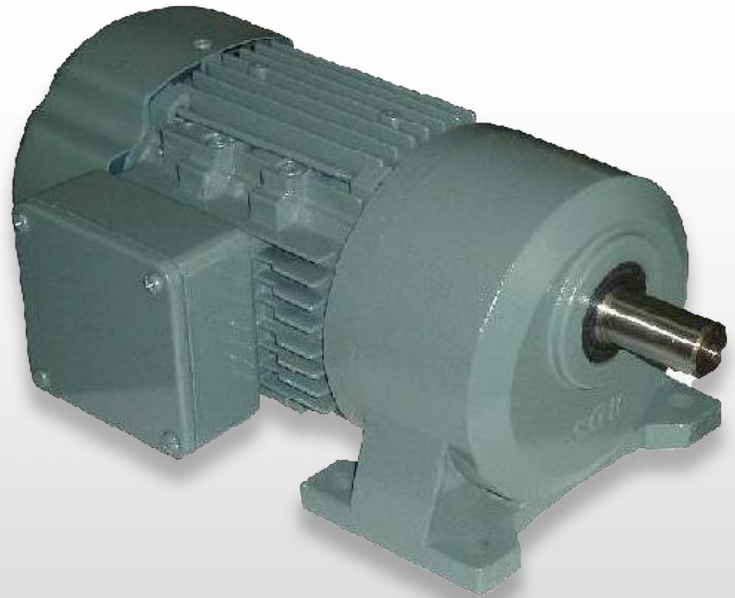




# GEARBOX-WORLD

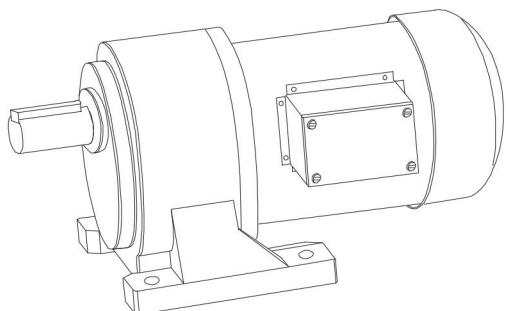
## G Series Helical Gear Motor G系列斜齿轮减速机



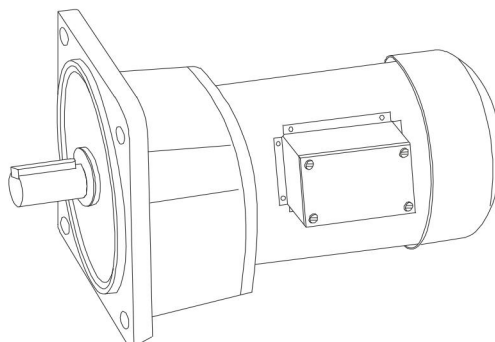
Website : [www.gearbox-world.com](http://www.gearbox-world.com)  
Email: [info@gearbox-world.com](mailto:info@gearbox-world.com)

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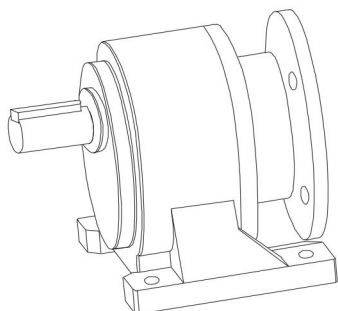
G..W



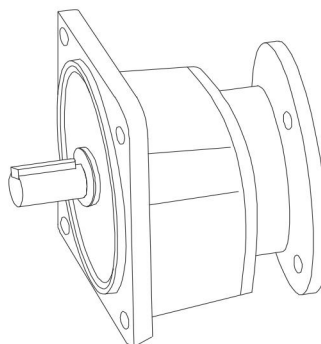
G..F



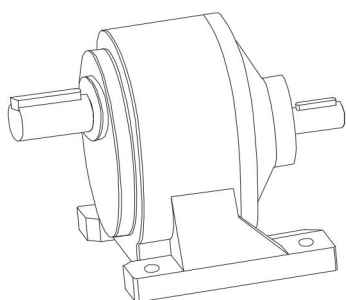
G..W.B5



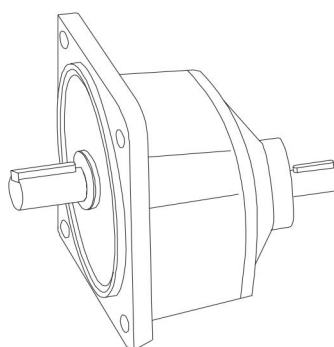
G..F.B5



G..W.Z



G..F.Z



型号标记

Designation



gear unit type:G  
 gear housing material  
 L:aluminium housing (18,22,28)  
 H:casting iron housing (32,40,50)  
 mounting type  
 W:foot mounted  
 F:flange mounted  
 gear unit size:18,22,28,32,40,50  
 connect with universal motor, omit sign  
 S: connect with brake motor  
 K: connect with IEC flange  
 Z: with input shaft  
 with motor, indicate power  
 with IEC flange, indicate flange frame  
 transmission ratio  
 terminal box position  
 omit sign default position

