



**Kuhner** shaker



KUHNER SERVICES

**from consulting to support**



## Comprehensive Services



### Installation and qualification

The installation and qualification service includes the checking of delivery status and installation environment, the actual machine installation incl. configuration and functional check, the testing of the alarm functions, and the verification of instrument parameters (e.g. speed, temperature, humidity, CO<sub>2</sub>, alarms). A detailed IQ/OQ report is available as an option.



### IQ/OQ documentation

Our well-experienced GMP department offers IQ/OQ (Installation Qualification/Operation Qualification) documents for our shakers, bioreactors, software, and communication interfaces. All documents are available as Kuhner standard documents or can be adapted to the client's requirements in format, layout, and scope. Furthermore, Kuhner provides also the documentation for the regular revalidation of the machines.



### Preventative maintenance and calibration

We perform preventative maintenance and equipment calibrations, (e.g. shaking frequency, temperature, CO<sub>2</sub>, etc.) to ensure optimal performance. Your shakers and orbitally shaken bioreactor systems (OSB) can be calibrated according to GMP (Good Manufacturing Practice) regulations. This service is performed by our qualified personnel.



### Technical support and consultation

We are available by phone at any time during the day. You can also contact us via email or via our contact form and we will return your call quickly. Kuhner is represented by subsidiaries and distributors around the world. Our employees and distribution partners in your home country enjoy taking care of your request personally. All our service technicians receive regular factory-certified trainings and updates on our machines.



## Repair service and spare parts

Kuhner has its own local spare parts warehouse to provide fast and efficient service for our customers. Maintenance work and repairs are performed worldwide by factory-certified personnel to exacting specifications and promptly at the customer's premise. Depending on your needs, our service engineers will reach out for visitor guidelines and ship necessary spare parts before coming on site. Please contact us for more details.



## Warranty

All Kuhner products are designed for durability and reliability. Kuhner shakers, incubator shakers and bioreactors are a cost-effective investment in quality backed with a five-year-warranty.

*\*excluding sensors*



## Upgrades and retrofits

Shaking machines and orbitally shaken bioreactor systems (OSB) can be upgraded and retrofitted on demand. Examples include shaking table changes and upgrades. Cooling, humidity, CO<sub>2</sub> systems may (in most cases) be added in the field. Please contact us for more details.



## One-time services and service contracts

Customers work directly with their engineers to design coverage which best suits their needs.





## Overview

of Kuhner's services and service packages\*:

Calibration	Preventative Maintenance	Preventative Maintenance incl. Calibration	Comprehensive Contract	Comprehensive Contract incl. Calibration
Calibration of - Speed - Temperature - Humidity - CO <sub>2</sub> - ...	—	Calibration of - Speed - Temperature - Humidity - CO <sub>2</sub> - ...	—	Calibration of - Speed - Temperature - Humidity - CO <sub>2</sub> - ...
—	One scheduled Preventative Maintenance visit per year	One scheduled Preventative Maintenance visit per year	One scheduled Preventative Maintenance visit per year	One scheduled Preventative Maintenance visit per year
Travel Expenses	Travel Expenses	Travel Expenses	Travel Expenses	Travel Expenses
—	—	—	All spare parts	All spare parts
—	—	—	—	One unplanned / Emergency Service Operation per year

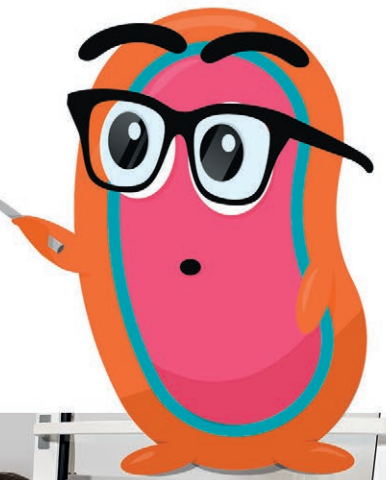
\*there may be minor variations depending on country

# Custom made

„Are you looking for customized products that are tailored to your individual application?“

„Still searching for the perfect custom solution? Let our expert team bring your vision to life!“

Our **Kuhner Atelier** is our perfect contact for you!



