# BioShake 3000

*Operating Manual*

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# 1 Safety and Caution

1. Do not operate the device in rooms where work is being carried out with explosive substances.
2. Do not use this device to process any explosive, radioactive or highly reactive substances.
3. Do not use this device to process any substances, which could create an explosive atmosphere.
4. **Danger!** Electric shock from damage to device/power cable. Danger! Lethal voltages inside the device.
5. **Warning!** General hazard point.
6. **Warning!** Injury from rapidly rotating holder. Injury from rapidly rotating imbalance compensation. Injury from flying tubes and plates.
7. **Warning!** Injury from sample material being flung out. Injury from incorrect vortexing.
8. **Warning!** Damage due to incorrect power supply.
9. **Caution!** Damage to the display from mechanical pressure. Severe vibration.
10. **Caution!** Damage to electronic components caused by spilled liquids. Damage to electronic components from condensation.
11. **Caution!** Poor safety due to missing operating manual. Caution when using aggressive chemicals.
12. Please start even with minimal mixing frequencies to avoid overloading.
13. Only mix in sealed tubes and plates. Sample material can be flung out of open, inadequately sealed or unstable tubes and plates.
14. When working with hazardous, toxic and pathogenic samples, always comply with the nationally specified safety environment.
15. Please use the original power supply delivered by QUANTIFOIL Instruments.
16. Please use the original accessories recommended by QUANTIFOIL Instruments.

Pay particular attention to personal safety gear (gloves, clothing, glasses etc.), the extraction hood and the safety class of the laboratory.

Read this section carefully and follow the instructions before beginning installation and any procedure.
The unit must be placed on a horizontal solid work space.
The device must be saving from shocks and falling.
The unit must be placed in sufficient distance to heat registers or radiators to ensure ambient temperature conditions in accordance with the technical specifications.

Use the normal care and precaution one would use with any electrical appliance. Be sure to use a power cord with the same rating and of the same type (three-wire with neutral conductor) as the one supplied with the instrument. Ensure that voltage and frequency of your power source match the input voltage and frequency inscribed on the electrical rating label of the power supply (AC/DC adaptor) and that the output voltage matches the rating of the equipment. The AC/DC adaptor is designed to work with a single-phase power system having a grounded neutral conductor. If you are not sure what type of power is supplied to your building contact your facilities manager.
As BioShake is an electrical device do not spill large quantities of liquid onto the device. Do not use it in an explosive atmosphere.
As parts of the device may generate electric, magnetic or electromagnetic fields, keep parts away that may be affected (e.g. data storage units).

BioShake is capable of heating the plate surface up to 100 °C.
This temperature is high enough to cause serious burns if touched.
Use extreme caution at all times.
Never leave your unit accessible to others when it is hot.
Never touch the plate surface unless you are sure it is cold.
Use oven gloves if necessary.

Do not unscrew any part of BioShake except different blocks.
Do not make any mechanical or electrical modifications to the equipment.
Never do anything else with BioShake as intended in this manual.
Noncompliance of the safety instructions may lead to device damage, loss of warranty and may cause serious personal injury as well as death.

# 2 General Information

**Warning!** Injury from sample material being flung out.

Sample material can be flung out of open, inadequately sealed or unstable wells, plates and tubes.

- Only mix in sealed tubes and plates
- When working with hazardous, toxic and pathogenic samples, always comply with nationally specified safety environment. Pay particular attention to personal safety gear (gloves, clothing, glasses etc.), the extraction hood and the safety class of the laboratory.

When setting mixing frequency, start from slower to faster speed settings.

# 3 Warranty

QUANTIFOIL Instruments warrants products manufactured by it to be free from defects in material or workmanship under normal use and service for a period of 2 years from date of shipment.
This warranty is specifically limited to the replacement or repair of any such warrantable defects, without charge, when the complete product is returned to QUANTIFOIL Instruments GmbH, freight prepaid, at the address shown above. Contact the factory at the address above for a Return Material Authorization (RMA) number before returning the product.
QUANTIFOIL Instruments shall be the sole judge of the warrant ability of alleged product defects. Products that are returned for warranty examination and that are found to be non-warrantable are chargeable and are returned freight collect. A copy of a purchase order with the amount of the charge must be received by QUANTIFOIL Instruments, either by mail or by FAX, before any equipment is returned. Warrantable products are repaired or replaced at no charge and returned freight prepaid.
THIS EXPRESS WARRANTY EXCLUDES ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PURPOSE. QUANTIFOIL INSTRUMENTS GmbH SHALL NOT BE LIABLE FOR WARRANTY IN ANY AMOUNT EXCEEDING THE PURCHASE PRICE OF THE GOODS. QUANTIFOIL INSTRUMENTS GmbH SHALL NOT BE LIABLE FOR ANY SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER IN CONTRACT, TORT, OR OTHERWISE.
The buyer acknowledges that he/she is not relying on the seller's skill or judgment to select or furnish goods suitable for any particular purpose and that there are no warranties that extend beyond the description on the face hereof.
This warranty extends only to the original purchaser, and shall not apply to any products or parts that have been subject to misuse, neglect, accident, or abnormal conditions or operations. Claims for damage in transit are directed to the freight carrier upon receipt.