标记示例

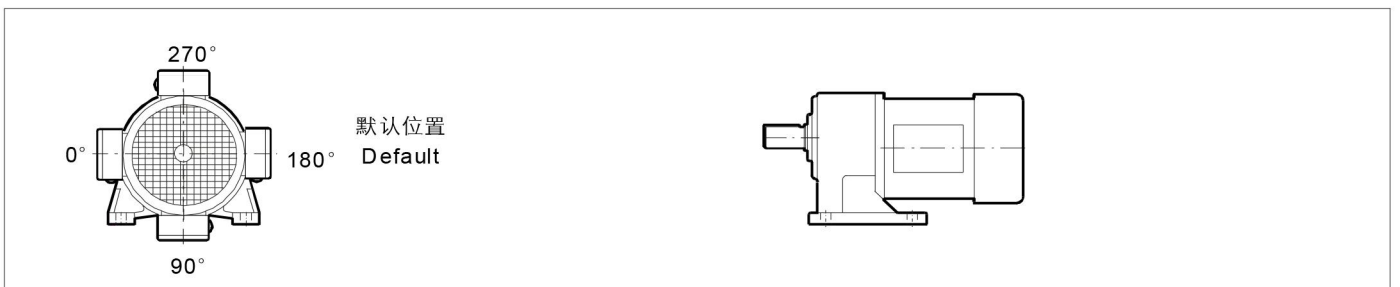
Sign Example

- A GHW40Z-50  
底脚安装,铸铁壳体,机型号40,传动比50
- B GLF28-550-50  
法兰安装,铝合金壳体,机型号28,普通电机550W,传动比50, 接线盒为默认位置180°
- C GLW28K-80B5-30  
底脚安装,铝合金壳体,机型号28,IEC过渡法兰80B5, 传动比30
- D GLF28S-550-50-0  
法兰安装,铝合金壳体,机型号28,制动电机550W,传动比50, 接线盒位置0°

- A GHW40Z-50  
foot-mounted,iron casting housing, gear unit size 40,with input shaft, transmission ratio 50
- B GLF28-550-50  
flange-mounted,aluminium housing, gear unit size 28, with universal motor 550W, transmission ratio 50,terminal box position at default 180 degree.
- C GLW28K-80B5-30  
flange-mounted,aluminium housing, gear unit size 28, with IEC motor flange 80B5,, transmission ratio 30.
- D GLF28S-550-50-0  
flange-mounted,aluminium housing, gear unit size 28, with brake motor 550W, transmission ratio 50,terminal box position at 0 degree.

接线盒位置

Terminal Box Position



## 电机配置说明

### Y系列普通三相异步电机

- 1 本系列减速机标准配置Y系列普通三相异步感应电机；
- 2 电机电压：380V/50Hz；
- 3 电机防护等级IP54，绝缘等级F，B级温升；
- 4 环境温度不超过40℃，不低于-15℃；
- 5 连续工作制S1；
- 6 海拔高度不超过1000m；
- 7 冷却方式为C0141（风扇自冷）；
- 8 100及以下规格为"Y"接法，112M及以上规格为"Δ"接法；
- 9 优先选用4极电机；
- 10 电机技术参数见第189-194页

### YEJ系列三相异步制动电机

- 1 三相异步制动电机为普通电机的基础上附加制动器；
- 2 电机电压：380V/50Hz；
- 3 制动器电压：规格71~100：DC99V  
规格112~200：DC170V
- 4 配置单相AC220/50Hz整流器；
- 5 电机防护等级IP44，绝缘等级F，B级温升；
- 6 环境温度不超过40℃，不低于-15℃；
- 7 连续工作制S1；
- 8 海拔高度不超过1000m；
- 9 冷却方式为C0141（风扇自冷）；
- 10 100及以下规格为"Y"接法，112M及以上规格为"Δ"接法；
- 11 优先选用4极电机；
- 12 电机技术参数见第189-194页

### 特殊电机

- 1 选用包括防爆电机，变频电机，多速电机等特殊电机，本公司提供IEC标准电机法兰接口，接口尺寸见19页；
- 2 异频率，异电压电机，请联系本公司技术部；
- 3 使用环境温度不在-15~40℃范围内，请联系本公司技术部；
- 4 更高的绝缘等级及防护等级，请联系本公司技术部。

## 安装位置

- 1 本系列减速机采用全封闭，全寿命设计，采用齿轮合成润滑脂润滑，可以任意位置安装，定货时无须指明安装位置。

## Configuration of Electric Motor

### Y series Three-phase Asynchronous Electric Motor

- 1 this series gear unit configure three-phase asynchronous electric motor;
- 2 voltage:380V/50Hz;
- 3 protection class:IP54,insulation class: F; temperature rising class: B;
- 4 ambient temperature:-15~40℃ ;
- 5 continue working duty:S1;
- 6 altitude less than 1000m;
- 7 self-cooling with fan:C0141;
- 8 within frame 100, follow connection Y, from frame 112, follow connection Δ ;
- 9 first select 4 motor;
- 10 technical data on page 189-194.

### YEJ series Three-phase Asynchronous Brake Motor

- 1 base on Y series motor, add a brake.
- 2 voltage:380V/50Hz;
- 3 brake voltage: frame:71~100 DC99V  
frame:112~200 DC170V;
- 4 with single phase AC220V/50Hz rectifier;
- 5 protection class:IP54,insulation class: F, temperature rising class: B ;
- 6 ambient temperature:-15~40℃ ;
- 7 continue working duty:S1;
- 8 altitude less than 1000m;
- 9 self-cooling with fan:C0141;
- 10 upon to frame 100, follow connection Y, from frame 112, follow connection Δ ;
- 11 first select 4,6,8 poles motor;
- 12 technical data on page 189-194.

### Customized Motor

- 1 others like explosion proof, inverter motor or multi-speed motor coupled by adaptor, the dimensions on page 19.
- 2 need different frequency and voltage, please contact us.
- 3 ambient temperature is out of -15~40℃ ,please contact us.
- 4 for higher insulation and protection class,please contact us.

## Mounting positions

- 1 completely closed and long-time design for this series gear motor, lubricated by synthe tical grease ,needh t indicating the mounting position.


## 技术参数

符号意义

## Technical Data

Key to Symbols

①  
↓ $P_1 = 180W$ 

NA rpm	M <sub>2</sub> Nm	i	Fr <sub>2MAX</sub> [N]	Type	Gear unit	Motor size	 Kg
56	29	25	1200				
70	23	20	1100				
93	17	15	800	GLW	18	63M2-4	8.5
140	12	10	550	GLF	18	63M2-4	8.5
280	5.8	5	250				
467	3.5	3	200				
②↑	③↑	④↑	⑤↑	⑥↑	⑦↑	⑧↑	⑨↑

- 1 电机功率  
2 输出转速  
3 输出转矩  
4 减速比  
5 输出轴中最大点载荷  
6 减速机类型  
7 减速机规格  
8 电机型号  
9 大概重量

- 1 motor power  
2 output speed  
3 output torque  
4 transmission ratio  
5 maximum load on middle output shaft  
6 gear unit type  
7 gear unit size  
8 motor frame  
9 approximate weight

注意!

