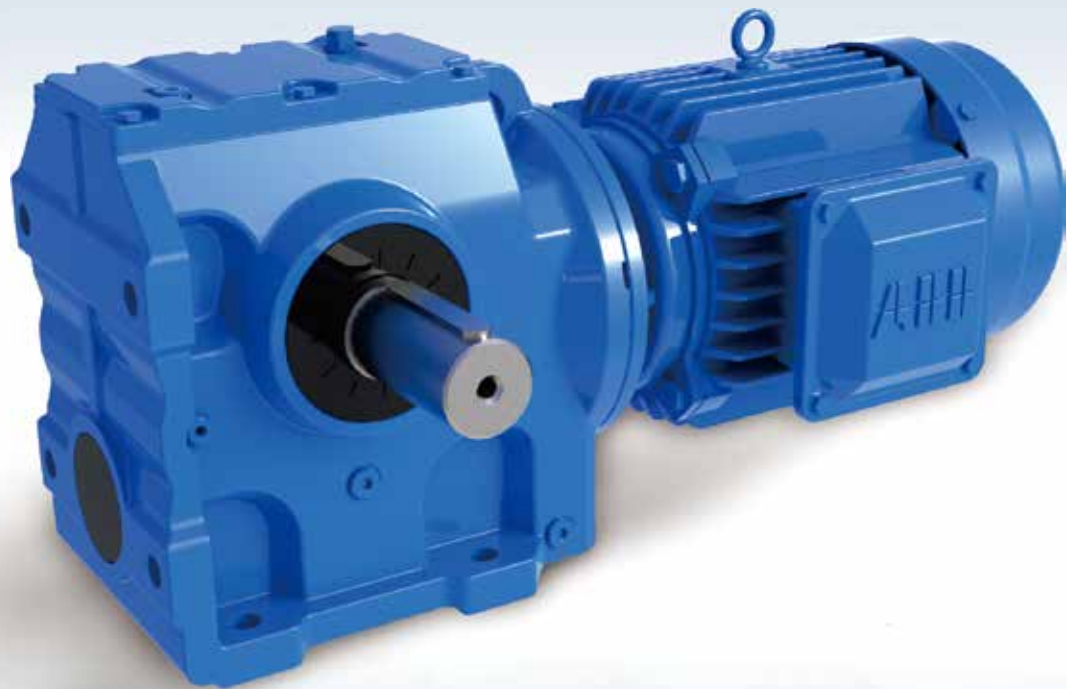


REDSUN



S SERIES HELICAL-WORM GEAR UNITS

08 / 2015

Note!

1. The structure scheme, appearance diagram and other attached diagrams in sample are examples, there is no strict proportion requirement. If you need exact dimension of certain types, please contact our sales dept.. (The unmarked dimension units are mm).
2. Gear unit has been tested before delivered, users should add lubrication oil before running.
3. We can only refer to the marked oil in the mannul. Actual oil filling level should be the same with the mark on oil immersion lens.
4. Lubrication oil viscosity should be selected according to working conditions and ambient temperature.
5. To prevent accidents, all the rotation parts should be added with protective covers according to safety regulation of the nation and region.
6. The solid shaft input structure gear unit is not equipped with any motor.
7. Motors of Y series are supplied with protection grade of IP54 unless otherwise specified.
8. Unless otherwise specified, you will receive the terminal box at 0°.



Guidelines for the selection

- ❑ Gear units are designed under the circumstance of steady load, stated operating time per day and a few starting times, but the practical condition will be not as perfect as the designed circumstance. so we must confirm driven machine factor f_1 , prime mover factor f_2 , starting factor f_3 according to actual load type, operating time, starting frequency. let it less than or equal to the service factor f_b of selection table, viz $f_1 \times f_2 \times f_3 \leq f_b$. the needed torque of service machine multiply the service factor ($f_1 \times f_2 \times f_3$) should less than or equal to gear units' permissible torque.

$$\text{Viz } T_N \geq T_2 \times f_1 \times f_2 \times f_3$$

f_1 — Driven machine factor(See table 1)

f_2 — Prime mover factor(See table 2)

f_3 — Start factor(See table 3)

T_2 — The torque required by driven machine

T_N — Gear unit permissible torque(See page 03)

- ❑ We accept the orders of products of special specification, and provide our customer with exclusive design service.
- ❑ Along with the technology advanced etc., the product of the manual of RED SUN will be changed, please forgive.



Service factor:

Table 1				Driven machine factor				f1		
Driven equipment	Daily operating time with load(hour)			Driven equipment	Daily operating time with load(hour)					
	≤ 2	> 2-10	> 10		≤ 2	> 2-10	> 10			
Sewage treatment				Conveying machine						
Concentrator(Central Transmission)	-	-	1.2	Bucket conveyor	-	1.4	1.5			
Compressed filter	1.0	1.3	1.5	Winch	1.4	1.6	1.6			
Flocculator	0.8	1.0	1.3	Hoist	-	1.5	1.8			
Aerator	-	1.8	2.0	Belt conveyor≤150kW	1.0	1.2	1.3			
Collector	1.0	1.2	1.3	Belt conveyor≥150kW	1.1	1.3	1.4			
Vertical,rotary group				Elevators for goods*	-	1.2	1.5			
Blended collector	1.0	1.3	1.5	Elevators for customers*	-	1.5	1.8			
Concentrator	-	1.1	1.3	Scraper conveyor	-	1.2	1.5			
Screw pump	-	1.3	1.5	Automatic ladder	1.0	1.2	1.4			
Water wheel machine	-	-	2.0	Rail traveling mechanism	-	1.5	-			
Pump				Various frequency device	-	1.8	2.0			
Centrifugal pump	1.0	1.2	1.3	Reciprocating compressor	-	1.8	1.9			
Volume-down pump				Hoisting mechanism**						
1Piston	1.3	1.4	1.8	Rotary mechanism*		1.4	1.8			
>1Piston	1.2	1.4	1.5	Pitching mechanism		1.1	1.4			
Dredge				Traveling mechanism		1.6	2.0			
Bucket conveyor	-	1.6	1.6	Lifting mechanism		1.1	1.4			
Unloading device	-	1.3	1.5	Jibcrane		1.2	1.6			
Carterpillar traveling mechanism	1.2	1.6	1.8	Cooling tower						
Bucket digger				Cooling tower fan	-	-	2.0			
Be used for picking up	-	1.7	1.7	Fan (Shaft flow and centrifugal type)	-	1.4	1.5			
Be used for rough materials	-	2.2	2.2	Food industry						
Chopper	-	2.2	2.2	Sugar production						
Traveling mechanism*	-	1.4	1.8	Sugar-cane cutter*	-	-	1.7			
Plate blender	-	1.0	1.0	Sugar crane mill						
Chemical industry				Beet sugar production	-	-	1.7			
Extruder	-	-	1.6	Beet masher	-	-	1.2			
Paste mixer	-	1.8	1.8	Squeeze machine, mechanical refrigerator, cooking machine	-	-	1.4			
Rubber calendar	-	1.5	1.5	Beet cleaner	-	-	1.5			
Cooling cylinder	-	1.3	1.4	Beet chopper						
Material mixer,be used for				Paper-making machinery						
Uniform medium	1.0	1.3	1.4	Various kinds***	-	1.8	2.0			
Non-uniform medium	1.4	1.6	1.7	Pulper driving device	Supply goods according to customer requirements					
Blender,be used for				Centrifugal compressor	-	1.4	1.5			
Uniform density medium	1.0	1.3	1.5	Rope way cable car						
Un-uniformed medium	1.2	1.4	1.6	Delivery ropeway	-	1.3	1.4			
Un-uniformed gas absorption	1.4	1.6	1.8	Cableway of shuttle system	-	1.6	1.8			
Oven	1.0	1.3	1.5	T rod elevator	-	1.3	1.4			
Centrifugal machine	1.0	1.2	1.3	Continuous cableway	-	1.4	1.6			
Metal processing equipment				Cement industry						
Plate turnover	1.0	1.0	1.2	Concrete blender	-	1.5	1.5			
Steel pushing device	1.0	1.2	1.2	Crusher*	-	1.2	1.4			
Winding machine	-	1.6	1.6	Rotary kiln	-	-	2.0			
Cooling bed transverse frame	-	1.5	1.5	Tube mill	-	-	2.0			
Roller leveler	-	1.6	1.6	Powder concentrator	-	1.6	1.6			
Roller path				Roller press	-	-	2.0			
Continuous	-	1.5	1.5							
Interval	-	2.0	2.0							
Reversing mill	-	1.8	1.8							
Cutter										
Continuous*	-	1.5	1.5							
Crank type*	1.0	1.0	1.0							
Continuous casting driving device	-	1.4	1.4							
Rolling mill										
Reversing cogging mill	-	2.5	2.5							
Reversing plate slab mill	-	2.5	2.5							
Reversing wire mill	-	1.8	1.8							
Reversing thin plate mill	-	2.0	2.0							
Reversing middle thickness plate mill	-	1.8	1.8							
Roll gap adjusting and driving device	0.9	1.0	-							



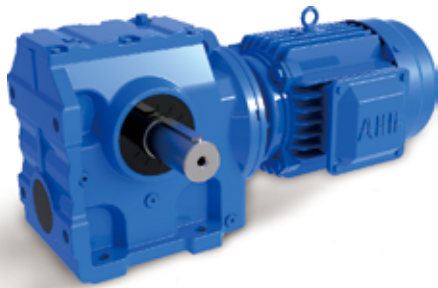
Table 1				Driven machine factor			f ₁		
Driven equipment	Daily running time with load(hour)			Driven equipment	Daily running time with load(hour)				
	≤ 2	> 2-10	> 10		≤ 2	> 2-10	> 10		
Wood industry				Plastics industry					
Barking machine				Miller, compound grinding	1.25	1.25	1.25		
Feed drive	1.25	1.25	1.50	Coating, film					
Main drive	1.75	1.75	1.75	Conveying pipe, Pulling rod, thin type					
Conveyor				Pipe type, Pile drawer	1.25	1.25	1.50		
Burner, repeating saw	1.25	1.25	1.50	Continuous mixer, Calender	1.50	1.50	1.50		
Rotary tower, transit transport	1.50	1.50	1.50	Blow film, to plasticizing					
Main loading, heavy loading	1.50	1.50	1.50	Batch mixer	1.75	1.75	1.75		
Main original wood, land base	1.75	1.75	2.00						
Conveying chain				Rubber industry					
Floor	1.50	1.50	1.50	Continuous strong inner mixer, Mix roller,					
Green-wood	1.50	1.50	1.75	Batch feeding mixer (except for double sticks)	1.50	1.50	1.50		
Cutting Chain				Refiner, calender					
Saw transmission, traction	1.50	1.50	1.75	Double roller clamp feeding and mixed miller	1.25	1.25	1.50		
Peeling barrel	1.75	1.75	2.00						
Feed drive				Batch strong inner mixer,					
Edging, wood trimmer				Double stick single groove grain stick	1.75	1.75	1.75		
Planer feed, assorting table,	1.25	1.25	1.50	Miller heater, double sticks					
Automatic incline lifting				Batch feeding mixer					
Multi-shaft feed, raw wood	1.75	1.75	1.75	Wave stick miller	2.00	2.00	2.00		
Transportation and rotation									
Transportation				Generator and exciter	1.00	1.00	1.25		
Charging tray									
Plywood lathe drive	1.50	1.50	1.75	Hammer crusher	1.75	1.75	2.00		
Conveying chain, Lifting									
				Sand miller	1.25	1.25	1.50		

⚠ Note: Determine required power P₂ of the driven equipment:
 *)Determine rated power according to maximum torque.
 **)It's necessary to check thermal capacity.

