

承 認 書  
(SPECIFICATION FOR APPROVAL)

CUSTOMER : 肯創

MODEL : IG220019X00015R

DATE : Dec 13, 2013

SUPPLIER :



CUSTOMER :

肯創科技 許江海



祥儀企業股份有限公司  
SHAYANG YE INDUSTRIAL CO.,LTD.

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## Technical Data

<b>Part Number</b>	IG220019X00015R	
<b>Customer P/N</b>		
<b>ITEM</b>	<b>Specifications</b>	<b>Note</b>
<b>1. Operation Status</b>		
1.1 Rated Voltage	12V D.C.	Stable power source 6mm from shaft end
1.2 Rated torque	0.3 kgf.cm	
1.3 Radial load	8N (0.8kg-f)	
1.4 Axial load	6N (0.6kg-f)	
1.5 Turning direction	Shaft horizontal	
1.6 Reverse direction	CW.CCW	
1.7 Using environment	Temperature -10~60 °C Humidity 20~90% RH	
1.8 Preserve environment	Temperature -20~70 °C Humidity 20~90% RH	
1.9 Using voltage range	12V (D.C.) ±10%	
<b>2. Electrical Characteristics</b>		
2.1 No Load current	200 mA max.	Motor terminal shell Motor terminal shell Reference Reference Reference
2.2 No Load speed	789 rpm ±15%	
2.3 Rated current	620 mA	
2.4 Rated speed	639 rpm ±15%	
2.5 Stall current	2.4 A	
2.6 Stall torque	2.2 kgf.cm	
2.7 Insulation	D.C. 100V meg. 1.0 MΩ min	
2.8 Durable voltage	100V (A.C.) , 1 minute min	
2.9 Coil resistance	5Ω	
2.10 Torque constant	0.91 kgf.cm/A	
2.11 Voltage constant	8.68 mV/r/min	
<b>3. Mechanical characteristic</b>		
3.1 Reduction ratio	1/19.225	By visual judgment
3.2 Thrust play of shaft	0.2 mm max.	
3.3 Radial play of shaft	0.05 mm max.	
3.4 Back lash	3° max.	
3.5 Outside Appearance	No scratch defective...	
<b>2. Life Cycle</b>	72000 cycles min.	After the rated life cycle test current @ rated load must stay within ±30% of the initial value and r.p.m. @ rated load must stay within ±20% of the initial value. However change of mechanical noise level was not considered as part of the testing
	<p style="text-align: center;">3 pulsos por vuelta del motor (3 semiciclos + y 3 -)</p>	

# **ASSEMBLY, MAINTENANCE, OPERATION**

1. Install: To avoid internal geared motor touched by overlong screws and caused defective. Please check screw size and length on external dimension drawing when installing geared motor into construction.
  
2. Reprocess: Heavy impact and vibration during reprocessing output shaft may cause loose screws and lead to unbalance gear operation. Please avoid reprocessing output shaft.  
Must to prevent overheat when weld wires into terminal and cause breakdown due to burnt internal geared motor parts.  
Please do not overload the radial load limitation of output shaft when using belt pulley or chain pulley as power transmission. Please do not overload the axial load limitation of output shaft when pressing parts upon it as well.
  
3. Environment: The parts of geared motors or itself may corroded or damaged easier when using or maintaining in out of range environment. Must to pay close attention that gears may corroded even under an allowed environment in long term.
  
4. Impact: Must prevent geared motor from falling and impact, or the parts will get damaged, the screws will be loosed, and the gear operation will unbalance etc...
  
5. Locked out: Please well prepared current transmitting protection in case of burnt motor coil easy and damaged gear from locked out geared motor.
  
6. Output shaft Turning:  
Please note that it is easier to damage gear when directly turning output shaft.
  
7. PWM controlling:  
The graphite brush of motor will be abnormally wore out or the commutator interval will be blocked by carbon powder when using in the condition of D/T under 60%.  
Moreover, please pay attention to the motor with capacitor due to there is ineffectual capacity cycle scope.
  
8. Momentary reverse:  
The graphite brush will be abnormally wore out or coil getting aggravated when geared motor is reversed momentary.  
Also, the commutator interval will be stuck if switch frequently.