本系列减速机减速比与功率的匹配有所变动, 新的设计建议按此技术参数选型.


ATTENTION

some of the technical data updated, suggest customer select the gear motor follow this version for new design.

## 技术参数

## Technical Data

**P<sub>1</sub> = 120 W**

<b>N<sub>A</sub></b> rpm	<b>M<sub>2</sub></b> Nm	<b>i</b>	<b>Fr<sub>2MAX</sub>[N]</b>	<b>Type</b>	<b>Gear unit</b>	<b>Motor size</b>	 Kg
1.2	490	1200	10200				
1.6	490	900	7200	GHW	32/22	63M1-4	23
1.9	490	750	5900	GHF	32/22	63M1-4	23
2.3	432	600	5200				
3.1	230	450	4080	GLW	28/18	63M1-4	12.5
3.7	230	375	3360	GLF	28/18	63M1-4	12.5
4.7	216	300	2800				
7.0	137	200	3200				
8.8	122	160	2800				
12	91	120	2300	GLW	22	63M1-4	8
14	76	100	1750	GLF	22	63M1-4	8
18	61	80	1700				
23	46	60	1650				
28	38	50	1600				
35	30	40	1500				
47	23	30	1350				
56	19	25	1200	GLW	18	63M1-4	7.5
70	16	20	1050	GLF	18	63M1-4	7.5
93	12	15	750				
140	7.8	10	500				
280	3.9	5	200				
467	2.3	3	180				

**P<sub>1</sub> = 180 W**

1.2	780	1200	15300				
1.6	780	900	11500	GHW	40/28	63M2-4	28.3
1.9	780	750	9200	GHF	40/28	63M2-4	28.3
2.3	648	600	7600				
3.1	486	450	7400	GHW	32/22	63M2-4	23.5
3.7	405	375	6300	GHF	32/22	63M2-4	23.5
4.7	324	300	5000				
7.0	228	200	2800				
8.8	183	160	2750	GLW	28	63M2-4	11
12	137	120	2650	GLF	28	63M2-4	11
14	114	100	5050				
14	114	100	1750				
18	91	80	1700				
23	69	60	1650	GLW	22	63M2-4	8.5
28	57	50	1650	GLF	22	63M2-4	8.5
35	46	40	1600				
47	34	30	1550				

## 技术参数

## Technical Data

**P<sub>1</sub> = 180 W**

<b>N<sub>A</sub></b> rpm	<b>M<sub>2</sub></b> Nm	<b>i</b>	<b>Fr<sub>2MAX</sub>[N]</b>	<b>Type</b>	<b>Gear unit</b>	<b>Motor size</b>	 Kg
56	29	25	1200				
70	23	20	1100				
93	17	15	800	GLW	18	63M2-4	8.5
140	12	10	550	GLF	18	63M2-4	8.5
280	5.8	5	250				
467	3.5	3	200				

**P<sub>1</sub> = 250 W**

1.2	1530	1200	20200				
1.6	1315	900	15100	GHW	50/32	71M1-4	60.5
1.9	1100	750	12600	GHF	50/32	71M1-4	60.5
2.3	900	600	9700				
3.1	675	450	7700				
3.7	563	375	7000	GHW	40/28	71M1-4	28.8
4.7	450	300	5600	GHF	40/28	71M1-4	28.8
7.0	317	200	5200				
8.8	254	160	5100	GHW	32	71M1-4	21.5
12	190	120	4800	GHF	32	71M1-4	21.5
14	159	100	4700				
14	159	100	5050				
18	127	80	4300				
23	95	60	3600	GLW	28	71M1-4	11.5
28	79	50	3300	GLF	28	71M1-4	11.5
35	63	40	2650				
47	48	30	2200				
56	40	25	1500				
70	32	20	1400				
93	24	15	1100	GLW	22	71M1-4	11.5
140	16	10	800	GLF	22	71M1-4	11.5
280	8.1	5	400				
467	4.9	3	300				

**P<sub>1</sub> = 370 W**


1.2	1530	1200	20200				
1.6	1530	900	15100	GHW	50/32	71M2-4	62
1.9	1511	750	12600	GHF	50/32	71M2-4	62
2.3	1332	600	9700				
3.1	975	450	7700				
3.7	810	375	7000	GHW	40/28	71M2-4	29.3
4.7	666	300	5600	GHF	40/28	71M2-4	29.3



## 技术参数

## Technical Data

**P<sub>1</sub> = 370 W**

<b>N<sub>A</sub></b> rpm	<b>M<sub>2</sub></b> Nm	<b>i</b>	<b>Fr<sub>2MAX</sub>[N]</b>	<b>Type</b>	<b>Gear unit</b>	<b>Motor size</b>	 Kg
7.0	469	200	5200				
8.8	375	160	5100	GHW	32	71M2-4	22
12	282	120	4800	GHW	32	71M2-4	22
14	235	100	4700				
14	235	100	5050				
18	188	80	4300				
23	141	60	3600	GLW	28	71M2-4	12
28	117	50	3300	GLF	28	71M2-4	12
35	94	40	2650				
47	70	30	2200				
56	59	25	1500				
70	48	20	1400				
93	36	15	1100	GLW	22	71M2-4	9.5
140	24	10	800	GLF	22	71M2-4	9.5
280	12	5	400				
467	7.2	3	300				


