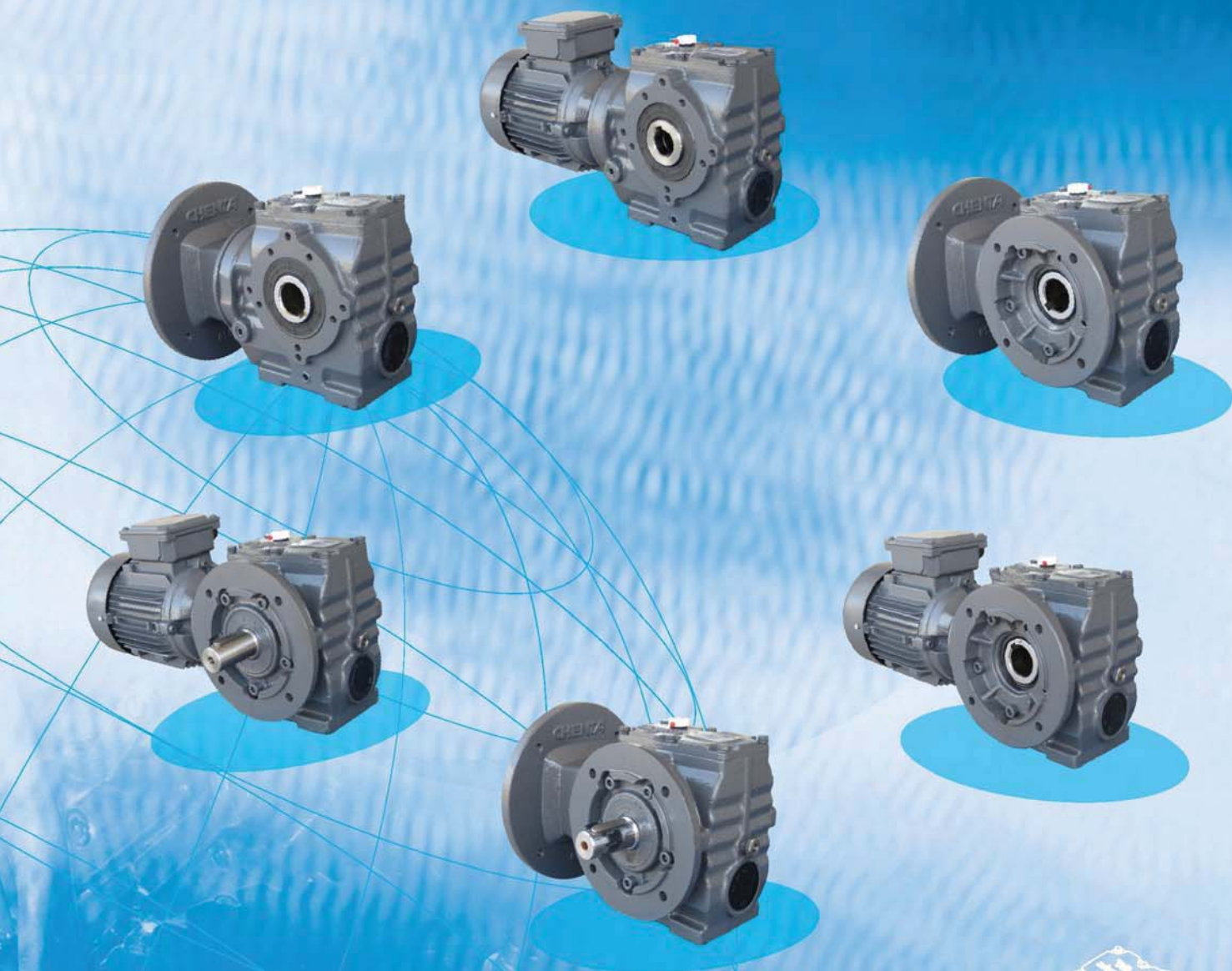




CHENTA HELICAL+WORM GEAR REDUCERS

成大斜齒+蝸齒輪減速機



外型安裝尺寸與德國領導品牌相容

INSTALLATION DIMENSION ARE CONSISTENT WITH GERMAN MODEL





# COMPANY PROFILE

1. IN 1960, Mr. Mao Cheng Chen, president of the company, and two other colleagues in the department of Mechanical Engineering of the Tainan Engineering College (predecessor of Cheng Kung University) established a company called "Chen Ta Machinery Works". It was named "Chen Ta" in remembrance of, and also giving acknowledgement to, their alma mater, Cheng Kung University (called Chen Ta in short) from where Mr. Chen and his colleagues had received their specialized mechanical education.
2. Chen Ta Machinery Works specialized in machining jobs such as grinding/re-building of the crankshafts of automobile and vessel engines, cylinder overhaul, and diesel engine adjustment. Back then, she was the best of her field in southern Taiwan. Due to the excellent technique and the cordial service, the company name was soon well known and the business became prosperous.
3. In 1971, to support a long-term operation, the company needed her own products, so the technique cooperation between CHENTA and Japan reducer manufacturer began. From then on, CHENTA started manufacturing her own brand, "CHENTA GEAR REDUCERS". Now the company has about 90 employees, and her products have been marketing to the world under the name of "CHENTA". The major markets are in Taiwan, Asia, and America. In Taiwan, she remains at the top of the field and also established branch offices in America and in Shanghai (in China).
4. Since the beginning of the company, our conviction is to "Gather excellent human resource, and research and manufacture high quality products". Our product policy is targeting at "Guaranteed Quality", "On Time Delivery", "Competitive Prices", "Rational Production", and "International Marketing".
5. With more than 40 years of experience in mechanical manufacturing and honest operation, a fine culture has naturally grown inside the cooperation. This spirit is the most precious resource of our company. The motto of our company is based on "INNOVATION", "HONESTY", "DILIGENCE", and "EFFICIENCY".
6. Influenced gradually under such fine culture, all employees in CHENTA work hard and take responsibility. They cooperate with each other and innovate actively. With their efforts, CHENTA keep developing and growing up to fight for the mutual benefit.
7. To reach our long term operation goal, based on the company's existing cultural resources, we will: have high expertise in the field; serve our customers with respect; constantly improve ourselves; manufacture high quality and affordable speed reducers for customers throughout the world, all so that we can grow together with our customers.

## COMPANY PROFILE

Company Name : CHENTA PRECISION MACHINERY IND. INC.

Established : 1971

Employee: 90 persons

Plant Sizes: Jen Wu Plant 7000m<sup>2</sup>

Shanghai Plant 6800m<sup>2</sup>

# ISO 9001 品質保證系統認證

# SGS

Certificate TW98/14175QA

The management system of

**CHENTA PRECISION MACHINERY  
INDUSTRIAL INC. /  
JEN WU MACHINERY CO., LTD.**

No. 118, Hall Tran Lane, Jen Wu,  
Kaohsiung Hsien, Taiwan, R.O.C.



has been assessed and certified as meeting the requirements of

## ISO 9001:2000

For the following activities

**DESIGN AND MANUFACTURE OF HELICAL GEAR SPEED REDUCER,  
WORM GEAR SPEED REDUCER AND GEAR MOTOR, GEAR BOX AND  
WATER PADDLE-WHEEL AERATOR.**

Further clarifications regarding the scope of this certificate and the applicability of  
ISO 9001:2000 requirements may be obtained by consulting the organization

This certificate is valid from 18 September 2006 until 17 September 2009  
Issue 4. Certified since September 1998

Authorised by

*P. Earl*



SGS United Kingdom Ltd. Systems & Services Certification  
Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK  
t +44 (0)151 350-6666 f +44 (0)151 350-6600 www.sgs.com

Page 1 of 1



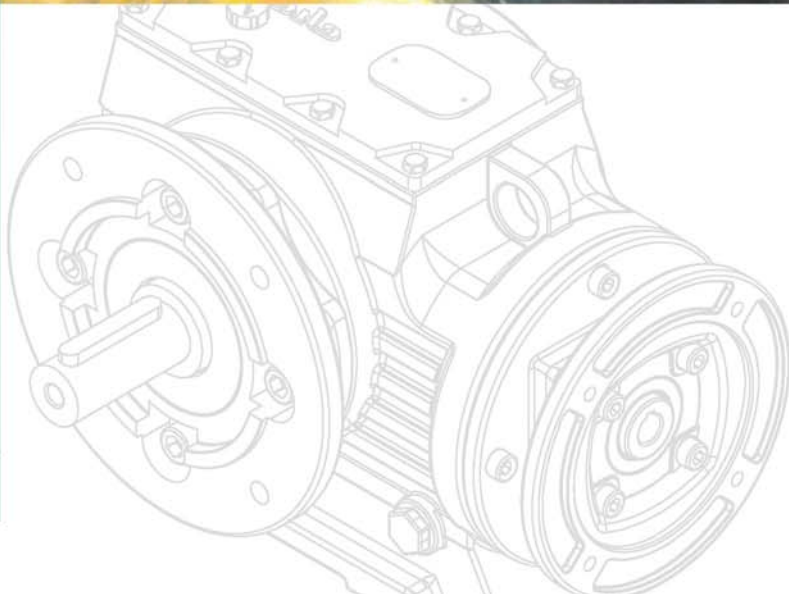
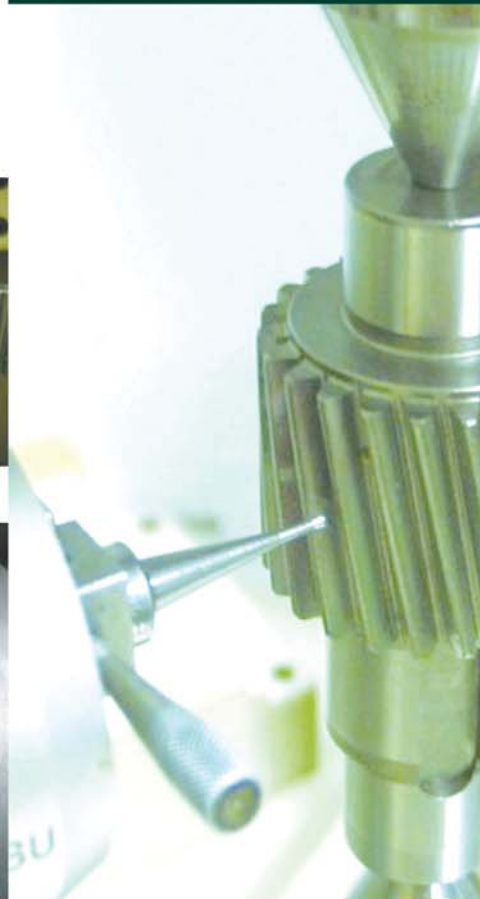
# 索引 INDEX

- 1 公司簡介**  
CHENTA Profile
- 3 ISO9001品質保證系統認證**  
ISO9001 Certification
- 4 索引**  
Index
- 5 加工及量測**  
Process & Measure
- 6 設計軟體說明**  
Software for CAD Drawings
- 7 產品介紹**  
Product Instruction
- 8 實體爆炸圖**  
Parts Picture of Helical Gear Reducer
- 10 編碼說明**  
Numbering System
- 12 3D 爆炸圖**  
3D Parts Drawing
- 14 各型號規格介紹共6種**  
CAD drawings
- 20 尺寸公差表、潤滑油**  
Tolerance & Lubricant Selection
- 21 安裝位置 & 3D 旋向圖**  
Mounting Position & 3D Rotation Direction
- 22 輸入馬力及輸出扭力矩一覽表**  
Horsepower and Torque Ratings
- 26 減速機使用說明**  
Operating Manual & Instruction
- 28 故障排除說明**  
Solutions and Reasons for the General Breakdown



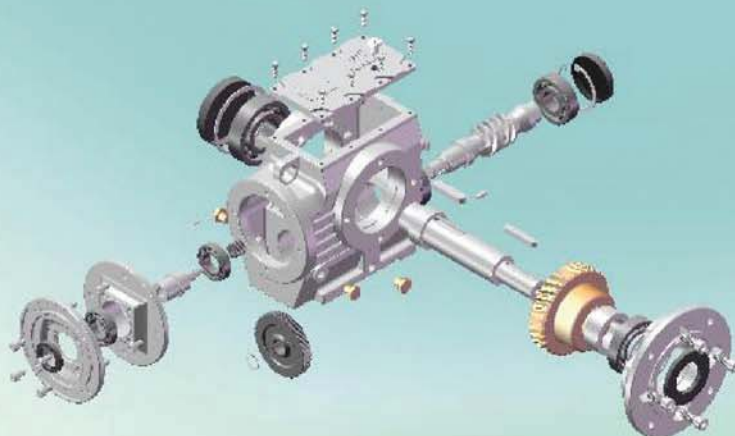
# Process & Measure

加工及量測



本公司除了原有的標準2D繪圖軟體進行設計工作，也導入了3D 機械設計軟體。完整的3D能表現接近實際的外型，使客戶能了解產品的整體架構，進行更深入的討論修改時，能與客戶在溝通上更無障礙。在交期上，更能大大縮短設計、工程圖、設計修改的時間，以最短時間供應，協助客戶提升市場競爭力。另外，許多客戶也已經採用3D軟體進行機械設備的設計，使得市面上對3D的需求性日益提高。未來，3D運用會更加廣泛。

Besides standard 2D CAD drawing software, we also lead in 3D Mechanical design software to design our products. Complete 3D drawing simulates to the real-world condition to make customers get the whole structure of the product. For further discussion and amendment, it makes communicate more easily. As for delivery, it shortens the time for design, CAD drawing and amending. It helps get products to market fast; in the mean while, promote the competition on market. Furthermore, many customers also use 3D software for mechanical design and it makes the need for 3D become more and more. In the future, the use for 3D is becoming general.