**Please use the online form for registration of your appliance and service:**

*www.qinstruments.com/service/*

Your completed data will serve as registered certificate of guarantee for our extended guaranteeing and will assure optimal service.
Please keep your sales slip for a possible warranty case which must be presented then. Your personal data will not be given to third persons.

# 4 Delivery Parts



| | |
|---|---|
| Part 1 | BioShake 3000<br>incl. 1x 24 VDC cable *(prewired cable, length 2 m)*<br>incl. 1x RS-232 cable *(prewired cable, length 2 m)* |
| Part 2 | Power supply |
| Part 3 | Power cord (1x Europe and 1x country specific design) |
| Part 4 | Operating manual, calibration certificate, allen key, integration manual (no picture) |

# 5 Installation

Unpack and carefully check the instrument. Report any damage or missing items to your distributor.
If no damage is found, place the device up on a stable horizontal surface.
Place an adapter on the shaker (chapter 6: Changing of adapter plates) if necessary.
Adjust the shaker to your Microplate Type (chapter 7: Adjustment to the Microplate).

Plug in the RS232 cable into a free port of your computer.
Plug the external power supply (2) into the 24 V socket of the BioShake.
Plug the power cord (3) into the power supply (2) and into the wall socket.
The instrument will do a self test.
Now the instrument is ready to accept data's from the computer.

To integrate the instrument into a robotic system, please refer to the document **"Integration Manual – Integration of BioShake instruments in lab automation systems".**

It is advisable to carry out a test run at maximum speed to ensure that the device does not move while mixing.

# 6 Changing of adapter plates

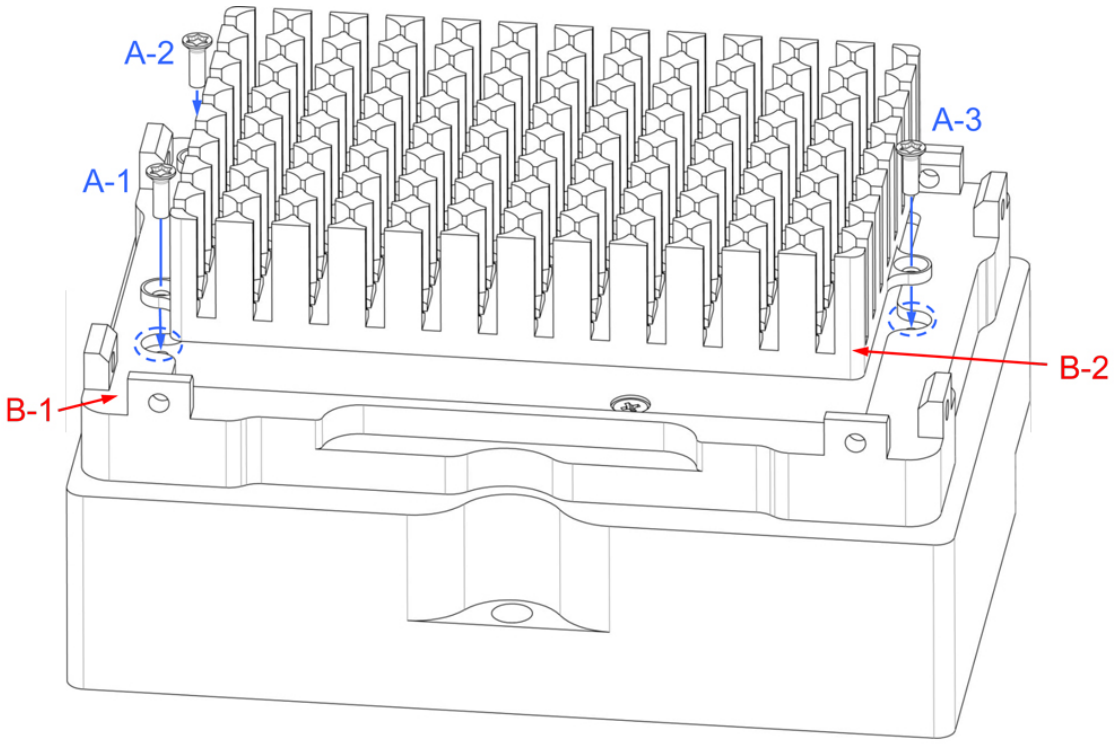
If the security cover plate or an adapter plate is already be mounted, please remove it first!

To change the adapter plates, please follow the subsequent steps:

1. Switch off the power supply for the instrument!
2. Remove all sample carriers (tubes, vials, microplates etc.).
3. Loosen the 3 torx screws A-1, A-2 and A-3 by using the supplied screwdriver *(Torx size 8, rotate left).*
4. Take off the adapter plate B-2 straight up and put it on a clean, soft surface.

