BURETA ELECTRÓNICA DIGIPETTE TOUCHDROP
ELECTRONIC BURETTE DIGIPETTE TOUCHDROP
BURETTE ÉLECTRONIQUE DIGIPETTE TOUCHDROP

REF. - CODE - RÉF. MDG004

DIGIPETTE

Este manual es parte inseparable del aparato por lo que debe estar disponible a todos los usuarios del equipo. Le recomendamos leer atentamente el presente manual y seguir rigurosamente los procedimientos de uso para obtener las máximas prestaciones y una mayor duración del mismo.

This manual should be available for all users of these equipments. To get the best results and a higher duration of this equipment it is advisable to read carefully this manual and follow the processes of use.

Ce manuel est une partie indissociable de l'appareil et doit être mis à la disposition de tous les utilisateurs de l'équipement. Nous vous recommandons de lire attentivement ce manuel et de suivre scrupuleusement les procédures d'utilisation afin d'obtenir des performances maximales et une plus longue durée de vie de l'appareil.

LANGUAGE INDEX

INDEX

1. SAFETY INSTRUCTIONS

This instrument may occasionally be used with hazardous materials or equipment. It is the sole responsibility of the user to establish proper safety practices and verify regulatory compliance prior to use. General recommendations:

- Read this user manual carefully before operating the instrument.
- Follow general safety instructions: always wear appropriate clothing and personal protective equipment (goggles, gloves, etc.).
- Observe the reagent manufacturer's instructions.
- When dispensing flammable liquids, avoid static build-up (do not use plastic containers or dry cloths).
- Use the instrument only for dispensing liquids, within the specified limits and conditions.
- Never point the discharge tube at yourself or others.
- Do not press the piston with the discharge tube plug in place.
- Do not remove the discharge tube while filling the cylinder.
- Clean the discharge tube plug regularly, as it can accumulate reagents.
- Do not transport the assembled instrument by the cylinder or valve block, as it may break and cause injury.
- Use only original spare parts and accessories.
- Do not make any technical modifications or disassemble the instrument beyond what is indicated in this user manual.
- Before each use, visually inspect the instrument for damage.
- In case of signs of malfunction (such as difficulty in moving the piston, stuck valves or leaks), discontinue use immediately.

2. FUNCTIONS AND LIMITATIONS OF USE

The DIGIPETTE TouchDrop electronic burette is designed to dispense liquids directly from the reservoir bottle. It is calibrated according to the guidelines of DIN EN ISO 8655-3.
When used correctly, the dispensed liquid comes into contact only with the following chemically resistant materials: PTFE, FEP and borosilicate glass.

- The CE marking symbol certifies that the product complies with the requirements of the EC directive and has been tested according to the specified test methods.
- The electronic burette is designed to perform liquid titrations, respecting the following physical limits:
  - Keep the instrument and reagent between 10°C and 40°C (50° F to 104° F).
  - Reagent vapour pressure: max 600 mbar.
  - Aspirate slowly above 300 mbar to avoid boiling of the liquid.
  - Kinematic viscosity: up to 500 mm^2/s.
    (Dynamic viscosity [mPa-s] = kinematic viscosity [mm^2/s] × density [g/cm^3]).
  - Use liquids with a density up to 2.2 g/cm^3.

■ Limitations on use:

- Chlorinated or fluorinated hydrocarbons, as well as certain chemical combinations that generate deposits, may hinder the movement of the piston or block it. If the piston shows resistance to movement, the instrument should be cleaned immediately.

-When dispensing flammable liquids, avoid electrostatic charge build-up. Do not dispense into plastic containers or wipe the instrument with dry cloths.

-It is designed for general laboratory applications and complies with relevant standards such as DIN EN ISO 8655-3. It is recommended to check its compatibility for specific applications (e.g. trace analysis, food industry, etc.).

-It has no specific approvals for use in the production or administration of food, pharmaceuticals or cosmetics.

3. EXCLUSIONS FROM USE

Do not use the instrument with:

■ Liquids that attack materials such as FEP, PFA or PTFE (e.g. dissolved sodium azide).
■ Liquids which attack borosilicate glass (e.g. hydrofluoric acid).
■ Hydrochloric acid in concentrations above 40%.
■ Tetrahydrofuran (THF) or oxolane.
■ Trifluoroacetic acid.
■ Explosive liquids (e.g. carbon disulphide).
■ Suspensions (e.g. activated carbon), as solid particles may clog or damage the instrument.
■ Liquids that attack the polypropylene (PP) of the stopper.
■ Aggressive atmospheres, e.g. hydrochloric acid (HCl) vapours.

The permitted concentration of dissolved sodium azide must not exceed 0.1%.