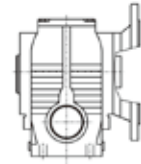
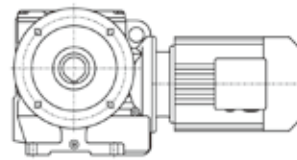
Prime mover factor

Table 2	Factor for prime mover	f ₂
Electric motors, hydraulic motors, turbines		1.0
Piston engines 4-6 cylinders		1.25
Piston engines 1-3 cylinders		1.5

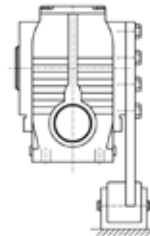
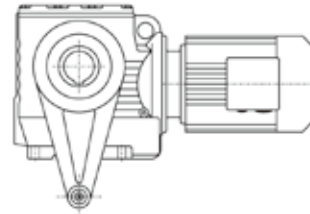
Table 3	Start factor				f ₃
	f ₁ x f ₂	1	1.25	2-	≥ 3
Starts per hour		-1.75	2.75		
≤ 5		1	1	1	1
6-25		1.2	1.12	1.06	1
26-60		1.3	1.2	1.12	1.06
61-180		1.5	1.3	1.2	1.12
> 180		1.7	1.5	1.3	1.2



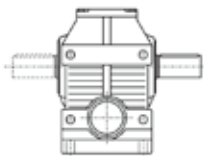
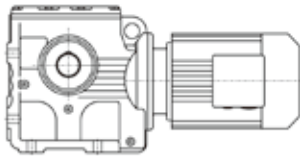
S series gear units are available in the following designs:



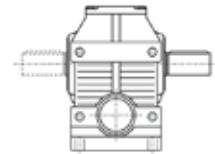
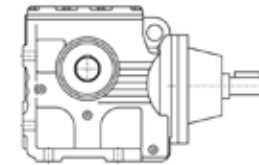
SAF...Y..
Flange-mounted hollow shaft helical-worm gear units



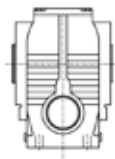
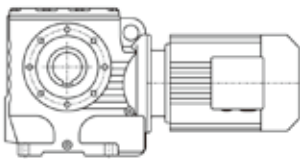
SAT...Y..
Torque-arm-mounted hollow shaft helical-worm gear units



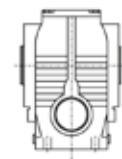
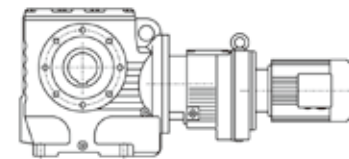
S..Y..
Foot-mounted solid shaft helical-worm gear units



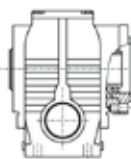
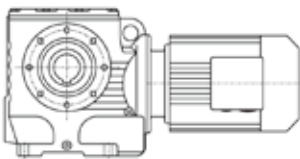
S(SF, SA, SAF, SAZ) S...
Helical-worm gear units with solid shaft input



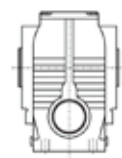
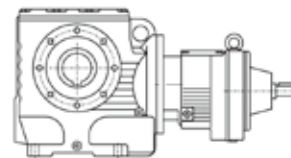
SA...Y...
Hollow shaft helical-worm gear units



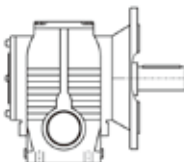
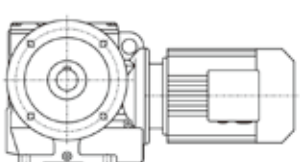
SA (S, SF, SAF, SAZ) ...R...Y...
Combi-type helical-worm gear units



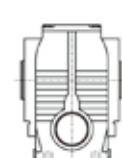
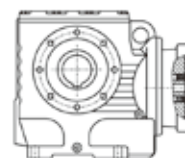
SAZ...Y...
Short-flange-mounted hollow shaft helical-worm gear units



SA (S, SF, SAF, SAZ) S...R...
Combi-type helical-worm gear units with solid shaft input



SF...Y..
Flange-mounted solid shaft helical-worm gear units

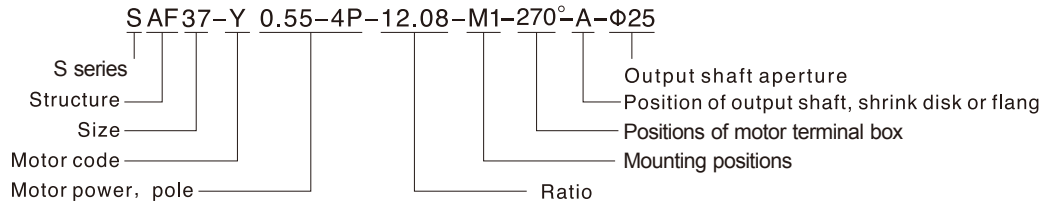


SA(S, SF, SAF, SAZ) ...Y...
Customers provide the motor by themselves need connected flange.

S



Type Designations:



R series:
Helical-worm gear units

Structure:	
Foot-mounted solid shaft	(-)
Hollow shaft	A
Flange-mounted solid shaft	F
Flange-mounted hollow shaft	AF
Short-flange-mounted hollow shaft	AZ
Torque-arm-mounted hollow shaft	AT
Foot-mounted solid shaft with solid shaft input	S
Hollow shaft with solid shaft input	AS
Flange-mounted solid shaft with solid shaft input	FS
Flange-mounted hollow shaft with solid shaft input	AFS
*Hollow shaft with shrink disk	H..(H, HF, HZ, HT)

Size:
(see selection table)

Motor code:	
Common motor	Y(Y2)
Flameproof motor	B
Direct current motor	Z
Brake motor	YEJ
Multi-speed motor	D
Variable frequency motor	YVP
Electromagnetic variable speed motor	YCT
Metallurgy hoisting motor	R
Transduction braking motor	YVPJ
Roller way	G

Motor power, pole :
See selection table

Ratio:
See selection table

Mounting positions:
M1, M2, M3, M4, M5, M6(See page 03)

Positions of motor terminal box:
0°, 90°, 180°, 270°(See page 03)

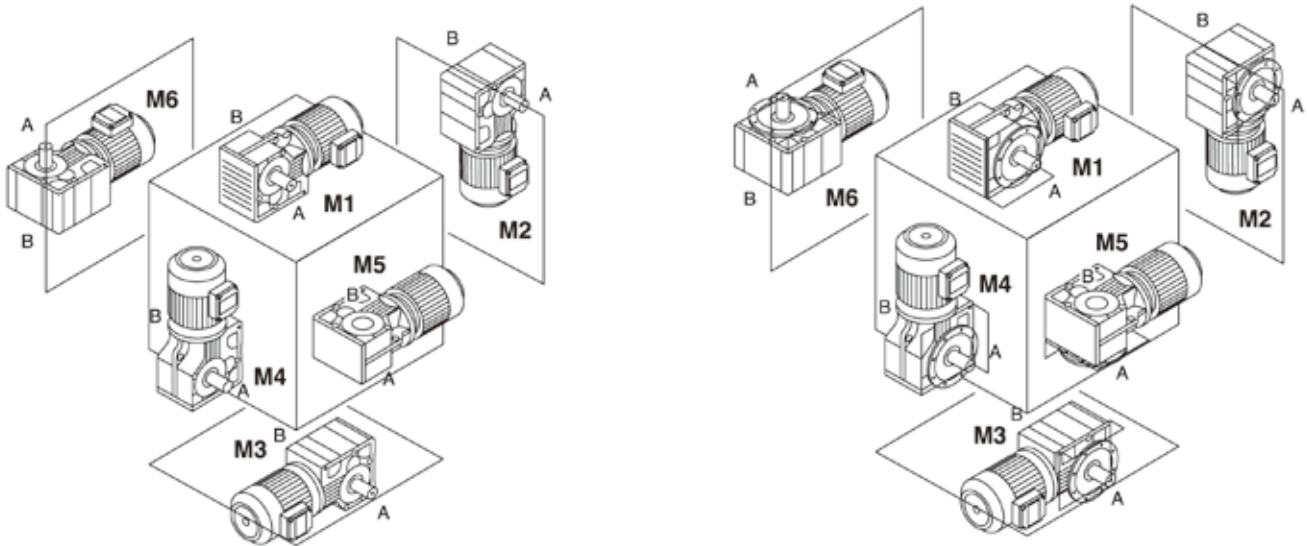
Output shaft \ flange \ shrink disc directions:
Viewing from motor end: left side = A,
right side = B, both side = AB(See mounting positions)

Output shaft aperture:
See the chart of mounting dimension (It will be omitted when applying with solid output shaft)

*Dimensions of hollow shaft with shrink disc, see page 22-23.

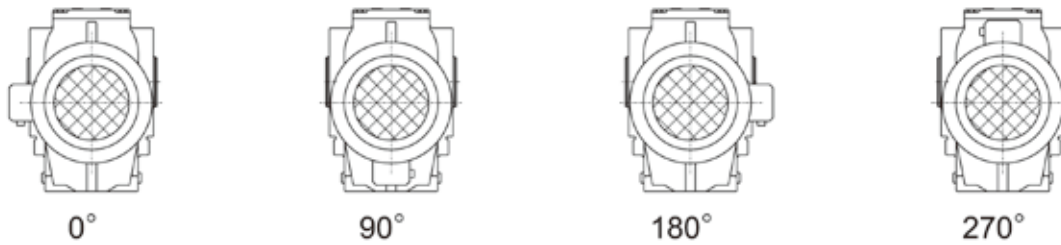


Mounting positions



S

Positions of motor terminal box



Input power rating and permissible torque

Size	37	47	57	67	77	87	97
Structure	S SA SF SAF SAT SAZ						
Input power rating (kW)	0.18~0.75	0.18~1.5	0.18~3	0.25~5.5	0.55~7.5	0.75~15	1.5~22
Ratio	10.27~165.71	11.46~244.74	10.78~196.21	11.55~227.20	9.96~241.09	11.83~223.26	12.75~230.48
Permissible torque (n.m)	90	170	300	520	1270	2280	4000



Gear unit weight

Size	37	47	57	67	77	87	97
Weight (kgs)	7	10	14	26	50	100	170

The marked weight is average value, it has no constraint force.

Oil

S...:

Size	Oil level (L)					
	M1	M2	M3 1)	M4	M5	M6
S37	0.25	0.4	0.5	0.6	0.4	0.4
S47	0.35	0.8	0.7	1.1	0.8	0.8
S57	0.5	1.2	1	1.5	1.3	1.3
S67	1	2.0	2.2/3.1	3.2	2.6	2.6
S77	1.9	4.2	3.7/5.4	6	4.4	4.4
S87	3.3	8.1	6.9/10.4	12	8.4	8.4
S97	6.8	15	13.4/18	22.5	17	17

SF...:

Size	Oil level (L)					
	M1	M2	M3 1)	M4	M5	M6
SF37	0.25	0.4	0.5	0.6	0.4	0.4
SF47	0.4	0.9	0.9	1.2	1.0	1.0
SF57	0.5	1.2	1	1.6	1.4	1.4
SF67	1	2.2	2.3/3	3.2	2.7	2.7
SF77	1.9	4.1	3.9/5.8	6.5	4.9	4.9
SF87	3.8	8	7.1/10.1	12	9.1	9.1
SF97	7.4	15	13.8/18.8	23.6	18	18

SA..., SAF..., SAZ...:

Size	Oil level (L)					
	M1	M2	M3 1)	M4	M5	M6
S..37	0.25	0.4	0.5	0.6	0.4	0.4
S..47	0.4	0.8	0.7	1.1	0.8	0.8
S..57	0.5	1.1	1	1.6	1.2	1.2
S..67	1	2.0	1.8/2.6	2.9	2.5	2.5
S..77	1.8	3.9	3.6/5	5.9	4.5	4.5
S..87	3.8	7.4	6/8.7	11.2	8	8
S..97	7	14	11.4/16	21	15.7	15.7

Note: Combi-type gear units must be filled with the larger oil volume.



Output speed	Output torque	Ratio	Service factor	Type	Pole	Output speed	Output torque	Ratio	Service factor	Type	Pole
r/min	Nm	i	f _B	Type	p	r/min	Nm	i	f _B	Type	p
0.18kW						0.18kW					
0.30	2579	4606	0.83			9.5	109	146.84	1.47		
0.36	2563	3872	0.84			10	102	137.25	1.57		
0.40	2515	3475	0.85	S 87R57	4	12	88	118.64	1.82	S 47	4
0.48	2394	2905	0.90	SF 87R57	4	14	75	100.80	2.14	SF 47	4
0.54	2239	2586	0.96	SA 87R57	4	15	67	90.00	2.40	SA 47	4
0.60	2021	2335	1.06	SAF87R57	4	18	57	76.88	2.80	SAF47	4
0.68	1778	2054	1.21			19	53	72.00	2.99		
0.76	1579	1824	1.36			23	45	60.65	3.56		
0.85	1412	1631	1.52								
0.99	1215	1404	0.98			9.1	113	152.00	0.80		
1.1	1078	1245	1.11			11	96	129.41	0.89		
1.3	952	1100	1.25	S 77R37	4	12	83	111.58	1.03		
1.5	826	954	1.45	SF 77R37	4	13	77	104.00	1.10		
1.7	725	837	1.65	SA 77R37	4	15	67	90.91	1.26		
1.9	618	714	1.93	SAF77R37	4	16	63	85.22	1.34		
2.2	551	637	2.2			18	56	75.20	1.52		
2.4	497	574	2.4			21	49	66.67	1.72		
						25	45	56.67	1.89		
						27	42	52.00	2.02	S 37	4
						31	39	45.45	2.16	SF 37	4
						33	37	42.61	2.30	SA 37	4
						37	33	37.60	2.61	SAF37	4
						42	29	33.33	2.95		
						49	25	28.33	3.47		
						59	23	23.46	3.66		
						74	19	18.85	4.56		
						84	16	16.48	5.21		
						90	15	15.45	5.56		
						102	13	13.63	6.30		
						115	12	12.08	7.11		
						135	10	10.27	8.37		
1.7	600	809	0.81			0.25kW					
2.0	532	712	0.92	S 67R37	4	0.48	2495	2905	0.86		
2.3	528	615	0.93	SF 67R37	4	0.54	2470	2586	0.87	S 87R57	4
2.6	470	543	1.04	SA 67R37	4	0.60	2406	2335	0.89	SF 87R57	4
3.0	406	469	1.20	SAF67R37	4	0.68	2221	2054	0.96	SA 87R57	4
3.3	367	424	1.33			0.76	2193	1824	0.98	SAF87R57	4
3.8	316	365	1.55			0.85	1961	1631	1.09		
						1.5	1118	930	1.92		
3.2	336	438	0.87			1.5	1147	954	1.04		
3.6	325	388	0.84			1.7	1006	837	1.19	S 77R37	4
4.1	291	336	0.97	S 57R17	4	1.9	858	714	1.39	SF 77R37	4
4.7	255	294	1.11	SF 57R17	4	2.2	766	637	1.56	SA 77R37	4
5.2	233	269	1.21	SA 57R17	4	2.4	690	574	1.73	SAF77R37	4
6.1	198	229	1.42	SAF57R17	4	2.8	600	499	1.99		
6.8	177	204	1.60			2.6	564	543	0.87		
7.4	162	187	1.74			3.0	560	469	0.87	S 67R37	4
4.7	198	294	0.81	S 47R17	4	3.3	510	424	0.96	SF 67R37	4
5.4	191	257	0.84	SF 47R17	4	3.8	439	365	1.11	SA 67R37	4
6.1	182	229	0.88	SA 47R17	4	4.4	384	319	1.27	SAF67R37	4
7.0	173	200	0.92	SAF47R17	4	4.9	338	281	1.45		
						4.7	353	294	0.80		
3.7	276	227.20	1.77	S 67	6	5.2	323	269	0.87	S 57R17	4
4.1	249	205.11	1.96	SF 67	6	6.1	275	229	1.02	SF 57R17	4
4.7	219	180.46	2.23	SA 67	6	6.8	245	204	1.15	SA 57R17	4
5.0	207	170.40	2.36	SAF67	6	7.4	225	187	1.25	SAF57R17	4
						8.4	198	165	1.42		
4.3	238	196.21	1.18	S 57	6	11	158	131	1.79		
4.7	219	180.40	1.29	SF 57	6	2.8	505	227.20	0.97		
5.5	187	154.35	1.51	SA 57	6	3.1	456	205.11	1.07	S 67	8
6.4	162	133.79	1.74	SAF57	6	3.6	401	180.46	1.22	SF 67	8
						3.8	378	170.40	1.29	SA 67	8
7.1	146	196.21	1.94	S 57	4	4.5	320	144.00	1.53	SAF67	8
7.7	134	180.40	2.11	SF 57	4						
9.0	115	154.35	2.46	SA 57	4						
10.4	99	133.79	2.84	SAF57	4						
5.1	204	168.00	0.81								
5.7	182	150.00	0.88	S 47	6						
5.8	178	146.84	0.90	SF 47	6						
6.2	167	137.25	0.96	SA 47	6						
7.2	144	118.64	1.11	SAF47	6						
5.7	182	244.74	0.88								
6.1	170	228.75	0.94	S 47	4						
7.0	147	197.73	1.09	SF 47	4						
8.3	125	168.00	1.28	SA 47	4						
9.3	111	150.00	1.44	SAF47	4						

