

epServices
for premium performance



Pipette Service Done Right

Eppendorf Pipette Calibration

»Are Your Results Reliable?«

Global quality standards assured with premium services by the experts

Your pipettes are high precision instruments, and require regular maintenance and checks to stay in peak performance. Especially the precision and accuracy of your pipettes are important to ensure the quality of your downstream results. When your pipettes are not working in peak condition, your experimental results can come into question.

Therefore, regular maintenance, calibration, and adjustment services by Eppendorf will help identify potential issues, and assure your pipettes and dispensers continue to generate reproducible results. Our new, globally available pipette service portfolio always follow the latest and strict international quality standards for calibration. Various calibration options include a thorough check of the pipette internally and externally, ensuring that wearable parts like O-rings are replaced in a timely manner.

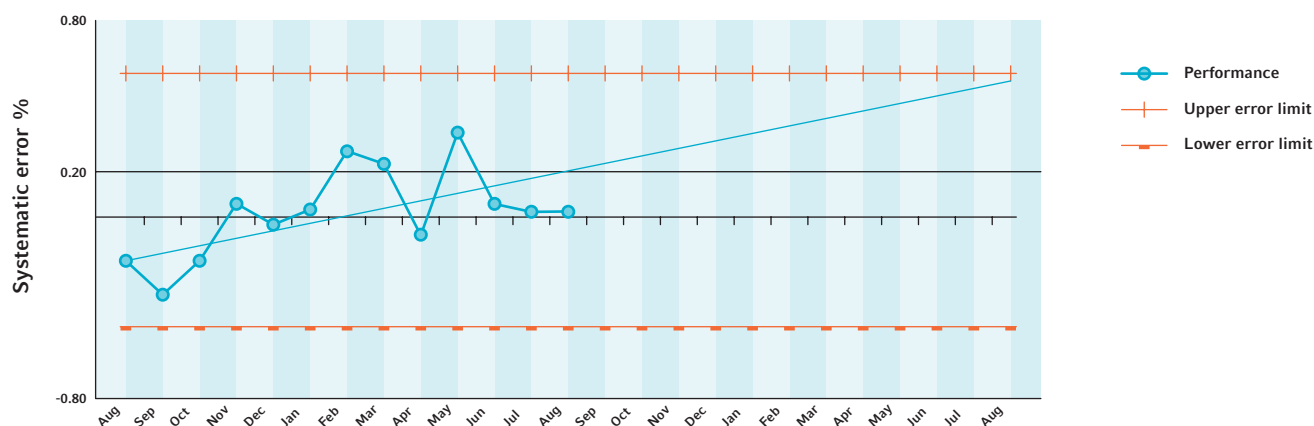


Calibration Drift Due to Wear and Tear

Month to month over a yearlong testing period, the new pipette in standard lab use is calibrating within the error limits as shown in the graph. However, wear and tear is causing this pipette's calibration to continuously just trend

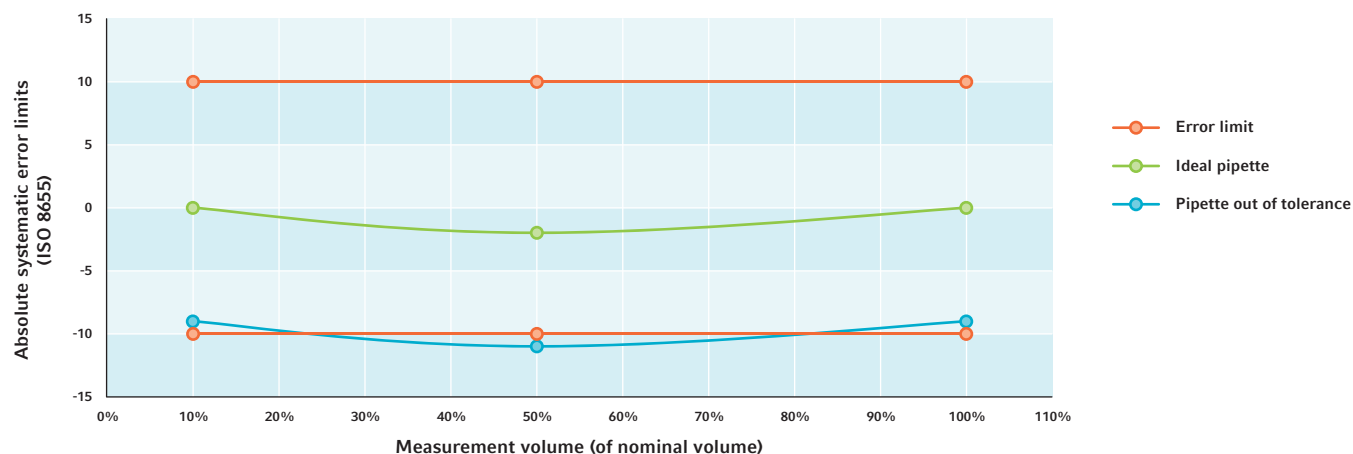
towards the upper limit. Without any maintenance, calibration or adjustment measures, this pipette will eventually fall out of calibration, potentially causing questionable and unreliable results.

