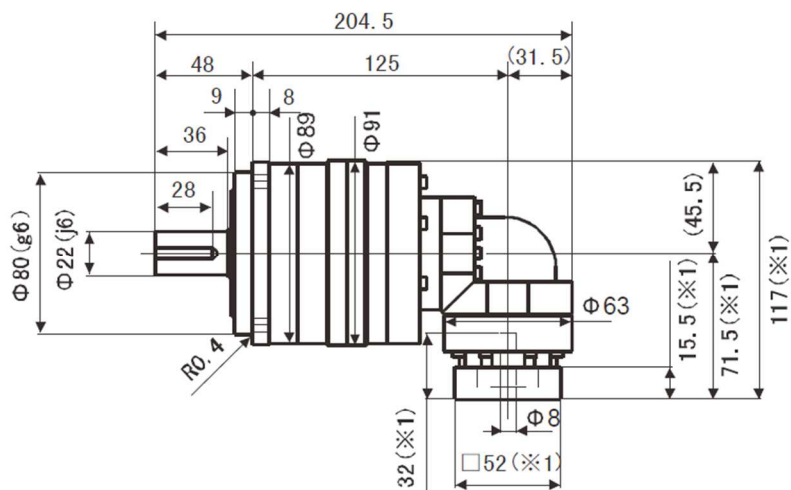
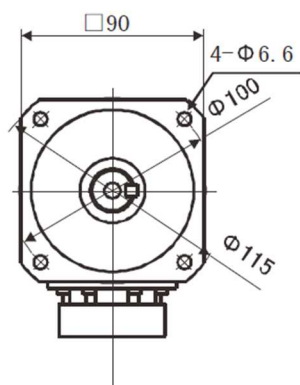


Input shaft bore $\leq \phi 28$

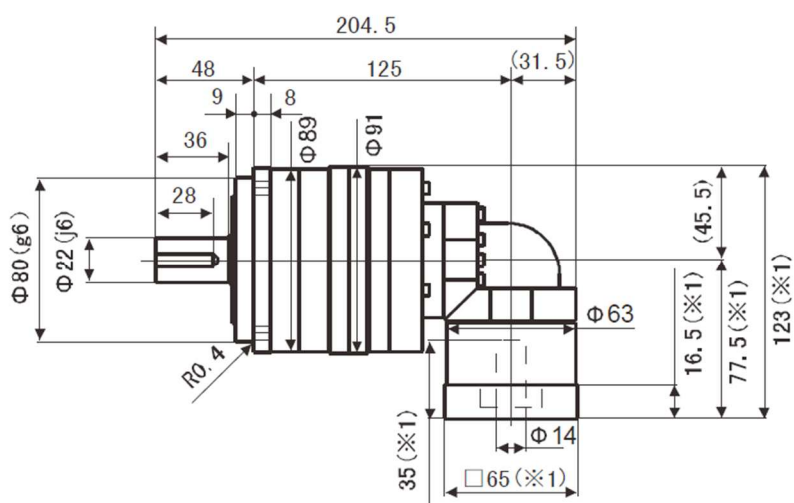
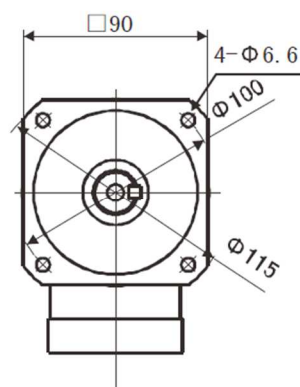


(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

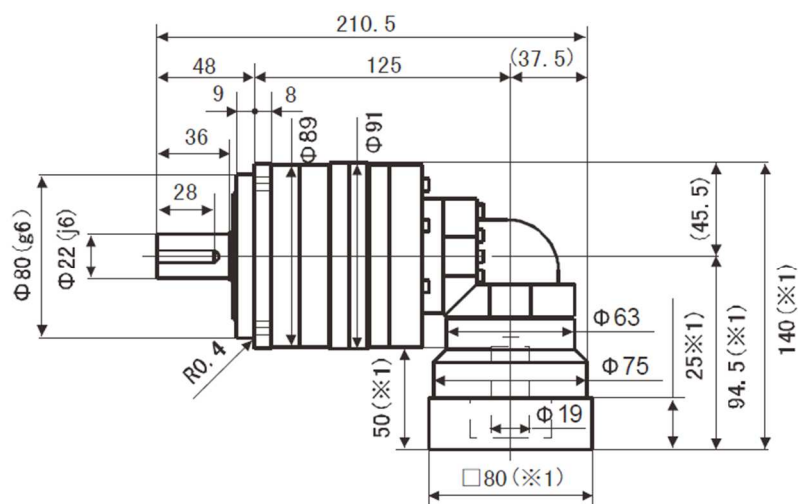
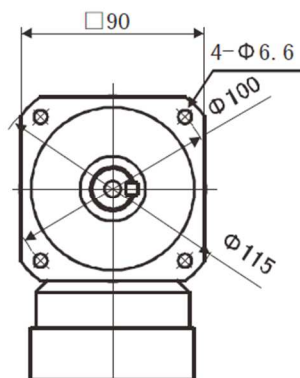
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$

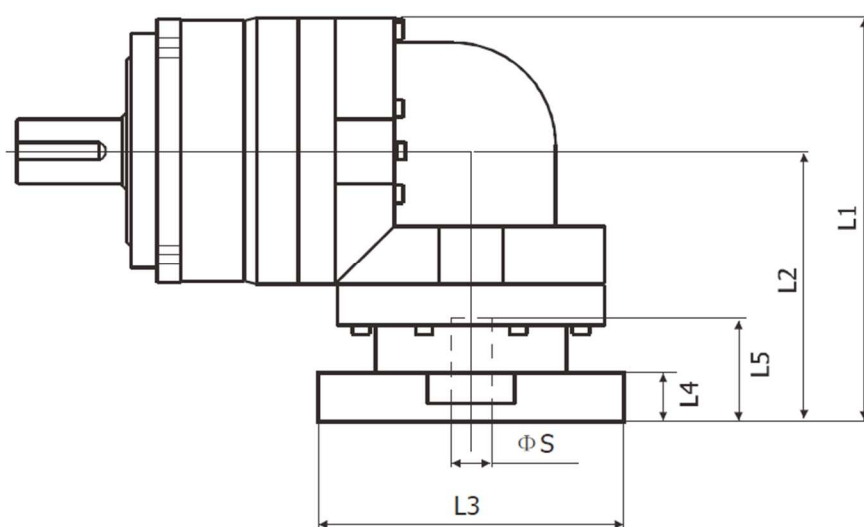
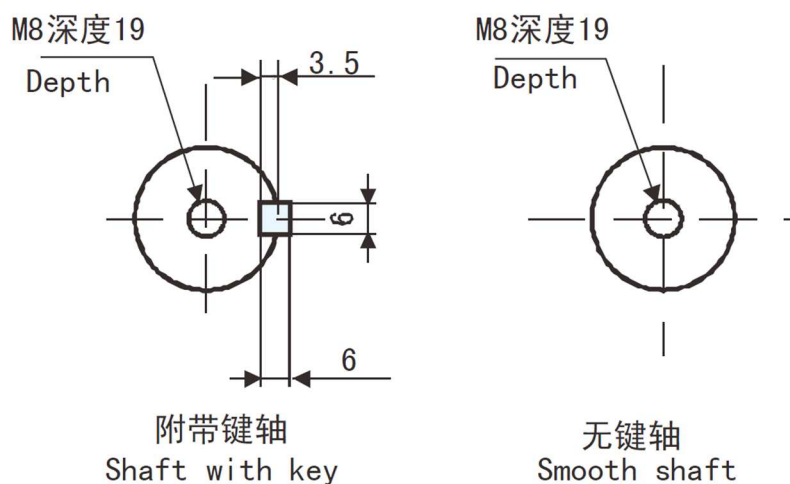


Input shaft bore $\leq \phi 19$



(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Gearbox output shaft



Model number	Adapter code	1-stage					2-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
TSF-090-□-□-8 (Input shaft bore ≤φ8)	AA·AC·AD·SF·AG	-	-	-	-	-	117	71,5	□52	15,5	32
	AB·AE·SH·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
TSF-090-□-□-14 (Input shaft bore ≤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

TSF-090-□-□-19 (Input shaft bore ≤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
TSF-090-□-□-28 (Input shaft bore ≤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	-	-	-	-	-

※ 2-stage reduction (1/3÷1/10), 3-stage reduction (1/15÷1/100)

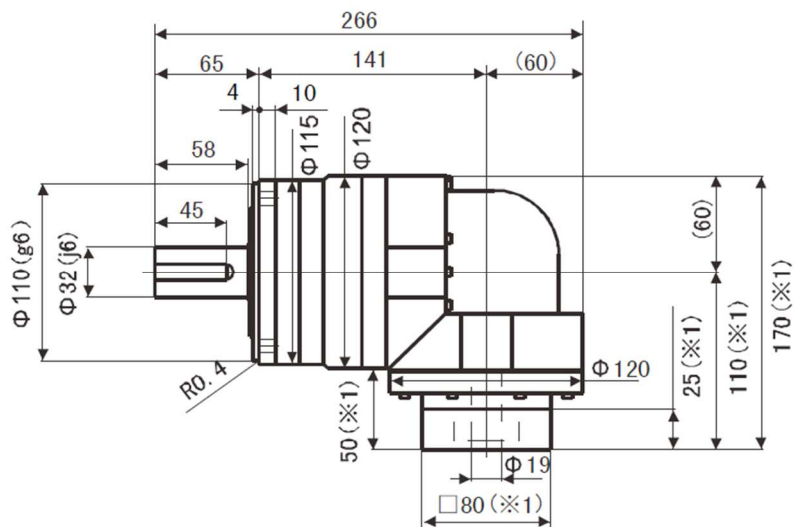
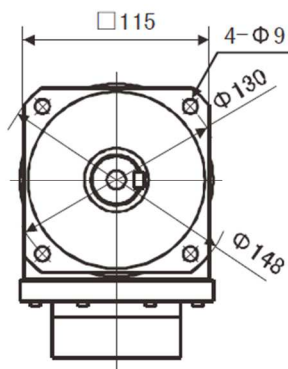
TSF115 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
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
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

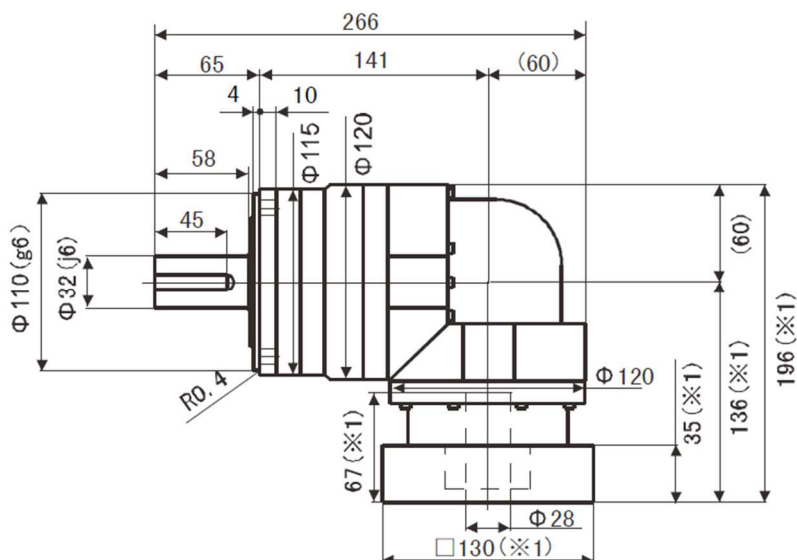
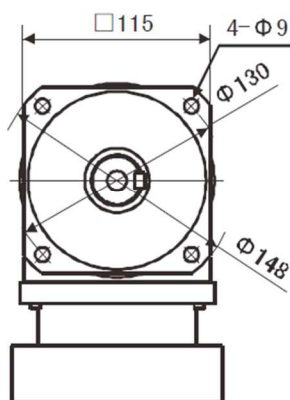
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \phi 14$) [kgcm ²]	Inertia ($\leq \phi 19$) [kgcm ²]	Inertia ($\leq \phi 28$) [kgcm ²]	Inertia ($\leq \phi 38$) [kgcm ²]
3	4300	3900	10,4	-	6,74	8,34	15,41
4	4300	3900		-	5,49	7,08	14,15
5	4300	3900		-	5,02	6,61	13,69
6	4300	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
15	4300	3900	10,1	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	-