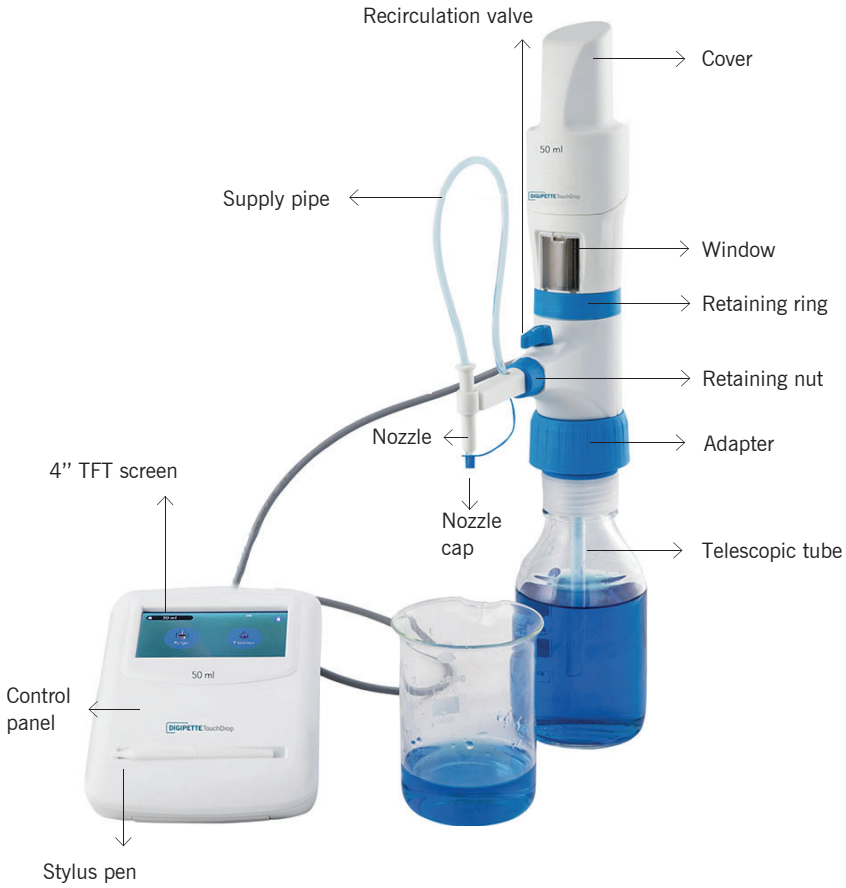
4. STORAGE CONDITIONS

Store the instrument and its accessories in a clean, cool and dry place. Recommended storage temperature is between -20°C and 50°C (-4° F to 122° F) with a relative humidity between 5% and 95%.

5. TECHNICAL SPECIFICATIONS

Code	MDG004
Model	DIGIPETTE TouchDrop
Volume range	0.01 ml-500 ml (max piston stroke: 50 ml, automatic addition
Volume accuracy	A: 0.05%, CV: 0.05%, CV: 0.05%.
Operating temperature	+10 °C to +40 °C (50 °F to 104 °F)
Battery	On a full charge it works for approx. 3 hours of continuous operation.
Power supply	18 V, 3 A
Screen	4" TFT screen
PC interface	Mini USB cable
Languages	English, Spanish, German

6. PRODUCT DESCRIPTION



7. ERROR LIMITS

The margins of error (inaccuracy and imprecision) correspond to the nominal capacity (or maximum volume) indicated on the instrument. These values are obtained by using the instrument with distilled water at an ambient temperature of 20°C and operating it smoothly and constantly.
The error margins are within the limits of DIN EN ISO 8655-3.

Capacity (mL)	Increments (mL)	Inaccuracy		Imprecision	
		±%	±mL	±%	±mL
50	0.01	0.05	0.025	0.05	0.025

8. BATTERY INSTALLATION

- Open the battery compartment on the back of the control panel.
- Connect the batteries to the panel cable by firmly inserting the battery connector into the panel connector. It will lock with a 'click' sound.
- Close the compartment
- Press the ON/OFF button on the side of the panel.
- The welcome message will appear on the screen.

Note: To replace the batteries, press the lock button to release the latch and remove the used batteries.

9. INITIAL CONFIGURATION

- Adjust the length of the telescopic tube to fit your container.
- Attach the telescopic tube at the wider end, as the ends of the tube have different diameters.
- Select the correct adapter for the bottle. The threaded base of the burette has a 30 mm thread. Five additional adapters are supplied for 28, 32, 38-, 38-, 40- and 45-mm threaded vessels in addition to the built-in 30 mm adapter.
- Attach the adapter to the reagent bottle by screwing it clockwise.
- Mount the instrument. Screw it to the reagent bottle.
- Connect the cable from the instrument body to the port on the back of the control panel with firm pressure. Check the position of the cable. The flat surface of the connector with the arrow should be facing downwards.
- If charging is required, insert the charging connector on the back of the control panel and firmly connect the power cord to the power adapter. Then plug the two-pin cable into a 220V socket.
- The battery indicator will show the charging symbol.
- The burette is now ready to switch on. Press the ON button on the side of the control panel to activate the panel.

