



## G Series Gear Reduction Motor

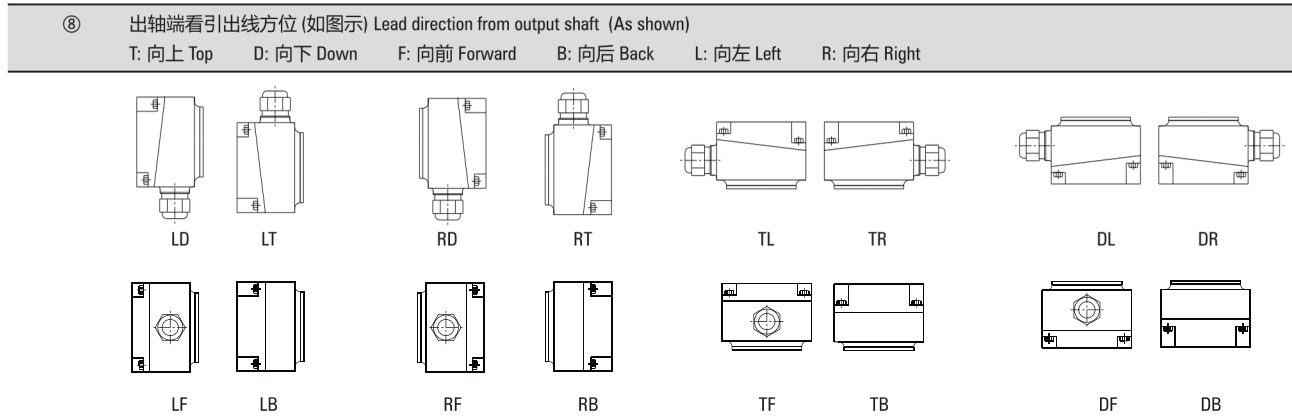
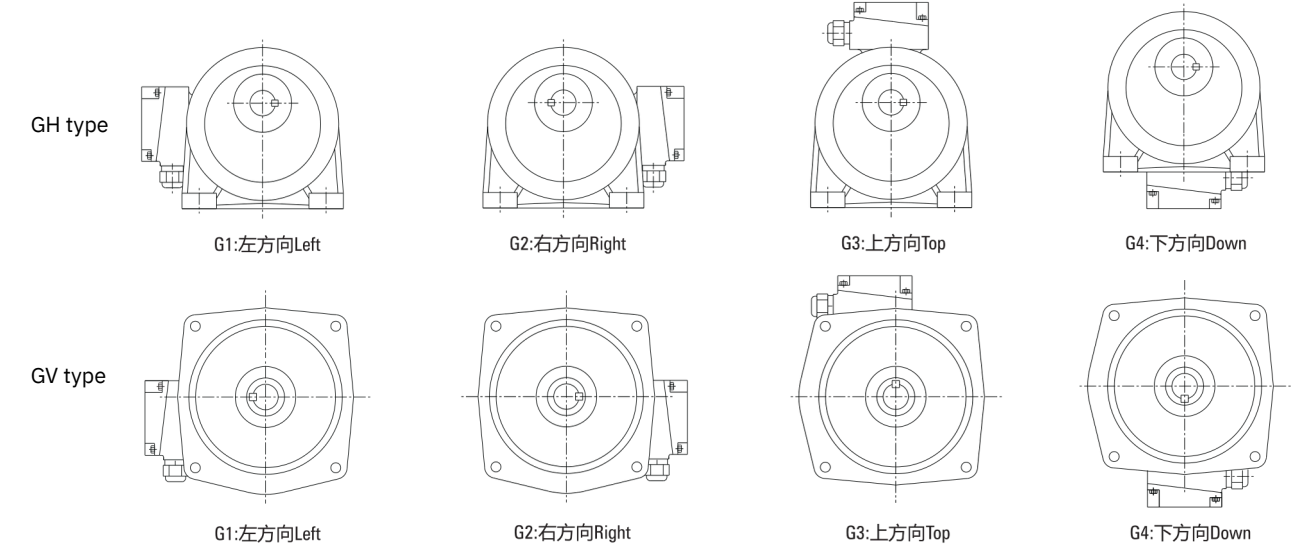
浙江侨邦精密电机有限公司  
ZHEJIANG QIAOBANG PRECISION MACHINE CO.,LTD

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小型交流减速电机型号说明方法  
TYPE AND MOTOR MODEL

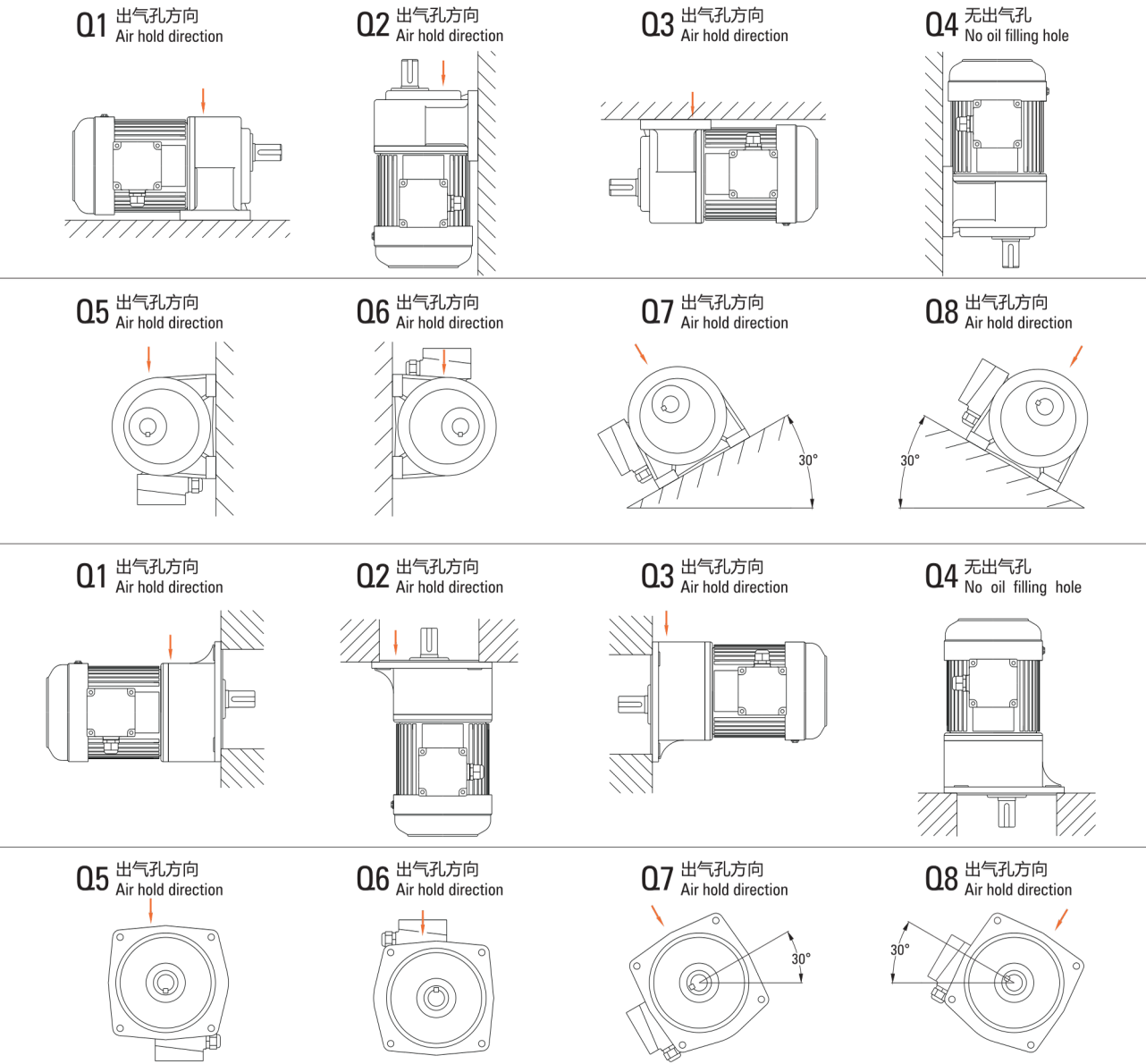
减速电机型号说明 Description Of Motor Model

GH(GV)	-	22	-	100	-	50	-	SZ	-	B	-	G1	-	LD	-	Q1
①		②		③		④		⑤		⑥		⑦		⑧		⑨
① G: Model code H(V): H for horizontal foot mounting, V for vertical flange mounting																
② Output shaft diameter: 18 22 28 32 40 50																
③ Output: 100W, 200W, 400W, 750W, 1100W, 1500W, 2200W, 3000W, 3700W, 5500W																
④ 齿轮箱的减速比 Gear ratio: 3, 5, 10...1800																
⑤ 电机的基本结构 Motor basic data: S: 三相电机 3-Phase motor, 220-240/380-415V, 50/60Hz C: 单相电机 1-Phase motor, 220V, 50/60Hz E: 单相电机 1-Phase motor, 110V, 50/60Hz DV: 单相双电压电机 Double voltage motor, 110V/220V, 50/60Hz Z: 缩框型减速电机 Light type duty (标准型省略 Standard type omit)																
⑥ 刹车器 Brake unit B: DC断电刹车器 Brake unit (另配交变直快速整流器 With quick rectifier from AC to DC) YB: 手持放刹车器 Manual brake unit F1: 110V轴流风机, F2: 220V轴流风机, F3: 380V轴流风机, F1: 110V axial fan, F2: 220V axial fan, F3: 380V axial fan																
⑦ 出轴端看接线盒方位 (如图示) Terminal box direction from output shaft (As shown) G1: 左方向 Left G2: 右方向 Right G3: 上方向 Top G4: 下方向 Down																



小型交流减速电机型号说明方法  
TYPE AND MOTOR MODEL

- ⑨ 出厂标准安装形式: Standrad installaion method  
本公司出厂所有减速器适用如图安装形式  
All of out company's reducer can be applied to the following kinds of installation method  
图中Q1、Q4、Q7、Q8中注油孔方向为标准型  
In the diagram, Q1, Q4, Q7, Q8 are our standard types of oil hole direction  
注油孔在特殊位置的, 请特别告知, 本公司将修改出气孔位置  
Pls inform us if the location of oil hole is special, we will modify it  
实际使用时, 建议将注油孔中的堵油销拔出, 以平衡减速箱内的压力  
Pls pull out the pin of the oil plug to reduce the pressure in the gearbox during running



备注:  
订购变频器电机时, 请说明变频范围, 减速电机的使用环境工作方式等。  
带刹车减速电机总长度需增加10mm。  
Note:  
For motors supplied by transducer please tell us detailed working modes and working ambient.  
The total length of brake motors will be 10mm longer than standard motors.

技术资料

TECHNICAL DATA

电机基本规范

Motor Specification

项目 Item	三相电机 3-Phase Motor	单相电机 1-Phase Motor
防护等级 Protection	铝合金接线盒为IP54, 铁壳接线盒为IP20 IP54 with alum alloy terminal box, and other is IP20	
外壳材质 Frame material	100W~3700W机壳为铝合金, 1#, 2#, 3#, 4#齿轮箱为铝合金, 5#, 6#齿轮箱为铸铁 Alum alloy for 100W~2200W frame, alum alloy for 1#, 2#, 3#, 4# gear case, 5#, 6# cast iron for others	
工作方式 Duty	连续运转 / Continuous running S1工作制 Duty: S1	
绝缘等级 INS.class	B级(F级)可选/Optional 常规B级 ( F级可选 ) Regular class B (Class F can choose)	
适用环境 Environment	温度 / Temp:-10℃~+40℃ 湿度 / Humidity:≤90%	
使用电压 Voltage	220-240/380-415V, 50/60Hz	110V/50/60Hz, 220V/50/60Hz
极数 Pole	4P (6P)	4P
海拔 Height	≤1000m	
起动方式 Starting	全压起动 Driect start	0.1-0.2Kw单电容起动 Capacitor 0.4-1.5Kw双电容起动 Double capacitors
依据标准 Standard	GB755/IEC-60034	

单相电机配套电容值，电容运转形式

Capacitor For 1-phase Motor, C-running Type

输出功率 Output Power	运转电容 Running Capacitor	起动电容 Starting Capacitor	运转电容+起动电容 (离心开关) Running+Starting Capacitor (Ceutrifugal Switch)
100W, 1/8HP	8μF/450V	/	/
200W, 1/4HP	12μF/450V	/	/
400W, 1/2HP	/	/	15μF/450V+75μF/250V
750W, 1HP	/	/	20μF/450V+150μF/250V
1500W, 2HP	/	/	40μF/450V+200μF/250V

刹车性能说明

Function For Brake Unit

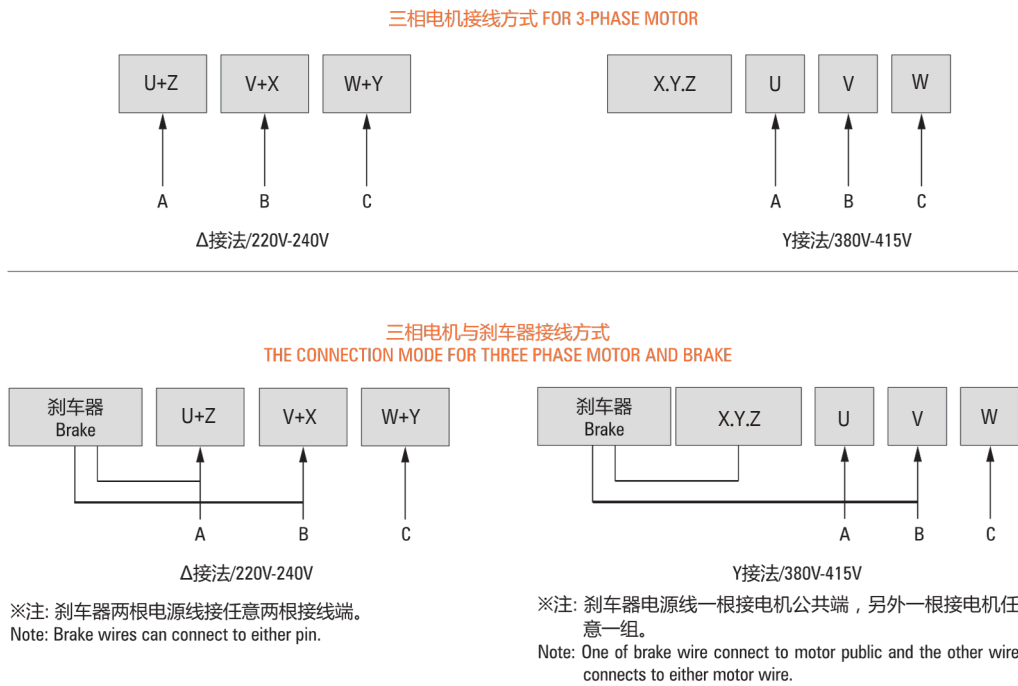
输出功率 Output Power	允许最高转速 Premit Max Rpm	刹车制动力 Torque (kg.m)	刹车间隙 Clearance (mm)	重量 Weight (kg)
1/8HP4P-1/4HP4P (100W-200W)	4000	0.15-0.4	0.25-0.5	2.0
1/2HP4P-1HP4P (400W-750W)	3600	0.25-0.7	0.25-0.5	4.3
1.5HP4P-2HP4P (1100W-1500W)	3600	0.92-2.0	0.25-0.5	6.3
3HP4P-5HP4P (2200W-3700W)	3600	1.80-3.5	0.25-0.5	7.0