# 斜齒+蝸齒輪減速機

## 產品特點說明

## Features



- 1> 設計理念：標準化設計與模組化設計相結合，達到與國際領導品牌具有互換性，且兼備結構緊湊，體積小等特點。
- 2> 低噪音：高效斜齒輪組結合蝸齒輪組傳動與純斜齒輪相比較具有傳動更平穩，噪音更小的特點。
- 3> 大速比：速比可以從1:8-1:210之間任意選擇，彌補了純蝸輪減速機速比較小範圍的缺點。
- 4> 負載範圍：負載可根據不同需求從1/4HP-30HP任意選擇，可滿足不同之需求。
- 5> 承載能力更大：齒輪及蝸桿採用20CrMo合金鋼滲碳，蝸輪採用高承載能力的鋁青銅，傳動具有更高的承載力。
- 6> 自鎖性：在特定的條件下，傳動具有自鎖性（不可逆性），傳動更安全。
- 7> 安裝靈活性：每個規格皆可在M1到M6任意方向位置上安裝，安裝更靈活，更方便。
- 8> 結構外型美觀，堅固。

### Features/

- 1> **Design conception:** combination of standardization and modularization to be compatible with international leading brands. With characteristic of rigid structure and compact body.
- 2> **Low noise:** gathering the advantage of helical gear high efficiency and worm gear smooth transmission, the transmission is more stable and less noise compare with standard helical gear speed reducer.
- 3> **More ratios choice:** the ratio range is between 8:1 ~ 210:1 which overcome the small ratio range issue of worm gear speed reducer.
- 4> **Loading range:** it can be freely chose between 1/4 HP ~ 30 HP according to different requirements and application.
- 5> **Better strength:** pinion, gear and worm shaft are 20CrMo material with carbonized treatment and aluminum bronze worm wheel which offers better strength and endurance.
- 6> **Self-lock:** in certain condition, it's not reversible from output shaft (self-lock) makes transmission movement be safer.
- 7> **Convenient for mounting:** every models are suitable for any mounting position (M1 ~ M6) as per different application. It's easier and also more convenient.
- 8> **Nice appearance with strong structure.**





# 斜齒+蝸齒輪減速機

## 之型號編碼說明

G N F 047 025 01 M3 A (B)

Numbering System

- G 斜齒+蝸齒輪 | HELICAL-WORM GEAR >
- N 機型 | MODEL >
- F 入力聯結方式 | INPUT TYPE >
- 047 型號 | SIZE >
- 025 速比 | RATIO >
- 01 法蘭框號 | FLANGE FRAME >
- M3 安裝方式 | MOUNTING POSITION >
- A (B) 軸向 | SHAFT DIRECTION >



### 斜齒+蝸齒輪減速機之型號編碼說明

Numbering System

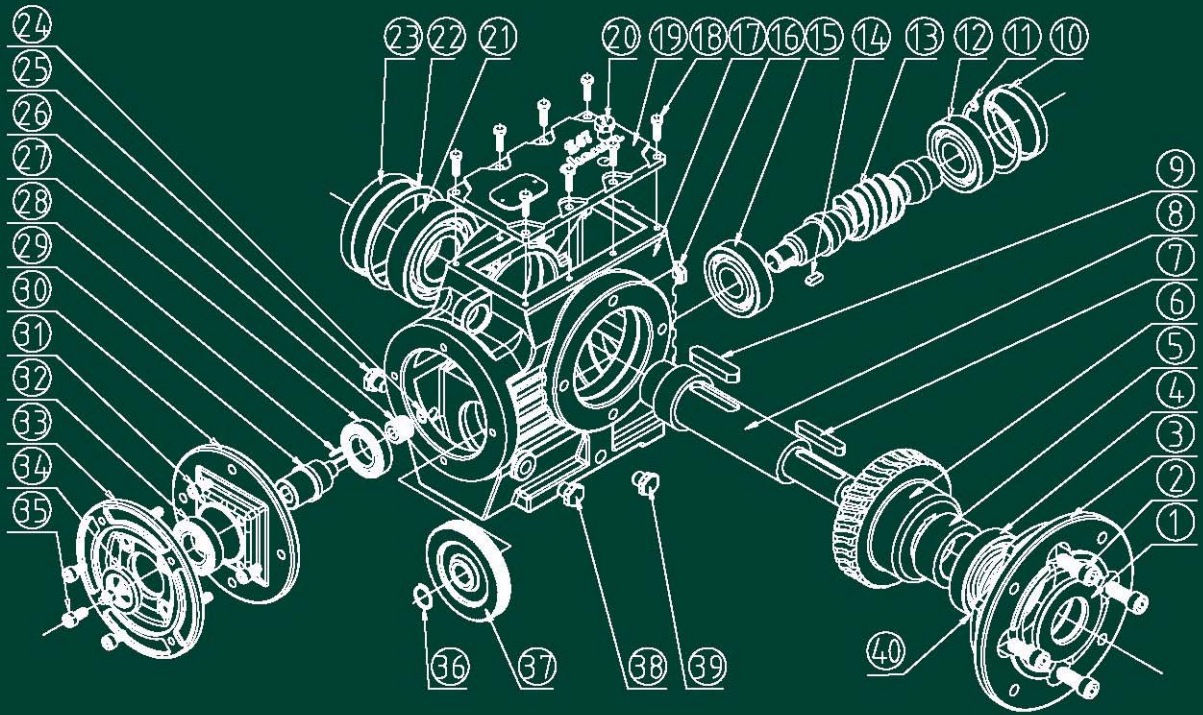
<p><b>斜齒+蝸齒輪</b> Helical-Worm Gear G</p>	<p><b>機型</b> Model M</p> <ul style="list-style-type: none"> <li>N 出力實心法蘭</li> <li>H 出力孔徑一大</li> <li>M 出力中空法蘭</li> </ul>	<p><b>入力聯結</b> Input Type F</p> <ul style="list-style-type: none"> <li>法蘭入力 IEC B5</li> <li>法蘭入力 IEC B14</li> <li>法蘭入力 IEC B14</li> <li>法蘭入力 NEMA</li> <li>馬達直結</li> </ul>	<p><b>型號</b> Size 047</p> <table border="1"> <tr><td>037</td><td>37</td></tr> <tr><td>047</td><td>47</td></tr> <tr><td>057</td><td>57</td></tr> <tr><td>067</td><td>67</td></tr> <tr><td>077</td><td>77</td></tr> <tr><td>087</td><td>87</td></tr> <tr><td>097</td><td>97</td></tr> </table>	037	37	047	47	057	57	067	67	077	77	087	87	097	97	<p><b>速比</b> Ratio 010</p> <table border="1"> <tr><td>010</td><td>1/10</td></tr> <tr><td>015</td><td>1/15</td></tr> <tr><td>020</td><td>1/20</td></tr> <tr><td>025</td><td>1/25</td></tr> <tr><td>030</td><td>1/30</td></tr> <tr><td>035</td><td>1/35</td></tr> <tr><td>040</td><td>1/40</td></tr> <tr><td>045</td><td>1/45</td></tr> <tr><td>050</td><td>1/50</td></tr> <tr><td>055</td><td>1/55</td></tr> <tr><td>060</td><td>1/60</td></tr> <tr><td>065</td><td>1/65</td></tr> <tr><td>070</td><td>1/70</td></tr> <tr><td>080</td><td>1/80</td></tr> <tr><td>090</td><td>1/90</td></tr> <tr><td>100</td><td>1/100</td></tr> <tr><td>110</td><td>1/110</td></tr> <tr><td>120</td><td>1/120</td></tr> <tr><td>*</td><td>...</td></tr> <tr><td>*</td><td>...</td></tr> <tr><td>*</td><td>...</td></tr> </table>	010	1/10	015	1/15	020	1/20	025	1/25	030	1/30	035	1/35	040	1/40	045	1/45	050	1/50	055	1/55	060	1/60	065	1/65	070	1/70	080	1/80	090	1/90	100	1/100	110	1/110	120	1/120	*	...	*	...	*	...	<p><b>法蘭框號</b> Flange Frame QQ</p> <table border="1"> <tr><td colspan="2">I. 公制框號</td></tr> <tr><td colspan="2">IEC standard 4-POLE</td></tr> <tr><td>QQ</td><td>1/4HP # 11</td></tr> <tr><td>HH</td><td>1/2HP # 14</td></tr> <tr><td>01</td><td>1HP # 19</td></tr> <tr><td>02</td><td>2HP # 24</td></tr> <tr><td>03</td><td>3HP # 28</td></tr> <tr><td>05</td><td>5HP # 28</td></tr> <tr><td>07</td><td>7.5HP # 38</td></tr> <tr><td>10</td><td>10HP # 38</td></tr> <tr><td>15</td><td>15HP # 42</td></tr> <tr><td>20</td><td>20HP # 42</td></tr> <tr><td colspan="2">II. 英制框號</td></tr> <tr><td colspan="2">NEMA standard</td></tr> <tr><td>01</td><td>56C</td></tr> <tr><td>02</td><td>143T</td></tr> <tr><td>04</td><td>182/184T</td></tr> <tr><td>06</td><td>213/215T</td></tr> <tr><td>08</td><td>254/256T</td></tr> </table>	I. 公制框號		IEC standard 4-POLE		QQ	1/4HP # 11	HH	1/2HP # 14	01	1HP # 19	02	2HP # 24	03	3HP # 28	05	5HP # 28	07	7.5HP # 38	10	10HP # 38	15	15HP # 42	20	20HP # 42	II. 英制框號		NEMA standard		01	56C	02	143T	04	182/184T	06	213/215T	08	254/256T	<p><b>孔徑</b> Aperture</p> <table border="1"> <tr><td>037</td><td># 20</td></tr> <tr><td>047</td><td># 25</td></tr> <tr><td></td><td># 30</td></tr> <tr><td>057</td><td># 30</td></tr> <tr><td></td><td># 35</td></tr> <tr><td>067</td><td># 40</td></tr> <tr><td></td><td># 45</td></tr> <tr><td>077</td><td># 50</td></tr> <tr><td></td><td># 60</td></tr> <tr><td>087</td><td># 60</td></tr> <tr><td></td><td># 70</td></tr> <tr><td>097</td><td># 70</td></tr> <tr><td></td><td># 90</td></tr> </table>	037	# 20	047	# 25		# 30	057	# 30		# 35	067	# 40		# 45	077	# 50		# 60	087	# 60		# 70	097	# 70		# 90	<p><b>馬達直結式欄位</b> Column only for Couple with Motor</p> <table border="1"> <tr><td>2</td><td>220/380</td><td>5</td><td>50HZ</td><td>2</td><td>2P</td></tr> <tr><td>4</td><td>240/415</td><td>6</td><td>60HZ</td><td>4</td><td>4P</td></tr> <tr><td>5</td><td>220/440</td><td></td><td></td><td>6</td><td>6P</td></tr> <tr><td>A</td><td>220/230</td><td></td><td></td><td>8</td><td>8P</td></tr> <tr><td>B</td><td>220/240</td><td></td><td></td><td></td><td></td></tr> <tr><td>C</td><td>230/400</td><td></td><td></td><td></td><td></td></tr> <tr><td>D</td><td>230/400</td><td></td><td></td><td></td><td></td></tr> <tr><td>E</td><td>230/440</td><td></td><td></td><td></td><td></td></tr> <tr><td>F</td><td>230/480</td><td></td><td></td><td></td><td></td></tr> <tr><td>G</td><td>120/208</td><td></td><td></td><td></td><td></td></tr> <tr><td>H</td><td>200/346</td><td></td><td></td><td></td><td></td></tr> <tr><td>K</td><td>208/220</td><td></td><td></td><td></td><td></td></tr> <tr><td>M</td><td>208/240</td><td></td><td></td><td></td><td></td></tr> <tr><td>N</td><td>380/660</td><td></td><td></td><td></td><td></td></tr> </table>	2	220/380	5	50HZ	2	2P	4	240/415	6	60HZ	4	4P	5	220/440			6	6P	A	220/230			8	8P	B	220/240					C	230/400					D	230/400					E	230/440					F	230/480					G	120/208					H	200/346					K	208/220					M	208/240					N	380/660				
037	37																																																																																																																																																																																																																		
047	47																																																																																																																																																																																																																		
057	57																																																																																																																																																																																																																		
067	67																																																																																																																																																																																																																		
077	77																																																																																																																																																																																																																		
087	87																																																																																																																																																																																																																		
097	97																																																																																																																																																																																																																		
010	1/10																																																																																																																																																																																																																		
015	1/15																																																																																																																																																																																																																		
020	1/20																																																																																																																																																																																																																		
025	1/25																																																																																																																																																																																																																		
030	1/30																																																																																																																																																																																																																		
035	1/35																																																																																																																																																																																																																		
040	1/40																																																																																																																																																																																																																		
045	1/45																																																																																																																																																																																																																		
050	1/50																																																																																																																																																																																																																		
055	1/55																																																																																																																																																																																																																		
060	1/60																																																																																																																																																																																																																		
065	1/65																																																																																																																																																																																																																		
070	1/70																																																																																																																																																																																																																		
080	1/80																																																																																																																																																																																																																		
090	1/90																																																																																																																																																																																																																		
100	1/100																																																																																																																																																																																																																		
110	1/110																																																																																																																																																																																																																		
120	1/120																																																																																																																																																																																																																		
*	...																																																																																																																																																																																																																		
*	...																																																																																																																																																																																																																		
*	...																																																																																																																																																																																																																		
I. 公制框號																																																																																																																																																																																																																			
IEC standard 4-POLE																																																																																																																																																																																																																			
QQ	1/4HP # 11																																																																																																																																																																																																																		
HH	1/2HP # 14																																																																																																																																																																																																																		
01	1HP # 19																																																																																																																																																																																																																		
02	2HP # 24																																																																																																																																																																																																																		
03	3HP # 28																																																																																																																																																																																																																		
05	5HP # 28																																																																																																																																																																																																																		
07	7.5HP # 38																																																																																																																																																																																																																		
10	10HP # 38																																																																																																																																																																																																																		
15	15HP # 42																																																																																																																																																																																																																		
20	20HP # 42																																																																																																																																																																																																																		
II. 英制框號																																																																																																																																																																																																																			
NEMA standard																																																																																																																																																																																																																			
01	56C																																																																																																																																																																																																																		
02	143T																																																																																																																																																																																																																		
04	182/184T																																																																																																																																																																																																																		
06	213/215T																																																																																																																																																																																																																		
08	254/256T																																																																																																																																																																																																																		
037	# 20																																																																																																																																																																																																																		
047	# 25																																																																																																																																																																																																																		
	# 30																																																																																																																																																																																																																		
057	# 30																																																																																																																																																																																																																		
	# 35																																																																																																																																																																																																																		
067	# 40																																																																																																																																																																																																																		
	# 45																																																																																																																																																																																																																		
077	# 50																																																																																																																																																																																																																		
	# 60																																																																																																																																																																																																																		
087	# 60																																																																																																																																																																																																																		
	# 70																																																																																																																																																																																																																		
097	# 70																																																																																																																																																																																																																		
	# 90																																																																																																																																																																																																																		
2	220/380	5	50HZ	2	2P																																																																																																																																																																																																														
4	240/415	6	60HZ	4	4P																																																																																																																																																																																																														
5	220/440			6	6P																																																																																																																																																																																																														
A	220/230			8	8P																																																																																																																																																																																																														
B	220/240																																																																																																																																																																																																																		
C	230/400																																																																																																																																																																																																																		
D	230/400																																																																																																																																																																																																																		
E	230/440																																																																																																																																																																																																																		
F	230/480																																																																																																																																																																																																																		
G	120/208																																																																																																																																																																																																																		
H	200/346																																																																																																																																																																																																																		
K	208/220																																																																																																																																																																																																																		
M	208/240																																																																																																																																																																																																																		
N	380/660																																																																																																																																																																																																																		
<p><b>GNF</b>   P. 14   <b>出力實心法蘭</b> SOLID OUTPUT FLANGE</p>	<p><b>GNM</b>   P. 15   <b>出力實心法蘭 入力馬達直結</b> SOLID OUTPUT FLANGE COUPLE WITH MOTOR</p>	<p><b>GHF</b>   P. 16   <b>出力中空</b> HOLLOW OUTPUT</p>	<p><b>GHM</b>   P. 17   <b>出力中空 入力馬達直結</b> HOLLOW OUTPUT COUPLE WITH MOTOR</p>	<p><b>GMF</b>   P. 18   <b>出力中空法蘭</b> HOLLOW OUTPUT FLANGE</p>	<p><b>GMM</b>   P. 19   <b>出力中空法蘭 入力馬達直結</b> HOLLOW OUTPUT FLANGE COUPLE WITH MOTOR</p>																																																																																																																																																																																																														

