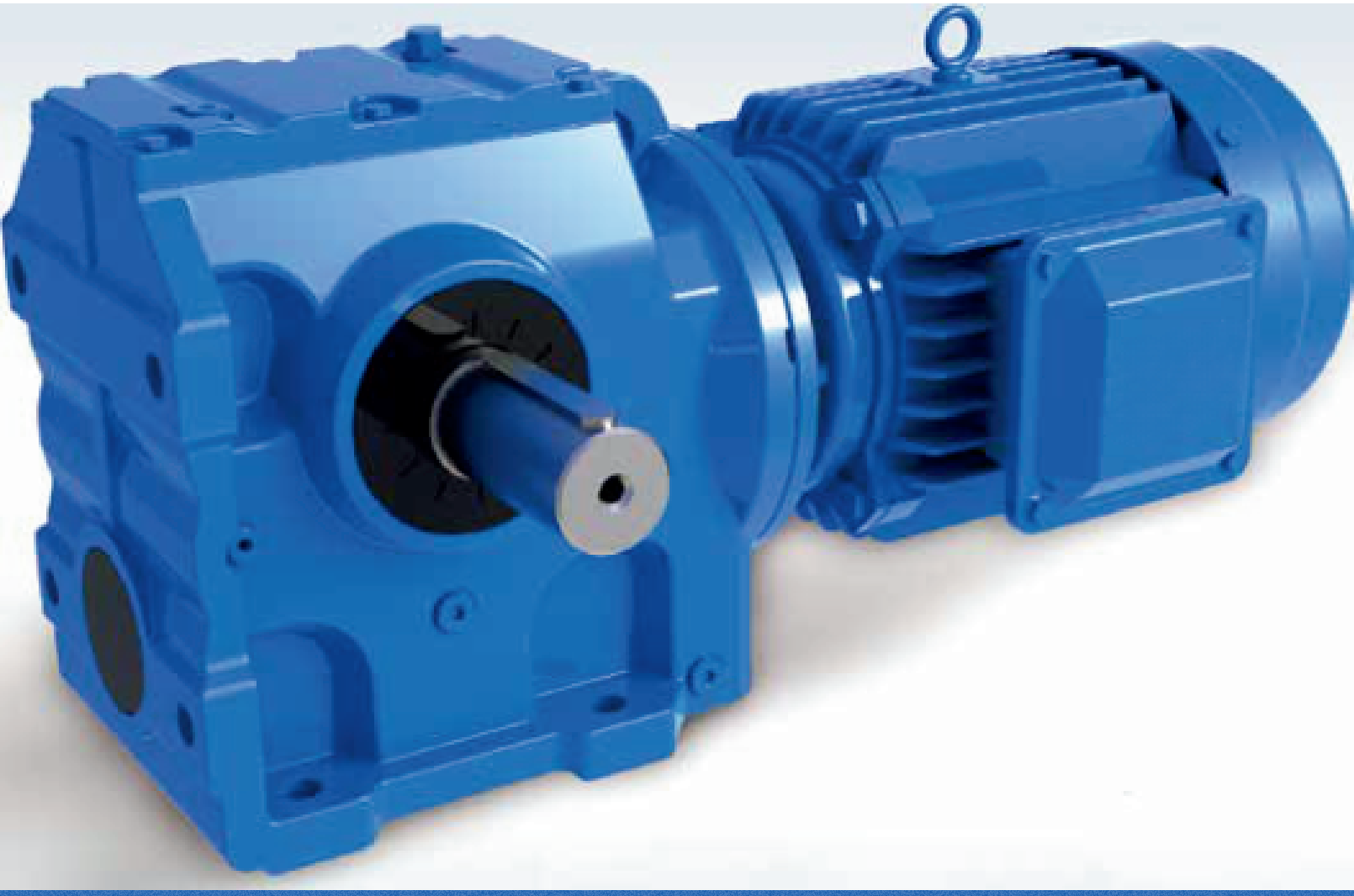
SMC
(주)신명전기



S Series Helical-Worm Gear Units

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. Unless otherwise specified, you will receive the terminal box at 0°.

1. 샘플에 포함된 구조도, 외형도 및 기타 첨부 도면은 예시용이며, 엄격한 비율 기준은 적용되지 않습니다. 특정 모델의 정확한 치수가 필요한 경우 당사 영업부로 문의해 주시기 바랍니다. (별도 표기가 없는 치수 단위는 mm입니다.)
2. 기어 유닛은 출고 전에 시험 운전을 완료하였으며, 사용 전 반드시 윤활유를 주입한 후 운전해야 합니다.
3. 매뉴얼에 표시된 오일만 참고용으로 제공됩니다. 실제 오일 주입량은 오일 레벨 게이지의 표시선과 동일한 수준으로 맞춰야 합니다.
4. 윤활유의 점도는 사용 조건 및 주변 환경 온도에 따라 적절히 선택해야 합니다.
5. 사고 방지를 위해 모든 회전 부위에는 해당 국가 및 지역의 안전 규정에 따라 보호 커버를 설치해야 합니다.
6. 중실축 입력 구조의 기어 유닛에는 모터가 포함되어 있지 않습니다.
7. 별도 지정이 없는 경우, 단자함은 0° 위치로 제공됩니다.

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 f1,prime mover factor f2,starting factor f3 according to actual load type, operating time,starting frequency.let it less than or equale to the service factor fb of selection table,viz f1×f2×f3≤fb.the needed torque of service machine multiply the service factor (f1×f2×f3) should less than or equale to gear units' permissible torque.

Viz $T_n \geq T2 \times f1 \times f2 \times f3$

f1 — Driven machine factor(See table 1)
f2 — Prime mover factor(See table 2)
f3 — Start factor(See table 3)
T2— 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 mannul of SMC will be changed, please forgive.

선정 가이드라인

▫ 기어 유닛은 일정한 부하 조건, 규정된 일일 운전 시간 및 적은 기동 횟수를 기준으로 설계되었습니다. 그러나 실제 사용 환경은 설계 조건만큼 이상적이지 않을 수 있으므로, 실제 부하 유형, 운전 시간 및 기동 빈도에 따라 구동 기계 계수 f1, 원동기 계수 f2, 기동 계수 f3를 반드시 확인해야 합니다.
또한 f1 × f2 × f3의 값은 선정표의 서비스 계수 fb 이하이어야 합니다.
즉:
f1×f2×f3≤fb
서비스 기계에 필요한 토크에 서비스 계수(f1 × f2 × f3)를 곱한 값은 기어 유닛의 허용 토크 이하이어야 합니다.
즉:
Tn≥T2×f1×f2×f3

- f1 — 구동 기계 계수 (표 1 참조)
- f2 — 원동기 계수 (표 2 참조)
- f3 — 기동 계수 (표 3 참조)
- T2 — 구동 기계에 필요한 토크
- T_n — 기어 유닛의 허용 토크 (3페이지 참조)

▫ 당사는 특수 사양 제품 주문을 접수하며, 고객 맞춤형 전용 설계 서비스를 제공합니다.
▫ 기술 발전 등에 따라 SMC 매뉴얼에 기재된 제품 내용은 예고 없이 변경될 수 있으니 양해 부탁드립니다.

Service factor:

Table 1 Driven machine factor f1

Driven equipment	Daily operating time with load(hour) ≤ 2	> 2–10	> 10
Sewage treatment			
Concentrator(Central Transmission)	–	–	1.2
Compressed filter	1.0	1.3	1.5
Flocculator	0.8	1.0	1.3
Aerator	–	1.8	2.0
Collector	1.0	1.2	1.3
Vertical,rotary group			
Blended collector	1.0	1.3	1.5
Concentrator	–	1.1	1.3
Screw pump	–	1.3	1.5
Water wheel machine	–	–	2.0
Pump			
Centrifugal pump	1.0	1.2	1.3
Volume–down pump			
1Piston	1.3	1.4	1.8
>1Piston	1.2	1.4	1.5
Dredge			
Bucket conveyor	–	1.6	1.6
Unloading device	–	1.3	1.5
Carterpillar traveling mechanism	1.2	1.6	1.8
Bucket digger			
Be used for picking up	–	1.7	1.7
Be used for rough materials	–	2.2	2.2
Chopper	–	2.2	2.2
Traveling mechanism*	–	1.4	1.8
Plate blender	–	1.0	1.0
Chemical industry			
Extruder	–	–	1.6
Paste mixer	–	1.8	1.8
Rubber calendar	–	1.5	1.5
Cooling cylinder	–	1.3	1.4
Material mixer,be used for			
Uniform medium	1.0	1.3	1.4
Non–uniform medium	1.4	1.6	1.7
Blender,be used for			
Uniform density medium	1.0	1.3	1.5
Un–uniformed medium	1.2	1.4	1.6
Un–uniformed gas absorption	1.4	1.6	1.8
Oven	1.0	1.3	1.5
Centrifugal machine	1.0	1.2	1.3
Metal processing equipment			
Plate turnover	1.0	1.0	1.2
Steel pushing device	1.0	1.2	1.2
Winding machine	–	1.6	1.6
Cooling bed transverse frame	–	1.5	1.5
Roller leveler	–	1.6	1.6
Roller path			
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	–

Driven equipment	Daily operating time with load(hour) ≤ 2	> 2–10	> 10
Conveyingmachine			
Bucket conveyor	–	1.4	1.5
Winch	1.4	1.6	1.6
Hoist	–	1.5	1.8
Belt conveyor≤150kW	1.0	1.2	1.3
Belt conveyor≥150kW	1.1	1.3	1.4
Elevators for goods*	–	1.2	1.5
Elevators for customers*	–	1.5	1.8
Scraper conveyor	–	1.2	1.5
Automatic ladder	1.0	1.2	1.4
Rail traveling mechanism	–	1.5	–
Various frequency device	–	1.8	2.0
Reciprocating compressor	–	1.8	1.9
Hoisting mechanism**			
Rotary mechanism*		1.4	1.8
Pitching mechanism		1.1	1.4
Traveling mechanism		1.6	2.0
Lifting mechanism		1.1	1.4
Jibcrane		1.2	1.6
Cooling tower			
Cooling tower fan	–	–	2.0
Fan (Shaft flow and centrifugal type)	–	1.4	1.5
Food industry			
Sugar production			
Sugar–cane cutter*	–	–	1.7
Sugar crane mill			
Beet sugar production	–	–	1.7
Beet masher			
Squeeze machine,	–	–	1.2
mechanical refrigerator,			
cooking machine	–	–	1.4
Beet cleaner			
Beet chopper	–	–	1.5
Paper-making machinery			
Various kinds***	–	1.8	2.0
Pulper driving device	Supply goods according to customer requirements		
Centrifugal compressor	–	1.4	1.5
Rope way cable car			
Delivery ropeway	–	1.3	1.4
Cableway of shuttle system	–	1.6	1.8
T rod elevator	–	1.3	1.4
Continuous cableway	–	1.4	1.6
Cement industry			
Concrete blender	–	1.5	1.5
Crusher*	–	1.2	1.4
Rotary kiln	–	–	2.0
Tube mill	–	–	2.0
Powder concentrator	–	1.6	1.6
Roller press	–	–	2.0

Table 1	Driven machine factor			f1			
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			
Feed drive	1.25	1.25	1.50	Coating, film	1.25	1.25	1.25
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	1.75	1.75	2.00	Batch mixer	1.75	1.75	1.75
Main original wood,land base				**Rubber industry**			
Conveying chain	1.50	1.50	1.50	Continuous strong inner mixer,Mix roller,			
Floor	1.50	1.50	1.75	Batch feeding mixer (except for double sticks)	1.50	1.50	1.50
Green–wood				Refiner, calender			
Cutting Chain	1.50	1.50	1.75	Double roller clamp feeding and mixed miller	1.25	1.25	1.50
Saw transmission,traction	1.75	1.75	2.00	Batch strong inner mixer,			
Peeling barrel				Double stick single groove grain stick	1.75	1.75	1.75
Feed drive				Miller heater, double sticks			
Edging,wood trimmer	1.25	1.25	1.50	Batch feeding mixer			
Planer feed,assorting table,				Wave stick miller	2.00	2.00	2.00
Automatic incline lifting	1.75	1.75	1.75	**Generator and exciter**	1.00	1.00	1.25
Multi–shaft feed,raw wood				**Hammer crusher**	1.75	1.75	2.00
Transportation and rotation				**Sand miller**	1.25	1.25	1.50
Transportation							
Charging tray							
Plywood lathe drive	1.50	1.50	1.75				
Conveying chain,Lifting							

⚠ Note: Determine required power P2 of the driven equipment:

*)Determine rated power according to maximum torque.

