G-Finder Pump Instruction Manual

The "G-Finder Pump" is an external pump for the portable gas detectors GFS-100 and GFM-400 manufactured by Gastron. It is designed for portable gas detector operators who occasionally require a pump for confined space entries. The dedicated model will be depended on the type of optional adapter accessory for "G-Finder Pump". "G-Finder Pump" can be attached and detached to or from the portable gas detector at the site, and if a stand-alone adapter accessory is used, the portable external pump "G-Finder Pump" can be operated as a stand-alone device. The "G-Finder Pump" is powered by a rechargeable 1-cell Li-Ion battery and the Li-Ion battery mounted in the pump can only be charged using the USB port (USB Type-C) in a non-hazardous area where explosive atmospheres are not present. A standard cellphone charger can be used for charging. The charging status is indicated on the LED light on the pump.

⚠ WARNING

1) Carefully read the instruction manual for G-Finder Pump and portable gas detector before using.

2) Ensure strict compliance with the Instructions for Use. The user must fully understand and strictly observe the instructions. Only use the product for its intended use.

3) Only trained and competent personnel are permitted to use this product.

4) Do not use faulty or incomplete product. Do not modify the product.

5) Do not attempt replacement or substitution of components. Replacement or Substitution of components may impact intrinsic safety and impair the functionality and will void the warranty of the product.

6) The electrical, electronic and battery elements of this product must not be disposed of via municipal waste streams; they should be disposed of by a qualified recycler or hazardous materials handler.
Correct disposal will contribute to recycling of materials and prevent negative consequences for the environment.

7) Do NOT OPEN when an explosive atmosphere is present.

8) Do NOT CHARGE the battery in hazardous location.

⚠ CAUTION

1) When using the G-Finder Pump, sudden change in the temperature may affect operating life and performance.
Using in a stable temperature environment is recommended.

2) Purge the "G-Finder Pump" sampling hose with the air sample prior to every measurement.

3) The pump cannot be operated while charging the battery.

4) Several environmental factors such as temperature and humidity can affect flow rate, operating time and charging time.

1. Specification

Item	Description
Ex marking	ATEX : CE 0344 ⟨Ex⟩ II 1 G Ex ia IIC T4 Ga IECEx / KCs / NEPSI : Ex ia IIC T4 Ga
Approvals	IECEx : IECEx KTL 22.0035X KCs : 23-KA2BO-0015X ATEX : DEKRA 23ATEX0003 X NEPSI : GYJ23.1023X KC : R-R-G99-GFP-10
Dimensions	61x136x41 mm (GFP-10) 61x211x48 mm (GFP-10-S1) 77x243x48 mm (GFP-10-M4)
Weight	Approx. 208 g (GFP-10) Approx. 349 g (GFP-10-S1) Approx. 483 g (GFP-10-M4)
Temperature	Operation : -20°C ~ 50 °C Charge : 0°C ~ 45 °C Storage : -20°C ~ 25 °C

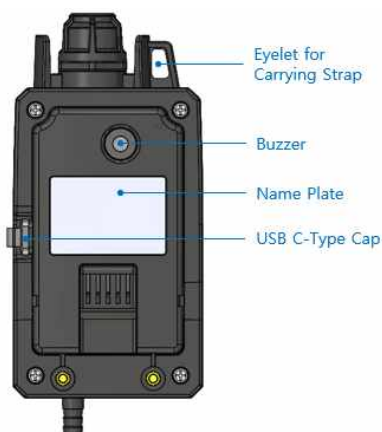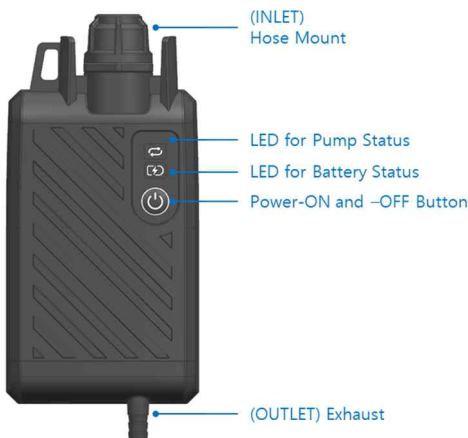|	
Humidity	5 ~ 95 % RH
IP	IP 67
Alarms	Visual, Audible (min. 90dB @ 10cm)
Flow	0.4 L/min
Maximum hose length	15m
Connectable hose size	mm (inch) I.D. x O.D., W.T. 3.18 x 4.76 (1/8″ x 3/16″), 0.8 (1/32″) 3.18 x 6.35 (1/8″ x 1/4″), 1.6 (1/16″)
Battery	1-cell rechargeable Li-ion battery
Charging voltage	DC 5V (USB Type-C); U_m = AC 250V
Charging time	≤ 7.5 hours
Operating time	At least 20 hours on a full charge (Different depending on the operating temperature and storage conditions)