\*選用馬達直結式請告知：馬達之電壓、頻率、極數、相數、防塵等級、是否加裝煞車  
\*Please specify Voltage,Hz, Pole,Phase, IP grade, Brake require or not if type of Couple with Motor needed.



# 零件分解圖 Basic Structure

MODEL:GNF



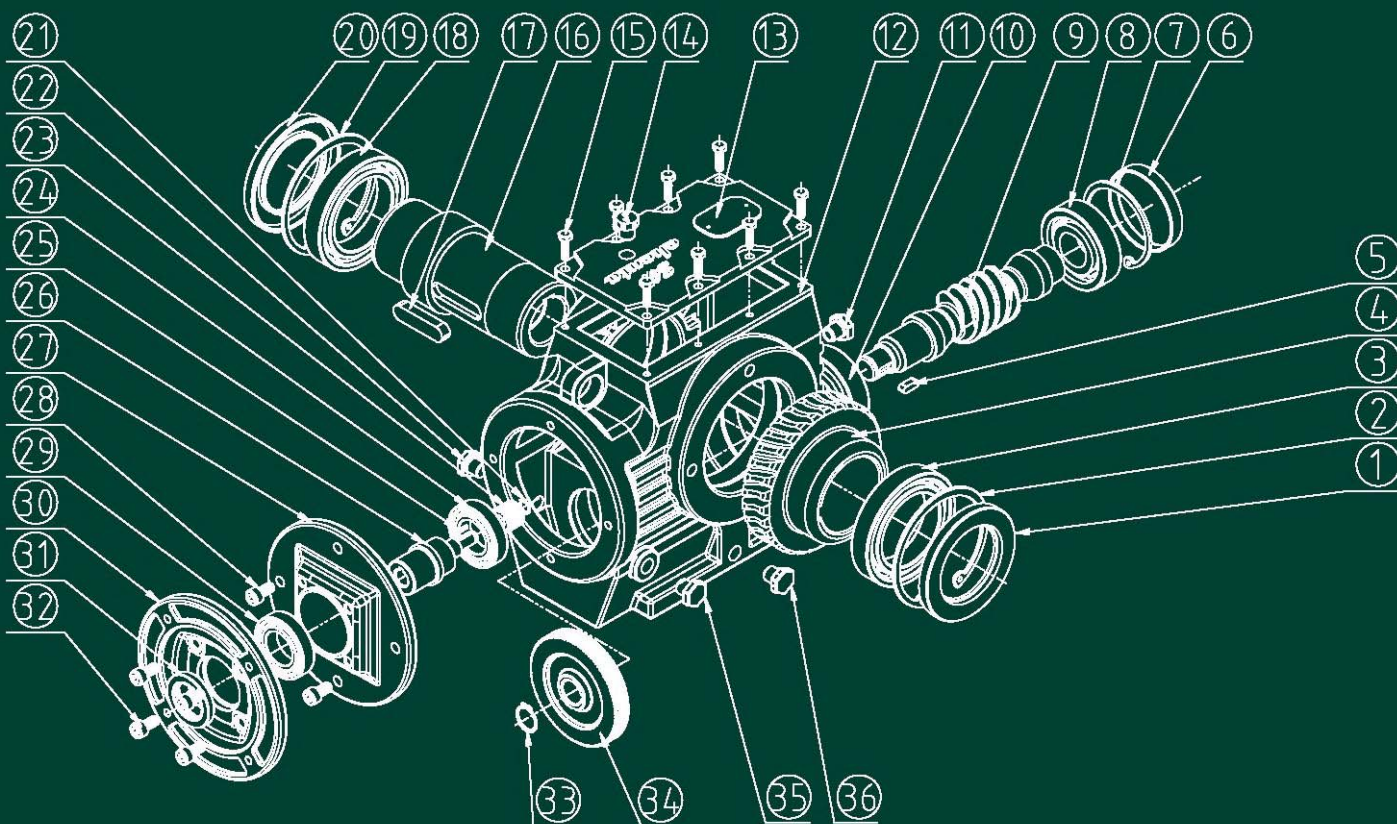
編碼 ITEM	零件名稱 PART NAME	數量 QTY	編碼 ITEM	零件名稱 PART NAME	數量 QTY	編碼 ITEM	零件名稱 PART NAME	數量 QTY	編碼 ITEM	零件名稱 PART NAME	數量 QTY
1	油封(oil seal)	1	11	扣環 (snap ring)	1	21	軸承 (bearing)	1	31	螺栓 (bolt)	4
2	螺栓(bolt)	4	12	軸承 (bearing)	1	22	扣環 (snap ring)	1	32	軸承 (bearing)	1
3	出力法蘭 (output flange)	1	13	蝸桿 (worm shaft)	1	23	油封 (oil seal)	1	33	入力法蘭(input flange)	1
4	軸承(bearing)	1	14	雙圓鍵(key)	1	24	扣環 (snap ring)	1	34	油封 (oil seal)	1
5	隔環(spacer)	1	15	軸承 (bearing)	1	25	塞頭 (breather cap)	1	35	螺栓 (bolt)	4
6	蝸輪 (worm gear)	1	16	油鏡 (oil gauge)	1	26	齒輪 (gear)	1	36	扣環 (snap ring)	1
7	雙圓鍵(key)	1	17	本體 (housing)	1	27	軸承 (bearing)	1	37	齒輪 (gear)	1
8	出力軸(output shaft)	1	18	螺栓 (bolt)	6	28	雙圓鍵(key)	1	38	塞頭 (breather cap)	1
9	雙圓鍵(key)	1	19	天窗蓋 (top cover)	1	29	入力軸 (input shaft)	1	39	塞頭 (breather cap)	2
10	油封 (oil seal)	1	20	塞頭 (breather cap)	1	30	入力蓋 (input cover)	1	40	扣環 (snap ring)	1

### 材料說明 ( MATERIAL GLANCE )

- 1.本體(housing)、蓋類 ( cover)、法蘭(flange)/灰口鑄鐵FC20;
- 2.入力軸(input shaft)、出力軸(output shaft)/鉻鉍合金鋼SCM440;
- 3.齒輪 ( gear)、蝸桿 ( worm shaft)/鉻鉍合金鋼SCM415;
- 4.蝸輪(worm gear)/球墨鑄鐵FCD45包鑄鉛青銅ALBC3。