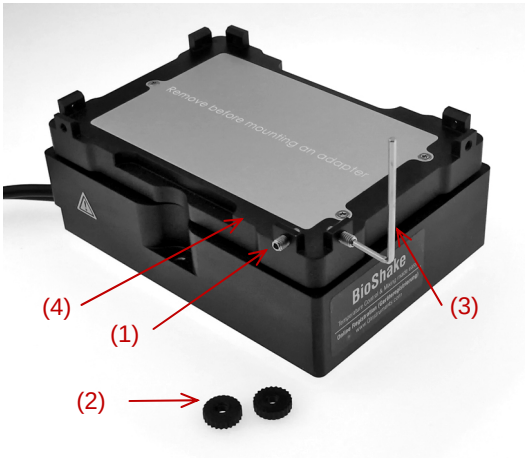
**Mounting of the new adapter plate:**

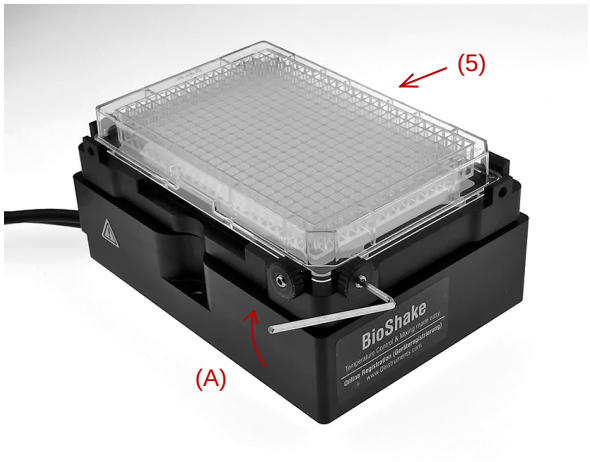
1. Please take care to a clean, dirt-free and particle-free operation.
2. Insert the new adapter plate straight into the impression into the plate holder B-1.
3. Check the fixed position.
4. Fix all torx screws A-1, A-2 und A-3 using clockwise rotation.
   Please take care to uniform controlled tightening of screws to ensure a good fit.
5. Please take care to good and tight fit of sample carriers (tubes, vials, microplates etc.).
6. Turn On the power supply of the instrument!

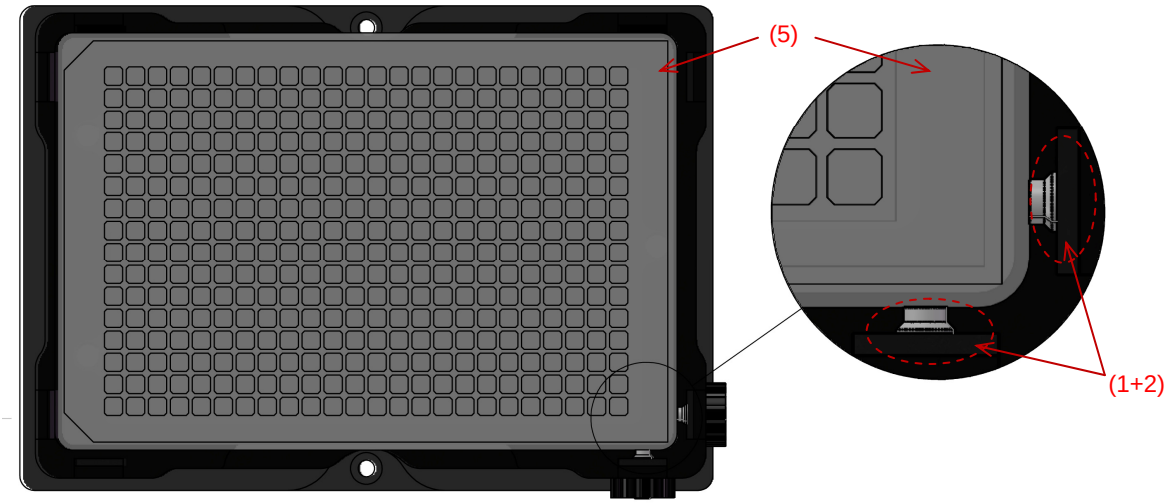



Heavier blocks may limit the shaking speed

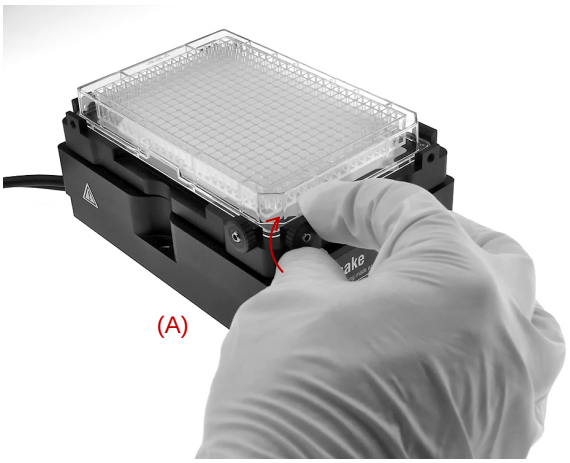
# 7 Adjustment to the microplate








(1) Insert the two spring plungers (1) into the treated screw holes in the corner area of the plate holder (4) by turning it clockwise with the delivered allen key (3)
(2) Insert the microplate (5) you want to use
(3) Turn the knurled nuts (2) by hand a few turns in clockwise direction (A)
(4) Turn the spring plunger (1) clockwise (A) until the ball is retracted completely
(5) Turn the spring plunger (1) counterclockwise (B) for 45-90°
(6) Turn the knurled nuts (2) by hand clockwise (A) until it sits tight, now the shaker is ready to be used with the microplate of your choice

