gasclip technologies

MGC Dock

User's Manual

Contents

Warnings Statements/Avertisseement

- The Clip Dock may not support all gases. For a complete list, please contact GCT.
- Do not use the Clip Dock if it appears to be damaged. Inspect it before each use.
- Ensure the Clip Dock is used with certified calibration gas.
- DO NOT use expired calibration gas. Please check the expiration date located on the bottle.
- DO NOT operate the Clip Dock in a hazardous environment
- Do not expose the Clip Dock to electrical or mechanical shocks before, during, or after use.
- Do not allow liquids to condense and/or use high power sprays on the Clip Dock.
- Gas Clip Technologies recommends periodic back up of the data stored on the USB Memory.
- The Clip Dock contains a lithium battery that must be disposed of by a qualified recycler. Check local regulations for proper disposal.
- Warning: The battery may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat above 100°C (212°F), or incinerate. Contact Gas Clip Technologies for replacement instructions. Use of another battery may present a risk of fire or explosion.
- DO NOT charge the instrument in temperatures above or below the specified range of 0°C to 40°C.
- Read the entire Clip Dock manual and follow all instructions to ensure proper use and safe installation.

READ FIRST BEFORE OPERATION

Gas Clip Technologies (GCT) Clip Docks are designed to ensure that the portable gas detectors are able to detect and alarm to known target gas concentrations. Data from these tests is stored to the onboard USB memory which can be downloaded for analysis at a later time. It is your responsibility to properly use the Clip Dock.

Description

The Gas Clip Technologies Clip Dock is an all-in-one stand-alone docking station designed for maximum testing efficiency and portability. It tests up to four units simultaneously, reducing the testing time and gas usage. With only two buttons, it's simple to train workers how to use it for regular bump tests, occasional calibrations, or to deactivate detectors. It can be optionally housed in a rugged Pelican© case or a wall-mountable metal enclosure. Logs are stored on a USB flash drive which can easily be transferred to a computer for analysis.

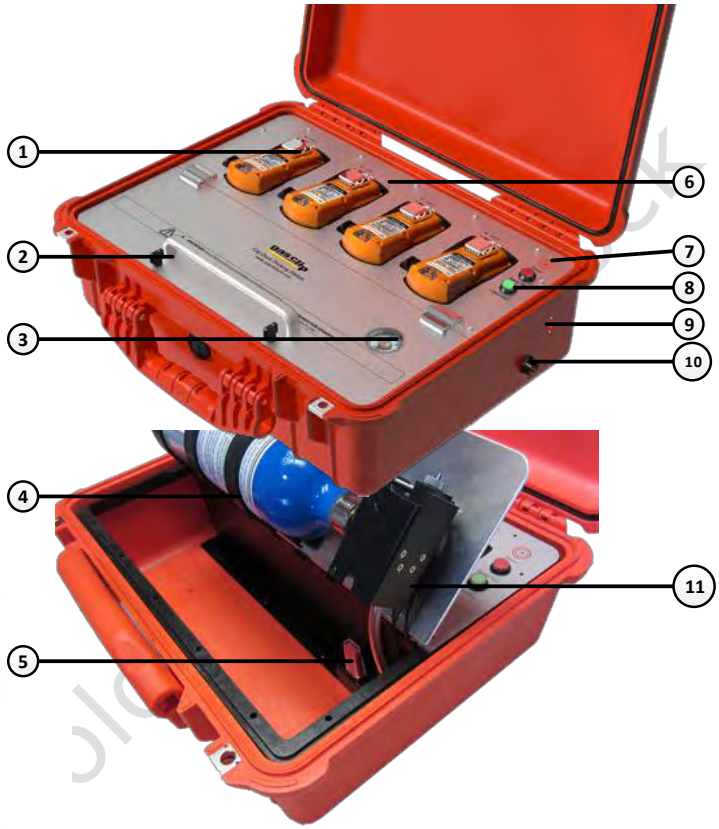
Each Clip Dock comes with the following standard features:

- Test 4 units at one time, up to 12 instruments in a minute
- Easy 1 button operation
- Robust rechargeable internal battery, up to 1500 tests before recharging
- Internal gas cylinder regulator and pressure gauge
- USB flash memory for bump test and event log storage
- Optional unit configuration and firmware updates via GCT Manager Software
- Rugged Pelican© case or Wall-mountable case
- No computer required to operate

Basic Operation

Clip Dock Components

Entry	Description
1	Detector Bay
2	Access Hatch Screws (x2)
3	Pressure Gauge
4	Gas Bottle
5	USB Memory Stick
6	Unit LED (x4)
7	Power LED
8	Buttons
9	Charging Port
10	Exhaust Port
11	Solenoid, Regulator, Gauge
12	(Optional) Gas Inlet



LEDs

LED	Color	Description
Unit LEDs	**orange**	test in progress
	red	test failed
	green	test passed
	orange cycling	charging
Power LED	**green**	powered on
	green blinking	low battery
	orange	test in progress
	orange blinking	No USB memory detected*

* The Clip Dock will be unable to record test results if USB memory is not installed

User Operation

Turning the Clip Dock On and Off

The Clip Dock is powered by an internal rechargeable battery that can perform up to 1500 bump tests. Pressing either button will automatically wake up the Clip Dock and perform the button's associate actions. The Clip Dock will automatically turn itself off between tests, unless the charger is connected.

Charging

Connect the supplied DC power adapter to the *Charging Port* on the Clip Dock to charge the internal battery. The Unit LEDs will cycle until the battery is fully charged. A complete charge takes approximately 3 hours and lasts for approximately 1500 bump test cycles.

⚠ DO NOT charge the instrument in temperatures above or below the specified range of 0°C to 40°C

⚠ DO NOT substitute any other battery type than specified and supplied by Gas Clip Technologies.

Calibration Gas Installation

The Clip Dock requires a calibration gas bottle to be installed in order to perform tests on the detectors. To install, remove the *Access Hatch Screws* (x2) and lift the access panel. Thread the bottle into the CG-10 fitting until tight. Once properly connected, the *gas gauge* will indicate the bottle pressure.

By default, the Clip Dock assumes that the bottle contains four gases so that any detector model can be tested. The **GCT Manager** software allows you to specify the gas concentrations. The default concentration is set for a mix of all gas types:

H_2S: 25 ppm CO: 100 ppm O_2: 18% LEL: 50%

Button Usage

Operation of the Clip Dock is determined by the two buttons on the top plate:

Bump Test: Briefly applies gas to ensure that the detectors respond

Calibration: Calibrates the detectors' measurement accuracy against the applied gas

Both (hold): Turns off or hibernates the detectors

Place up to four activated detectors into the detector bays. The Clip Dock can test up to four detectors simultaneously. Ensure that the gas bottle matches the gas types required by the inserted detectors. The Clip Dock can test with different detectors at the same time if using a multi-gas blend calibration mix.

To begin the test, press the *Bump Test* and/or the *Calibration* button. A bump test will take approximately 20 seconds; a calibration 90 seconds; hibernation a few seconds. While the test is active, the LEDs will turn ORANGE. When the test has completed, the LEDs will turn GREEN for pass or RED for fail. Wait until the power button shows the overall result (GREEN or RED) before removing the detectors.

Every test will perform the following maintenance operations:

- Upgrade each detector's firmware (if required)
- Set the detector's date and time (if supported)
- Test each detector's beeper
- Configure each detector's user options (as required)

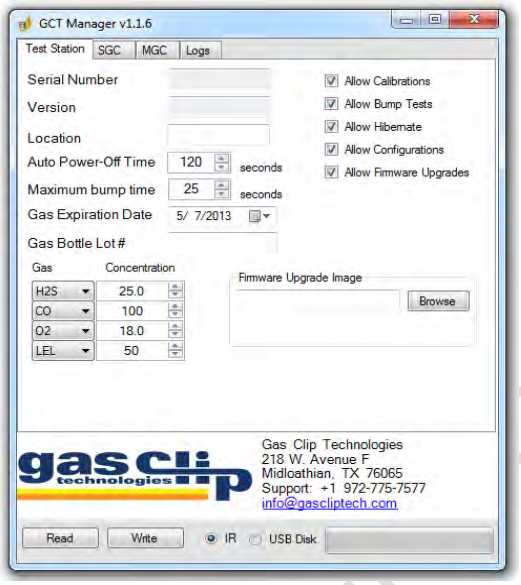
- Download each detector's logs
- Bump, Calibrate, or hibernate as requested
- Record the test to the USB memory