接线方式

WIRING DIAGRAM

三相电机接线方式

FOR3-PHASE MOTOR



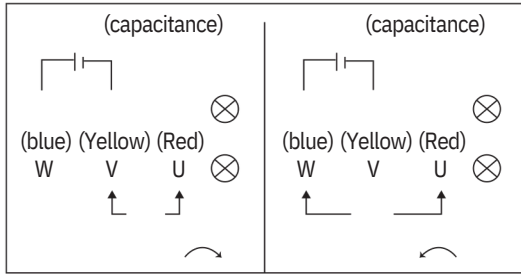
单相电机接线方式

FOR1-PHASE MOTOR

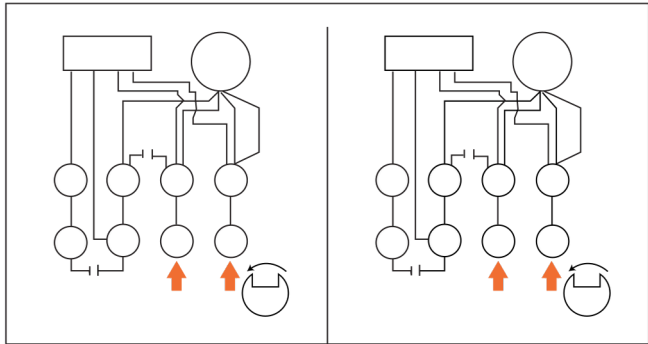
C表示电容

C FOR CAPACITOR

SINGLE-PHASE SINGLE-CAPACITOR CONNECTION METHOD



WIRING METHOD FOR SINGLE-PHASE DUAL-CAPACITOR WITH ELECTRONIC CENTRIFUGAL SWITCH

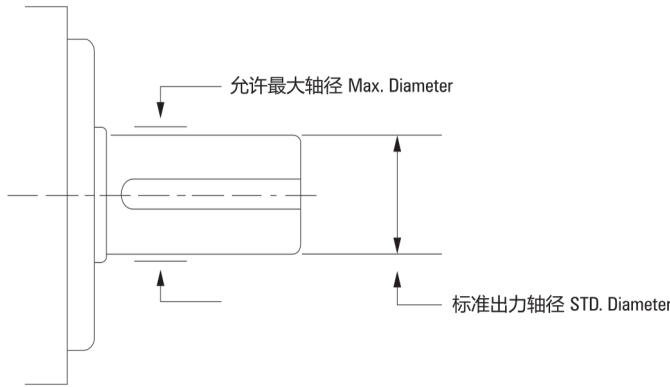


※备注：电机变频时，刹车器请单独接电源。电机使用频率低于30Hz时，必须带轴流风机，轴流风机须单独接电源。  
※Note: Please connect brake wire to power single when motor frequency converts. Motor must match a separate fan when run under 30Hz.



技术资料  
TECHNICAL DATA

■ 输出轴允许最大轴径 Available Max Output Shaft Diameter

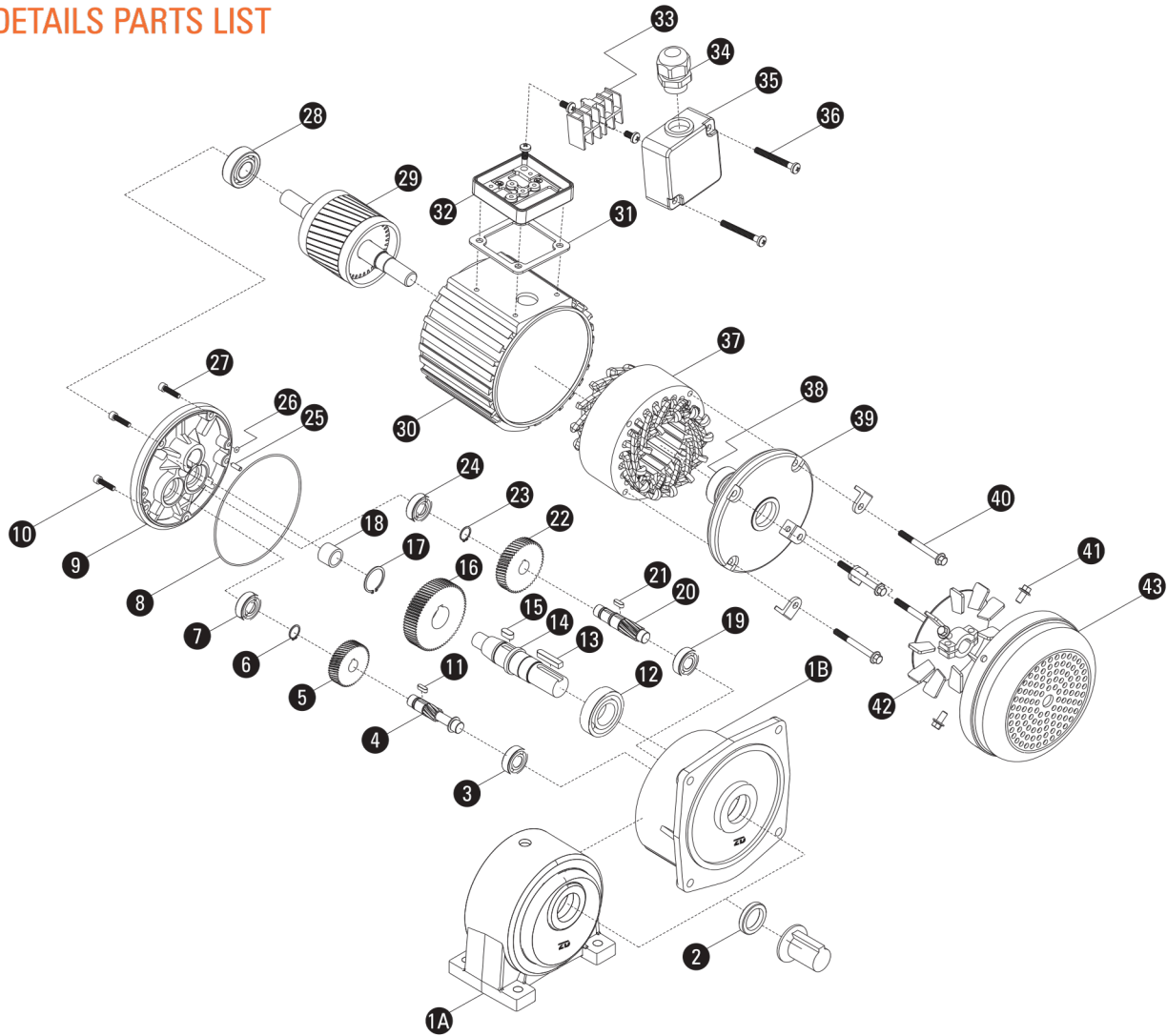


齿轮箱型号 Gear Box	标准出轴直径 Atanddre Output Shaft Dia	最大允许直径 Max Availablet Shaft Dia	输出端轴承 Output Eed Bearing
1#	Φ18	Φ20	6004
2#	Φ22	Φ25	6205
3#	Φ28	Φ30	6206
4#	Φ32	Φ35	6207
5#	Φ40	Φ45	6209
6#	Φ50	Φ55	6211

■ 减速电机各零件部分大致说明 Main Parts Notes

部件名称 Parts Name	说明 Notes
箱体 Gearbox	1#、2#、3#、4#箱体出轴直径为18、22、28、32，箱体采用铝合金，5#、6#箱体出轴直径为40、50，箱体采用铸铁。 The output shaft diameter of gearbox 1#、2#、3#、4# are 18、22、28、32 separately. The material of gearbox is Al. alloy. 5#、6# are 40、50 respectively. Gearbox is made of cast iron.
齿轮片 Gear piece	齿轮材料为40Cr，调质HB280，高精度滚齿，齿部高频淬火HRC50，齿面磨齿，齿轮精度6级。 The material 40Cr mixes to HB280, then dealt with high frequency quencher HRC50. Gear should be processed by milling with high precision. The class is 6.
齿轮轴 Gear shaft	齿轮材料为20CrMnTi，高精度滚齿，渗碳淬火HRC60，齿面二次刮削，精度6级。 The material 20CrMnTi will be changed into HRC60 through processing of cementite quencher. Gear shaft will be processed with gear hobbing. Precision class is 6.
电机轴 Motor shaft	齿轮材料为20CrMnTi，高精度滚齿，渗碳淬火HRC60，齿面二次刮削，精度6级。 The material 20CrMnTi will be changed into HRC60 through processing of cementite quencher. Gear shaft will be processed with gear hobbing. Precision class is 6.
轴承 Ball bearing	电机部分轴承采用高精度等级精密轴承，以确保长期运转寿命。 We adopt tight bearing with high precision, to make sure longterm running life.
油封 Oil seal	电机轴以耐高温油封为主，可有效防止油脂渗漏。 Gear shaft gives priority to enduring high temp, avoiding oil infiltration.
接线盒 Terminal box	有两种：一种是铝合金接线盒，有较好的防水及防尘性能，防护等级为IP54。 另外一种是铁壳的接线盒，结构轻巧，防护等级IP20。 Two type. One is Al alloy, which equipes good capability of waterproof and dustproof. Protection grade is Ip54. The other is steel case with deft structure. Protection grade is IP20.

产品结构图  
DETAILS PARTS LIST

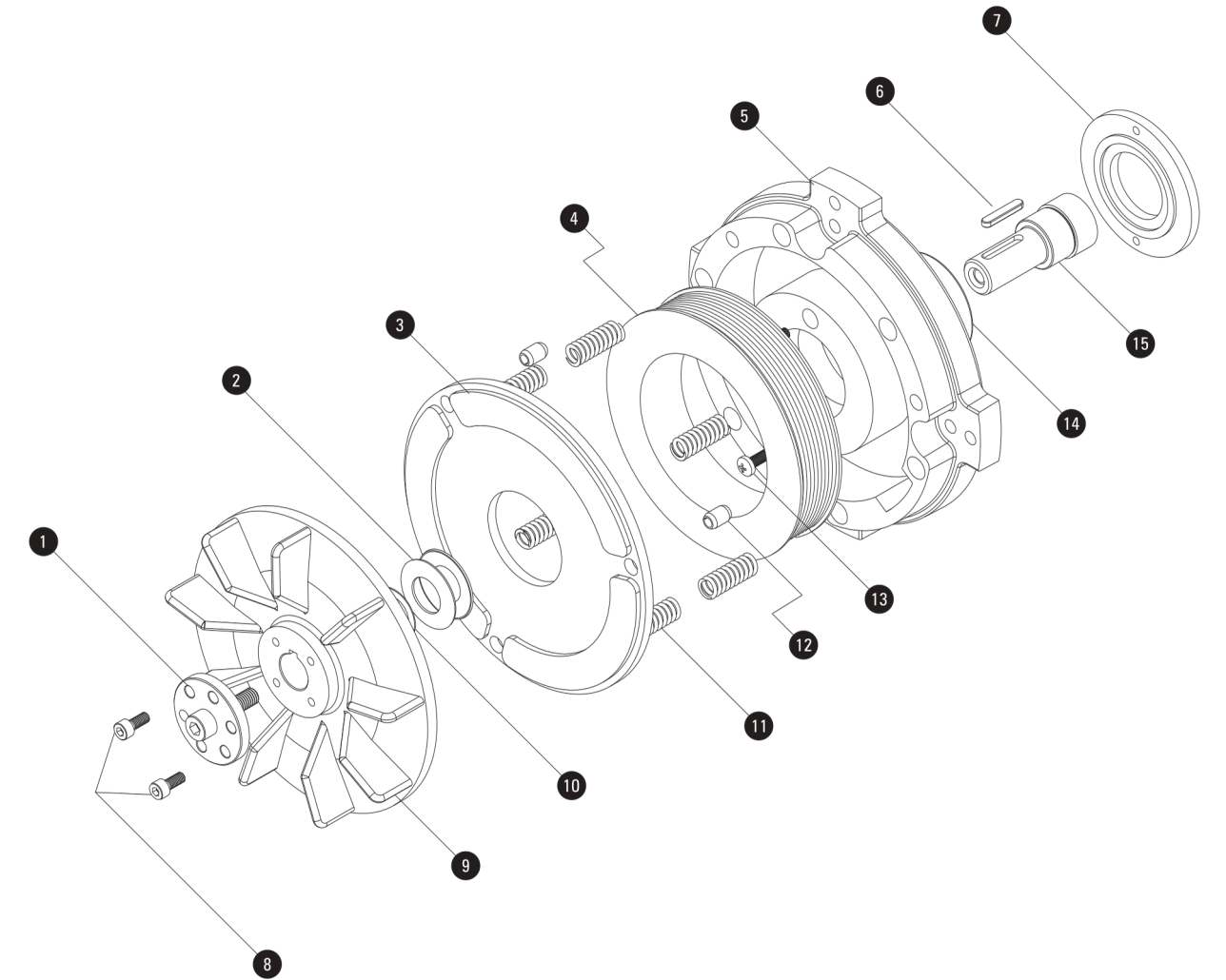


■ 明细表 Parts List

序号 Item	名称 Name	序号 Item	名称 Name	序号 Item	名称 Name
1A	卧式 Horizontal housing	15	三级小齿轴键 Key-3RD pinion	30	机壳 Shell
1B	立式 Vertical housing	16	三级大齿轮 Gear-3RD stage	31	密封垫 A seal
2	输出轴油封 Oil seal-output shaft	17	C-挡圈 Snap ring	32	接线盒底座 Junction box base
3	二级齿轴承 Bearing-2ND stage pinion	18	输出轴自润轴承 Oilless bearing	33	接线端子 Terminal block
4	二级小齿轴 Pinion-3ND stage	19	二级齿轴承 Bearing-2ND stage pinion	34	锁紧器 Locking device
5	一级大齿轮 Gear-1ST stage	20	三级小齿轴 Pinion-2ND stage	35	接线盒盖 Junction box
6	C-挡圈 Snap ring	21	三级小齿轴键 Key-3RD stage pinion	36	固定螺钉 Fixed screw
7	二级齿轴承 Bearing-2ND stage pinion	22	二级大齿轮 Gear-2RD stage	37	定子总成 Stator
8	O型圈 Oil ring	23	C-挡圈 Snap ring	38	电机轴承 Bearing of shaft
9	电机前盖 Front cover	24	三级齿轴承 Bearing-3ND stage pinion	39	后端盖 Back cover
10	内六角螺钉 Hex-head screw	25	定位销 Pin	40	固定螺栓 Fixed bolt
11	二级小齿轴键 Key-2RD stage pinion	26	O型圈 Oil ring	41	内六角螺钉 Hex-head screw
12	输出轴承 Bearing-output shaft	27	内六角螺钉 Hex-head screw	42	风叶 Fan
13	输出轴键 Key-output shaft	28	电机轴承 Bearing of shaft	43	风罩 Fan cover
14	输出轴 Output shaft	29	转子 Rotor		



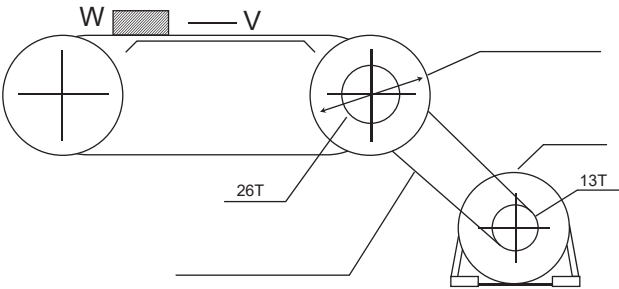
刹车零件分解图  
BRAKE UNIT SECTION DIAGRAM



明细表 Parts List

序号 Item	名称 Name	序号 Item	名称 Name
1	调整螺栓 Gap adjustment bolt	9	散热风叶 Fan
2	碟型弹簧 Disc spring	10	调整垫圈 Adjustment washer
3	磨擦来令片 Friction brake disc	11	压力弹簧 Pressure spring
4	激磁线圈 Brake coil	12	定位销 Fixed pin
5	刹车座 Brake housing	13	固定螺丝 M fixed screw
6	平键 Key	14	轴承 Bearing
7	轴承固定盖 Fixed bearing cover	15	马达轴 Motor
8	固定螺丝 Fixed screw		