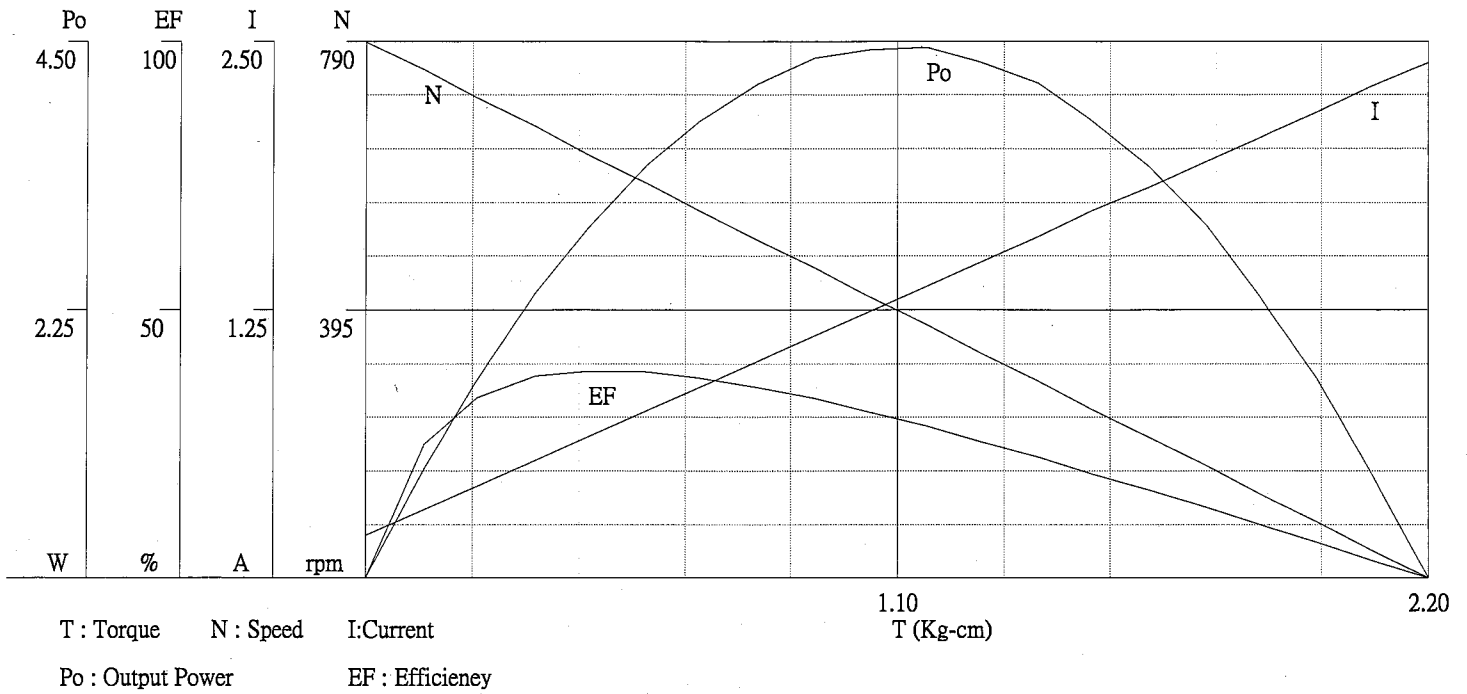
# SHAYANG YE INDUSTRIAL CO.,LTD.

