LIMING®

ROBONICDRIVE®

諧波減速機 DSF-MC、DSG-MC

馬達安裝指南

1 一般注意事項

感謝您採用本公司減速機，減速機係設計為設備使用，操作前需對減速機規格及操作使用手冊有充分了解。為了操作者及機械設備的安全，並確保能夠正確地使用本減速機，請在裝機之前，詳細閱讀以下注意事項。

2 運送、安裝及儲存注意事項

1. 當取出或放置減速機時，不可只握住旋轉軸心。
2. 安裝時請勿直接撞擊以避免影響運轉精度，例如：敲擊或捶打。
3. 給予軸心之負載，不論是軸向力或是徑向力，請勿超過規格所規定之範圍。（詳細內容請參照型錄）
4. 請勿使用於有水滴、油性液體或過度潮濕之場所和具腐蝕及易燃性氣體之環境。
5. 請儲存減速機於無潮濕、無灰塵及無有害、腐蝕之氣、液體的場所。
6. 減速機軸心材質不具防鏽能力，出廠時雖已施加油脂做防鏽保護，但如果儲存時間超過六個月，為確保軸心免於鏽蝕，請每三個月定期檢視軸心狀況並適時補充適當的防鏽油脂。

3 運轉注意事項

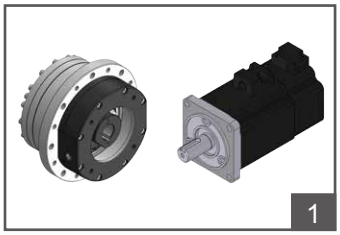
1. 請於減速機規格規定範圍內使用該產品。請特別注意環境溫度須於規格正常範圍內。
2. 減速機軸心材質不具防鏽能力，為確保長期使用，運轉期間軸心需施加適當防鏽油脂。
3. 長時間運轉後，減速機本體溫度可能升高，請勿直接碰觸。
4. 當發現到任何不正常的異味、噪音、煙霧、熱氣或是異常的振動，請立即停止減速機運轉並關閉電源。

4 其他注意事項

1. 不得拆解減速機或更換零件，否則產品保固將失效或導致減速機永久故障及損壞。
2. 請勿讓任何水滴或油飛濺或滴到產品上。

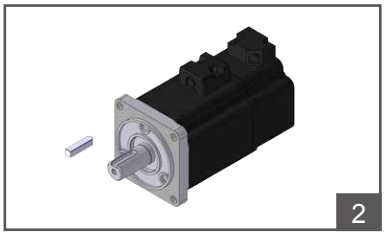
WARNING	確保正確使用利明牌減速機，安裝、操作及維修前，請詳細閱讀本安全預防措施。