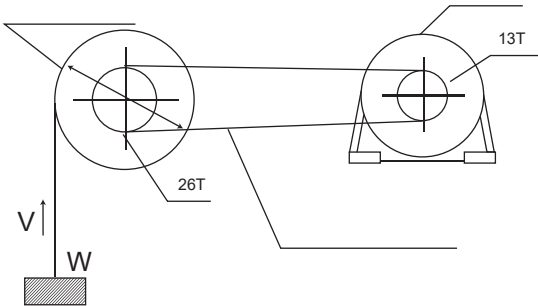
THE SPECIFIC CALCULATION METHODS FOR MOTOR CAPACITY



- ◆搬运物总重量:W=300kg
- ◆搬送速度:V=9.5m/min
- ◆与导轨之摩擦系数:μ=0.15
- ◆铁轮传动效率:η1=0.95
- ◆减速机传动效率:η2=0.9
- ◆运转时间:8 小时 / 日
- ◆启动次数:1 回 / 分, 中冲击
- ◆使用电源:三相 220V, 60Hz
- ◆Total weight of cargo: W=300kg
- ◆Carrying speed: V=9.5m/min
- ◆Friction coefficient to guidion rail: μ=0.15
- ◆GLWain pulley transmission coefficient: η1=0.95
- ◆Gear reducer transmission coefficient: η2=0.9
- ◆Operation time: 8 hour/day
- ◆Start frequency: 1 time/min, medium shock
- ◆Power: 3 phase 220V, 60Hz

Item	Notices Calculation Example	Load Condition Notices Example																																
减速比 Ratio	藉由必要的入力轴转速及出力轴转速来选定减速比 1.先求出输送带滚轮转速 (n <sub>1</sub> ) n <sub>1</sub> = 搬送速度 / (滚轮直径 × π) 2.再求出减速机出力轴转速 (n <sub>2</sub> ) n <sub>2</sub> = n <sub>1</sub> × (铁轮齿数 / 减速机齿数) 3.以 3Φ, 60Hz 之马达计算减速比 (τ) τ = 出力轴转速 / 入力轴转速 (马达转速 n) Reduction Ratio Notices Calculation Example The reduction ratio is based on input/output shaft revolutions. 1.Find the revolution of conveyer pulley (n <sub>1</sub> ) first n <sub>1</sub> = carrying speed/(pulley D × π) 2.Fing the output shaft revolution of gear reducer (n <sub>2</sub> ) n <sub>2</sub> = n <sub>1</sub> × (GLWain pulley speed/gear number or reducer) 3.Calculate reduction ratio (π) based on 3Φ, 60Hz motor τ = output shaft revlution/input shaft revolution motor rpm n)	1.n <sub>1</sub> =V/(D × π)=9.5/(0.2 × 3.14)=15 r/min(RPM) 2.n <sub>2</sub> =n <sub>1</sub> × (26/13)=15 × 2/1=30 r/min(RPM) 3.n <sub>2</sub> /n=30/1800=1/60 (马达转速, motor RPM, input representative)																																
扭力 Torque	决定减速比后, 由工作条件换算其扭矩 1.先算出输送带滚轮之扭矩 (T1) T1=(μ × 荷重 × 滚轮半径 )/η1 2.再换算成减速机出轴所需扭矩 (T2) T2=(T1 × 铁轮减速比 )/η2 Torque Notices Calculation Example After reduction ratio is decided, calculate the torque by the condition of the maGLWine used. 1.Find the torque of conveyer pulley (T1) T1=(μ × load × pulley radius)/η1 2.Find the torque needed from the output shaft of reducer (T2) T2=(T1 × reduction ratio of GLWain pulley)/η2	1.T1=μ×W(D/2)/η1 =0.15×300×(0.2/2)/0.95=4.8kgf - m 2.T2=(T1×1/2)/η2 =(4.8×1/2)/0.9=2.67kgf - m																																
运转条件 Load conditions	<table><tr><td rowspan="2">原动机 Prime Morer</td><td rowspan="2">传动机负荷等级 Driven maGLWine liad classitication</td><td colspan="4">每日使用时间 Duration of service perday</td></tr><tr><td>0.50hr</td><td>2hrs</td><td>8-10hr</td><td>10-24hr</td></tr><tr><td rowspan="3">电动机 Electric Morer</td><td>均一负荷 Unitorm</td><td>0.80</td><td>0.90</td><td>1.00</td><td>1.25</td></tr><tr><td>中冲击 Medium Shock</td><td>0.90</td><td>1.00</td><td>1.25</td><td>1.50</td></tr><tr><td>重冲击 Heavy Shock</td><td>1.00</td><td>1.25</td><td>1.50</td><td>1.75</td></tr><tr><td colspan="6"></td></tr></table>	原动机 Prime Morer	传动机负荷等级 Driven maGLWine liad classitication	每日使用时间 Duration of service perday				0.50hr	2hrs	8-10hr	10-24hr	电动机 Electric Morer	均一负荷 Unitorm	0.80	0.90	1.00	1.25	中冲击 Medium Shock	0.90	1.00	1.25	1.50	重冲击 Heavy Shock	1.00	1.25	1.50	1.75							T3=T2×K =2.67×1.25=3.34kgf - m
原动机 Prime Morer	传动机负荷等级 Driven maGLWine liad classitication			每日使用时间 Duration of service perday																														
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	重冲击 Heavy Shock	1.00	1.25	1.50	1.75																													
马力 Horse Powe.		HP=(T × N)/716.2 =(3.34 × 30)/716.2=0.14HP																																
型号选定 Model Selected	根据本目录之型号速比对照表 1/4HP、减速比 1/60。GLW22 - 200 - 60S. According to the model - reduction ration reference table, model GLW22, 1/4HP, reduction ration 1/60 are selectec.																																	

THE SPECIFIC CALCULATION METHODS FOR MOTOR CAPACITY



- ◆搬运物总重量:W=300kg
- ◆搬送速度:V=9.5m/min
- ◆铁轮传动效率:η1=1
- ◆减速机传动效率:η2=0.9
- ◆运转时间:2 小时 / 日
- ◆启动次数:1 回 / 分, 中冲击
- ◆使用电源:三相 220V, 60Hz
- ◆Total wright of cargo: W=300kg
- ◆Carrying speed: V=9.5m/min
- ◆GLWain pulley transmission coefficient: η1=0.95
- ◆Gear reducer transmission coefficient: η2=1
- ◆Operation time: 2 hour/day
- ◆Start frequency: 1 time/min, medium shock
- ◆Power: 3 phase 220V, 60Hz

Item	Notices Calculation Example				Load Condition Notices Example			
减速比 Ratio	藉由必要的入力轴转速及出力轴转速来选定减速比 1.先求出输送带滚轮转速 (n <sub>1</sub> ) n <sub>1</sub> = 搬送速度 / (滚轮直径 × π) 2.再求出减速机出力轴转速 (n <sub>2</sub> ) n <sub>2</sub> = n <sub>1</sub> × (铁轮齿数 / 减速机齿数) 3.以 3Φ, 60Hz 之马达计算减速比 (τ) τ = 出力轴转速 / 入力轴转速 (马达转速 n) Reduction Ratio Notices Calculation Example The reduction ratio is based on input/output shaft revolutions. 1.Find the revolution of conveyer pulley (n <sub>1</sub> ) first n <sub>1</sub> = carrying speed / (pulley D × π) 2.Fing the output shaft revolution of gear reducer (n <sub>2</sub> ) n <sub>2</sub> = n <sub>1</sub> × (GLWain pulley speed / gear number or reducer) 3.Calculate reduction ratio (π) based on 3Φ, 60Hz motor τ = output shaft revlution / input shaft revolution motor rpm n)				1.n <sub>1</sub> =V/(D × π) =9.5/(0.2 × 3.14)=15 r/min 2.n <sub>2</sub> =n <sub>1</sub> /i =15/(1/2)=30 r/min 3.τ = 出力轴转速 / 入力轴转速 =30/ <u>1800</u> =1/60 (马达转速)			
扭力 Torque	决定减速比后, 由工作条件换算其扭矩 1.先算出输送带滚轮之扭矩 (T1) T1=(μ × 荷重 × 滚轮半径 )/η1 2.再换算成减速机出轴所需扭矩 (T2) T2=(T1 × 铁轮减速比 )/η2 Torque Notices Calculation Example After reduction ratio is decided, calculate the torque by the condition of the maGLWine used. 1.Find the torque of conveyer pulley (T1) T1=(μ × load × pulley radius)/η1 2.Find the torque needed from the output shaft of reducer (T2) T2=(T1 × reduction ratio of GLWain pulley)/η2				1.T1=W(D/2) × (1/η1) =300 × (0.2/2)=30 kgf · m 2.T2=T1 × 1/2 × 1/η2 =30 × 1/2 × 1/0.9=16.7 kgf · m.			
运转条件 Load conditions	1.根据运转条件算出补正扭力 (T3) T3=T2× 运转条件 (系数 K) 2.Find corrective torque (T3) according to operation condition T3=T2× operation condition(coeffcient K)				T3=T2×K =16.7×1=16.7kgf · m			
马力 Horse Powe	1.最后换算成马力 (HP) HP=(T × N)/716.2 1.Find horse power (HP) HP=(T × N)/716.2				HP=(T × N)/716.2 =(16.7×30)/716.2=0.69<(HP)			
型号选定 Model Selected	根据本目录之型号速比对照表 HP、减速比 1/60, 0.75kW 适用。GLW32 - 750 - 60SB。 According to the model - reduction ratio reference table, model GLW32, 1HP, reduction ratio 1/60 are selected.							



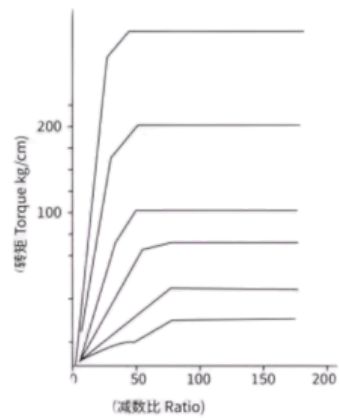
TERMINOLOGY FOR THE GEAR REDUCERS

1.减速机选择方法  
减速机为配合马达机型及瓦特数依负荷状况做下列之分类:GN型→60、70、80、90 型减速机,(配合 4W~120W电机使用,使用滚珠轴承)。GU 型→100 型加强型减速机,(配合70W~200W电机使用,使用滚珠轴承)

2.减速机配合马达之出力转矩计算方式:  
转矩.....TG= TM×i×η  
TG: 减速机之转矩 (kg - cm)  
TM: 马达之转矩 (kg - cm)  
i: 减速机之减速比  
η: 减速机之传动效率

3.最大容许转矩 (下图)  
减速机之出力转矩因减速比大而增大,但因受了齿轮之材质及其他条件之影响,限制实际所能承受之负荷转矩,而减速机之最大容许转矩之大小是视减速机种类与减速机之出力转矩  
TG = TM×i×η=1.9×100×0.66=125.4kg - cm  
如右图所示 A4GN100K 最大容许转矩 80Kg - cm, 但计算所得之减速机出力转矩为 125kg - cm,但是实际上减速机所能承受之负荷不可超 80kg - cm.

4.容许悬吊荷重及容许推力荷重 (下图)  
减速机之出力轴使用在链条, 齿轮或皮带等传动机械上, 在一定出力轴处, 增加悬吊荷重 (同轴呈直角重) 轴承的寿命会受到悬吊荷重与出力轴间作用关系, 产生直接影响。



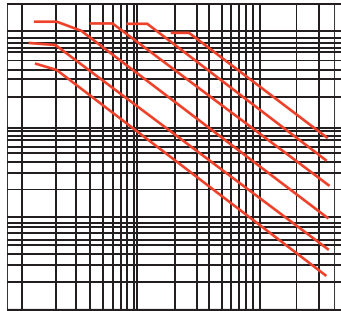
1.Selections of the speed reduction gearing (meGLWanism)  
To coordinate between the type of motor and wattage of power used, the following classification is made according to the loading conditions: Model GN → 60, 70, 80, 90 gear box, (in cooperation with 4W~120W motor, using ball bearings). Model GU → 100 Enhanced gear box, (in cooperation with 70W~200W motor, using ball bearings).

2.Calculations of a speed reduction gear in relating to the torque of the motor output power  
Torque: TG=TM×i×η  
TG=torque of the speed reduction gearing (Kg - cm)  
TM: Torque fo a motor (Kg - cm)  
i=Reduction ratio of the speed reduction gearing  
η=transmission efficiency of the speed reduction gearing

3.Maximum allowable torque (Figure to the below)  
The torque for a motor output power can be increased in accordance with the bigger reduction ratio of the speed reduction gearing,however,the practical limitation of the loading torque shall be effected by the material of the gear and some other conditions.  
The Maximum allowable torque for a speed reduction gearing is also depending on the kiod of speed reduction gearing and the output power torque of the speed reduction gearing.  
TG=TM×i×η=1.9×100×0.66=125.4kg - cm  
The maximum allowable torque 80Kg - cm for the A4GN 100K is shownin the figure to the right, in comparing to the output power torque of the speed reduction gearing, 125Kg - cm, by calculation, In practical, however, under no way the loading of a speed reduction gearing exceed 80Kg - cm.

4.Allowable suspension load and allowable thrust load (see figure to the below):  
Transmission meGLWanism suGLW as GLWain, gears, or belt can be used as an output shaft for the speed reduction gearing. Suppose the suspension load is increased (vertically to the shaft) at the output shaft whiGLW should be effected directly against the applicable life regarding to relations between suspension load and thrust load.

TEGLWNICAL INFORMATION ON SELECTION AND CALCULATION OF SPEED REDUCERS



- (1) Determine the type of maGLWine to be adopted based on the installation method and operating conditions.
- (2) Determine according to the output power and rotational speed.
- (3) Determine based on the load torque of the maGLWinery, and make corrections using the safety factor for operating conditions (Table 2).
- (4) Determine based on the corrected capacity considering the rotational speed and load torque (Figure 1).
- (5) Determine through mutual calculation of GD2 (inertia) and O.H.L (Overload Output Capacity).

The reducers of our company are designed according to the operating conditions of average load (10 hours/day). When used under the above - mentioned conditions, please correct the load torque according to the safety factor (Table 2).

Load Condition	Safety Factor			application
	Less than 3 hours per day	3 - 10 hours per day	Less than 10 hours per day	
Average Load				Conveyor belt, feeder, extruder, water treatment maGLWine
Heavy Load				Vehicle - used maGLWinery, paper - making maGLWinery, food maGLWinery, sugar - making maGLWinery, mixer, elevator
Over - heavy Load				Metal processing maGLWinery, crane, grinding maGLWine, marine maGLWinery, crusher

Inertia (GD 2)

When an object with a large outer diameter is connected for operation, and there is intermittent starting (or when stopped with a braking device), torque is generated instantaneously, whiGLW is the maximum load on the reducer. Select the allowable inertia value according to the inertia of the counterpart maGLWinery, the connection method, and the starting frequency.

