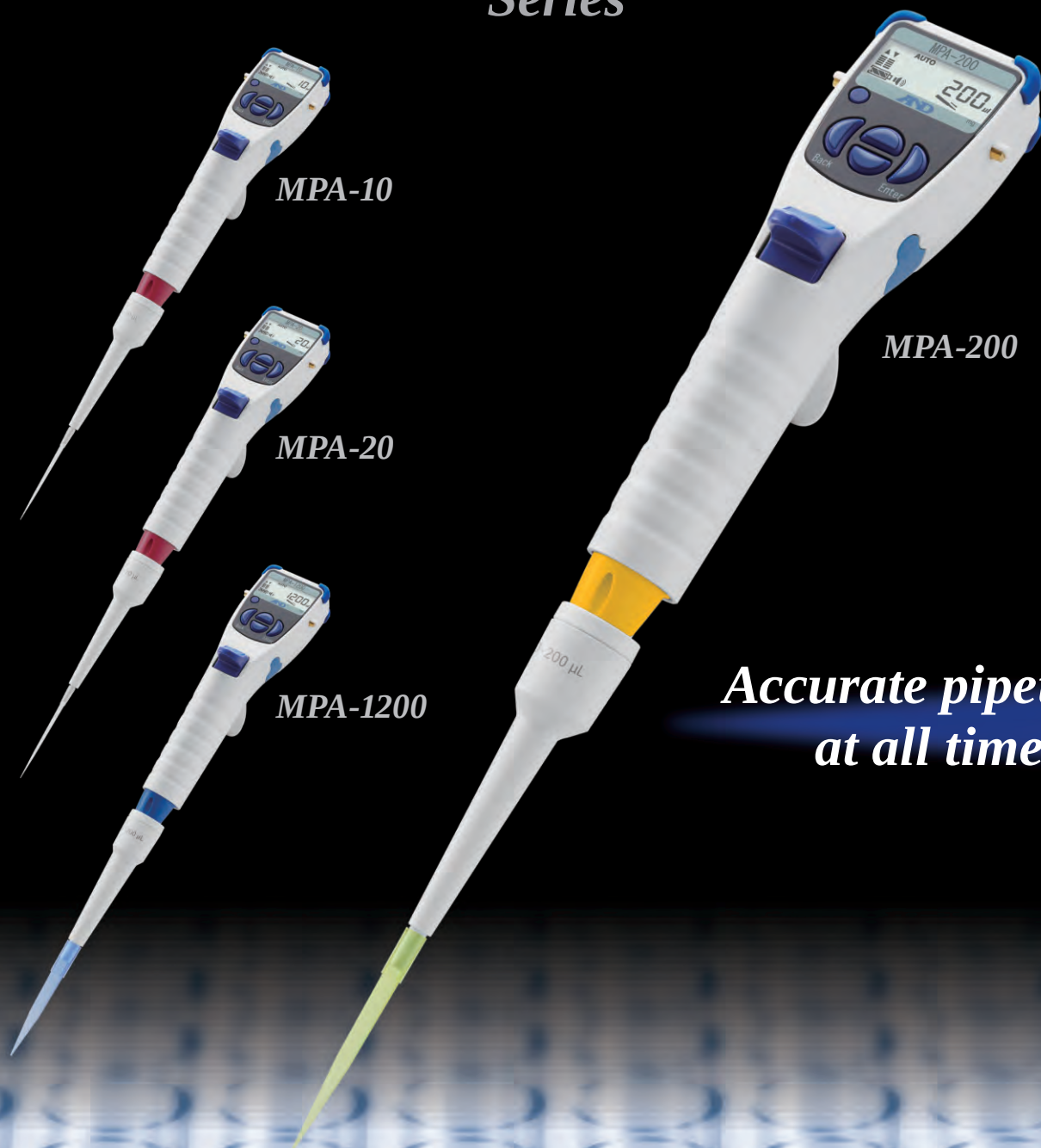


# *Single Channel Electronic Pipettes*

# *MPA*

## *Series*



*MPA-10*

*MPA-20*

*MPA-1200*

*MPA-200*

*Accurate pipetting  
at all times*



# **A&D**

A&D Company, Limited

<http://www.aandd.jp>

*...Clearly a Better Value*

# If you still think manual pipettes are good enough, it's time to **THINK AGAIN**

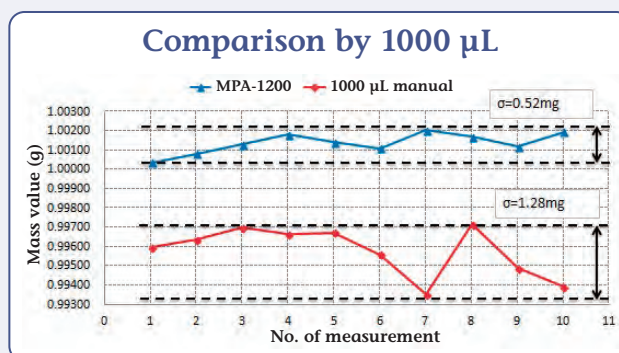
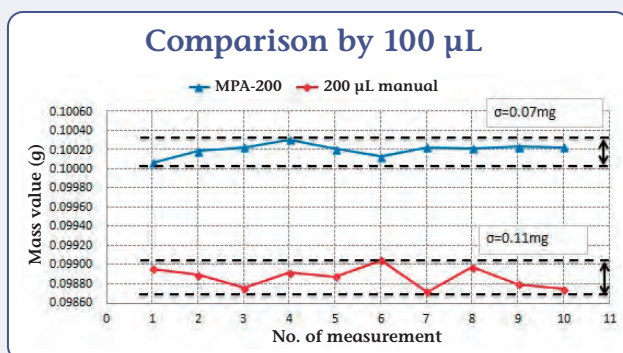
Now take a moment to consider the facts presented here. You will then realize why A&D's new and original electronic pipettes, the MPA series, should be your future choice in pipettes!

## Greater Ease, Yet Higher Precision

### Accuracy assured for everyone at all times

Unlike manual pipettes, dispensed quantities will not vary with each individual or each pipetting motion. Automatic operation ensures uniform accurate pipetting for both novice and expert alike, making anyone's assays always reliable.

In reality, it is extremely difficult for even proficient users to maintain a consistent pipetting motion (e.g. aspirating speed) every single time with a manual pipette. The graphs below show actual repeatability comparisons made by one of A&D's customers – a highly experienced manual pipette user – between the MPA series and her favorite, name-brand manual pipettes.