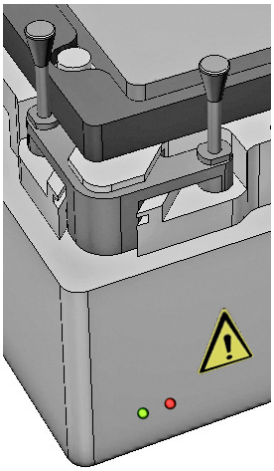
# 8 Operation

The BioShake is designed for shaking of liquids in tissue culture plates, microplates, tubes, and vials. The microplate or tubes have to place on the shaker platform of the BioShake. The liquid to be shaken is introduced into the wells or tubes.
The automatic start up function of the unit ensures a gradual start of the shaking process, without sample splashing. The drive is absolutely wear-free and maintenance-free.

To integrate the instrument into a robotic system, please refer to the document **“Integration of BioShake devices in lab automation systems”.**

# 9 Error control

All BioShake devices as new version 2012 have internal algorithms and sensors for monitoring operating parameters and error detection. Any errors are sending out via RS232 communication interface. Those are easier to detect and localize.
To improve the functional testing during installation and visualizing the operating status all BioShake automation devices are equipped with integrated LED indication lights. The indication lights allow a quick function test and error control. These have a green and red indicator lights that light up either, or are disabled.



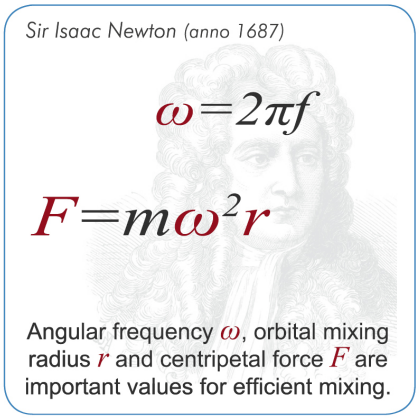
| | |
|---|---|
| **Boot process when switching on or reset** | Only red indicator light |
| **Failure-free operation** | Only green indicator light |
| **In case of failure** | Green and red indicator lights at the same time |

In case of failure, the error list should read out via RS232 command (getErrorList<CR>), to help detect the error more precisely.

| Error Value | Description |
|---|---|
| | **Mixing function** |
| 101 | Error by the DC motor controller. |
| 102 | Error due speed failure, for example happens through mechanical locking. |
| 103 | Errors caused by an uninitialized shaker or incorrect initialization parameters after switch on. Please see the service manual to start a special initialization routine for optimization of motor parameters. |
| 104 | Errors caused by unsuccessful initialization routine. Please see also the service manual. |
| 105 | Errors caused by not achieving of the home position at the stop command / routine. Please call the service line. |
| | **Temperature control** |
| 201 | Error due failed answers from temperature sensors or incorrect internal settings of temperature sensors. Please call the service line. |
| 202 | Error due temperature communication bus system. Please call the service line. |
| 203 | Sensor with the requested ID is not found while working. Please call the service line. |
| 204 | Errors caused by a faulty temperature measurement while working. Please call the service line. |

# 10 Tips for shaker operation

A wide variety of well plates are commercially available.
To ensure that the plates are positioned securely in the plate holder, they must correspond with the *ANIS/SBS Standard for Microplates*.
If the filled plate has a weight of more than 80 g, then the maximum rated shaking frequency of 3,000 rpm may not be attainable with a safety stand. Select a lower shaking frequency in this case. However, there is no risk of damage to the BioShake – even if the weight is too high then the shaking action stops due to excessive weight or excessive shaking frequencies. As soon as you reduce the frequency, the unit will stand firm.




**Maximum shaker platform load: 500 g (filled well plate).**

The shaker is driven by a maintenance-free brushless motor which enables silent operation and constant shaking speed independent of the load.

**IMPORTANT NOTES:**

Please start even with minimal mixing frequencies to avoid overloading.

Only mix in sealed tubes and plates. Sample material can be flung out of open, inadequately sealed or unstable tubes and plates.

When working with hazardous, toxic and pathogenic samples, always comply with the nationally specified safety environment.

Pay particular attention to personal safety gear (gloves, clothing, glasses etc., the extraction hood and the safety class of the laboratory.

# 11 Specification

## 11.1 Adapter for microplates, tubes and glass vials

Q.Instruments offers high precision adapter plates to allow a perfect fit for all kinds of tubes, vials, microplates and other different disposables.
The adapter plates are optimized for an excellent heat transfer to the disposables and enhance the uniformity over all wells and the heat up time.
The exchange of adapter plates can be performed very easily within one minute.

