



Planetary Gearbox Operation Manual



Thank you for selecting SESAME products. Please read this manual before operation.



Safety Standards: The safety standard marks are indicated on the nameplates of approved products.

1. NOTE

1.1 Preparation before installation

Please read this operation manual before using this Gearbox. Any problems caused by inappropriate operation contrary with the manual, or damage caused by natural disasters, or restructure the Gearmotor without our permission, Sesame will not hold any responsibility nor will the Gearbox be cover by warranty.

- ◆ Warranty start within one year after purchase the Gearbox. Within warranty period, if Gearbox damage is not cause by operation error nor by natural disaster, then please send back the Gearbox, we should replace the damage spare part at free of charge.
- ◆ Installation, Disassemble, Maintenance on the gearbox, needed to be performing by Train Profession.
- ◆ According to the application and operation environment, the gearbox temperature might be raising after period of running. Please do not touch the gearbox directly during operation, or right off from operation.
- ◆ Do not touch any rotating components when the gearbox is running. Ensure that the plugs of the gearbox were inserted after installation. Avoid any small object fall into the gearbox.
- ◆ Handle the gearbox gently during installation, as the component is precision. Therefore, do not knock the gearbox by any tool, In order to avoid the influence of running accuracy.
- ◆ Do not disassemble or transformation of Gearbox, or they may be injured or cause damage to equipment.
- ◆ The Gearbox is a sealed design, oil belongs to semi-solid advanced synthetic oil, and therefore it is no need for change oil.

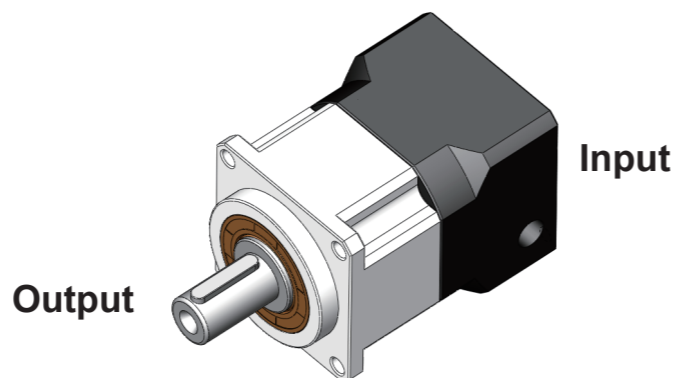
1.2 Installation environment limitation

Gearbox must install under following term, do not accord with those term, as the gearbox might be damage, and which will not be cover by the warranty.

- ◆ Gearbox is design or manufacturing, for use in the other of mechanical equipment assembly.
- ◆ Avoid Gearbox used in flammable gas or corrosion gas environment.
- ◆ Operate temperature is between -10 to + 90°C.
- ◆ Humidity: no more than 85%, in order to avoid condensation.
- ◆ Operate altitude may not be higher than 1000m above sea-level
- ◆ Avoid direct sunlight, dust accumulation.
- ◆ Avoid continuity vibration or hit.
- ◆ Used in good ventilated place.

2. Gearbox Introduction

As shown below, the input side is for installing the servo motor and the output is join the application equipment.