Mode: IG220019X00015R

S/N: 001

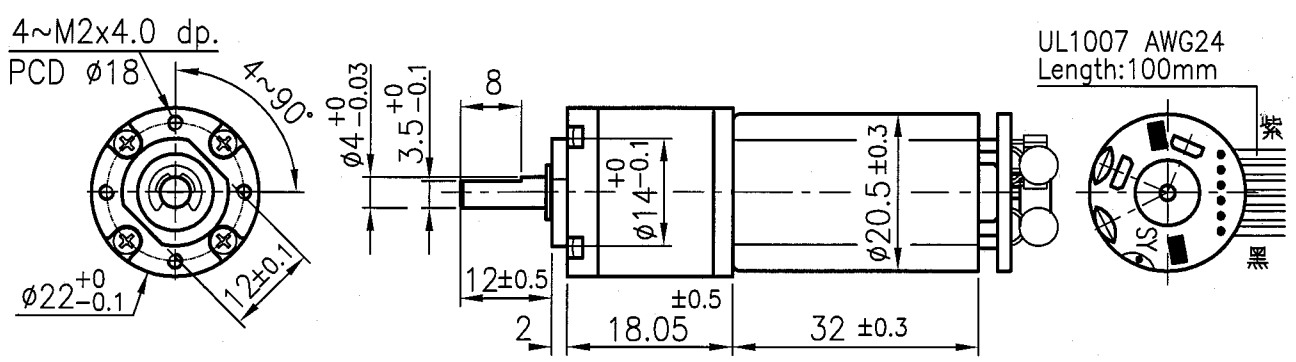
Voltage : 12 V

Date: 20131213





	T(N/m)	[Kg/cm]	N(rpm)	I(A)	Po(W)	EF(%)
No Load	0	0.00	789.00	.20	0	0
	.01	.12	748.21	.32	.92	25
	.03	.35	664.99	.55	2.39	37.73
	.06	.58	581.51	.78	3.46	38.49
	.07	.69	540.29	.89	3.83	37.32
	.08	.81	498.15	1.01	4.14	35.59
	.09	.93	457.23	1.13	4.36	33.55
	.1	1.04	415.47	1.24	4.43	31.05
	.12	1.27	332.34	1.47	4.33	25.56
	.14	1.39	290.84	1.59	4.15	22.65
	.15	1.50	249.35	1.71	3.84	19.5
	.16	1.62	207.75	1.82	3.45	16.48
	.17	1.74	165.96	1.94	2.96	13.25
	.18	1.85	124.67	2.05	2.37	10.03
	.2	2.08	41.56	2.29	.89	3.36
Stall	.22	2.20	0.00	2.40	0	0
Po...(max)	.11	1.16	373.66	1.36	4.45	28.37
EF...(max)	.05	.46	622.40	.66	2.94	38.62

參考 REF.
估價 EVALUATE
試作 INITIAL
製作 MASS



REDUCTION RATIO: 1/19.22  
 OUTPUT SHAFT: STEEL  
 MOTOR SPECIFICATION: 12V 15000RPM  
 OUTPUT-789RPM/ ≤ 200mA WITH NO LOAD  
 3 pulsos por vuelta del motor (3 semiciclos + y 3 -)

核准 APPROVED BY
核對 CHECKED BY
繪圖 DRAWN BY

軸徑 $\begin{matrix} 0 \\ - \end{matrix}$ 孔徑 $\begin{matrix} + \\ 0 \end{matrix}$ 長度, 角度 $\pm$	1	新出圖																																		
— 指定等級區分之數值公差																																				
<table border="1"> <tr> <th>區分</th> <th>1~6</th> <th>6~18</th> <th>18~50</th> <th>50~120</th> <th>120~250</th> <th>250~500</th> <th>500~1000</th> <th>角度</th> </tr> <tr> <td>1級</td> <td>0.1</td> <td>0.2</td> <td>0.3</td> <td>0.4</td> <td>0.5</td> <td>0.6</td> <td>0.8</td> <td>1°</td> </tr> <tr> <td>2級</td> <td>0.2</td> <td>0.4</td> <td>0.6</td> <td>0.8</td> <td>1.2</td> <td>1.6</td> <td>2.0</td> <td>2°</td> </tr> </table>	區分	1~6	6~18	18~50	50~120	120~250	250~500	500~1000	角度	1級	0.1	0.2	0.3	0.4	0.5	0.6	0.8	1°	2級	0.2	0.4	0.6	0.8	1.2	1.6	2.0	2°									
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未標示孔徑距公差	±0.1		±0.2		設變單號 E.C.N.		設變單號 E.C.N.																													
熱處理 HEAT TREATMENT	件名 PART NAME		GEARMOTOR		單位 UNITS	mm																														
表面處理 SURFACE	圖號 DWG.		IG220019X00015R		比例 SCALE	9/10																														
材質 MATERIAL	 <b>祥儀企業股份有限公司</b> SHA YANG YE INDUSTRIAL CO., LTD.																																			
重量 WEIGHT										頁次 SHEET	1/1																									

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