**P<sub>1</sub> = 550 W**

3.1	1485	450	18900	GHW	50/32	80M1-4	64
3.7	1238	375	15800	GHW	50/32	80M1-4	64
4.7	990	300	12600	GHW	50/32	80M1-4	64
7.0	698	200	10500				
8.8	558	160	9500	GHW	40	80M1-4	32.3
12	419	120	8400	GHW	40	80M1-4	32.3
14	349	100	7500				
14	349	100	7500				
18	279	80	5950				
23	209	60	5600	GHW	32	80M1-4	25
28	174	50	5000	GHW	32	80M1-4	25
35	140	40	4250				
47	105	30	3500				
56	87	25	3200				
70	71	20	2600				
93	53	15	1950	GLW	28	80M1-4	15
140	36	10	1700	GLF	28	80M1-4	15
280	18	5	880				
467	11	3	700				

## 技术参数

## Technical Data

**P<sub>1</sub> = 750 W**

<b>N<sub>A</sub></b> rpm	<b>M<sub>2</sub></b> Nm	<b>i</b>	<b>Fr<sub>2MAX</sub>[N]</b>	<b>Type</b>	<b>Gear unit</b>	<b>Motor size</b>	 Kg
3.1	1530	450	18900	GHW GHF	50/32	80M2-4	65
3.7	1530	375	15800				
4.7	1350	300	12600				
7.0	951	200	10500	GHW GHF	40	80M2-4	28.3
8.8	761	160	9500				
12	571	120	8400				
14	476	100	7500				
14	476	100	7500	GHW GHF	32	80M2-4	26
18	381	80	5950				
23	285	60	5600				
28	238	50	5000				
35	190	40	4250				
47	143	30	3500				
56	119	25	3200	GLW GLF	28	80M2-4	16
70	97	20	2600				
93	73	15	1950				
140	49	10	1700				
280	24	5	880				
467	15	3	750				


**P<sub>1</sub> = 1100 W**

7.0	1395	200	9700	GHW GHF	50	90S-4	56
8.8	1116	160	9500				
12	837	120	9200				
14	698	100	9000				
14	698	100	11500	GHW GHF	40	90S-4	34.3
18	558	80	10100				
23	419	60	8800				
28	349	50	7500				
35	279	40	6300				
47	209	30	5200				
56	174	25	4100	GHW GHF	32	90S-4	32
70	143	20	4100				
93	107	15	3700				
140	71	10	2500				
280	36	5	1700				
467	21	3	1400				

## 技术参数

## Technical Data

**P<sub>1</sub> = 1500W**

NA rpm	M <sub>2</sub> Nm	i	Fr <sub>2</sub> MAX[N]	Type	Gear unit	Motor size	 Kg
8.8	1522	160	9500	GHW	50	90L-4	59
12	1142	120	9200	GHW	50	90L-4	59
14	951	100	9000	GHW	50	90L-4	59
14	951	100	11500	GHW	40	90L-4	37.3
18	761	80	10100	GHW	40	90L-4	37.3
23	571	60	8800	GHW	40	90L-4	37.3
28	476	50	7500	GHW	40	90L-4	37.3
35	381	40	6300	GHW	40	90L-4	37.3
47	285	30	5200	GHW	40	90L-4	37.3
56	238	25	4100	GHW	32	90L-4	35
70	194	20	4100	GHW	32	90L-4	35
93	146	15	3700	GHW	32	90L-4	35
140	97	10	2500	GHW	32	90L-4	35
280	49	5	1700	GHW	32	90L-4	35
467	29	3	1400	GHW	32	90L-4	35

**P<sub>1</sub> = 2200W**

14	1395	100	8700	GHW	50	100L1-4	62
18	1116	80	8500	GHW	50	100L1-4	62
23	837	60	8200	GHW	50	100L1-4	62
28	698	50	7800	GHW	50	100L1-4	62
35	558	40	7350	GHW	50	100L1-4	62
47	419	30	7100	GHW	50	100L1-4	62
56	349	25	4100	GHW	40	100L1-4	40.3
70	285	20	4100	GHW	40	100L1-4	40.3
93	214	15	3700	GHW	40	100L1-4	40.3
140	143	10	2500	GHW	40	100L1-4	40.3
280	71	5	1700	GHW	40	100L1-4	40.3
467	43	3	1400	GHW	40	100L1-4	40.3

**P<sub>1</sub> = 3000W**

18	1522	80	8500	GHW	50	100L2-4	66
23	1142	60	8200	GHW	50	100L2-4	66
28	951	50	7800	GHW	50	100L2-4	66
35	761	40	7350	GHW	50	100L2-4	66
47	571	30	7100	GHW	50	100L2-4	66

## 技术参数

## Technical Data

**P<sub>1</sub> = 3000W**

<b>N<sub>A</sub></b> rpm	<b>M<sub>2</sub></b> Nm	<b>i</b>	<b>Fr<sub>2MAX</sub>[N]</b>	<b>Type</b>	<b>Gear unit</b>	<b>Motor size</b>	 Kg
56	476	25	4100				
70	389	20	4100				
93	292	15	3700	GHW	40	100L2-4	44.3
140	194	10	2500	GHF	40	100L2-4	44.3
280	97	5	1700				
467	58	3	1400				

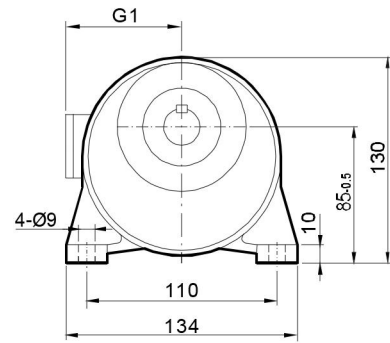
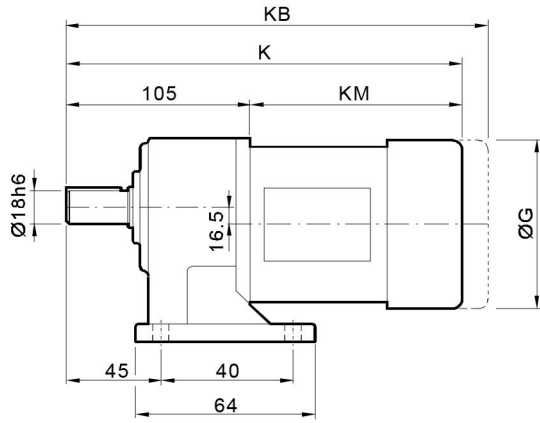
**P<sub>1</sub> = 4000W**