TSF115 – Dimensions

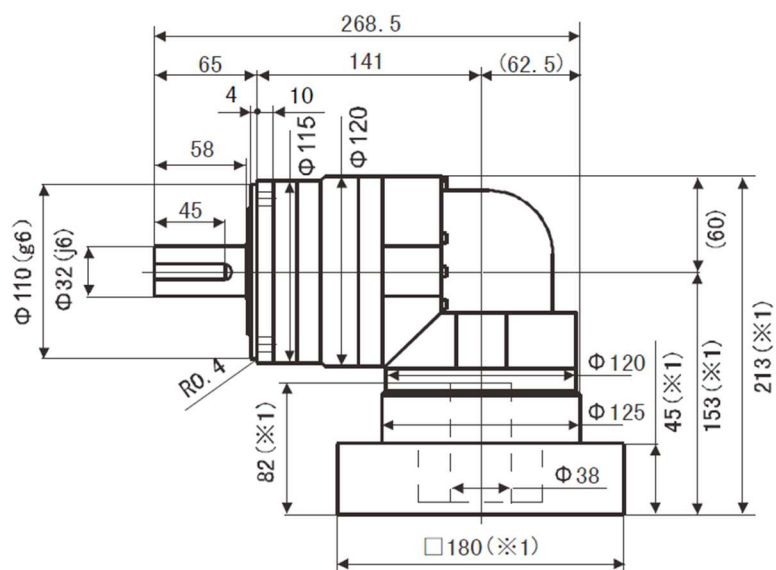
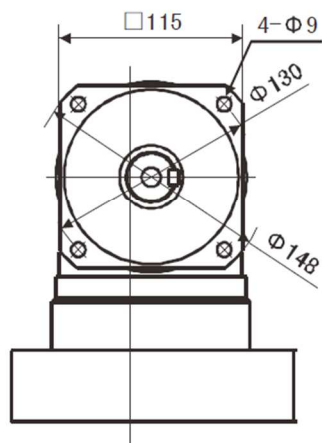
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$

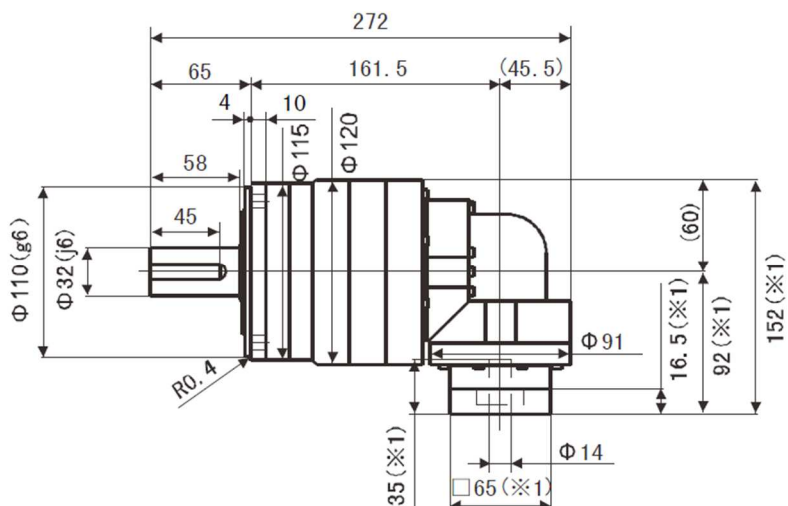
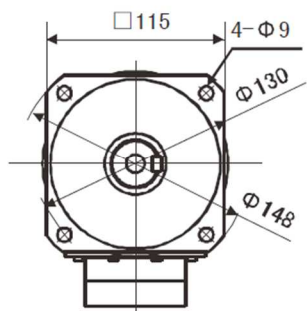


Input shaft bore $\leq \phi 38$

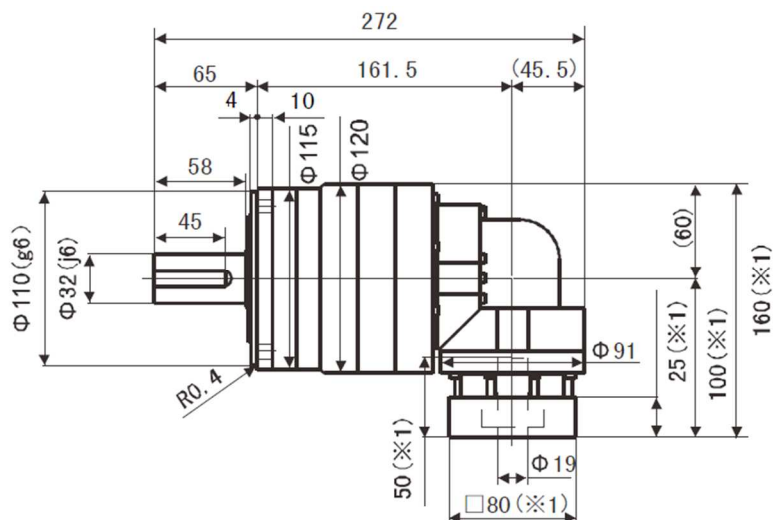
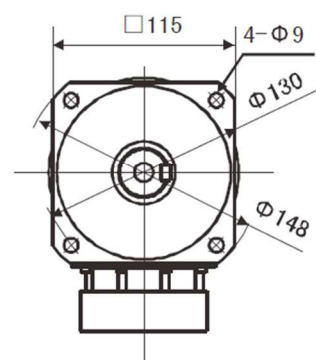


(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

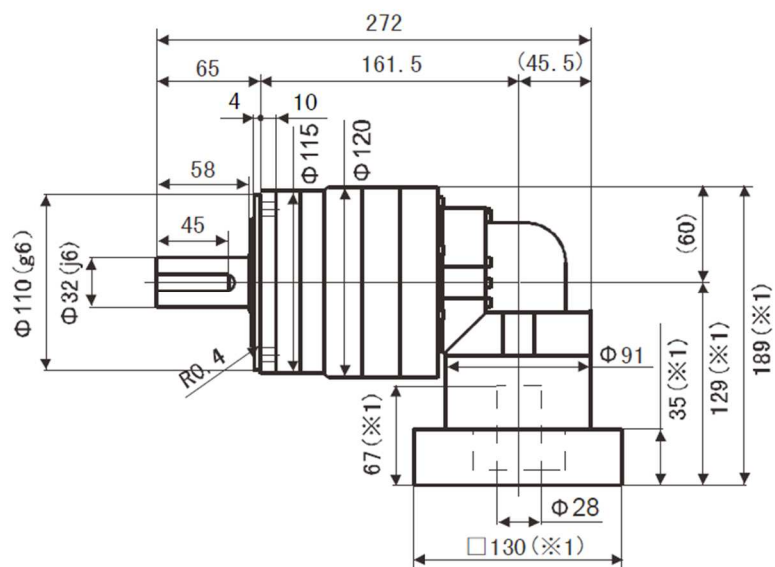
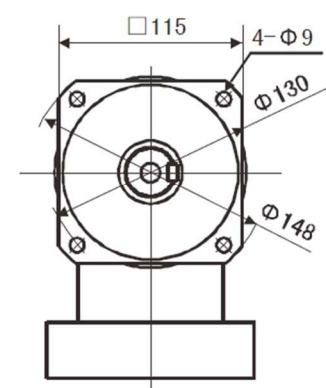
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$

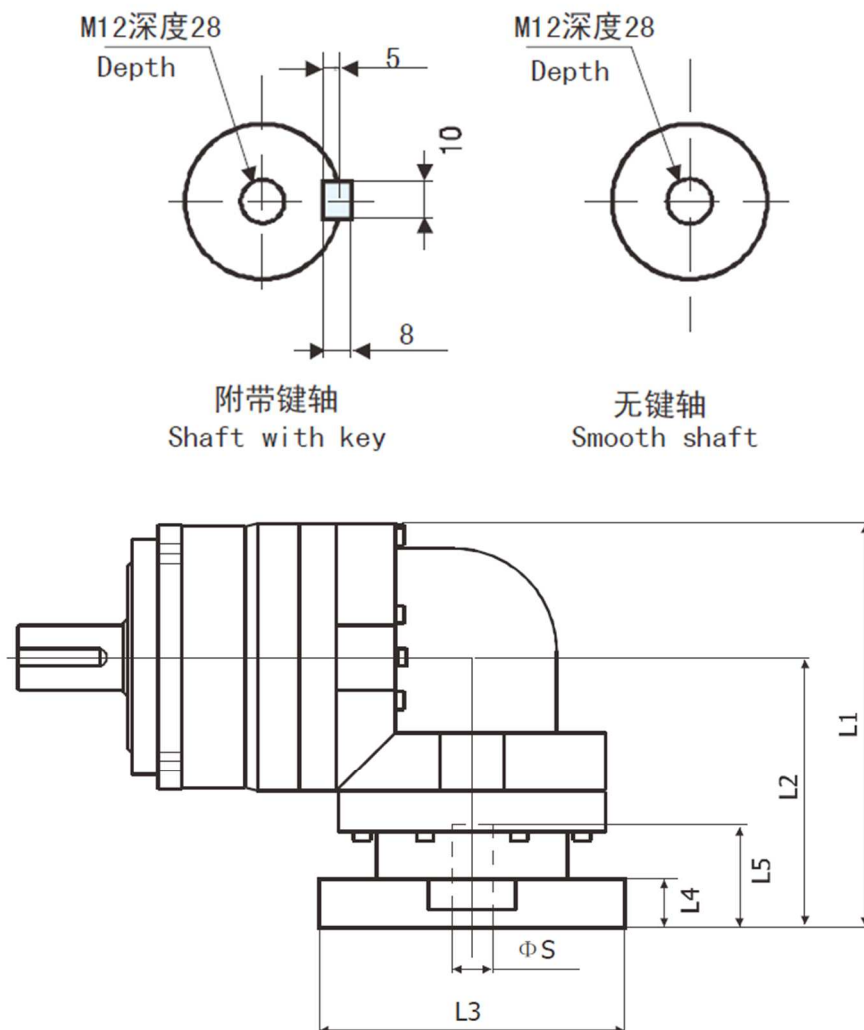


Input shaft bore $\leq \phi 28$



(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Gearbox output shaft



Model number	Adapter code	2-stage					3-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
TSF-115-□-□-14 (Input shaft bore ≤φ14)	BA·BB·BD·BE·BF·BG·BJ·BK	-	-	-	-	-	152	92	□65	16,5	35
	BC·BH·BM	-	-	-	-	-	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
TSF-115-□-□-19 (Input shaft bore ≤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
TSF-115-□-□-28 (Input shaft bore ≤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
TSF-115-□-□-38 (Input shaft bore ≤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	213	163	□200	55	92	-	-	-	-	-
	MA·MB	213	153	□220	45	82	-	-	-	-	-
	NA	213	153	□250	45	82	-	-	-	-	-