**)It's necessary to check thermal capacity.

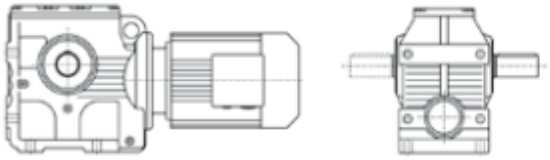
Prime mover factor

Table 2 Factor for prime mover	f2
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				f3
f3 / f1xf2 / Starts per hour	1	1.25 –1.75	2– 2.75	⩾3
⩽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

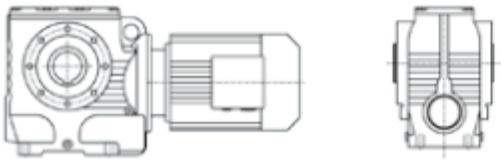


S series gear units are available in the following designs:



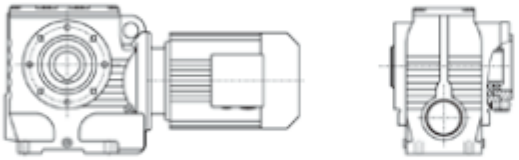
S..Y..

Foot-mounted solid shaft helical-worm gear units



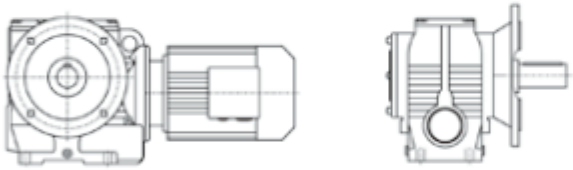
SA...Y...

Hollow shaft helical-worm gear units



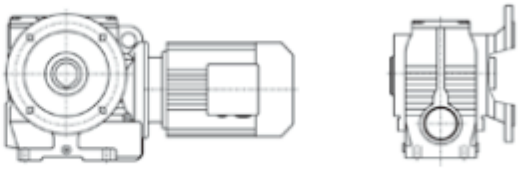
SAZ...Y...

Short-flange-mounted hollow shaft helical-worm gear units



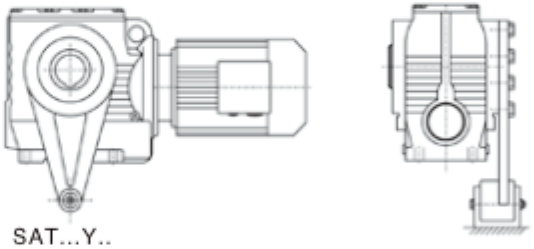
SF...Y..

Flange-mounted solid shaft helical-worm gear units



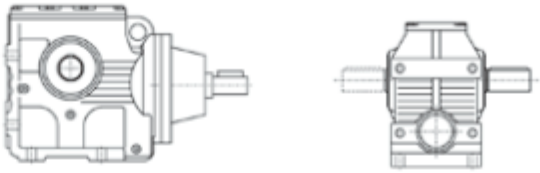
SAF...Y..

Flange-mounted hollow shaft helical-worm gear units



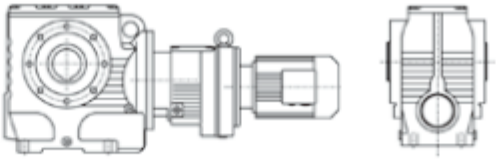
SAT...Y..

Torque-arm-mounted hollow shaft helical-worm gear units



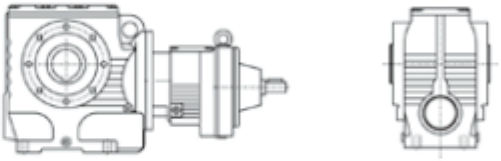
S(SF、SA、SAF、SAZ)S...

Helical-worm gear units with solid shaft input



SA(S、SF、SAF、SAZ)...R...Y...

Combi-type helical-worm gear units



SA(S、SF、SAF、SAZ)S...R...

Combi-type helical-worm gear units with solid shaft input

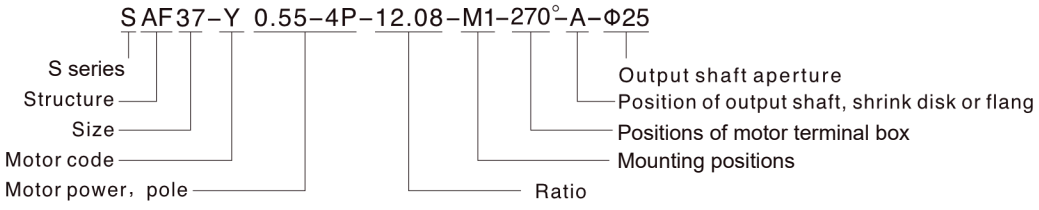


SA(S、SF、SAF、SAZ)...Y...

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)

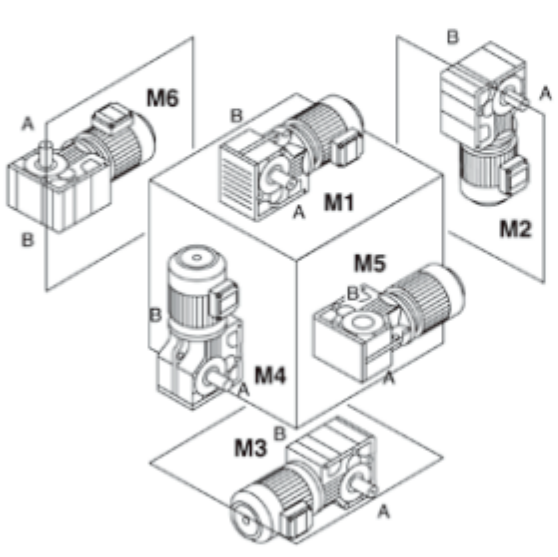
Positions of motor terminal box:
0°, 90°, 180°, 270°(See page 03)

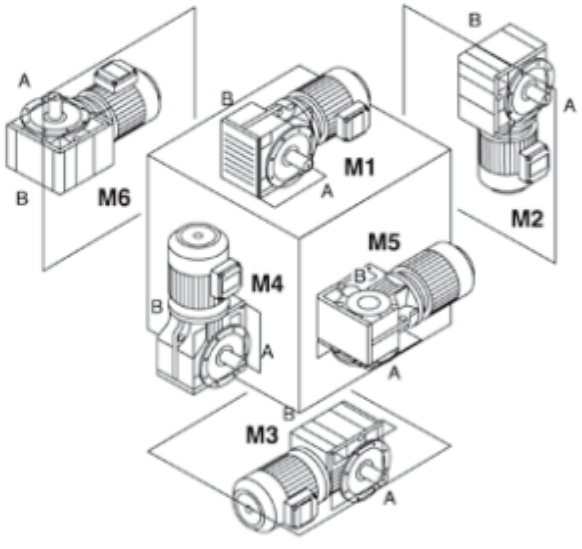
Output shaft \ flange \ shrink disc directions:
Viewing from motor end: left side = A,
right side = B, both side = AB(See mounting positions)

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.

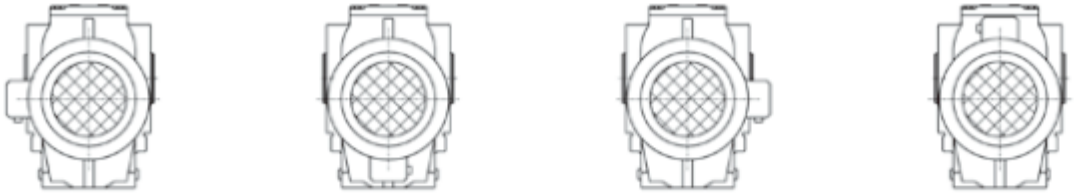
Mounting positions





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 r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
0.18kW					
0.30	2579	4606	0.83		
0.36	2563	3872	0.84		
0.40	2515	3475	0.85	S 87R57	4
0.48	2394	2905	0.90	SF 87R57	4
0.54	2239	2586	0.96	SA 87R57	4
0.60	2021	2335	1.06	SAF87R57	4
0.68	1778	2054	1.21		
0.76	1579	1824	1.36		
0.85	1412	1631	1.52		
0.99	1215	1404	0.98		
1.1	1078	1245	1.11		
1.3	952	1100	1.25	S 77R37	4
1.5	826	954	1.45	SF 77R37	4
1.7	725	837	1.65	SA 77R37	4
1.9	618	714	1.93	SAF77R37	4
2.2	551	637	2.2		
2.4	497	574	2.4		
1.7	600	809	0.81		
2.0	532	712	0.92	S 67R37	4
2.3	528	615	0.93	SF 67R37	4
2.6	470	543	1.04	SA 67R37	4
3.0	406	469	1.20	SAF67R37	4
3.3	367	424	1.33		
3.8	316	365	1.55		
3.2	336	438	0.87		
3.6	325	388	0.84		
4.1	291	336	0.97	S 57R17	4
4.7	255	294	1.11	SF 57R17	4
5.2	233	269	1.21	SA 57R17	4
6.1	198	229	1.42	SAF57R17	4
6.8	177	204	1.60		
7.4	162	187	1.74		
4.7	198	294	0.81	S 47R17	4
5.4	191	257	0.84	SF 47R17	4
6.1	182	229	0.88	SA 47R17	4
7.0	173	200	0.92	SAF47R17	4
3.7	276	227.20	1.77	S 67	6
4.1	249	205.11	1.96	SF 67	6
4.7	219	180.46	2.23	SA 67	6
5.0	207	170.40	2.36	SAF67	6
4.3	238	196.21	1.18	S 57	6
4.7	219	180.40	1.29	SF 57	6
5.5	187	154.35	1.51	SA 57	6
6.4	162	133.79	1.74	SAF57	6
7.1	146	196.21	1.94	S 57	4
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

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
0.18kW					
9.5	109	146.84	1.47		
10	102	137.25	1.57		
12	88	118.64	1.82	S 47	4
14	75	100.80	2.14	SF 47	4
15	67	90.00	2.40	SA 47	4
18	57	76.88	2.80	SAF47	4
19	53	72.00	2.99		
23	45	60.65	3.56		
9.1	113	152.00	0.80		
11	96	129.41	0.89		
12	83	111.58	1.03		
13	77	104.00	1.10		
15	67	90.91	1.26		
16	63	85.22	1.34		
18	56	75.20	1.52		
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		
0.25kW					
0.48	2495	2905	0.86		
0.54	2470	2586	0.87	S 87R57	4
0.60	2406	2335	0.89	SF 87R57	4
0.68	2221	2054	0.96	SA 87R57	4
0.76	2193	1824	0.98	SAF87R57	4
0.85	1961	1631	1.09		
1.5	1118	930	1.92		
1.5	1147	954	1.04		
1.7	1006	837	1.19	S 77R37	4
1.9	858	714	1.39	SF 77R37	4
2.2	766	637	1.56	SA 77R37	4
2.4	690	574	1.73	SAF77R37	4
2.8	600	499	1.99		
2.6	564	543	0.87		
3.0	560	469	0.87	S 67R37	4
3.3	510	424	0.96	SF 67R37	4
3.8	439	365	1.11	SA 67R37	4
4.4	384	319	1.27	SAF67R37	4
4.9	338	281	1.45		
4.7	353	294	0.80		
5.2	323	269	0.87	S 57R17	4
6.1	275	229	1.02	SF 57R17	4
6.8	245	204	1.15	SA 57R17	4
7.4	225	187	1.25	SAF57R17	4
8.4	198	165	1.42		
11	158	131	1.79		
2.8	505	227.20	0.97		
3.1	456	205.11	1.07	S 67	8
3.6	401	180.46	1.22	SF 67	8
3.8	378	170.40	1.29	SA 67	8
4.5	320	144.00	1.53	SAF67	8