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Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p	Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p
0.25kW						0.37kW					
3.7	383	227.20	1.28			0.68	2611	2054	0.82	S 87R57	4
4.1	346	205.11	1.41	S 67	6	0.76	2488	1824	0.86	SF 87R57	4
4.7	304	180.46	1.61	SF 67	6	0.85	2318	1631	0.92	SA 87R57	4
5.0	287	170.40	1.70	SA 67	6	1.5	1655	930	1.29	SAF87R57	4
5.9	243	144.00	2.01	SAF67	6	1.7	1479	831	1.45		
6.1	234	227.20	2.09			1.9	1271	714	0.94		
6.8	211	205.11	2.31			2.2	1134	637	1.05	S 77R37	4
7.7	186	180.46	2.63	S 67	4	2.4	1021	574	1.17	SF 77R37	4
8.2	176	170.40	2.78	SF 67	4	2.8	888	499	1.34	SA 77R37	4
9.7	148	144.00	3.30	SA 67	4	3.2	779	438	1.53	SAF77R37	4
11	134	130.00	3.65	SAF67	4	3.6	692	389	1.72		
12	118	114.38	4.15			3.8	557	365	0.88	S 67R37	4
13	111	108.00	4.39			4.4	568	319	0.92	SF 67R37	4
4.3	331	196.21	0.85	S 57	6	4.9	500	281	0.98	SA 67R37	4
4.7	304	180.40	0.93	SF 57	6	5.7	438	246	1.12	SAF67R37	4
5.5	260	154.35	1.08	SA 57	6						
6.4	225	133.79	1.25	SAF57	6	3.0	702	222.00	3.03	S 87	8
6.8	211	125.05	1.34			3.4	627	198.00	3.42	SF 87	8
7.1	202	196.21	1.39			4.0	527	166.43	4.07	SA 87	8
7.7	186	180.40	1.52							SAF87	8
9.0	159	154.35	1.77	S 57	4	2.8	763	241.09	1.57		
10	138	133.79	2.05	SF 57	4	3.3	652	206.04	1.83	S 77	8
11	129	125.05	2.19	SA 57	4	3.5	598	188.89	2.00	SF 77	8
13	111	108.09	2.53	SAF57	4	4.0	524	165.75	2.28	SA 77	8
15	95	91.84	2.98			4.3	497	157.08	2.40	SAF77	8
17	85	82.00	3.34								
7.0	204	197.73	0.81			3.9	544	227.20	0.90	S 67	6
8.3	173	168.00	0.92			4.3	491	205.11	1.00	SF 67	6
9.3	155	150.00	1.04			4.9	432	180.46	1.13	SA 67	6
9.5	151	146.84	1.06			5.2	408	170.40	1.20	SAF67	6
10	141	137.25	1.13			6.1	345	144.00	1.42		
12	122	118.64	1.31	S 47	4	6.1	347	227.20	1.41		
14	104	100.80	1.54	SF 47	4	6.8	313	205.11	1.56		
15	93	90.00	1.73	SA 47	4	7.7	275	180.46	1.78	S 67	4
18	79	76.88	2.02	SAF47	4	8.2	260	170.40	1.88	SF 67	4
19	74	72.00	2.16			9.7	220	144.00	2.23	SA 67	4
23	71	60.65	2.24			11	198	130.00	2.47	SAF67	4
24	63	59.32	2.56			12	174	114.38	2.80		
28	61	50.40	2.64								
31	54	45.00	2.96			5.7	370	154.35	0.81		
13	107	104.00	0.81			6.6	321	133.79	0.88	S 57	6
15	94	90.91	0.91			7.1	300	125.05	0.94	SF 57	6
16	88	85.22	0.97			8.2	259	108.09	1.09	SA 57	6
18	77	75.20	1.10			9.6	220	91.84	1.28	SAF57	6
21	69	66.67	1.24			10.8	196	82.00	1.44		
25	63	56.67	1.36								
27	58	52.00	1.46			7.1	299	196.21	0.94		
31	55	45.45	1.56			7.7	275	180.40	1.02		
33	51	42.61	1.66			9.0	235	154.35	1.20		
37	45	37.60	1.88	S 37	4	10	204	133.79	1.38	S 57	4
42	40	33.33	2.12	SF 37	4	11	191	125.05	1.48	SF 57	4
49	34	28.33	2.50	SA 37	4	13	165	108.09	1.71	SA 57	4
59	32	23.46	2.64	SAF37	4	15	140	91.84	2.01	SAF57	4
74	26	18.85	3.28			17	125	82.00	2.25		
84	23	16.48	3.75			20	119	70.04	2.64		
90	21	15.45	4.00			21	111	66.89	2.37		
102	19	13.63	4.54			22	107	62.53	2.53		
115	17	12.08	5.12								
135	14	10.27	6.02			10	209	137.25	0.80	S 47	4
						12	181	118.64	0.88	SF 47	4
						14	154	100.80	1.04	SA 47	4
						15	137	90.00	1.17	SAF47	4
						18	117	76.88	1.36		



Output speed	Output torque	Ratio	Service factor	Type	Pole	Output speed	Output torque	Ratio	Service factor	Type	Pole
r/min	Nm	i	f _B	Type	p	r/min	Nm	i	f _B	Type	p
0.37kW						0.55kW					
19	110	72.00	1.46			3.7	859	241.09	1.39	S 77	6
23	106	60.65	1.52			4.3	734	206.04	1.63	SF 77	6
24	93	59.32	1.73			4.7	673	188.89	1.78	SA 77	6
28	90	50.40	1.78			5.3	590	165.75	2.02	SAF77	6
31	80	45.00	2.00	S 47	4	5.6	559	157.08	2.13		
36	68	38.44	2.34	SF 47	4					S 77	4
39	64	36.00	2.50	SA 47	4	5.8	547	241.09	2.18	SF 77	4
46	54	30.33	2.96	SAF47	4	6.7	467	206.04	2.56	SA 77	4
50	56	27.74	2.84			7.4	428	188.89	2.79	SAF77	4
54	53	25.93	3.03								
62	46	22.41	3.51			6.1	515	227.20	0.95		
73	39	19.04	4.13			6.8	465	205.11	1.05		
82	35	17.00	4.63			7.7	409	180.46	1.20		
						8.2	386	170.40	1.27		
21	102	66.67	0.84			9.7	326	144.00	1.50	S 67	4
25	93	56.67	0.92			11	295	130.00	1.66	SF 67	4
27	86	52.00	0.98			12	259	114.38	1.89	SA 67	4
31	81	45.45	1.05			13	245	108.00	2.00	SAF67	4
33	76	42.61	1.12			15	208	91.96	2.35		
37	67	37.60	1.27	S 37	4	17	189	83.57	2.58		
42	59	33.33	1.43	SF 37	4	19	172	72.39	2.98		
49	50	28.33	1.69	SA 37	4	21	164	65.00	2.84		
59	48	23.46	1.78	SAF37	4						
74	38	18.85	2.22			9.6	327	91.84	0.86		
84	34	16.48	2.54			11	292	82.00	0.97		
90	31	15.45	2.71			12	251	70.40	1.01	S 57	6
102	28	13.63	3.07			13	278	66.89	1.12	SF 57	6
115	25	12.08	3.46			14	260	62.53	1.09	SA 57	6
135	21	10.27	4.07			16	225	54.05	1.26	SAF57	6
						19	191	45.92	1.48		
						22	170	41.00	1.66		
						25	146	35.20	1.93		
0.55kW						0.55kW					
1.0	2517	1332	0.85			9.0	350	154.35	0.81		
1.2	2475	1191	0.87			10	303	133.79	0.93		
1.3	2460	1032	0.87	S 87R57	4	11	284	125.05	0.99		
1.5	2340	930	0.92	SF 87R57	4	13	245	108.09	1.15		
1.7	2198	831	0.97	SA 87R57	4	15	208	91.84	1.35		
1.9	1902	719	1.13	SAF87R57	4	17	186	82.00	1.52		
2.2	1651	624	1.30			20	177	70.40	1.59		
2.5	1476	558	1.45			21	165	66.89	1.70	S 57	4
3.2	1151	435	1.86			22	160	62.53	1.77	SF 57	4
						26	143	54.05	1.97	SA 57	4
2.8	1320	499	0.90			30	121	45.92	2.32	SAF57	4
3.2	1159	438	1.03	S 77R37	4	34	108	41.00	2.60		
3.6	1029	389	1.16	SF 77R37	4	40	93	35.02	3.04		
4.3	865	327	1.38	SA 77R37	4	42	91	32.80	3.10		
4.8	764	289	1.56	SAF77R37	4	46	87	30.12	3.25		
5.6	661	250	1.81			53	79	26.11	3.57		
						57	74	24.40	3.82		
5.7	558	246	0.84	S 67R37	4	66	64	21.09	4.42		
6.3	585	221	0.88	SF 67R37	4						
7.0	524	198	0.93	SA 67R37	4	18	174	76.88	0.92		
8.3	444	168	1.10	SAF67R37	4	19	163	72.00	0.98		
						23	157	60.65	1.02		
3.0	1044	222.00	2.05	S 87	8	25	138	59.32	1.16		
3.4	931	198.00	2.30	SF 87	8	28	133	50.40	1.20		
4.0	783	166.43	2.74	SA 87	8	31	119	45.00	1.34		
				SAF87	8	36	102	38.44	1.57	S 47	4
						39	95	36.00	1.68	SF 47	4
4.0	791	222.00	2.71	S 87	6	46	80	30.33	1.91	SA 47	4
4.5	705	198.00	3.04	SF 87	6	50	84	27.74	1.99	SAF47	4
5.3	593	166.43	3.62	SA 87	6	54	78	25.93	2.04		
				SAF87	6	62	68	22.41	2.36		
						73	58	19.04	2.78		
3.3	969	206.04	1.23	S 77	8	82	51	17.00	3.11		
3.5	888	188.89	1.34	SF 77	8	96	44	14.52	3.65		
4.0	780	165.75	1.53	SA 77	8	102	41	13.60	3.89		
4.3	739	157.08	1.62	SAF77	8	121	35	11.46	4.62		