# 零件分解圖 Basic Structure

MODEL:GHF



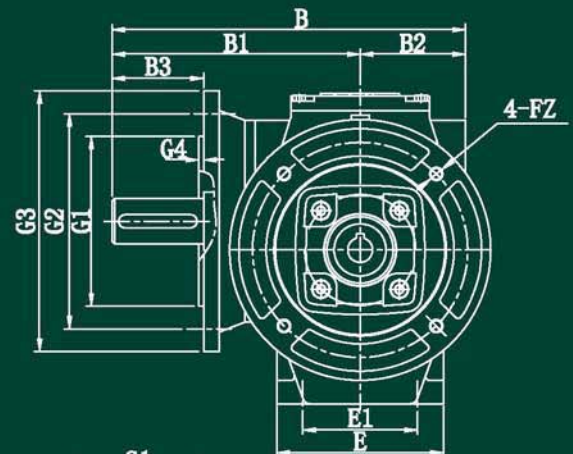
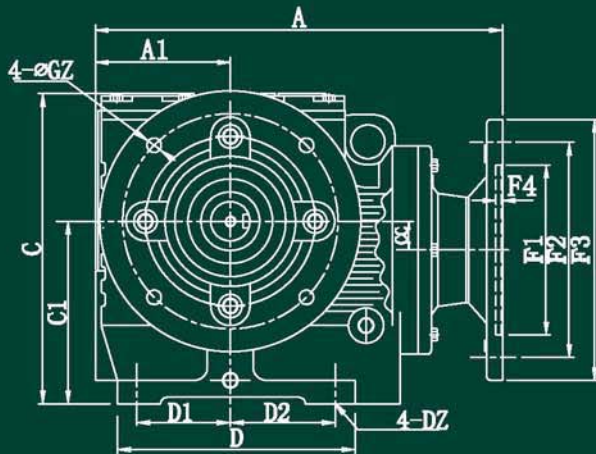
編碼 ITEM	零件名稱 PART NAME	數量 QTY	編碼 ITEM	零件名稱 PART NAME	數量 QTY	編碼 ITEM	零件名稱 PART NAME	數量 QTY	編碼 ITEM	零件名稱 PART NAME	數量 QTY
1	油封(oil seal)	1	11	油鏡(oil gauge)	1	21	扣環(snap ring)	1	31	油封(oil seal)	1
2	扣環(snap ring)	1	12	本體(housing)	1	22	塞頭(breather cap)	1	32	螺栓(bolt)	4
3	軸承(bearing)	1	13	天窗蓋(top cover)	1	23	齒輪(gear)	1	33	扣環(snap ring)	1
4	蝸輪(worm gear)	1	14	塞頭(breather cap)	1	24	軸承(bearing)	1	34	齒輪(gear)	1
5	雙圓鍵(key)	1	15	螺栓(bolt)	6	25	雙圓鍵(key)	1	35	塞頭(breather cap)	1
6	油封(oil seal)	1	16	出力軸(output shaft)	1	26	入力軸(input shaft)	1	36	塞頭(breather cap)	2
7	扣環(snap ring)	1	17	雙圓鍵(key)	1	27	入力蓋(input cover)	1	37		
8	軸承(bearing)	1	18	軸承(bearing)	1	28	螺栓(bolt)	1	38		
9	蝸桿(worm shaft)	1	19	扣環(snap ring)	1	29	軸承(bearing)	1	39		
10	軸承(bearing)	1	20	油封(oil seal)	1	30	入力法蘭(input flange)	1	40		

### 材料說明 ( MATERIAL GLANCE )

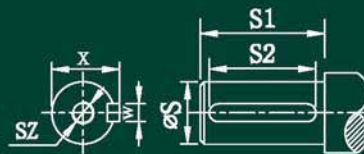
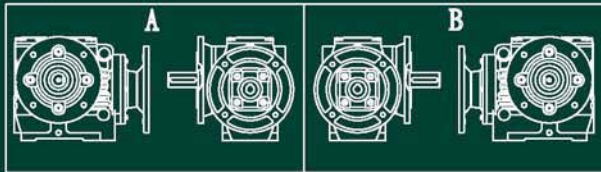
- 1.本體(housing)、蓋類 ( cover)、法蘭(flange)/灰口鑄鐵FC20;
- 2.入力軸(input shaft)、出力軸(output shaft)/鋁鎳合金鋼SCM440;
- 3.齒輪 ( gear )、蝸桿 ( worm shaft )/鋁鎳合金鋼SCM440;
- 4.蝸輪(worm gear)/球墨鑄鐵FCD45包鍍鉛青銅ALBC3。



# 型式 MODEL/GNF 外型尺寸



Shaft Direction



出力軸  
OUTPUT-SHAFT VIEW

GNF	A1	B	B1	B2	B3	C	C1	CC	D	D1	D2	E	E1	DZ	GZ	OIL(L)
37	63	172	115	57	40	143	82	0	113	46	41	85	55	M8*15L	6.6/9	0.27
47	71	191	133.5	57.5	50	178.5	100	10	128	35	52	95	60	M10*20L	9	0.38
57	80	232	160	72	60	187	112	23.7	146	58.5	58.5	100	60	M10*20L	11	0.55
67	103	270.5	190	80.5	70	238	140	22	182	71.5	80.5	128	88	M12*25L	11	1.1
77	118.5	341	240	101	90	301	180	33	200	85	85	154	102	M16*32L	14	2.0
87	150	410	290	140	120	367	225	47	265	115	110	194	118	M16*32L	18	3.5
97	180	505	340	165	140	460	280	53	301	135	113	236	160	M20*32L	8-17.5	7.1

GNF	出力法蘭 OUTPUT FLANGE				出力軸 OUTPUT SHAFT					
	G1	G2	G3	G4	øS	S1	S2	X	W	SZ
37	80	100	120	3	20m6	40	32	22.5	6	M6*15L
	110	130	160							
47	110	130	160	3.5	25m6	50	40	28	8	M10*20L
57	130	165	200	3.5	30m6	60	50	33	8	M10*20L
67	130	165	200	3.5	35m6	70	60	38	10	M12*25L
77	180	215	250	4	45m6	90	80	48.5	14	M16*40L
87	250	300	350	5	60m6	120	110	64	18	M20*70L
97	350	400	450	5	70m6	140	125	74.5	20	M20*70L

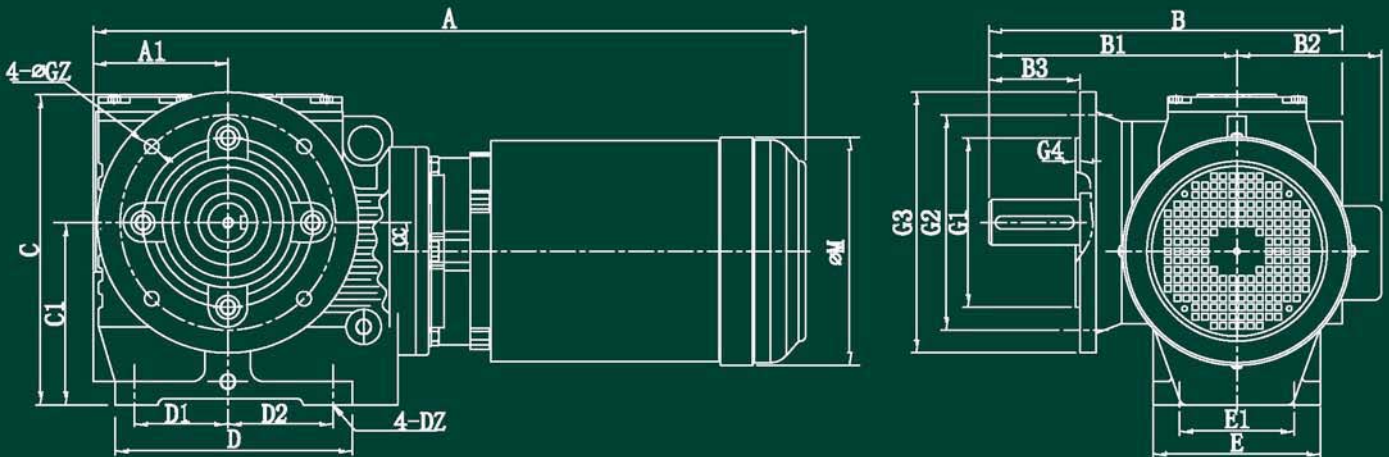


入力孔  
INPUT-BORE VIEW

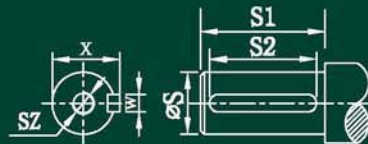
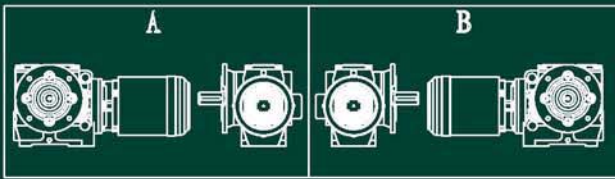
GNF	入力法蘭 INPUT FLANGE								
	HP	1/4	1/2	1	2	3	5	7.5	10
37	A	196		216					
	HP	1/4	1/2	1	2				
47	A	226		244					
	HP	1/4	1/2	1	2				
57	A	245		263					
	HP	1/2	1	2	3	5			
67	A	295.5		311.5		330			
	HP	1	2	3	5	7.5	10		
77	A	341		362.5		411			
	HP	2	3	5	7.5	10	15		
87	A	401.5		418		466.5		502.5	
	HP	3	5	7.5	10	15	20	25	30
97	A	482		526.5		562.5		571.5	
	HP	3	5	7.5	10	15	20	25	30

HP	INPUT BORE 入力孔-入力法蘭				INPUT FLANGE				
	øU	V	T	F1	F2	F3	F4	FZ	
1/4	11	12.8	4	110	130	160	4	M8	
1/2	14	16.3	5				4	M8	
1	19	21.8	6	130	165	200	5	M10	
2	24	27.3	8				5	M10	
3/5	28	31.3	8	180	215	250	5	M12	
7.5/10	38	41.3	10	230	265	300	6	M12	
15/20	42	45.3	12	250	300	350	6	M16	
25/30	48	51.8	14	300	350	400	6	M16	
40	55	59.3	16				6	M16	

# 型式 MODEL/GNM 外型尺寸



Shaft Direction



出力軸  
OUTPUT-SHAFT VIEW

GNM	A1	B	B1	B3	C	C1	CC	D	D1	D2	E	E1	DZ	GZ	OIL(L)
37	63	172	115	40	143	82	0	113	46	41	85	55	M8*15L	6.6/9	0.27
47	71	191	133.5	50	178.5	100	10	128	35	52	95	60	M10*20L	9	0.38
57	80	232	160	60	187	112	23.7	146	58.5	58.5	100	60	M10*20L	11	0.55
67	103	270.5	190	70	238	140	22	182	71.5	80.5	128	88	M12*25L	11	1.1
77	118.5	341	240	90	301	180	33	200	85	85	154	102	M16*32L	14	2.0
87	150	410	290	140	367	225	47	265	115	110	194	118	M16*32L	18	3.5
97	180	505	340	165	460	280	53	301	135	113	236	160	M20*32L	8-17.5	7.1

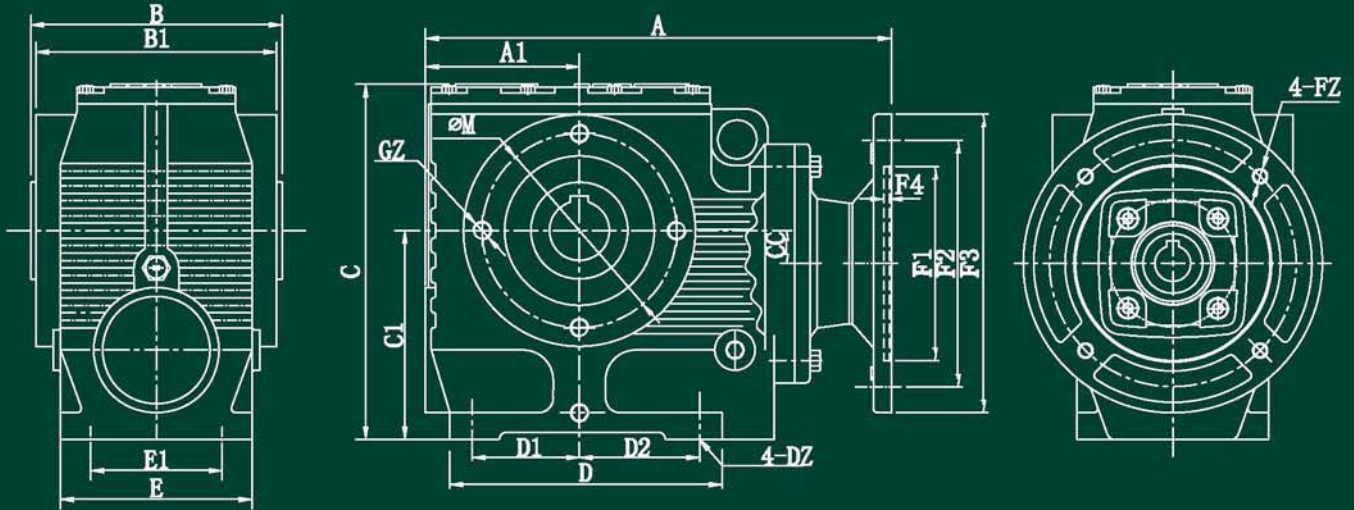
GNM	出力法蘭 OUTPUT FLANGE				出力軸 OUTPUT SHAFT					
	G1	G2	G3	G4	∅S	S1	S2	X	W	SZ
37	80	100	120	3	20m6	40	32	22.5	6	M6*15L
	110	130	160							
47	110	130	160	3.5	25m6	50	40	28	8	M10*20L
57	130	165	200	3.5	30m6	60	50	33	8	M10*20L
67	130	165	200	3.5	35m6	70	60	38	10	M12*25L
77	180	215	250	4	45m6	90	80	48.5	14	M16*40L
87	250	300	350	5	60m6	120	110	64	18	M20*70L
97	350	400	450	5	70m6	140	125	74.5	20	M20*70L