### Stress-minimized, pain-free operation

Does your thumb hurt when pipetting? Operating a manual pipette requires holding out the thumb perpendicular to the hand and then pushing the plunger all the way down with a force of a few kilograms. Such irregular movement can easily cause a repetitive strain injury (RSI) in the base of the thumb as you repeat it day in, day out.



With the MPA series, it is possible to control the plunger by lightly pressing a key with the ball of the forefinger (like pulling a trigger), while maintaining all fingers in a natural, effortless grip. No longer will hours or days of pipetting make you feel any pain in your thumb.\*1

\*1 Our experiment verified that virtually no strain occurs at all after 3,000 repeated pipettings over a 5 hour period.

## Various useful pipetting modes

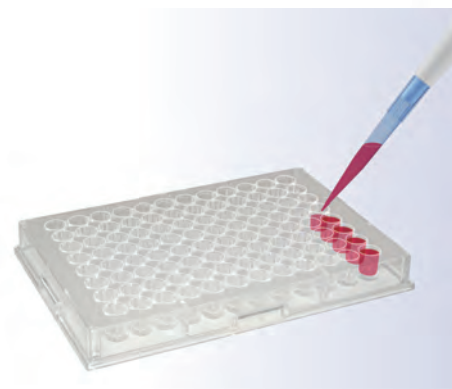
Apart from standard automatic aspirating and dispensing (AUTO mode), the following functions help greatly reduce time, stress and error associated with certain pipetting tasks:

### ■ Multiple dispensing (MD) mode

The MD mode lets you divide one aspirated volume (e.g. 1200  $\mu\text{L}$ ) into multiple dispensings of a smaller volume (e.g. 100  $\mu\text{L}$   $\times$  12 times). Use of this function will dramatically increase efficiency when you have to deliver the same amount of sample repeatedly into microplate wells, etc.

The MPA series automatically prevents error due to backlash<sup>★</sup>, which presents itself when the operation switches from aspirating to dispensing. You therefore need not discard the first dispensing volume as being inaccurate, as is the case with conventional electronic pipettes.