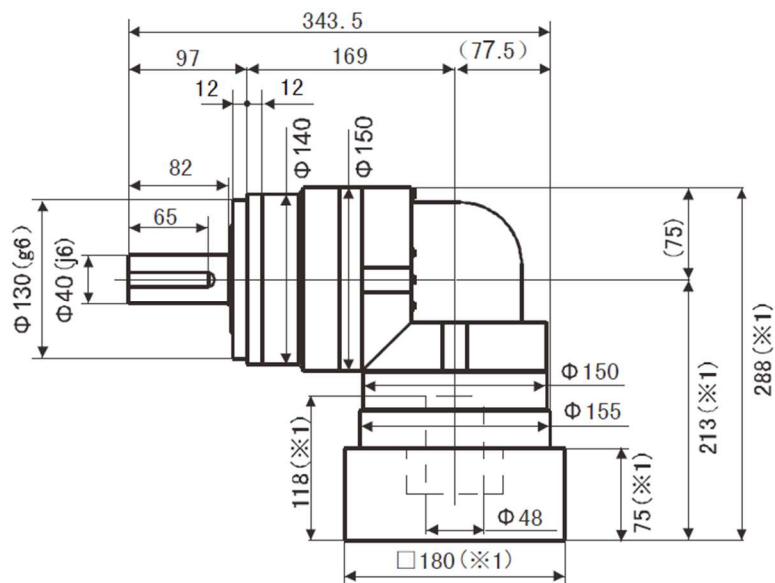
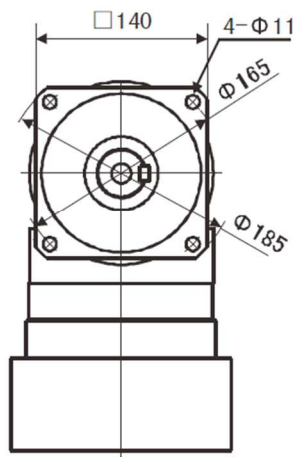
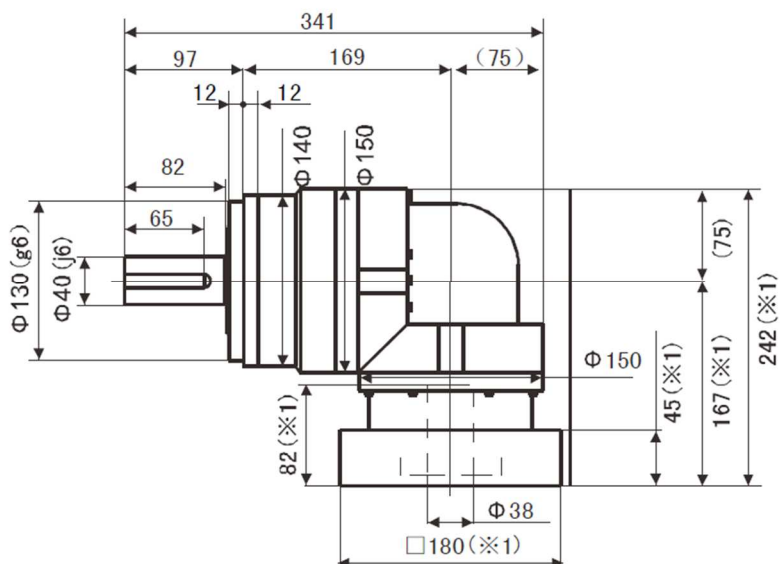
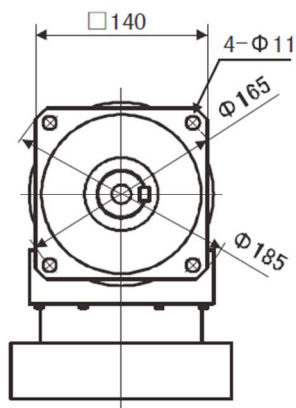
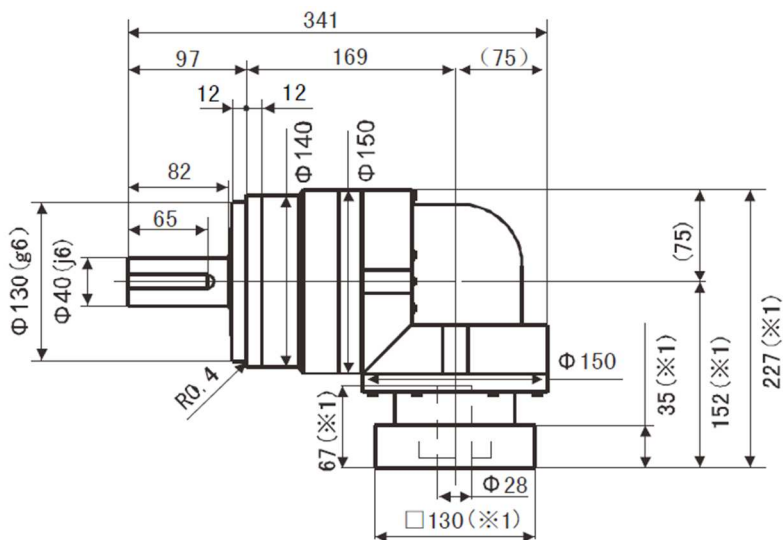
※ 2-stage reduction (1/3÷1/10), 3-stage reduction (1/15÷1/100)

TSF140 - Parameters

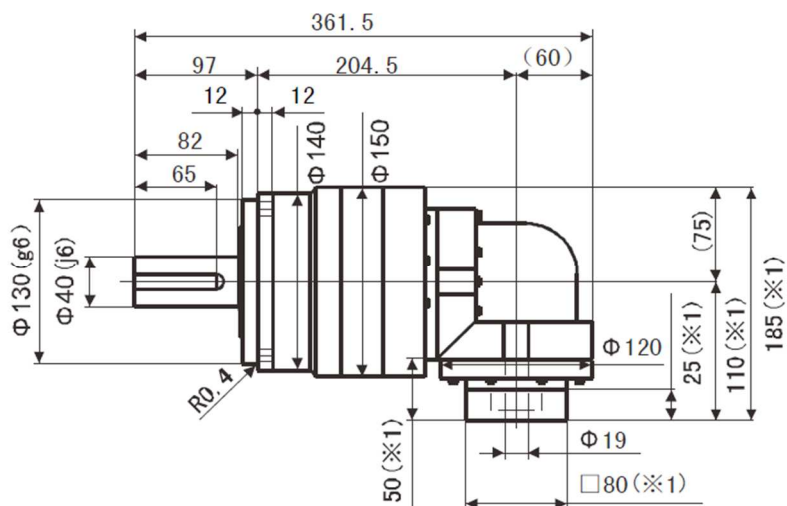
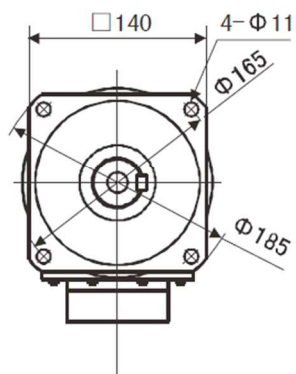
Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
3	130	260	700	2000	4000	3200	2400
4	170	340	950	2000	4000	3500	2700
5	200	400	1100	2000	4000	3800	3000
6	260	520	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
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

Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \phi 19$) [kgcm ²]	Inertia ($\leq \phi 28$) [kgcm ²]	Inertia ($\leq \phi 38$) [kgcm ²]	Inertia ($\leq \phi 48$) [kgcm ²]
3	9100	8200	19,1	-	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
15	9100	8200	19,6	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	-

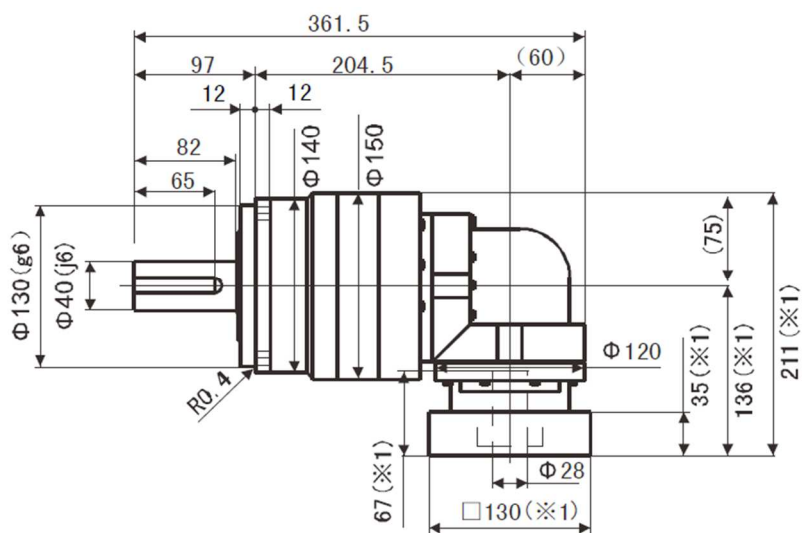
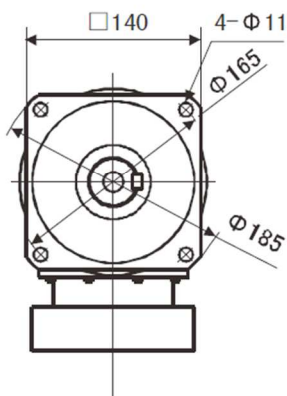
Input shaft bore $\leq \varnothing 28$



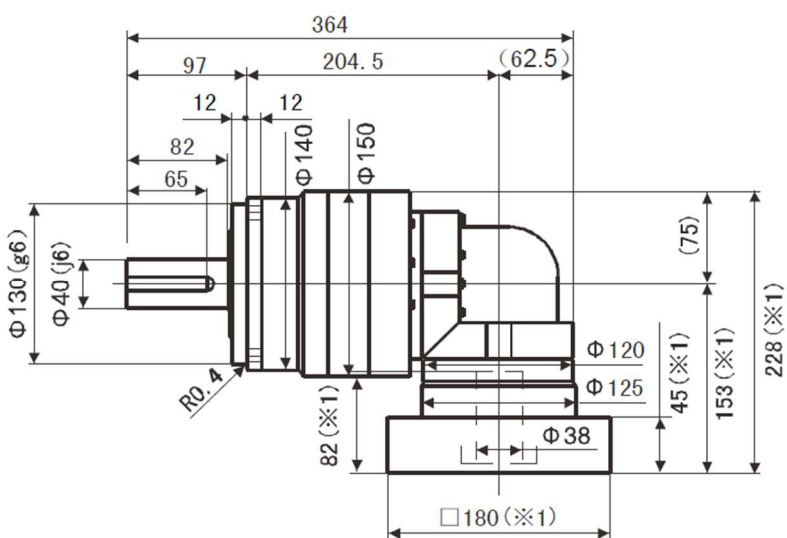
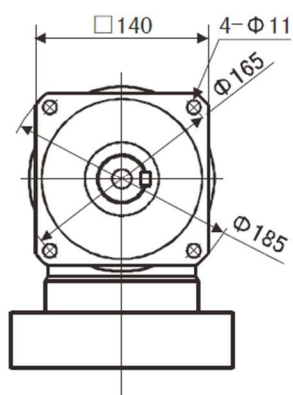
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$

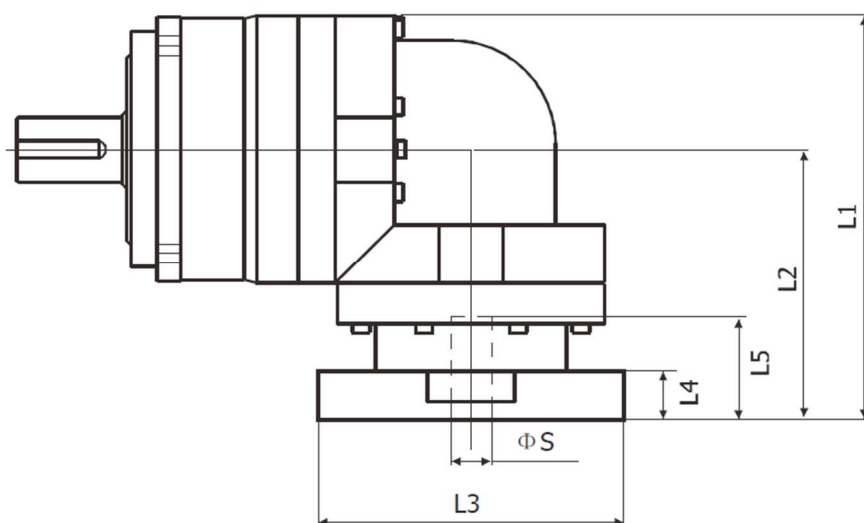
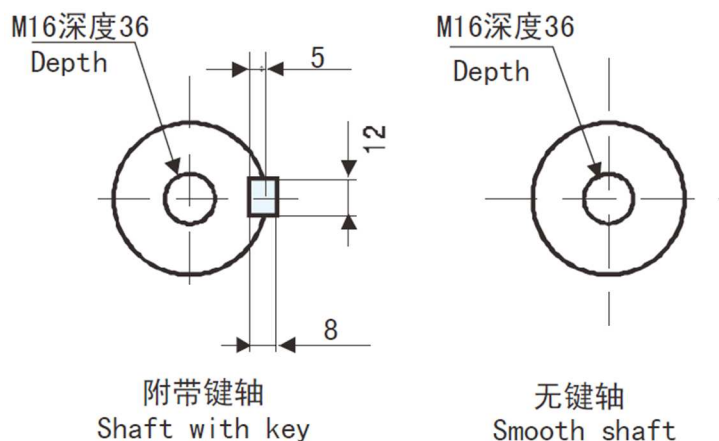


Input shaft bore $\leq \phi 38$



(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Wał wyjściowy przekładni



Model number	Adapter code	2-stage					3-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
TSF-140-□-□-19 (Input shaft bore ≤φ19)	DA·DB·DC	-	-	-	-	-	185	110	□80	25	50
	DD	-	-	-	-	-	195	120	□80	35	60
	DE	-	-	-	-	-	190	115	□80	30	55
	EA	-	-	-	-	-	190	115	□90	30	55
	EB	-	-	-	-	-	185	110	□90	25	50
	EC	-	-	-	-	-	195	120	□90	35	60
	FA	-	-	-	-	-	185	110	□100	25	50
	FB	-	-	-	-	-	195	120	□100	35	60
	GA·GC	-	-	-	-	-	190	115	□115	30	55
	GB·GD	-	-	-	-	-	185	110	□115	25	50
	HA	-	-	-	-	-	185	110	□130	25	50
	HB	-	-	-	-	-	200	125	□130	40	65
	HC·HD·HE	-	-	-	-	-	190	115	□130	30	55
TSF-140-□-□-28 (Input shaft bore ≤φ28)	FA·FB·FC	227	152	□100	35	67	211	136	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	227	152	□115	35	67	211	136	□115	35	67
	HA·HC·HD	227	152	□130	35	67	211	136	□130	35	67
	HB	227	162	□130	45	77	221	146	□130	45	77
	JA·JB·JC	227	152	□150	35	67	211	136	□150	35	67
	KA·KB	227	152	□180	35	67	211	136	□180	35	67
	LA	227	152	□200	35	67	211	136	□200	35	67
	MA	227	152	□220	35	67	211	136	□220	35	67
TSF-140-□-□-38	HA	242	167	□130	45	82	228	153	□130	45	82