GNM	入力馬達 INPUT MOTOR				
	HP	1/4	1/2	1	2
37	A	356	382	405	448
	HP	1/4	1/2	1	2
47	A	383.5	410	433.5	476
	HP	1/4	1/2	1	2
57	A	402.5	428.5	452.5	495
	HP	1/2	1	2	3
67	A	479	503	545.5	585
	HP	1	2	3	5
77	A	535.5	578	617.5	667
	HP	3	5	7.5	10
87	A	673	722.5	767	804.5
	HP	3	5	7.5	10
97	A	737	786	827	865
	HP	3	5	7.5	10

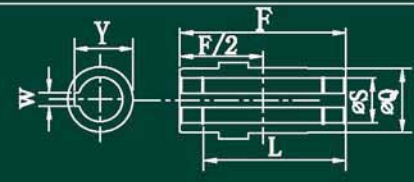
馬達尺寸 MOTOR DIMENSION		
HP	∅M	B2
1/4	112	116
1/2	132	106
1	156	132
2	175	142
3	192	160
5	219	173
7.5	268	222
10	268	222
15	334	248
20	334	248
25	382	286
30	382	286



# 型式 MODEL/GHF 外型尺寸



OUTPUT-SHAFT VIEW  
出力軸



GHF	A1	B	B1	C	C1	CC	D	D1	D2	E	E1	F	ØM	DZ	GZ	OIL(L)
37	63	120	114	143	82	0	113	46	41	85	55	120	75	M8*15L	4-M6*12L	0.25
47	71	120	115	178.5	100	10	128	35	52	95	60	120	115	M10*20L	4-M8*15L	0.4
57	80	150	144	187	112	23.7	146	58.5	58.5	100	60	150	100	M10*20L	8-M8*15L	0.55
67	103	168	161	238	140	22	182	71.5	80.5	128	88	168	130	M12*25L	4-M12*20L	1.1
77	118.5	210	202	301	180	33	200	85	85	154	102	210	155	M16*32L	8-M12*20L	2.0
87	150	250	240	367	225	47	265	115	110	194	118	250	180	M16*32L	8-M16*32L	4.0
97	180	290	280	460	280	53	301	135	113	236	160	290	220	M20*32L	8-M16*32L	7.3

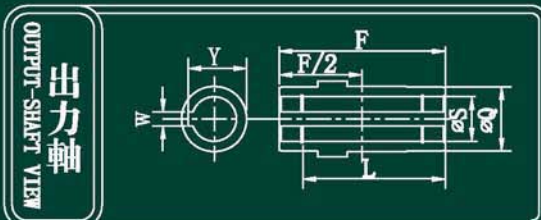
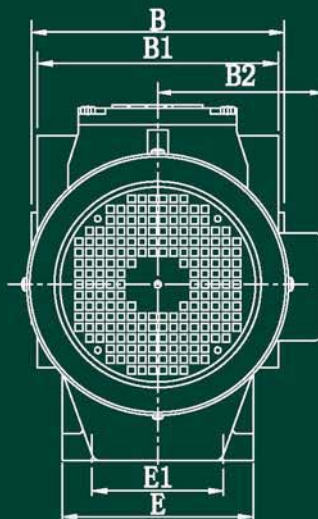
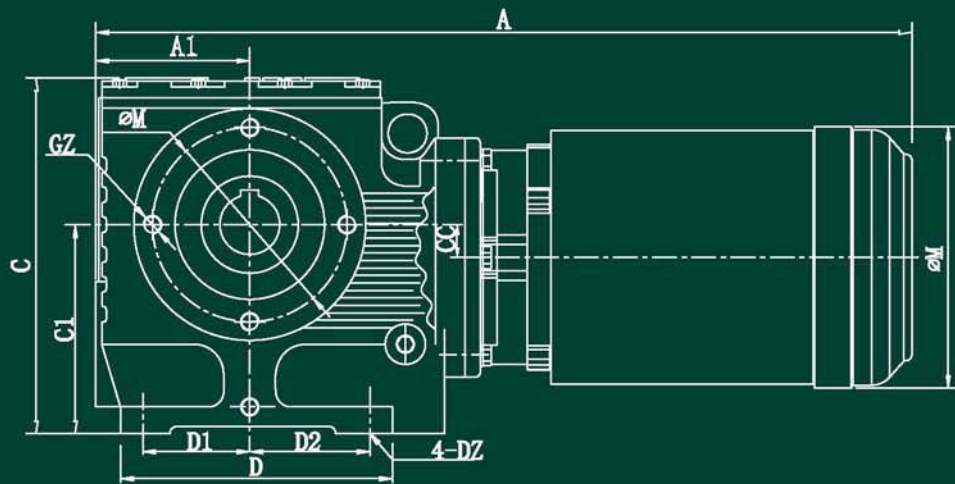
GHF	出力軸 OUTPUT SHAFT				
	ØS	ØQ	L	Y	W
37	20	35	104	22.8	6
47	25	45	105	28.3	8
	30			33.3	
57	30	50	132	33.3	8
	35			38.3	
67	40	65	144	43.3	12
	45			48.8	
77	50	80	180	53.8	14
	60			64.4	
87	60	95	220	64.4	18
	70			74.9	
97	70	120	260	74.9	20
	90			95.4	



GHF	入力法蘭 INPUT FLANGE						
	HP	1/4	1/2	1	2	3	5
37	HP	1/4	1/2	1	2		
	A		196		216		
47	HP	1/4	1/2	1	2		
	A		226		244		
57	HP	1/4	1/2	1	2		
	A		245		263		
67	HP	1/2	1	2	3	5	
	A	295.5	311.5		330		
77	HP	1	2	3	5	7.5	10
	A	341		362.5		411	
87	HP	2	3	5	7.5	10	15
	A	401.5	418		466.5	502.5	
97	HP	3	5	7.5	10	15	20
	A		482		526.5	562.5	571.5

INPUT BORE		入力孔-入力法蘭				INPUT FLANGE			
HP	ØU	V	T	F1	F2	F3	F4	FZ	
1/4	11	12.8	4	110	130	160	4	M8	
1/2	14	16.3	5				4	M8	
1	19	21.8	6	130	165	200	5	M10	
2	24	27.3	8				5	M10	
3/5	28	31.3	8	180	215	250	5	M12	
7.5/10	38	41.3	10	230	265	300	6	M12	
15/20	42	45.3	12	250	300	350	6	M16	
25/30	48	51.8	14	300	350	400	6	M16	
40	55	59.3	16				6	M16	

# 型式 MODEL/GHM 外型尺寸



GHM	A1	B	B1	C	C1	CC	D	D1	D2	E	E1	F	ØM	DZ	GZ	OIL(L)
37	63	120	114	143	82	0	113	46	41	85	55	120	75	M8*15L	4-M6*12L	0.30
47	71	120	115	178.5	100	10	128	35	52	95	60	120	115	M10*20L	4-M8*15L	0.4
57	80	150	144	187	112	23.7	146	58.5	58.5	100	60	150	100	M10*20L	8-M8*15L	0.55
67	103	168	161	238	140	22	182	71.5	80.5	128	88	168	130	M12*25L	4-M12*20L	1.1
77	118.5	210	202	301	180	33	200	85	85	154	102	210	155	M16*32L	8-M12*20L	2.0
87	150	250	240	367	225	47	265	115	110	194	118	250	180	M16*32L	8-M16*32L	4.0
97	180	290	280	460	280	53	301	135	113	236	160	290	220	M20*32L	8-M16*32L	7.3

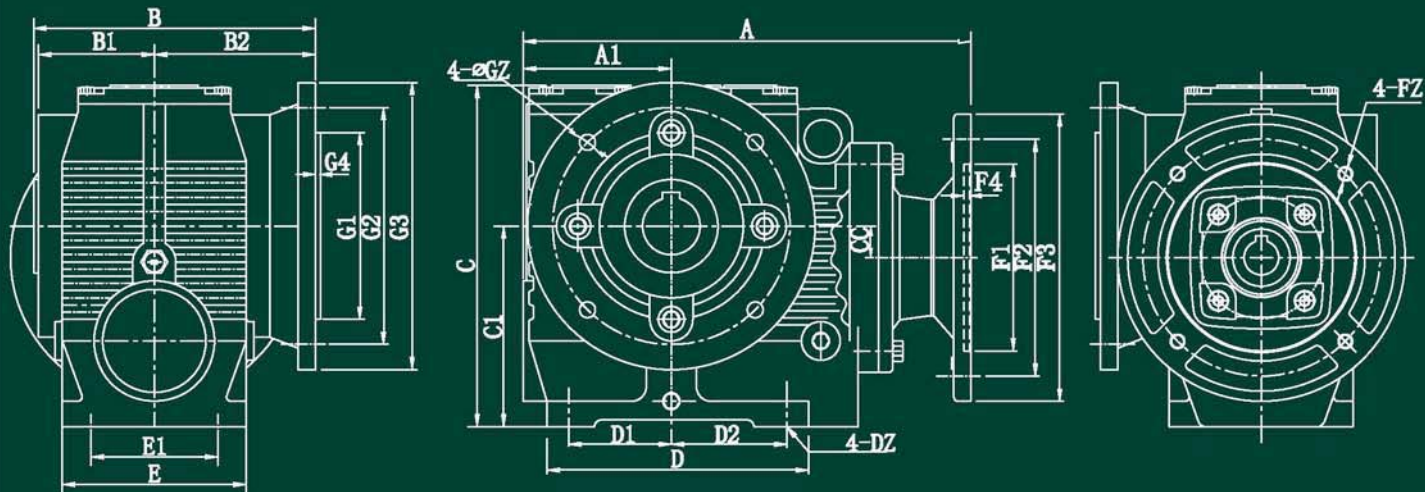
GHM	出力軸 OUTPUT SHAFT				
	ØS	ØQ	L	Y	W
37	20	35	104	22.8	6
47	25	45	105	28.3	8
	30			33.3	
57	30	50	132	33.3	8
	35			38.3	
67	40	65	144	43.3	12
	45			48.8	
77	50	80	180	53.8	14
	60			64.4	
87	60	95	220	64.4	18
	70			74.9	
97	70	120	260	74.9	20
	90			95.4	

GHM	入力馬達 INPUT MOTOR						
	HP	1/4	1/2	1	2		
37	A	356	382	405	448		
	HP	1/4	1/2	1	2		
47	A	383.5	410	433.5	476		
	HP	1/4	1/2	1	2		
57	A	402.5	428.5	452.5	495		
	HP	1/2	1	2	3	5	
67	A	479	503	545.5	585	634	
	HP	1	2	3	5	7.5	
77	A	535.5	578	617.5	667	711	
	HP	3	5	7.5	10	15	
87	A	673	722.5	767	804.5	873.5	
	HP	3	5	7.5	10	15	20
97	A	737	786	827	865	934	978
	HP	3	5	7.5	10	15	20

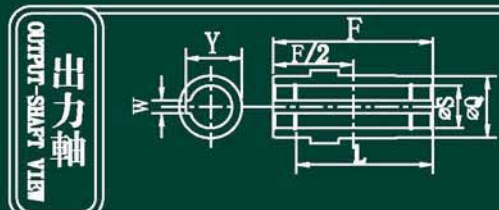
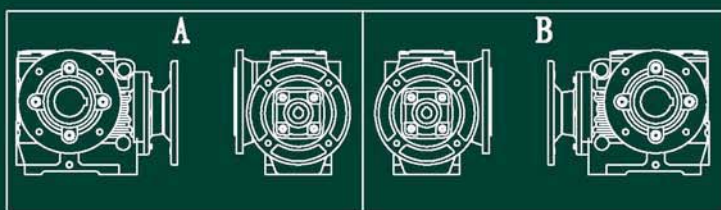
馬達尺寸 MOTOR DIMENSION		
HP	ØM	B2
1/4	112	116
1/2	132	106
1	156	132
2	175	142
3	192	160
5	219	173
7.5	268	222
10	268	222
15	334	248
20	334	248
25	382	286
30	382	286



# 型式 MODEL/GMF 外型尺寸



## Shaft Direction



GMF	A1	B	B1	B2	C	C1	CC	D	D1	D2	E	E1	F	DZ	GZ	OIL(L)
37	63	135	57	75	143	82	0	113	46	41	85	55	120	M8*15L	6.6/9	0.27
47	71	141.5	57.5	84	178.5	100	10	128	35	52	95	60	120	M10*20L	9	0.38
57	80	175	72	100	187	112	23.7	146	58.5	58.5	100	60	150	M10*20L	11	0.55
67	103	196	80.5	112	238	140	22	182	71.5	80.5	128	88	168	M12*25L	11	1.1
77	118.5	255	101	150.5	301	180	33	200	85	85	154	102	210	M16*32L	14	2.0
87	150	302.5	120	177.5	367	225	47	265	115	110	194	118	250	M16*32L	18	3.5
97	180	350	140	205	460	280	53	301	135	113	236	160	290	M20*32L	8-17.5	7.1