Note: When mounted on a reagent bottle, always carry the instrument by grasping the burette and the bottle with each hand and store it in an upright position.

10. USE OF THE INSTRUMENT

10.1. SWITCHING ON THE CONTROL PANEL

- Turn the instrument on using the ON7OFF switch on the back of the control panel.
- On start-up, the instrument will warn the user to place the control in recirculation mode.
- Turn the control knob to recirculation mode and press the check mark (☑) on the control panel display when ready.
- The instrument will automatically restart and is ready for use.

10.2. PURGING

Note: It is recommended to perform this step before using the burette to ensure bubble-free dispensing.

- From the main screen of the control panel, select the purge mode.
- The display will prompt you to turn the knob to recirculation mode.
- Turn the knob to recirculation mode and press the check mark (☐) on the display when ready.
- The burette will purge automatically. If the device is still not properly purged, return to the first point and repeat the procedure until no large air bubbles are observed under the piston.
- Small air bubbles up to 1 mm in size are allowed.

10.3. TITRATION (TITRATION)

Note: Wear protective clothing and eye and hand protection. Liquid may accumulate in cap. Follow all safety instructions and observe limitations and conditions of use.

- Remove the cap from the discharge pipe.
- Select the titration mode on the main screen.
- The control panel display shall warn the user to turn the knob to dither mode.
- Place the nozzle of the discharge tube against the inner wall of a suitable container.
- Turn the knob clockwise to select titration mode and press the check mark (☑) on the control panel display when ready.
- Now fill the burette cylinder by pressing the FILL button on the titration screen(Fig. 1).
- By pressing the STOP button, you can stop filling whenever you need to. *The grey colour indicates that the function is deactivated.
- Once the burette is full, the FILL button will be deactivated, which means that the burette cannot be filled any further.

(Fig. 1)

- To dispense the liquid, three dispensing speeds are provided, including drop-by-drop dispensing, which allows the user to reach the end point with high accuracy by dispensing one drop per click.

Fast mode		Medium mode		Drop by drop mode	
Capacity	Speed	Capacity	Speed	Capacity	Speed
50 ml	3.8 ml/s	50 ml	1.3 ml/s	50 ml	10µl/clic



■ When dispensing is complete, the RESET and SAVE buttons will be activated.
■ Clicking the SAVE button will transfer the dispensed reading to the QUICK SET button. The SAVE button will then be disabled, indicating that the reading cannot be saved again.
The reading stored in the memory will be transferred to QUICK SET and will be considered as the last value to be measured.
■ To activate the QUICK SET button, reset the display. The RESET button simply resets the displayed reading to zero.
■ By accessing the QUICK SET function, you can adjust the volume in 10 µl increments using the + and - buttons. The QUICK SET button allows the user to dispense a set amount of liquid at one time.
Once the quantity has been dispensed using the QUICK SET button, the user can continue the titration process from that point.
Note: If the titration value exceeds the cylinder capacity, simply store the value in QUICK SET. The burette will automatically fill and dispense until the stored value is reached.

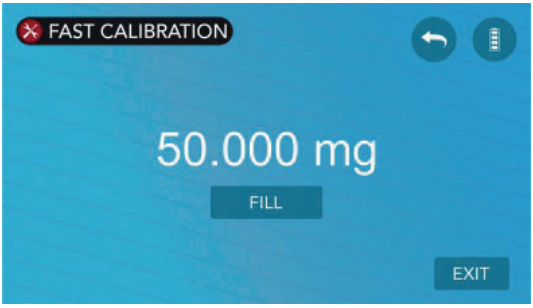
10.4. SENSITIVE MEDIA

For photosensitive media (e.g. iodine, potassium permanganate or silver nitrate solutions), it is recommended to use the amber window included in the box.
■ To replace the inspection window, disassemble the default window by pressing its top and removing it.
■ Place the amber window into the slot at the bottom of the housing and press down until you hear a click.

11. CALIBRATION

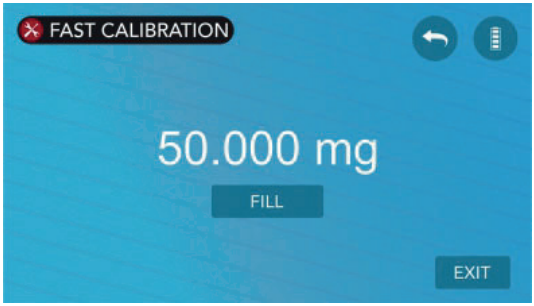
11.1. USER CALIBRATION PROCEDURE

The burette has been calibrated in the laboratory to its nominal volume. However, due to possible variations in ambient conditions and the viscosity of the dispensed medium, a gravimetric test is recommended every 3 to 12 months. The gravimetric volume test according to DIN EN ISO 8655-3 is carried out as follows:
■ Enter the settings icon in the bottom right corner of the home screen.
■ From the setup menu, select Calibration.
■ If the user detects a calibration problem at any dispensing speed, the user can select the specific speed to be calibrated (Fig. 1).