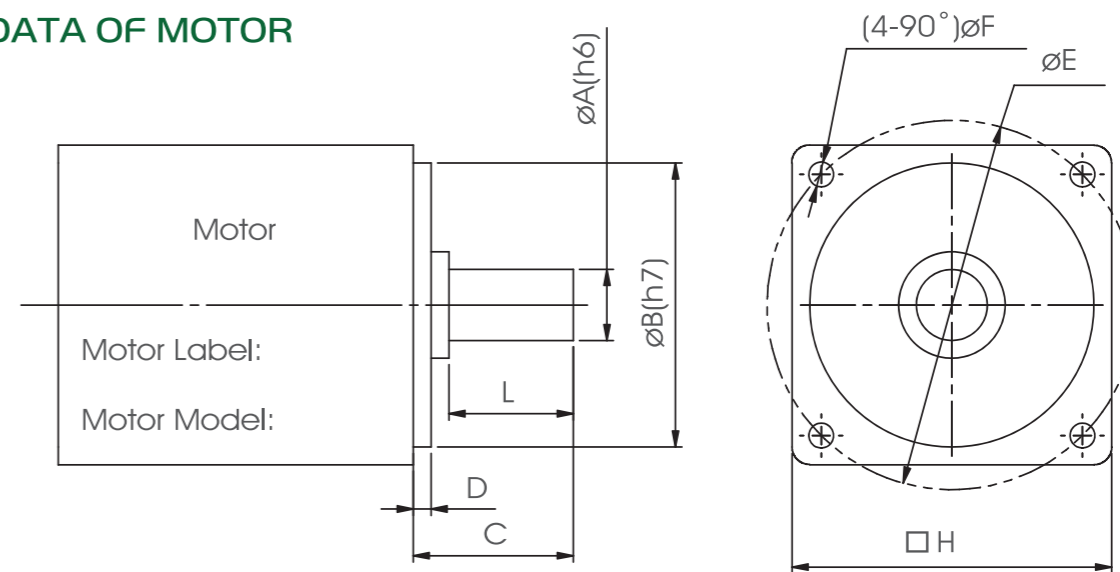


To ensure the product performance, both the input and output ends must be protected carefully to avoid any damage, and cause improper operation.

3. Coding System

P	Planetary	H : Exactitude Helical Series
G	Grade	G : Precision Series E : Efficient Series U : Heavy Duty Series
L	Connection	L : Square Housing with Flange C : Round Housing without Flange E : Round Housing with Flange R : Right Angle F : Plate Type H : Square Flange Helical Gear (Square Flange Helical Gear for G Grade (Precision Series) Only) B : Muti-Ratio Series T : Muti-Shafted Series P : Light Load Series
60	Size	42:□42 60:□60 90:□90 115:□115 142:□142 180:□180 220:□220
I		
30	Speed Reduction Ratio	Single Stage:3,4,5,6,7,8,9,10 Double Stage:12,15,20,25,30,35,40,45,50,60,70,80,90,100 Multi-Stage: 125~1000
P1	Backlash	P0: Micro Backlash P1: Precision Backlash P2: Standard Backlash
Y	Customer Specification	
MOTOR	Motor Model	

FILL IN DATA OF MOTOR



SPECIFICATIONS

Motor Shaft Dia.	Flange Dia.	Motor Shaft Length	Flange Height	P.C.D of Bore	Bore Dia.	Motor Flange Square	Actual Length of Motor Shaft	Backlash
øA(h6)	øB(h7)	C	D	øE	øF	□H	L	P0/P1/P2



感謝您選用世協電機產品，
在安裝及操作本產品前，請詳細閱讀本說明書



認證聲明：因各國安規之差異關係，產品銘牌上列出安規標章者，即為符合該驗證。

1. 注意事項

1.1 安裝前準備

- ◆ 使用前請熟讀“操作說明書”，若因人為原因、非產品本身原因或天災發生等因素而導致不良或損壞，在操作時違反本說明書所示內容而造成的損害，或未依照原本設計之使用方式及非經由本公司進行的改裝及維修所造成的故障，本公司將不承擔任何賠償責任，特此聲明，敬請見諒。
- ◆ 本公司的產品保固期間為購買產品後一年內。保固期限內，若產品因非人為因素而發生故障，客戶將產品寄回，本公司免費更換受損零件。
- ◆ 減速機之安裝，拆卸，保養，須由專業技術人員進行之。
- ◆ 依據安裝環境之通風狀況，長時間連續運轉下可能使得減速機溫度升高，運轉中與剛停機後請避免直接碰觸減速機。
- ◆ 運轉中請勿接觸任何旋轉中之部件，減速機安裝完畢後請務必將側面的塞頭回塞，以避免細小物品掉入減速機中。
- ◆ 減速機為精密零組件，安裝過程中，請勿以軟鎚或者工具敲擊減速機本體，以避免影響運轉精度。
- ◆ 請勿對減速機進行拆解或改造，否則有可能受傷或造成設備受損。
- ◆ 減速機為密封式設計，油品屬半固態高級合成油，不需換油。