56	634	25	9600				
70	518	20	8100				
93	389	15	7200	GHW	50	112M-4	77
140	259	10	6400	GHF	50	112M-4	77
280	130	5	4300				
467	78	3	4300				

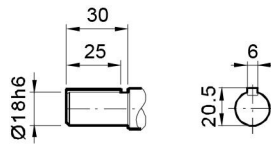
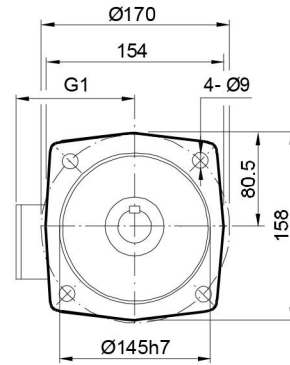
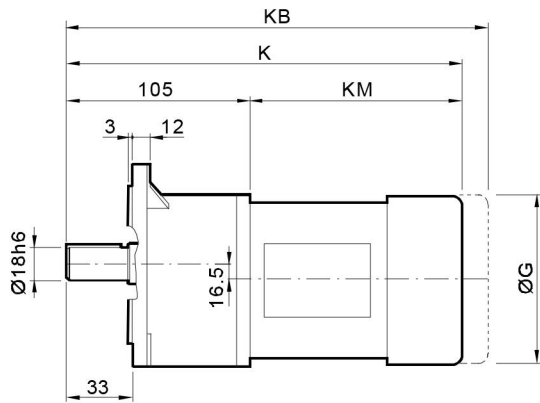
安装尺寸

Mounting dimensions

GLW18..



GLF18..



尺寸	电机规格	Motor frame									
Dimensions	<b>63</b>										
<b>G</b>	130										
<b>G1</b>	108										
<b>K</b>	307										
<b>KB</b>	383										
<b>KM</b>	202										

尺寸说明

以上尺寸为直联普通电机和制动电机尺寸；  
KB为制动电机尺寸,其余为普通电机尺寸；  
防爆电机，变频电机等须加过渡法兰，见19页。

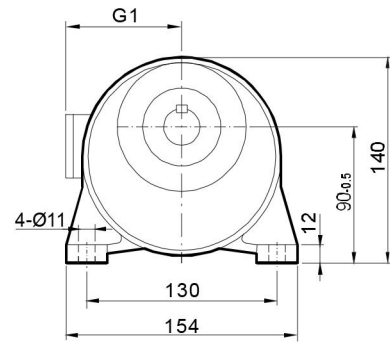
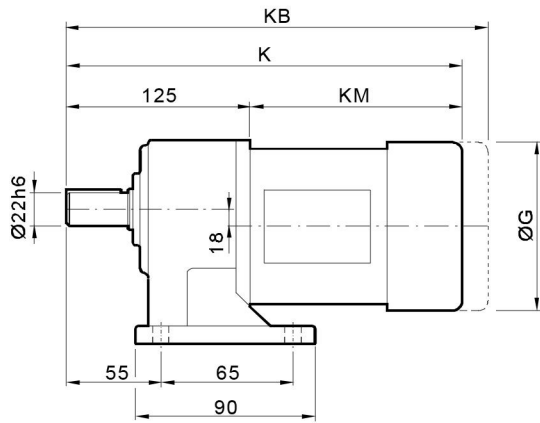
ATTENTION

Dimensions of universal and brake motor shown in upon table, the others like explosion, inverter motor coupled by adaptor, the dimensions on page 19.

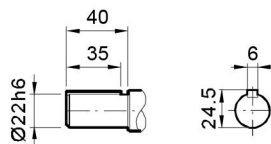
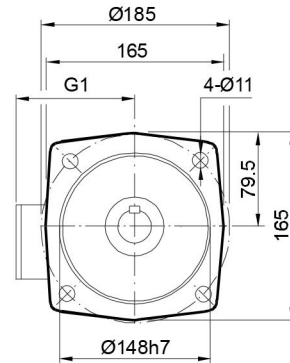
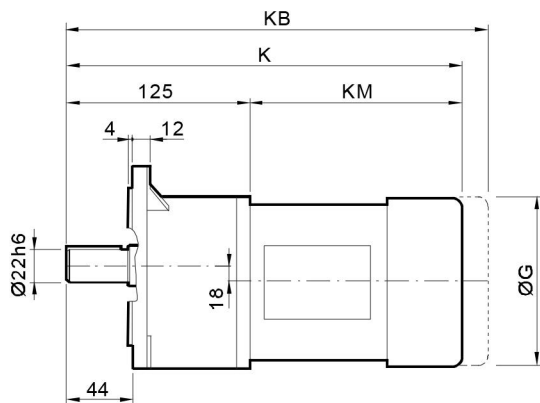
安装尺寸

Mounting dimensions

GLW22..



GLF22..



尺寸 Dimensions	电机规格 Motor frame									
	63	71								
G	130	145								
G1	108	110								
K	327	345								
KB	403	421								
KM	202	220								

尺寸说明

以上尺寸为直联普通电机和制动电机尺寸；  
KB为制动电机尺寸,其余为普通电机尺寸；  
防爆电机，变频电机等须加过渡法兰，见19页。

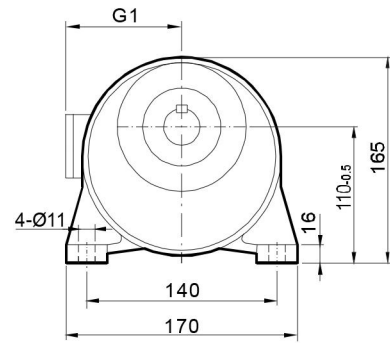
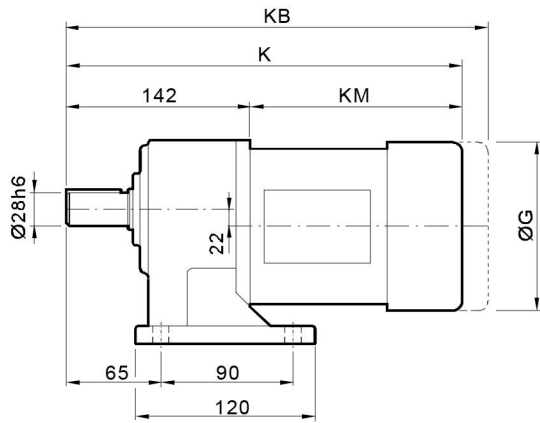
ATTENTION

Dimensions of universal and brake motor shown in upon table, the others like explosion, inverter motor coupled by adaptor, the dimensions on page 19.