5 安裝步驟



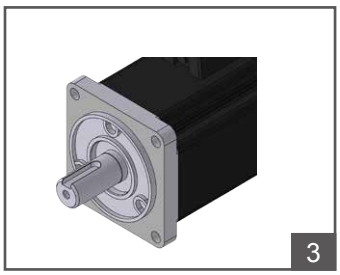
1

核對馬達型號與減速機規格是否正確。並將配合面擦拭乾淨。



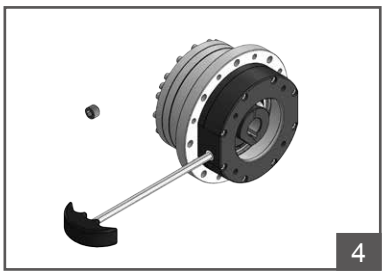
2

確認減速機與馬達是否有鍵配合。



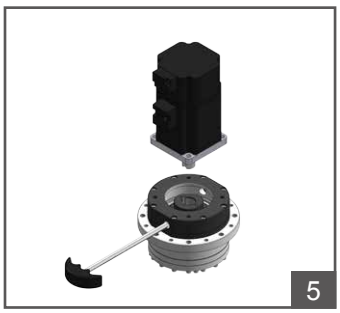
3

請使用帶油封之電機，避免潤滑脂洩漏至電機。



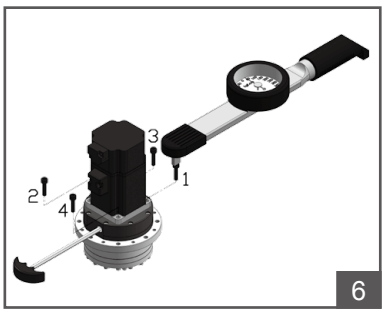
4

取出塞頭，使用六角扳手將迫緊環螺絲鬆開。並將扳手與螺絲對準孔位。



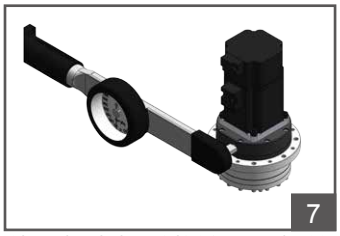
5

將馬達垂直裝入減速機。



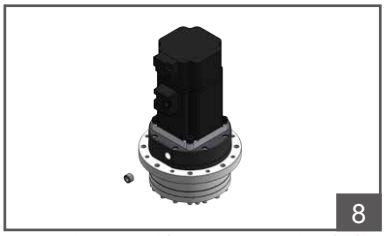
6

依序 1~4 使用扭力扳手鎖上內六角螺絲。(表一)



7

使用扭力扳手將迫緊環螺絲鎖緊。(表一)



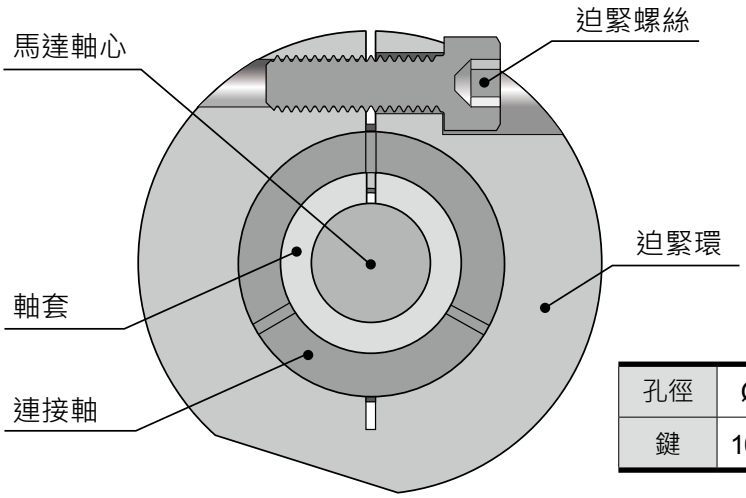
8

裝回塞頭並鎖緊，避免細小物品掉入減速機中。

※ 務必先鎖緊馬達固定面，才能鎖緊馬達軸心迫緊環。
※ 請依步驟順序組裝，尤其步驟 6、7 不可顛倒。

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6 迫緊螺絲及迫緊環扭矩表



孔徑	Ø35	Ø38	Ø42	Ø48	Ø55	Ø60	Ø75
鍵	10 x 8	10 x 8	12 x 8	14 x 9	16 x 10	18 x 11	20 x 12

迫緊螺絲規格	螺絲強度等級	螺絲鎖緊扭矩 (Nm)	迫緊扭矩 (Nm)
M4 x P 0.7	12.9	4.83	87
M5 x P 0.8	12.9	10	164
M6 x P 1.0	12.9	16.3	233
M8 x P 1.25	12.9	41	423
M10 x P 1.5	12.9	81	678
M12 x P 1.75	12.9	110	813

※ 馬達扭矩超過迫緊扭矩時，可能導致打滑。

(表一)

7 減速機一般故障原因及改善方法

故障情形	故障原因	解決方法
減速機過熱	超負荷運轉	調整至適當負荷
	油封過度磨擦	在油封處滴潤滑油
	出力軸與傳動裝置連接不當	調整至適當位置
	衝擊荷重大	更換較大型號減速機
減速機雜音	超負荷運轉	調整至適當負荷
	軸承損傷或間隙過大	更換軸承
	潤滑油不足或劣化	依指示加入適量潤滑油
	出力軸與傳動裝置連接不當	調整至適當位置
	螺栓鬆脫	旋緊螺栓
	傳動裝置固定不良	傳動裝置固定
漏油	油封損傷	更換油封
	油量過多	依指示加入適量潤滑油
	螺絲鬆脫	旋緊螺栓
	外殼破裂	更換外殼
出力軸不轉	超負荷運轉	調整至適當負荷
	軸承損傷	更換軸承
	異物嵌入	取出異物
	齒輪磨損	更換齒輪
	衝擊荷重過大	更換較大型號減速機

LIMING®

ROBONICDRIVE®

DSF-MC、DSG-MC

Motor Installation Guide

WARNING	To ensure the correct use of the LIMING brand reducer, please read these safety precautions thoroughly before installation, operation, and maintenance.