2. Parts of G-Finder Pump

(INLET) Hose Mount

LED for Pump Status
LED for Battery Status
Power-ON and –OFF Button

(OUTLET) Exhaust

Eyelet for Carrying Strap

Buzzer

Name Plate

USB C-Type Cap

[GFP-10]   [GFP-10-S1]   [GFP-10-M4]

1) Icons Description

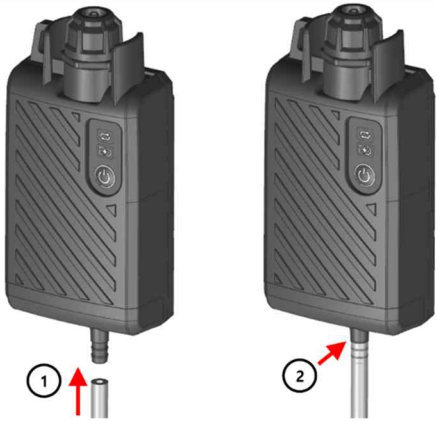| Icon	Description
	Pump Status LED - Green: Normal - Red: Abnormal - Red dimming: Pump Warm-up
	Battery Status LED Not Charging: flash once in 5 seconds Charging: dimming with 3 colors - Green: 80 % ~ 100 % - Yellow : 30 % ~ 80 % - Red: 0 % ~ 30 % ● Red LED blinks continuously when the charging temperature is out of the allowable temperature.
	Power-ON and -OFF Button (Power-ON / Power-OFF, Press and hold for 3 seconds)

3. Storage

- Disconnect the pump from the gas detector for storage.
- Ensure the pump is clean and dry before storing. Avoid direct sunlight.
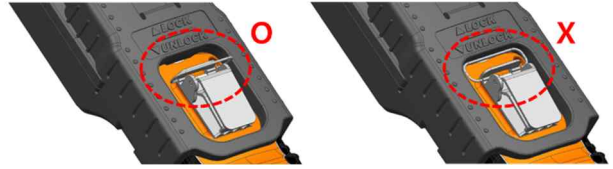- Please keep it as charged as possible for the next use.

4.Use

1) Connect a gas detector with the pump

▶ GFP-10

▶ GFP-10-S1
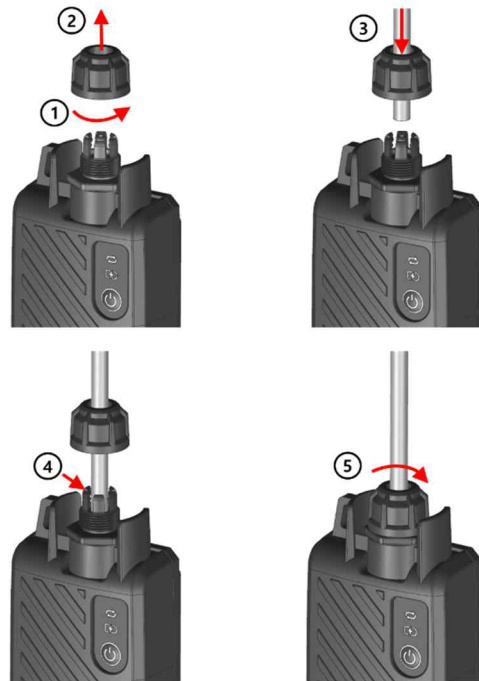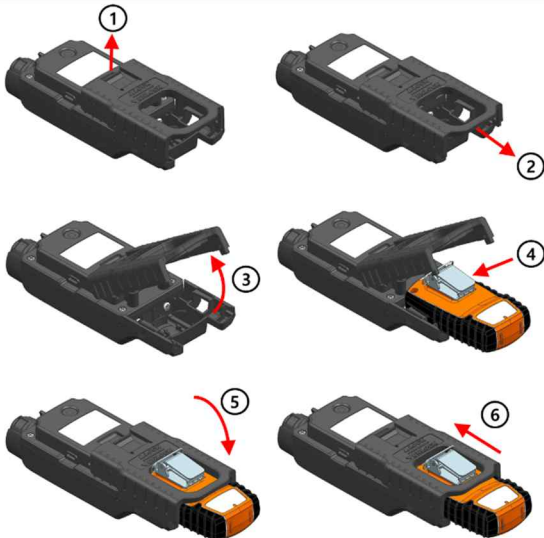