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Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p	Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p
0.55kW						0.75kW					
42	88	33.33	0.96			6.8	634	205.11	0.80		
49	75	28.33	1.13			7.7	558	180.46	0.88		
59	71	23.46	1.20			8.2	527	170.40	0.93		
74	57	18.85	1.49	S 37	4	9.7	445	144.00	1.10		
84	50	16.48	1.71	SF 37	4	11	402	130.00	1.22		
90	47	15.45	1.82	SA 37	4	12	354	114.38	1.38	S 67	4
102	41	13.63	2.06	SAF37	4	13	334	108.00	1.46	SF 67	4
115	37	12.08	2.33			15	284	91.96	1.72	SA 67	4
135	31	10.27	2.74			17	258	83.57	1.89	SAF67	4
0.75kW						0.75kW					
1.1	4411	1223	0.85			19	224	72.39	2.09		
1.3	3860	1070	0.97			21	234	65.00	2.18		
1.5	3347	928	1.12	S 97R57	4	22	206	63.00	2.37		
1.7	2972	824	1.27	SF 97R57	4	24	195	57.19	2.51		
1.9	2575	714	1.46	SA 97R57	4	26	185	54.00	2.51		
2.2	2258	626	1.67	SAF97R57	4	30	166	45.98	2.95		
2.6	1941	538	1.94			0.75kW					
2.9	1746	484	2.2			13	331	70.04	0.80		
0.75kW						14	369	66.89	0.82	S 57	6
1.3	2659	1032	0.81			15	345	62.53	0.85	SF 57	6
1.5	2593	930	0.83			17	298	54.05	0.95	SA 57	6
1.7	2569	831	0.83	S 87R57	4	20	253	45.92	1.11	SAF57	6
1.9	2396	719	0.89	SF 87R57	4	22	226	41.00	1.25		
2.2	2251	624	0.95	SA 87R57	4	0.75kW					
2.5	2013	558	1.06	SAF87R57	4	13	334	108.09	0.84		
3.2	1569	435	1.37			15	284	91.84	0.99		
4.3	1165	323	1.84			17	254	82.00	1.11		
0.75kW						20	217	70.04	1.17		
4.3	1179	327	1.01	S 77R37	4	21	241	66.89	1.25		
4.8	1042	289	1.15	SF 77R37	4	22	226	62.53	1.30		
5.6	902	250	1.32	SA 77R37	4	26	195	54.05	1.45	S 57	4
6.3	790	219	1.51	SAF77R37	4	30	166	45.92	1.70	SF 57	4
0.75kW						34	148	41.00	1.91	SA 57	4
3.0	1457	230.48	2.58	S 97	8	40	126	35.02	2.23	SAF57	4
3.3	1311	207.48	2.87	SF 97	8	42	118	32.80	2.27		
3.6	1187	187.89	3.17	SA 97	8	46	124	30.12	2.38		
0.75kW						53	108	26.11	2.62		
4.1	1048	222.00	2.04	S 87	6	57	101	24.40	2.80		
4.6	935	198.00	2.29	SF 87	6	66	87	21.09	3.24		
5.5	786	166.43	2.73	SA 87	6	78	74	17.92	3.82		
0.75kW						87	66	16.00	4.28		
6.2	690	223.26	3.10	S 87	4	102	56	13.67	5.00		
7.0	612	198.00	3.50	SF 87	4	0.75kW					
8.4	515	166.43	4.16	SA 87	4	31	162	45.00	0.99		
0.75kW						36	139	38.44	1.15		
3.8	1139	241.09	1.05	S 77	6	39	130	36.00	1.23		
4.4	973	206.04	1.23	SF 77	6	46	109	30.33	1.40	S 47	4
4.8	892	188.89	1.34	SA 77	6	50	114	27.74	1.46	SF 47	4
5.5	783	165.75	1.53	SAF77	6	54	107	25.93	1.50	SA 47	4
0.75kW						62	92	22.41	1.73	SAF47	4
5.8	745	241.09	1.60			73	78	19.04	2.04		
6.7	637	206.04	1.87			82	70	17.00	2.28		
7.4	584	188.89	2.04	S 77	4	96	60	14.52	2.67		
8.4	512	165.75	2.33	SF 77	4	102	56	13.60	2.85		
8.8	486	157.08	2.46	SA 77	4	121	47	11.46	3.39		
10	425	137.48	2.81	SAF77	4	0.75kW					
11	383	123.86	3.12			74	78	18.85	1.09		
13	336	108.65	3.55			84	68	16.48	1.25	S 37	4
0.75kW						90	64	15.45	1.33	SF 37	4
0.75kW						102	56	13.63	1.51	SA 37	4
0.75kW						115	50	12.08	1.71	SAF37	4
0.75kW						135	42	10.27	2.01		



Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p	Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p
1.1kW						1.1kW					
1.7	4328	824	0.87			20	351	70.04	0.80		
2.0	3750	714	1.00	S 97R57	4	21	328	66.89	0.86		
2.2	3288	626	1.14	SF 97R57	4	22	315	62.53	0.89		
2.6	2826	538	1.33	SA 97R57	4	26	284	54.05	0.99		
2.9	2542	484	1.48	SAF97R57	4	30	241	45.92	1.17		
3.3	2206	420	1.70			34	215	41.00	1.31		
						40	184	35.02	1.53	S 57	4
2.2	2547	624	0.84			43	181	32.80	1.56	SF 57	4
2.5	2512	558	0.85			46	172	30.12	1.64	SA 57	4
2.9	2341	485	0.92			54	157	26.11	1.80	SAF57	4
3.2	2285	435	0.94	S 87R57	4	57	146	24.40	1.93		
3.7	1985	378	1.08	SF 87R57	4	66	127	21.09	2.23		
4.3	1697	323	1.26	SA 87R57	4	78	108	17.92	2.62		
5.0	1476	281	1.45	SAF87R57	4	88	96	16.00	2.94		
5.5	1339	255	1.60			102	82	13.67	3.44		
6.3	1166	222	1.84			109	77	12.80	3.67		
6.8	1077	205	1.99			130	65	10.78	4.36		
				S 77R37	4	46	182	30.33	0.88		
6.4	1150	219	1.04	SF 77R37	4	50	167	27.74	0.96		
				SA 77R37	4	54	156	25.93	1.03	S 47	4
				SAF77R37	4	62	135	22.41	1.19	SF 47	4
3.0	2136	230.48	1.76	S 97	8	74	114	19.04	1.40	SA 47	4
3.3	1923	207.48	1.96	SF 97	8	82	102	17.00	1.57	SAF47	4
3.6	1742	187.89	2.16	SA 97	8	96	87	14.52	1.84		
				SAF97	8	103	82	13.60	1.96		
						122	69	11.46	2.33		
3.9	1596	230.48	2.36	S 97	6	1.5kW					
4.4	1437	207.48	2.62	SF 97	6	2.0	4484	714	0.84		
4.8	1301	187.89	2.89	SA 97	6	2.2	4383	626	0.86	S 97R57	4
				SAF97	6	2.6	3853	538	0.98	SF 97R57	4
6.3	999	222.00	2.14			2.9	3467	484	1.08	SA 97R57	4
7.1	891	198.00	2.40	S 87	4	3.3	3008	420	1.25	SAF97R57	4
8.4	749	166.43	2.86	SF 87	4	3.7	2693	376	1.40		
9.2	689	152.95	3.11	SA 87	4	4.3	2342	327	1.61		
10.3	612	135.83	3.50	SAF87	4						
5.8	1085	241.09	1.10			2.9	2707	485	0.79		
6.8	928	206.04	1.29			3.2	2481	435	0.86		
7.4	850	188.89	1.40			3.7	2313	378	0.93	S 87R57	4
8.4	746	165.75	1.60	S 77	4	4.3	2225	323	0.96	SF 87R57	4
8.9	707	157.08	1.69	SF 77	4	5.0	2013	281	1.06	SA 87R57	4
10	619	137.48	1.93	SA 77	4	5.5	1826	255	1.17	SAF87R57	4
11	558	123.86	2.14	SAF77	4	6.3	1590	222	1.35		
13	489	108.65	2.44			6.8	1468	205	1.46		
15	432	95.88	2.77								
11	585	130.00	0.84			3.0	2871	230.48	1.31	S 97	8
12	515	114.38	0.95			3.3	2584	207.48	1.45	SF 97	8
13	486	108.00	1.01			3.7	2340	187.89	1.61	SA 97	8
15	414	91.96	1.18			4.1	2076	166.62	1.81	SAF97	8
17	376	83.57	1.30								
19	341	72.39	1.43	S 67	4	4.0	2153	230.48	1.75	S 97	6
22	326	65.00	1.50	SF 67	4	4.4	1938	207.48	1.94	SF 97	6
23	284	63.00	1.63	SA 67	4	4.9	1755	187.89	2.14	SA 97	6
24	300	57.19	1.72	SAF67	4	5.5	1557	166.62	2.42	SAF97	6
26	284	54.00	1.72								
30	242	45.98	2.02			6.1	1415	230.48	2.66	S 97	4
34	220	41.79	2.23			6.7	1274	207.48	2.95	SF 97	4
39	190	36.20	2.57			7.5	1154	187.89	3.26	SA 97	4
44	165	31.50	2.96							SAF97	4
53	139	26.40	3.53								
						4.1	2074	222.00	1.03	S 87	6
						4.6	1850	198.00	1.16	SF 87	6
						5.5	1555	166.43	1.38	SA 87	6
						6.1	1429	152.95	1.50	SAF87	6

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Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p	Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p
1.5kW						2.2kW					
6.3	1363	222.00	1.56			3.4	4350	420	0.86	S 97R57	4
7.1	1216	198.00	1.76			3.8	3894	376	0.97	SF 97R57	4
8.4	1022	166.43	2.10	S 87	4	4.3	3387	327	1.11	SA 97R57	4
9.2	939	152.95	2.28	SF 87	4	4.9	2972	287	1.26	SAF97R57	4
10	834	135.83	2.57	SA 87	4	5.6	2610	252	1.44		
12	746	121.44	2.87	SAF87	4	4.1	3091	230.48	1.22	S 97	6
13	970	109.19	3.20			4.5	2782	207.48	1.35	SF 97	6
15	582	94.77	3.68			5.0	2520	187.89	1.49	SA 97	6
7.4	1160	188.89	1.03							SAF97	6
8.4	1018	165.75	1.17			6.2	2046	230.48	1.84		
8.9	964	157.08	1.24			6.8	1842	207.48	2.04		
10	844	137.48	1.41			7.6	1668	187.89	2.25	S 97	4
11	760	123.86	1.57			8.5	1479	166.62	2.54	SF 97	4
13	667	108.65	1.79	S 77	4	9.4	1337	150.64	2.81	SA 97	4
15	589	95.88	2.03	SF 77	4	11	1133	127.68	3.32	SAF97	4
16	564	85.00	2.12	SA 77	4	13	990	111.52	3.80		
18	522	78.78	2.29	SAF77	4	15	863	93.27	4.54		
19	517	72.22	2.31			17	828	83.31	4.36		
22	454	63.38	2.63			6.4	1971	222.00	1.08		
23	430	60.06	2.78			7.2	1758	198.00	1.22		
27	377	52.57	3.17			8.5	1477	166.43	1.45		
30	339	47.36	3.52			9.3	1358	152.95	1.58		
34	298	41.54	4.01			10	1206	135.83	1.78	S 87	4
17	513	83.57	0.95			12	1078	121.44	1.99	SF 87	4
19	466	72.39	1.05			13	969	109.19	2.21	SA 87	4
22	444	65.00	1.10			15	841	94.77	2.55	SAF87	4
23	410	63.00	1.19			17	753	84.86	2.74		
24	387	57.19	1.26			19	733	75.63	2.84		
26	367	54.00	1.26			20	700	70.40	3.06		
30	329	45.98	1.48			21	630	67.62	3.40		
34	299	41.79	1.63	S 67	4	23	625	60.80	3.43		
39	259	36.20	1.89	SF 67	4	27	547	52.77	3.92		
44	226	31.50	2.17	SA 67	4	10	1220	137.48	0.98		
53	216	26.40	2.26	SAF67	4	11	1100	123.86	1.09		
59	195	23.83	2.51			13	965	108.65	1.24		
67	171	20.92	2.86			15	851	95.88	1.40		
71	162	19.80	3.02			17	755	85.00	1.46		
83	138	16.86	3.54			18	816	78.78	1.58		
91	125	15.32	3.90			20	748	72.22	1.60		
106	109	13.27	4.50			22	656	63.38	1.82	S 77	4
121	95	11.55	5.17			24	622	60.06	1.92	SF 77	4
43	247	32.80	1.20			27	544	52.57	2.19	SA 77	4
46	235	30.12	1.14			30	491	47.36	2.43	SAF77	4
54	214	26.11	1.32			34	430	41.54	2.78		
57	200	24.40	1.41	S 57	4	39	380	36.66	3.14		
66	173	21.09	1.63	SF 57	4	44	337	32.50	3.55		
78	147	17.92	1.92	SA 57	4	51	307	27.75	3.89		
88	131	16.00	2.15	SAF57	4	55	287	25.93	4.15		
102	112	13.67	2.52			62	269	22.75	4.43		
109	105	12.80	2.69			66	255	21.56	4.68		
130	88	10.78	3.20			31	476	45.98	1.03		
96	119	14.52	1.35	S 47	4	34	433	41.79	1.13		
103	111	13.60	1.44	SF 47	4	39	375	36.20	1.30		
122	94	11.46	1.71	SA 47	4	45	326	31.50	1.50		
				SAF47	4	54	312	26.40	1.56	S 67	4
						60	282	23.83	1.73	SF 67	4
						68	248	20.97	1.97	SA 67	4
						72	234	19.80	2.09	SAF67	4
						84	200	16.86	2.45		
						93	181	15.32	2.70		
						107	157	13.27	3.11		
						123	137	11.55	3.58		



Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p	Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p
2.2kW						3kW					
89	189	16.00	1.49	S 57	4	39	511	36.20	0.96		
104	162	13.67	1.74	SF 57	4	45	445	31.50	1.10		
111	152	12.80	1.86	SA 57	4	54	426	26.40	1.15		
132	128	10.78	2.21	SAF57	4	60	385	23.83	1.27	S 67	4
3kW						68	338	20.97	1.44	SF 67	4
4.9	4053	287	0.93	S 97R57	4	72	320	19.80	1.53	SA 67	4
				SF 97R57	4	84	272	16.86	1.80	SAF67	4
				SA 97R57	4	93	247	15.32	1.98		
				SAF97R57	4	107	214	13.27	2.28		
6.2	2790	230.48	1.35			123	186	11.55	2.62		
6.8	2512	207.48	1.50			104	221	13.67	1.28	S 57	4
7.6	2275	187.89	1.65			111	207	12.80	1.36	SF 57	4
8.5	2017	166.62	1.86	S 97	4	132	174	10.78	1.62	SA 57	4
9.4	1824	150.64	2.06	SF 97	4					SAF57	4
11	1546	127.68	2.43	SA 97	4	4kW					
13	1350	111.52	2.79	SAF97	4	6.2	3668	230.48	1.02		
15	1129	93.27	3.20			6.9	3302	207.48	1.14		
17	1177	83.31	3.33			7.7	2991	187.89	1.26		
18	978	80.75	3.85			8.6	2652	166.62	1.42		
8.5	2015	166.43	1.06			9.6	2398	150.64	1.57	S 97	4
9.3	1852	152.95	1.16			11	2032	127.68	1.85	SF 97	4
10	1644	135.83	1.30			13	1775	111.52	2.12	SA 97	4
12	1470	121.44	1.46			15	1547	93.27	2.43	SAF97	4
13	1322	109.19	1.62			17	1485	83.31	2.53		
15	1147	94.77	1.87			18	1399	80.75	2.93		
17	1027	84.86	2.01	S 87	4	19	1285	75.32	2.69		
19	1068	75.63	2.09	SF 87	4	23	1185	63.84	3.17		
20	955	70.40	2.24	SA 87	4	26	1035	55.76	3.63		
21	859	67.62	2.50	SAF87	4	12	1933	121.44	1.11		
23	852	60.80	2.51			13	1738	109.19	1.23		
27	745	52.77	2.88			15	1508	94.77	1.42		
30	696	47.25	3.08			17	1404	84.86	1.53		
33	667	43.13	3.21			19	1351	75.63	1.59		
36	617	39.20	3.47			20	1256	70.40	1.71		
37	554	38.25	3.87			21	1129	67.62	1.90		
42	481	34.09	4.45			24	1121	60.80	1.91	S 87	4
17	1113	85.00	1.07			27	980	52.77	2.19	SF 87	4
18	1029	78.78	1.16			30	915	47.25	2.34	SA 87	4
20	1020	72.22	1.17			33	877	43.13	2.44	SAF87	4
22	895	63.38	1.33			37	812	39.20	2.64		
24	848	60.06	1.41			38	728	38.25	2.94		
27	742	52.57	1.61			42	682	34.09	3.14		
30	669	47.36	1.79			45	633	32.15	3.39		
34	587	41.54	2.04	S 77	4	49	627	29.55	3.42		
39	518	36.66	2.31	SF 77	4	55	557	26.24	3.85		
44	459	32.50	2.60	SA 77	4	61	498	23.46	4.30		
51	419	27.75	2.85	SAF77	4	24	1115	60.06	1.07		
55	392	25.93	3.05			27	976	52.57	1.22		
62	367	22.75	3.25			30	879	47.36	1.36		
66	348	21.56	3.43			35	771	41.54	1.55		
75	305	18.87	3.92			39	681	36.66	1.75		
84	274	17.00	4.35			44	604	32.50	1.98		
95	241	14.91	4.96			52	550	27.75	2.17	S 77	4
108	212	13.16	5.62			56	515	25.93	2.32	SF 77	4
122	188	11.67	6.34			63	483	22.75	2.47	SA 77	4
143	161	9.96	7.43			67	458	21.56	2.61	SAF77	4
						76	400	18.87	2.98		
						85	361	17.00	3.31		
						97	316	14.91	3.77		
						109	279	13.16	4.28		
						123	248	11.67	4.82		
						145	211	9.96	5.65		





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Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p	Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p
4kW						7.5kW					
73	420	19.80	1.16	S 67	4	13	3304	111.52	1.14		
85	358	16.86	1.37	SF 67	4	16	2880	93.27	1.31		
94	325	15.32	1.50	SA 67	4	17	2764	83.31	1.36		
109	282	13.27	1.74	SAF67	4	18	2604	80.75	1.44		
125	245	11.55	1.99			19	2393	75.32	1.57		
5.5kW						23	2207	63.84	1.70	S 97	4
8.6	3647	166.62	1.03			26	1928	55.76	1.95	SF 97	4
9.6	3297	150.64	1.14			31	1612	46.64	2.33	SA 97	4
11	2794	127.68	1.35			36	1438	40.38	2.62	SAF97	4
13	2441	111.52	1.54			40	1396	36.39	2.69		
15	2127	93.27	1.77	S 97	4	45	1294	32.76	2.91		
17	2041	83.31	1.84	SF 97	4	49	1172	29.67	3.21		
18	1923	80.75	1.96	SA 97	4	55	1039	26.31	3.62		
19	1767	75.32	2.13	SAF97	4	61	940	23.79	4.00		
23	1630	63.84	2.31			72	796	20.16	4.72		
26	1424	55.76	2.64			11kW					
31	1191	46.64	3.16			31	1704	47.25	1.26		
36	1031	40.38	3.65			34	1633	43.13	1.31		
4kW						37	1511	39.20	1.42		
17	1931	84.86	1.11			38	1355	38.25	1.58		
19	1857	75.63	1.15			43	1270	34.09	1.69		
20	1727	70.40	1.24			45	1178	32.15	1.82	S 87	4
21	1552	67.62	1.38			49	1167	29.55	1.84	SF 87	4
24	1541	60.80	1.39			56	1037	26.24	2.07	SA 87	4
27	1347	52.77	1.59			62	927	23.46	2.31	SAF87	4
30	1259	47.25	1.70			69	833	21.09	2.57		
33	1206	43.13	1.78	S 87	4	80	723	18.31	2.96		
37	1116	39.20	1.92	SF 87	4	89	648	16.39	3.31		
38	1001	38.25	2.14	SA 87	4	107	537	13.60	3.99		
42	938	34.09	2.28	SAF87	4	123	467	11.83	4.59		
45	870	32.15	2.46			53	1024	27.75	1.17		
49	862	29.55	2.49			56	959	25.93	1.24		
55	766	26.24	2.80			64	899	22.75	1.33	S 77	4
61	685	23.46	3.13			68	852	21.56	1.40	SF 77	4
68	615	21.09	3.48			77	746	18.87	1.60	SA 77	4
79	534	18.31	4.01			86	672	17.00	1.78	SAF77	4
88	478	16.39	4.48			98	589	14.91	2.03		
106	397	13.60	5.40			111	520	13.16	2.30		
122	345	11.83	6.21			125	461	11.67	2.59		
5.5kW						147	394	9.96	3.03		
35	1061	41.54	1.13			7.5kW					
39	936	36.66	1.28			13	3304	111.52	1.14		
44	830	32.50	1.44			16	2880	93.27	1.31		
52	757	27.75	1.58			17	2764	83.31	1.36		
56	709	25.93	1.69	S 77	4	18	2604	80.75	1.44		
63	664	22.75	1.80	SF 77	4	19	2393	75.32	1.57		
67	629	21.56	1.90	SA 77	4	23	2207	63.84	1.70	S 97	4
76	551	18.87	2.17	SAF77	4	26	1928	55.76	1.95	SF 97	4
85	496	17.00	2.41			31	1612	46.64	2.33	SA 97	4
97	435	14.91	2.74			36	1438	40.38	2.62	SAF97	4
109	384	13.16	3.11			40	1396	36.39	2.69		
123	341	11.67	3.51			45	1294	32.76	2.91		
145	291	9.96	4.11			49	1172	29.67	3.21		
4kW						55	1039	26.31	3.62		
94	447	15.32	1.09	S 67	4	61	940	23.79	4.00		
109	387	13.27	1.26	SF 67	4	72	796	20.16	4.72		
125	337	11.55	1.45	SAF67	4	11kW					
						26	2808	55.76	1.34		
						31	2349	46.64	1.60		
						36	2095	40.38	1.80		
						40	2034	36.39	1.85	S 97	4
						45	1886	32.76	1.99	SF 97	4
						49	1708	29.67	2.20	SA 97	4
						55	1514	26.31	2.48	SAF97	4
						61	1369	23.79	2.75		
						72	1160	20.16	3.24		
						83	1014	17.61	3.71		
						99	848	14.73	4.43		
						115	734	12.75	5.12		
						7.5kW					
						56	1510	26.24	1.42		
						62	1350	23.46	1.59	S 87	4
						69	1214	21.09	1.77	SF 87	4
						80	1054	18.31	2.03	SA 87	4
						89	943	16.39	2.27	SAF87	4
						107	783	13.60	2.74		
						123	681	11.83	3.15		



Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p	Output speed r/min	Output torque Nm	Ratio i	Service factor f _B	Type Type	Pole p
15kW											
31	3203	46.64	1.17								
36	2856	40.38	1.32								
40	2773	36.39	1.36								
45	2571	32.76	1.46	S 97	4						
49	2329	29.67	1.61	SF 97	4						
55	2065	26.31	1.82	SA 97	4						
61	1867	23.79	2.01	SAF97	4						
72	1582	20.16	2.38								
83	1382	17.61	2.72								
99	1156	14.73	3.25								
115	1001	12.75	3.76								
89	1287	16.39	1.67	S 87	4						
107	1068	13.60	2.01	SF 87	4						
123	929	11.83	2.31	SA 87	4						
				SAF87	4						
18.5kW											
40	3499	36.39	1.07								
45	3150	32.76	1.19								
50	2853	29.67	1.32	S 97	4						
56	2530	26.31	1.49	SF 97	4						
62	2287	23.79	1.64	SA 97	4						
73	1938	20.16	1.94	SAF97	4						
83	1693	17.61	2.22								
100	1416	14.73	2.65								
115	1226	12.75	3.07								
22kW											
56	3008	26.31	1.25								
62	2720	23.79	1.38	S 97	4						
73	2305	20.16	1.63	SF 97	4						
83	2014	17.61	1.87	SA 97	4						
100	1684	14.73	2.23	SAF97	4						
115	1458	12.75	2.58								

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Permissible torque Nm	Output speed r/min	Ratio i	Type Type	Power kW/4p	Permissible torque Nm	Output speed r/min	Ratio i	Type Type	Power kW/4p	
90	7.8	179	S 37R17 SF 37R17 SA 37R17 SAF37R17	0.18	2280	0.24	5875	S 87R57 SF 87R57 SA 87R57 SAF87R57	0.18	
	8.8	158				0.27	5187			
	9.7	144				0.30	4606			
	12	118				-----				
	13	110				0.36	3872			
170	3.6	388	S 47R17 SF 47R17 SA 47R17 SAF47R17	0.18		0.40	3475			0.25
	4.1	336				0.48	2905			
	4.7	294				-----				
	5.4	257				0.54	2586			
	6.1	229				0.60	2335			
	7.0	200			0.68	2054				
	7.4	187			-----					
8.4	165	0.76	1824							
300	2.4	574	S 57R17 SF 57R17 SA 57R17 SAF57R17	0.18	0.85	1631	0.55			
	2.7	506			1.0	1332				
	3.2	438			1.2	1191				
	3.6	388			-----					
	4.1	336			1.3	1032				
	4.7	294			1.5	930				
	5.2	269			1.7	831				
	6.1	229			-----					
	6.8	204			1.9	719				
	7.4	187			2.2	624				
	8.4	165			2.5	558				
11	131	-----								
520	1.3	1045	S 67R37 SF 67R37 SA 67R37 SAF67R37	0.18	2.9	485	0.75			
	1.5	914			3.2	435				
	1.7	809			3.7	378				
	2.0	712			-----					
	2.3	615			4.4	323				
	2.6	543			5.1	281				
	3.0	469			-----					
	3.3	424			0.16	8608				
	3.8	365			0.18	7554				
	4.4	319			0.21	6640				
	4.9	281			0.24	5780				
	5.7	246			0.28	4937				
	6.3	221			-----					
7.0	198	0.31	4444							
1270	0.45	3098	S 77R37 SF 77R37 SA 77R37 SAF77R37	0.18	0.35	4017	S 97R57 SF 97R57 SA 97R57 SAF97R57	0.25		
	0.67	2083			0.40	3453				
	0.77	1813			0.45	3108				
	0.80	1745			0.52	2654				
	0.87	1600			0.60	2329				
	1.0	1404			-----					
	1.1	1245			0.67	2081				
	1.3	1100			0.75	1860				
	1.5	954			0.88	1574				
	1.7	837			-----					
	1.9	714			1.0	1394				
	2.2	637			1.1	1223				
	2.4	574			1.3	1070				
	2.8	499			-----					
	3.2	438			1.5	928				
	3.6	389			1.7	824				
	4.3	327			-----					
	4.8	289			2.0	714				
	5.6	250			2.2	626				
6.4	219	2.6	538							
		2.9	484							
		3.4	420							
		3.8	376							

		4.3	327							
		4.9	287							

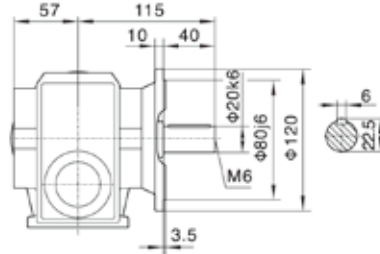
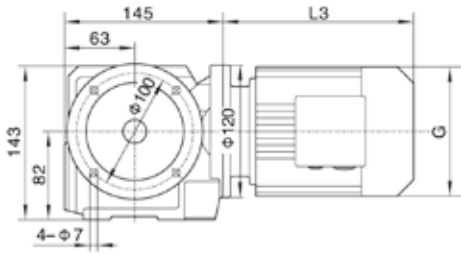
		5.7	252							
		6.6	219							

				3						
				4						

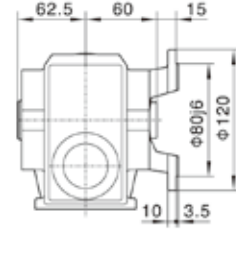
All gear units are overloaded in above table. Determination of operating torque should not higher than the gear unit's nominal torque.