If you need an adapter plate for specially shaped micro plates, tubes or vials, so please send us additional specific information about your used sample container: manufacturer, description, article number.
You will receive your special formed adapter plate!

## 11.2 Technical Specification

| | |
|---|---|
| **Changeable adapter plates for sample container** | |
| Microplates | 96-, 384-, and 1536-well microplates, deep well plates, PCR plates |
| Tubes | 0.2 / 0.5 / 1.5 / 2.0 ml standard microcentrifuge tubes |
| Glass vials | 2.0 and 4.0 ml glass vials |
| *others* | *on request* |
| **Mixing** | |
| Mixing frequency | 200 to 3,000 rpm (microplates)<br>200 to 1,800 rpm (tubes, glass vials) |
| Mixing orbit | constant 2 mm diameter |
| Speed setting resolution | linear increments |
| Mixing regulation accuracy | ± 25 rpm |
| Home position | Yes, self-positioning, within 5 sec |
| Home position accuracy | ±0.1 mm |
| **Device control** | |
| Electronic control board | Completely accommodated in the shaker (non external components) |
| Controller | Microcontroller (8-Bit-RISC-Prozessor) |
| Operation control | Remote controlled |
| User interface | RS232 interface (2.0 m connecting cable) |
| **Electrical** | |
| Operating Voltages | 24 V DC input, 75 Watt |
| Power supply | External power supply unit 100-240 V AC, 50-60 Hz |
| **Properties** | |
| Housing Material | Aluminum anodized |
| Environment operating range | +5°C to 45°C (80 % max. relative humidity) |
| Dimensions (W x D x H) | 142 mm x 99 mm x 48.2 mm<br>(5.59 in x 3.897 in x 1.8976 inches) |
| Weight | 1.5 kg (3.3 lbs) |

Technical specifications subject to change!

# 12 CE – Certificate of Conformity

TÜV THÜRINGEN

**ZERTIFIKAT**

***CERTIFICATE***

Konformitätsbestätigung
*Certificate of Conformity*

Registrier-Nr. / *Registered No.*: **074/13/3510 B**

| Zeichen des Antragstellers<br>*Reference of Applicant* | Antragsdatum<br>*Date of Application*<br>27.09.2013 | Aktenzeichen<br>*File Reference*<br>3510 3280/13 | Prüfbericht Nr.<br>*Test Report No.*<br>3280/13/01 | gültig bis<br>*valid until*<br>30.09.2015 |
|---|---|---|---|---|

Hiermit wird bestätigt, dass das nachfolgend genannte Produkt den Sicherheitszielen der Richtlinie des Rates vom 12. Dezember 2006 zur Angleichung der Rechtsvorschriften der Mitgliedsstaaten betreffend elektrische Betriebsmittel (2006/95/EG) entspricht.
*We hereby certify that the product mentioned below meets the safety destinations of the council directive of 12. December 2006 on the approximation of the laws of the member states relating to electrical appliances (2006/95/EC).*

| | |
|---|---|
| Hersteller:<br>*Manufacturer name* | QUANTIFOIL Instruments GmbH<br>Loebstedter Straße 101<br>07745 Jena |
| Erzeugnis, Typ:<br>*Product, type* | Thermoschüttler<br>Typ: „BioShake 3000-T elm |
| Technische Beschreibung:<br>*technical description* | 24VDC, 100W<br>mit Netzteil: Sunny Computer Technology Europe<br>Typ: SYS1250-A324 (nicht Bestandteil der Prüfung) |
| Prüfgrundlagen:<br>*Tested according to* | DIN EN 61010-1:2002-08+B1:2002-11+B2:2004-11<br>DIN EN 61010-2-010:2004-06<br>DIN EN 61010-2-051:2004-07 |

Dieses Zertifikat bestätigt das Ergebnis einer einmaligen Untersuchung an dem zur Prüfung vorgelegten Erzeugnismuster. Es stellt kein allgemeingültiges Urteil über die Eigenschaften der Erzeugnisse aus der laufenden Fertigung dar. Dieses Zertifikat gilt daher nicht für Produkte, die vom vorgelegten Erzeugnismuster abweichen oder wenn sich die Prüfgrundlagen ändern. Auch wenn sich vorstehend genannte Produkte nicht ändern, wird mit o.g. Gültigkeitsdatum dieses Zertifikat automatisch ungültig. Es berechtigt nicht zur Führung eines Prüfzeichens oder des Logos des TÜV Thüringen. Eine Veröffentlichung dieses Zertifikates ist ohne schriftliche Genehmigung der Prüfstelle nicht gestattet. Hinsichtlich der o.g. grundlegenden Anforderungen und zu berücksichtigender Prüfgrundlagen gilt für die Erzeugnisse der laufenden Produktion die aktuelle Rechtslage zum Zeitpunkt ihres Inverkehrbringens.
*This certificate confirms the result of a nonrecurring testing of the presented object sample. It does not give a general judgement about the quality of the products of the current production. This certificate is not valid from there for products which deviate from the submitted production sample or if the test basis changes. Even it points as afore specified do not change, this certificate becomes automatically invalid with above mentioned date of validity. It does not legitimate to use a test mark or the logo of TÜV Thüringen. The publishing of that certificate needs the written approval of the testing centre. Regarding the afore mentioned basic requirements and testing specifications to consider, the products of the current fabrication have to comply with the legal situation up-to-date by its time of placing on the market.*