▶ GFP-10-M4

⚠ CAUTION

When connecting the gas detector, pay attention to the position of the fixing clip on the back of the detector.
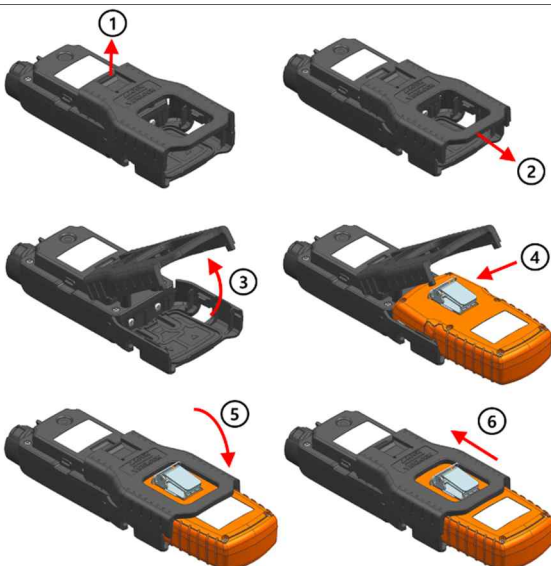

2) Connect a hose with the pump

3) Preparations for use

i. Connect a gas detector refer to '1) Connect a gas detector with the pump'.

ii. Connect a hose refer to '2) Connect a hose with the pump'.

iii. Press and hold the power button for 3 seconds to power the pump on until emitting 3 times beep. (1 time beep per every second)

iv. When the pump is powered on with 3 beeps, the red pump status LED will be on and dimming while the pump is warming up.(Warm-up Time： within 3s above 0℃, within 40s 0℃ or less) Then the LED will blink green and red alternately for 10 seconds

while waiting for the flow blockage check test.

v.   While the green and red pump status LEDs are blinking alternately with a beep, perform the flow blockage check test by blocking the end of the connected hose temporarily. (If the flow blockage is confirmed for more than 3 seconds within 10 seconds while the LEDs blinking alternately, it is treated as success. If the flow blockage is not confirmed, it is treated as failure.)

vi. If the flow blockage check test is successful, the alarm sound will be played twice with the green pump status LED light and the pump resumes normal operation. If the check test fails, the alarm sound will be played 3 times with the red pump status LED light and the pump stops.

- In order to operate the "G-Finder Pump" GFP-10 normally, the flow blockage check test must be successful. If the flow blockage check test fails, check the following parts of "G-Finder Pump" - inlet hose mount, a filter in the mount, a hose and outlet exhaust. Then proceed from step 'iii' again after appropriate act.

4) Performing the measurement

i.   Once the flow blockage check test is completed successfully, the pump resumes normal operation with the green pump status LED on continuously and the battery status LED flashes every second with different colors according to the remaining battery capacity.

ii. And then, move the end of the connected hose to the measuring point and start to measure. For more information, please see the instruction manual for the gas detector.