(Input shaft bore ≤φ38)	HB	237	162	□130	40	77	223	148	□130	40	77
	JA	242	167	□150	45	82	228	153	□150	45	82
	KA·KB·KC	242	167	□180	45	82	228	153	□180	45	82
	LA	242	167	□200	45	82	228	153	□200	45	82
	LB	252	177	□200	55	92	238	163	□200	55	92
	MA·MB	242	167	□220	45	82	228	153	□220	45	82
	NA	242	167	□250	45	82	228	153	□250	45	82
TSF-140-□-□-48 (Input shaft bore ≤φ48)	KB·KC	268	193	□180	55	98	-	-	-	-	-
	KA	268	213	□180	75	118	-	-	-	-	-
	LA	268	193	□200	55	98	-	-	-	-	-
	MA	268	193	□220	55	98	-	-	-	-	-
	MB	288	213	□220	75	118	-	-	-	-	-
	NA	268	213	□250	75	118	-	-	-	-	-
	PA	268	213	□280	75	118	-	-	-	-	-

※ 2-stage reduction (1/3÷1/10), 3-stage reduction (1/15÷1/100)

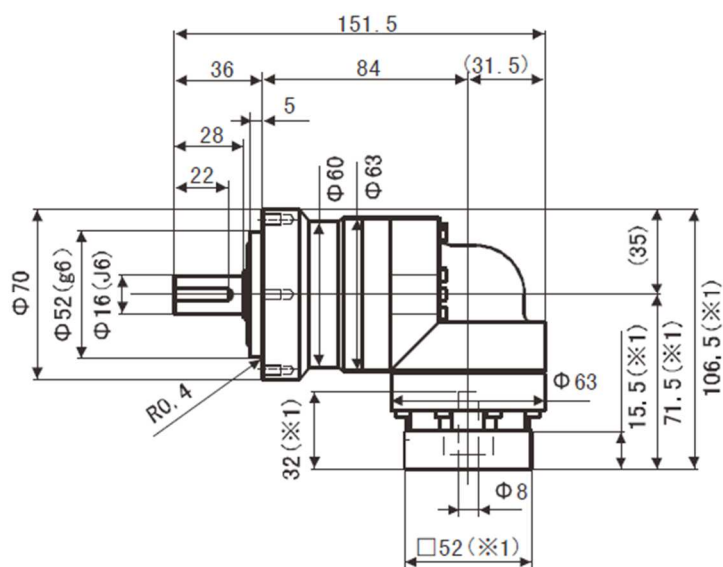
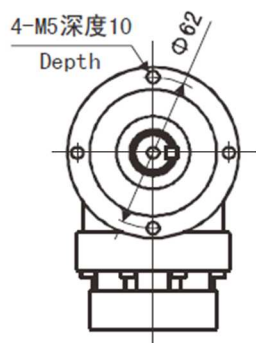
TSL070 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
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
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

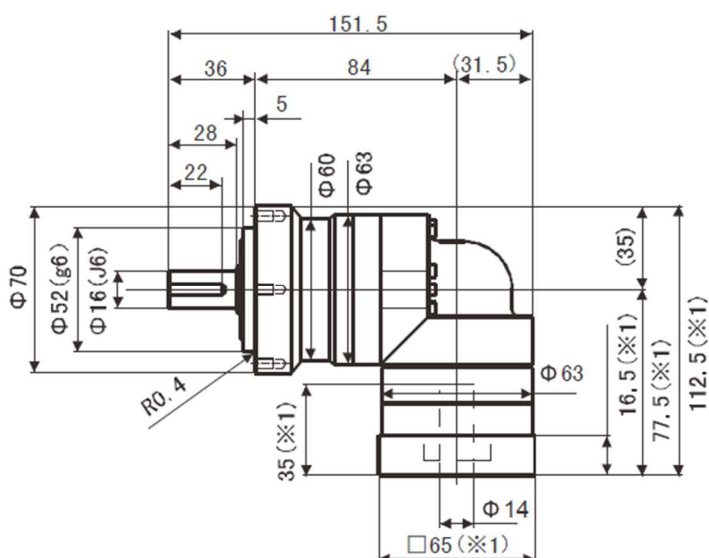
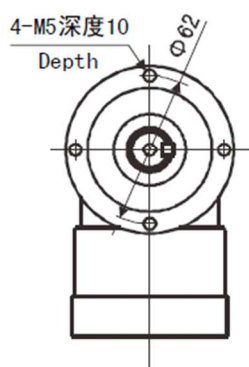
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \phi 8$) [kgcm ²]	Inertia ($\leq \phi 14$) [kgcm ²]	Inertia ($\leq \phi 19$) [kgcm ²]	
3	1200	1100	1,9	0,31	0,39	0,58	
4	1200	1100		0,27	0,34	0,53	
5	1200	1100		0,25	0,32	0,51	
6	1200	1100		0,24	0,31	0,50	
7	1200	1100		0,23	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	
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	-	

TSL070 – Dimensions

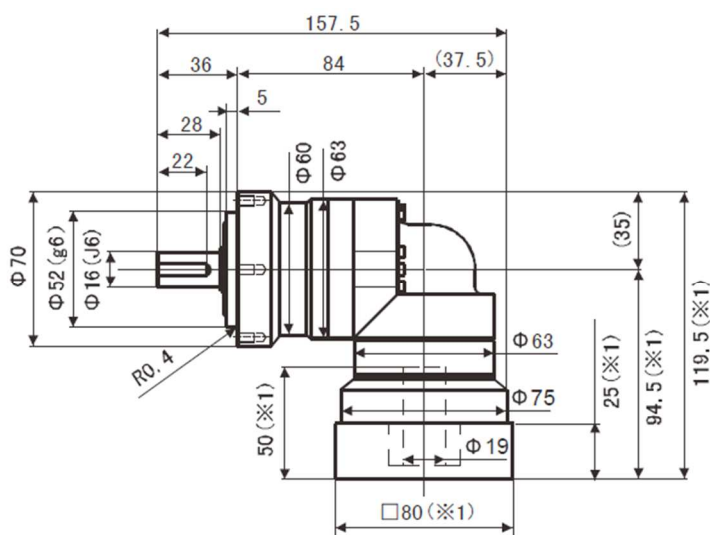
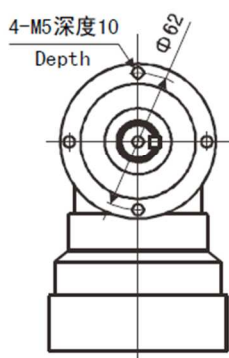
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$

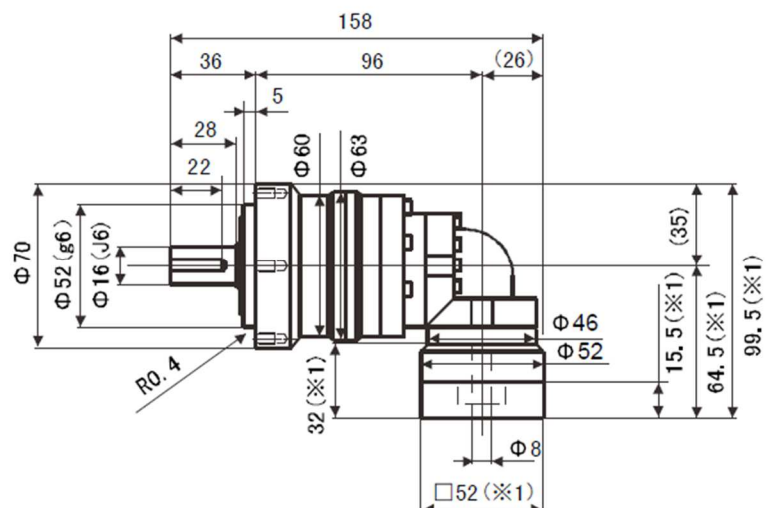
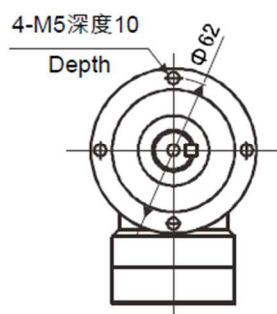


(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

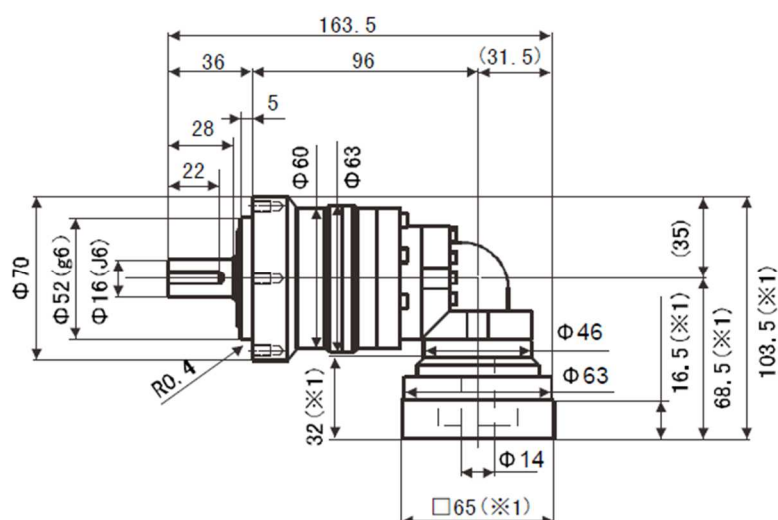
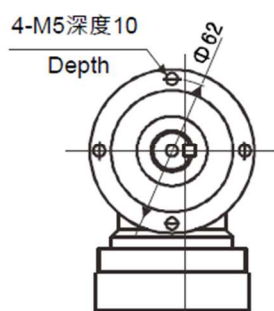
Elmark Automatyka S.A.

ul. Niemcewicza 76, 05-075 Warszawa, tel. (+48) 22 773 79 37; elmark@elmark.com.pl; www.elmark.com.pl
NIP: 5252072585; KRS: 0000803828, Sąd Rejonowy dla M-St. Warszawy, XIV Wydział Gosp. KRS; Kapitał Zakładowy 525.000 zł, w pełni opłacony

Input shaft bore $\leq \phi 8$

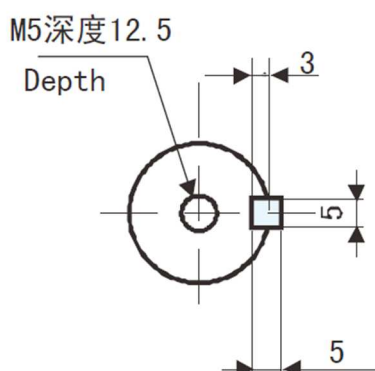


Input shaft bore $\leq \phi 14$

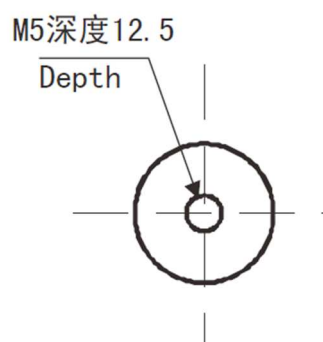


(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

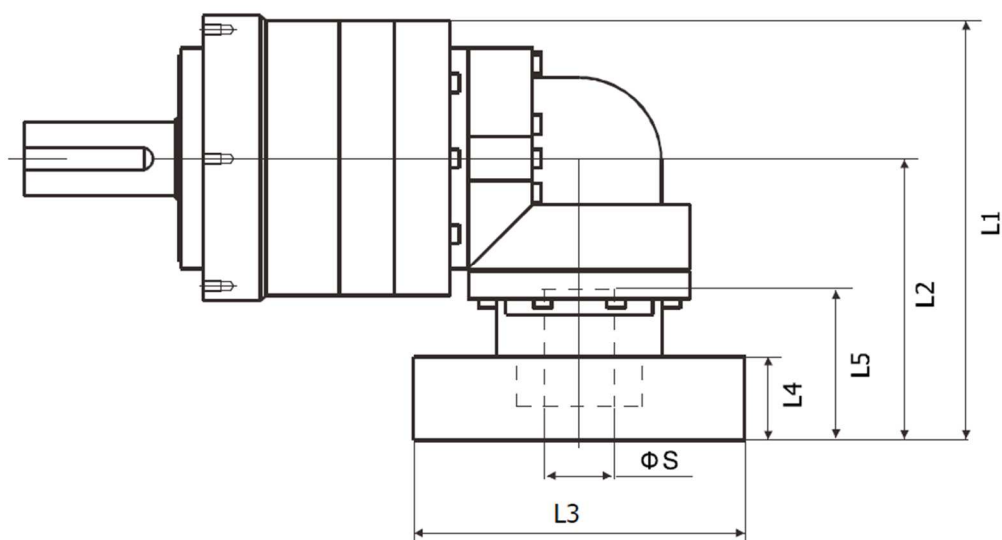
Gearbox output shaft



附带键轴
Shaft with key



无键轴
Smooth shaft



Model number	Adapter code	2-stage					3-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
TSL-070-□-□-8 (Input shaft bore $\leq \phi 8$)	AA·AC·AD·SF·AG	106,5	71,5	□52	15,5	32	99,5	64,5	□52	15,5	32
	AB·AE·SH·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
TSL-070-□-□-14 (Input shaft bore $\leq \phi 14$)	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·BM	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
TSL-070-□-□-19 (Input shaft bore $\leq \phi 19$)	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	-	-	-	-	-