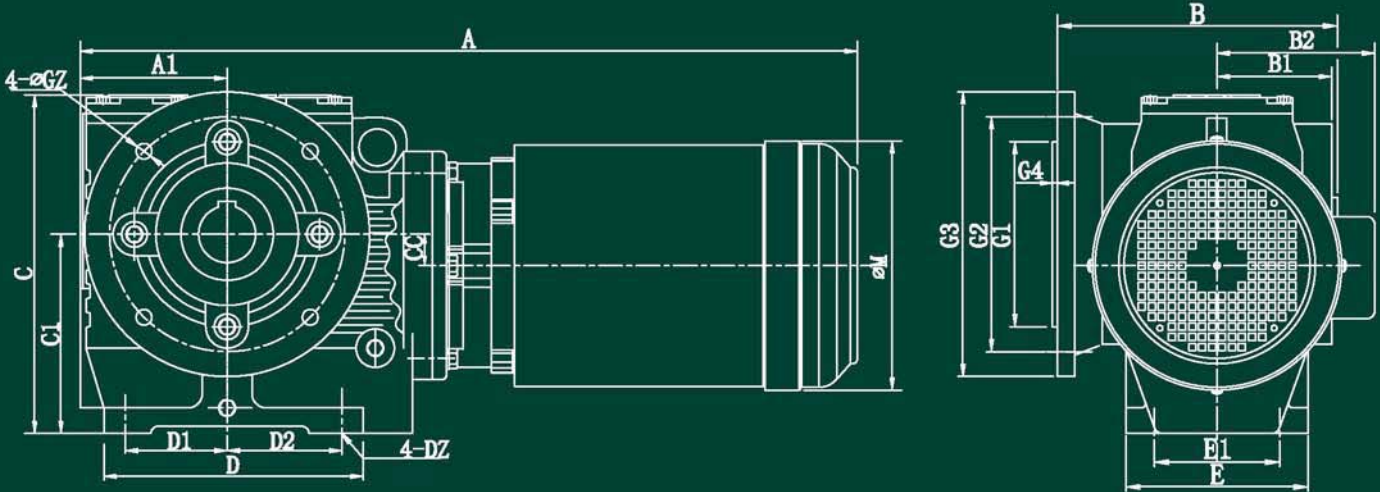
GMF	出力軸 OUTPUT SHAFT					出力法蘭 OUTPUT FLANGE			
	øS	øQ	L	Y	W	G1	G2	G3	G4
37	20	35	104	22.8	6	80 110	100 130	120 160	3
47	25 30	45	105	28.3 33.3	8	110	130	160	3.5
57	30 35	50	132	33.3 38.3	8 10	130	165	200	3.5
67	40 45	65	144	43.3 48.8	12 14	130	165	200	3.5
77	50 60	80	180	53.8 64.4	14 18	180	215	250	4
87	60 70	95	220	64.4 74.9	18 20	250	300	350	5
97	70 90	120	260	74.9 95.4	20 25	350	400	450	5



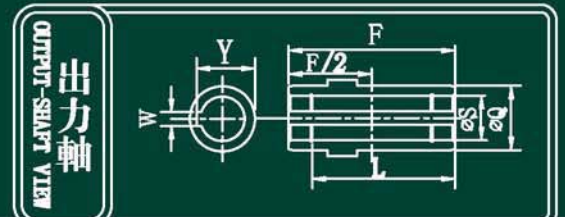
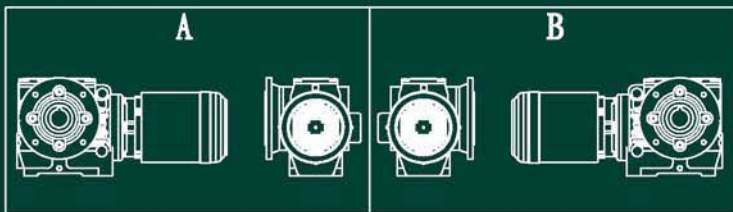
HP	INPUT BORE 入力孔-入力法蘭				INPUT FLANGE			
	øU	V	T	F1	F2	F3	F4	FZ
1/4	11	12.8	4	110	130	160	4	M8
1/2	14	16.3	5				4	M8
1	19	21.8	6	130	165	200	5	M10
2	24	27.3	8				5	M10
3/5	28	31.3	8	180	215	250	5	M12
7.5/10	38	41.3	10	230	265	300	6	M12
15/20	42	45.3	12	250	300	350	6	M16
25/30	48	51.8	14	300	350	400	6	M16
40	55	59.3	16				6	M16

GMF	入力法蘭 INPUT FLANGE							
	HP	1/4	1/2	1	2	3	5	10
37	A	196	216					
47	A	226	244					
57	A	245	263					
67	A	295.5	311.5	330				
77	A	341	362.5	411				
87	A	401.5	418	466.5	502.5			
97	A	482	526.5	562.5	571.5			

# 型式 MODEL/GMM 外型尺寸



## Shaft Direction



GMM	A1	B	B1	C	C1	CC	D	D1	D2	E	E1	F	DZ	GZ	OIL(L)
37	63	135	57	143	82	0	113	46	41	85	55	120	M8*15L	6.6/9	0.27
47	71	144	57.5	178.5	100	10	128	35	52	95	60	120	M10*20L	9	0.38
57	80	175	72	187	112	23.7	146	58.5	58.5	100	60	150	M10*20L	11	0.55
67	103	196	80.5	238	140	22	182	71.5	80.5	128	88	168	M12*25L	11	1.1
77	118.5	255	101	301	180	33	200	85	85	154	102	210	M16*32L	14	2.0
87	150	302.5	120	367	225	47	265	115	110	194	118	250	M16*32L	18	3.5
97	180	350	140	460	280	53	301	135	113	236	160	290	M20*32L	8-17.5	7.1

GMM	出力軸 OUTPUT SHAFT					出力法蘭 OUTPUT FLANGE			
	ØS	ØQ	L	Y	W	G1	G2	G3	G4
37	20	35	104	22.8	6	80	100	120	3
47	25	45	105	28.3	8	110	130	160	3.5
	33.3								
57	30	50	132	33.3	8	130	165	200	3.5
	35			38.3					
67	40	65	144	43.3	12	130	165	200	3.5
	45			48.8					
77	50	80	180	53.8	14	180	215	250	4
	60			64.4					
87	60	95	220	64.4	18	250	300	350	5
	70			74.9					
97	70	120	260	74.9	20	350	400	450	5
	90			95.4					

GMM	入力馬達 INPUT MOTOR					
	HP	1/4	1/2	1	2	
37	A	356	382	405	448	
	HP	1/4	1/2	1	2	
47	A	383.5	410	433.5	476	
	HP	1/4	1/2	1	2	
57	A	402.5	428.5	452.5	495	
	HP	1/2	1	2	3	5
67	A	479	503	545.5	585	634
	HP	1	2	3	5	7.5
77	A	535.5	578	617.5	667	711
	HP	3	5	7.5	10	15
87	A	673	722.5	767	804.5	873.5
	HP	3	5	7.5	10	15
97	A	737	786	827	865	934
	HP	3	5	7.5	10	15

馬達尺寸 MOTOR DIMENSION	HP	ØM	B2
1/4	112	116	
1/2	132	106	
1	156	132	
2	175	142	
3	192	160	
5	219	173	
7.5	268	222	
10	268	222	
15	334	248	
20	334	248	
25	382	286	
30	382	286	



# 公差尺寸表&潤滑油選定

## Tolerance & Lubricant Selection



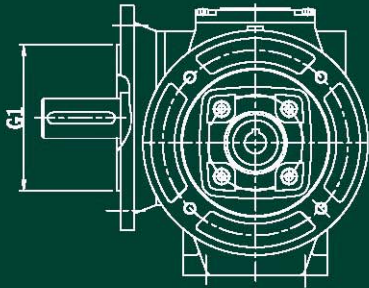
入力孔  
INPUT-BORE VIEW



出力軸  
OUTPUT-SHAFT VIEW

單位unit: mm

出、入力軸/軸徑尺寸公差 OUTPUT & INPUT SHAFT		
DIAMETER	k6	m6
> $\phi$ 14~18	+0.012	+0.018
	+0.001	+0.007
> $\phi$ 18~30	+0.015	+0.021
	+0.002	+0.008
> $\phi$ 30~50	+0.018	+0.025
	+0.002	+0.009
> $\phi$ 50~80	+0.021	+0.030
	+0.002	+0.011
> $\phi$ 80~120	+0.025	+0.035
	+0.003	+0.013



單位unit: mm

出、入力軸/軸徑尺寸公差 OUTPUT & INPUT SHAFT	
DIAMETER G1	h7
> $\phi$ 80~120	0
	-0.035
> $\phi$ 120~180	0
	-0.04
> $\phi$ 180~250	0
	-0.046
> $\phi$ 250~315	0
	-0.052
> $\phi$ 315~400	0
	-0.057
> $\phi$ 400~500	0
	-0.063

出力轉速 > 100R.P.M. 使用中油國光牌HD220極壓機油或同級品  
 output RPM > 100R.P.M. please use CPC HD-220 E.P.lubricant or equivalent  
 出力轉速 < 100R.P.M. 使用中油國光牌HD320極壓機油或同級品  
 output RPM < 100R.P.M. please use CPC HD-320 E.P.lubricant or equivalent

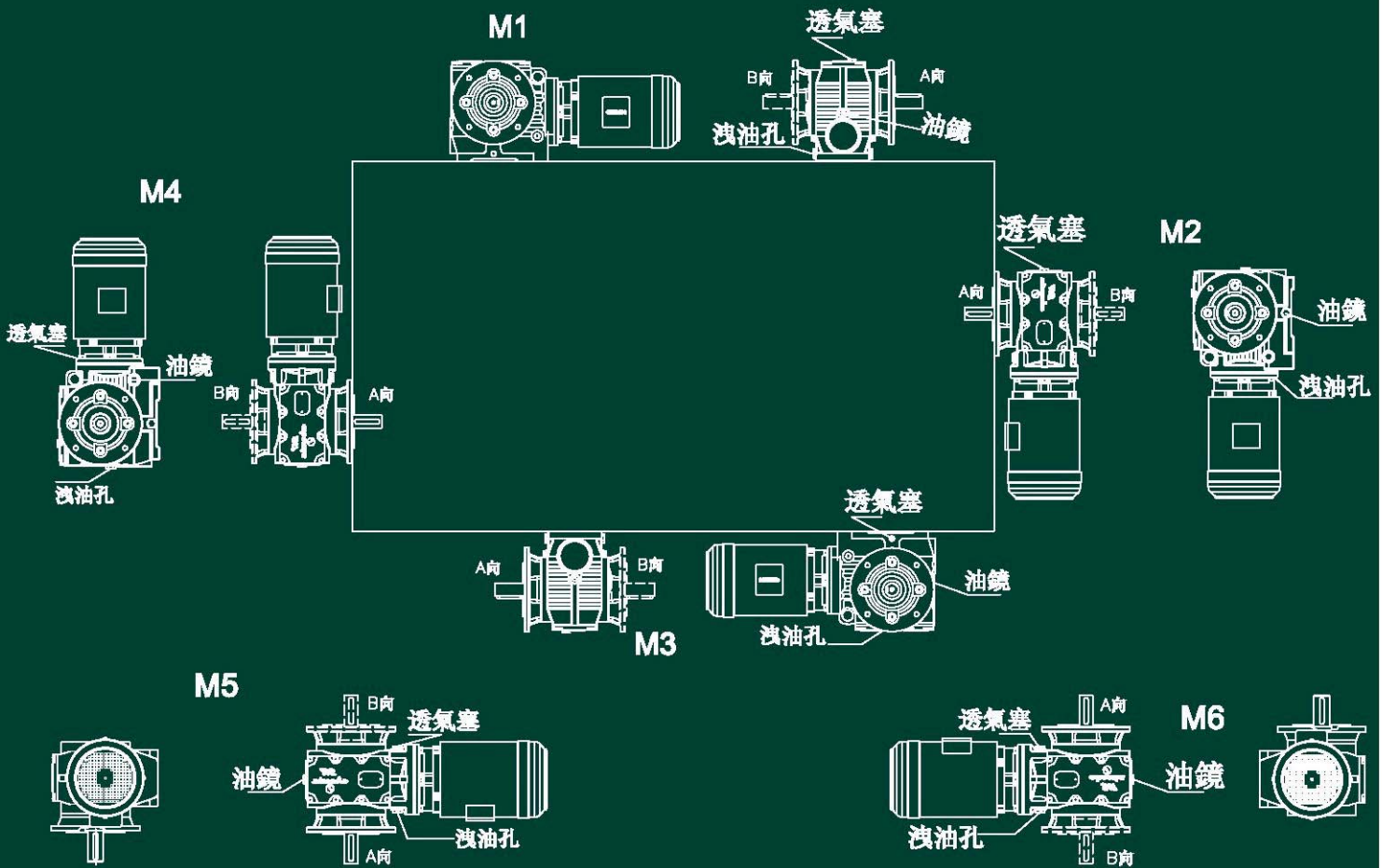
潤滑油選定參數表 Selection Table of Lubricant  
 標準負荷，入力轉速600PRM或以上 Standard Load, Input 600 RPM or more.