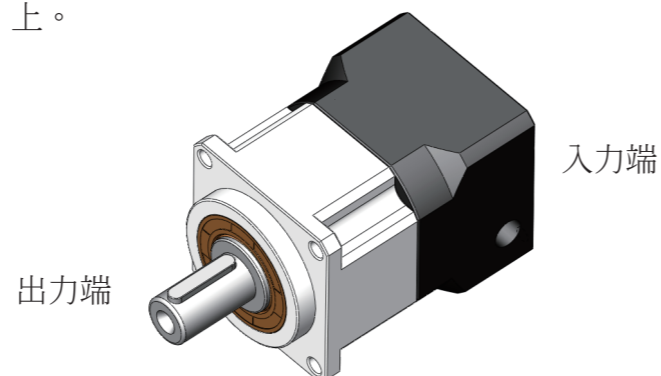
1.2 安裝環境的限制

減速機必須依據下列條件安裝，不符合下列之安裝條件及使用環境將會損害到本產品，不在保固範圍內。

- ◆ 本產品之設計或製造，為使用裝配於其他之機械設備上。
- ◆ 避免將減速機使用於可燃氣體或腐蝕氣體之環境。
- ◆ 周圍使用溫度-10~+90°C。
- ◆ 溼度：不可超過85%，以避免水氣凝結。
- ◆ 高度：不可超過海平面1000公尺。
- ◆ 避免陽光直射，灰塵堆積。
- ◆ 避免水或油的噴濺。
- ◆ 避免連續性震動或撞擊。
- ◆ 使用於良好通風之場所。