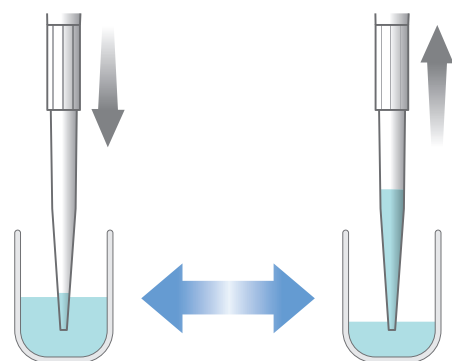
★ Patent pending



Multiple dispensing  
into a microplate

### ■ Mixing (MIX) mode

In MIX mode the pipette executes with one key press a set number of aspirating-dispensing cycles to mix and homogenize the solution in the receiving vessel. The same task using a manual pipette particularly tires your thumb and is also difficult to perform correctly when the mixing volume is small (prone to mix air and produce bubbles).



Mixing

### ■ Reverse operation

When reverse operation is selected, the pipette first aspirates a volume larger than the set dispensing volume, and discards the excess volume after delivery. This function is recommended for viscous samples that tend to linger in the tip.

## Flexibility In Use and Maintenance

### *Easy calibration (adjustment) by yourself – User CAL function<sup>★</sup>*

It would be expensive and difficult to use a third-party calibration service frequently at convenient times, wouldn't it. Rest assured that with the MPA series, you will be able to perform calibration and make necessary corrections for dispensing volumes at your own location whenever you want.<sup>\*2 \*3</sup>

★ Patent pending

This function also corrects for possible errors arising from differences in tip characteristics so you can use your preferred manufacturer's tips without any worry.<sup>\*4</sup>

<sup>\*2</sup> For verification of dispensed volumes necessary for calibration, A&D's pipette accuracy testers are useful (see "A&D's Pipette Management Solutions" on the following page).

<sup>\*3</sup> A calibration report is provided for each unit at the time of shipping as well.

<sup>\*4</sup> A list of compatible tips is available from the A&D website.



## A&D's Pipette Management Solutions

The following tools let you manage the quality and performance of your pipettes readily in-house (allowing documentation and compliance with ISO8655).



*For quick checking of pipette airtightness...*  
**Leak Tester: AD-1690**

*For verification of pipette accuracy and repeatability...*  
**Pipette Accuracy Testers: BM Series + BM-014, etc.**



*For easy implementation of daily and periodic pipette checks...*  
**Pipette Professional: AD-1695**



## Calibration and display in a unit of weight (mg)★

With the MPA series, you can choose to calibrate and display the pipetting amount based on the weight (mg) of the sample itself measured using a balance, instead of volume (μL).

This will make it much easier for you to handle liquids that need to be managed by weight, such as a diluted solution of a solid or powder, eliminating the necessity of troublesome density calculations. Additionally, it realizes more precise control of dispensing amounts of liquids whose viscous resistances or behaviors inside tips are different from that of purified water (with which the volume is normally calibrated).

★ Patent pending

## Preventive measures against damage by falls

Did you know that one of the most common repairs of electronic pipettes is for a broken LCD or electronic section due to dropping? With padding set on the four corners of the head★, those sections of the MPA series are designed to be protected from impacts from falls as much as possible.

★ Patent pending

Meanwhile, the finger hook that rests on your middle finger is long and curved in such a way that the pipette will remain perched in the hand even when the grip is loosened.



Impact-absorbing pads

## Quickly detachable lower part

The MPA series entails a much smaller risk of contamination inside the cylinder since electronic control produces no accidental, excessive suction of the sample.

When necessary, the lower part of the MPA series (including the tip holder and piston) can be quickly separated for autoclave sterilization (121 °C, 2 atm, 20 min) or replacement with a new one (supplied as an accessory – AX-LOW-10/20/200/1200).

## Simple function and operation settings

Changing the operation mode, volume(s), aspirating and dispensing speeds\*<sup>5</sup>, etc., is simple and straightforward. Further, up to nine combinations of these settings can be saved in the pipette for immediate recall at later times.

*\*<sup>5</sup> In addition to the reverse operation and calibration by weight (mg), slowing down these speeds is also effective for accurate pipetting of viscous samples.*

## Battery and Charging Options

The MPA series receives power supply from either an AC adapter or lithium-ion rechargeable battery (1,800 pipettings guaranteed on a full charge). You can also use the pipette without any hitches while charging the battery at the same time via USB connection.