## Creation of an independent department

Kuhner Atelier has sprung into life at the beginning of 2022 to optimize our performance and serve our customers' needs for custom-made solutions even better.

Do you have an unconventional or self-made shaking vessel? Send us a prototype of your vessel and we will develop a clamp that fits. Would you prefer to combine your measuring system with one of our shakers? Do you require a shaking machine with an unconventional feature? We will adapt our shakers to fit your needs. We will work with you to create an optimal solution for your shaking machine or shaken bioreactor system (OSB). Contact our Kuhner Atelier department today to learn more about our services and discuss your individual requirements.

We look forward to working with you to develop innovative solutions.

Contact **atelier@kuhner.com** for any inquiries.





## Consulting and Trainings

- **Application-oriented consultation**
- **Science Room & Shaking Technology Forum**
- **Kuhner Seminars and in-house or online trainings**

Discover customized consulting services for cultivations in shaken bioreactors from microliter scale to multi-liter scale, supported by our state-of-the-art in-house laboratories. Using advanced technologies, including computational modeling and online measurement techniques, we provide expert advice and generate experimental data to answer any questions about our products or cultivation methods. Through partnerships with renowned research institutions, we provide solutions to complex cultivation challenges. Consultations are free of charge

and confidential for our customers, and interested customers also receive a free initial consultation. In addition, you will find informative posters and downloadable application data in our Science Room and valuable support and information in our Shaking Technology Forum. Attend our scientific seminars on various topics related to orbitally shaken bioreactors, technology and symposia and benefit from customized training courses held on-site, online or at our dedicated training facilities in Monthey (CH), Birsfelden (CH), and Girona (ES).





## Incubator shakers and laboratory shakers



ISF1-Z

Laboratory shakers and incubator shakers are required to be in continuous use for years. Even small variations in the shaker operation can influence the reproducibility of your cell cultivations and experimental results. Regularly servicing your shakers and incubators, including calibration of the probes, guarantees a reliable and consistent shaker performance.

### The Installation and Qualification Service includes:

- Check of delivery status and installation environment
- Installation incl. configuration and functional check
- Test of alarm functions
- Verification of instrument parameters (e.g. speed, temperature, humidity, CO<sub>2</sub>, alarms)
- Optional: Detailed IQ/OQ report
- End user orientation and training

### The Preventative Maintenance Service includes:

- Inspection of machine leveling
- Inspection of door opening system and gaskets
- Check of shaking system operation with adjustments, if necessary
- Check and calibration of heating system
- Check and calibration of refrigeration system
- Check of fan operation – cooling and circulation
- Inspection of bearings
- Inspection of shaking trays and clamps, incl. replacement of silicon rubbers
- Check of drain for blockage
- Optional: 2-Point Calibration Service



## MPS-Z Automated

our industry-leading automated shaker includes  
an industry-leading maintenance and support plan

### The Preventative Maintenance Service includes:

- Check of sluice/ transfer platform
- Check of barcode reader
- Performance of electrical test
- Check of SCARA (Hawk™)
- Check of clamping table
- Check of electronics
- Check of software and customer interface
- Cleaning of electronic drawer
- Check of safety interlock door
- Check of all interfaces and connections
- Check of heat exchanger peltier module air
- Check of peltier module
- Check of fans

Necessary adjustments will be carried out on customers request.

### The Calibration Service:

- Teaching and adjustment of SCARA (Hawk™) to each point in the machine
- Calibration of side door function
- Calibration of temperature
- Calibration of CO<sub>2</sub>
- Calibration of humidity
- Includes certification and documentation
- Optional: 2-Point Calibration Service

Calibration does not include maintenance or spare parts. The Calibration Service can be purchased separately or as part of the Preventative Maintenance Service or the Comprehensive Service Contract.