※ 2-stage reduction (1/3÷1/10), 3-stage reduction (1/15÷1/100)

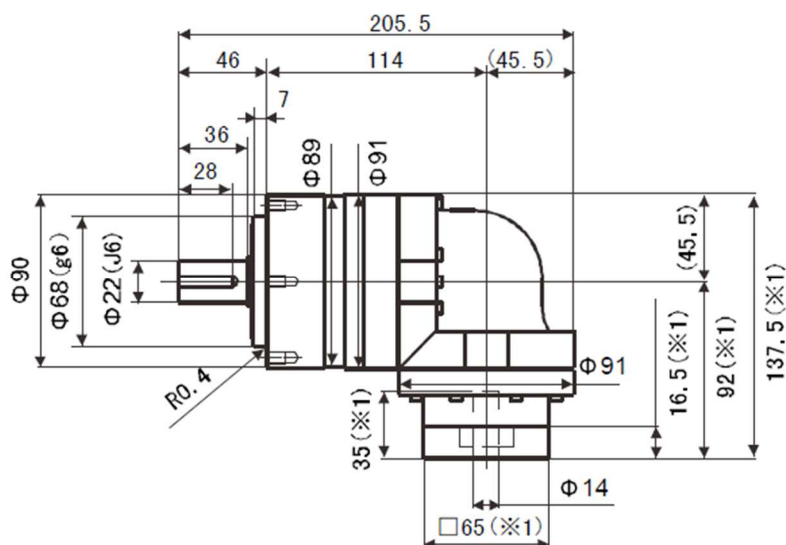
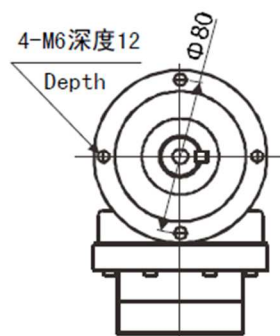
TSL090 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
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
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

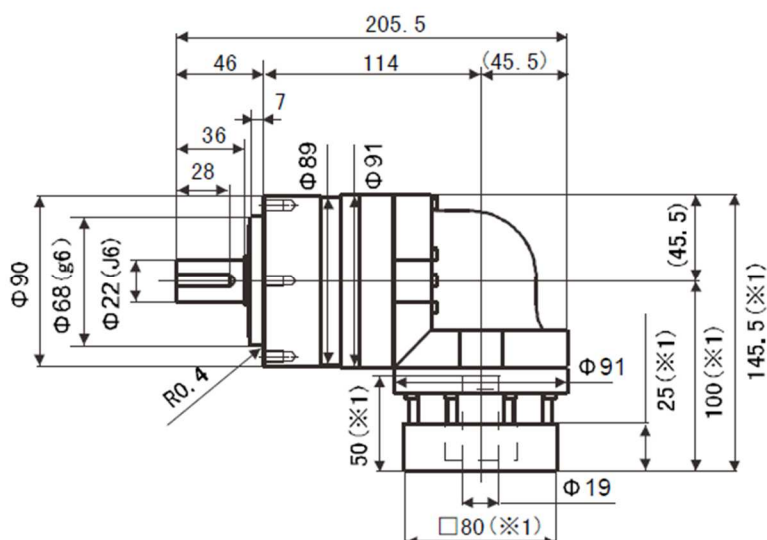
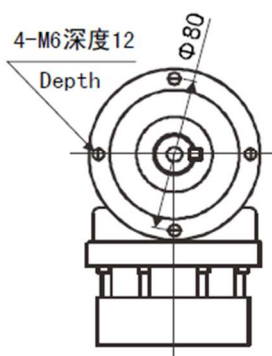
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \varnothing 8$) [kgcm ²]	Inertia ($\leq \varnothing 14$) [kgcm ²]	Inertia ($\leq \varnothing 19$) [kgcm ²]	Inertia ($\leq \varnothing 28$) [kgcm ²]
3	2400	2200	4,9	-	2,12	2,45	4,57
4	2400	2200		-	1,89	2,22	4,35
5	2400	2200		-	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
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	-

TSL090 – Dimensions

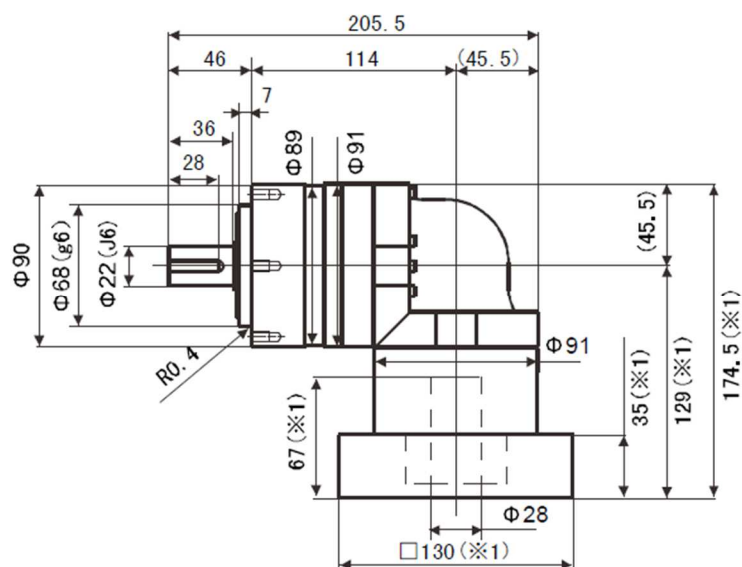
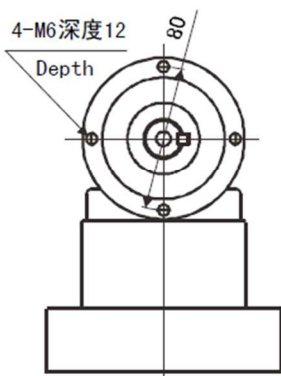
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$

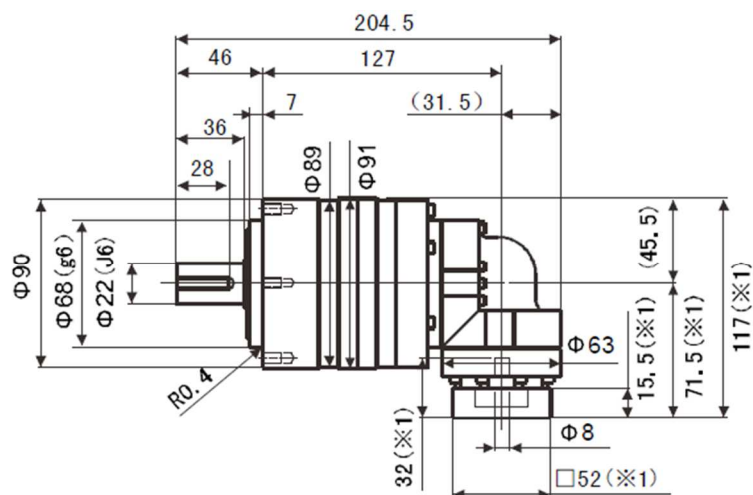
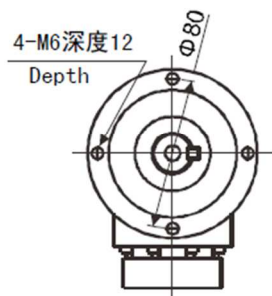


(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

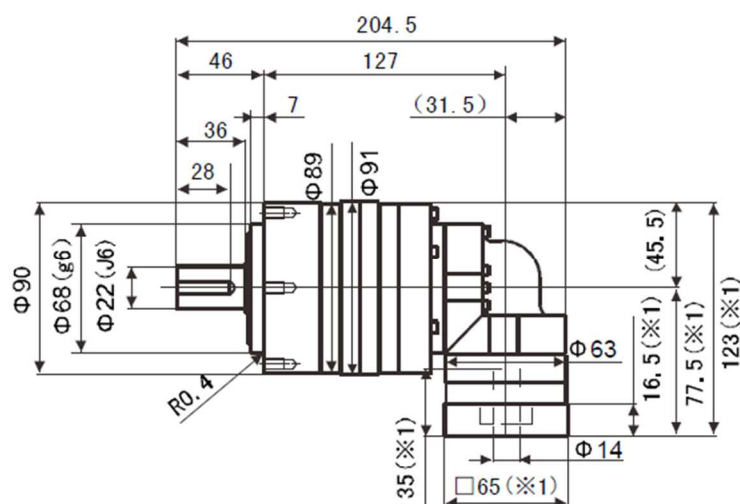
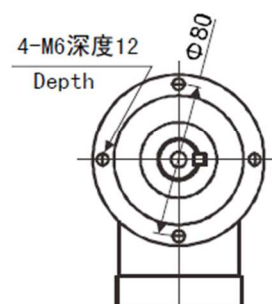
Elmark Automatyka S.A.

ul. Niemcewicza 76, 05-075 Warszawa, tel. (+48) 22 773 79 37; elmark@elmark.com.pl; www.elmark.com.pl
NIP: 5252072585; KRS: 0000803828, Sąd Rejonowy dla M-St. Warszawy, XIV Wydział Gosp. KRS; Kapitał Zakładowy 525.000 zł, w pełni opłacony

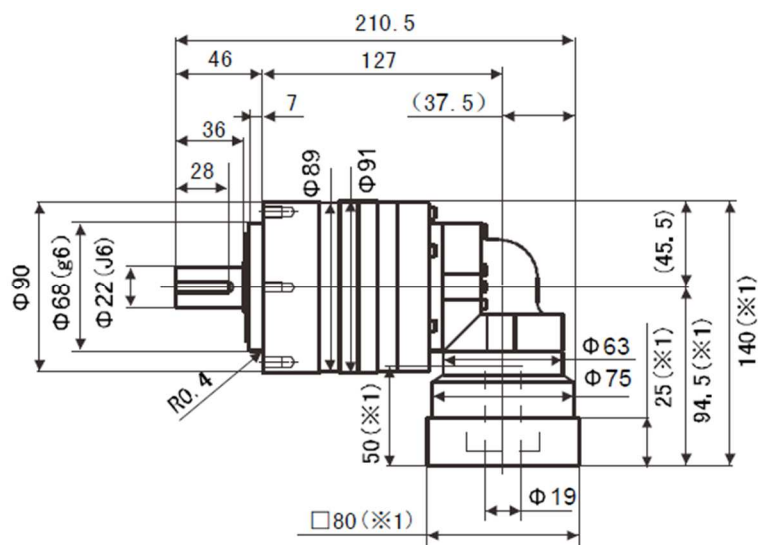
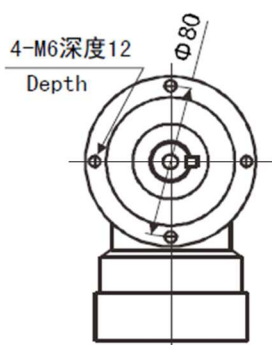
Input shaft bore $\leq \phi 8$