Troubleshooting Failures

1. Inspect the detector sensor and beeper cavities and clear any obstructions.
2. Clean the small IR communication window located on the top of the detector.
3. Verify the gas bottle is not empty. 58L bottles are "full" at 500 PSI; 116L at 1000 PSI.
4. Try relocating the Clip Dock away from bright light sources, which may interfere with IR communication between the Clip Dock and the detectors.
5. If a monitor has failed 3 after three test attempts, please contact Gas Clip Technologies.

Clip Dock Configuration

The Clip Dock is configured with the **GCT Manager** software. The latest version is available on the GCT website at , along with its User's Manual.



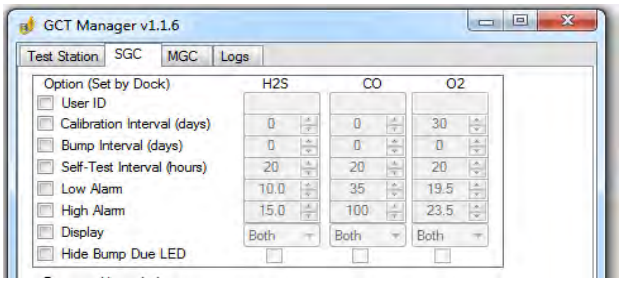
The GCT Manager software can communicate with the Clip Dock through IR or USB as selected by the radio buttons. IR communication is handled through Bay 1 of the Clip Dock and if the IR Link is placed into Bay 1. For IR communication, connect the Clip Dock to a charger and place the GCT IR Link into Bay 1. Direct USB operation with the memory stick connected to the PC offers faster transfers or configuration without a GCT IR Link.

Clip Dock Options

The software program will provide a detailed description of each option if the mouse is hovered of it. The *Location*, *Gas Expiration Date* and *Gas Bottle Lot #* are optional parameters that will be recorded into the log file with each test. The checkboxes can enable or disable various features of the Clip Dock, including: calibrations, bump tests, hibernations, detector configuration and detector firmware upgrades.

Detector Options

Every detector tested by the Clip Dock can optionally be programmed with various configuration settings. By default, the Clip Dock will not reconfigure any detectors. The GCT Manager software allows fine-grained control over which options are programmed into the detectors and what those settings will be.



Clip Dock Records (Logs)

The Clip Dock records the results of each test to its USB memory. In addition, it will download each detector's event log. Clip Dock log files are stored in Comma Separated Value (CSV) format which can easily be parsed by a spreadsheet program for viewing and manipulation.

Clip Dock Log Format

The first lines of the log file provide a header for the log data. Each test is stored in multiple lines:

Line 1: Overall Clip Dock test results

- Date and Time of test
- Test type (Bump Test, Calibration or Turn Off)
- Clip Dock Serial Number
- Overall pass/fail test result
- Firmware and Hardware versions
- Location (optional user string that can be configured with the GCT Manager)

Line 2: Bay test results for the inserted detector

- Bay Number (1-4)
- Detector Model
- Detector serial number
- Detector pass/fail result
- Detector firmware and hardware versions
- Beeper pass/fail result
- Detector options (varies by detector type)

Line 3: Detector sensor(s) test results

- Sensor Type
- Sensor pass/fail result
- Sensor reading
- Gas bottle details
- Sensor options (varies by detector type)

Logged SGC Options

The SGC Dock logs the following Single Gas Clip (SGC) detector options on Line 2:

- Show Sensor Readings (T/F)
- Bump Flash Disabled (T/F)
- Hide Clock (T/F)
- User ID
- Self-Test Interval

The following SGC Sensor options are logged on Line 3:

- High and Low alarms
- Calibration and Bump Test Intervals
- Calibration and Bump Due (days)

Logged MGC Options

The MGC Dock logs the following Multi Gas Clip (MGC) detector options on Line 2:

- User Message
- Language
- TWA method
- TWA and STEL intervals
- SAFE mode (T/F)
- Self-Test Lock (T/F)
- Auto-Zero (T/F)
- Maintenance Notification (T/F)
- Dock Lock (T/F)
- Latching Alarms (T/F)

The following MGC Sensor options are logged on Line 3:

- Sensor enabled/disabled
- Low, High, STEL and TWA alarms
- Last calibration and calibration interval
- Last bump test and bump test interval

Wall-Mounted Clip Dock

The wall-mounted Clip Dock exchanges the portable Pelican© case for an enclosure suitable for permanent, fixed installations. All other features and operations are the same.

The Clip Dock is mounted with four screws (supplied). For installation on drywall, the provided drywall anchors should be used. For installation on brick or metal structures, the user will have to supply suitable mounting hardware. A convenient wall-mounting template is included to help locate the mounting screws.

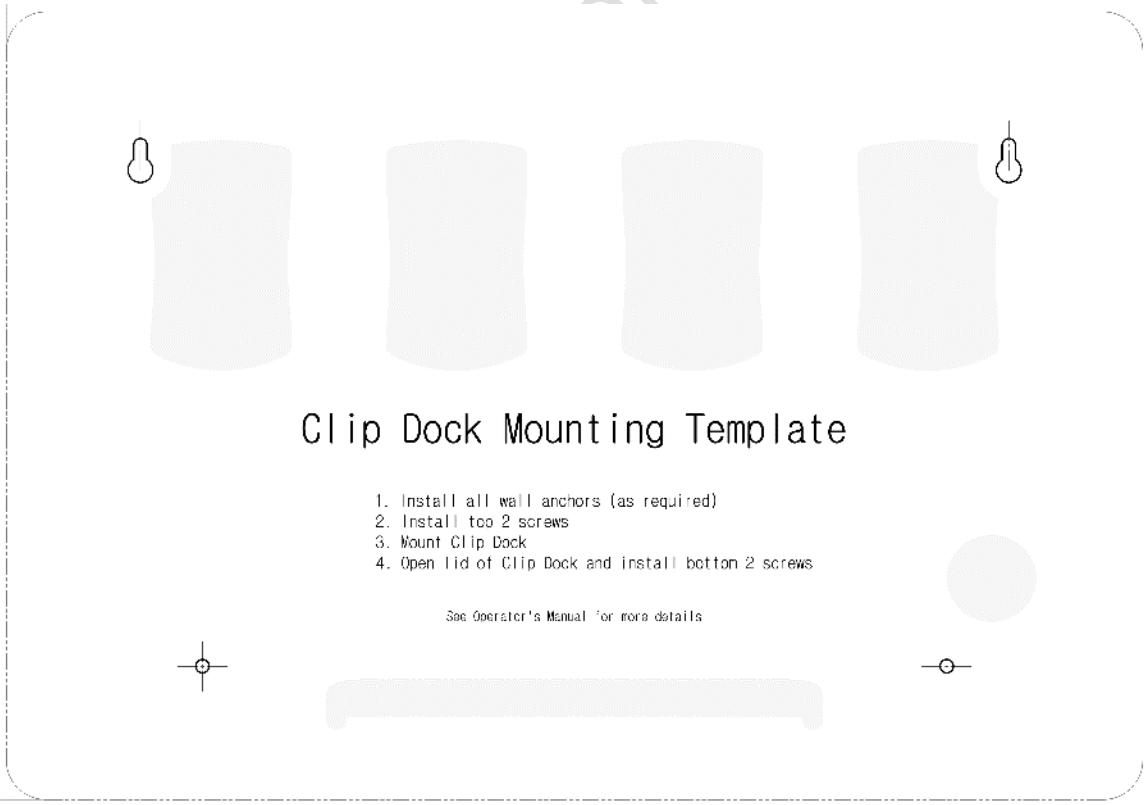
IMPORTANT: *Select a location near a power source that is required for charging of the internal battery.*