2. 減速機介紹

減速機分為入力端與出力端，入力端用於安裝伺服馬達，出力端用於安裝在所需傳動的設備上。



入力端與出力端分別與伺服馬達以及應用端連結。在使用前必須小心保護，避免刮傷或者生鏽，影響安裝精度，造成運轉不順暢。

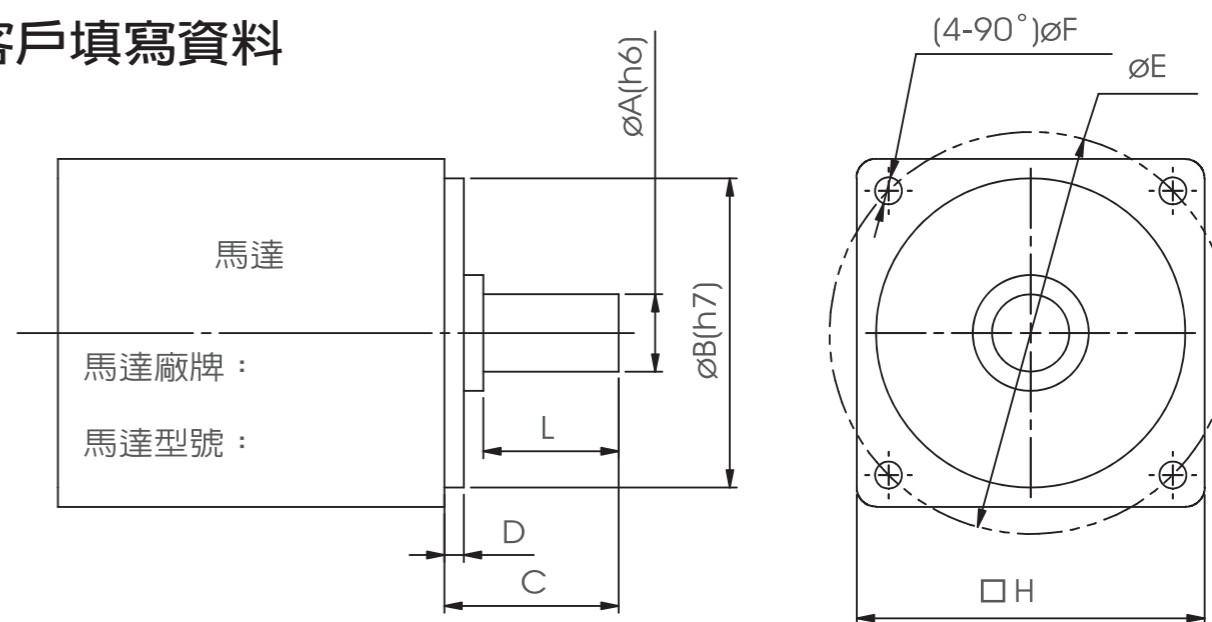
3. 型號定義

P	行星式減速機	
G	等級	H: 斜齒極精密型 G: 精密型 E: 實用型 U: 重負荷型
L	本體與連結方式	L: 方形有法蘭面 C: 圓形無法蘭面 E: 圓形有法蘭面 R: 直角型 F: 圓盤連結型 H: 方方法蘭面斜齒型 (適用於等級G精密型行星式減速機) B: 多比數型 T: 多輸出軸型 P: 輕負載型

60	框號	42: □42 60: □60 90: □90 115: □115 142: □142 180: □180 220: □220
I	減速比	單節式: 3,4,5,6,7,8,9,10 雙節式: 12,15,20,25,30,35,40,45,50,60,70,80,90,100 多節式: 125~1000
30		
I		
P1	背隙	P0: 超精密級 P1: 精密等級 P2: 標準背隙
I		
Y	特殊規格	
I		

MOTOR 馬達型號

客戶填寫資料



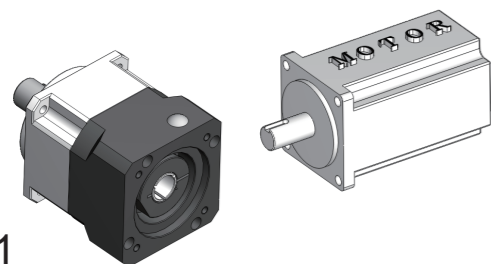
規格

馬達軸外徑	馬達凸緣外徑	馬達軸長度	馬達凸緣高度	螺絲孔中心距	螺絲孔直徑	馬達面尺寸	馬達軸有效長	要求背隙
øA(h6)	øB(h7)	C	D	øE	øF	□H	L	P0/P1/P2

4. MOTOR CONNECTIVITY WITH GEARBOX

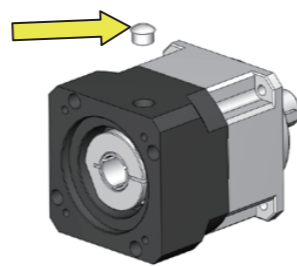
◆ 4.1

Check the motor and gearbox size. Clean the mounting surface.



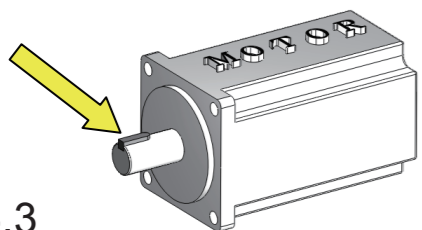
◆ 4.2

Take off the plug from the adapter plate. Revolve the set collar until the bolt is aligned with the hole.



◆ 4.3

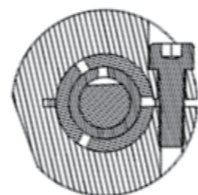
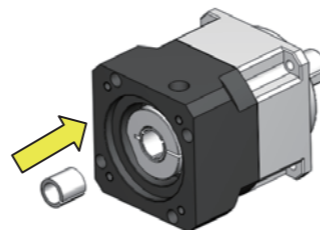
Remove the key from the motor shaft. Mounting the balance key if necessary.