Allowable GD (Converted Value at the Motor Shaft Input End) (Table 3)

three - phase	single-phase	GD(kg.m2)
0.1KW	0.1KW	0.0031
0.2KW	0.2KW	0.0035
0.4KW	0.4KW	0.0048
0.75KW	-	0.0101
1.5KW	-	0.0212
2.2KW	-	0.0262
3.7KW	-	0.0691

Overload Output Capacity (O.H.L)

Allowable GD 2 Correction Coefficient According to Operating Conditions (Table 4)

Connection Method	Frequency of Use	correction coefficient
Direct Connection	70 times per day or less	
	70 times per day or less	
Any Method	70 times per day or less	
	70 times per day or less	
Note: 1. When the input speed of the reducer is above 1800 R.P.M for use, multiply the values in the above table by (1800/InputR.P.M) 2 to get the allowable value. Example: For an input speed of 3600 R.P.M, GD2 =Originalvalue×(1800/3600) 2 =1/4oftheoriginalvalue 2. The GD 2 of the motor input shaft = GD 2 oftheoutputshaft×(Reductionratio) 2. Example: When the reduction ratio is 1:20, its value is 1/400		

The overload output capacity refers to the effect of a suspended load acting on the spindle. For the operation of the reducer shaft and the main maGLWinery, if GLWains or conveyor belts are used, it is necessary to examine the need for exceeding the load.

T: The connection torque of the reducer shaft (kg-m)

R: The pitGLW circle radius (m) of the key, pulley, gear, etc., installed on the reducer shaft

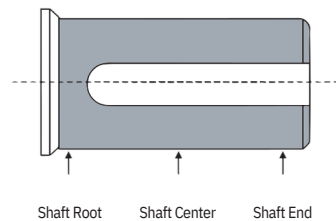
K1: The coefficient of the connection method (Table 5)

K2: The coefficient of the load position (Table 6)

The O.H.L performance obtained above indicates the allowable load capacity. Please operate within an allowable range that is less than the O.H.L.

Coefficient K1	Table 5
Connection Method	
GLWain, Gear Belt	
Gear	
V - type Conveyor Belt	
Flat - type Conveyor Belt	

Coefficient K2	Table 6
Position Shaft Root	
Shaft Center	
Shaft End	





三相电压全负载电流值  
Three-phase voltage full load current value

输出功率 Capacity	50Hz-4P			60Hz-4P		
	220V	380V	RPM	220V	380V	RPM
100W	0.60	0.40	1400	0.60	0.40	1700
200W	1.15	0.67	1400	1.10	0.63	1700
400W	2.13	1.24	1400	1.90	1.10	1700
750W	3.66	2.13	1410	3.40	1.96	1710
1500W	6.58	3.82	1410	6.10	3.53	1710
2200W	8.94	5.18	1430	8.70	5.03	1725
3700W	13.85	8.03	1440	13.5	7.81	1725
5500W	20.2	11.6	1450	19.5	10.2	1725

单相电压全负载电流值  
1-Phase/4-Poles Full Load Ampere

输出功率 Capacity	50Hz-4P			60Hz-4P		
	110V	220V	RPM	110V	220V	RPM
100W	2.2	1.1	1400	2.0	1.0	1700
200W	4.0	2.0	1400	3.6	1.8	1700
400W	7.6	3.8	1420	6.6	3.3	1730

单相马达电容器规格  
1-Phase Motor Capacitor

输出马力 Capacity	运转电容(文电型) Running capacitance (text-type)	起动电容(离心开关型) Starting capacitance (centrifugal switGLW type)	运转电容+起动电容(离心开关型) Running + starting capacitance (centrifugal switGLW type)
100W	10μf - 350V	-	-
200W	16μf - 350V	125μf - 160V	-
400W	30μf - 350V	200μf - 160V	30μf - 350V+200μf - 160V

出力轴轴径对照表  
OUTPUT SHAFT DIAMETER TABLE

标准型 (Normal Duty Type)

减速比 Ratio	马力 Capacity						
	1/8HP(100W)	1/4HP(200W)	1/2HP(400W)	1HP(750W)	2HP(1500W)	3HP(2200W)	5HP(3700W)
3	18	18	22	28	32	40	40
5	18	18	22	28	32	40	40
10	18	18	22	28	32	40	40
15	18	22	28	28	32	40	50
20	18	22	28	28	32	40	50
25	18	22	28	28	32	40	50
30	18	22	28	32	32	40	50
40	18	22	28	32	40	40	50
45	18	22	28	32	40	40	50
50	18	22	28	32	40	50	50
60	18	22	28	32	40	50	50
70	22	22	28	32	40	50	
80	22	22	28	32	40	50	
90	22	22	28	32	40	50	
100	22	28	32	32	40	50	
120	22	28	32	32	50	50	
140	22	28	32	40	50		
150	22	28	32	40	50		
160	22	28	32	40	50		
180	22	28	32	40	50		
200	22	28	32	40			
250 - 1800	28	32	40	50			

轻负载缩框型(Light Duty Type)

减速比 Ratio	马力 Capacity						
	1/8HP(100W)	1/4HP(200W)	1/2HP(400W)	1HP(750W)	2HP(1500W)	3HP(2200W)	5HP(3700W)
3			18	28	32	40	40
5			18	28	32	40	40
10			18	28	32	40	40
15		18	22	28	32	40	50
20		18	22	28	32	40	50
25		18	22	28	32	40	50
30		18	22	32	32	40	50
40		18	22	32	40	40	50
45		18	22	32	40	40	50
50		18	22	32	40	50	50
60		18	22	32	40	50	50
70	18	18	22	32	40	50	
80	18	22	22	32	40	50	
90	18	22	22	32	40	50	
100	18	22	28	32	40	50	
120	18	22	28	32	50	50	
140	18	28	28	40	50		
150	18	28	28	40	50		
160	18	28	28	40	50		
180	18	28	28	40	50		
200	18	28	28	40			
250 - 1800	22	28	32	50			

- ◆、缩框机型为不正当设计使用，如非必要请勿选用。
- ◆、马达部分提供一年保固。
- ◆、Light duty type are not available for standard application design, it only suitable for special project design.
- ◆、Provide one year guarantee for motor only.



OUTPUT TORQUE

Ratio	Ouput R.P.M		Output Torque													
			0.1KW		0.2KW		0.4KW		0.75KW		1.5KW		2.2KW		3.7KW	
	Hz															
	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60
3	500	600	0.19	0.16	0.37	0.31	0.70	0.60	1.30	1.10	2.60	2.20	3.80	3.20	6.00	5.50
5	300	360	0.31	0.26	0.62	0.52	1.20	1.00	2.20	1.90	4.50	3.80	6.72	5.60	11.0	10.0
10	150	180	0.62	0.52	1.24	1.04	2.40	2.00	4.50	3.80	9.10	7.60	13.7	11.2	22.0	20.0
15	100	120	0.91	0.76	1.80	1.50	3.60	3.00	6.80	5.70	13.5	11.3	20.1	16.8	32.6	29.8
20	75	90	1.20	1.00	2.40	2.00	4.80	4.00	9.00	7.50	18.1	15.1	26.8	22.4	43.6	36.0
25	60	72	1.40	1.20	3.00	2.50	6.00	5.00	11.2	9.40	22.6	18.9	33.6	28.0	53.9	49.53
30	50	60	1.80	1.50	3.60	3.00	7.20	6.00	13.5	11.3	27.1	22.6	40.3	33.6	64.7	58.8
40	37	45	2.20	1.90	4.60	3.90	9.30	7.80	17.5	14.6	34.9	29.1	52.0	43.4	86.3	78.4
45	33	40	2.70	2.20	5.40	4.40	10.9	9.10	20.6	17.0	41.1	34.0	59.8	49.6	98.5	81.7
50	30	36	2.80	2.40	5.70	4.80	11.6	9.70	21.9	18.3	43.6	36.4	65.1	54.3	107	97.0
60	25	30	3.40	2.90	6.90	5.80	13.9	11.6	26.2	21.9	52.4	43.7	78.1	65.1	127	115
70	21	25	4.30	3.60	8.00	5.80	16.2	13.5	31.5	26.3	62.4	52.0	92.5	77.1		
80	19	23	4.80	4.00	9.20	7.70	18.4	15.4	35.5	29.6	70.8	59.0	105	87.5		
90	17	20	5.20	4.40	10.30	8.60	20.7	17.3	39.3	32.8	77.1	64.3	113	94.3		
100	15	18	5.80	4.90	11.5	9.60	23.0	19.2	43.2	36.0	83.7	69.8	126	105		
120	12	15	6.90	5.80	13.8	11.5	27.7	23.1	51.8	43.2	101	83.7				
140	11	13	8.00	6.70	16.0	13.4	32.0	26.7	59.7	49.8	116	96.8				
160	9	11	9.10	7.60	18.3	15.3	36.3	30.3	68.0	56.7	132	110				
180	8	10	10.3	8.60	20.7	17.3	40.8	34.0	76.8	64.0	148	123				
200	7	9	11.6	9.70	22.9	19.1	43.2	36.0	82.8	69.0						

1kg·m = 9.8N·m (牛顿·米)

OVERHUNG LOAD

Ratio	Ouput R.P.M		Output Torque													
			0.1KW		0.2KW		0.4KW		0.75KW		1.5KW		2.2KW		3.7KW	
	Hz															
	50	60	50	60	50	60	50	60	50	60	50	60	50	60	50	60
3	500	600	30	25	30	25	54	45	60	50	145	130	165	150	200	180
5	300	360	36	30	36	30	78	70	85	75	165	150	210	180	270	225
10	150	180	70	60	70	60	150	130	180	180	280	250	210	180	270	225
15	100	120	110	90	110	100	175	160	165	160	355	348	430	360	570	550
20	75	90	150	125	135	125	190	170	175	170	369	365	490	450	780	750
25	60	72	155	140	150	140	210	180	185	180	450	430	540	500	850	830
30	50	60	160	150	170	165	235	220	415	400	480	450	650	630	1100	1050
40	38	45	160	160	180	180	270	260	430	420	580	550	690	650	1200	1100
45	33	40	170	170	180	180	335	328	440	430	590	570	710	670	1280	1200
50	30	36	170	170	180	180	350	335	450	440	600	580	820	780	1300	1250
60	25	30	180	180	180	180	350	350	450	450	630	610	850	820	1400	1350
70	21	25	180	180	180	180	350	350	460	460	670	650	900	900	1400	1400
80	18	22	180	180	180	180	350	350	460	460	680	680	1100	1100		
90	16	20	180	180	180	180	350	350	500	500	850	850	1100	1100		
100	15	18	200	200	250	250	380	380	590	590	900	900	1200	1200		
120	12	15	200	200	320	320	390	390	640	640	920	920	1200	1200		
140	11	13	200	200	320	320	400	400	679	679	920	920				
150	10	12	220	220	330	330	420	420	679	679	950	950				
160	9	11	220	220	330	330	420	420	700	700	950	950				
180	8	10	240	240	350	350	430	430	720	720	980	980				
200	7	9	240	240	350	350	430	430	720	720						
1/250-1/1800			300	300	480	480	720	720	1400	1400						

0.1KW

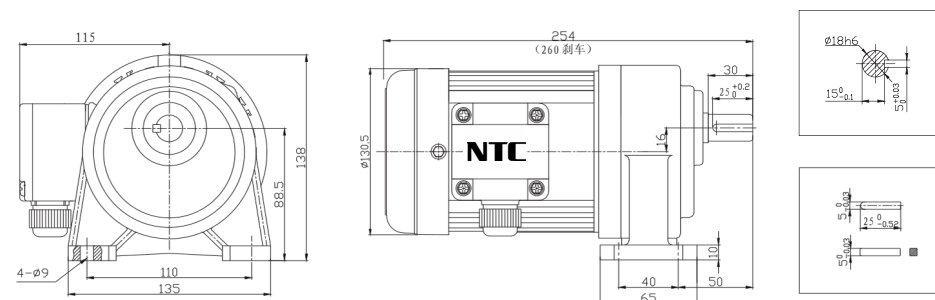
GH Horizontal Type With Aluminum housing  
3 Phase (Brake) Gear Motor



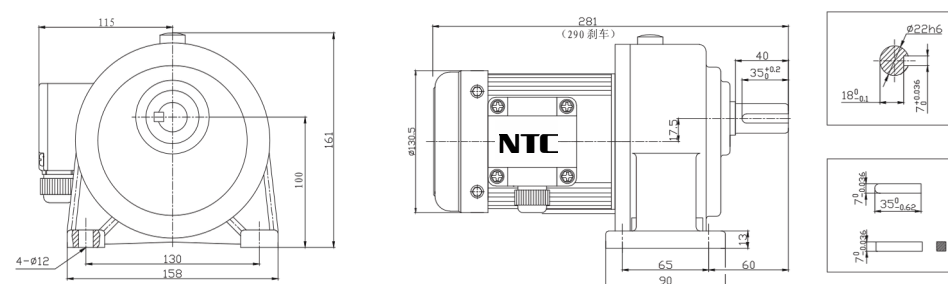
GH18-100-3~60

轻负载缩框型 GH18-100-60~170

Light-load Frame-shrunk Type



GH22-100-60~200



Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.

0.1KW

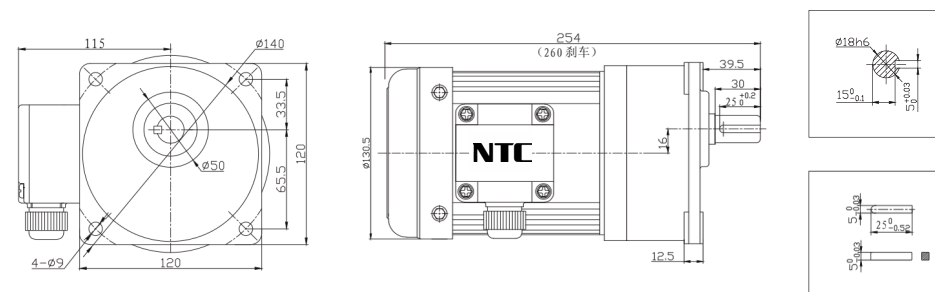
GV Vertical Type With Aluminum housing  
3 Phase (Brake) Gear Motor



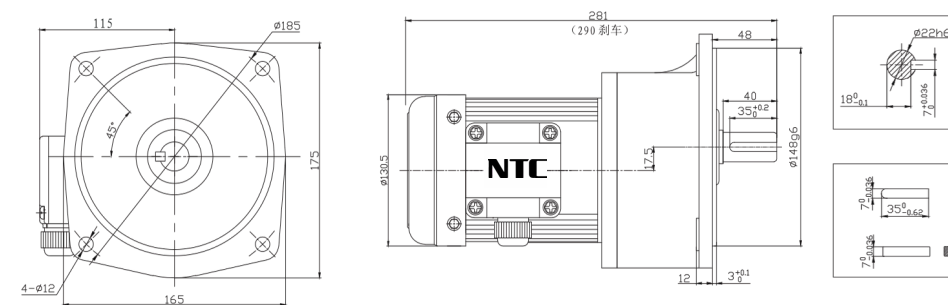
GV18-100-3~60

轻负载缩框型 GV18-100-60~170

Light-load Frame-shrunk Type



GV22-100-60~200



Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.