Arnstadt, den 30.09.2013

TÜV Thüringen Anlagentechnik GmbH & Co. KG
Prüfstelle für Gerätesicherheit
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99310 Arnstadt
Tel.: 03628 / 598 370
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Prüflaboratorium u. Zertifizierungsstelle

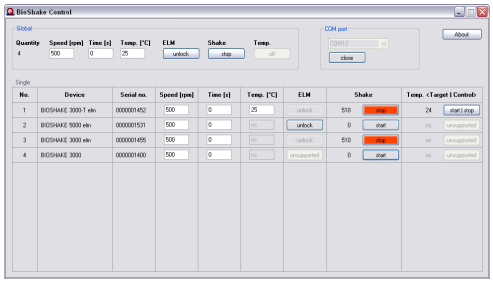
TÜV THÜRINGEN

Dipl.-Ing. (FH) S. Thron
Sachverständiger

Dieses Zertifikat besteht aus */this certificate consists of*: 1 Blatt / *sheet*

The CE certified instrument **BioShake 3000-T elm** is identical in construction with all products of the **BioShake 3000** series.

# 13 BioShake Control - test software



BioShake Control is a small Windows based program for your PC to start using the shaker in moments and to exercise all shaker features.

**Installation:**

1. Download the software from the download area: http://www.qinstruments.com/en/service/downloads.html
2. Check the actual version of Windows .Net Framework 4. Use this link for actual version: www.microsoft.com/en-us/download/details.aspx?id=17718
3. Copy the **BioShakeControl.exe** (1.1 MB) to your PC.
4. Plug in the RS232 cable from the single BioShake or Daisy Chain Box into a free port of your computer. If necessary use a USB/RS232 converter.
5. Plug the external power supply/supplies into the 24 V socket of all used BioShake.
6. Plug the power cord(s) into the power supply/supplies.
7. Switch On all BioShake devices at the same time. The instrument(s) will do a self test.
8. Start the program **BioShakeControl.exe** through a double click.
9. Now the instruments and software are ready to work.
10. Select the right COM port and click the button “open”.
11. The software starts the initialization routine for determining all connected devices.
12. Now the user can set parameters, start and stop for a single device.
13. In global section the user can control all devices with global commands.

# 14 Maintenance

The device is maintenance-free.
Before cleaning the BioShake disconnect the power cord.

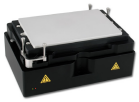
If contaminated the device may be cleaned using a mild soap solution and water or an alcohol-based disinfectant. Do not use another cleaning solution!
If you have any questions about cleaning please contact your distributor or directly QUANTIFOIL Instruments.

Should it become necessary to repair the equipment, it should be returned to an authorized servicing agent. The equipment must be clean and free from harmful substances. Always ship the shaker well-packed, preferably in the original shipping container in order to avoid damage to the unit en route.

For more details how to service the device, please refer to the document **“Service Manual BioShake”.**