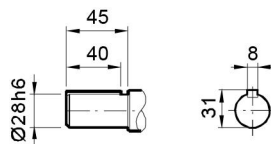
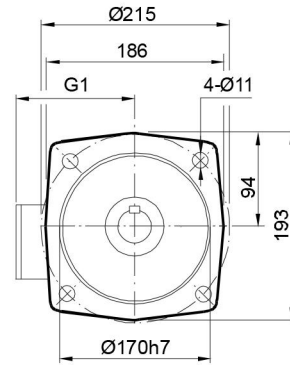
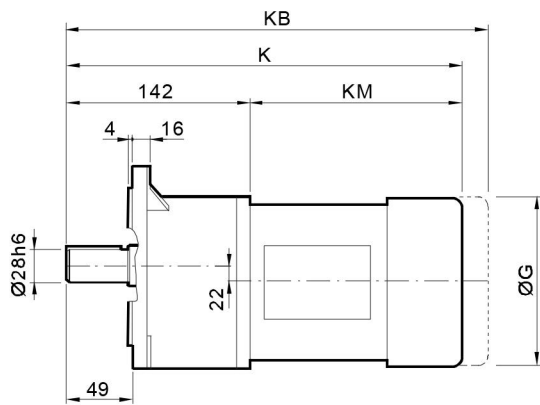
安装尺寸

Mounting dimensions

GLW28..



GLF28..



尺寸 Dimensions	电机规格 Motor frame									
	63	71	80							
<b>G</b>	130	145	175							
<b>G1</b>	108	110	145							
<b>K</b>	344	362	397							
<b>KB</b>	420	438	472							
<b>KM</b>	202	220	255							

尺寸说明

以上尺寸为直联普通电机和制动电机尺寸；  
KB为制动电机尺寸,其余为普通电机尺寸；  
防爆电机，变频电机等须加过渡法兰，见19页。

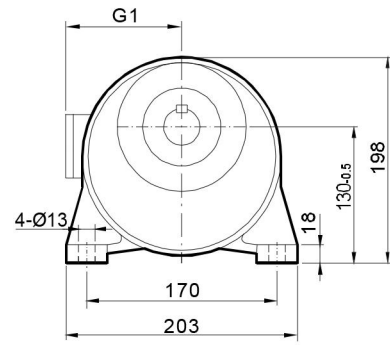
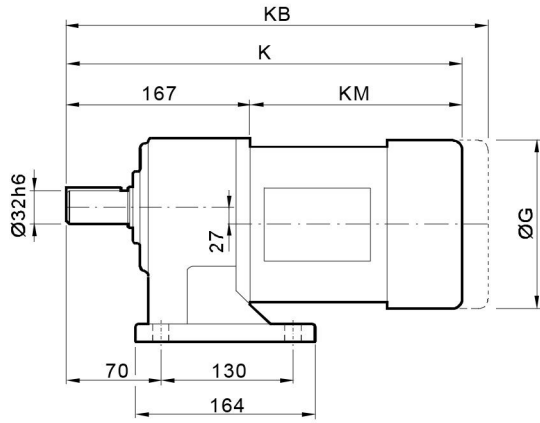
ATTENTION

Dimensions of universal and brake motor shown in upon table, the others like explosion, inverter motor coupled by adaptor, the dimensions on page 19.

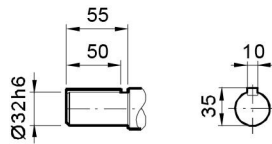
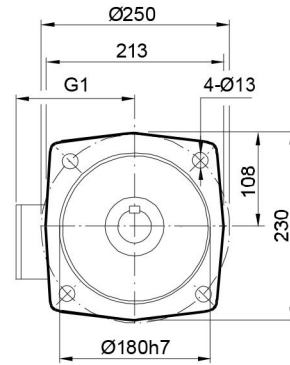
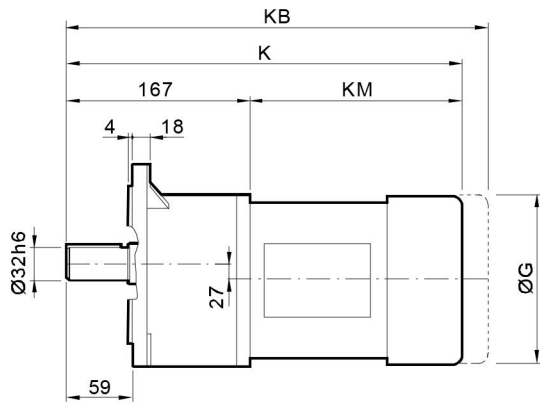
安装尺寸

Mounting dimensions

GHW32..



GHF32..