1 General Precautions

Thank you for using LI MING company's reducer. The reducer is designed for use with equipment, and you should have a thorough understanding of the reducer's specifications and the operating manual before use. For the safety of operators and machinery, and to ensure proper use of the reducer, please read the following precautions in detail before installation.

2 Transport, Installation, and Storage Precautions

1. When removing or placing the reducer, do not hold it by the rotating shaft alone.
2. During installation, avoid direct impacts to prevent affecting operational accuracy, such as striking or hammering.
3. Do not exceed the load limits specified for the shaft, whether axial or radial forces. (For detailed information, please refer to the catalog.)
4. Do not use in areas with water droplets, oily liquids, excessive moisture, or environments with corrosive and flammable gases.
5. Store the reducer in a location free from moisture, dust, and harmful or corrosive gases and liquids.
6. The reducer's shaft material does not have rust-resistant properties. Although anti-rust protection oil was applied at the factory, if the storage period exceeds six months, please check the shaft condition every three months and apply appropriate rust-preventive grease as needed to ensure the shaft remains free from corrosion.

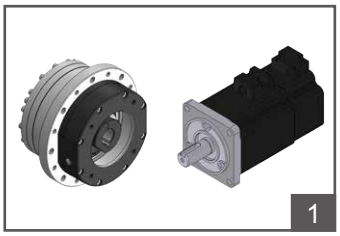
3 Operation Precautions

1. Please use the product within the specifications provided for the reducer. Pay special attention to ensure that the operating temperature is within the normal range specified.
2. The reducer's shaft material does not have rust-resistant properties. To ensure long-term use, apply appropriate rust-preventive grease to the shaft during operation.
3. After extended operation, the temperature of the reducer body may rise. Do not touch it directly.
4. If you detect any unusual odors, noises, smoke, heat, or abnormal vibrations, immediately stop the reducer and turn off the power.

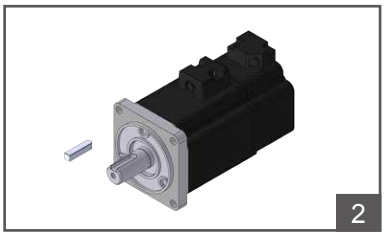
4 Other Precautions

1. Do not disassemble the reducer or replace parts, as this may void the product warranty or lead to permanent malfunction and damage.
2. Do not allow any water droplets or oil to splash or drip onto the product.

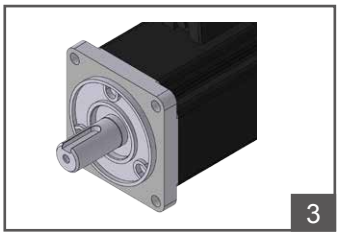
5 Installation Steps



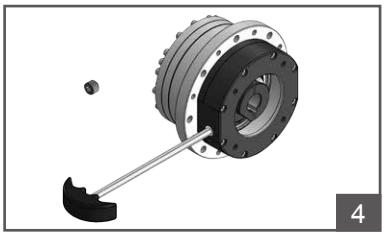
Verify that the motor model and reducer specifications are correct. Also, clean the mating surface.



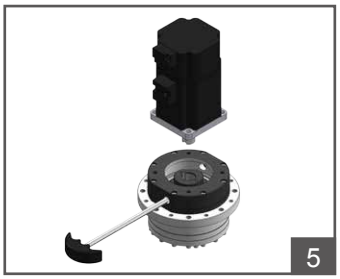
Please verify whether the motor or the reducer is keyed.



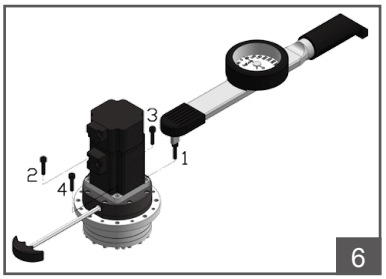
Please use a motor with a seal to prevent grease from leaking into the motor.



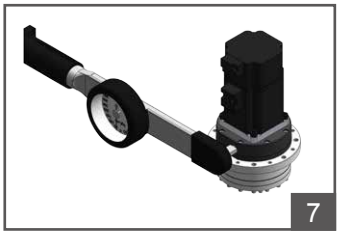
Remove the plug. Use a hex wrench to loosen the clamping ring screws, and align the wrench and screws with the holes.