Besides the USB power connector, the MPA series is equipped with electrode terminals to be hooked onto the following charger devices (all sold separately):

### ■ Charging hanger (AX-HA-CHG)

A space-saving charger that can be freely mounted to a wall, rack, or anywhere you find convenient. Using the provided linking cable, one AC adapter can supply power to a maximum of three hangers.

### ■ Charging stand for single MPA (AX-ST-CH-A1)

A stand that allows charging of individual MPA pipettes. It is also possible to combine up to three units to charge multiple pipettes with one AC adapter. The size of one unit is 60 (W)\*<sup>6</sup> × 335 (H) × 154 (D) mm.

*\*<sup>6</sup> Or 95 mm including the stand feet*

### ■ Charging stand for four MPAs (AX-ST-CH-M4)

A stand that can receive and charge up to four MPA pipettes simultaneously. Its size is 195 (W) × 350 (H) × 195 (D) mm.



AX-HA-CHG



AX-ST-CH-A1



AX-ST-CH-M4

## Specifications

| Model                              |                    | MPA-10                                                                                            |         | MPA-20         |         | MPA-200       |        | MPA-1200       |         |
|------------------------------------|--------------------|---------------------------------------------------------------------------------------------------|---------|----------------|---------|---------------|--------|----------------|---------|
| Capacity range                     |                    | 0.5 to 10.0 µL                                                                                    |         | 2.0 to 20.0 µL |         | 10 to 200 µL  |        | 100 to 1200 µL |         |
| Increment                          |                    | 0.1 µL                                                                                            |         |                |         | 1 µL          |        |                |         |
| Performance*7 *8                   | Volume             | 1.0 µL                                                                                            | 10.0 µL | 2.0 µL         | 20.0 µL | 10 µL         | 200 µL | 100 µL         | 1200 µL |
|                                    | Accuracy           | ±4.0%                                                                                             | ±1.0%   | ±4.0%          | ±1.0%   | ±2.5%         | ±0.6%  | ±2.5%          | ±0.5%   |
|                                    | Repeatability (CV) | 2.5%                                                                                              | 0.4%    | 2.5%           | 0.4%    | 1.0%          | 0.15%  | 0.6%           | 0.15%   |
| Operation mode                     |                    | Standard mode (AUTO), Multiple dispensing mode (MD), Mixing mode (MIX), System setting mode (SYS) |         |                |         |               |        |                |         |
| Program memory                     |                    | 9 programs                                                                                        |         |                |         |               |        |                |         |
| Aspirating/dispensing speed        |                    | 5 speeds                                                                                          |         |                |         |               |        |                |         |
| Pipette drive method               |                    | High precision stepping motor                                                                     |         |                |         |               |        |                |         |
| Power saving function              |                    | Automatic power off after 10 minutes of inactivity                                                |         |                |         |               |        |                |         |
| Maximum number of pipetting cycles |                    | 1,800 (on a full charge) *7                                                                       |         |                |         |               |        |                |         |
| Charging time                      |                    | Approx. 5 hours / 100%                                                                            |         |                |         |               |        |                |         |
| AC adapter                         |                    | Input: AC 100 to 240V, Output: DC 5V / 1A, Plug shape: selectable                                 |         |                |         |               |        |                |         |
| Autoclave treatment                |                    | Possible for the lower part of the pipette (121°C, 2 atm, 20 minutes)                             |         |                |         |               |        |                |         |
| Operating environment              |                    | 15 to 30°C (59 to 86°F), 85%RH or less                                                            |         |                |         |               |        |                |         |
| Battery                            |                    | Lithium-ion battery 3.7V / 920 mAh                                                                |         |                |         |               |        |                |         |
| Length                             |                    | Approx. 280 mm                                                                                    |         |                |         |               |        |                |         |
| Weight (including the battery)     |                    | Approx. 150 g                                                                                     |         |                |         | Approx. 160 g |        | Approx. 170 g  |         |