環境溫度 Temperature (C°)	中國石油 CPC	ISO VG	Mobil	Shell
-30~-15	HD 100	VG 100	Mobilgear 627	Omala 100
-15~-3	HD 150	VG 150	Mobilgear 629	Omala 150
-3~23	HD 220	VG 220	Mobilgear 630	Omala 220
23~40	HD 320	VG 320	Mobilgear 632	Omala 320
40~80	HD 460	VG 460	Mobilgear 634	Omala 460

超重負荷，入力轉速600RPM以上 Heavy Load, Input 600 RPM or more.

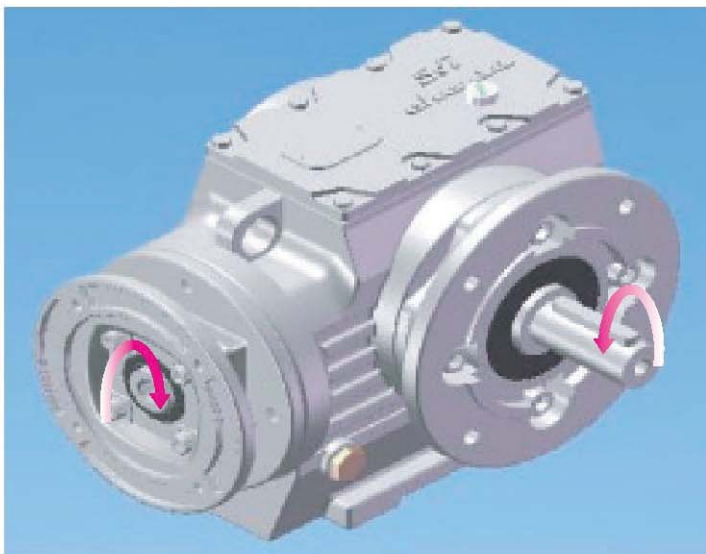
環境溫度 Temperature (C°)	中國石油 CPC	ISO VG	Mobil	Shell
-30~-15	HD 150	VG 150	Mobilgear 629	Omala 150
-15~-3	HD 220	VG 220	Mobilgear 630	Omala 220
-3~23	HD 320	VG 320	Mobilgear 632	Omala 320
23~40	HD 460	VG 460	Mobilgear 634	Omala 460
40~80	HD 680	VG 680	Mobilgear 636	Omala 680

# 安裝位置 Mounting Position



請注意：安裝位置軸承需要特殊的潤滑方式。請詢問本公司的服務人員。

NOTE: Please specify if position is required. (Special Lubrication design on bearings.)



斜齒+蝸齒輪減速

旋轉方向：出力軸與入力  
軸旋轉方向不同方向（如圖）  
output shaft and input shaft in  
opposite directions.  
(refer to picture)



# 斜齒+蝸齒輪減速機 ※ 許可輸入功率及輸出扭矩表

每日8-10小時連續運轉並在均勻載荷情況下 Service Factor (K=1.2)  
 Applies for continuous service free from recurrent shock loading and does not exceed 10 hours per day.

SIZE: 37型						
公稱速比 Nominal ratio	實際速比 Actual ratio	入力1750 input rpm		入力1450 input rpm		入力功率 input kw
		出力轉速 Output rpm	出力扭矩 Output Torque kgm	出力轉速 Output rpm	出力扭矩 Output Torque kgm	
157	157.4	11.11	7.43	9.21	8.97	0.16
144	144.4	12.11	7.37	10.04	8.90	0.17
123	122.9	14.23	7.52	11.79	9.08	0.20
99	98.80	17.71	7.08	14.67	8.55	0.23
86	86.36	20.26	6.85	16.79	8.27	0.25
81	80.95	21.61	7.05	17.91	8.52	0.27
71	71.44	24.49	6.80	20.29	8.21	0.29
63	63.33	27.63	6.76	22.89	8.17	0.32
56	55.92	31.29	6.59	25.92	7.95	0.29
51	51.30	34.11	6.55	28.26	7.90	0.31
44	43.68	40.06	6.56	33.19	7.85	0.36
35	35.10	49.85	6.38	41.31	7.71	0.43
31	30.68	57.03	6.10	47.25	7.36	0.47
29	28.76	60.84	6.10	50.41	7.44	0.50
25	25.38	68.95	5.98	57.13	7.22	0.55
23	22.50	77.77	5.95	64.44	7.19	0.61
20	19.89	88.00	4.27	72.91	5.16	0.46
18	18.24	95.94	4.26	79.49	5.15	0.50
16	15.53	112.6	4.11	93.37	4.97	0.56
13	12.48	140.2	3.94	116.2	4.76	0.66
11	10.91	160.4	3.91	132.9	4.73	0.75
10	10.23	171.1	3.81	141.7	4.61	0.78
9	9.02	193.9	3.71	160.6	4.48	0.86
8	8.0	218.7	3.63	181.2	4.39	0.95

標示※最大輸入功率為1.1kw Max:1.1kw

SIZE: 47型						
公稱速比 Nominal ratio	實際速比 Actual ratio	入力1750 input rpm		入力1450 input rpm		入力功率 input kw
		出力轉速 Output rpm	出力扭矩 Output Torque kgm	出力轉速 Output rpm	出力扭矩 Output Torque kgm	
202	201.47	8.68	13.41	7.20	16.18	0.23
175	175.4	9.97	12.18	8.26	14.7	0.24
158	158	11.08	11.89	9.18	14.34	0.26
143	142.8	12.25	11.57	10.15	13.96	0.28
113	112.7	15.52	11.42	12.86	13.77	0.35
94	93.55	18.7	11.37	15.5	13.72	0.42
84	84	20.83	11.18	17.26	13.49	0.46
72	71.75	24.39	11.21	20.21	13.53	0.54
61	60.83	28.77	11.09	23.83	13.38	0.63
60	60.56	28.9	11.07	23.94	13.36	0.45
55	54.55	32	10.86	26.58	13.10	0.49
49	49.3	35.5	10.82	29.41	13.05	0.54
39	38.92	44.96	10.75	37.25	12.97	0.68
32	32.3	54.18	10.63	44.89	12.82	0.81
29	29	60.34	10.6	50	12.79	0.90
25	24.77	70.65	10.06	58.53	12.14	1.00
21	21	83.33	9.385	69.04	11.32	1.10
20	20.69	84.58	9.286	70.8	11.20	0.96
19	18.7	93.58	8.743	77.54	10.55	1.00
15	14.76	118.56	8.281	98.23	10.0	1.20
12	12.25	142.86	8.018	118.3	9.67	1.40
11	11	159.09	8.228	131.8	9.93	1.6*
9	9.39	186.37	7.902	154.4	9.53	1.8*
8	7.97	219.57	7.825	181.9	9.44	2.1*

標示※最大輸入功率為1.5kw Max:1.5kw

SIZE: 57型						
公稱速比 Nominal ratio	實際速比 Actual ratio	入力1750 input rpm		入力1450 input rpm		入力功率 input kw
		出力轉速 Output rpm	出力扭矩 Output Torque kgm	出力轉速 Output rpm	出力扭矩 Output Torque kgm	
202	201.47	8.68	22.6	7.20	27.28	0.32
175	175.4	9.97	22.14	8.26	26.72	0.36
158	158	11.08	21.6	9.18	26.07	0.39
143	142.8	12.25	21.53	10.15	25.98	0.43
113	112.7	15.52	21.33	12.86	25.75	0.54
94	93.55	18.7	20.99	15.5	25.33	0.64
84	84	20.83	20.91	17.26	25.23	0.74
72	71.75	24.39	20.88	20.21	25.02	0.83
61	60.83	28.77	20.47	23.83	24.71	0.96
60	60.56	28.9	19.46	23.94	23.49	0.77
55	54.55	32	18.9	26.58	22.81	0.83
49	49.3	35.5	18.5	29.41	22.35	0.90
39	38.92	44.96	17.87	37.25	21.58	1.1
32	32.3	54.18	17.52	44.89	21.15	1.3
29	29	60.34	16.94	50	20.45	1.4
25	24.77	70.65	15.0	58.53	18.09	1.45
21	21	83.33	14.46	69.04	17.45	1.65
20	20.69	84.58	12.57	70.8	15.17	1.3
19	18.7	93.58	12.67	77.54	15.3	1.45
15	14.76	118.56	12.07	98.23	14.57	1.75
12	12.25	142.86	11.45	118.3	13.82	2
11	11	159.09	11.31	131.8	13.65	2.2*
9	9.39	186.37	10.97	154.4	13.24	2.5*
8	7.97	219.57	10.06	181.9	12.14	2.7*

標示※最大輸入功率為2.2kw Max:2.2kw

SIZE: 67型						
公稱速比 Nominal ratio	實際速比 Actual ratio	入力1750 input rpm		入力1450 input rpm		入力功率 input kw
		出力轉速 Output rpm	出力扭矩 Output Torque kgm	出力轉速 Output rpm	出力扭矩 Output Torque kgm	
208	207.9	8.42	40	6.97	48.3	0.55
190	190.1	9.2	40	7.62	48.3	0.6
168	168	10.41	39.47	8.63	47.63	0.67
148	148	11.82	39.44	9.79	47.6	0.76
121	121.3	14.42	39.13	11.96	47.2	0.92
114	114.3	15.31	38.88	12.68	46.91	0.97
99	98.7	17.73	38.07	14.69	45.94	1.1
78	78	22.43	36.92	18.58	44.56	1.35
68	67.85	25.79	35.69	21.37	43.07	1.5
66	65.63	26.67	34.7	22.1	41.88	1.25
58	58	30.17	34.35	25	41.45	1.4
51	51.1	34.24	34.15	28.37	41.21	1.58
40	39.47	44.33	33.39	36.73	40.3	2
34	34.08	51.35	33.16	42.64	40.01	2.3
27	26.93	64.98	31.9	53.84	38.49	2.8
23	23.42	74.72	30.71	61.91	37.06	3.1
20	20.3	86.20	30	71.42	36.27	3.5
22	22	79.54	23.94	65.9	28.89	2.3
16	15.89	110.13	23.3	91.25	28.12	3.1
15	14.97	116.9	23.37	96.86	28.2	3.3
13	12.93	135.34	23.24	112.14	28.05	3.8*
10	10.21	171.4	23.18	142.02	27.98	4.8*
9	8.88	196.96	22.28	163.2	26.88	5.3*
8	7.7	222.27	21.13	188.3	25.50	5.8*

標示※最大輸入功率為3.7kw Max:3.7kw

每日8-10小時連續運轉並在均勻載荷情況下 Service Factor (K=1.2)  
 Applies for continuous service free form recurrent shock loading and does not exceed 10 hours per day.