◆ 4.4

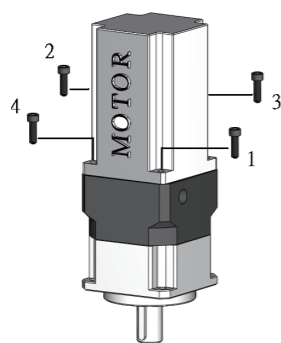
Make sure the motor shaft size. Choose the right bushing if necessary.

As installing on flatted shaft, be sure to align the collet gap over the flat and the set collar bolt perpendicular to the flat.



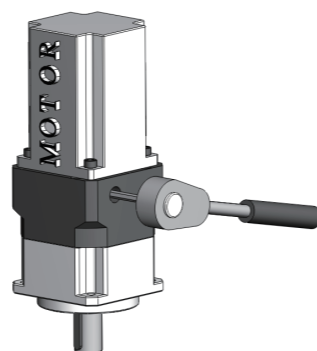
◆ 4.5

Tighten the mounting screws in 1~4 order with torque wrench to 5% specified torque.



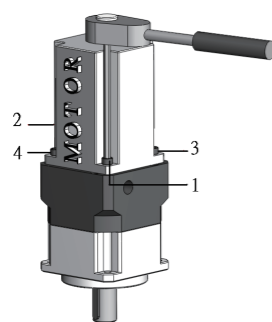
◆ 4.6

Tighten the set collar bolt with torque wrench to specified torque.



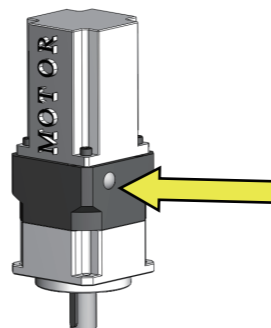
◆ 4.7

Tighten the mounting screws in 1~4 order with torque wrench to specified torque.



◆ 4.8

Put the plug back on the adapter plate.



Tightening Torque

Bolt Size	Width Across Flats	Strength 8.8 Tightening Torque		Strength 10.9 Tightening Torque		Strength 12.9 Tightening Torque	
		N-m	In-lb	N-m	In-lb	N-m	In-lb
M3*0.5P	2.5	1.3	12	1.8	16	2.1	19
M4*0.7P	3	3	27	4.1	37	4.9	44
M5*0.8P	4	6.1	55	8.2	73	9.8	87
M6*1P	5	11	98	14	124	17	151
M8*1.25P	6	25	222	34	302	41	364
M10*1.5P	8	49	434	67	594	80	709
M12*1.75P	10	85	753	116	1028	139	1232
M14*2P	12	137	1214	186	1648	223	1976
M16*2P	14	210	1860	286	2534	343	3038

5. TEST RUN & TROUBLE SHOOTING GUIDES

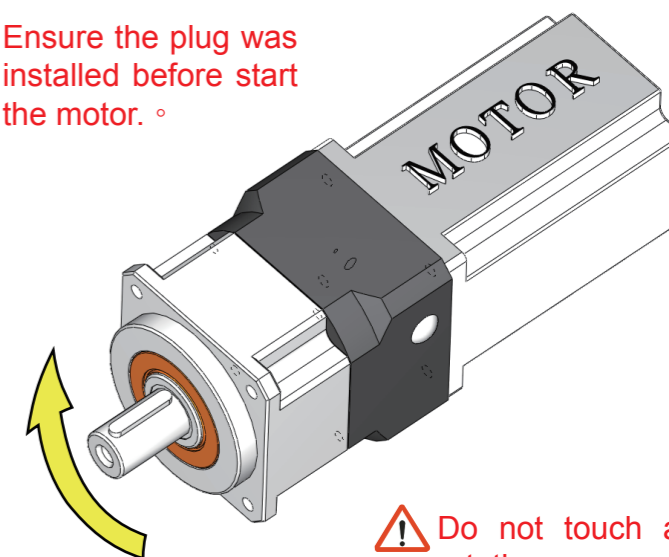
◆ 5.1

Power on the motor. Slowly drive the motor and adjust its mounting status until the gearbox is driven smoothly.