\*7 In standard mode with maximum aspirating and dispensing speeds

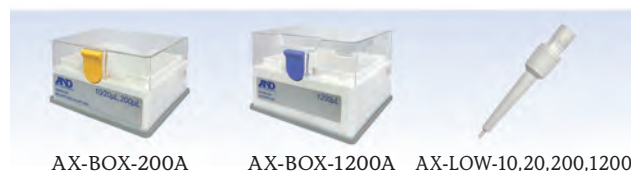
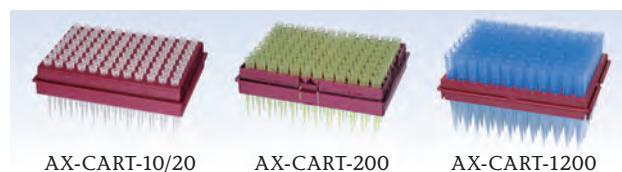
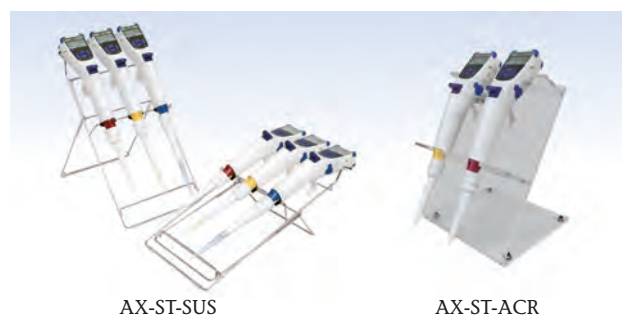
\*8 For the MPA-10, specifications apply for volumes of 1.0 µL or above

## Accessories / disposables

- AX-BOX-200A Tip box for the MPA-10/20/200 \*9
- AX-BOX-1200A Tip box for the MPA-1200 \*9
- AX-BOX-200B Tip box for the MPA-10/20/200 (no latch) \*9
- AX-BOX-1200B Tip box for the MPA-1200 (no latch) \*9
- AX-CART-10/20 Tip cartridge for the MPA-10/20 (10 tip sets) \*10
- AX-CART-200 Tip cartridge for the MPA-200 (10 tip sets) \*10
- AX-CART-1200 Tip cartridge for the MPA-1200 (10 tip sets) \*10
- AX-ST-SUS Stainless steel stand (for up to three MPAs)
- AX-ST-ACR Acrylic stand (for up to two MPAs)
- AX-HA-CHG Charging hanger
- AX-ST-CH-A1 Charging stand for single MPA
- AX-ST-CH-M4 Charging stand for four MPAs
- AX-BAT-MPA Lithium-ion rechargeable battery
- AX-LOW-10 Lower part assembly for the MPA-10
- AX-LOW-20 Lower part assembly for the MPA-20
- AX-LOW-200 Lower part assembly for the MPA-200
- AX-LOW-1200 Lower part assembly for the MPA-1200

\*9 Tips are not included

\*10 One tip set includes 96 tips



# AND

...Clearly a Better Value

### A&D Company, Limited

3-23-14 Higashi-Ikebukuro, Toshima-ku, Tokyo 170-0013 JAPAN  
Telephone: [81](3) 5391-6132 Fax: [81](3) 5391-6148  
http://www.aandd.jp

### A&D ENGINEERING, INC.

1756 Automation Parkway, San Jose, CA 95131 U.S.A.  
Telephone: [1](408) 263-5333 Fax: [1](408) 263-0119

### A&D Australasia Pty Ltd.

32 Dew Street, Thebarton, South Australia 5031 AUSTRALIA  
Telephone: [61](8) 8301-8100 Fax: [61](8) 8352-7409

### A&D INSTRUMENTS LTD.

Unit 24/26 Blacklands Way Abingdon Business Park,  
Abingdon, Oxon OX14 1DY UNITED KINGDOM  
Telephone: [44](1235) 550420 Fax: [44](1235) 550485

### <German Sales Office>

Hamburger Straße 30 D-22926 Ahrensburg GERMANY  
Telephone: [49](0) 4102 459230 Fax: [49](0) 4102 459231

### A&D KOREA Limited

817, Manhattan Bldg., 33, Gukjegeumyung-ro 6-gil,  
Yeongdeungpo-gu, Seoul, 150-749, KOREA  
Telephone: [82](2) 780-4101 Fax: [82](2) 782-4280

### A&D RUS CO., LTD.

Vereyskaya str.17, Moscow, 121357 RUSSIA  
Telephone: [7] (495) 937-33-44 Fax: [7] (495) 937-55-66

### A&D Instruments India Private Limited

509 Udyog Vihar Phase V  
Gurgaon-122 016, Haryana, INDIA  
Telephone: [91](124) 471-5555 Fax: [91](124) 471-5599