5) Complete measurement

i.   Press and hold the power button for 3 seconds to turn off the pump until emitting 3 times beep. (1 time beep per every second)

ii. The pump is powered off after 3 beeps and the pump status LED will be off.

iii. Please disconnect the pump from the gas detector after completing the measurement.

iv. While the pump is off, the battery status LED flashes once in every 5 seconds with different color according to the remaining battery capacity.

6) Charging the pump

⚠ CAUTION

- Ensure the charging plug and the USB socket are clean.

- When the charging temperature is out of the allowable temperature, charging will be stopped and the red battery status LED will blink continuously. To resume charging, the charging cable must be disconnected and reconnected within the allowable charging temperature.

i.   Connect the pump to the 5V USB adapter by using the supplied USB

Type-C cable to start charging the battery.

ii.   Measurement cannot be performed while charging.

iii.   Do not charge the battery in explosion-hazard area.

iv.   When charging the battery, the battery status LED is dimming with different colors according to the battery's charge level. And when the battery is charged completely, the green LED will be on continuously.

● Charging time may vary depending on the type of USB Type-c cable or 5V USB adapter.

5. Manufacturer Information

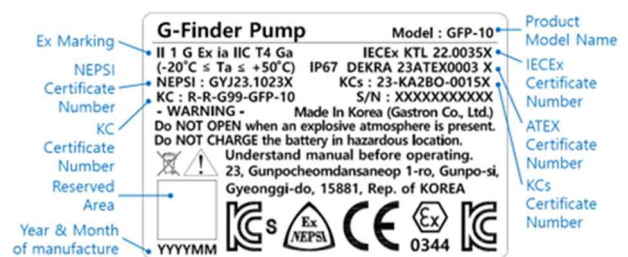If there are any problems with our products, please contact us at the address below.

1) Address :
    Gastron Co., Ltd. 23, Gunpocheomdansaneop 1-ro, Gunpo-si, Gyeonggi-do, Korea
2) Tel : 82-31-490-0800
3) Fax : 82-31-490-0801
4) URL : www.gastron.com
5) e-mail : gastron@gastron.com

6. Certifications and Approvals

1) The certification marking and certificate numbers are in the table below.

Ex marking	ATEX : CE 0344 ⟨Ex⟩ II 1 G Ex ia IIC T4 Ga
	IECEx / KCs / NEPSI : Ex ia IIC T4 Ga
Approvals	IECEx : IECEx KTL 22.0035X
	KCs : 23-KA2BO-0015X
	ATEX : DEKRA 23ATEX0003 X
	NEPSI : GYJ23.1023X
	KC : R-R-G99-GFP-10

2) The product is in conformity with the following standards:
    IECEx : IEC 60079-0:2017, IEC 60079-11:2011
    KCs : Announcement No. 2019-15 of Ministry of Employment and Labor
    ATEX : EN IEC 60079-0:2018, EN 60079-11:2012
    NEPSI : GB 3836.1-2010, GB 3836.4-2010, GB 3836.20-2010

3) The product may be used in zones 0, 1 & 2 with flammable gases and vapors with apparatus groups IIC and with temperature classes T1, T2, T3, T4.

4) The product is only certified for use in ambient temperature in the range -20℃ ≤ Ta ≤ +50℃ and should not be used outside this range.

5) With regard to explosion safety, it is not necessary to check for correct operation.

6) The product contains parts non-replaceable by user and is not intended to be repaired by user. Repair of the equipment is to be carried out by the manufacturer, or their approved agents, in accordance with the applicable code of practice.

7) The certificate label is described as below.

7. Ordering Information

Please put an order according to the model code description below.

- GFP-10-XX
  - **GFP-10 : standard model name**
  - **XX: Adapter type**
    (Blank : stand-alone adapter(default),
    S1 : GFS-100 Connecting adapter,
    M4 : GFM-400 Connecting adapter)

8. Sales Information

This equipment may be operated in all EU members.

9.Revision History

REV.	CONTENTS	DATE
0.1	Initial Document	2022.04.08
0.2	IECEx, KC Certification updated	2022.11.03
1.0	KCs, ATEX, NEPSI Certification updated	2023.02.16