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
0.25kW					
3.7	383	227.20	1.28	S 67	6
4.1	346	205.11	1.41	SF 67	6
4.7	304	180.46	1.61	SA 67	6
5.0	287	170.40	1.70	SAF67	6
5.9	243	144.00	2.01		
6.1	234	227.20	2.09		
6.8	211	205.11	2.31		
7.7	186	180.46	2.63	S 67	4
8.2	176	170.40	2.78	SF 67	4
9.7	148	144.00	3.30	SA 67	4
11	134	130.00	3.65	SAF67	4
12	118	114.38	4.15		
13	111	108.00	4.39		
4.3	331	196.21	0.85	S 57	6
4.7	304	180.40	0.93	SF 57	6
5.5	260	154.35	1.08	SA 57	6
6.4	225	133.79	1.25	SAF57	6
6.8	211	125.05	1.34		
7.1	202	196.21	1.39		
7.7	186	180.40	1.52		
9.0	159	154.35	1.77	S 57	4
10	138	133.79	2.05	SF 57	4
11	129	125.05	2.19	SA 57	4
13	111	108.09	2.53	SAF57	4
15	95	91.84	2.98		
17	85	82.00	3.34		
7.0	204	197.73	0.81		
8.3	173	168.00	0.92		
9.3	155	150.00	1.04		
9.5	151	146.84	1.06		
10	141	137.25	1.13		
12	122	118.64	1.31	S 47	4
14	104	100.80	1.54	SF 47	4
15	93	90.00	1.73	SA 47	4
18	79	76.88	2.02	SAF47	4
19	74	72.00	2.16		
23	71	60.65	2.24		
24	63	59.32	2.56		
28	61	50.40	2.64		
31	54	45.00	2.96		
13	107	104.00	0.81		
15	94	90.91	0.91		
16	88	85.22	0.97		
18	77	75.20	1.10		
21	69	66.67	1.24		
25	63	56.67	1.36		
27	58	52.00	1.46		
31	55	45.45	1.56		
33	51	42.61	1.66		
37	45	37.60	1.88	S 37	4
42	40	33.33	2.12	SF 37	4
49	34	28.33	2.50	SA 37	4
59	32	23.46	2.64	SAF37	4
74	26	18.85	3.28		
84	23	16.48	3.75		
90	21	15.45	4.00		
102	19	13.63	4.54		
115	17	12.08	5.12		
135	14	10.27	6.02		

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
0.37kW					
0.68	2611	2054	0.82	S 87R57	4
0.76	2488	1824	0.86	SF 87R57	4
0.85	2318	1631	0.92	SA 87R57	4
1.5	1655	930	1.29	SAF87R57	4
1.7	1479	831	1.45		
1.9	1271	714	0.94		
2.2	1134	637	1.05	S 77R37	4
2.4	1021	574	1.17	SF 77R37	4
2.8	888	499	1.34	SA 77R37	4
3.2	779	438	1.53	SAF77R37	4
3.6	692	389	1.72		
3.8	557	365	0.88	S 67R37	4
4.4	568	319	0.92	SF 67R37	4
4.9	500	281	0.98	SA 67R37	4
5.7	438	246	1.12	SAF67R37	4
3.0	702	222.00	3.03	S 87	8
3.4	627	198.00	3.42	SF 87	8
4.0	527	166.43	4.07	SA 87	8
				SAF87	8
2.8	763	241.09	1.57		
3.3	652	206.04	1.83	S 77	8
3.5	598	188.89	2.00	SF 77	8
4.0	524	165.75	2.28	SA 77	8
4.3	497	157.08	2.40	SAF77	8
3.9	544	227.20	0.90		
4.3	491	205.11	1.00	S 67	6
4.9	432	180.46	1.13	SF 67	6
5.2	408	170.40	1.20	SA 67	6
6.1	345	144.00	1.42	SAF67	6
6.1	347	227.20	1.41		
6.8	313	205.11	1.56		
7.7	275	180.46	1.78	S 67	4
8.2	260	170.40	1.88	SF 67	4
9.7	220	144.00	2.23	SA 67	4
11	198	130.00	2.47	SAF67	4
12	174	114.38	2.80		
5.7	370	154.35	0.81		
6.6	321	133.79	0.88	S 57	6
7.1	300	125.05	0.94	SF 57	6
8.2	259	108.09	1.09	SA 57	6
9.6	220	91.84	1.28	SAF57	6
10.8	196	82.00	1.44		
7.1	299	196.21	0.94		
7.7	275	180.40	1.02		
9.0	235	154.35	1.20		
10	204	133.79	1.38	S 57	4
11	191	125.05	1.48	SF 57	4
13	165	108.09	1.71	SA 57	4
15	140	91.84	2.01	SAF57	4
17	125	82.00	2.25		
20	119	70.04	2.64		
21	111	66.89	2.37		
22	107	62.53	2.53		
10	209	137.25	0.80		
12	181	118.64	0.88	S 47	4
14	154	100.80	1.04	SF 47	4
15	137	90.00	1.17	SA 47	4
18	117	76.88	1.36	SAF47	4

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
0.37kW					
19	110	72.00	1.46		
23	106	60.65	1.52		
24	93	59.32	1.73		
28	90	50.40	1.78		
31	80	45.00	2.00	S 47	4
36	68	38.44	2.34	SF 47	4
39	64	36.00	2.50	SA 47	4
46	54	30.33	2.96	SAF47	4
50	56	27.74	2.84		
54	53	25.93	3.03		
62	46	22.41	3.51		
73	39	19.04	4.13		
82	35	17.00	4.63		
21	102	66.67	0.84		
25	93	56.67	0.92		
27	86	52.00	0.98		
31	81	45.45	1.05		
33	76	42.61	1.12		
37	67	37.60	1.27	S 37	4
42	59	33.33	1.43	SF 37	4
49	50	28.33	1.69	SA 37	4
59	48	23.46	1.78	SAF37	4
74	38	18.85	2.22		
84	34	16.48	2.54		
90	31	15.45	2.71		
102	28	13.63	3.07		
115	25	12.08	3.46		
135	21	10.27	4.07		
0.55kW					
1.0	2517	1332	0.85		
1.2	2475	1191	0.87		
1.3	2460	1032	0.87		
1.5	2340	930	0.92	S 87R57	4
1.7	2198	831	0.97	SF 87R57	4
1.9	1902	719	1.13	SA 87R57	4
2.2	1651	624	1.30	SAF87R57	4
2.5	1476	558	1.45		
3.2	1151	435	1.86		
2.8	1320	499	0.90		
3.2	1159	438	1.03	S 77R37	4
3.6	1029	389	1.16	SF 77R37	4
4.3	865	327	1.38	SA 77R37	4
4.8	764	289	1.56	SAF77R37	4
5.6	661	250	1.81		
5.7	558	246	0.84	S 67R37	4
6.3	585	221	0.88	SF 67R37	4
7.0	524	198	0.93	SA 67R37	4
8.3	444	168	1.10	SAF67R37	4
3.0	1044	222.00	2.05	S 87	8
3.4	931	198.00	2.30	SF 87	8
4.0	783	166.43	2.74	SA 87	8
				SAF87	8
4.0	791	222.00	2.71	S 87	6
4.5	705	198.00	3.04	SF 87	6
5.3	593	166.43	3.62	SA 87	6
				SAF87	6
3.3	969	206.04	1.23	S 77	8
3.5	888	188.89	1.34	SF 77	8
4.0	780	165.75	1.53	SA 77	8
4.3	739	157.08	1.62	SAF77	8

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
0.55kW					
3.7	859	241.09	1.39		
4.3	734	206.04	1.63	S 77	6
4.7	673	188.89	1.78	SF 77	6
5.3	590	165.75	2.02	SA 77	6
5.6	559	157.08	2.13	SAF77	6
5.8	547	241.09	2.18	S 77	4
6.7	467	206.04	2.56	SF 77	4
7.4	428	188.89	2.79	SA 77	4
				SAF77	4
6.1	515	227.20	0.95		
6.8	465	205.11	1.05		
7.7	409	180.46	1.20		
8.2	386	170.40	1.27		
9.7	326	144.00	1.50		
11	295	130.00	1.66	S 67	4
12	259	114.38	1.89	SF 67	4
13	245	108.00	2.00	SA 67	4
15	208	91.96	2.35	SAF67	4
17	189	83.57	2.58		
19	172	72.39	2.98		
21	164	65.00	2.84		
9.6	327	91.84	0.86		
11	292	82.00	0.97		
12	251	70.40	1.01		
13	278	66.89	1.12	S 57	6
14	260	62.53	1.09	SF 57	6
16	225	54.05	1.26	SA 57	6
19	191	45.92	1.48	SAF57	6
22	170	41.00	1.66		
25	146	35.20	1.93		
9.0	350	154.35	0.81		
10	303	133.79	0.93		
11	284	125.05	0.99		
13	245	108.09	1.15		
15	208	91.84	1.35		
17	186	82.00	1.52		
20	177	70.40	1.59		
21	165	66.89	1.70	S 57	4
22	160	62.53	1.77	SF 57	4
26	143	54.05	1.97	SA 57	4
30	121	45.92	2.32	SAF57	4
34	108	41.00	2.60		
40	93	35.02	3.04		
42	91	32.80	3.10		
46	87	30.12	3.25		
53	79	26.11	3.57		
57	74	24.40	3.82		
66	64	21.09	4.42		
18	174	76.88	0.92		
19	163	72.00	0.98		
23	157	60.65	1.02		
25	138	59.32	1.16		
28	133	50.40	1.20		
31	119	45.00	1.34		
36	102	38.44	1.57	S 47	4
39	95	36.00	1.68	SF 47	4
46	80	30.33	1.91	SA 47	4
50	84	27.74	1.99	SAF47	4
54	78	25.93	2.04		
62	68	22.41	2.36		
73	58	19.04	2.78		
82	51	17.00	3.11		
96	44	14.52	3.65		
102	41	13.60	3.89		
121	35	11.46	4.62		

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
0.55kW					
42	88	33.33	0.96		
49	75	28.33	1.13		
59	71	23.46	1.20		
74	57	18.85	1.49	S 37	4
84	50	16.48	1.71	SF 37	4
90	47	15.45	1.82	SA 37	4
102	41	13.63	2.06	SAF37	4
115	37	12.08	2.33		
135	31	10.27	2.74		
0.75kW					
1.1	4411	1223	0.85		
1.3	3860	1070	0.97		
1.5	3347	928	1.12	S 97R57	4
1.7	2972	824	1.27	SF 97R57	4
1.9	2575	714	1.46	SA 97R57	4
2.2	2258	626	1.67	SAF97R57	4
2.6	1941	538	1.94		
2.9	1746	484	2.2		
1.3	2659	1032	0.81		
1.5	2593	930	0.83		
1.7	2569	831	0.83	S 87R57	4
1.9	2396	719	0.89	SF 87R57	4
2.2	2251	624	0.95	SA 87R57	4
2.5	2013	558	1.06	SAF87R57	4
3.2	1569	435	1.37		
4.3	1165	323	1.84		
4.3	1179	327	1.01	S 77R37	4
4.8	1042	289	1.15	SF 77R37	4
5.6	902	250	1.32	SA 77R37	4
6.3	790	219	1.51	SAF77R37	4
3.0	1457	230.48	2.58	S 97	8
3.3	1311	207.48	2.87	SF 97	8
3.6	1187	187.89	3.17	SA 97	8
				SAF97	8
4.1	1048	222.00	2.04	S 87	6
4.6	935	198.00	2.29	SF 87	6
5.5	786	166.43	2.73	SA 87	6
				SAF87	6
6.2	690	223.26	3.10	S 87	4
7.0	612	198.00	3.50	SF 87	4
8.4	515	166.43	4.16	SA 87	4
				SAF87	4
3.8	1139	241.09	1.05	S 77	6
4.4	973	206.04	1.23	SF 77	6
4.8	892	188.89	1.34	SA 77	6
5.5	783	165.75	1.53	SAF77	6
5.8	745	241.09	1.60		
6.7	637	206.04	1.87		
7.4	584	188.89	2.04	S 77	4
8.4	512	165.75	2.33	SF 77	4
8.8	486	157.08	2.46	SA 77	4
10	425	137.48	2.81	SAF77	4
11	383	123.86	3.12		
13	336	108.65	3.55		