# 15 Ordering Information

## BioShake – single modules for automation

| Order no. | Description | |
|---|---|---|
| **1808-0016** | **BioShake 3000** | |
|  | *Description:* | *Universal orbital shaker for robots*<br>*For using with microplates, tube, glass vials or others*<br>*Mixing from 0 - 3,000 rpm, orbit diameter 2.0 mm, RS232* |
| | *Scope of delivery*:* | *1x BioShake 3000, 1x power supply 110-240 VAC / 24 VDC,*<br>*2x power cords: Europe & country-specific, 1x 24 VDC cable (fixed, length 2 m),*<br>*1x RS232 cable (fixed, length 2 m), 1x documentation 1x calibration certificate* |
| **1808-0017** | **BioShake 3000 elm** | |
|  | *Description:* | *Microplate orbital shaker for robots*<br>*Automatic Edge Locking Mechanism (ELM) for robotic gripping*<br>*Mixing from 0 - 3,000 rpm, orbit diameter 2.0 mm, RS232* |
| | *Scope of delivery:* | *1x BioShake 3000 elm, 1x power supply 110-240 VAC / 24 VDC,*<br>*2x power cords: Europe & country-specific, 1x 24 VDC cable (fixed, length 2 m),*<br>*1x RS232 cable (fixed, length 2 m), 1x documentation, 1x calibration certificate* |
| **1808-0018** | **BioShake 3000 elm DWP** | |
|  | *Description:* | *Orbital Shaker for Deep Well Plates (DWP), Specially adapted for 0.5-2.2 ml DWP*<br>*Automatic Edge Locking Mechanism (ELM) for robotic gripping*<br>*Mixing from 0 - 3,000 rpm, orbit diameter 2.0 mm, RS232* |
| | *Scope of delivery:* | *1x BioShake 3000 elm DWP, 1x power supply 110-240 VAC / 24 VDC,*<br>*2x power cords: Europe & country-specific, 1x 24 VDC cable (fixed, length 2 m),*<br>*1x RS232 cable (fixed, length 2 m), 1x documentation, 1x calibration certificate* |
| **1808-0516** | **BioShake 3000-T** | |
|  | *Description:* | *Universal thermoshaker for robots*<br>*For using with microplates, tube, glass vials or others*<br>*Mixing from 0 - 3,000 rpm, orbit 2.0 mm, temperature control from RT - 99°C, RS232* |
| | *Scope of delivery*:* | *1x BioShake 3000-T, 1x power supply 110-240 VAC / 24 VDC,*<br>*2x power cords: Europe & country-specific, 1x 24 VDC cable (fixed, length 2 m),*<br>*1x RS232 cable (fixed, length 2 m), 1x documentation, 1x calibration certificate* |
| **1808-0517** | **BioShake 3000-T elm** | |
|  | *Description:* | *Microplate thermoshaker for robots*<br>*Automatic Edge Locking Mechanism (ELM) for robotic gripping*<br>*Mixing from 0 - 3,000 rpm, orbit 2.0 mm, temperature control from RT - 99°C, RS232* |
| | *Scope of delivery*:* | *1x BioShake 3000-T elm, 1x power supply 110-240 VAC / 24 VDC,*<br>*2x power cords: Europe & country-specific, 1x 24 VDC cable (fixed, length 2 m),*<br>*1x RS232 cable (fixed, length 2 m), 1x documentation, 1x calibration certificate* |
| **1808-2017** | **BioShake 5000 elm** | |
|  | *Description:* | *Orbital shaker for 384 & 1536 well microplates*<br>*Automatic Edge Locking Mechanism (ELM) for robotic gripping*<br>*Mixing from 0 - 5,000 rpm, orbit diameter 1.2 mm, RS232* |
| | *Scope of delivery:* | *1x BioShake 5000 elm, 1x power supply 110-240 VAC / 24 VDC,*<br>*2x power cords: Europe & country-specific, 1x 24 VDC cable (fixed, length 2 m),*<br>*1x RS232 cable (fixed, length 2 m), 1x documentation, 1x calibration certificate* |

** Adapters are not included in delivery and have to be ordered separately.*

## Accessories / Software

| Order no. | Description | |
|---|---|---|
| 1808-9013 | Grounding set for BioShake, universal | |
| 1808-9120 | USB/RS232 Converter – Digitus DA-70156 USB serial adapter USB 2.0 | |
| 1810-0061 | Daisy Chain Box 4 | |
| 1810-0071 | Moxa 4-port - Connects 1-4 BioShake serial devices via USB-Port to a PC | |
| 1810-0072 | Moxa 8-port - Connects 1-8 BioShake serial devices via USB-Port to a PC | |
| 1810-0073 | Moxa 16-port - Connects 1-16 BioShake serial devices via USB-Port to a PC | |
| 1811-0200 | SILA Driver for BioShake . compliant and approved driver . according SILA standard | |

