



# GFS-100

## 夾持力感測器使用說明書

## GRIPPING FORCE SENSOR MANUAL




### 重要 Important Notes :


- 請仔細閱讀本說明書，充分瞭解之後再使用本製品。  
本說明書請妥善保管，製品使用者變更時，請將此說明書交給新的使用者。
- Before you use the product. Please read this instruction carefully.  
Keep the instruction carefully. If the user of the product altered, please hand the instruction to the new user.



## ◎序言

為了確保你的安全，在使用你的夾持力感測器之前，請務必詳閱本說明書內所記載之警告事項，並特別注意文中此  圖形符號下之說明。

## ◎ INTRODUCTION

To ensure safe operation of your GRIPPING FORCE SENSOR, please read this instruction manual and pay particular attention to instructions marked with  including IMPORTANT instructions concerning chuck performance.



→ 若未依照此符號底下的說明來操作機械將引起立即的危險，導致重大傷害或死亡。  
Indicates an imminently hazardous situation which, if not avoided, could result in death or serious injury.



→ 若未依照此符號底下的說明來操作機械將引起潛在的危險，導致重大傷害或死亡。  
Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



→ 若未依照此符號底下的說明來操作機械將引起潛在的危險，導致中輕度的傷害。  
Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.



→ 依照此符號底下的說明事先了解製品的性能，可避免不正確的操作。  
Indicates for chuck performance and avoiding errors of mistake.

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\*You can download the outline drawing (in pdf or dwg format) and 3D step at AUTOGRIP WEB.

1. 夾持力感測器 (GFS-100) - 配備

1. Ggripping force sensor(GFS-100)  
- Equipped



Fig.01

配備清單 Parts list:

NO.	產品名稱	Name	Q'ty 數量
1	GFS-100 夾持力感測器	GFS-100 gripping force sensor	1 pc
2	替換測頭	Testing heads	9 sets
3	Type C 充電線	Type C cable	1 pc
4	定位工具	Safety positioning tool	1 pc
5	六角孔圓頭螺栓	Hex. socket cap bolt	6ps
6	六角扳手	Hex. key wrench	1pc
7	使用說明書	Gripping Force Sensor Manual	1 pc
8	設備校驗記錄表	Calibration Report	1 pc

規格 / specifications:

型號 Model	最大夾持力 (單爪) Max. Load (1-jaw)	最高轉速 Max. Speed	夾持範圍 Gripping range	準確度 Accuracy
GFS-100	100 kN	6000 r.p.m.	70,84,104 mm	± 2%

## 2. 夾持力感測器 (GFS-100) - 外觀說明

- (1) 電源開關：長按開關機，短按手動歸零。
- (2) Type C 防水充電接頭。
- (3) 藍芽指示燈號 ( 藍 )
  - 開機後進入配對模式，若配對成功則會閃爍 ( 呼吸燈 )。
  - 連線斷開後，燈號會熄滅。
- (4) 充電指示燈號 ( 紅 )
  - 充電時燈號恆亮。
  - 充電完成燈號熄滅。

## 2. Ggripping force sensor(GFS-100) - Appearance Description

- (1) Power : Long press to power on/off, short press for manual zeroing.
- (2) Type C waterproof charging port.
- (3) Bluetooth Indicator Light (Blue)
  - Enters pairing mode after powering on. Successful pairing results in a flashing light (breathing light).
  - Light turns off after disconnection from a connection.
- (4) Charging Indicator Light (Red)
  - Light remains on continuously during charging.
  - The charging complete indicator light turns off.

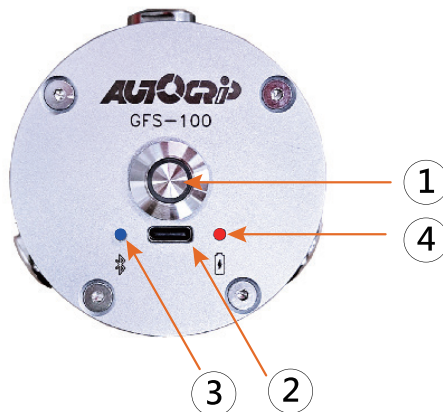


Fig.02

### 3. 夾持力感測器 (GFS-100) - APP 安裝

- 在安裝之前，請確保您的智慧型手機作業系統符合以下 iOS 和 Android 系統的兩個版本的要求。
- iOS 系統：Apple iOS 16.1.2 版本以上。
- Android 系統：Android 12 版本或以上 ( 不支援 "Android GO 版本 " ) 。
- 支援藍牙版本 5.0 以上。
- 掃描下方 QR-code，下載 GFS-100 APP，或至 AUTOGRIP 網站的 GFS 頁面下載。