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
0.75kW					
6.8	634	205.11	0.80		
7.7	558	180.46	0.88		
8.2	527	170.40	0.93		
9.7	445	144.00	1.10		
11	402	130.00	1.22		
12	354	114.38	1.38	S 67	4
13	334	108.00	1.46	SF 67	4
15	284	91.96	1.72	SA 67	4
17	258	83.57	1.89	SAF67	4
19	224	72.39	2.09		
21	234	65.00	2.18		
22	206	63.00	2.37		
24	195	57.19	2.51		
26	185	54.00	2.51		
30	166	45.98	2.95		
13	331	70.04	0.80		
14	369	66.89	0.82	S 57	6
15	345	62.53	0.85	SF 57	6
17	298	54.05	0.95	SA 57	6
20	253	45.92	1.11	SAF57	6
22	226	41.00	1.25		
13	334	108.09	0.84		
15	284	91.84	0.99		
17	254	82.00	1.11		
20	217	70.04	1.17		
21	241	66.89	1.25		
22	226	62.53	1.30		
26	195	54.05	1.45		
30	166	45.92	1.70	S 57	4
34	148	41.00	1.91	SF 57	4
40	126	35.02	2.23	SA 57	4
42	118	32.80	2.27	SAF57	4
46	124	30.12	2.38		
53	108	26.11	2.62		
57	101	24.40	2.80		
66	87	21.09	3.24		
78	74	17.92	3.82		
87	66	16.00	4.28		
102	56	13.67	5.00		
31	162	45.00	0.99		
36	139	38.44	1.15		
39	130	36.00	1.23		
46	109	30.33	1.40	S 47	4
50	114	27.74	1.46	SF 47	4
54	107	25.93	1.50	SA 47	4
62	92	22.41	1.73	SAF47	4
73	78	19.04	2.04		
82	70	17.00	2.28		
96	60	14.52	2.67		
102	56	13.60	2.85		
121	47	11.46	3.39		
74	78	18.85	1.09		
84	68	16.48	1.25	S 37	4
90	64	15.45	1.33	SF 37	4
102	56	13.63	1.51	SA 37	4
115	50	12.08	1.71	SAF37	4
135	42	10.27	2.01		

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
1.1kW					
1.7	4328	824	0.87		
2.0	3750	714	1.00	S 97R57	4
2.2	3288	626	1.14	SF 97R57	4
2.6	2826	538	1.33	SA 97R57	4
2.9	2542	484	1.48	SAF97R57	4
3.3	2206	420	1.70		
2.2	2547	624	0.84		
2.5	2512	558	0.85		
2.9	2341	485	0.92		
3.2	2285	435	0.94	S 87R57	4
3.7	1985	378	1.08	SF 87R57	4
4.3	1697	323	1.26	SA 87R57	4
5.0	1476	281	1.45	SAF87R57	4
5.5	1339	255	1.60		
6.3	1166	222	1.84		
6.8	1077	205	1.99		
6.4	1150	219	1.04	S 77R37 SF 77R37 SA 77R37 SAF77R37	4 4 4 4
3.0	2136	230.48	1.76	S 97	8
3.3	1923	207.48	1.96	SF 97	8
3.6	1742	187.89	2.16	SA 97 SAF97	8 8
3.9	1596	230.48	2.36	S 97	6
4.4	1437	207.48	2.62	SF 97	6
4.8	1301	187.89	2.89	SA 97 SAF97	6 6
6.3	999	222.00	2.14		
7.1	891	198.00	2.40	S 87	4
8.4	749	166.43	2.86	SF 87	4
9.2	689	152.95	3.11	SA 87	4
10.3	612	135.83	3.50	SAF87	4
5.8	1085	241.09	1.10		
6.8	928	206.04	1.29		
7.4	850	188.89	1.40		
8.4	746	165.75	1.60	S 77	4
8.9	707	157.08	1.69	SF 77	4
10	619	137.48	1.93	SA 77	4
11	558	123.86	2.14	SAF77	4
13	489	108.65	2.44		
15	432	95.88	2.77		
11	585	130.00	0.84		
12	515	114.38	0.95		
13	486	108.00	1.01		
15	414	91.96	1.18		
17	376	83.57	1.30		
19	341	72.39	1.43	S 67	4
22	326	65.00	1.50	SF 67	4
23	284	63.00	1.63	SA 67	4
24	300	57.19	1.72	SAF67	4
26	284	54.00	1.72		
30	242	45.98	2.02		
34	220	41.79	2.23		
39	190	36.20	2.57		
44	165	31.50	2.96		
53	139	26.40	3.53		

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
1.1kW					
20	351	70.04	0.80		
21	328	66.89	0.86		
22	315	62.53	0.89		
26	284	54.05	0.99		
30	241	45.92	1.17		
34	215	41.00	1.31		
40	184	35.02	1.53	S 57	4
43	181	32.80	1.56	SF 57	4
46	172	30.12	1.64	SA 57	4
54	157	26.11	1.80	SAF57	4
57	146	24.40	1.93		
66	127	21.09	2.23		
78	108	17.92	2.62		
88	96	16.00	2.94		
102	82	13.67	3.44		
109	77	12.80	3.67		
130	65	10.78	4.36		
46	182	30.33	0.88		
50	167	27.74	0.96		
54	156	25.93	1.03	S 47	4
62	135	22.41	1.19	SF 47	4
74	114	19.04	1.40	SA 47	4
82	102	17.00	1.57	SAF47	4
96	87	14.52	1.84		
103	82	13.60	1.96		
122	69	11.46	2.33		
1.5kW					
2.0	4484	714	0.84		
2.2	4383	626	0.86	S 97R57	4
2.6	3853	538	0.98	SF 97R57	4
2.9	3467	484	1.08	SA 97R57	4
3.3	3008	420	1.25	SAF97R57	4
3.7	2693	376	1.40		
4.3	2342	327	1.61		
2.9	2707	485	0.79		
3.2	2481	435	0.86		
3.7	2313	378	0.93	S 87R57	4
4.3	2225	323	0.96	SF 87R57	4
5.0	2013	281	1.06	SA 87R57	4
5.5	1826	255	1.17	SAF87R57	4
6.3	1590	222	1.35		
6.8	1468	205	1.46		
3.0	2871	230.48	1.31	S 97	8
3.3	2584	207.48	1.45	SF 97	8
3.7	2340	187.89	1.61	SA 97	8
4.1	2076	166.62	1.81	SAF97	8
4.0	2153	230.48	1.75	S 97	6
4.4	1938	207.48	1.94	SF 97	6
4.9	1755	187.89	2.14	SA 97	6
5.5	1557	166.62	2.42	SAF97	6
6.1	1415	230.48	2.66	S 97	4
6.7	1274	207.48	2.95	SF 97	4
7.5	1154	187.89	3.26	SA 97	4
				SAF97	4
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

S

1.5kW

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
6.3	1363	222.00	1.56		
7.1	1216	198.00	1.76		
8.4	1022	166.43	2.10	S 87	4
9.2	939	152.95	2.28	SF 87	4
10	834	135.83	2.57	SA 87	4
12	746	121.44	2.87	SAF87	4
13	970	109.19	3.20		
15	582	94.77	3.68		
7.4	1160	188.89	1.03		
8.4	1018	165.75	1.17		
8.9	964	157.08	1.24		
10	844	137.48	1.41		
11	760	123.86	1.57		
13	667	108.65	1.79	S 77	4
15	589	95.88	2.03	SF 77	4
16	564	85.00	2.12	SA 77	4
18	522	78.78	2.29	SAF77	4
19	517	72.22	2.31		
22	454	63.38	2.63		
23	430	60.06	2.78		
27	377	52.57	3.17		
30	339	47.36	3.52		
34	298	41.54	4.01		
17	513	83.57	0.95		
19	466	72.39	1.05		
22	444	65.00	1.10		
23	410	63.00	1.19		
24	387	57.19	1.26		
26	367	54.00	1.26		
30	329	45.98	1.48	S 67	4
34	299	41.79	1.63	SF 67	4
39	259	36.20	1.89	SA 67	4
44	226	31.50	2.17	SAF67	4
53	216	26.40	2.26		
59	195	23.83	2.51		
67	171	20.92	2.86		
71	162	19.80	3.02		
83	138	16.86	3.54		
91	125	15.32	3.90		
106	109	13.27	4.50		
121	95	11.55	5.17		
43	247	32.80	1.20		
46	235	30.12	1.14		
54	214	26.11	1.32		
57	200	24.40	1.41	S 57	4
66	173	21.09	1.63	SF 57	4
78	147	17.92	1.92	SA 57	4
88	131	16.00	2.15	SAF57	4
102	112	13.67	2.52		
109	105	12.80	2.69		
130	88	10.78	3.20		
96	119	14.52	1.35	S 47	4
103	111	13.60	1.44	SF 47	4
122	94	11.46	1.71	SA 47	4
				SAF47	4

2.2kW

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
3.4	4350	420	0.86	S 97R57	4
3.8	3894	376	0.97	SF 97R57	4
4.3	3387	327	1.11	SA 97R57	4
4.9	2972	287	1.26	SAF97R57	4
5.6	2610	252	1.44		
4.1	3091	230.48	1.22	S 97	6
4.5	2782	207.48	1.35	SF 97	6
5.0	2520	187.89	1.49	SA 97	6
				SAF97	6
6.2	2046	230.48	1.84		
6.8	1842	207.48	2.04		
7.6	1668	187.89	2.25	S 97	4
8.5	1479	166.62	2.54	SF 97	4
9.4	1337	150.64	2.81	SA 97	4
11	1133	127.68	3.32	SAF97	4
13	990	111.52	3.80		
15	863	93.27	4.54		
17	828	83.31	4.36		
6.4	1971	222.00	1.08		
7.2	1758	198.00	1.22		
8.5	1477	166.43	1.45		
9.3	1358	152.95	1.58		
10	1206	135.83	1.78	S 87	4
12	1078	121.44	1.99	SF 87	4
13	969	109.19	2.21	SA 87	4
15	841	94.77	2.55	SAF87	4
17	753	84.86	2.74		
19	733	75.63	2.84		
20	700	70.40	3.06		
21	630	67.62	3.40		
23	625	60.80	3.43		
27	547	52.77	3.92		
10	1220	137.48	0.98		
11	1100	123.86	1.09		
13	965	108.65	1.24		
15	851	95.88	1.40		
17	755	85.00	1.46		
18	816	78.78	1.58		
20	748	72.22	1.60		
22	656	63.38	1.82	S 77	4
24	622	60.06	1.92	SF 77	4
27	544	52.57	2.19	SA 77	4
30	491	47.36	2.43	SAF77	4
34	430	41.54	2.78		
39	380	36.66	3.14		
44	337	32.50	3.55		
51	307	27.75	3.89		
55	287	25.93	4.15		
62	269	22.75	4.43		
66	255	21.56	4.68		
31	476	45.98	1.03		
34	433	41.79	1.13		
39	375	36.20	1.30		
45	326	31.50	1.50		
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
2.2kW					
89	189	16.00	1.49	S 57	4
104	162	13.67	1.74	SF 57	4
111	152	12.80	1.86	SA 57	4
132	128	10.78	2.21	SAF57	4
3kW					
4.9	4053	287	0.93	S 97R57	4
				SF 97R57	4
				SA 97R57	4
				SAF97R57	4
6.2	2790	230.48	1.35		
6.8	2512	207.48	1.50		
7.6	2275	187.89	1.65		
8.5	2017	166.62	1.86	S 97	4
9.4	1824	150.64	2.06	SF 97	4
11	1546	127.68	2.43	SA 97	4
13	1350	111.52	2.79	SAF97	4
15	1129	93.27	3.20		
17	1177	83.31	3.33		
18	978	80.75	3.85		
8.5	2015	166.43	1.06		
9.3	1852	152.95	1.16		
10	1644	135.83	1.30		
12	1470	121.44	1.46		
13	1322	109.19	1.62		
15	1147	94.77	1.87		
17	1027	84.86	2.01	S 87	4
19	1068	75.63	2.09	SF 87	4
20	955	70.40	2.24	SA 87	4
21	859	67.62	2.50	SAF87	4
23	852	60.80	2.51		
27	745	52.77	2.88		
30	696	47.25	3.08		
33	667	43.13	3.21		
36	617	39.20	3.47		
37	554	38.25	3.87		
42	481	34.09	4.45		
17	1113	85.00	1.07		
18	1029	78.78	1.16		
20	1020	72.22	1.17		
22	895	63.38	1.33		
24	848	60.06	1.41		
27	742	52.57	1.61		
30	669	47.36	1.79		
34	587	41.54	2.04	S 77	4
39	518	36.66	2.31	SF 77	4
44	459	32.50	2.60	SA 77	4
51	419	27.75	2.85	SAF77	4
55	392	25.93	3.05		
62	367	22.75	3.25		
66	348	21.56	3.43		
75	305	18.87	3.92		
84	274	17.00	4.35		
95	241	14.91	4.96		
108	212	13.16	5.62		
122	188	11.67	6.34		
143	161	9.96	7.43		