SIZE: 77型						
公稱速比 Nominal ratio	實際速比 Actual ratio	入力1750 Input rpm		入力1450 Input rpm		入力功率 Input kw
		出力轉速 Output rpm	出力扭矩 Output Torque kgm	出力轉速 Output rpm	出力扭矩 Output Torque kgm	
190	189.5	9.23	90.4	7.65	109.2	1.3
182	182	9.61	90.3	7.96	108.9	1.4
168	167.6	10.44	90.0	8.65	108.4	1.5
130	130	13.46	86.0	11.15	103.7	1.8
107	106.7	16.4	78.39	13.59	94.60	2.0
95	95	18.42	76.77	15.26	92.65	2.2
85	85.22	20.53	75.13	17.01	90.67	2.4
79	78.46	22.30	74.93	18.48	90.43	2.6
67	66.67	26.25	73.47	21.74	88.67	3.0
56	55.87	31.32	72.27	25.95	87.21	2.8
43	43.33	40.38	72.0	33.46	86.96	3.6
36	35.56	49.21	73.92	40.77	89.21	4.5
32	31.67	55.25	73.15	45.78	88.28	5.0
28	28.41	61.6	72.18	51.03	87.11	5.5
26	26.15	66.92	71.27	55.45	86.01	5.9
22	22.22	78.76	70.82	65.25	85.48	6.9
24	23.47	74.56	62.91	61.78	75.92	5.6
18	18.2	96.15	60.10	79.67	72.54	6.9
15	14.93	117.21	57.88	97.12	69.86	8.1*
13	13.3	131.58	54.74	131.58	66.07	8.6*
12	11.93	146.69	54.24	146.69	65.47	9.5*
11	10.98	159.38	53.08	159.38	64.06	10.1*
9	9.33	187.5	51.37	155.35	62	11.5*

標示※最大輸入功率為7.5kw Max:7.5kw

SIZE: 87型						
公稱速比 Nominal ratio	實際速比 Actual ratio	入力1750 Input rpm		入力1450 Input rpm		入力功率 Input kw
		出力轉速 Output rpm	出力扭矩 Output Torque kgm	出力轉速 Output rpm	出力扭矩 Output Torque kgm	
175	174.5	10.03	167.1	8.309	201.66	2.53
152	151.7	11.53	160.8	9.55	194.02	2.8
117	116.9	14.97	159.3	12.4	192.23	3.6
99	99.26	17.63	146.5	14.6	176.82	3.9
87	86.67	20.19	164.5	16.73	162.31	4.1
82	81.6	21.44	132.8	17.76	160.27	4.3
64	64	27.34	123.5	22.65	149.09	5.1
55	55.27	31.66	113.7	26.23	137.22	4.8
48	48.03	36.43	111.2	30.19	134.15	5.4
37	37.03	47.25	111.1	39.15	134.07	7.0
31	31.43	55.67	110.5	46.13	133.3	8.2
27	27.44	63.77	109.4	52.84	131	9.3
26	25.84	67.72	108.5	56.11	131	9.8
20	20.07	86.33	107.7	71.53	130	12.4
21	21.23	82.43	87.38	68.29	105.46	8.7
16	16.37	106.9	86.74	88.57	104.68	11.2
14	13.9	125.9	86.14	104.31	103.97	13.1
12	12.13	144.27	83.21	119.53	100.42	14.5
11	11.42	153.24	81.04	126.97	97.8	15
9	8.96	195.31	72.06	161.83	86.96	17

標示※最大輸入功率為15kw Max:15kw

SIZE: 97型						
公稱速比 Nominal ratio	實際速比 Actual ratio	入力1750 Input rpm		入力1450 Input rpm		入力功率 Input kw
		出力轉速 Output rpm	出力扭矩 Output Torque kgm	出力轉速 Output rpm	出力扭矩 Output Torque kgm	
220	231.67	7.55	324.6	6.25	386	3.4
194	196.52	8.90	315.2	7.37	380.5	4.0
181	180.92	9.67	308.8	8.01	372.7	4.2
162	161.7	10.82	299.8	8.96	361.8	4.5
142	145.6	12.02	293.8	9.95	354.9	4.9
132	131.85	13.27	280.7	10.99	338.8	5.1
113	116.92	14.96	263.7	12.40	318.1	5.4
106	105.7	16.55	260.4	13.71	314.2	5.9
90	89.6	19.53	256.1	16.18	309.1	6.7
78	78.26	22.36	241.7	18.52	291.7	7.3
67	65.45	26.73	234.3	22.15	282.8	8.2
56	55.79	31.36	259.4	25.98	313.8	9.6
50	49.87	35.09	258.4	29.07	311.3	10.7
44	40.65	43.05	257.8	35.67	311	13.1
41	36.05	48.54	257.8	40.22	311	14.5
35	32.60	53.68	256.5	44.47	309.6	15.2
33	27.63	63.33	242.2	52.47	292.3	17.5
28	26.39	66.31	204.5	54.94	246.8	15.3
24	23.59	72.52	203.1	60.09	245.1	16.8
26	21.23	66.69	198.5	55.26	239.5	18.7
19	19.23	91.00	191.7	75.40	231.4	19.8
15	15.42	113.48	186.3	94.03	224.9	24*
11	11.41	153.37	173.9	127.08	209.8	29.6*
10	9.55	183.24	160.1	151.83	193.2	32*

標示※最大輸入功率為22kw Max:22kw

# HELICAL+WORM GEAR REDUCERS

## OPERATION MANUAL

- This operation manual is trying to help you install and use speed reducer correctly. To prevent problem occurred, proper installation and operation is very crucial. Certainly, this operation manual will also suggest you how to maintain in order to extend the life of speed reducer.
- Every CHENTA speed reducer is passed strict inspection and testing and well packaged before shipping. However when you receive speed reducer, please check immediately if there is any shortage or damage of the parts via transportation. This will be much helpful as evidence when you offer claim to the transportation carrier, meanwhile please also notice us for improving our transportation service with a qualified and responsible carrier. Also, we are eager to help to fix the problem for you and to reduce your inconvenience to the minimum.

### I. Lubrication

1. Unless it's a special request from customer, every CHENTA speed reducer will be supplied with proper quantity lubricant according to different installation position before shipping. If customer prefers to fill in the lubricant oil by himself, please follow the instruction of operation manual in latter pages in this catalog.

### II. Storage

1. If you won't install the speed reducer soon, please keep it out from humid place. And, please contact our service people if you want to install speed reducer for operation after storage. Our service people will inform you what should be noticed and checked in advance before operation.

### III. Attachments the parts on reducer's shaft

1. Notice : Don't hit on shafts heavily. It will cause bearings damaged and shorten the life of bearings. We prefer to suggest use heating method, to heat the parts up to 80°C, it could easily slip in on the shafts and reduce the possibility of bearings damaged. As to the tolerance of shaft's diameter, please refer to the specification in catalog.
2. While install the coupling, make sure to check the alignment of coupling and shaft of speed reducer properly to eliminate the damage on bearings and reduce to vibration frequency and abnormal wear.
3. To avoid over load on the bearings of output shaft, please refer to the OHL (over hung loading) in catalog and don't exceed. If exceed or extra axial or radial loading, please contact our service engineer for consultation.
4. The actual application of following factors such as input and output speed, direction of rotation, installation site and over axial and radial loading should be careful to watch.

### IV. Installation & Operation

1. The under lying factors should be taken into consideration:
  - \* Ambient temperature below 40°C
  - \* Location with good air ventilation
  - \* Proper locations for oil plug, breather plug and drain plug
  - \* Sufficient space for periodical inspection or maintenance of replacement
2. To install necessarily on a flat, stable and solid base for accurate alignment to prevent from the breakage of reducer's housing.
3. The suggested tolerance of flatness on base:
  - For size 77 or smaller, < 0.1 mm/m
  - For size 87 or bigger, < 0.2 mm/m
4. To avoid the lubricant splash out during the transportation, breather plug with red pin inserted into air breathing hole. Please remove the red pin before start-up.
5. Before installation, double check the input horsepower and ratio is the same as the punched name plate of reducer.

### V. Maintenance

Be aware! The power should be off before removal or replacement of reducer.

1. Oil level and quality lubricant is key point of daily maintenance. Please refer to our suggestion to change the lubricant periodically according to the operation frequency site situation.
2. Check the alignment of coupling, the tightness of chain, and nuts and keep clean of reducer.

# HELICAL+WORM GEAR REDUCERS

## I. INSTALLATION

1. Input shaft connects to motor directly, a flexible coupling prefer to apply according; output shaft connects to machine, it is better to use a gear coupling.
2. Install on a stable foundation and good air ventilation and the convenience of oil filling / draining should be considered.
3. The input shaft of the reducer and the motor shaft should be in alignment and the tolerance should fit the allowance.
4. After installation, please check input shaft by hand first to check whether running smoothly of nut.
5. Before start-up, no-load running test should be proceeded and any abnormal status occurred should be corrected immediately.

## II. LUBRICATION

1. A new reducer needs replace oil in the beginning of 500 hrs operation; and then, each 2,500 hrs change again. Moreover, a regular oil checking is required and change necessarily.
2. Please change by equivalent specification of oil and don't mix with other brand of specification of oil.
3. Before changing oil, the inside of reducer should be flushed and drain out, then fill in new oil.
4. During operation, if the heat is over 80°C or any abnormal noise occurred, please shut down the reducer for checking immediately and start running only after the cause is resolved.
5. Lubricant recommendation: MOBIL gear 632, SHELL omala 320 or MOBIL mobilube HD80W-90, SHELL spirax E.P. 90.

## III. MAINTENANCE

1. A regular maintenance is required and if found any worn out, corrective action should be taken. The accuracy of spare parts replaced should be exactly the same as the original standard and no-load running test in advance is required.
2. Build maintenance system and data collection of failure carefully for all problems been met.

## Cause & Trouble shooting for the general problem and Improvement

The following lists are general problem situations. In case other problem happen, please contact directly with us to get more information.

CAUSE	REASON	IMPROVEMENT
1. Overheat	<ol style="list-style-type: none"> <li>1. overload</li> <li>2. lubricant oil overfill or shortage</li> <li>3. improper lubricant oil</li> <li>4. over friction on oil seal (lack of lubricant)</li> </ol>	<ol style="list-style-type: none"> <li>1. adjust to proper loading</li> <li>2. Add lucricant to the level of oil gauge</li> <li>3. change proper lubricant oil</li> <li>4. Lip lubricant at oil seal</li> </ol>
2. Noise	<ol style="list-style-type: none"> <li>1. consistant noise { improper gears contact; bearing damaged</li> <li>2. screaming noise { bearing gap too small; lubricant oil shortage</li> <li>3. consistant noise { some object insert ; bearing damaged</li> </ol>	<ol style="list-style-type: none"> <li>1. { repair gears ; replace bearing</li> <li>2. { replace bearing ; fill in lubricant oil</li> <li>3. { remove debris &amp; replace lubricant oil ; replace bearing</li> </ol>
3. Vibration	<ol style="list-style-type: none"> <li>1. gear over-fricative</li> <li>2. Debris inside</li> <li>3. bearing worn-out or damaged</li> <li>4. bolt loose</li> </ol>	<ol style="list-style-type: none"> <li>1. replace gear</li> <li>2. remove debris &amp; replace lubricant oil</li> <li>3. replace bearing</li> <li>4. tighten bolt</li> </ol>
4. Oil Leakage	<ol style="list-style-type: none"> <li>1. oil seal damaged</li> <li>2. gasket damaged</li> <li>3. drain plug loose</li> <li>4. covers or flange loose</li> </ol>	<ol style="list-style-type: none"> <li>1. replace oil seal</li> <li>2. replace gasket</li> <li>3. tighten drain plug</li> <li>4. tighten the bolts</li> </ol>
5. Input and Output Shaft Fail	<ol style="list-style-type: none"> <li>1. overheat cause gear-bound.</li> <li>2. bearing damaged</li> <li>3. some debris between gears</li> </ol>	<ol style="list-style-type: none"> <li>1. adjust or replace gears</li> <li>2. replace bearing</li> <li>3. remove debris; clean inside then replace lubricant oil</li> </ol>
6. Input shaft fail to drive output shaft	<ol style="list-style-type: none"> <li>1. gear worn-out</li> <li>2. the key connecting gear and output shaft damaged</li> <li>3. input shaft broken</li> <li>4. output shaft broken</li> </ol>	<ol style="list-style-type: none"> <li>1. replace gears</li> <li>2. replace key</li> <li>3. replace input shaft</li> <li>4. replace output shaft</li> </ol>
7. Gear Worn-out	<ol style="list-style-type: none"> <li>1. overload</li> <li>2. improper lubricant oil</li> <li>3. lubricant oil shortage</li> <li>4. ambient temperature too high</li> </ol>	<ol style="list-style-type: none"> <li>1. adjust to proper loading</li> <li>2. change proper lubricant oil</li> <li>3. refill lubricant oil</li> <li>4. ventilation improvement</li> </ol>



**成大精機工業股份有限公司**  
**CHENTA GEAR SPEED REDUCER**  
**CHENTA PRECISION MACHINERY IND. INC.**  
**JEN WU MACHINERY CO., LTD.**

**總公司**

**Head Office / Plant**

台灣高雄縣814仁武鄉鳳仁路後庄巷118號  
 NO. 118 HALL TRAN LANE, JEN WU,  
 KAOHSIUNG COUNTY, TAIWAN

Tel: 886-7-3727007

Fax: 886-7-3727267

Http://www.chenta.com

E-mail: sales@chenta.com

**美國分公司**

**U.S.A Office**

CHANNEL POWER / CHENTA GEAR U.S.A

Tel: 1-973-244-1750

Fax: 1-973-244-1746

E-mail: albert@chenta.com

**上海公司**

**Shanghai Plant**

上海市嘉定區馬陸鎮上海機械工業園區

敬學路158號 郵編: 201801

NO. 158 JING-XUE ROAD, MA-LU TOWN,

JIA-DING DISTRICT, SHANGHAI, CHINA.

ZIP CODE: 20801

Tel: 86-21-69156255

Fax: 86-21-69156605

E-mail: cysd@chenta.com