Input shaft bore $\leq \phi 14$

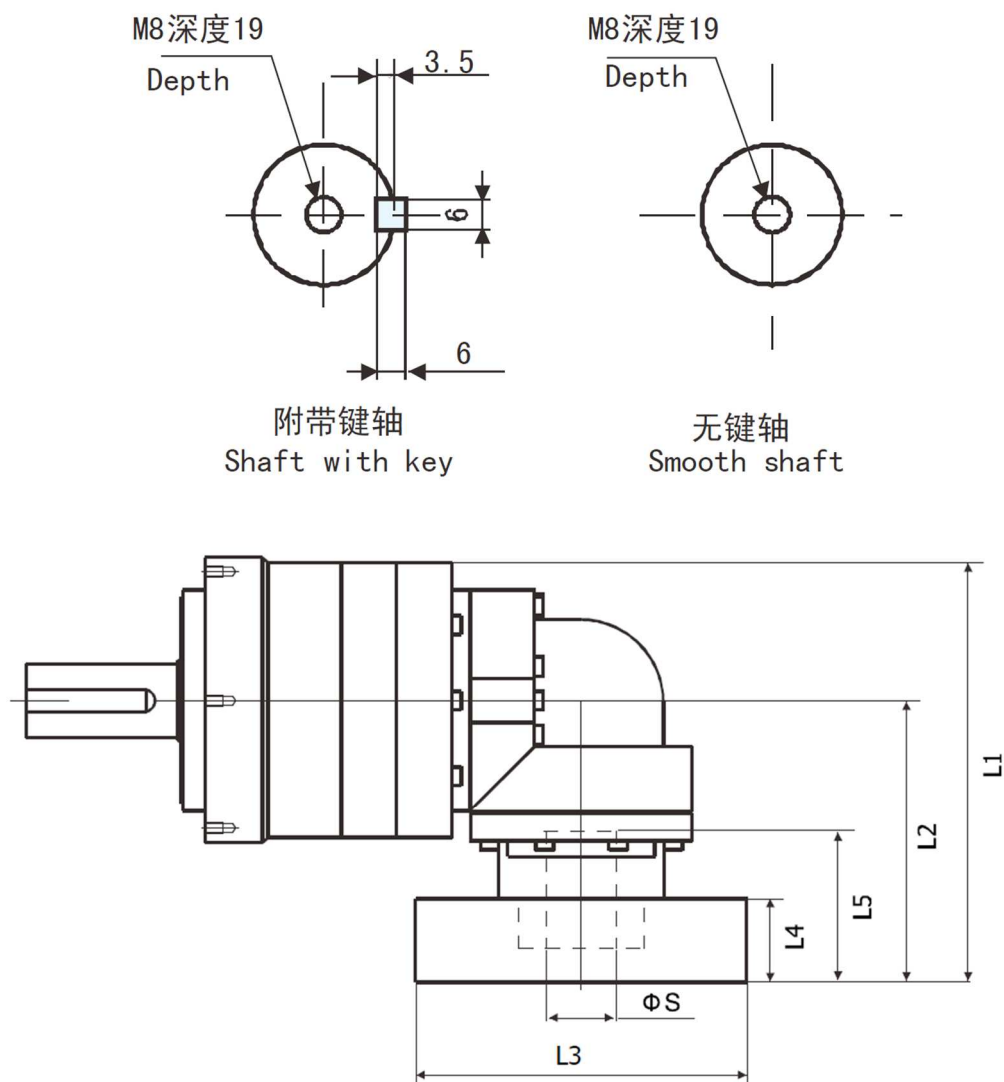


Input shaft bore $\leq \phi 19$



(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Gearbox output shaft



Model number	Adapter code	2-stage					3-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
TSL-090-□-□-8 (Input shaft bore ≤φ8)	AA·AC·AD·SF·AG	-	-	-	-	-	117	71,5	□52	15,5	32
	AB·AE·SH·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
TSL-090-□-□-14 (Input shaft bore ≤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·BM	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
TSL-090-□-□-19 (Input shaft bore ≤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
TSL-090-□-□-28 (Input shaft bore ≤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	-	-	-	-	-

※ 2-stage reduction (1/3÷1/10), 3-stage reduction (1/15÷1/100)

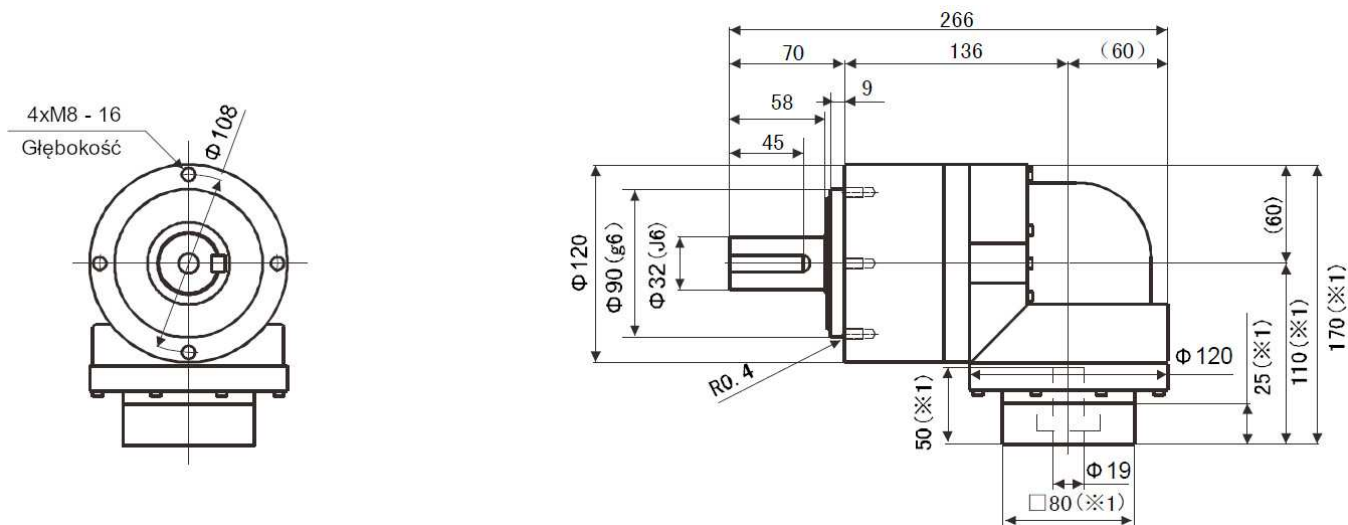
TSL120 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
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
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

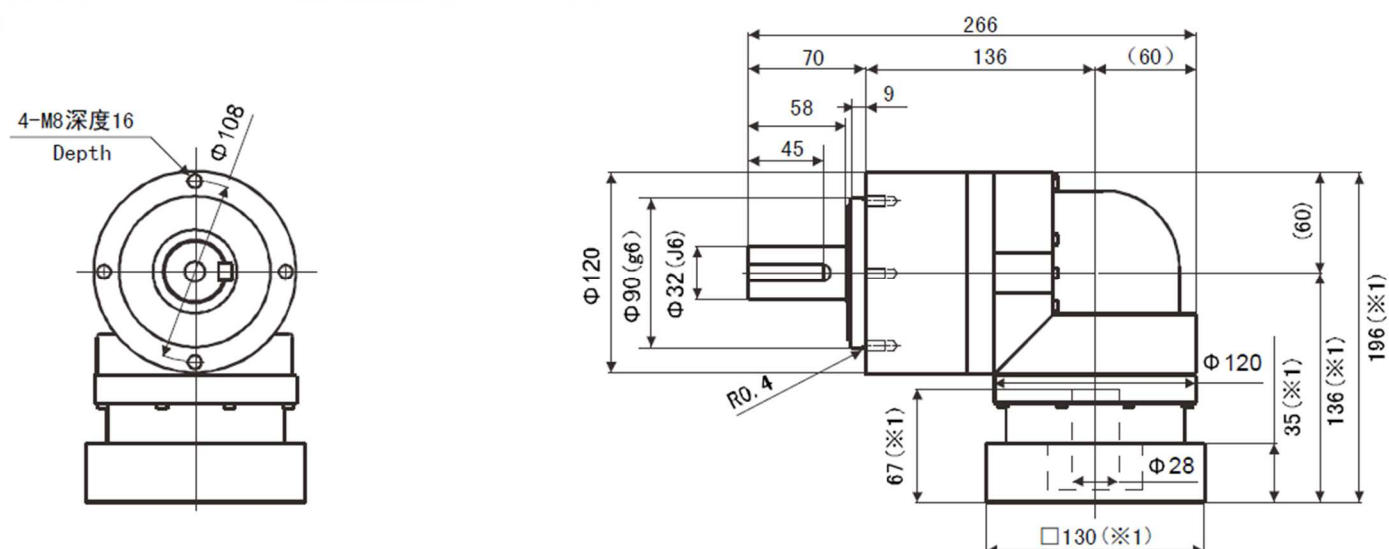
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \phi 14$) [kgcm ²]	Inertia ($\leq \phi 19$) [kgcm ²]	Inertia ($\leq \phi 28$) [kgcm ²]	Inertia ($\leq \phi 38$) [kgcm ²]
3	4300	3900	10,2	-	6,74	8,34	15,41
4	4300	3900		-	5,49	7,08	14,15
5	4300	3900		-	5,02	6,61	13,69
6	4300	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
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	-

TSL120 – Dimensions

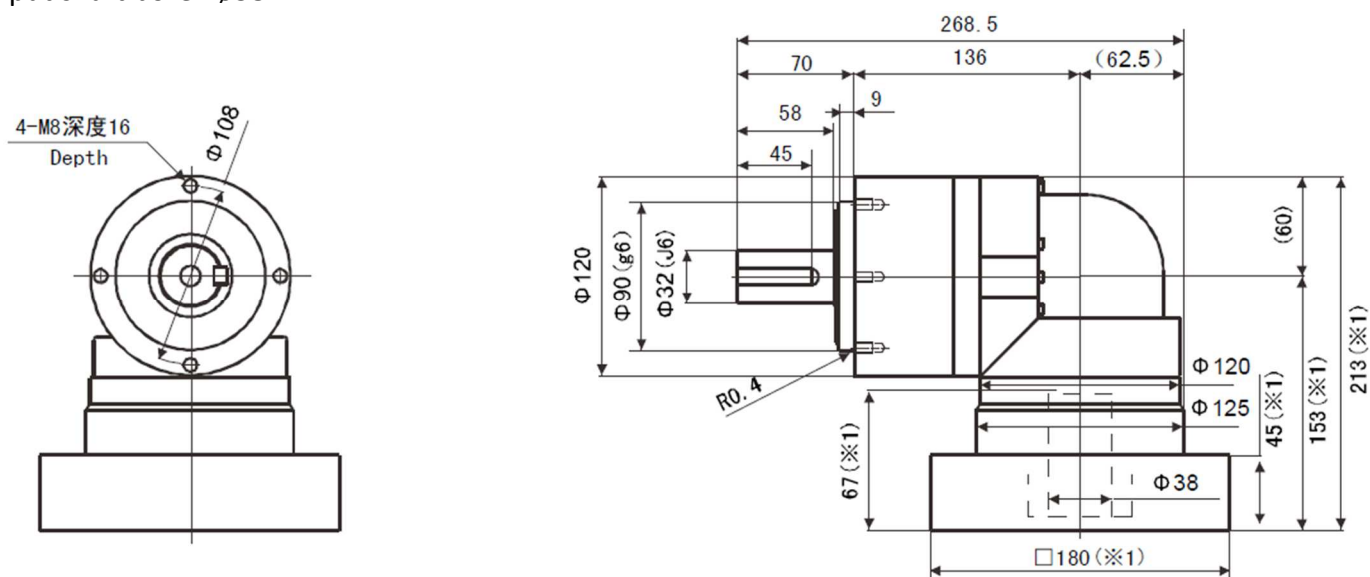
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$

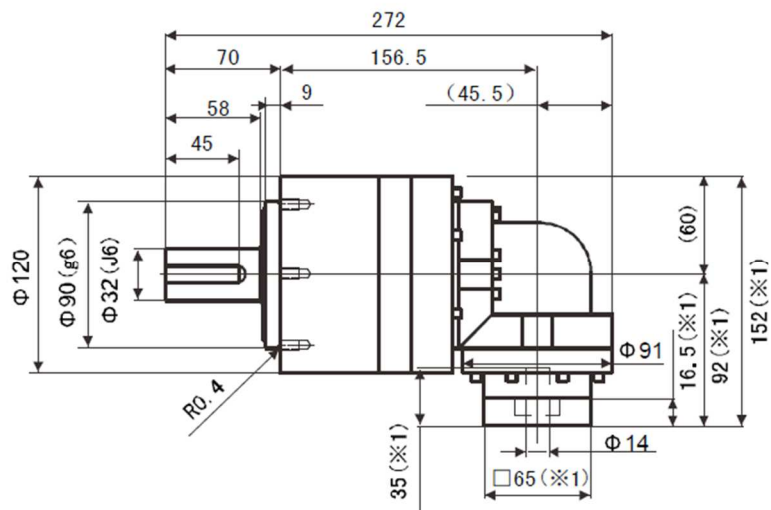
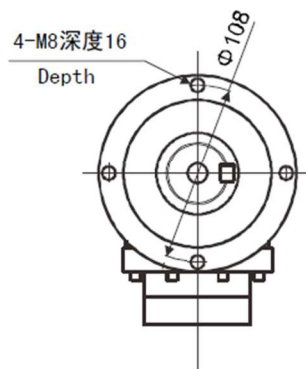


Input shaft bore $\leq \phi 38$

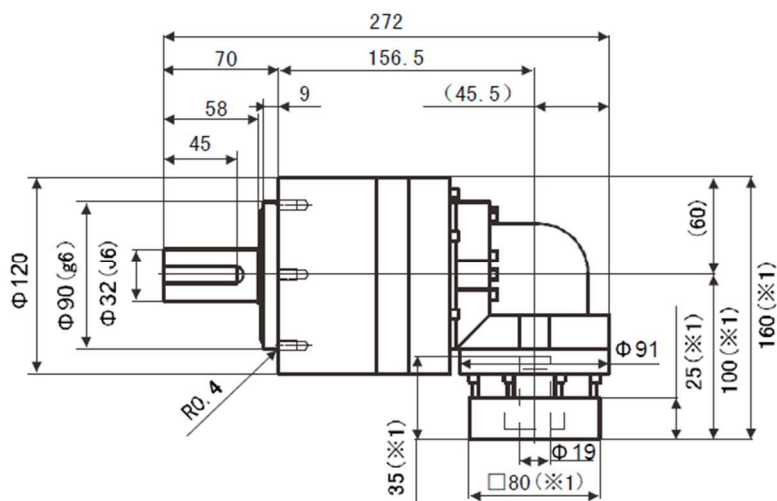
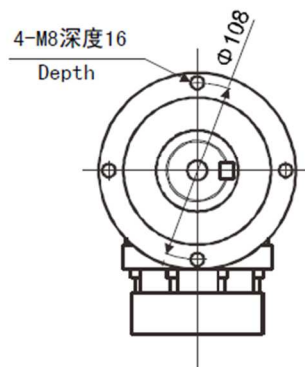