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
3kW					
39	511	36.20	0.96		
45	445	31.50	1.10		
54	426	26.40	1.15		
60	385	23.83	1.27	S 67	4
68	338	20.97	1.44	SF 67	4
72	320	19.80	1.53	SA 67	4
84	272	16.86	1.80	SAF67	4
93	247	15.32	1.98		
107	214	13.27	2.28		
123	186	11.55	2.62		
104	221	13.67	1.28	S 57	4
111	207	12.80	1.36	SF 57	4
132	174	10.78	1.62	SA 57	4
				SAF57	4
4kW					
6.2	3668	230.48	1.02		
6.9	3302	207.48	1.14		
7.7	2991	187.89	1.26		
8.6	2652	166.62	1.42		
9.6	2398	150.64	1.57	S 97	4
11	2032	127.68	1.85	SF 97	4
13	1775	111.52	2.12	SA 97	4
15	1547	93.27	2.43	SAF97	4
17	1485	83.31	2.53		
18	1399	80.75	2.93		
19	1285	75.32	2.69		
23	1185	63.84	3.17		
26	1035	55.76	3.63		
12	1933	121.44	1.11		
13	1738	109.19	1.23		
15	1508	94.77	1.42		
17	1404	84.86	1.53		
19	1351	75.63	1.59		
20	1256	70.40	1.71		
21	1129	67.62	1.90		
24	1121	60.80	1.91	S 87	4
27	980	52.77	2.19	SF 87	4
30	915	47.25	2.34	SA 87	4
33	877	43.13	2.44	SAF87	4
37	812	39.20	2.64		
38	728	38.25	2.94		
42	682	34.09	3.14		
45	633	32.15	3.39		
49	627	29.55	3.42		
55	557	26.24	3.85		
61	498	23.46	4.30		
24	1115	60.06	1.07		
27	976	52.57	1.22		
30	879	47.36	1.36		
35	771	41.54	1.55		
39	681	36.66	1.75		
44	604	32.50	1.98		
52	550	27.75	2.17	S 77	4
56	515	25.93	2.32	SF 77	4
63	483	22.75	2.47	SA 77	4
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		

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
4kW					
73	420	19.80	1.16	S 67	4
85	358	16.86	1.37	SF 67	4
94	325	15.32	1.50	SA 67	4
109	282	13.27	1.74	SAF67	4
125	245	11.55	1.99		
5.5kW					
8.6	3647	166.62	1.03		
9.6	3297	150.64	1.14		
11	2794	127.68	1.35		
13	2441	111.52	1.54		
15	2127	93.27	1.77	S 97	4
17	2041	83.31	1.84	SF 97	4
18	1923	80.75	1.96	SA 97	4
19	1767	75.32	2.13	SAF97	4
23	1630	63.84	2.31		
26	1424	55.76	2.64		
31	1191	46.64	3.16		
36	1031	40.38	3.65		
17	1931	84.86	1.11		
19	1857	75.63	1.15		
20	1727	70.40	1.24		
21	1552	67.62	1.38		
24	1541	60.80	1.39		
27	1347	52.77	1.59		
30	1259	47.25	1.70		
33	1206	43.13	1.78	S 87	4
37	1116	39.20	1.92	SF 87	4
38	1001	38.25	2.14	SA 87	4
42	938	34.09	2.28	SAF87	4
45	870	32.15	2.46		
49	862	29.55	2.49		
55	766	26.24	2.80		
61	685	23.46	3.13		
68	615	21.09	3.48		
79	534	18.31	4.01		
88	478	16.39	4.48		
106	397	13.60	5.40		
122	345	11.83	6.21		
35	1061	41.54	1.13		
39	936	36.66	1.28		
44	830	32.50	1.44		
52	757	27.75	1.58		
56	709	25.93	1.69	S 77	4
63	664	22.75	1.80	SF 77	4
67	629	21.56	1.90	SA 77	4
76	551	18.87	2.17	SAF77	4
85	496	17.00	2.41		
97	435	14.91	2.74		
109	384	13.16	3.11		
123	341	11.67	3.51		
145	291	9.96	4.11		
94	447	15.32	1.09	S 67	4
109	387	13.27	1.26	SF 67	4
125	337	11.55	1.45	SA 67	4
				SAF67	4

Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
7.5kW					
13	3304	111.52	1.14		
16	2880	93.27	1.31		
17	2764	83.31	1.36		
18	2604	80.75	1.44		
19	2393	75.32	1.57		
23	2207	63.84	1.70		
26	1928	55.76	1.95	S 97	4
31	1612	46.64	2.33	SF 97	4
36	1438	40.38	2.62	SA 97	4
40	1396	36.39	2.69	SAF97	4
45	1294	32.76	2.91		
49	1172	29.67	3.21		
55	1039	26.31	3.62		
61	940	23.79	4.00		
72	796	20.16	4.72		
31	1704	47.25	1.26		
34	1633	43.13	1.31		
37	1511	39.20	1.42		
38	1355	38.25	1.58		
43	1270	34.09	1.69		
45	1178	32.15	1.82	S 87	4
49	1167	29.55	1.84	SF 87	4
56	1037	26.24	2.07	SA 87	4
62	927	23.46	2.31	SAF87	4
69	833	21.09	2.57		
80	723	18.31	2.96		
89	648	16.39	3.31		
107	537	13.60	3.99		
123	467	11.83	4.59		
53	1024	27.75	1.17		
56	959	25.93	1.24		
64	899	22.75	1.33	S 77	4
68	852	21.56	1.40	SF 77	4
77	746	18.87	1.60	SA 77	4
86	672	17.00	1.78	SAF77	4
98	589	14.91	2.03		
111	520	13.16	2.30		
125	461	11.67	2.59		
147	394	9.96	3.03		
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		
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		

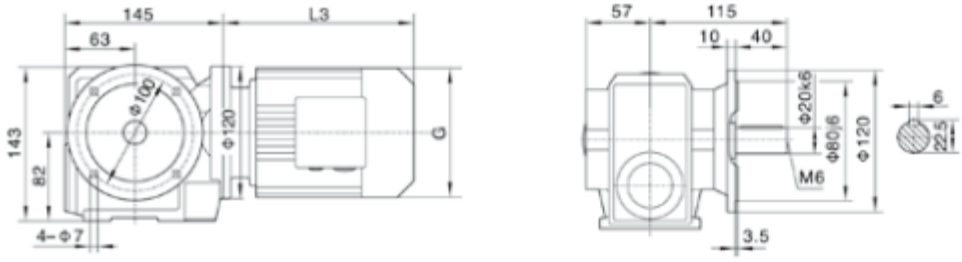
Output speed r/min	Output torque Nm	Ratio i	Service factor f_B	Type Type	Pole p
15kW					
31	3203	46.64	1.17		
36	2856	40.38	1.32		
40	2773	36.39	1.36		
45	2571	32.76	1.46	S 97	4
49	2329	29.67	1.61	SF 97	4
55	2065	26.31	1.82	SA 97	4
61	1867	23.79	2.01	SAF97	4
72	1582	20.16	2.38		
83	1382	17.61	2.72		
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		

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
	8.8	158		
	9.7	144		
	12	118		
	13	110		0.25
170	3.6	388	S 47R17 SF 47R17 SA 47R17 SAF47R17	0.18
	4.1	336		
	4.7	294		
	5.4	257		0.25
	6.1	229		
	7.0	200		
	7.4	187		
	8.4	165		
300	2.4	574	S 57R17 SF 57R17 SA 57R17 SAF57R17	0.18
	2.7	506		
	3.2	438		
	3.6	388		
	4.1	336		0.25
	4.7	294		
	5.2	269		
	6.1	229		0.37
	6.8	204		
	7.4	187		
	8.4	165		0.55
	11	131		
520	1.3	1045	S 67R37 SF 67R37 SA 67R37 SAF67R37	0.18
	1.5	914		
	1.7	809		
	2.0	712		
	2.3	615		0.25
	2.6	543		
	3.0	469		0.37
	3.3	424		
	3.8	365		
	4.4	319		0.55
	4.9	281		
	5.7	246		
	6.3	221		
	7.0	198		0.75
1270	0.45	3098	S 77R37 SF 77R37 SA 77R37 SAF77R37	0.18
	0.67	2083		
	0.77	1813		
	0.80	1745		
	0.87	1600		
	1.0	1404		0.25
	1.1	1245		
	1.3	1100		
	1.5	954		0.37
	1.7	837		
	1.9	714		
	2.2	637		0.55
	2.4	574		
	2.8	499		
	3.2	438		0.75
	3.6	389		
	4.3	327		1.1
	4.8	289		
	5.6	250		
	6.4	219		

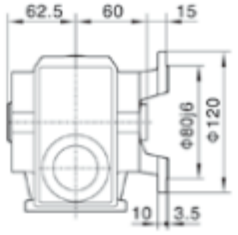
Permissible torque Nm	Output speed r/min	Ratio i	Type Type	Power kW/4p
2280	0.24	5875	S 87R57 SF 87R57 SA 87R57 SAF87R57	0.18
	0.27	5187		
	0.30	4606		
	0.36	3872		0.25
	0.40	3475		
	0.48	2905		
	0.54	2586		0.37
	0.60	2335		
	0.68	2054		
	0.76	1824		0.55
	0.85	1631		
	1.0	1332		
	1.2	1191		
	1.3	1032		0.75
	1.5	930		
	1.7	831		
	1.9	719		1.1
	2.2	624		
	2.5	558		
	2.9	485		1.5
	3.2	435		
	3.7	378		
	4.4	323		2.2
	5.1	281		
4000	0.16	8608	S 97R57 SF 97R57 SA 97R57 SAF97R57	0.18
	0.18	7554		
	0.21	6640		
	0.24	5780		
	0.28	4937		
	0.31	4444		0.25
	0.35	4017		
	0.40	3453		
	0.45	3108		0.37
	0.52	2654		
	0.60	2329		
	0.67	2081		0.55
	0.75	1860		
	0.88	1574		
	1.0	1394		0.75
	1.1	1223		
	1.3	1070		
	1.5	928		1.1
	1.7	824		
	2.0	714		1.5
	2.2	626		
	2.6	538		
	2.9	484		2.2
	3.4	420		
	3.8	376		
	4.3	327		3
	4.9	287		
	5.7	252		4
	6.6	219		