◆ 5.2

If the problem could not be solved via the procedures above, please DO NOT take apart of the motor, contact SESAME for technical support right away.

⚠ Ensure the plug was installed before start the motor. °



⚠ Do not touch any rotating component when the gearbox is running.

⚠ Attention

- ◆ Apply our product with other, please ensure it match other's requirement, specification, or limitation.
- ◆ Customer need to recheck our product is suitable for their current system or machinery usage.
- ◆ If customer is neglecting for rechecking, then Sesame is not responsible for any cause there might occur.

SESAME MOTOR CORP. :

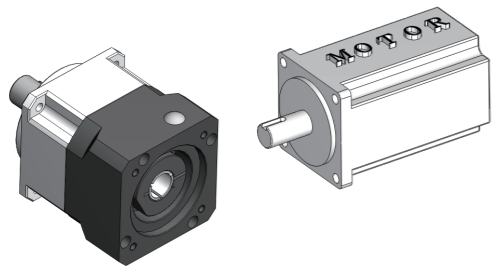
<http://www.sesamemotor.com.tw/>

E-mail: info@sesamemotor.com.tw

TEL: +886-4-2561-0011

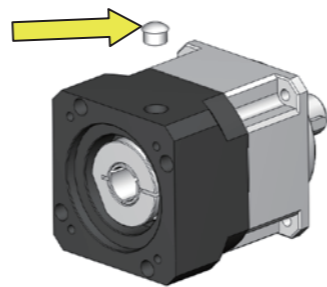
FAX: +886-4-2562-7766

4. 馬達與減速機的連結



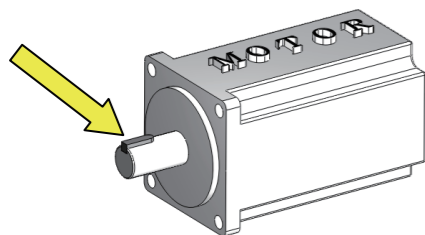
◆ 4.1

先確認馬達減速機規格是否正確，並將馬達與減速機之安裝面擦拭乾淨。



◆ 4.2

將連接板上扣式塞頭取下，轉動馬達鎖緊環，直到鎖緊環螺絲對準塞頭孔。

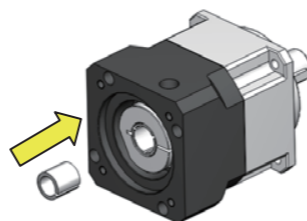


◆ 4.3

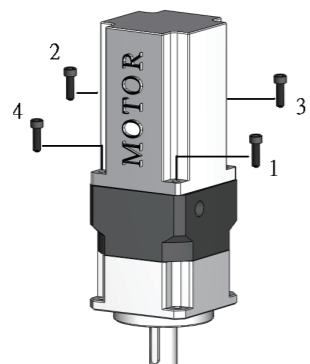
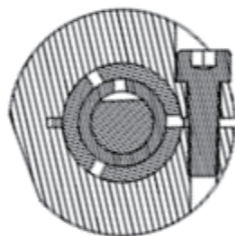
取下馬達上原先的鍵，如有必要，請安裝平衡鍵。