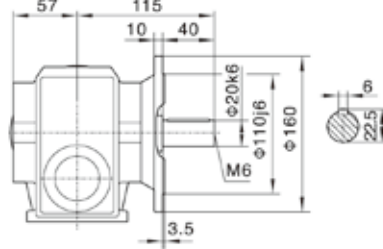
SF37/Φ120



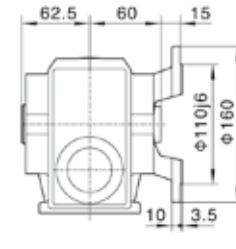
SAF37/Φ120



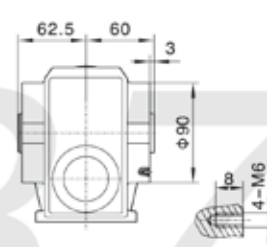
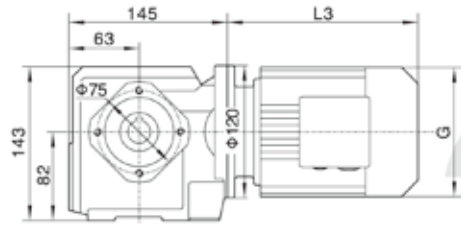
SF37/Φ160



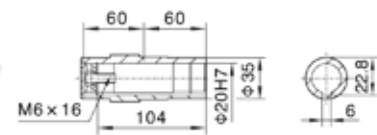
SAF37/Φ160



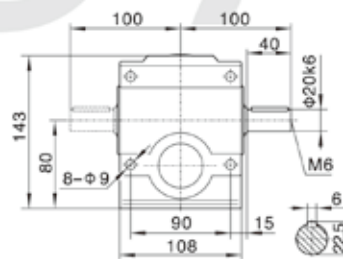
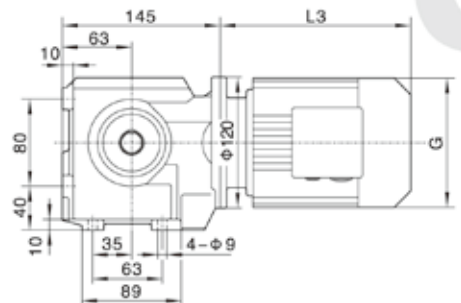
SA37



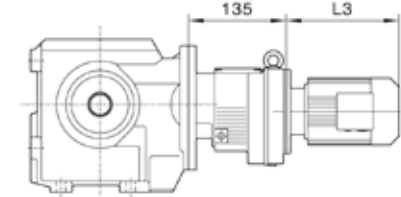
SAF37/SA37/SAZ37
Hollow shaft



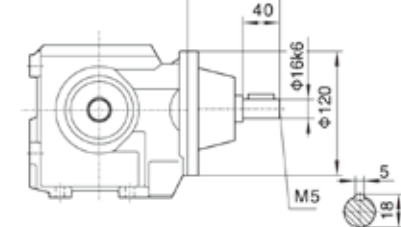
S37



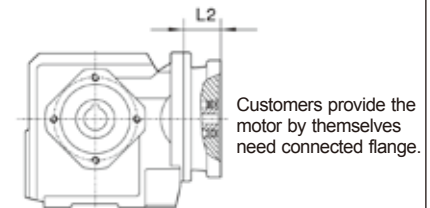
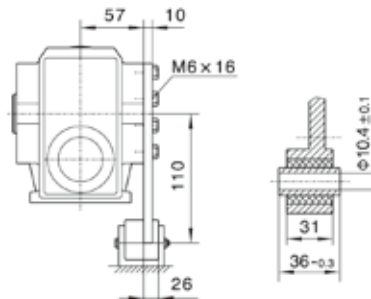
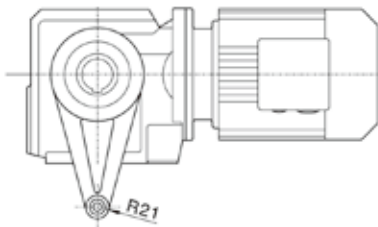
S..37R17



S..S37



SAT37



Customers provide the motor by themselves need connected flange.

Note: For other values please refer to relevant structure.

Motor size	63	71		80	
Power/(kW)	0.18	0.25	0.37	0.55	0.75
L3	235	245		278	
G	130	145		175	
L2	71	71		71	

Note:1.The housings of SA, SF, SAF, SAZ are common parts.The mounting dimensions may consult each other. 2. "S.." means S, SA, SF, SAF, SAZ.

S



S

S47

SA47

SAZ47

SA47/SAZ47/SAF47
Φ 25H7 /Hollow shaft

Φ 30H7

SF47

SAF47

SAT47

S..S47

S..47R17

Customers provide the motor by themselves need connected flange. —

Motor size	63	71	80	90S	90L		
Power/(kW)	0.18	0.25 0.37	0.55 0.75	1.1	1.5		
L3	235	245	278	304	328		
G	130	145	175	195	195		
L2	71	71	71	71	71		

Note: For other values please refer to relevant structure.

Note:1.The housings of SA、SF、SAF、SAZ are common parts.The mounting dimensions may consult each other. 2. "S.." means S, SA, SF, SAF, SAZ.



SA57/SAZ57/SAF57 /Hollow shaft
Φ30H7

Φ35H7

SA57

SAZ57

SF57

SAF57

SAT57

S..S57

S..57R17

Note: For other values please refer to relevant structure.

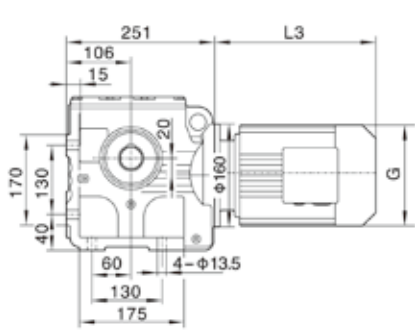
Motor size	63	71	80	90S	90L	100			
Power/(kW)	0.18	0.37	0.55 0.75	1.1	1.5	2.2 3.0			
L3	235	245	278	304	328	340			
G	130	145	175	195	195	215			
L2	71	71	71	71	71	93			

Customers provide the motor by themselves need connected flange.

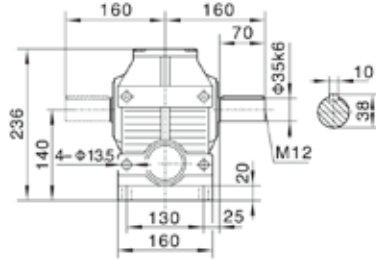
Note:1.The housings of SA、SF、SAF、SAZ are common parts.The mounting dimensions may consult each other. 2."S.." means S, SA, SF, SAF, SAZ.



S

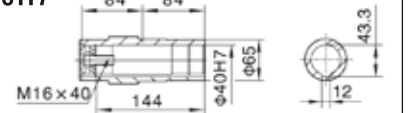


S67



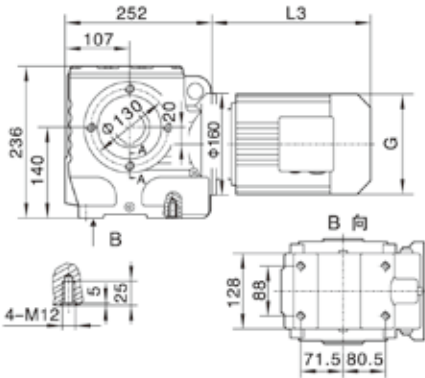
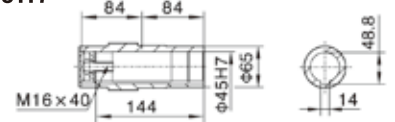
SA67/SAZ67/SAF67

Φ 40H7

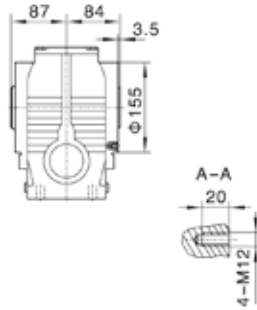


/Hollow shaft

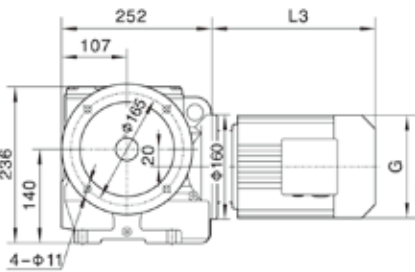
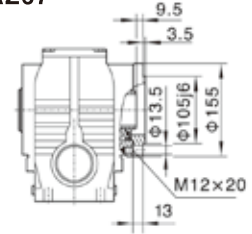
Φ 45H7



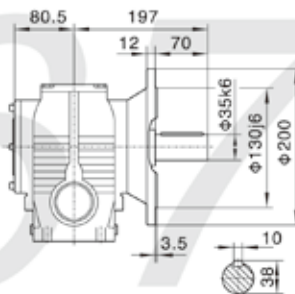
SA67



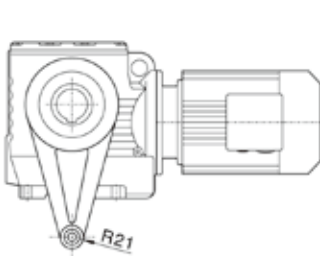
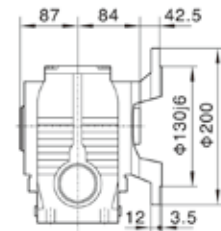
SAZ67



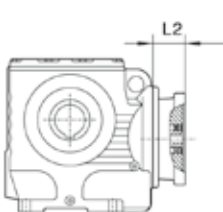
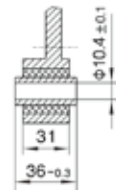
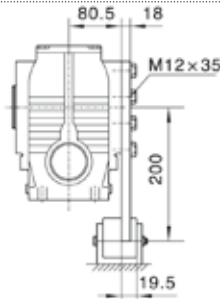
SF67