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

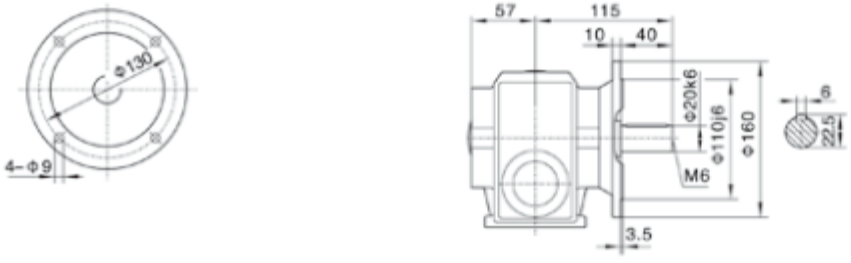
SF37/Φ120



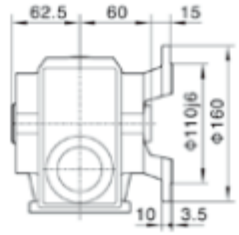
SAF37/Φ120



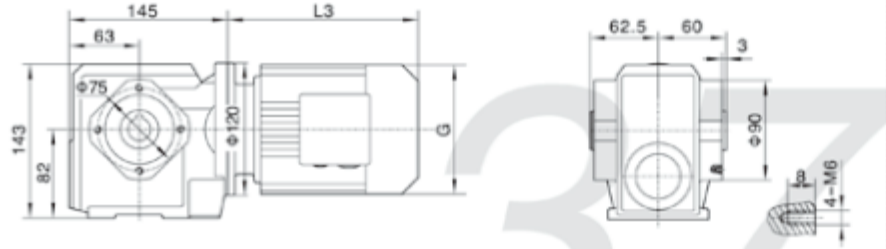
SF37/Φ160



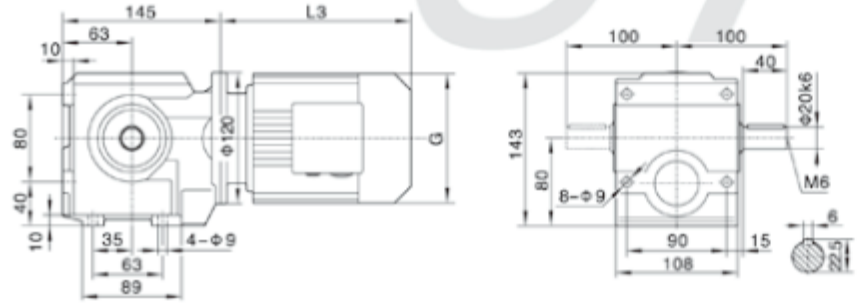
SAF37/Φ160



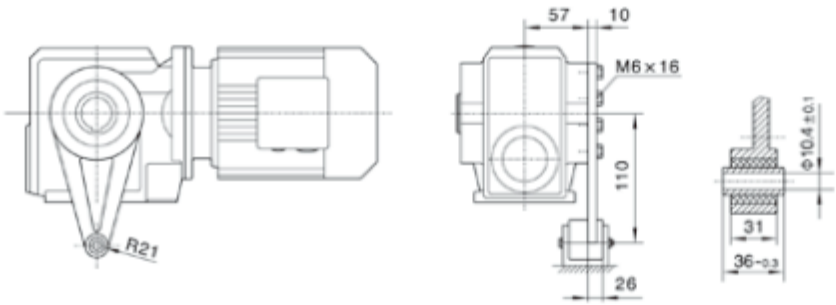
SA37



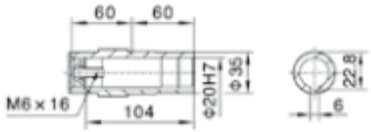
S37



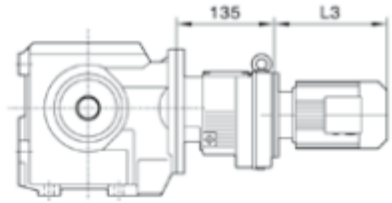
SAT37



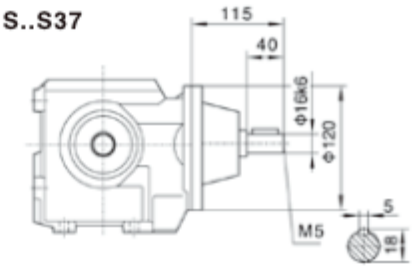
SAF37/SA37/SAZ37 Hollow shaft

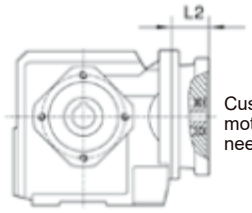


S..37R17



S..S37



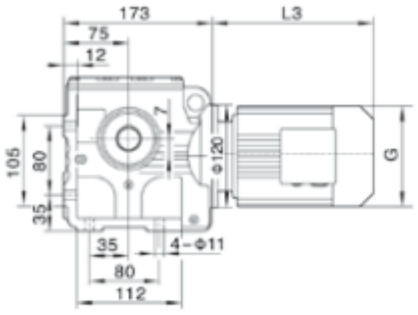


Customers provide the motor by themselves need connected flange.

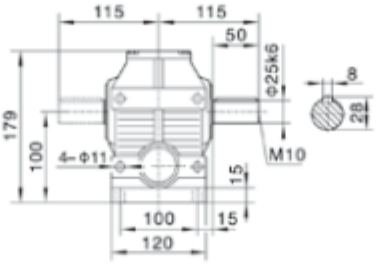
Note: For other values please refer to relevant structure.

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.



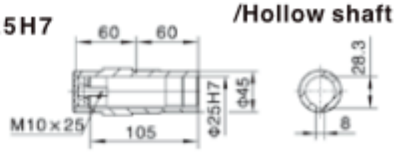
S47



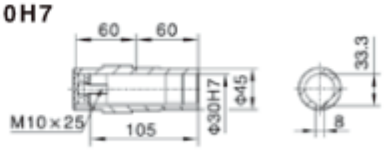
SA47/SAZ47/SAF47

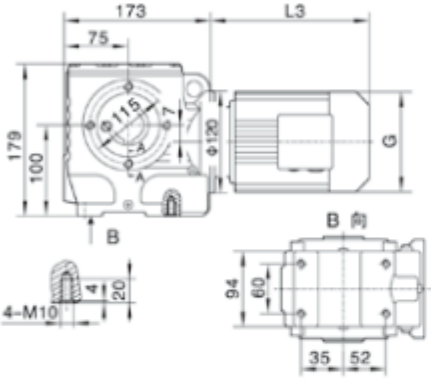
/Hollow shaft

Φ25H7

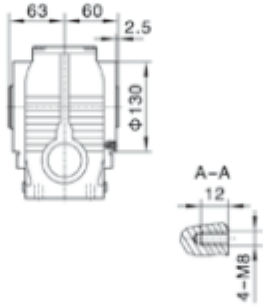


Φ30H7

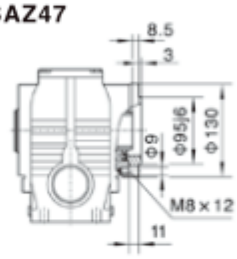


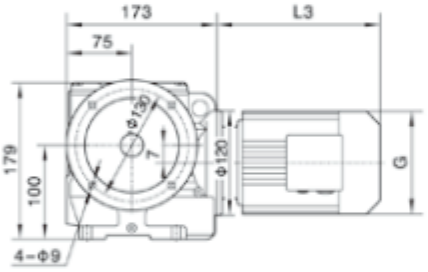


SA47

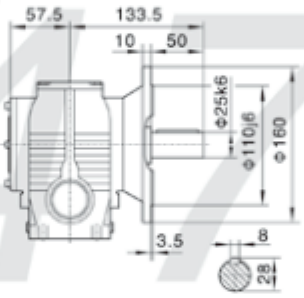


SAZ47

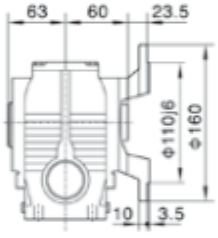


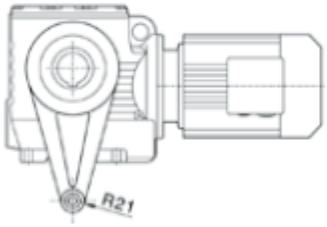


SF47

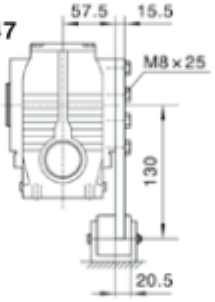


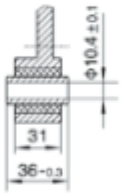
SAF47

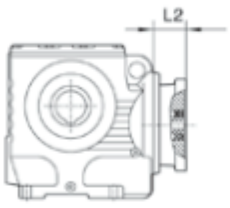




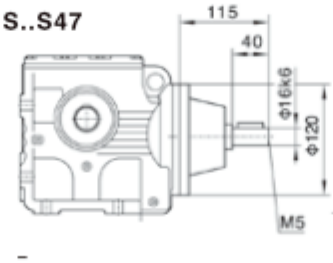
SAT47



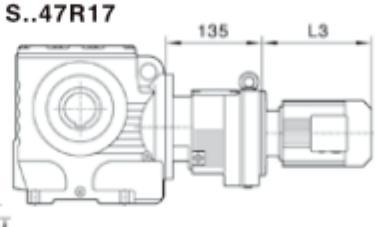




S..S47



S..47R17

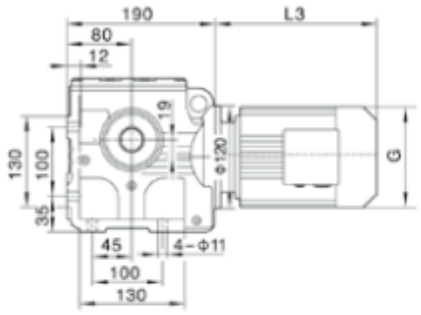


Note: For other values please refer to relevant structure.

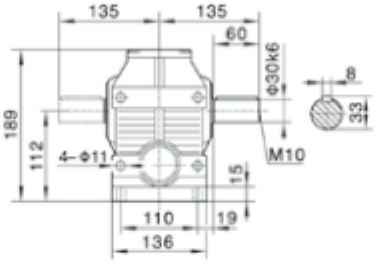
Customers provide the motor by themselves need connected flange.

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: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.

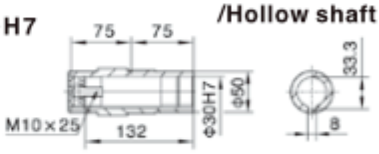


S57

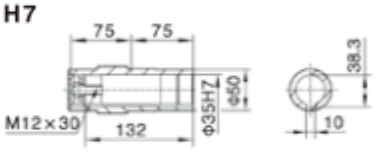


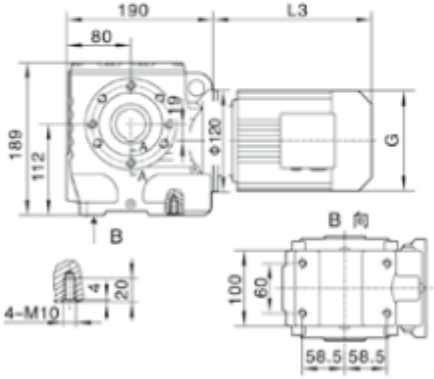
SA57/SAZ57/SAF57

Φ30H7 /Hollow shaft

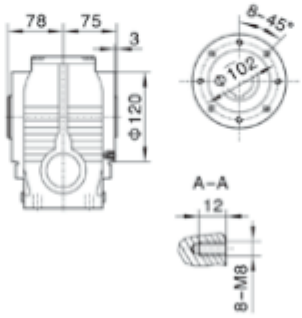


Φ35H7

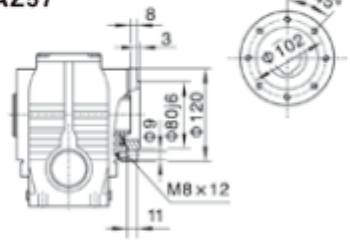


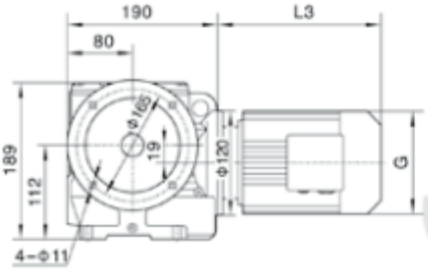


SA57

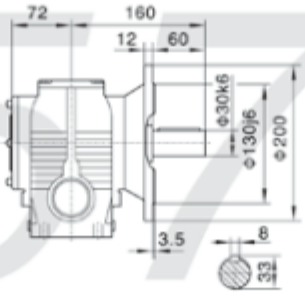


SAZ57

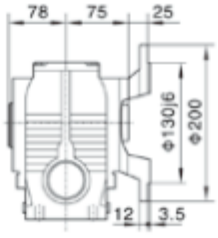


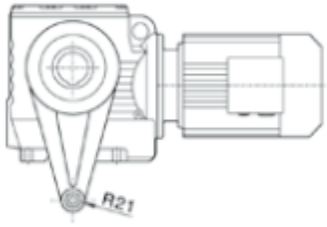


SF57

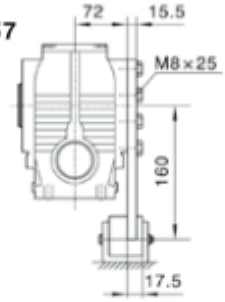


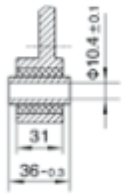
SAF57

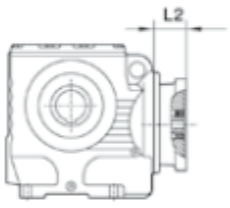




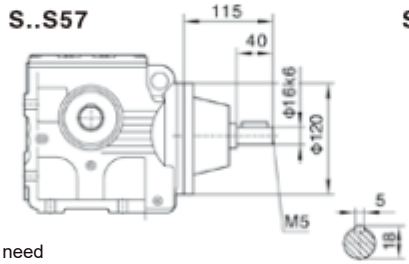
SAT57



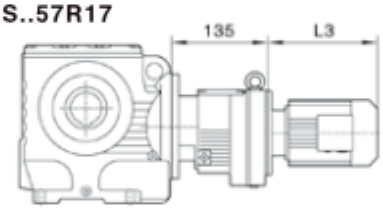




S..S57



S..57R17

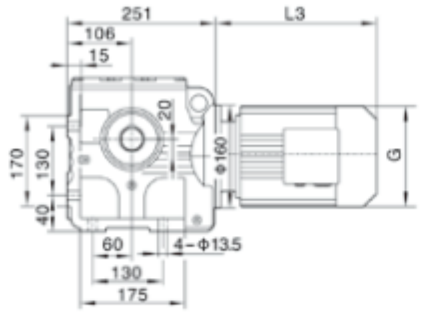


Customers provide the motor by themselves need connected flange.