◆ 4.4

確認馬達軸心尺寸，軸心太小選用適當襯套。

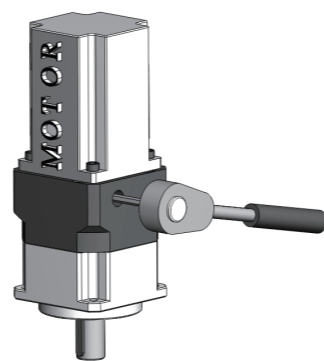


當馬達為平軸狀，對準襯套夾縫在平軸中心線，使鎖緊環螺絲與平軸面呈垂直。



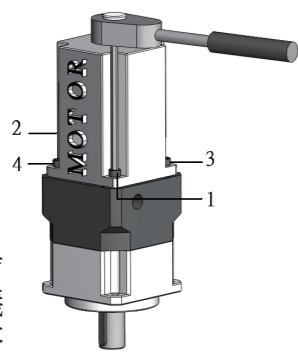
◆ 4.5

依螺絲尺寸，參考鎖緊螺絲扭力建議表的5%，依照1至4順序，將螺絲輕輕鎖上。



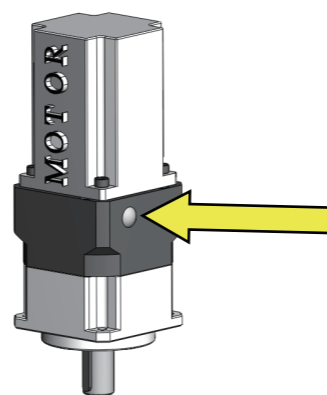
◆ 4.6

依螺絲尺寸將馬達與減速機直立擺設，參照鎖緊螺絲扭力建議表，以扭力扳手將馬達鎖緊環螺絲鎖緊。



◆ 4.7

依螺絲尺寸，參考鎖緊螺絲扭力建議表，依照1至4順序，用扭力扳手將螺絲鎖緊。



◆ 4.8

將扣式塞頭裝回。

鎖緊螺絲扭力建議表

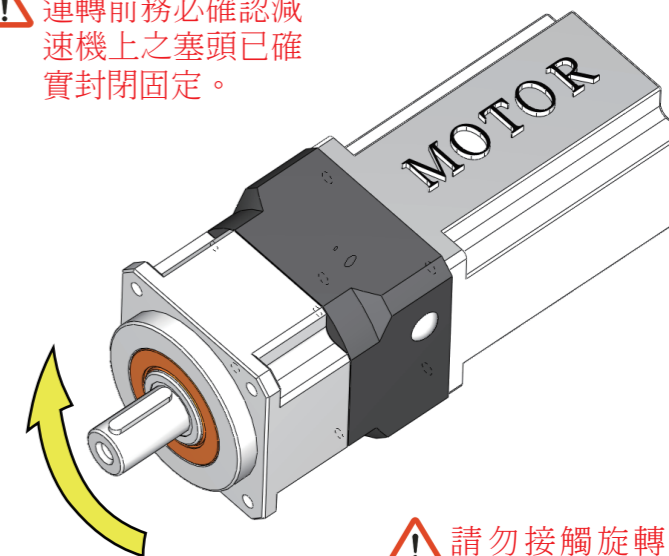
螺絲尺寸	六角頭尺寸 mm	強度8.8螺絲之鎖緊扭力		強度10.9螺絲之鎖緊扭力		強度12.9螺絲之鎖緊扭力	
		N-m	In-lb	N-m	In-lb	N-m	In-lb
M3*0.5P	2.5	1.3	12	1.8	16	2.1	19
M4*0.7P	3	3	27	4.1	37	4.9	44
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M12*1.75P	10	85	753	116	1028	139	1232
M14*2P	12	137	1214	186	1648	223	1976
M16*2P	14	210	1860	286	2534	343	3038

5. 運轉測試與故障排除

◆ 5.1

將馬達接上動力，以低轉速作正逆轉測試，確認運轉順暢。若有任何運轉不順暢產生，請調整至順暢運轉為止，再開始以正常工作速度運轉。

⚠ 運轉前務必確認減速機上之塞頭已確實封閉固定。



⚠ 請勿接觸旋轉中之部件!!!

◆ 5.2

若經以上檢查仍無法查出故障原因，請勿進行拆解，請儘快與世協電機聯絡，以取得技術協助。

⚠ 請注意

- ◆ 將本公司產品與其他產品搭配使用時，請確認是否符合客戶所需之規格、法規或限制等。
- ◆ 此外，請客戶自行確認目前所使用的系統、機械或是裝置是否適用於本公司產品。
- ◆ 如未確認是否符合或適用時，本公司無須對本公司產品的適用性負責。

世協電機股份有限公司：

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