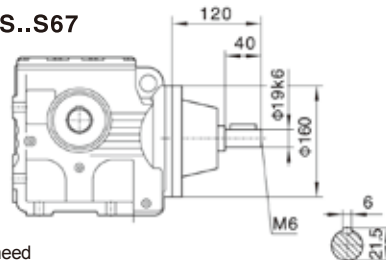
SAF67



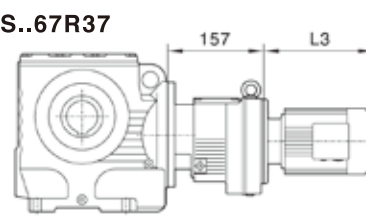
SAT67



S..S67



S..67R37

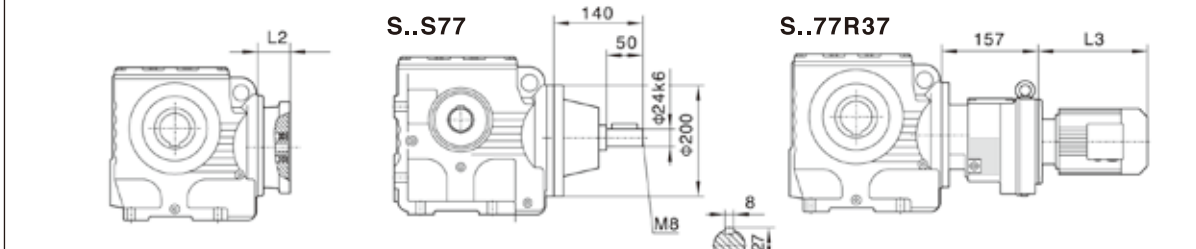
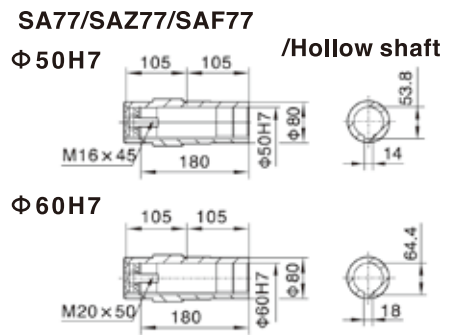
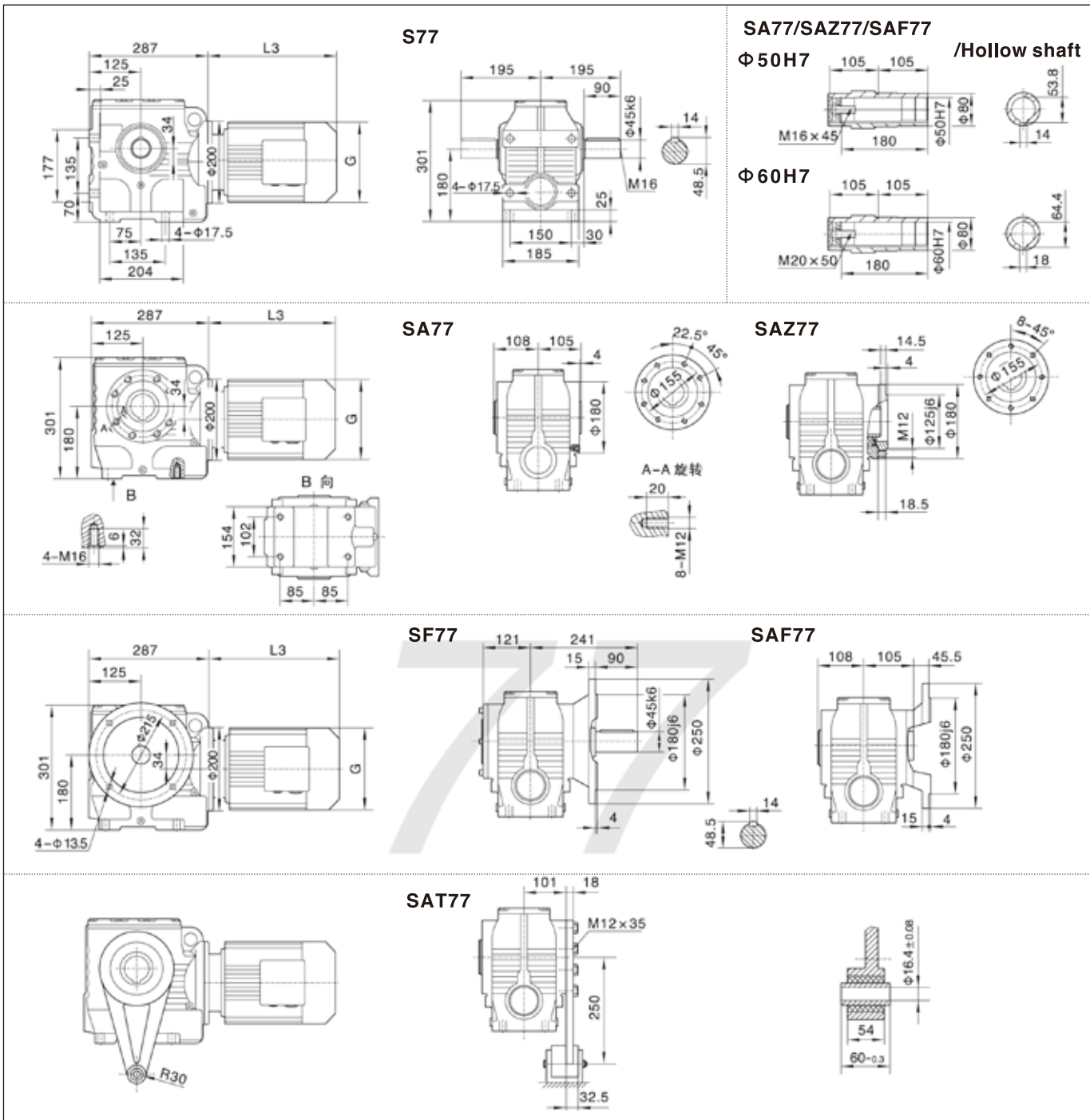


Customers provide the motor by themselves need connected flange.

Note: For other values please refer to relevant structure.

Motor size	71	80	90S	90L	100	112M	132S			
Power/(kW)	0.25 0.37	0.55 0.75	1.1	1.5	2.2 3.0	4.0	5.5			
L3	245	278	304	328	350	380	425			
G	145	175	195	195	215	240	275			
L2	81	81	81	81	93	93	101			

Note:1.The housings of SA、SF、SAF、SAZ are common parts.The mounting dimensions may consult each other. 2. "S.." means S, SA, SF, SAF, SAZ.



Note: For other values please refer to relevant structure.

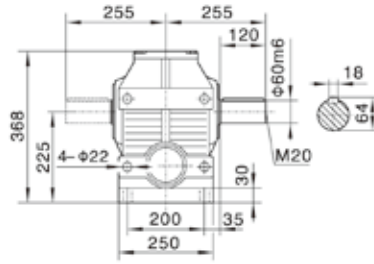
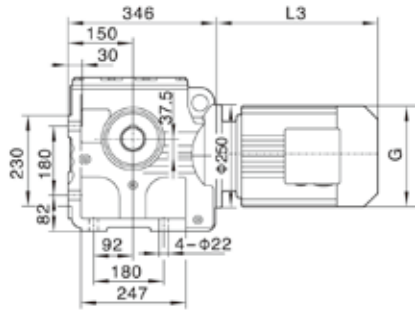
Customers provide the motor by themselves need connected flange.

Motor size	80	90S	90L	100	112M	132S	132M		
Power/(kW)	0.55 0.75	1.1	1.5	2.2 3.0	4.0	5.5	7.5		
L3	278	304	328	350	380	425	461		
G	175	195	195	215	240	275	275		
L2	81	81	81	93	93	101	101		

Note:1.The housings of SA、SF、SAF、SAZ are common parts.The mounting dimensions may consult each other. 2. "S.." means S, SA, SF, SAF, SAZ.

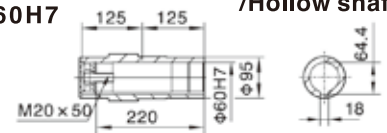


S87

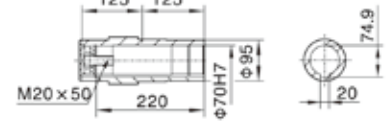


SA87/SAZ87/SAF87

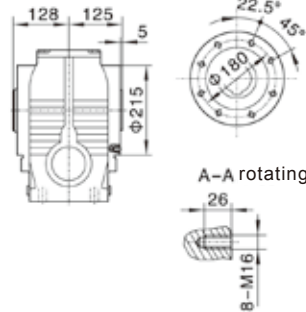
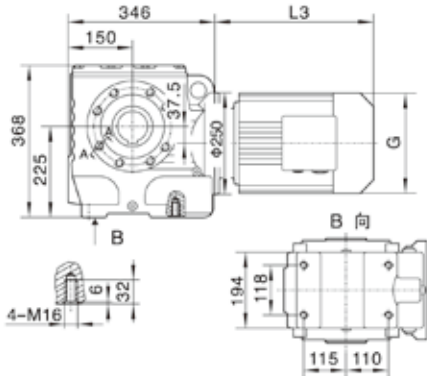
Φ 60H7 /Hollow shaft



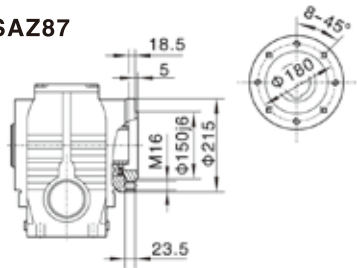
Φ 70H7



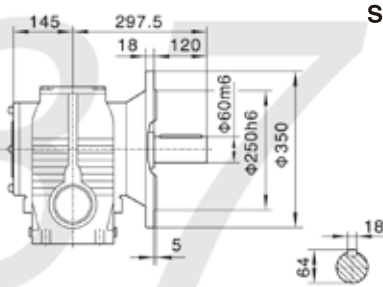
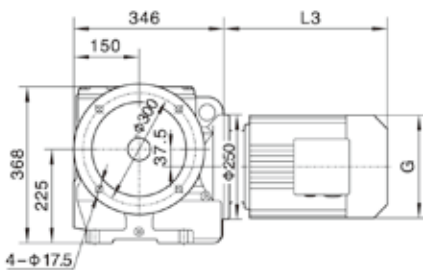
SA87



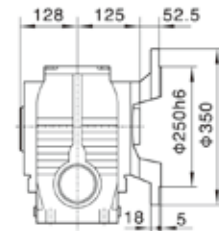
SAZ87



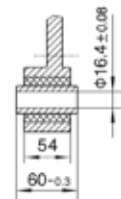
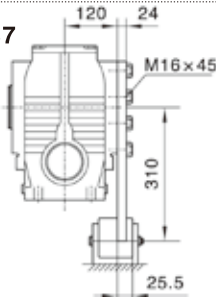
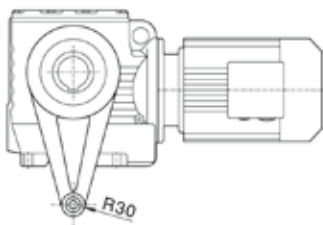
SF87



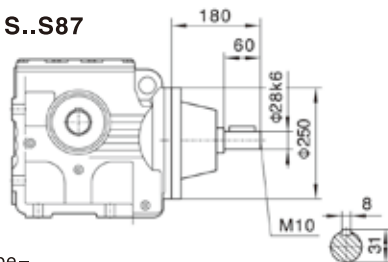
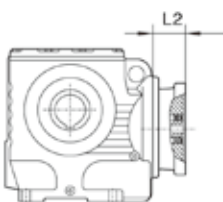
SAF87