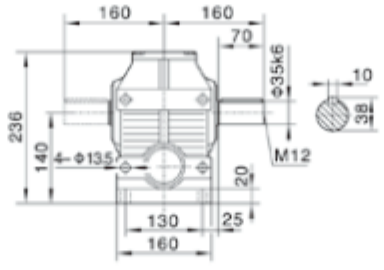
Note: For other values please refer to relevant structure.

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					

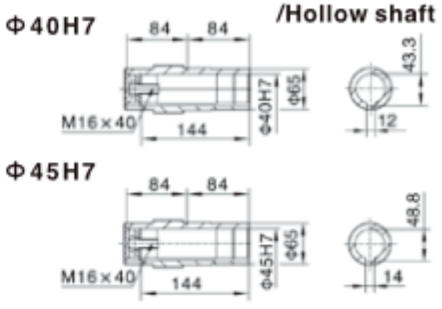
Note:1.The housings of SA、SF、SAF、SAZ are common parts.The mounting dimensions may consult each other. 2. "S.." means S, SA, SF, SAF, SAZ.

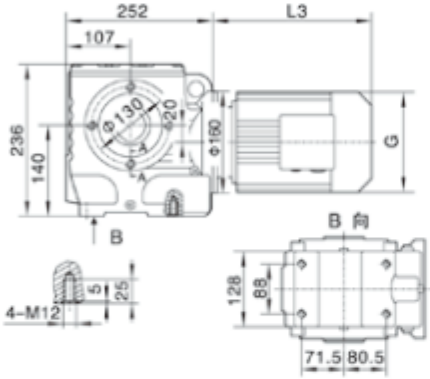


S67

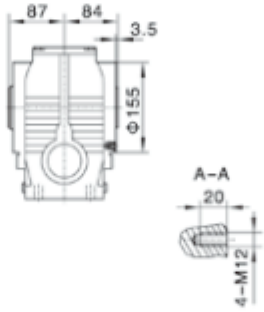


SA67/SAZ67/SAF67

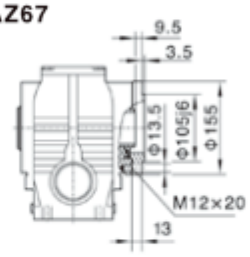


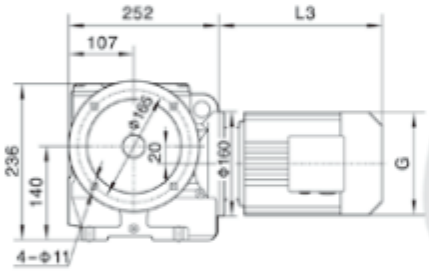


SA67

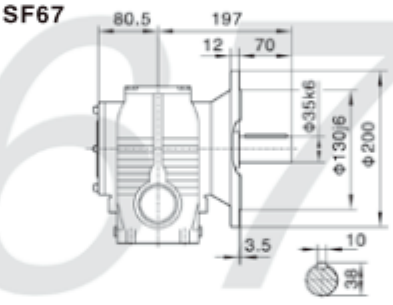


SAZ67

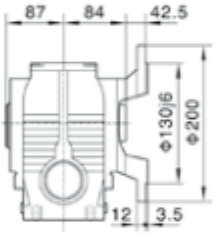


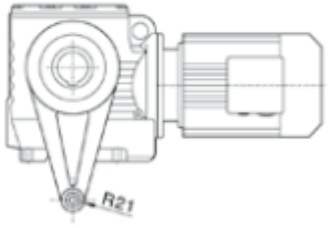


SF67

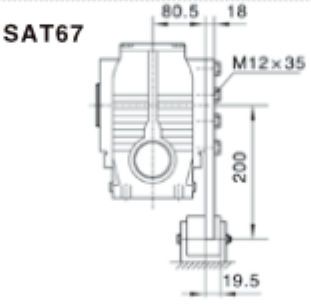


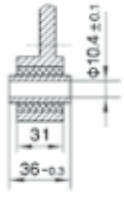
SAF67

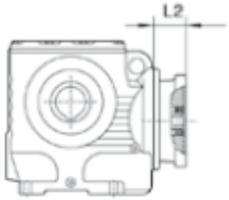




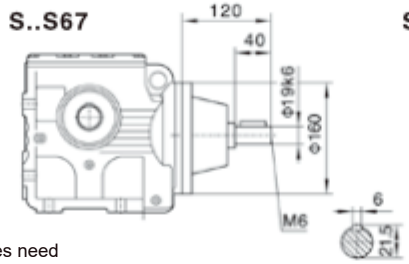
SAT67



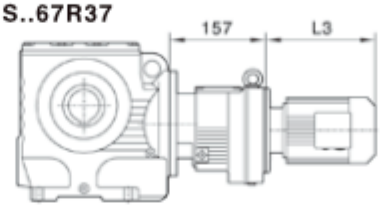




S..S67



S..67R37

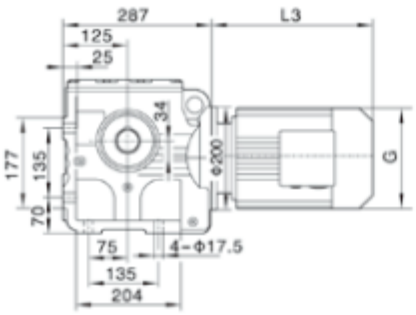


Customers provide the motor by themselves need connected flange.

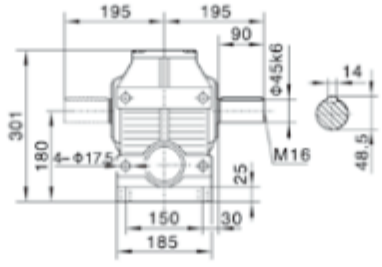
Note: For other values please refer to relevant structure.

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.

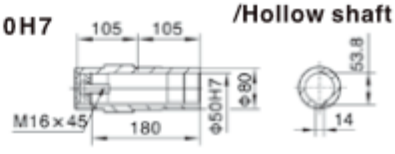


S77

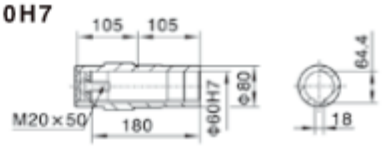


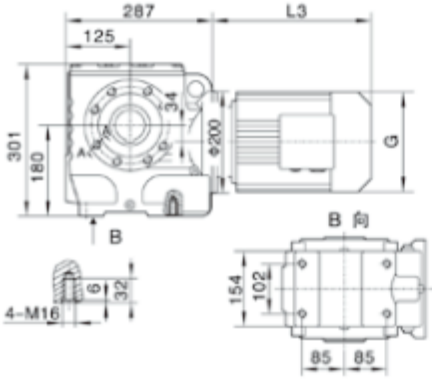
SA77/SAZ77/SAF77

Φ50H7 /Hollow shaft

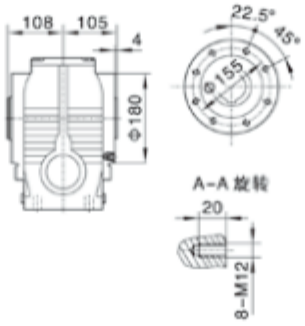


Φ60H7

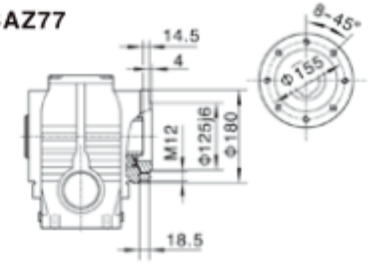


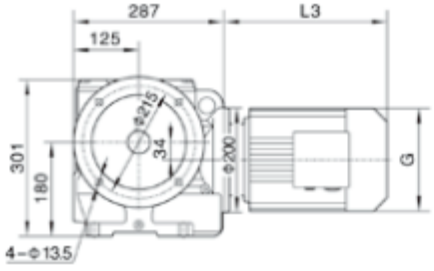


SA77

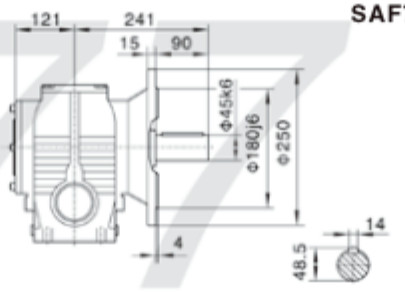


SAZ77

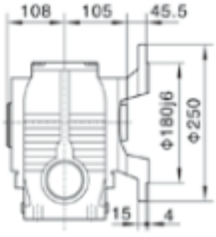


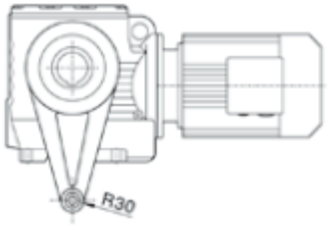


SF77

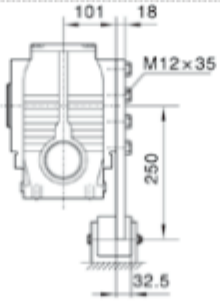


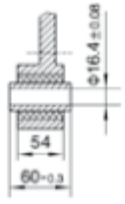
SAF77

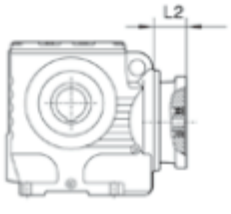




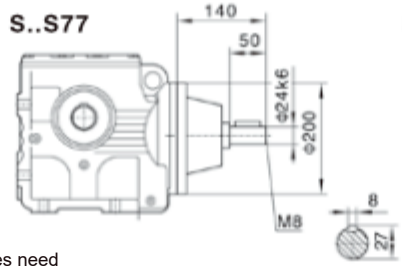
SAT77



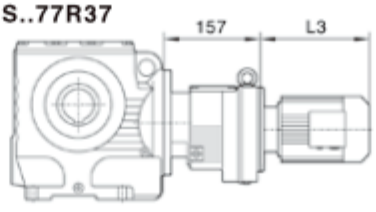




S..S77



S..77R37



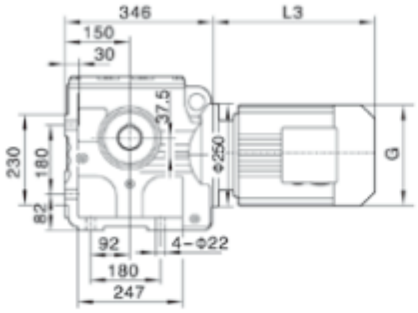
Customers provide the motor by themselves need connected flange.

Note: For other values please refer to relevant structure.

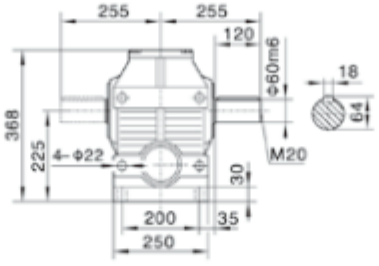
Motor size	80		90S	90L	100		112M	132S	132M			
Power/(kW)	0.55	0.75	1.1	1.5	2.2	3.0	4.0	5.5	7.5			
L3	278		304	328	350		380	425	461			
G	175		195	195	215		240	275	275			
L2	81		81	81	93		93	101	101			

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.