(×1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

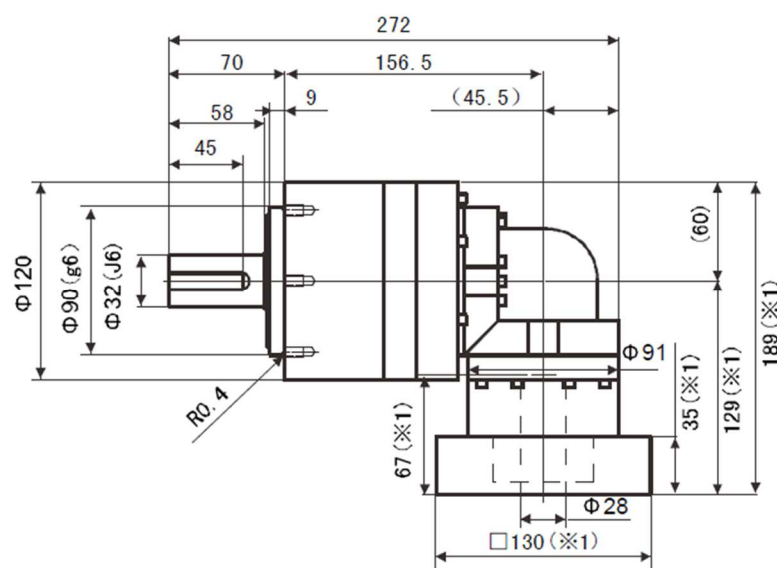
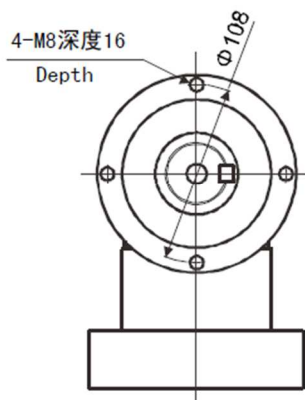
Input shaft bore $\leq \phi 14$



Input shaft bore $\leq \phi 19$

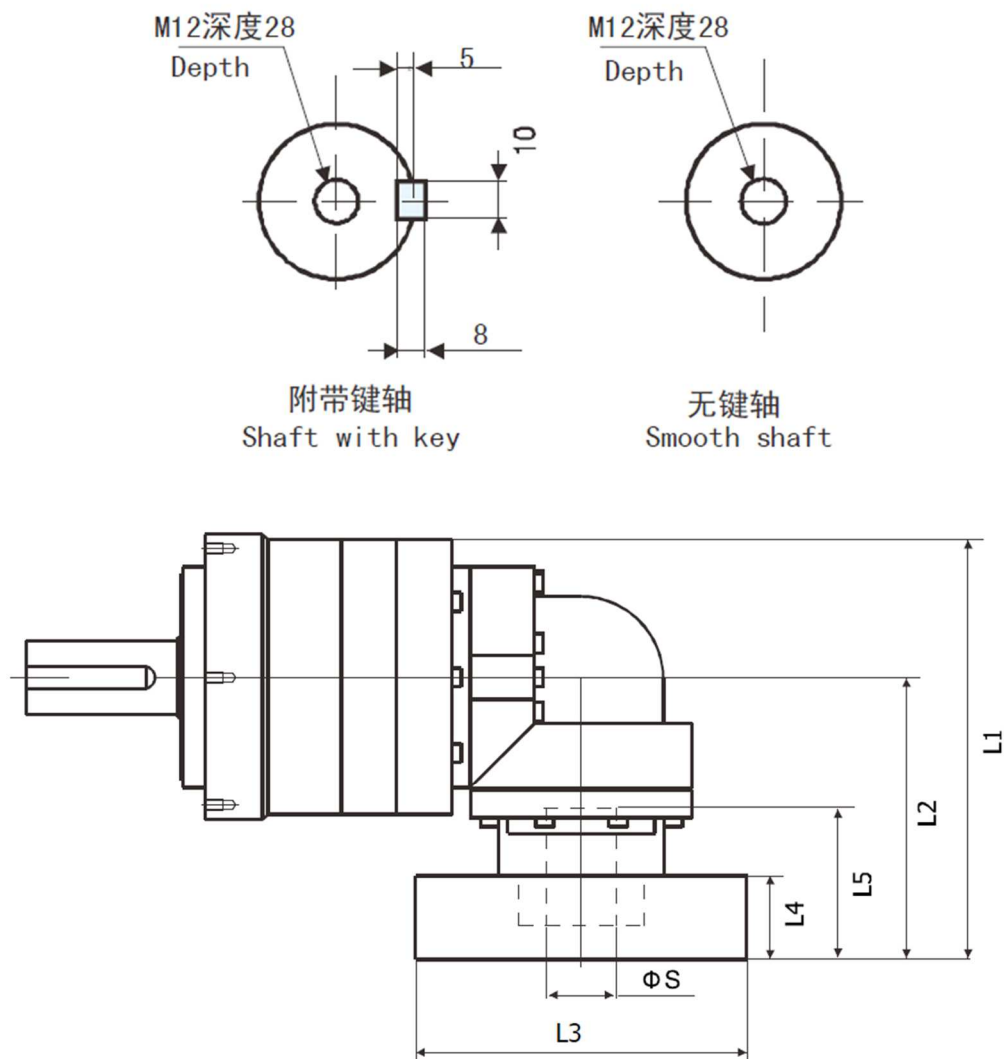


Input shaft bore $\leq \phi 28$



(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Gearbox output shaft



Model number	Adapter code	2-stage					3-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
TSL-120-□-□-14 (Input shaft bore ≤φ14)	BA·BB·BD·BE·BF·BG·BJ·BK	-	-	-	-	-	152	92	□65	16,5	35
	BC·BH·BM	-	-	-	-	-	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
TSL-120-□-□-19 (Input shaft bore ≤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
TSL-120-□-□-28 (Input shaft bore ≤ø28)	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
TSL-120-□-□-38 (Input shaft bore ≤ø38)	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	-	-	-	-	-

※ 2-stage reduction (1/3÷1/10), 3-stage reduction (1/15÷1/100)

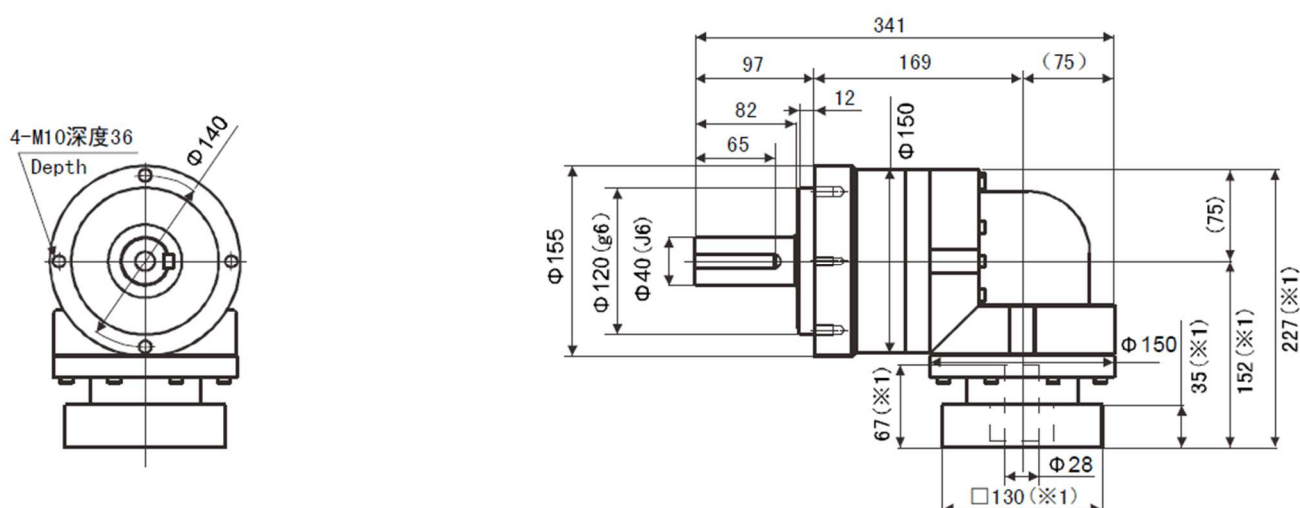
TSL155 - Parameters

Ratio	Nominal output torque [Nm]	Maximum output torque [Nm]	Emergency stop torque [Nm]	Nominal input speed [rpm]	Maximum input speed [rpm]	Permitted radial load [N]	Permitted axial load [N]
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
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

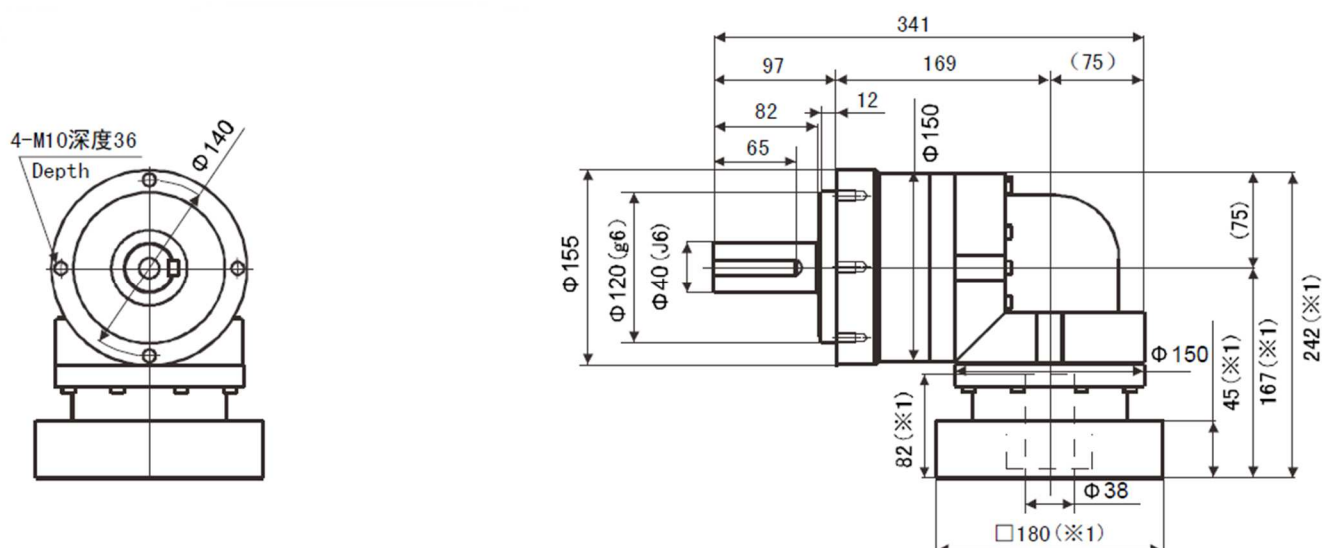
Ratio	Maximum radial load [N]	Maximum axial load [N]	Weight [kg]	Inertia ($\leq \phi 19$) [kgcm ²]	Inertia ($\leq \phi 28$) [kgcm ²]	Inertia ($\leq \phi 38$) [kgcm ²]	Inertia ($\leq \phi 48$) [kgcm ²]
3	9100	8200	19,8	-	23,13	27,50	40,73
4	9100	8200		-	18,57	22,94	36,17
5	9100	8200		-	16,91	21,28	34,51
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
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	-