## Adapter / Thermo adapter (only for BioShake XP, BioShake iQ, BioShake 3000, BioShake 3000-T, BioShake 3000-T elm)

| Order no. | Description | |
|---|---|---|
| | **Thermo adapter for micro well plates & PCR plates** | |
| 1808-1021 | Adapter for micro well plate . Flat bottom standard . e.g. Nunc® #269620, Greiner® #781101 | |
| 1808-1022 | Adapter for micro well plate . Flat bottom High Base . e.g. Greiner® HiBase #78407x, 78410 | |
| 1808-1024 | Adapter for micro well plate . Flat bottom Low Base . e.g. Aurora® storage plate, Alere ArrayStrip® | |
| 1808-1031 | Adapter for micro well plate . 96 well round bottom, type 1 . e.g. Corning® #3367, #3789 | |
| 1808-1032 | Adapter for micro well plate . 96 well round bottom, type 2 . e.g. Greiner®, NUNC®, Matrix® plates | |
| 1808-1041 | Adapter for PCR Plate . 96 well . e.g. Eppendorf twin.tec® #0030-128.672 | |
| 1808-1051 | Adapter for PCR Plate . 384 well . e.g. Eppendorf twin.tec® #0030-128.532 | |
| | **Thermo adapter for deep well plates & storage plates** | |
| 1808-1121 | Adapter for Deep Well Plate . Eppendorf® 96/1000 µl . #0030-503.209 | |
| 1808-1131 | Adapter for Deep Well Plate . Eppendorf® 96/500 µl . #0030-501.101 | |
| 1808-1141 | Adapter for Deep Well Plate . BRAND® 96/1100 µl U-bottom . #701350 | |
| 1808-1151 | Adapter for Deep Well Plate . NUNC® 96/2000 µl . #278743, 278752 | |
| 1808-1161 | Adapter for Deep Well Plate . Axygen® 96/0.6 ml V-bottom . #P-DW-500-C | |
| 1808-1162 | Adapter for Deep Well Plate . Axygen® 96/2.0 ml round bottom . #P-DW-20-C | |
| 1808-1171 | Adapter for Storage Plate . Abgene® 96/2.2 ml MARK II square well . #AB-09032 | |
| 1808-1172 | Adapter for Deep Well Plate . Abgene® 96/0.8 ml round well . #AB-0765, AB-0859 | |
| 1808-1181 | Adapter for Mega Block . Sarstedt® Megablock 96/2.2 ml . #82.1972.002 | |
| 1808-1191 | Adapter for Storage Plate . HJ-Bioanalytik® 96/1.2 ml riplate low profile . #750289 | |
| 1808-1201 | Adapter for Storage Plate . Corning® 96/320 µl V-bottom . #3342, 3347, 3357, 3363, 3894-3898 | |
| 1808-1211 | Adapter for Masterblock . Greiner® 96/1.0 ml U-bottom . #78020x, 78026x | |
| | **Thermo adapter for centrifuge tubes with conical shape** | |
| 1808-1061 | Adapter for tubes . 24x 2.0 ml or 15x 0.5 ml | |
| 1808-1062 | Adapter for tubes . 24x 1.5 ml or 15x 0.5 ml | |
| 1808-1063 | Adapter for tubes . 40x 0.5 ml or 28x 0.2 ml | |
| 1808-1064 | Adapter for tubes . 96x 0.2 ml | |
| 1808-1067 | Adapter for lysis tubes . 35x 0.5-2.0 ml, Ø 10.2 mm | |
| 1808-1093 | Adapter for FALCON® tubes . 4x 50 ml or 2x 15 ml | |
| 1808-1094 | Adapter for FALCON® tubes . 12x 15 ml | |
| | **Accessories for tube adapter** | |
| 1808-1511 | iQ Rack Cover – for adapter 24x 1.5/2.0 ml tubes | |
| | **Thermo adapter for tubes/vials with cylindrical shape** | |
| 1808-1069 | Adapter for glass vials . 35x 2.0 ml, Ø 10.8 mm | |
| 1808-1071 | Adapter for glass vials . 30x 2.0 ml, Ø 12 mm | |
| 1808-1072 | Adapter for glass vials . 20x 4.0 ml, Ø 15 mm | |
| 1808-1073 | Adapter for glass vials . 20x 4.0 ml, Ø 17 mm | |
| 1808-1074 | Adapter for glass vials . 20x 6.0 ml Ø 19 mm | |
| 1808-1085 | Adapter for 24x Alere® ArrayTubes 1.5 ml | |
| | **Customized adapters** | |
| 1808-1000 | Customized adapters are available on request | |

## Service material and spare parts

| Order no. | Description | |
|---|---|---|
| | **Service material** | |
| 1808-9001 | Set of axial bearing balls for BioShake (set of 3 pieces) | |
| 1808-9002 | Set of O-rings coated (special slide way coating, 13x2mm, set of 3 pieces) | |
| 1808-9003 | Service Pack for BioShake (contents 1808-9001, 1808-9002) | |
| 1808-9004 | Service set of ELM-Pins for BioShake 3000 elm (set of 4 pieces) | |
| 1808-9009 | Service set of ELM-Pins for BioShake 3000-T elm (set of 4 pieces) | |
| 1808-9005 | Service set of mass balance elements for BioShake | |
| | **Spare parts** | |
| 1808-9011 | External power supply unit (100-240 V AC, 50-60 Hz, 24 V DC, 120 W) | |
| 1808-9101 | Power cord with 3-pin plug (clover leaf) - Europe | |
| 1808-9102 | Power cord with 3-pin plug (clover leaf) - Switzerland | |
| 1808-9103 | Power cord with 3-pin plug (clover leaf) - UK | |
| 1808-9104 | Power cord with 3-pin plug (clover leaf) - Italy | |
| 1808-9110 | Power cord with 3-pin plug (clover leaf) - USA | |
| 1808-9111 | Power cord with 3-pin plug (clover leaf) - Japan | |
| 1808-9112 | Power cord with 3-pin plug (clover leaf) - China | |
| 1808-9113 | Power cord with 3-pin plug (clover leaf) - Korea | |
| 1808-9114 | Power cord with 3-pin plug (clover leaf) - Australia | |

Please use the original accessories recommended by QUANTIFOIL Instruments.

Please use the original power supply delivered by QUANTIFOIL Instruments.

Using spare parts or disposables which we have not recommended can reduce the precision, accuracy and life of the BioShake.

QUANTIFOIL Instruments do not honour any warranty or accept any responsibility for damage resulting from such action.

# 16 Support

P lease contact Q.Instruments for additional information and availability about the BioShake. If you have any problems with the control of the BioShake please contact the Q.Instruments support team.

We provide a range of technical material (e.g. application notes, bulletins, instruction manuals, and selection and use guides) that support our products and key applications. All of our technical documents can be viewed and printed. Many documents are available as PDF (Portable Document Format) files, which may be downloaded.

http://www.qinstruments.com/en/service/downloads.html

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