Installation Procedure:

In most cases the Clip Dock can be installed with the use of the following tools:

- #2 Philips screw driver
- Level
- Clip Dock Mounting Template

1. Using the provided installation template and a level, mark out the four screw locations



2. Screw the drywall anchors into the marked locations.

3. Screw in the top two screws most of the way. Leave enough space for the Clip Dock case to slide over the screw.

4. Hang the Clip Dock on the top two screws.

5. Open the gas cylinder compartment and screw in the remaining two screws

6. To complete the installation:
   - Lead the exhaust tube away to a suitably vented location.
   - Install the gas cylinder or connect the external gas source.
   - Connect the DC power source to the Clip Dock.
   - Secure the gas cylinder compartment lid with the access hatch screws.

Clip Dock Specifications

	Portable Clip Dock	Wall-Mounted Clip Dock
Size	19.78 x 15.77 x 7.41 in. (50.2 x 40 x 18.8 cm)	17.75 x 12 x 6.5 in. (45.2 x 30.5 x 16.5 cm)
Weight (without gas cylinder)	15 lbs. (6.8 kg.)	14lbs. (6.4 kg.)
Operating Temperature	41 to +104˚F (5 to +40˚C)	
Battery Life	1500 Bump Tests	
Charge Time	2-3 hours	
LEDs	5 red/green/orange LEDs (1 for each unit, 1 for power)	
Display	Alphanumeric Liquid Crystal Display (LCD)	
Log Capacity	Approximately 5 million tests (2GB, removable USB memory)	
Warranty	Full 2 years	
User Options	Location, Gas expiration date, Gas bottle lot number, gas concentrations, bump gas time, bump sensor pass criteria, calibrations, bump tests, hibernations, detector configuration, firmware upgrades, turn off time	

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Limited Warranty

Gas Clip Technologies ("GCT") warrants this product to be free from defects in material and workmanship under normal use and service for a period of two years beginning upon the date of purchase. This warranty extends only to the sale of new and unused products to the original buyer. GCT's warranty obligation is limited, at GCT's option, to refund of the purchase price, repair, or replacement of a defective product that is returned to a GCT authorized service center within the warranty period. In no event shall GCT's liability hereunder exceed the purchase price actually paid by the buyer for the product. This Warranty does not include: (1) Routine replacement of parts due to the normal wear and tear of the product arising from use. (2) Any product which in GCT's opinion has been misused, altered, neglected or damaged by accident or abnormal conditions of operation, handling, or use. (3) Any damage or defects attributable to repair of the product by any person other than the authorized dealer, or installation of unapproved parts or gas cylinders on or in the product. The obligations set forth in this warranty are conditional on: (1) Proper storage, installation, use, maintenance, and compliance with the user's manual instructions and any other applicable recommendations of GCT. (2) The buyer promptly notifying GCT of any defect and, if required, promptly making the product available for correction. No goods shall be returned to GCT until receipt by the buyer of instructions from GCT. (3) The right of GCT to require that the buyer provide proof of purchase such as the original invoice, bill of sale or packing slip to establish that the product is within the warranty period. The buyer agrees that this warranty is the buyer's sole and exclusive remedy and is in lieu of all other warranties, express or implied, including but not limited to any implied warranty or merchantability or fitness for a particular purpose. GCT shall not be liable for any special, indirect, incidental, or consequential damages or losses, including loss of data, whether arising from breach of warranty or based on contract, tort, or reliance on any other theory. Some countries or states do not allow limitation of the term of an applied warranty, or exclusion or limitation of incidental or consequential damages, the limitations and exclusions of this warranty may not apply to every buyer. If a court of competent jurisdiction holds any provision of this warranty invalid or unenforceable, such holding will not affect the validity or enforceability of any other provision.