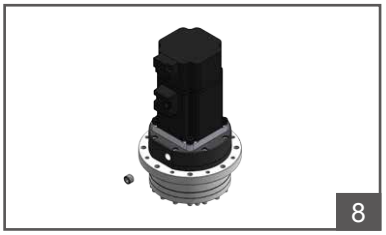
Install the motor vertically into the reducer.



Tighten the internal hexagon screws sequentially from 1 to 4 using a torque wrench. (Table 1)



Tighten the clamping ring screws using a torque wrench. (Table 1)



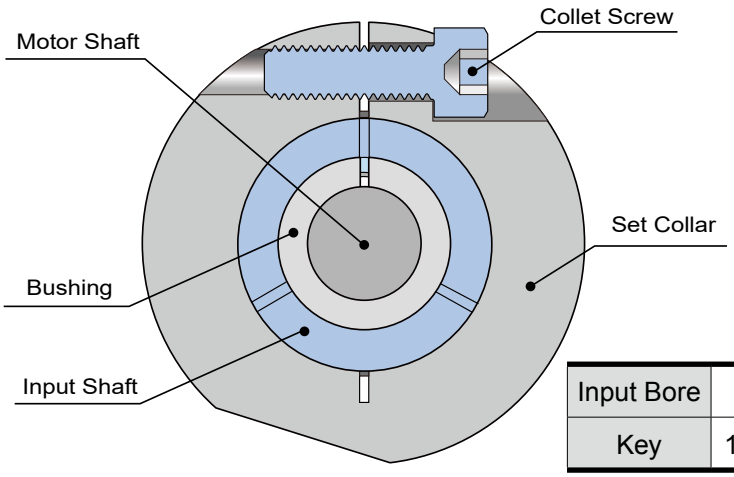
Install and securely tighten the screw plug to prevent small objects from entering the reducer.

※ Be sure to tighten the motor mounting face first before tightening the motor shaft clamping ring.

※ Please assemble in the order of the steps, especially steps 6 and 7, which must not be reversed.

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6 Collet Screw & Set Collar Torque Table



Input Bore	Ø35	Ø38	Ø42	Ø48	Ø55	Ø60	Ø75
Key	10 x 8	10 x 8	12 x 8	14 x 9	16 x 10	18 x 11	20 x 12

Spec. of Collet Screw	Screw Grade	Tighten Torque (Nm)	Clench Torque (Nm)
M4 x P 0.7	12.9	4.83	87
M5 x P 0.8	12.9	10	164
M6 x P 1.0	12.9	16.3	233
M8 x P 1.25	12.9	41	423
M10 x P 1.5	12.9	81	678
M12 x P 1.75	12.9	110	813

※ When the motor torque exceeds the clench torque, it may cause slipping.

(Table 1)

7 Common Causes of Reducer Failures and Improvement Methods

Failure Description	Causes	Solutions
Overheating	◆ Overload. ◆ Excessive friction of oil seal. ◆ Improper connection between output shaft and transmission device. ◆ Large impact load.	◆ Adjust to proper load. ◆ Lubricate the oil seal. ◆ Adjust to proper position. ◆ Use a larger gearbox.
Noise	◆ Overload. ◆ Bearing damaged or loose clearance. ◆ Shortage or deterioration of lubricating oil. ◆ Improper connection between output shaft and transmission device. ◆ Loose bolts. ◆ Improper installation of transmission device.	◆ Adjust to proper load. ◆ Replace the bearing. ◆ Fill in adequate lubricating oil as indicated. ◆ Adjust to proper position. ◆ Tighten the bolts. ◆ Fix transmission device securely.
Oil Leakage	◆ Oil seal damaged. ◆ Excessive oil. ◆ Loose screws. ◆ Outer shell is fractured.	◆ Replace oil seal. ◆ Fill in adequate lubricating oil as indicated. ◆ Tighten the screws. ◆ Replace the outer shell.
Output Shaft Failure	◆ Overload. ◆ Bearing damaged. ◆ Intrusion of foreign objects. ◆ Gear is worn-out. ◆ Large impact load.	◆ Adjust to proper load. ◆ Replace the bearing. ◆ Remove foreign objects. ◆ Replace the gear. ◆ Use a larger gearbox.