尺寸 Dimensions	电机规格 Motor frame									
	71	80	90							
<b>G</b>	145	175	195							
<b>G1</b>	110	145	150							
<b>K</b>	387	422	432							
<b>KB</b>	462	497	511							
<b>KM</b>	220	255	265							

尺寸说明

以上尺寸为直联普通电机和制动电机尺寸；  
KB为制动电机尺寸,其余为普通电机尺寸；  
防爆电机，变频电机等须加过渡法兰，见19页。

ATTENTION

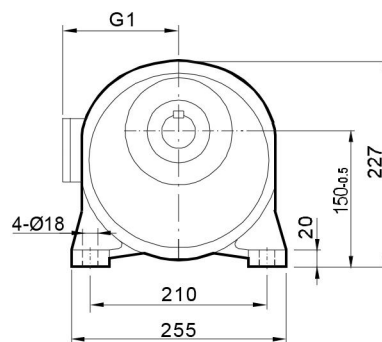
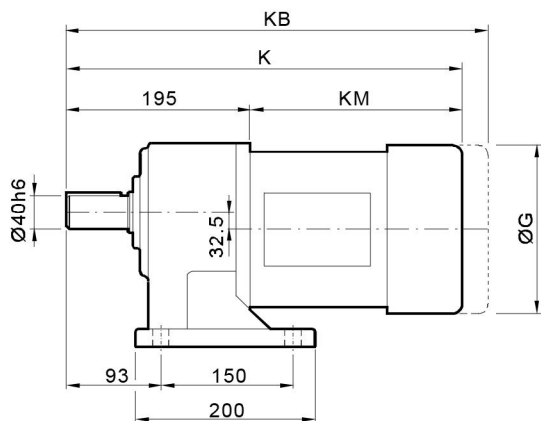
Dimensions of universal and brake motor shown in upon table, the others like explosion, inverter motor coupled by adaptor, the dimensions on page 19.



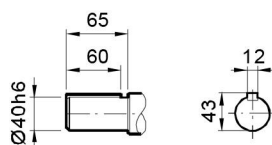
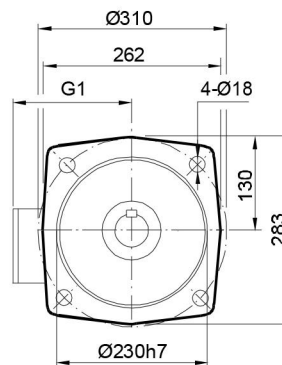
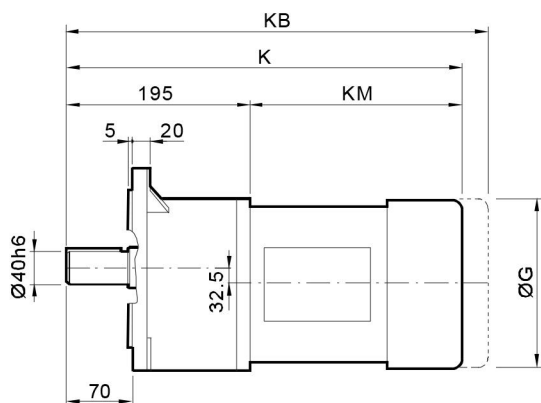
安装尺寸

Mounting dimensions

GHW40..



GHF40..



尺寸 Dimensions	电机规格 Motor frame									
	80	90S	90L	100						
G	175	195	195	215						
G1	145	150	150	175						
K	460	460	485	520						
KB	537	584	609	633						
KM	265	265	290	325						

尺寸说明

以上尺寸为直联普通电机和制动电机尺寸；  
KB为制动电机尺寸,其余为普通电机尺寸；  
防爆电机，变频电机等须加过渡法兰，见19页。

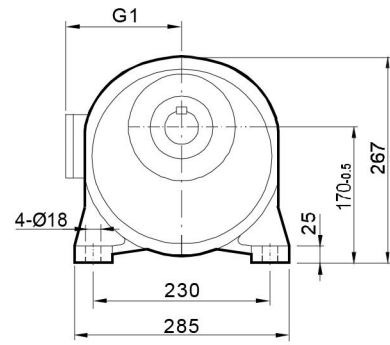
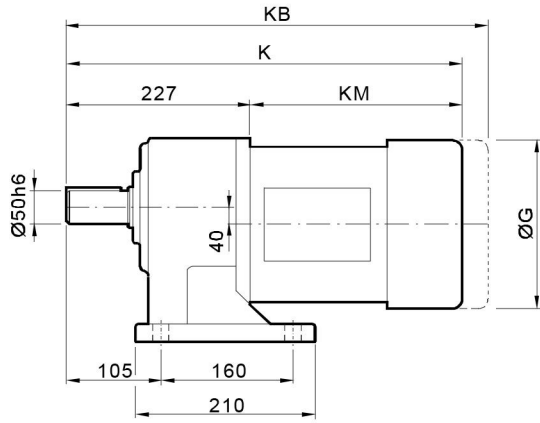
ATTENTION

Dimensions of universal and brake motor shown in upon table, the others like explosion, inverter motor coupled by adaptor, the dimensions on page 19.

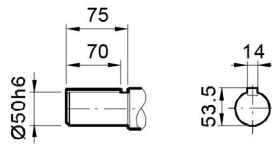
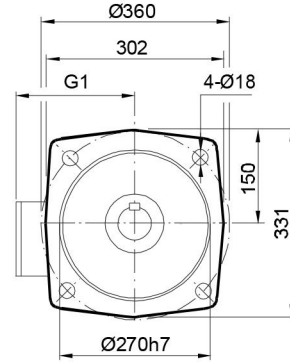
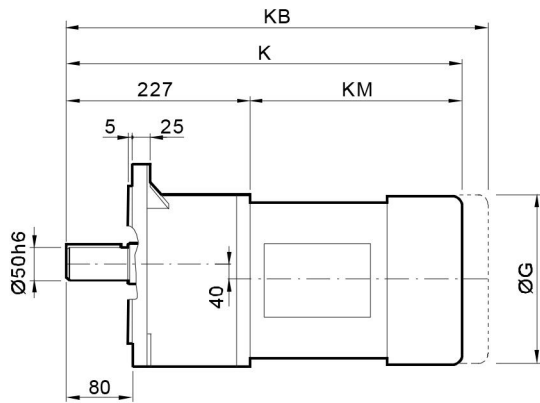
安装尺寸

Mounting dimensions

**GHW50..**



**GHF50..**



尺寸 Dimensions	电机规格 Motor frame									
	90S	90L	100L	112M						
<b>G</b>	195	195	215	240						
<b>G1</b>	150	150	175	185						
<b>K</b>	492	507	552	567						
<b>KB</b>	616	631	665	687						
<b>KM</b>	265	280	325	340						