MPS-Z Automated





## Orbital Shaken Bioreactors

Kuhner's orbitally shaken bioreactors (OSB) with single-use bags are ideally suited for the cultivation of mammalian, human, insect, and plant cell cultures. The bioreactors are available in four different sizes with varying working volumes, starting as small as 1.5 L and going all the way up to 2500 L.

The OSBs are all designed to be user-friendly and the single-use bags guarantee a fast and simple set-up and short down-times. Keep the downtimes at a minimum and your shaken bioreactors in good working order by taking advantage of our service and preventative maintenance offerings.

### The Installation and Qualification Service includes:

- Check of delivery status and installation environment
- Installation incl. configuration and functional check
- Test of alarm functions
- Verification of instrument parameters (e.g. speed, temperature, gas flow, alarms)
- Optional: Detailed IQ/OQ report
- End user orientation and training

### The Preventative Maintenance Service includes:

- Check of delivery status and installation environment
- Installation incl. configuration and functional check
- Test of alarm functions
- Verification of instrument parameters (e.g. speed, temperature, gas flow, alarms)
- Optional: Detailed IQ/OQ report

**One scheduled preventative maintenance visit per year and travel expenses. The following tasks are performed:**

- Preparation of documents
- Check of mechanical integrity of shaker
- Check of software and firmware package
- Check of power consumption
- Check of shaking frequency and noise level
- Check of mass flow controllers
- Check of temperature control
- Check of emergency stop function
- Check of peristaltic pump functionality
- Check of electronics for pH and DO sensor module
- Test of electrical functions)
- Optional: 2-Point Calibration Service

Necessary adjustments will be carried out on customers request.



SB2500-Z



## The Calibration Service includes:

- Calibration of temperature (at 37°C)
- Calibration of mass flow controller
- Calibration of pH and DO
- Calibration of shaking frequency
- Optional: 2-Point Calibration Service

Calibration does not include maintenance or spare parts. The Calibration Service can be purchased separately or as part of the Preventative Maintenance Service or the Comprehensive Service Contract.

## The Comprehensive Service Contract includes:

- Spare parts
- One unscheduled visit per year
- One scheduled Preventative Maintenance visit per year (including all checkpoints listed under Preventative Maintenance Service)
- Guaranteed response times
- Travel expenses
- Optional: 2-Point Calibration Service

SB50-X



SB200-X



SB10-X







## Add-Ons

### Online measurement & Gas mixing

#### Kuhner TOM (Transfer Rate Online Measurement)

Would you like to know how you can precisely measure the oxygen transfer rate (OTR), the carbon dioxide transfer rate (CTR) and the respiration quotient (RQ) for up to 16 individual shake flasks in your Kuhner incubator? Introducing the Kuhner TOM (Transfer Rate Online Measurement) system. This innovative solution provides users with a deeper understanding of their bioprocesses and enables more efficient and effective optimization during process development.

#### The Preventative Maintenance Service includes:

- Visual inspection of the condition of machine
- Functional inspection
- Tightness check
- Exchange of O-rings
- Check of sensor performance
- Adjustment of pumps
- Firmware update
- Optional: Cleaning including decontamination and tube exchange



Kuhner TOM

#### The Installation and Qualification Service includes:

- Checking of delivery status and installation environment
- Installation incl. configuration and functional check
- CO<sub>2</sub> sensor calibration
- End user orientation and training

#### Spare Parts Service

- Exchange of O<sub>2</sub> sensors
- Exchange of CO<sub>2</sub> sensors
- Exchange of pumps

We recommend to exchange the O<sub>2</sub> and CO<sub>2</sub> sensors every 3-4 years.



# Kuhner shaker

## local service points



### Head office Switzerland

Adolf Kühner AG  
Phone: +41 (0)61 319 93 82  
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For all other countries please contact our head office. We will guide you to our nearest partners.



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### Benelux

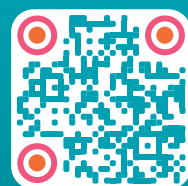
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