0.2KW

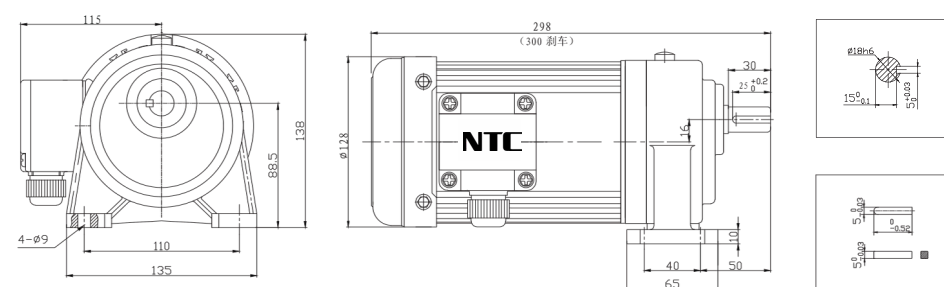
GH Horizontal Type With Aluminum housing  
3 Phase (Brake) Gear Motor



GH18-200-3~10

轻负载缩框型 GH18-200-15~105

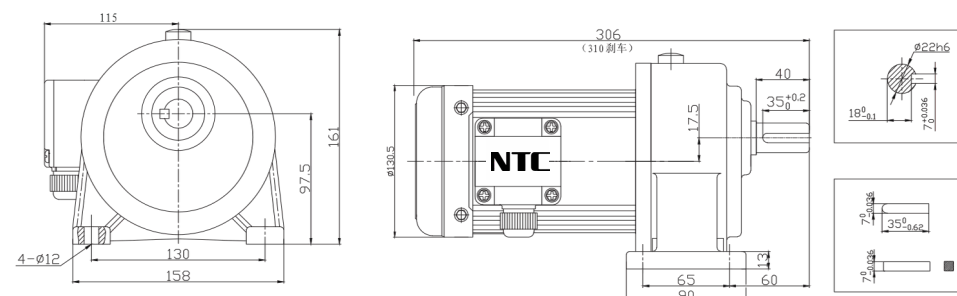
Light-load Frame-shrunk Type



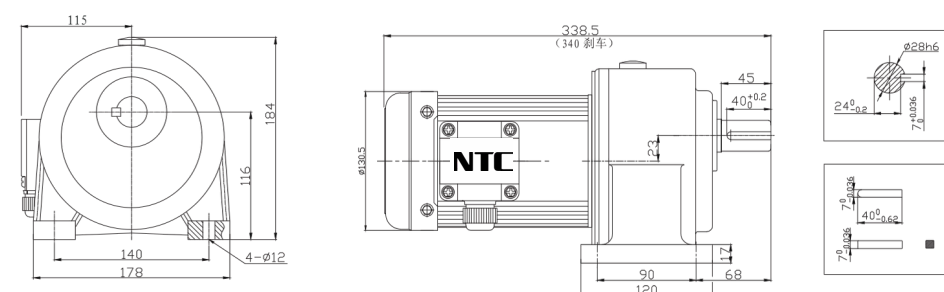
GH22-200-15~90

轻负载缩框型 GH22-200-100~200

Light-load Frame-shrunk Type



GH28-200-100~200



Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.

0.2KW

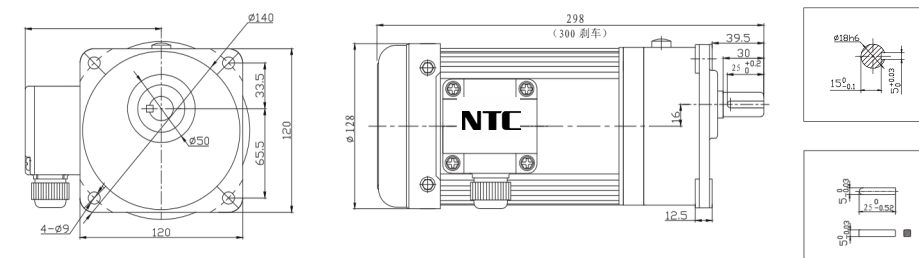
GV Vertical Type With Aluminum housing  
3 Phase (Brake) Gear Motor



GV18-200-3~10

轻负载缩框型 GV18-200-15~105

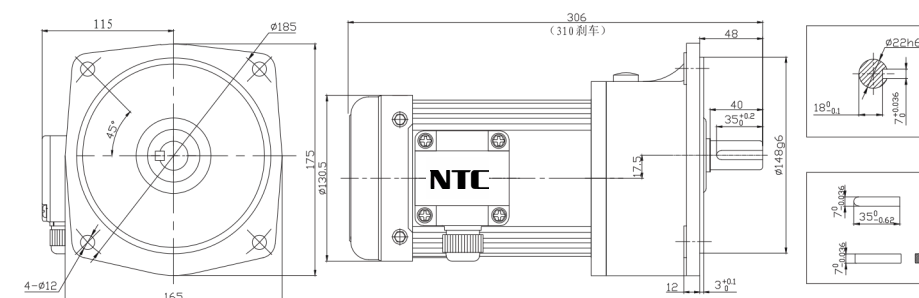
Light-load Frame-shrunk Type



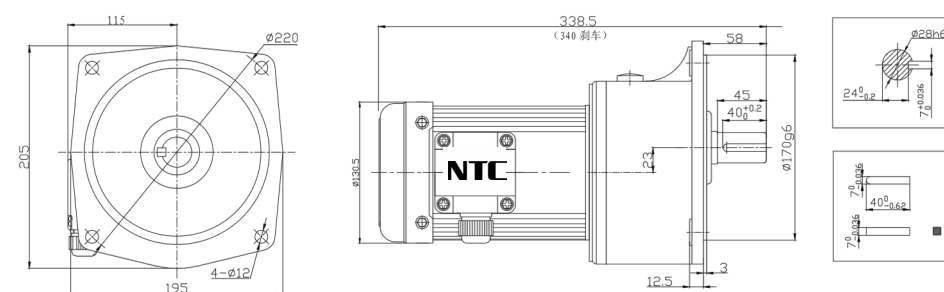
GV22-200-15~90

轻负载缩框型 GV22-200-100~200

Light-load Frame-shrunk Type



GV28-200-100~200



Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.

0.4KW

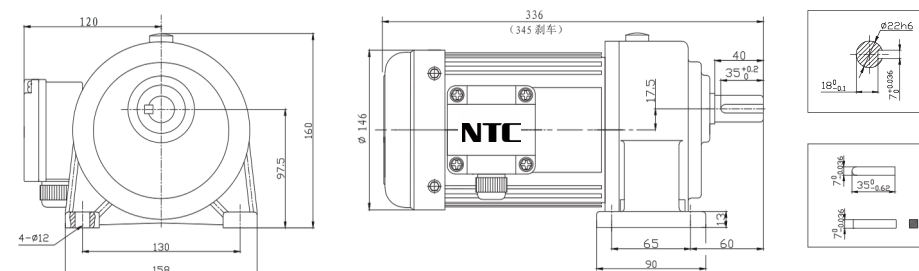
GH Horizontal Type With Aluminum housing 3  
Phase (Brake) Gear Motor



GH22-400-3~10

轻负载缩框型 GH22-400-15~105

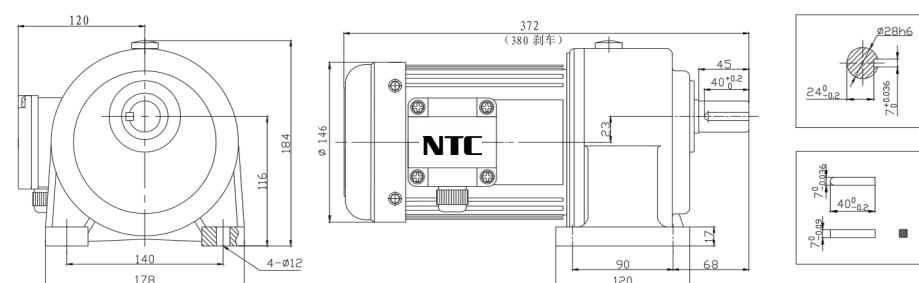
Light-load Frame-shrunk Type



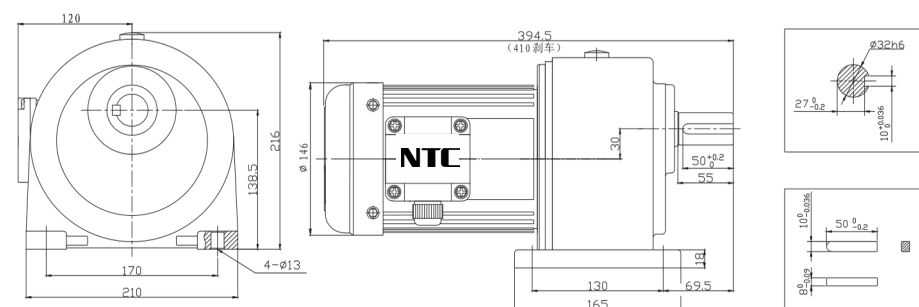
GH28-400-15~90

轻负载缩框型 GH28-400-100~200

Light-load Frame-shrunk Type



GH32-400-100~200



Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.

0.4KW

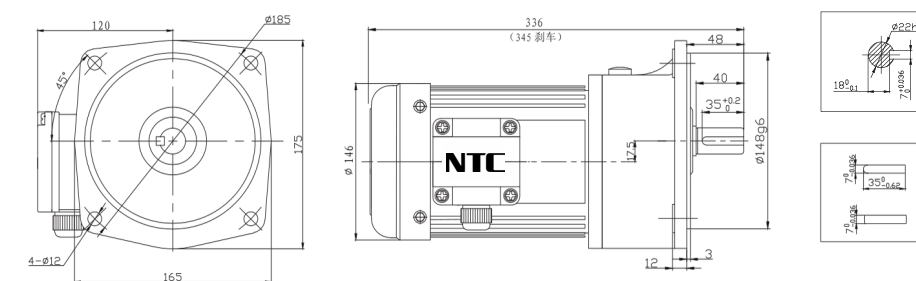
GV Vertical Type With Aluminum housing  
3 Phase (Brake) Gear Motor



GV22-400-3~10

轻负载缩框型 GV22-400-15~105

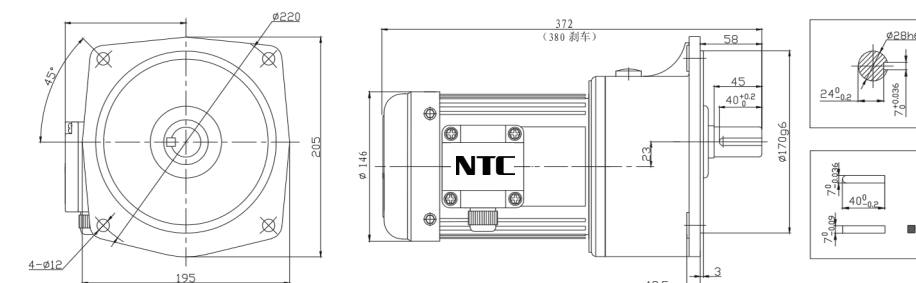
Light-load Frame-shrunk Type



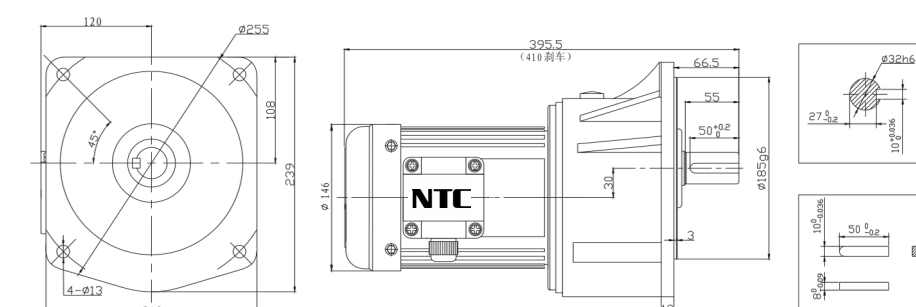
GV28-400-15~90

轻负载缩框型 GH28-400-100~200

Light-load Frame-shrunk Type



GV32-400-100~200



Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.

## 0.75KW

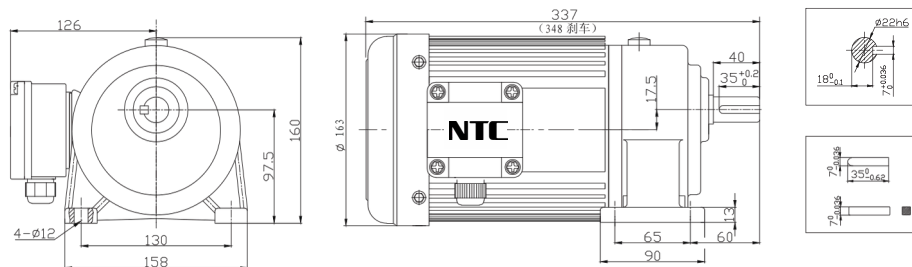
GH Horizontal Type With Aluminum housing  
3 Phase (Brake) Gear Motor



### GH22-750-3~30

轻负载缩框型

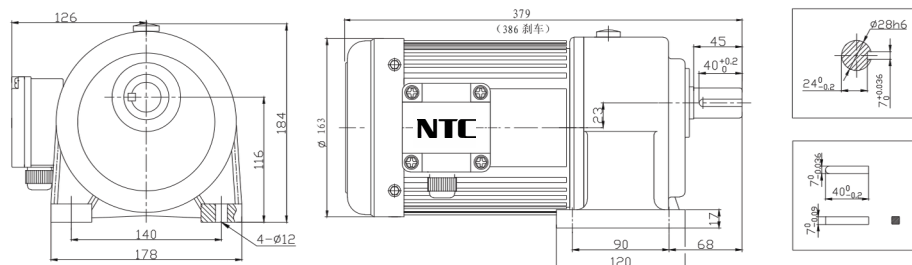
Light-load Frame-shrunk Type



### GH28-750-3~30

轻负载缩框型

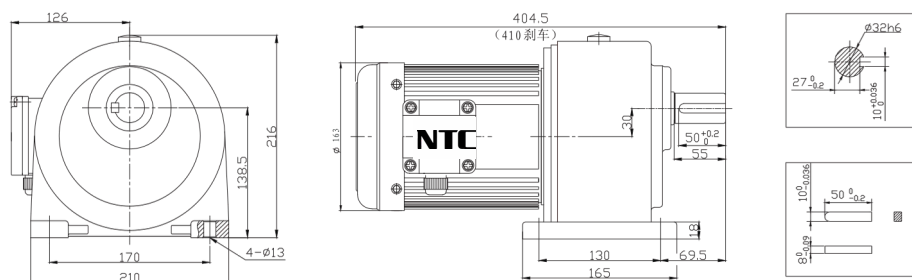
Light-load Frame-shrunk Type



### GH32-750-30~120

轻负载缩框型 GH32-750-130~200

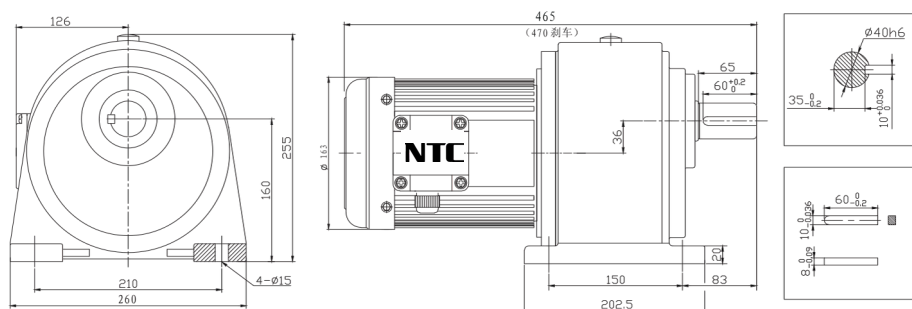
Light-load Frame-shrunk Type



### GH40-750-130~200

轻负载缩框型

Light-load Frame-shrunk Type



Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.