尺寸说明

以上尺寸为直联普通电机和制动电机尺寸；  
KB为制动电机尺寸,其余为普通电机尺寸；  
防爆电机，变频电机等须加过渡法兰，见19页。

**ATTENTION**

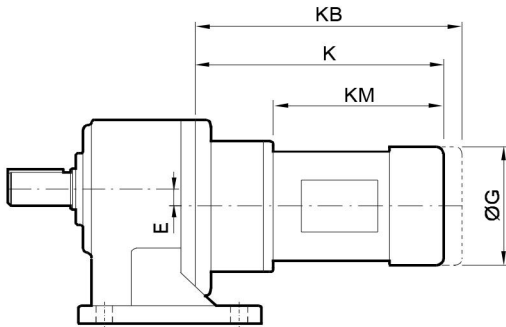
Dimensions of universal and brake motor shown in upon table, the others like explosion, inverter motor coupled by adaptor, the dimensions on page 19.

安装尺寸

Mounting dimensions

组合型尺寸

Combinations



减速机规格 Gear unit size	电机规格 Motor frame	G	K	KB	KM	E
G..28/18	63..	130	277	353	202	38.5
G..32/22	63..	130	287	363	202	45
	71..	145	305	381	220	45
G..40/28	63..	132	309	375	202	54.5
	71..	145	317	393	220	54.5
G..50/32	80..	175	367	442	265	67

尺寸说明

以上尺寸为直联普通电机和制动电机尺寸；  
KB为制动电机尺寸,其余为普通电机尺寸；  
防爆电机，变频电机等须加过渡法兰，见19页。

ATTENTION

Dimensions of universal and brake motor shown in upon table, the others like explosion, inverter motor coupled by adaptor, the dimensions on page 19.

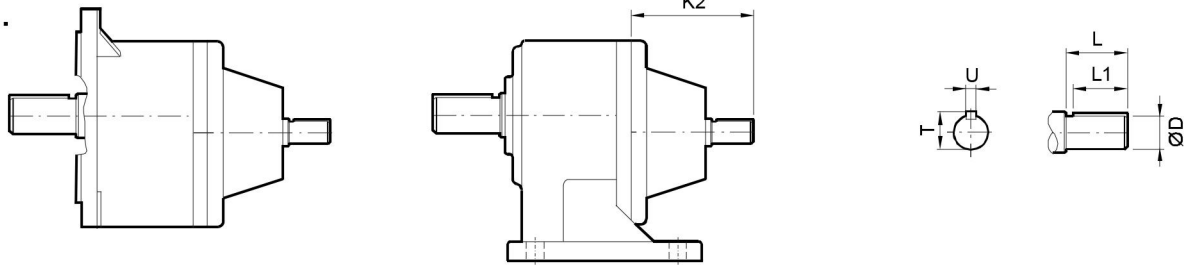
安装尺寸

Mounting dimensions

输入轴尺寸

With input shaft dimensions

G..Z..

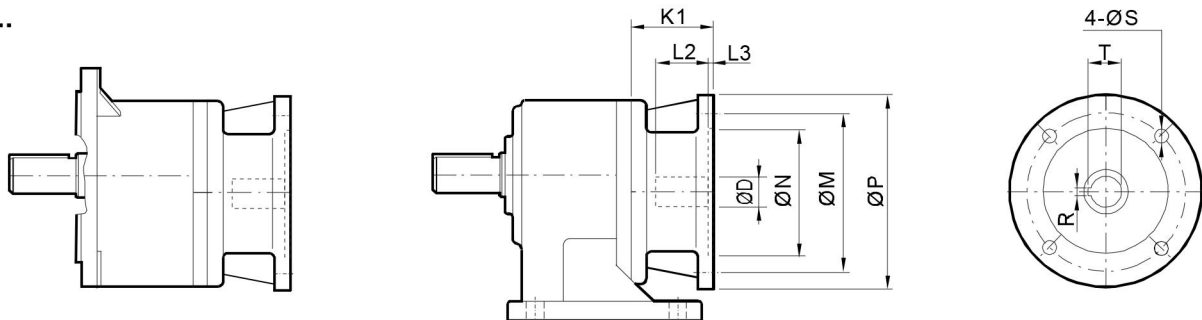


减速机型号 Gear unit size	D	L1	L	U	T	K2
G..18	14	22	25	5	16	66
G..22	14	22	25	5	16	66
G..28	16	25	30	5	18	79
G..32	19	25	30	6	21.5	86.5
G..40	24	30	35	8	27	109.5
G..50	35	45	50	10	38	125

输入法兰尺寸

With input flange dimensions

G..K..



减速机型号 Gear unit size	电机规格 Motor frame	D	N	M	P	K1	L2	L3	R	T	S
G..18	63B5	11	95	115	140	45	23	4	4	12.8	10
G..22	63B5	11	95	115	140	45	23	4	4	12.8	10
	71B5	14	110	130	160	55	30	4.5	5	16.3	10
G..28	63B5	11	95	115	140	45	23	4	4	12.8	10
	71B5	14	110	130	160	55	30	4.5	5	16.3	10
	80B5	19	130	165	200	58.5	40	4.5	6	21.8	12
G..32	71B5	14	110	130	160	55	30	4.5	5	16.3	10
	80B5	19	130	165	200	75	30	4.5	6	21.8	12
	90B5	24	130	165	200	75	40	4.5	8	27.3	12
G..40	80B5	19	110	165	200	75	30	4.5	6	21.8	12
	90B5	24	130	165	200	75	40	4.5	8	27.3	12
	100B5	28	180	215	250	80.5	60	5	8	31.3	15
G..50	90B5	24	130	165	200	75	40	4.5	8	27.3	12
	100B5	28	180	215	250	80.5	60	5	8	31.3	15
	112B5	28	180	215	250	80.5	60	5	8	31.3	15