### 3. Ggripping force sensor(GFS-100) - Download APP

- Please ensure that your smartphone's operating system meets the requirements for both iOS and Android systems, as specified below.
- iOS System: Apple iOS 16.1.2 or later .
- Android System: Android version 12 or later (not compatible with "Android GO versions").
- Supports Bluetooth versions 5.0 or later.
- Scan the QR code below to download the GFS-100 app , or go to the GFS-100 page of the AUTOGRIP website to download.

Download free



GFS-100



Fig.03

- 確認手機藍芽已開啟。點選進入 APP 後與感測器裝置連線。
- 可自行定義感測器裝置名稱。
- 選擇語系：支援繁體 / 簡中 / 英文。
- 進入主畫面。預設為三爪夾持讀值。若使用於兩爪夾頭，請切換。也可選擇顯示原始讀值。
- 點選圖  可儲存夾持數據。
- 點選圖  可查詢所儲存的夾持數據。
- Make sure that the phone's Bluetooth is turned on. After entering the app, connect with the sensor device.
- You can define the name of the sensor device on your own.
- Select language: supports Traditional Chinese/Simplified Chinese/English.
- Access the main screen. By default, it displays readings for a three-jaw grip. If used with a two-jaw grip, please switch. You can also choose to display raw readings.
- Clicking  allows you to save gripping data.
- Clicking  lets you access the saved gripping data.



Fig.04

**IMPORTANT  
注意事項**

- 配對時，若無法找到設備，請至手機系統之設定 --> 藍牙，搜尋、選取設備並配對。
- 註：若上述辦法皆無法排除故障，請聯繫經銷商。
- When pairing, if you can not find the device, please go to Android's setup --> Bluetooth, and then search, find and pair the device.
- Note: If the above methods fail to troubleshoot the issue, please contact the dealer for assistance.

#### 4. 檢測步驟

- (1) 根據待測的二爪 / 三爪夾頭以及夾持範圍，選擇適合的替換測頭。
- (2) 使用六角扳手鎖緊螺栓，確保替換測頭安全固定在感測器上。(Fig.05)

#### 4. Testing Procedure



Fig.05

- (1) Based on the two-jaw/three-jaw chuck being tested and the gripping range, select an appropriate replacement testing head.
- (2) Use a hex key wrench to tighten the hex socket cap bolt, ensuring that the replacement testing head is securely fixed onto the gripping force sensor. (Fig.05)

- (3) 在檢測過程中，請使用 " 定位工具 " 來協助夾持，以避免夾傷的情況發生。(Fig.06)



Fig.06



- (4) 調整軟 / 硬爪的位置，使感測器在爪行程約略一半的位置時能夠穩固夾持。(Fig.07)
- (4) Adjust the positions of the soft/hard claws to ensure the gripping force sensor is securely clamped when approximately halfway through the claw stroke.(Fig.07)

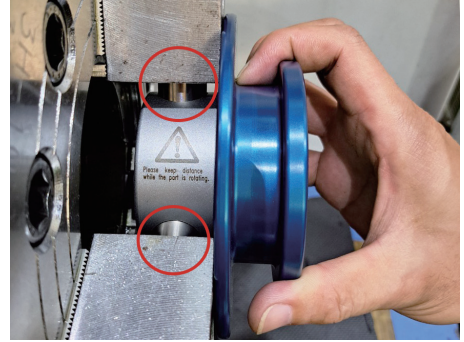


Fig.07

- (5) 啟用應用程式並進行配對，確認在未受力狀態下讀值是否歸零。
- (5) Activate the application and proceed with pairing.  
Confirm that the reading zeroes out when in an unloaded state.