## 0.75KW

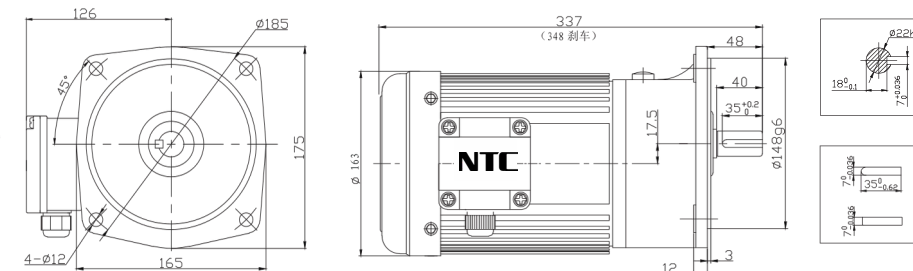
GV Vertical Type With Aluminum housing  
3 Phase (Brake) Gear Motor



### GV22-750-3~30

轻负载缩框型

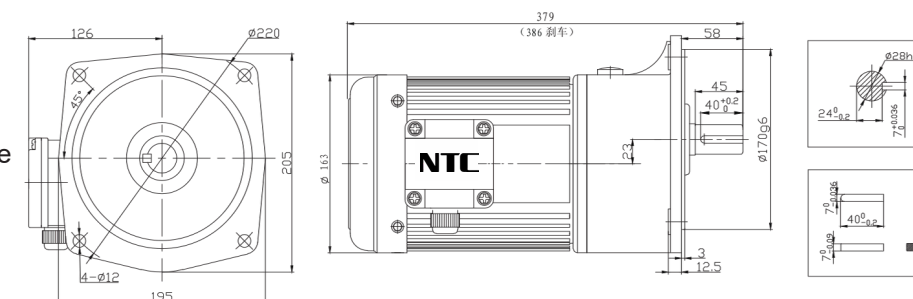
Light-load Frame-shrunk Type



### GV28-750-3~30

轻负载缩框型

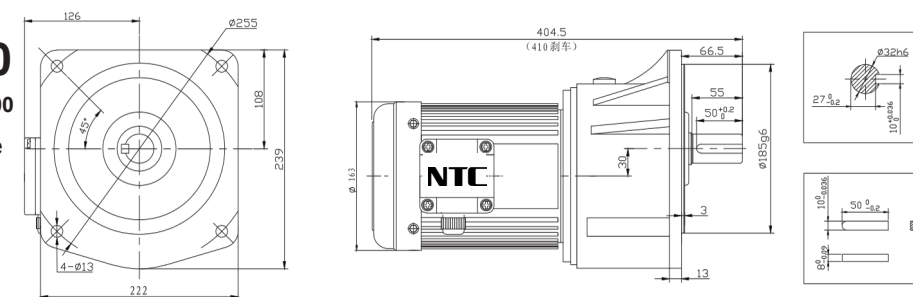
Light-load Frame-shrunk Type



### GV32-750-30~120

轻负载缩框型 GV32-750-130~200

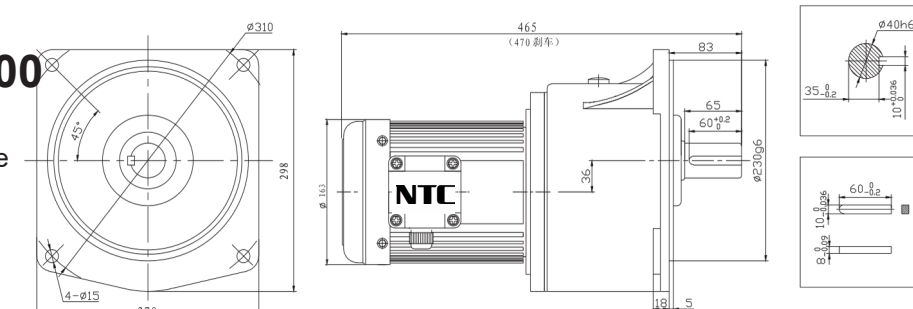
Light-load Frame-shrunk Type



### GV40-750-130~200

轻负载缩框型

Light-load Frame-shrunk Type



Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.



## 1.5KW

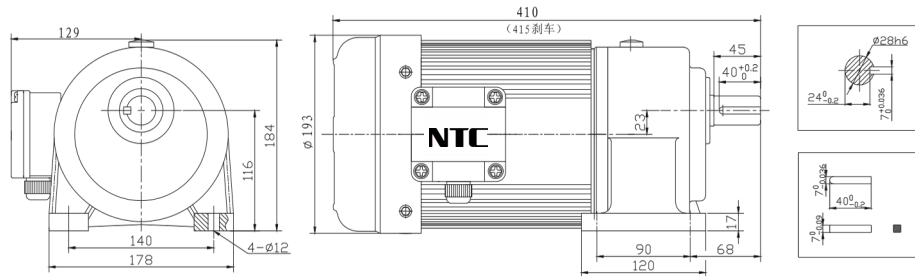
GH Horizontal Type With Aluminum housing  
3 Phase (Brake) Gear Motor



### GH28-1500-3~30

轻负载缩框型

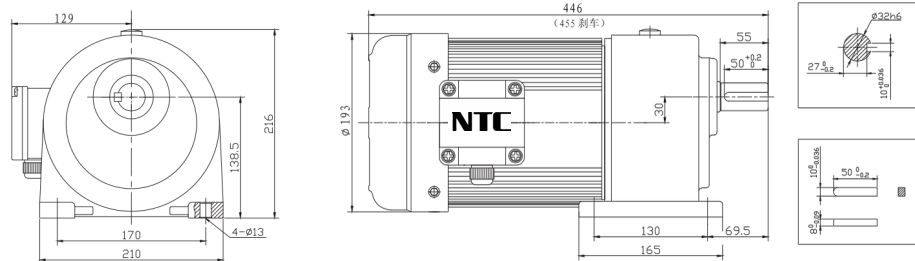
Light-load Frame-shrunk Type



### GH32-1500-3~30

轻负载缩框型 GH32-1500-40~160

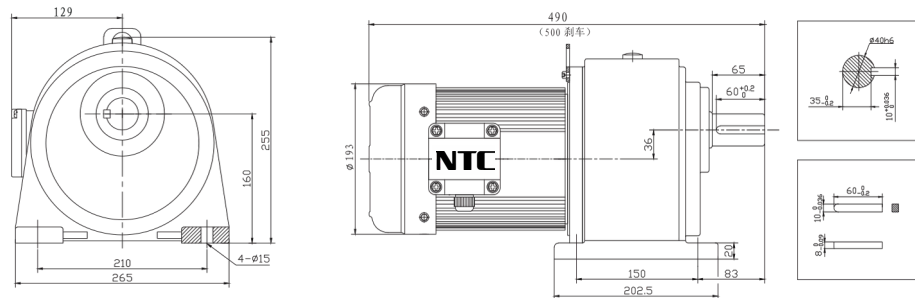
Light-load Frame-shrunk Type



### GH40-1500-35~120

轻负载缩框型

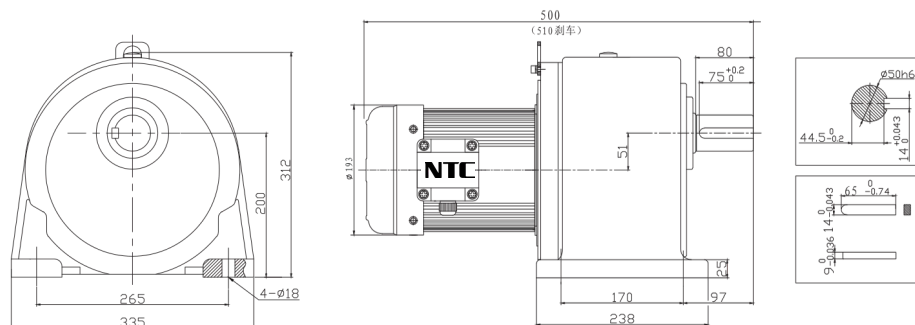
Light-load Frame-shrunk Type



### GH50-1500-110~200

轻负载缩框型

Light-load Frame-shrunk Type



Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.

## 1.5KW

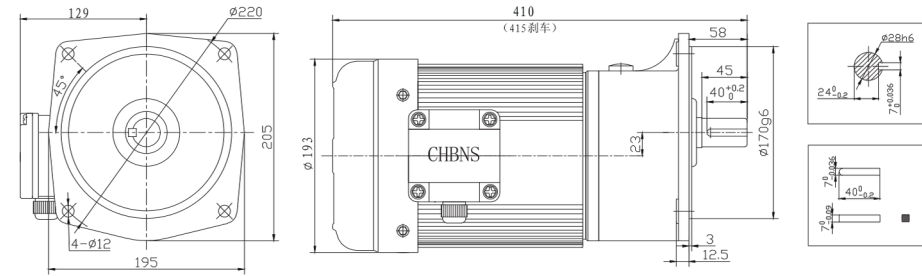
GV Vertical Type With Aluminum housing  
3 Phase (Brake) Gear Motor



### GV28-1500-3~30

轻负载缩框型

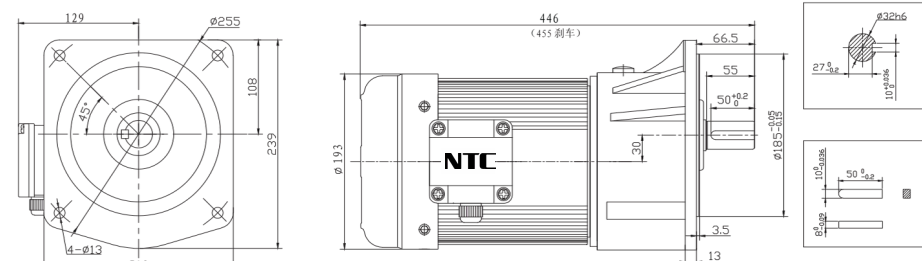
Light-load Frame-shrunk Type



### GV32-1500-3~30

轻负载缩框型 GV32-1500-40~160

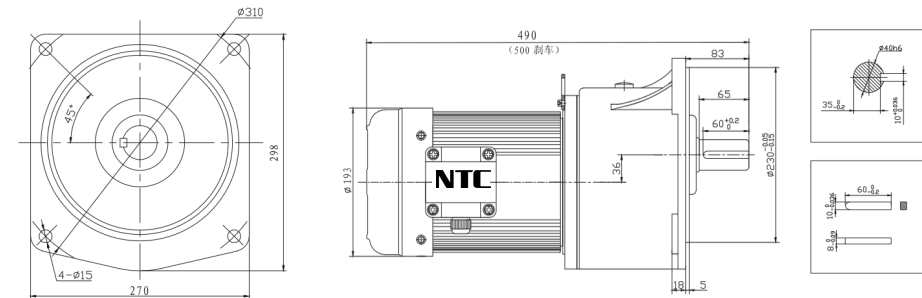
Light-load Frame-shrunk Type



### GV40-1500-35~120

轻负载缩框型

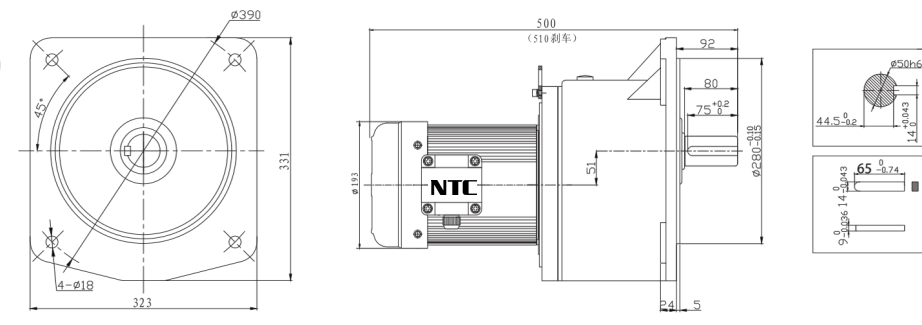
Light-load Frame-shrunk Type



### GV50-1500-110~200

轻负载缩框型

Light-load Frame-shrunk Type

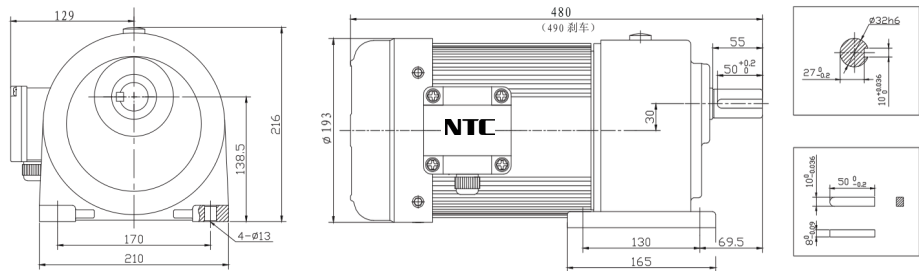


Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.

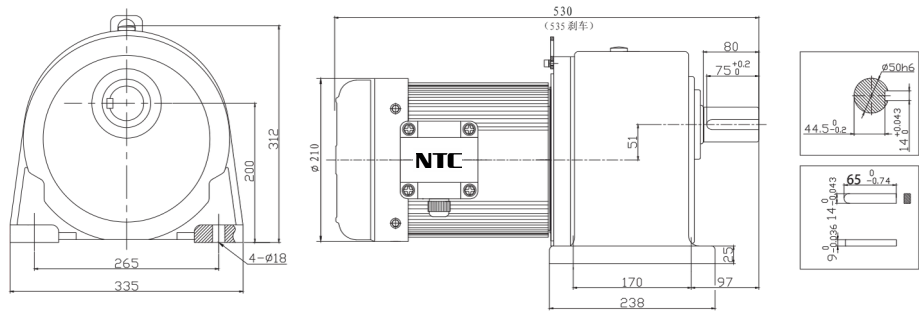
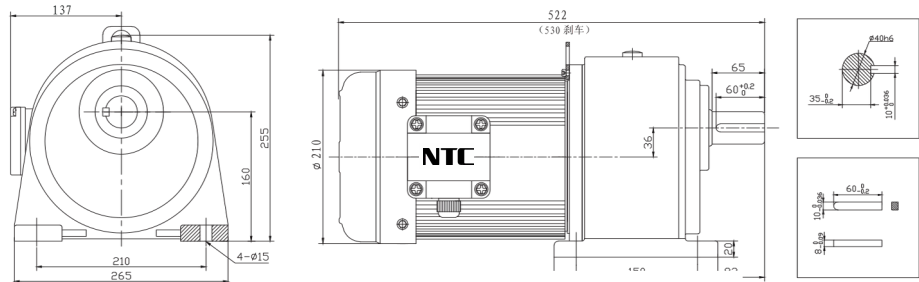
2.2KW  
GH Horizontal Type With Aluminum housing  
3 Phase (Brake) Gear Motor



GH32-2200-3~40  
轻负载缩框型 GH32-2200-3~30  
Light-load Frame-shrunk Type



GH40-2200-3~120

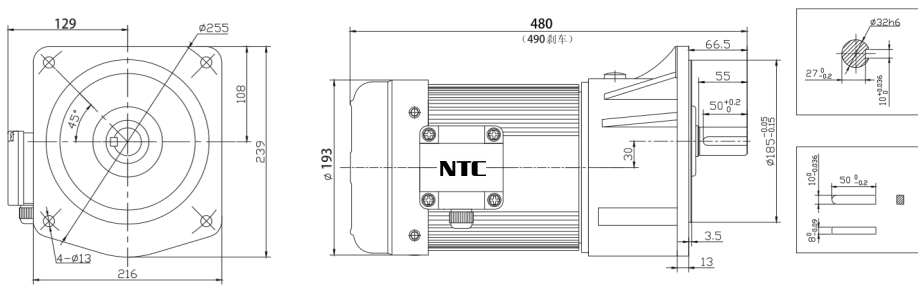


注: 缩框型为轻负载, 无大惯性场合中使用。为不正当设计, 如非必要请勿使用。  
Note: The frame-shrunk type is for use in light-load, no large-inertia occasions. It is an improper design. Please do not use it unless necessary.