Example pipette calibration over time



What Else is Important?

Calibrating with 3 volumes to compensate for the non-linear correlation of error and volume



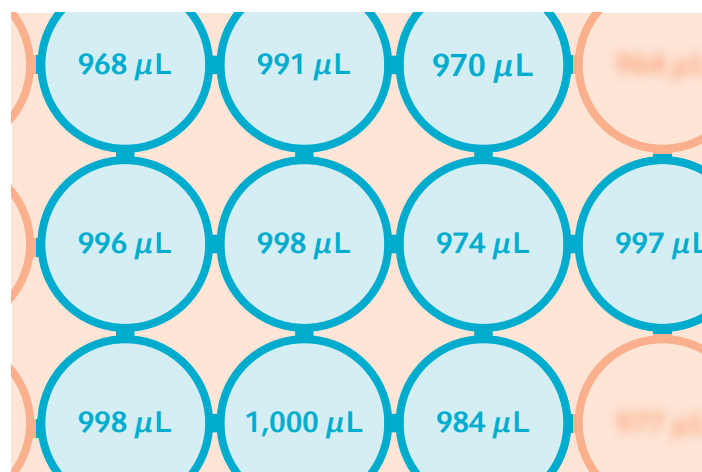
ISO 8655 requires 3 volumes to be tested during calibration: Nominal volume, 50% of nominal volume, and lower limit of useful volume or 10% of nominal volume (whichever is the greater). Since the error limits of a pipette are not linear from minimum to maximum volume, it is possible to have the 10% and 100% volumes perform within the systematic error limits while the 50% volume does not.

The graph above demonstrates this phenomenon with the blue line representing a pipette that is out of tolerance. The user would not know that this pipette isn't functioning properly without testing all 3 volumes.

Calibrating with 10 measurements versus 4 measurements to compensate for deviations



4 measurements – avg. 997 µL, 0.3% error



10 measurements – avg. 984 µL, 1.6% error

The boxes above represent a set of calibration measurements from a 1.000 µL pipette. On the left, taking only 4 measurements produces an error of 0.3%, well within the pipette's 0.6% error limit. On the right, taking all 10 measurements

produces an error of 1.6%, considerably outside the pipette's 0.6% limits. More confidence in the calibration is produced and the results become statistically more accurate when using 10 measurements as recommended by ISO 8655.

Why Eppendorf Pipette Service?



Beyond ISO Conformity

We maintain over 5000 pipette manufacturer specifications and conform to the manufacturer standard when their specifications are tighter than ISO 8655 standards, if requested by customer.



Highly Trained Service Technicians

Our highly-qualified technicians go through 200 hours of training and must pass rigorous exams to become certified before servicing pipettes.



Thorough Maintenance

Our calibration services include a thorough check of the pipette internally and externally, ensuring that wearable parts like O-rings are replaced in a timely manner.



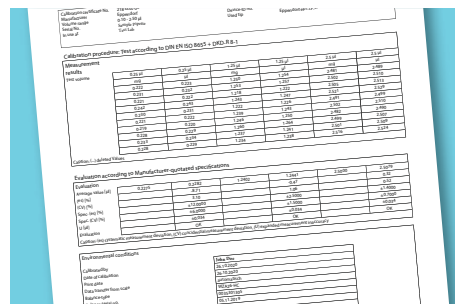
Fully Accredited Service Centers

In our major markets, ISO 17025 accredited calibration processes are available in the field or at the service center. As a liquid handling expert partner, we can help you meet any regulatory need.



Over 60 Years of Experience

Since we released the first piston stroke pipette in 1961, we continue to manufacture and service pipettes with a passion for improving user results.



Audit-proof Documentation

Our calibration documentation will give you peace of mind due to reduced workload for your qualification and regulatory audit process. Most of our calibration facilities worldwide use our CFR21 part 11 compliant software.

Eppendorf Calibration Process

Decontamination

After verifying the customer's declaration of decontamination, all pipettes go through an additional Eppendorf decontamination process before they are forwarded to our calibration facilities.



Preventive Maintenance and Repair

- > As found examination and calibration if requested
- > Cleaning of external and inner parts and maintenance (lubricating, exchange of wear and tear parts if necessary) of the devices
- > Leak testing
- > Performing necessary repairs



Calibration and Adjustment

- > Usage of high-precision single- and multi-channel balances fulfilling ISO 8655 requirements
- > Usage of original manufacturer pipette tips
- > Measurement according to ISO 8655
- > Evaluation according to manufacturer specifications (if requested to ISO 8655 or customer SOP error limits)
- > Adjustment, if device is outside of the error limits
- > ISO 17025 calibration certificate on request.



Labeling and Packaging

- > Device is packed with calibration certificate and service report ready for shipment
- > Each device is labeled with a calibration service sticker with the calibration date
- > Shipping in secure packaging with our certified shipping partners assures the pipette arrives in peak condition.