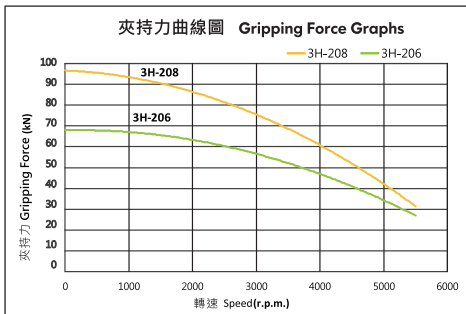


Fig.08



- 重要：確認夾持力感測器穩固夾持，不會於高速旋轉下飛出。
- 建議使用定位工具，避免夾傷，也可確保感測器並未在偏斜的狀態下受力。偏斜夾持可能會影響測試的精確度，甚至有鬆脫的風險。
- 開始檢測。
- Important: Please make sure the sensor is hold firmly to prevent flying out from the chuck under high speed rotating.
- Usage of safety positioning tool is suggested to prevent from being hurt. It also guarantee right position of the sensor without tilt. Tilt gripping may has negative effect on measurement accuracy and increase the risk of sensor flying out.
- Start Measurement.



DANGER  
危險

- 夾持力感測器若以兩爪進行夾持時，在高速旋轉之測試中有噴飛之可能性，造成夾頭與機器毀損以及人員的傷亡。  
為避免此現象，需於生爪與感測器之夾持點上，銑出溝槽供夾持力感測器兩端定位避免上述情形發生。(Fig.09)
- If the sensor is clamped with two jaws in high-speed rotation, the sensor may fly out and causing personal injury and damage to the chuck and the machine. To avoid this danger, please milled grooves on the clamping points of the soft jaws and the sensor to position properly and prevent fly-out.(Fig.09)

不正確 INCORRECT

正確 CORRECT

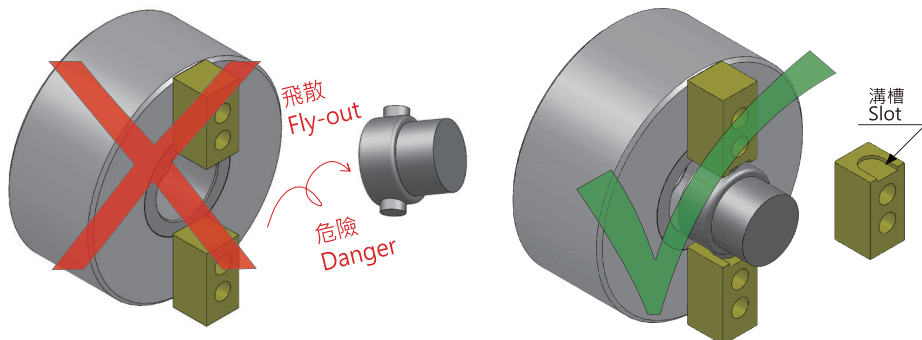


Fig.09



CAUTION  
注意

- 感測器最大適用的夾持力為 100kN( 單爪 )，使用時請緩慢增加油 ( 氣 ) 壓，確保夾持力落在工作範圍內。若超過工作範圍可能損壞感測器。
- 檢測夾持力時請確保感測器被穩固夾持。夾頭高速旋轉時，人員請處於安全位置，或關上防護鈹金，以防工件飛出造成傷害。
- 使用完畢，請長按開關鍵五秒關閉感測器，此時藍色指示燈會熄滅。
- 感測器與 APP 藍芽斷線超過 30 秒，感測器將會自動關機。

- Maximum gripping force allowed for a single-jaw is 100kN. Please increase the oil/air pressure slowly to make sure you are not exceeding the working range of sensor.
- Please make sure the sensor is held firmly during operation. When chuck is under high speed rotating, please stay in safe position or close the protection cover of machine in case of being hurt.
- Press power button for 5 seconds until the blue indicator light off to power off the sensor.
- If the connection between the sensor and the mobile app via Bluetooth is interrupted for more than 30 seconds, the sensor will automatically power off.

**IMPORTANT**  
**留意事項**

- 感測器內有電路，測試時不可使用切削液，以免濺入損壞感測器。存放時，請注意防潮。
- 充電時可接受最大充電電壓：4.2V，最大充電電流：1000mA，以避免電池損壞。
- There is circuit in the gripping force sensor, please keep dry. When testing, please don't use the coolant simultaneously. Please store in dry place.
- Maximum charging voltage during charging: 4.2V, maximum charging current: 1000mA, to avoid battery damage.



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