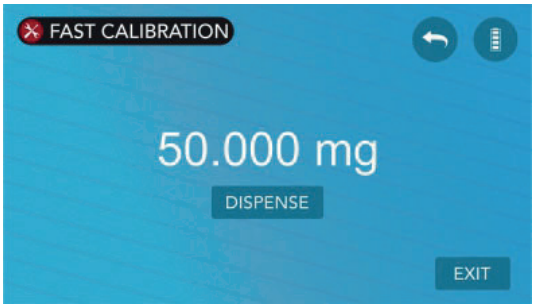
(Fig. 1)

■ Fill the nominal volume with doubly distilled and deionised water by pressing the FILL button on the calibration screen of the control panel (Fig. 2).



(Fig. 2)

■ Dispense the loaded liquid by pressing the DISPENSE button on the calibration screen of the control panel (Fig. 3).



(Fig. 3)

■ Measure the dispensed liquid on a digital or electronic balance and enter the value in grams (g) using the electronic keypad available on the burette panel (Fig. 4).
Note: This procedure is the same for calibrating the burette at fast or medium speed at all volumes

(Fig. 4)

■ Dropwise calibration: During dropwise calibration of the burette, a small amount is filled and approximately 20 drops are dispensed when dispensing. The user must enter the value of the dispensed quantity displayed on the balance.
To continue, click on the confirmation symbol (☑) (Fig. 15.A7).
Repeat this procedure until the nominal volume is reached on the electronic balance.

(Fig. 5)

11.2 FACTORY RESET

■ To reset the factory calibration settings, the user must access the Factory Reset option in the Factory Settings menu.
■ Click on the confirmation symbol (☑) to reset the calibration to the original factory settings. The CAL label will disappear from all displays.

12. OTHER ADJUSTMENTS

12.1. CONTROL PANEL AND BRIGHTNESS ADJUSTMENT

■ Click on the settings icon from the home screen.
■ In the configuration window, click on the BRIGHTNESS icon.
■ From the BRIGHTNESS window, select the desired brightness level and click on the confirmation symbol to save it (☑).

12.2. LANGUAGE SETTING

■ The user can select the preferred language from the Language settings. Select the desired language from the corresponding tab by clicking on it and confirm the selection by clicking on the confirmation symbol to save it (☑). You can switch to the following languages: English, German and Spanish.

12.3. DATE AND TIME SETTING

■ In the configuration window, click on the Factory Settings icon.
■ In the Factory Settings menu, select the date and time option.
■ The user can set and modify the date and time using the available electronic keypad.

13. CLEANING AND MAINTENANCE

Whenever cleaning is required, circulate distilled water through the burette. Completely fill the cylinder with distilled water and press the quick-dispense button to expel all the water.

Procedure for disassembling the spout:
■ Unscrew the retaining nut by turning it counterclockwise and remove the spout. Clean the spout with deionised water.
Procedure for mounting the spout:
■ Insert the outlet pipe into the lower housing until it can no longer advance.
■ Screw on the retaining nut to complete the assembly by turning it clockwise.
Note: Use isopropyl alcohol applied to a cloth or cotton wool to clean the external body.

14. TROUBLESHOOTING

Problem	Possible cause	Solution
Difficulty in moving the piston	Formation of crystals or dirt	Perform a cleaning cycle
Cannot be filled	Filling valve clogged	Clean the fill valve. If the valve ball is stuck, use a 200 µl plastic tip to loosen it.
Air bubbles in the instrument	Incomplete purge	Purge the instrument again
	Loose or damaged filler pipe	Secure the telescopic filling tube firmly. If necessary, cut the tube approx. 1 cm from the top or replace it.
	Filling tube not immersed in liquid	Fill the bottle or adjust the length of the telescopic filling tube correctly.
The delivered volume is lower than indicated	The instrument has not been fully primed	Re-prime the instrument
The instrument does not indicate any function	Internal error	Perform a restart
One-drop, one-touch dispenser not working	Instrument not purged	Make sure there are no air bubbles in the supply pipe or cylinder, bleed properly.
	Use the drop-by-drop dispensing button directly after filling the burette.	After each fill, use the quick or medium button to dispense a small amount, then use drop-by-drop dispensing.
Reading does not transfer from the burette panel to the software	The controller is missing	Install the driver provided with the installation file.
	Cable not connected or damaged	Check the connection and, if the cable is damaged, ask the supplier for assistance.