SL155 – Dimensions

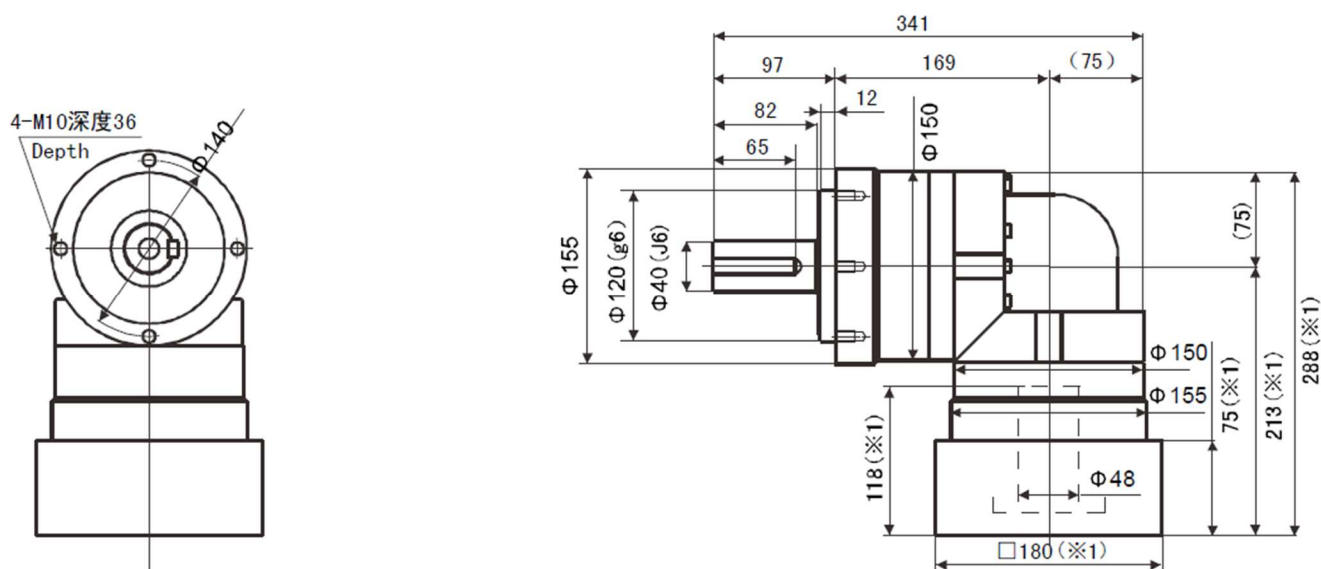
Input shaft bore $\leq \phi 28$



Input shaft bore $\leq \phi 38$

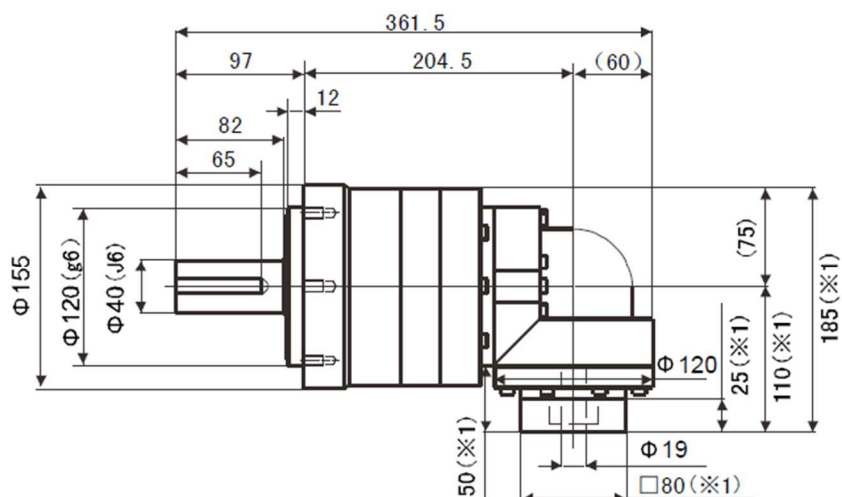
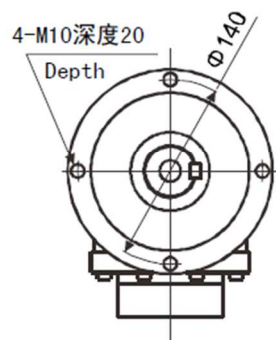


Input shaft bore $\leq \phi 48$

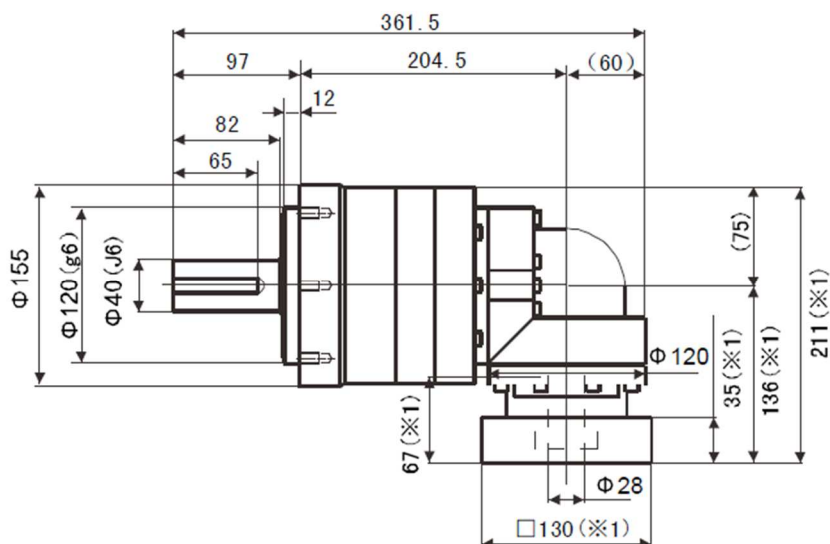
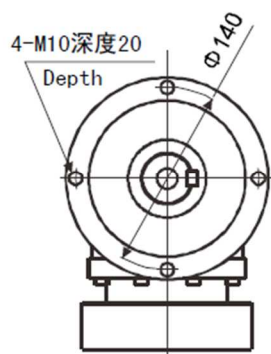


(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

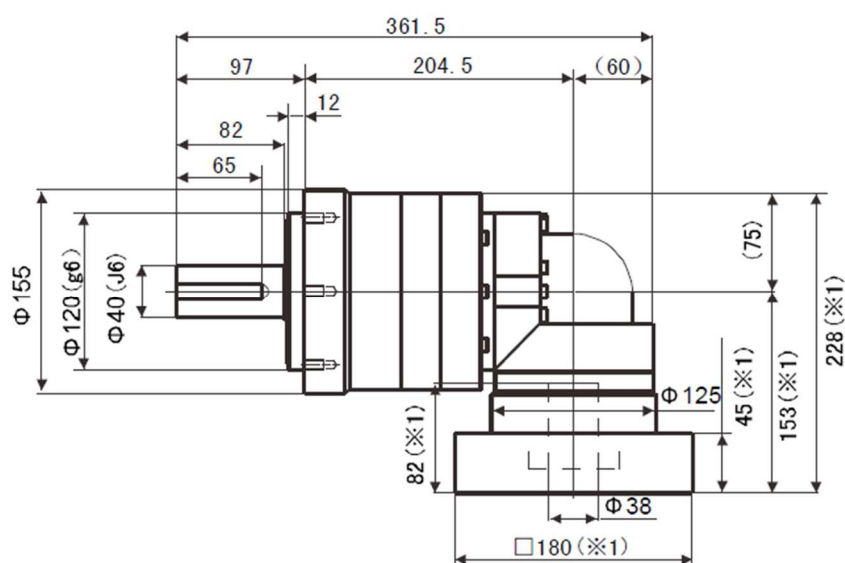
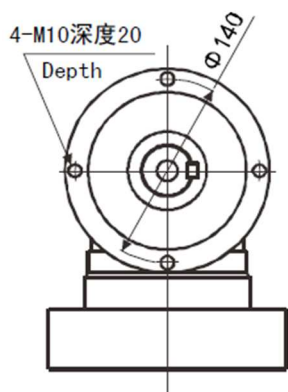
Input shaft bore $\leq \phi 19$



Input shaft bore $\leq \phi 28$

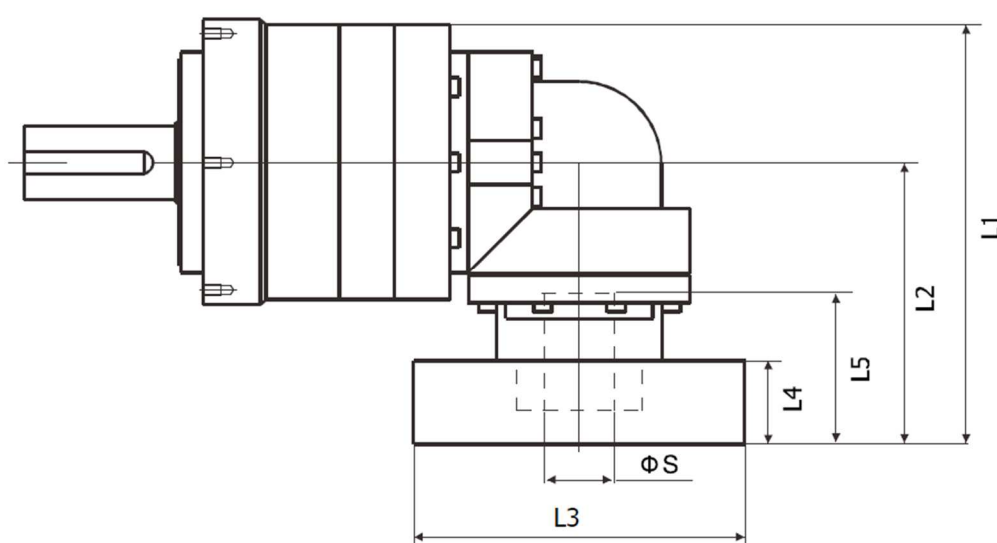
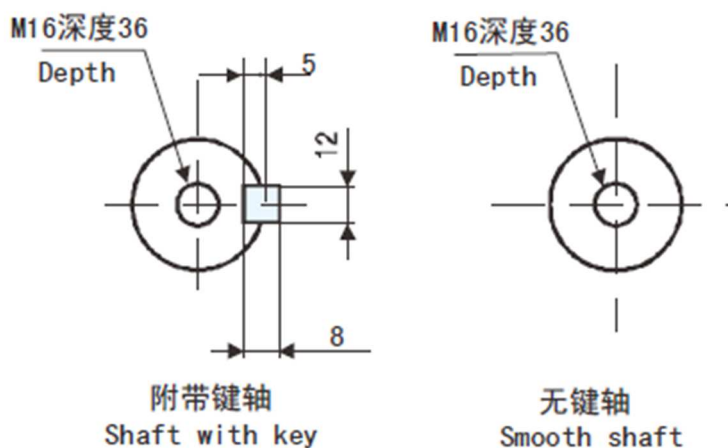


Input shaft bore $\leq \phi 38$



(※1) Length will vary depending on motor. Bushing will be inserted to adapt motor shaft.

Gearbox output shaft



Model number	Adapter code	2-stage					3-stage				
		L1	L2	L3	L4	L5	L1	L2	L3	L4	L5
TSL-155-□-□-19 (Input shaft bore ≤φ19)	DA·DB·DC	-	-	-	-	-	187,5	11 0	□80	25	50
	DD	-	-	-	-	-	197,5	12 0	□80	35	60
	DE	-	-	-	-	-	192,5	11 5	□80	30	55
	EA	-	-	-	-	-	192,5	11 5	□90	30	55
	EB	-	-	-	-	-	187,5	11 0	□90	25	50
	EC	-	-	-	-	-	197,5	12 0	□90	35	60
	FA	-	-	-	-	-	187,5	11 0	□100	25	50
	FB	-	-	-	-	-	197,5	12 0	□100	35	60
	GA·GC	-	-	-	-	-	192,5	11 5	□115	30	55
	GB·GD	-	-	-	-	-	187,5	11 0	□115	25	50
	HA	-	-	-	-	-	187,5	11 0	□130	25	50
	HB	-	-	-	-	-	202,5	12 5	□130	40	65
	HC·HD·HE	-	-	-	-	-	192,5	11 5	□130	30	55
TSL-155-□-□-28 (Input shaft bore ≤φ28)	FA·FB·FC	229,5	152	□100	35	67	213,5	13 6	□100	35	67
	GA·GB·GC·GD·GE·GF·GG	229,5	152	□115	35	67	213,5	13 6	□115	35	67
	HA·HC·HD	229,5	152	□130	35	67	213,5	13 6	□130	35	67
	HB	239,5	162	□130	45	77	223,5	14 6	□130	45	77
	JA·JB·JC	229,5	152	□150	35	67	213,5	13 6	□150	35	67
	KA·KB	229,5	152	□180	35	67	213,5	13 6	□180	35	67
	LA	229,5	152	□200	35	67	213,5	13 6	□200	35	67
	MA	229,5	152	□220	35	67	213,5	13 6	□220	35	67

TSL-155-□-□-38 (Input shaft bore ≤φ38)	HA	244,5	167	□130	45	82	230,5	15 3	□130	45	82
	HB	239,5	162	□130	40	77	225,5	14 8	□130	40	77
	JA	244,5	167	□150	45	82	230,5	15 3	□150	45	82
	KA·KB·KC	244,5	167	□180	45	82	230,5	15 3	□180	45	82
	LA	244,5	167	□200	45	82	230,5	15 3	□200	45	82
	LB	244,5	177	□200	55	92	240,5	16 3	□200	55	92
	MA·MB	244,5	167	□220	45	82	230,5	15 3	□220	45	82
	NA	244,5	167	□250	45	82	230,5	15 3	□250	45	82
TSL-155-□-□-48 (Input shaft bore ≤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	-	-	-	-	-

※ 2-stage reduction (1/3÷1/10), 3-stage reduction (1/15÷1/100)