Frequently Asked Questions

How often should you calibrate a pipette?

> You decide within the scope of your quality standards on the calibration frequency. The frequency of calibration may vary depending on the number of users, the frequency of use of the pipettes, as well as the type of dispensed liquids and the Accepted tolerances. A renewal of the conformity by ISO 8655 is recommended at least once per year.

What is a renewal of a conformity?

> The calibration / renewal of conformity consists of a pipette maintenance and an As-Left calibration. These strictly adhere to ISO 8655 criteria, ensuring that the pipette meets conformity to ISO 8655 requirements or even tighter specifications like manufacturer specifications.

What happens, if my instrument cannot be repaired?

> We will inform you and offer you an attractive trade-in offer.
> On request we will dispose your old instrument or send it back to you.

What is an ISO 17025 calibration certificate?

> An ISO 17025 calibration certificate not only contains the data from the calibration protocol, but also contains the measurement uncertainty, and the accreditation confirmation of the lab. The ISO 17025 calibration certificate with the included raw data information ensures the traceability chain for the calibration.

Why do I need a calibration without preventive maintenance in addition?

> The As-Is protocol is performed before the As-Left calibration or renewal of conformity including maintenance. This protocol shows the calibration status of the pipette as received from the user, and is indicative of the pipette's performance prior to the renewal of conformity.



> Watch video:
www.eppendorf.com/pipette-video

Pipette Calibration Service

Calibration Services – Ordering information

Service	Calibration measurements »As Is«	Calibration measurements »As Left«	Decontamination from outside ^{*2}	Checking, cleaning, lubricating ^{*4} before calibration	Single channel pipette/ dispenser	8-channel pipette	12-channel pipette	16-channel pipette	24-channel pipette
ISO 8655 including Preventive Maintenance		10 per test volume ^{*1}	included	included	0082 000 142	0082 000 165	0082 000 166	0082 000 185	0082 000 186
3x4 without Preventive Maintenance	4 per test volume ^{*1}		included		0082 000 139	0082 000 159	0082 000 160	0082 000 179	0082 000 180

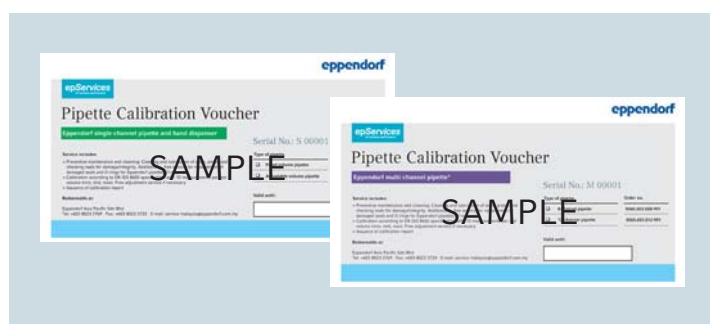
Calibration Service Packages – Ordering information

Service	Calibration measurements »As Is«	Calibration measurements »As Left«	Outside decontamination ^{*2} ; checking, cleaning, lubrication ^{*4}	ISO 17025 Accreditation calibration certificate	Single channel pipette/ dispenser	8-channel pipette	12-channel pipette	16-channel pipette	24-channel pipette
ISO 17025 including Preventive Maintenance		10 per test volume ^{*1}	included	included	0082 000 143	0082 000 167	0082 000 168	0082 000 187	0082 000 188
ISO 17025 Professional	10 per test volume ^{*1}	10 per test volume ^{*1}	included	included	0082 000 220	0082 000 221	0082 000 222	0082 000 223	0082 000 224

Our Unique Pipette Calibration Vouchers

- > Instantly redeemable as prepaid service vouchers;
- > Long validity period of 2 years for better service planning* and utilization of your maintenance budget;
- > Minimize paperwork within your organization when calibration is required;
- > The voucher provides a calibration service that is in accordance with ISO17025 including preventive maintenance.

* Recommended service interval varies from monthly to yearly depending on type of pipette, frequency of use, number of users, aggressiveness of liquids dispensed, acceptable error limits and internal standard (SOPs).



Purchase	Complimentary
20	2
50	5
100	12

You get more savings when you purchase more vouchers for pipette calibration.

The pipette calibration vouchers are available for single-channel pipettes, 8-channel pipettes and 12-channel pipettes.



MS ISO/IEC 17025
CALIBRATION
SAMM NO. 689

Since 2015, our pipette calibration facility in Malaysia has been accredited in accordance with MS ISO/IEC 17025 and listed on Standards Malaysia (SAMM 689) for its technical competence under the volumetric field for the scope of 10 µL to 10 mL. From 2020 onward, we have expanded our scope from 0.1 µL to 100 mL to cover our entire product calibration range. This will cover all piston-operated volumetric apparatus such as the manual pipettes, electronic pipettes and bottle-top dispensers.

Eppendorf Asia Pacific Sdn Bhd · Eppendorf Liquid Handling Service Centre

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