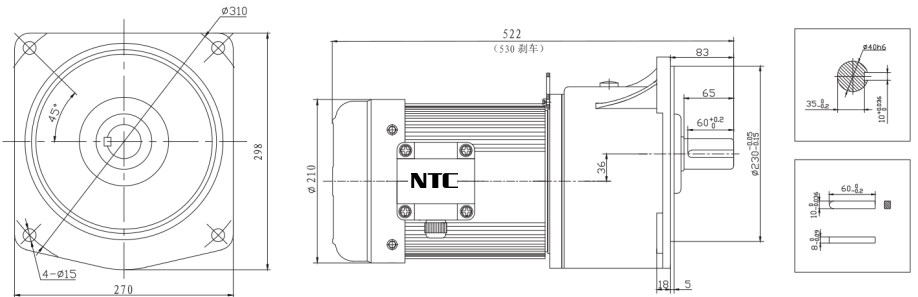
2.2KW  
GV Vertical Type With Aluminum housing  
3 Phase (Brake) Gear Motor



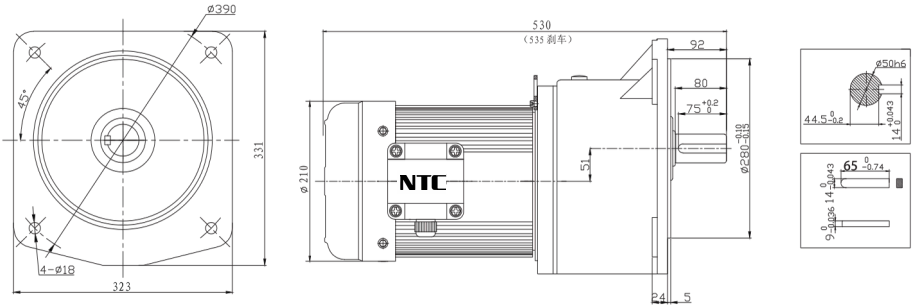
GV32-2200-3~40  
轻负载缩框型 GV32-2200-3~30  
Light-load Frame-shrunk Type



GV40-2200-3~120



GV50-2200-5~100



注: 缩框型为轻负载, 无大惯性场合中使用。为不正当设计, 如非必要请勿使用。  
Note: The frame-shrunk type is for use in light-load, no large-inertia occasions. It is an improper design. Please do not use it unless necessary.

3.7KW

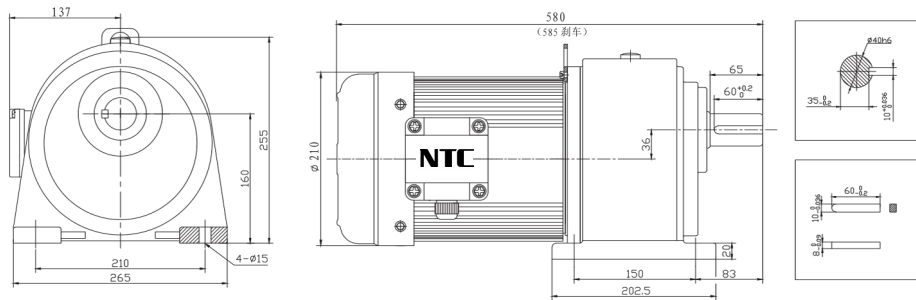
GH Horizontal Type With Aluminum housing  
3 Phase (Brake) Gear Motor



GH40-3700-3~10

轻负载缩框型 GH40-3700-15~100

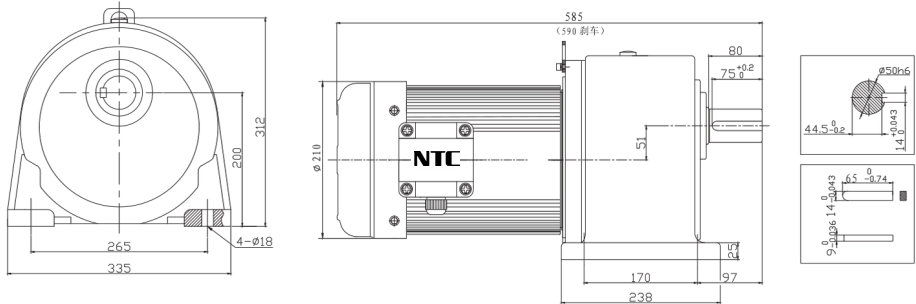
Light-load Frame-shrunk Type



GH50-3700-15~60

轻负载缩框型 GH50-3700-70~120

Light-load Frame-shrunk Type



Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.

3.7KW

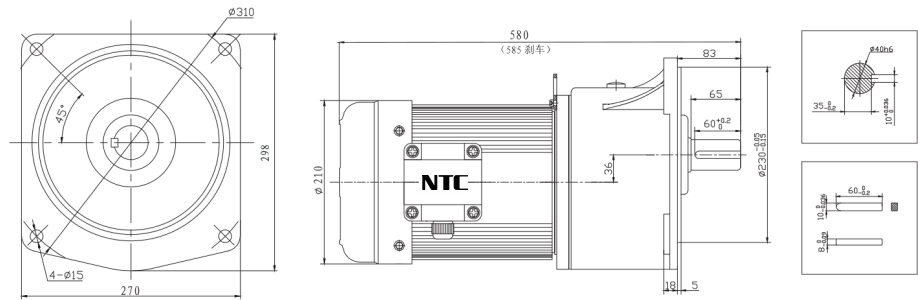
GV Vertical Type With Aluminum housing  
3 Phase (Brake) Gear Motor



GV40-3700-3~10

轻负载缩框型 GV40-3700-15~100

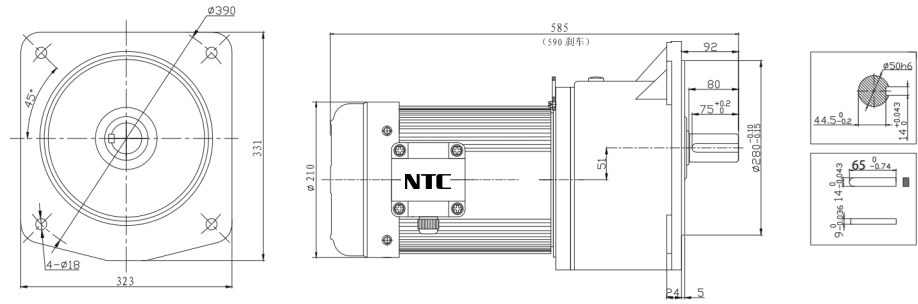
Light-load Frame-shrunk Type



GV50-3700-15~60

轻负载缩框型 GV50-3700-70~120

Light-load Frame-shrunk Type



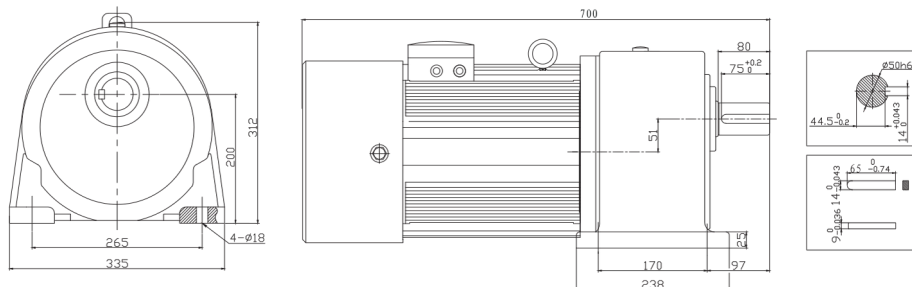
Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.



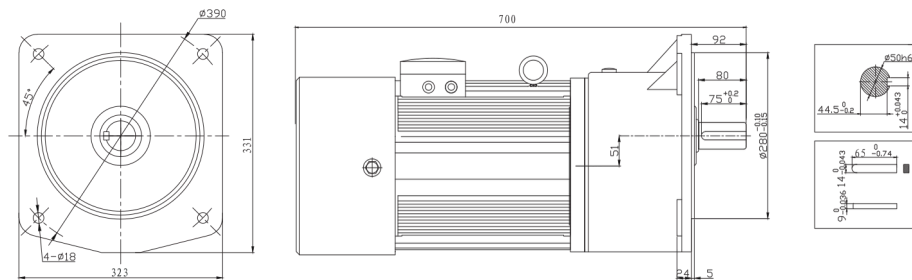
## 5.5KW

GH Horizontal Type With Aluminum housing 3 Phase (Brake) Gear Motor

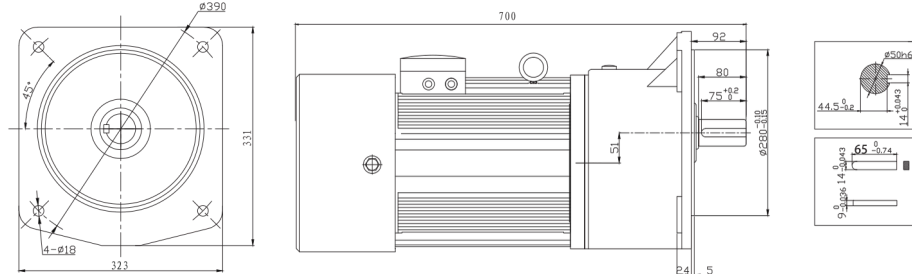
### GH50-5.5KW



### GV50-5.5KW



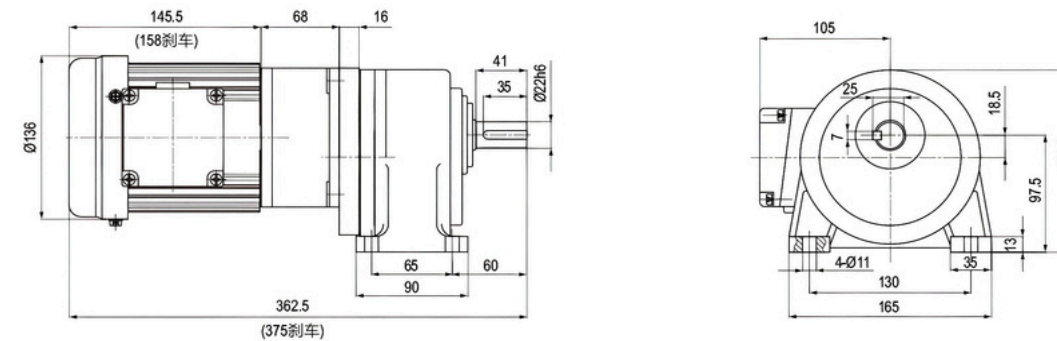
### 50-5.5KW



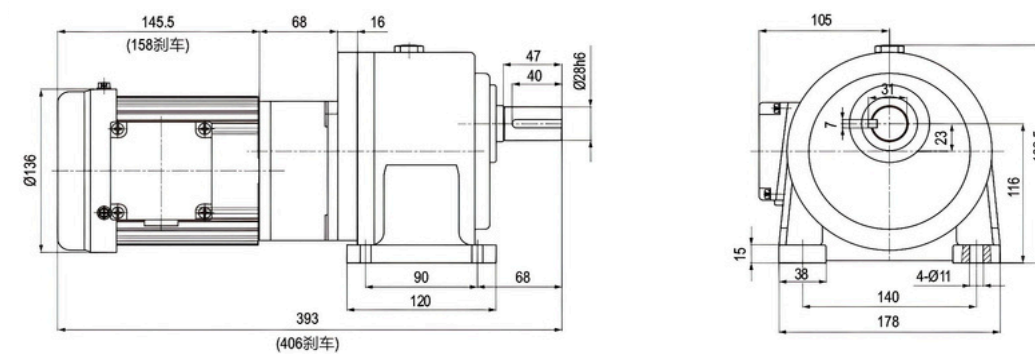
Dimensions GLWart

### GH22+GV18-100-250~1800

Light-load Frame-shrunk Type

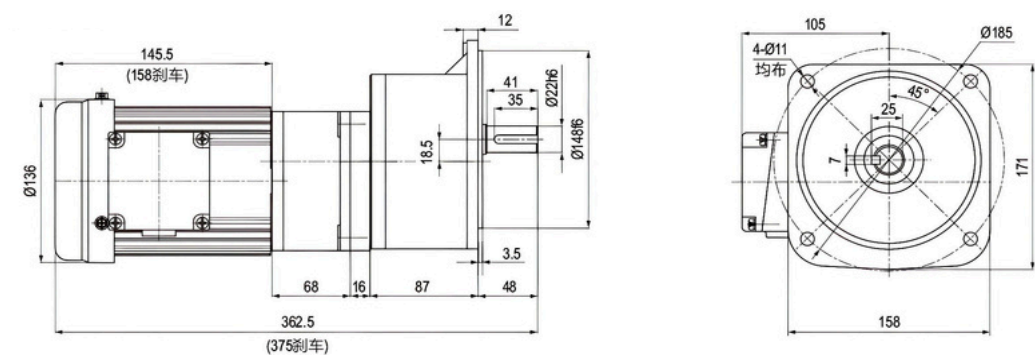


### GH28+GV18-100-250~1800

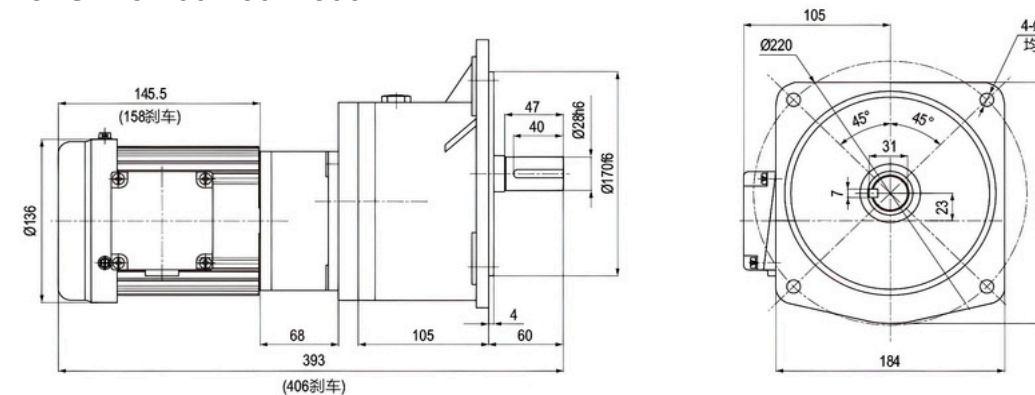


### GV22+GV18-100-250~1800

Light-load Frame-shrunk Type



### GV28+GV18-100-250~1800



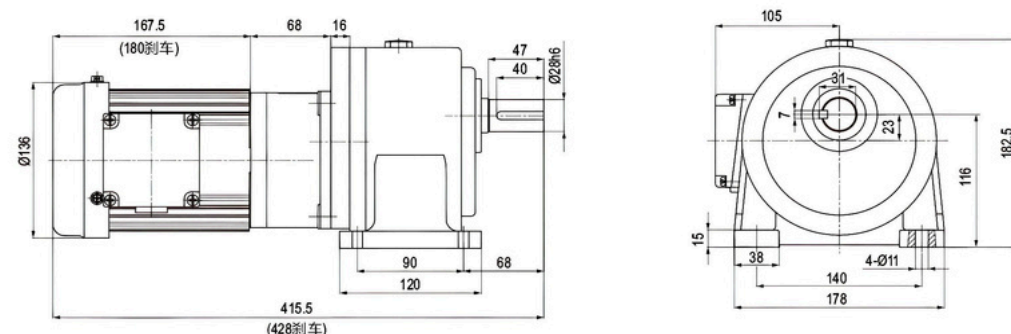
Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.

Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.

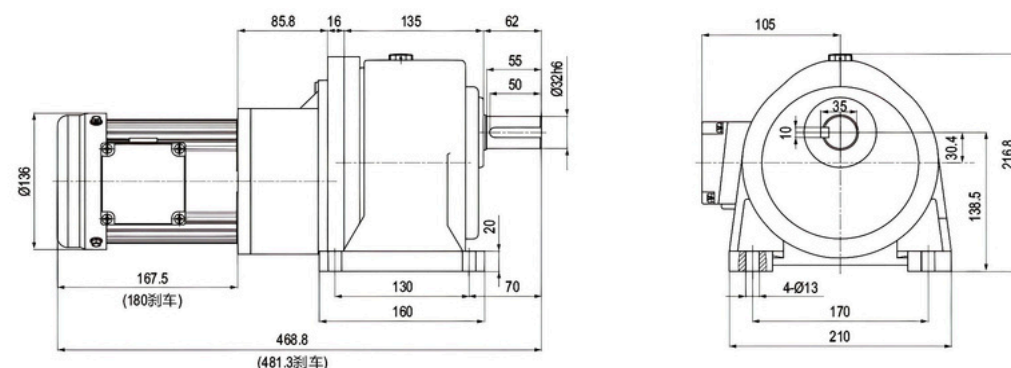
Dimensions GLWart

**GH28+GV18-200-250~1800**

Light-load Frame-shrunk Type

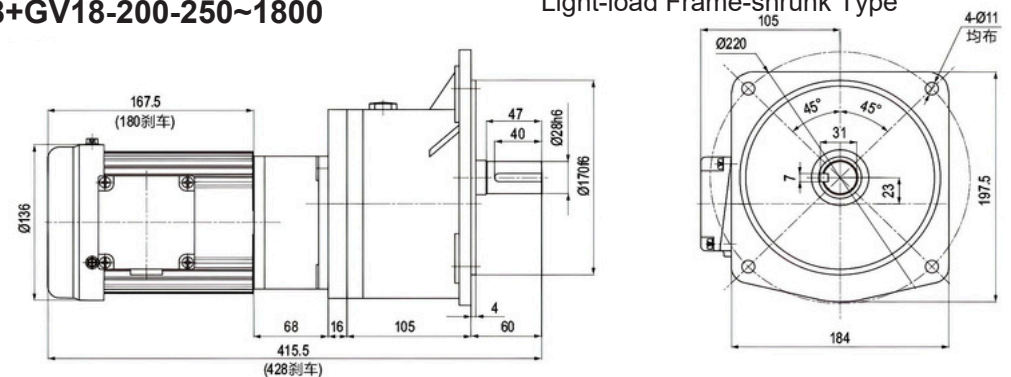


**GH32+GV22-200-250~1800**

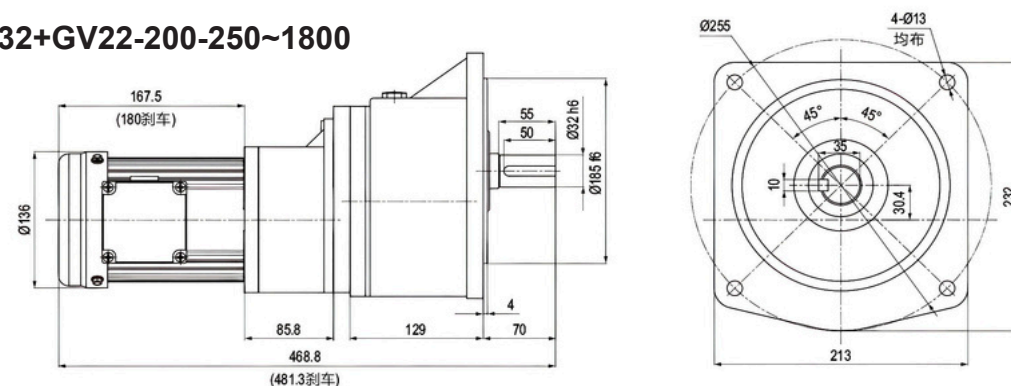


**GV28+GV18-200-250~1800**

Light-load Frame-shrunk Type



**GV32+GV22-200-250~1800**

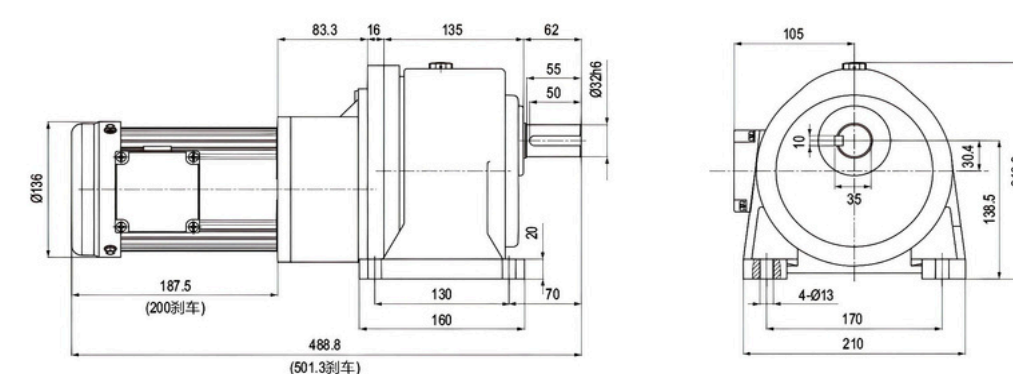


Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.

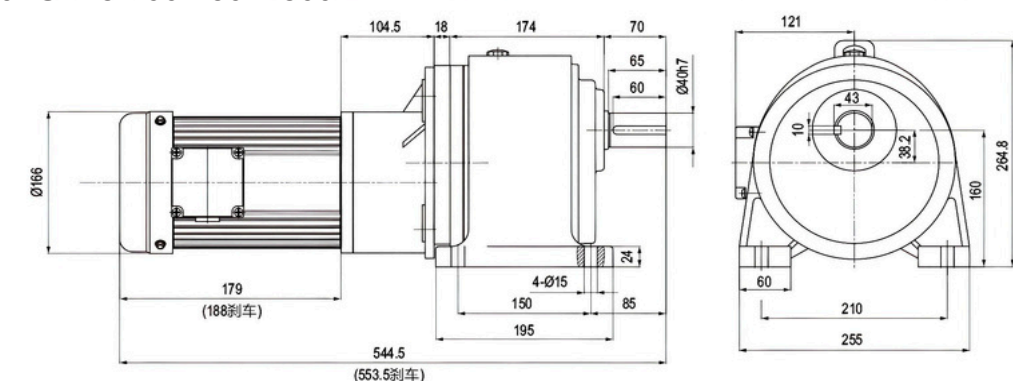
Dimensions GLWart

**GH32+GV22-400-250~1800**

Light-load Frame-shrunk Type

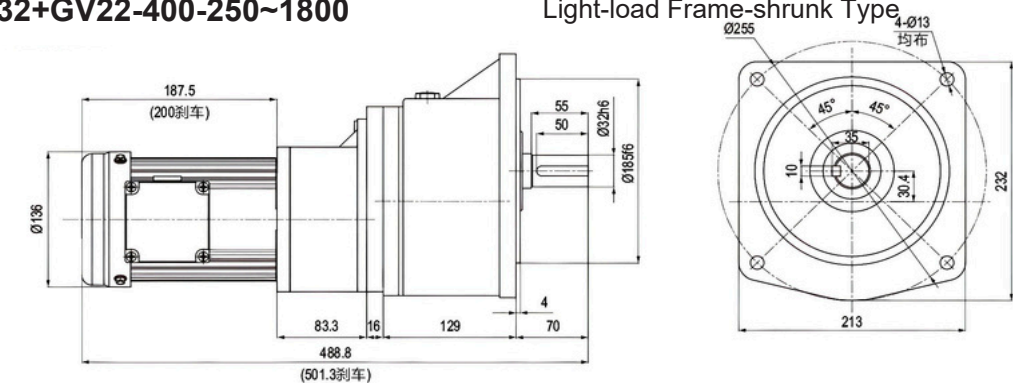


**GH40+GV28-400-250~1800**

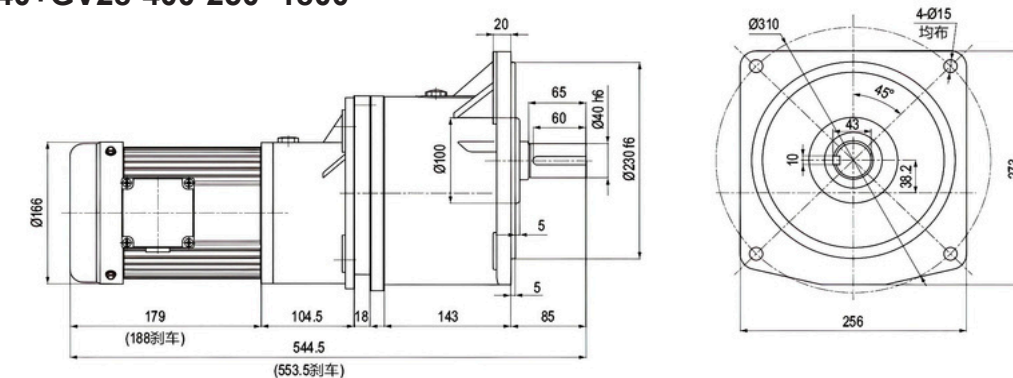


**GV32+GV22-400-250~1800**

Light-load Frame-shrunk Type



**GV40+GV28-400-250~1800**

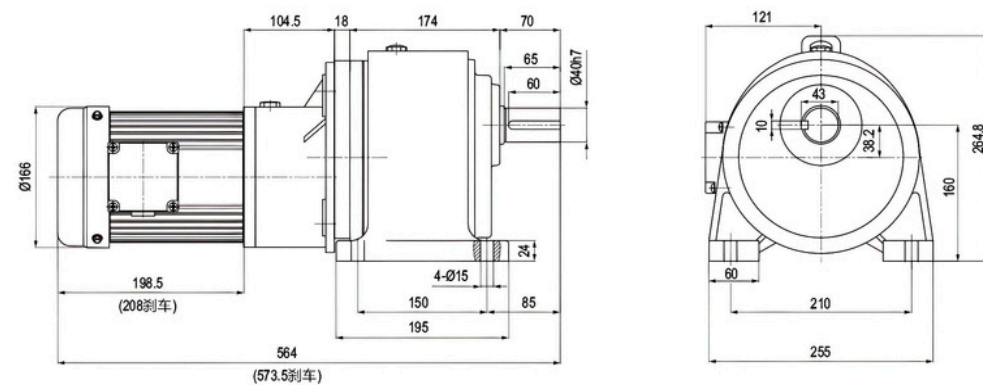


Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.

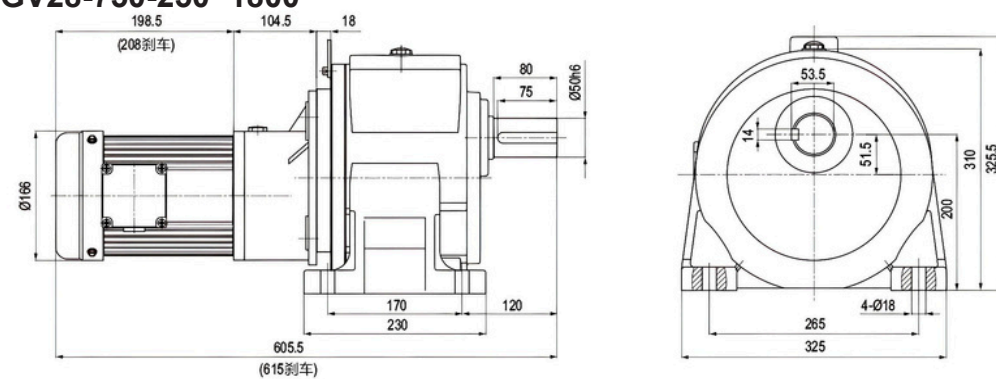
Dimensions GLWart

GH40+GV28-750-250~1800

Light-load Frame-shrunk Type

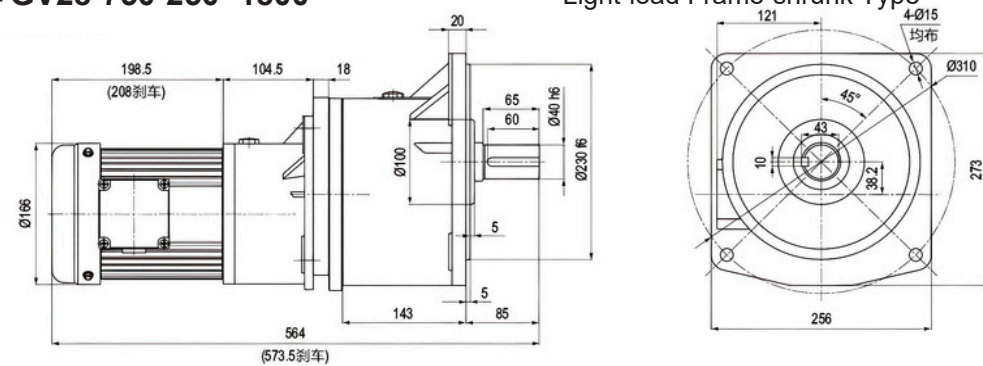


GH50+GV28-750-250~1800

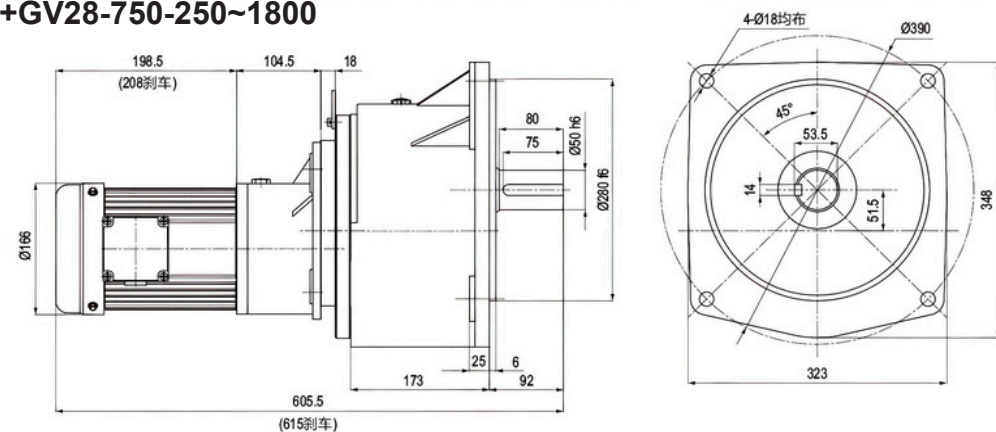


GV40+GV28-750-250~1800

Light-load Frame-shrunk Type



GV50+GV28-750-250~1800



Note: The frame-shrunk type is for use in light-load, no-large-inertia occasions. It is an improper design. Please do not use it unless necessary.