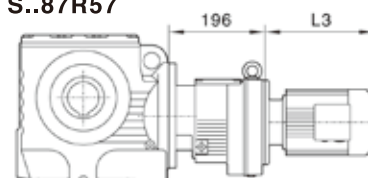
SAT87



S..S87



S..87R57

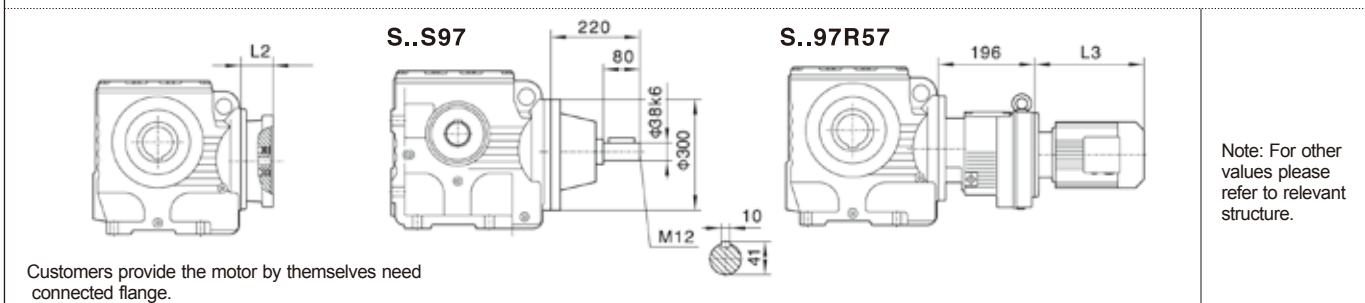
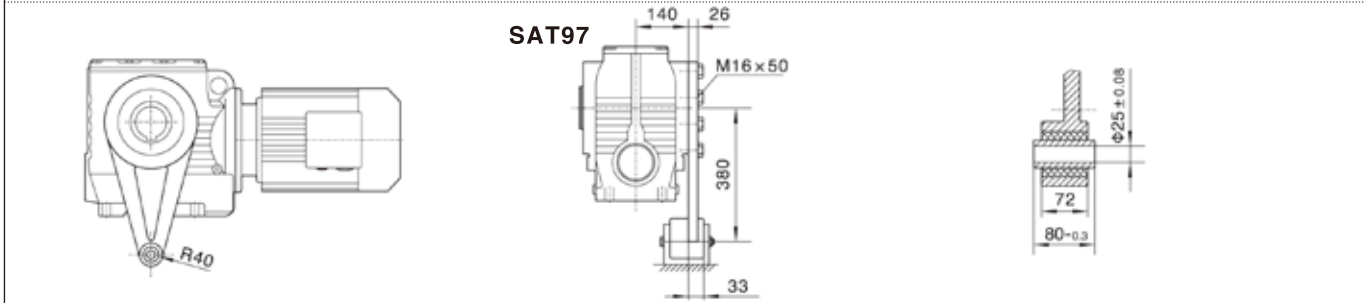
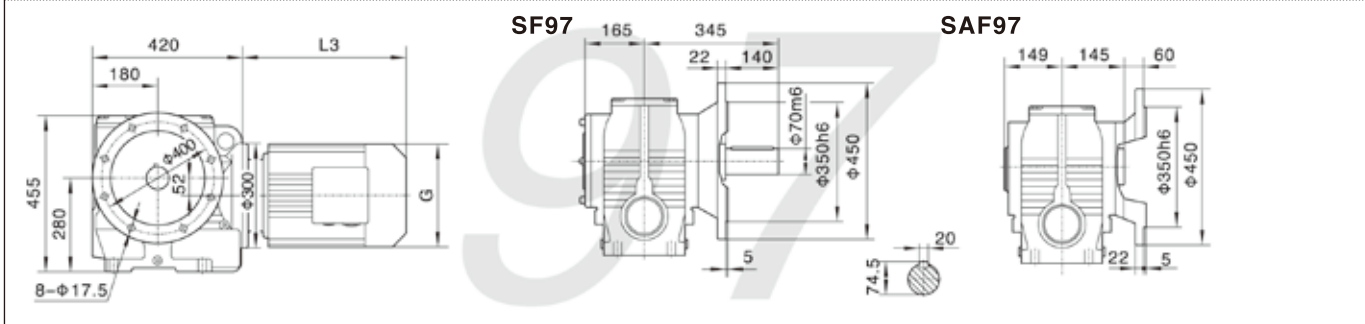
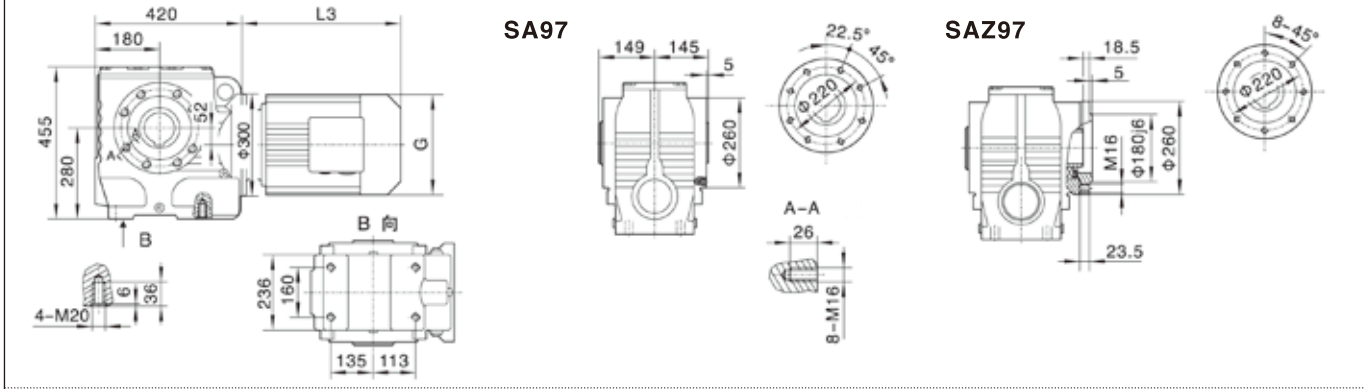
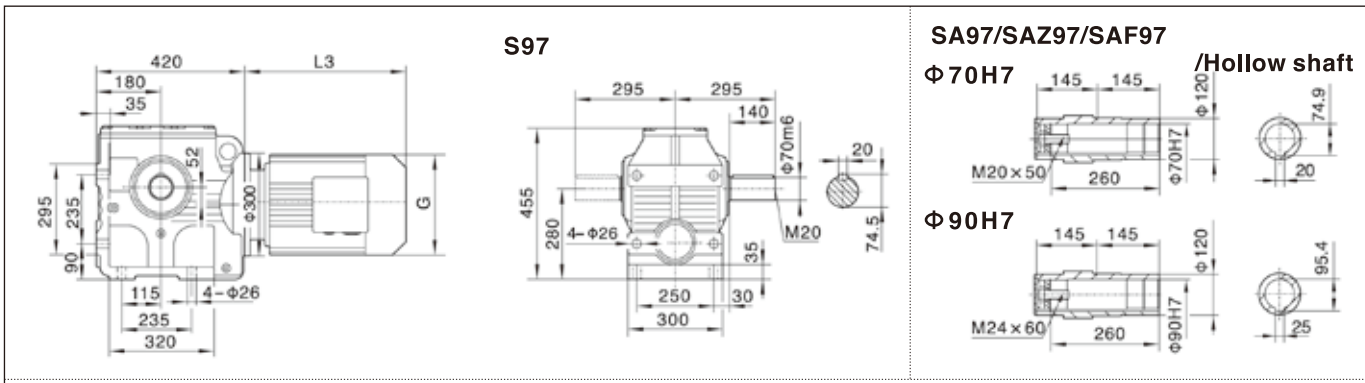


When equipping the user's motor or the special one, the flange is required to be connected.

Motor size	80	90S	90L	100	112M	132S	132M	160M	160L
Power/(kW)	0.75	1.1	1.5	2.2 3.0	4.0	5.5	7.5	11	15
L3	246	280	304	350	380	425	461	524	547
G	175	195	195	215	240	275	275	330	330
L2	86	86	86	71	71	101	101	126	126

Note: For other values please refer to the opposite structure.

Note: 1. The housings of SA, SF, SAF, SAZ are common parts. The mounting dimensions may consult each other. 2. "S.." means S, SA, SF, SAF, SAZ.



Note: For other values please refer to relevant structure.

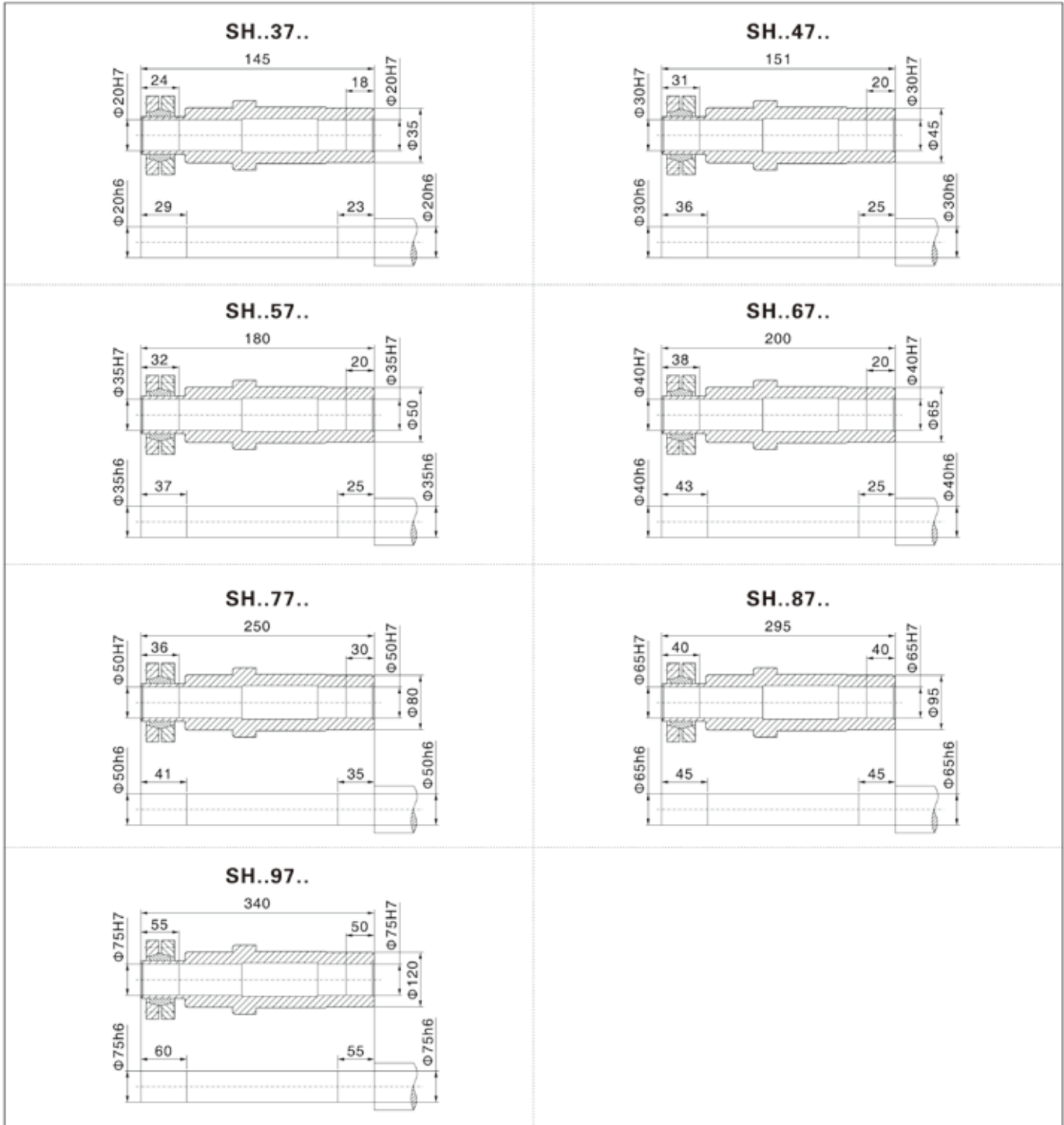
Customers provide the motor by themselves need connected flange.

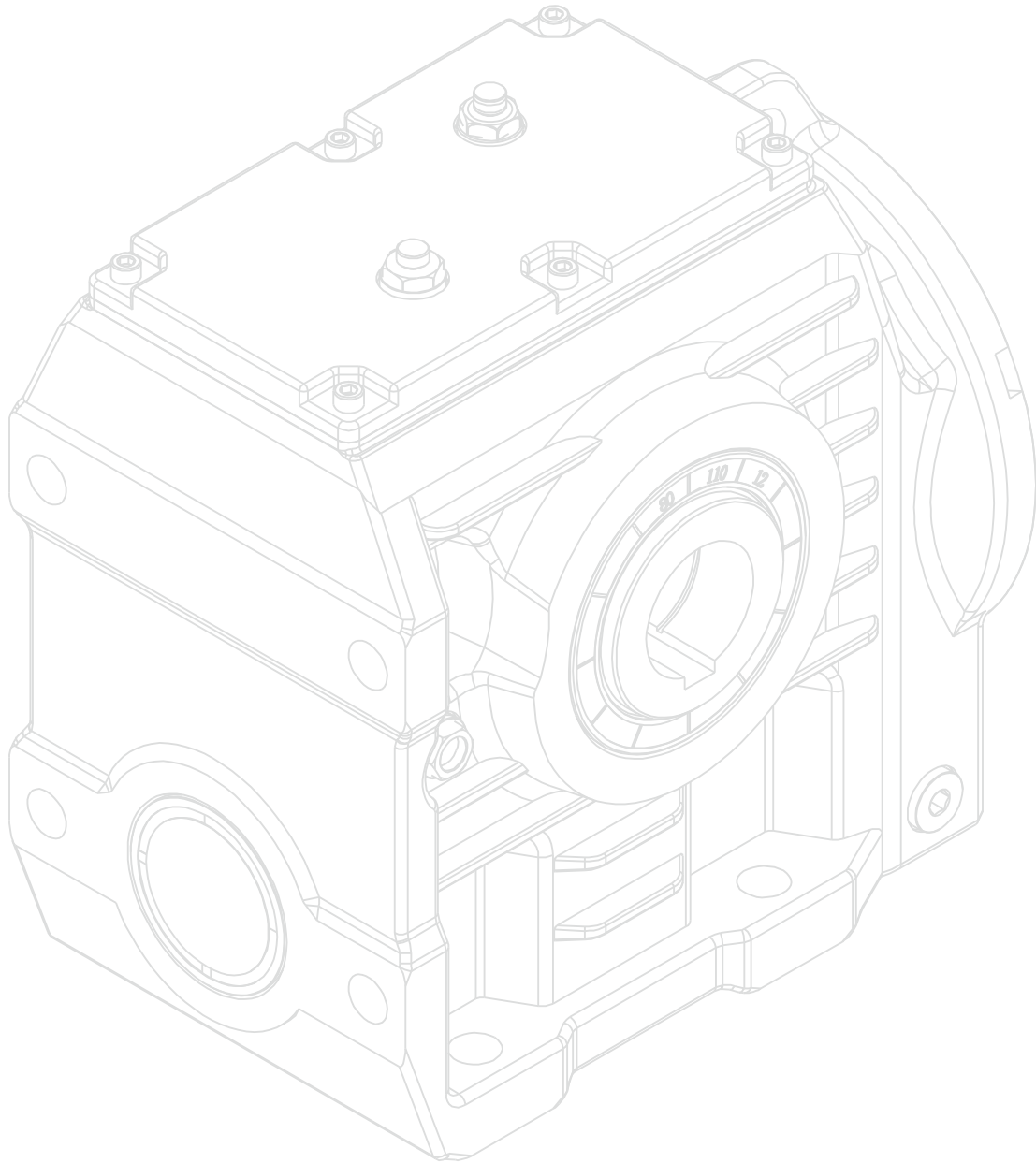
Motor size	90L	100	112M	132S	132M	160M	160L	180M	180L
Power/(kW)	1.5	2.2 3.0	4.0	5.5	7.5	11	15	18.5	22
L3	304	315	334	425	461	524	547	555	588
G	195	215	240	275	275	330	330	380	380
L2	86	86	86	101	101	126	126	126	126

Note:1.The housings of SA、SF、SAF、SAZ are common parts.The mounting dimensions may consult each other. 2. "S.." means S, SA, SF, SAF, SAZ.



Dimensions of shrink disc





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