S

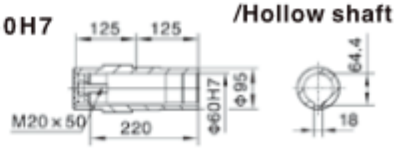


S87

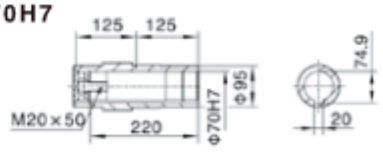


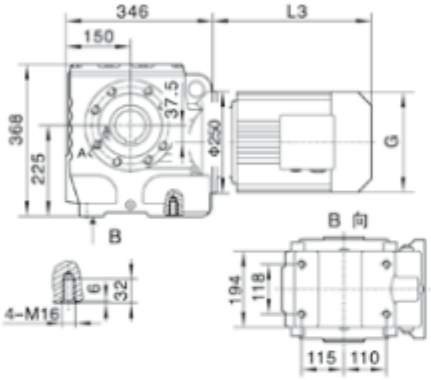
SA87/SAZ87/SAF87

Φ60H7 /Hollow shaft

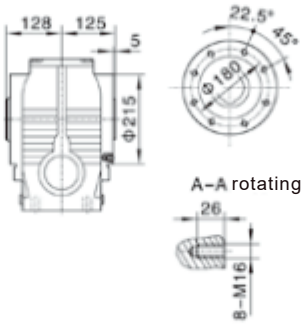


Φ70H7

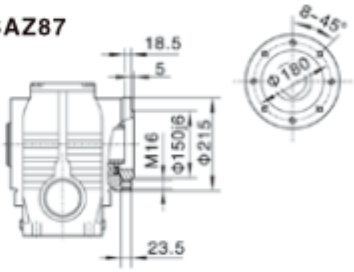


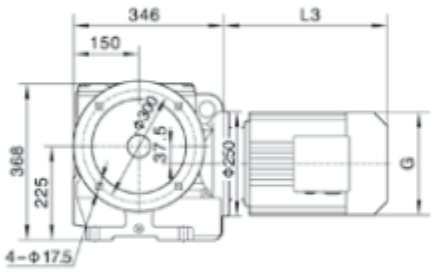


SA87

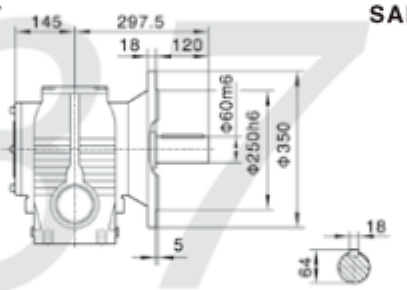


SAZ87

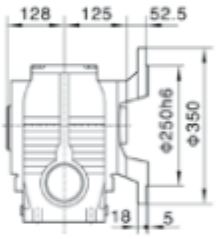


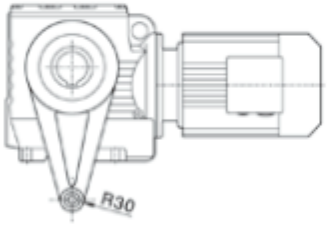


SF87

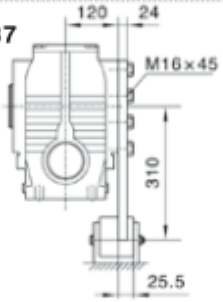


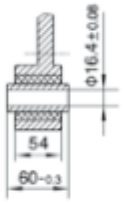
SAF87

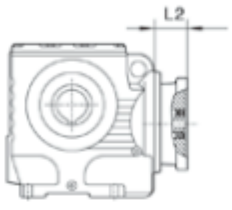




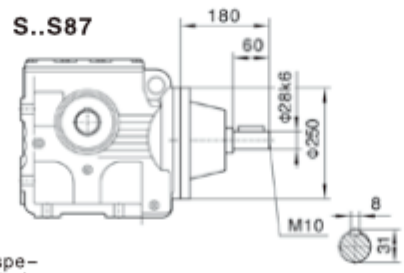
SAT87



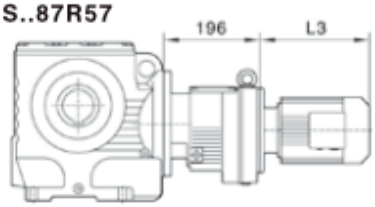




S..S87



S..87R57

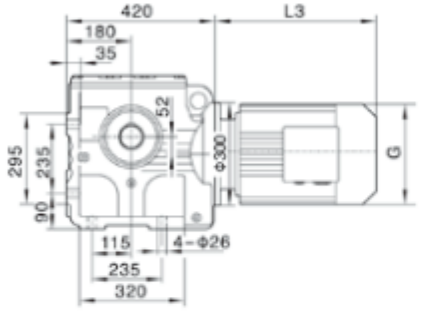


When equipping the user's motor or the special one, the flange is required to connected.

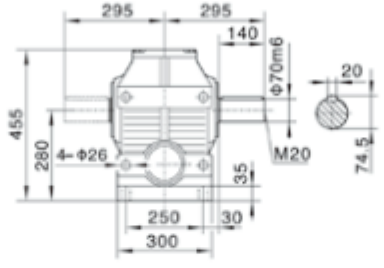
Note:For other values please refer to the opposited structure.

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: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.

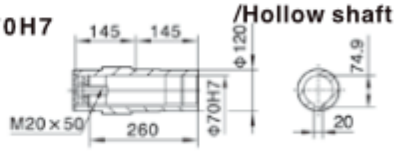


S97

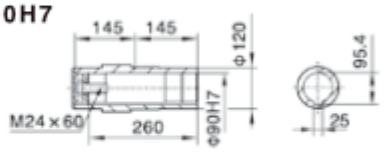


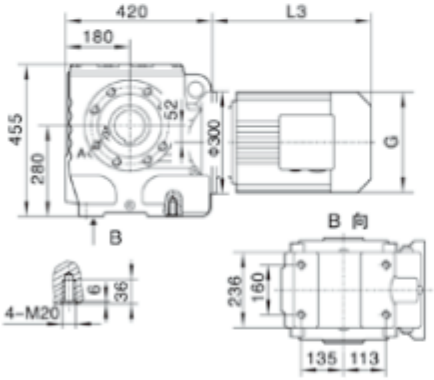
SA97/SAZ97/SAF97

Φ70H7 /Hollow shaft

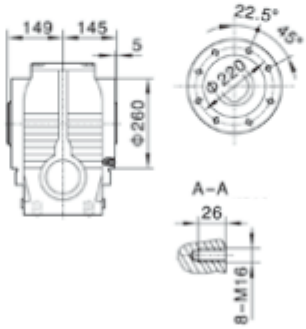


Φ90H7

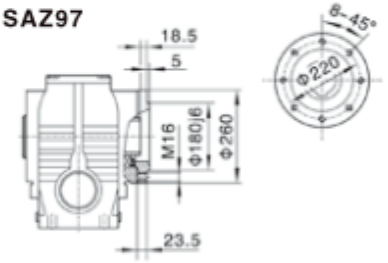


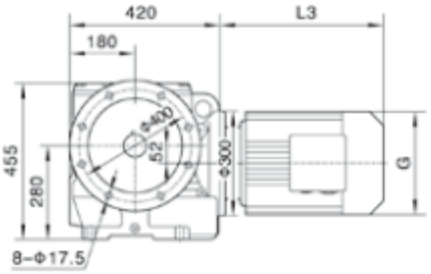


SA97

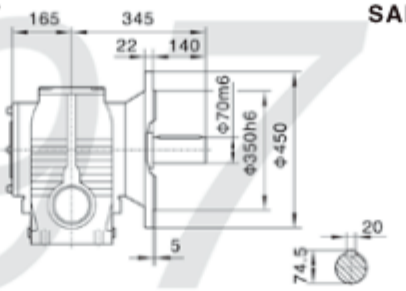


SAZ97

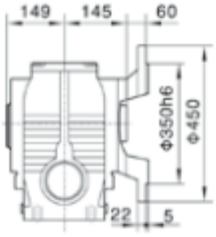


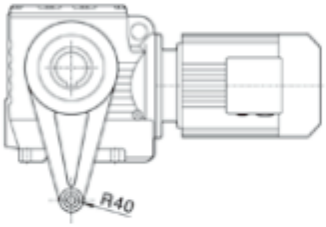


SF97

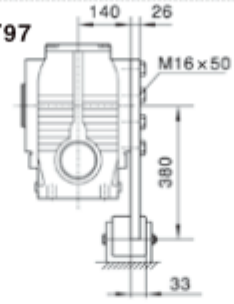


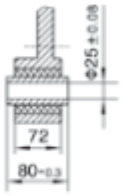
SAF97

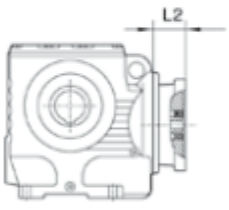




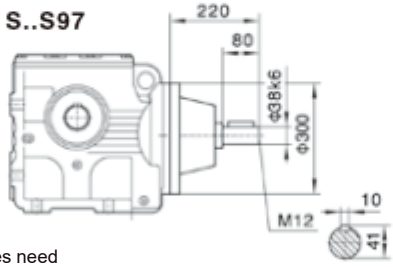
SAT97



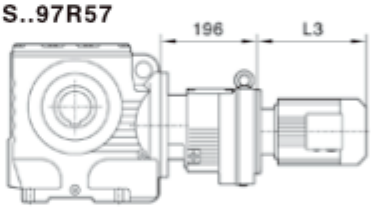




S..S97



S..97R57



Customers provide the motor by themselves need connected flange.

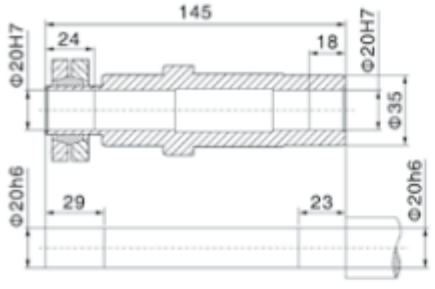
Note: For other values please refer to relevant structure.

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	

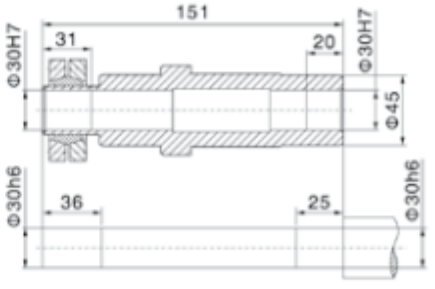
Note:1.The housings of SA、SF、SAF、SAZ are common parts.The mounting dimensions may consult each other. 2. "S.." means S, SA, SF, SAF, SAZ.

Dimensions of shrink disc

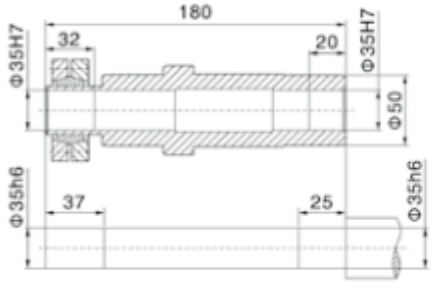
SH..37..



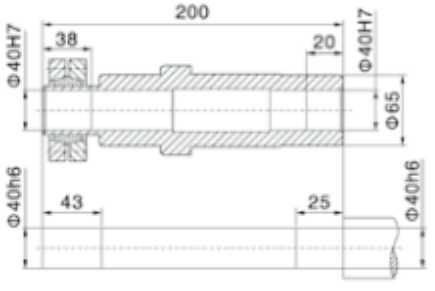
SH..47..



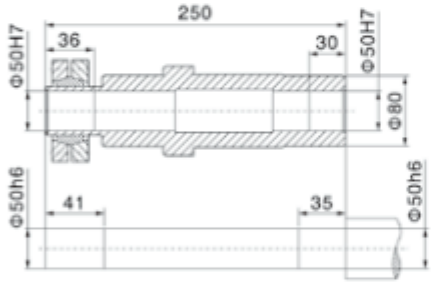
SH..57..



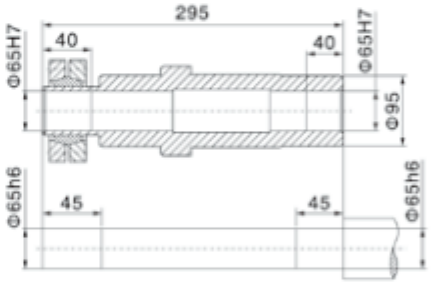
SH..67..



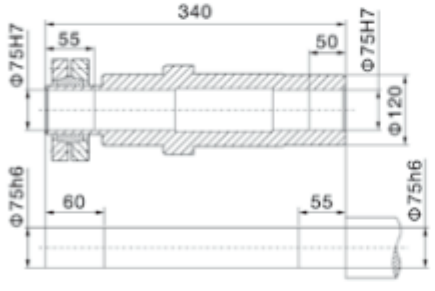
SH..77..



SH..87..



SH..97..



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