



## Operating Instructions

Varioshake Overhead Shaker

VS 20 OH





Before installation, please check whether contents of package are in good order and complete. Should you note any damages or have any reasons for complaint, please contact your supplier or directly:

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Translation of the original operating instructions

Q4DT-E\_13-012-EN-01, 04.07.2023

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## 1 Use of the Overhead Shaker

### 1.1 Intended Use

The information in these operating instructions must by all means be carefully read and observed. Only then a perfect functioning of the Shaking Apparatus can be guaranteed. The units may only be installed and operated by persons who have made themselves familiar with these operating instructions. The frequency of the shaking motion can be set and is electronically regulated. Laboratory vessels that are to be used on the Shaking Apparatus must be fixed safe-to-operate.



Caution:

due to increased risk of injury never reach into the unit as long as it is still in motion.

### 1.2 Improper Use

LAUDA Varioshake Shaking Apparatus are no Medical Devices. They fall neither under national nor international Medical Device Directives and have to be used and applied accordingly. The Shaking Apparatus may not be used in potentially explosive atmospheres and must neither be set up nor operated in laboratory areas with aggressive or corrosive ambient. By all means make sure to prevent the shaking procedure creating an explosive atmosphere during operation of the Shaking Apparatus.

## 2 Warranty conditions

LAUDA offers a standard 12 month manufacturer's warranty from the date of purchase.

## 3 Before Initiation

The information in these operating instructions must by all means be carefully read and observed. Only then a perfect functioning of the Shaking Apparatus can be guaranteed. A free of charge guarantee repair cannot be granted for defects due to improper installation or handling.

Safety precautions are marked with the following symbols.



Read and observe the operating instructions



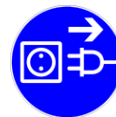
Hand injury warning



Warning of dangerous electrical voltage



General hazard warning



Before maintenance and repair disconnect the unit all-pole from the electrical mains (pull the plug from the socket).

## 4 Transport, set-up and location of the overhead shaker

Protect yourself and the unit during transport and setup by working carefully and avoid danger of e. g. shifting or tilting the unit. Place on solid, even and level surfaces inside buildings only. The location must provide sufficient space as well as the necessary carrying capacity for the unit (unit weight see Technical Data, plus weight of the accessories and load). The Shaking Apparatus is not suitable for use in potentially explosive atmospheres, e. g. during anaesthesia with inflammable gas or steam types.

## 5 Voltage

The overhead shaker must be connected to a properly installed safety socket. The machine is an electrical device of protection class I. A connection to the protective conductor (PE) must be ensured. For the value of the required mains fuse, please refer to the technical data, Section 10 of these instructions. See section 12 of this guide for more information on connecting to the mains power supply. The electrical connection must be made in such a way that the overhead shaker can be completely disconnected from the mains at any time.

The rotary knob of the overhead shaker must be turned fully counterclockwise to the "0 revolutions" position. The operating voltage on the rating plate (on the back of the device) must be identical to the mains voltage. If they match, make the electrical connection.

## 6 Initiation

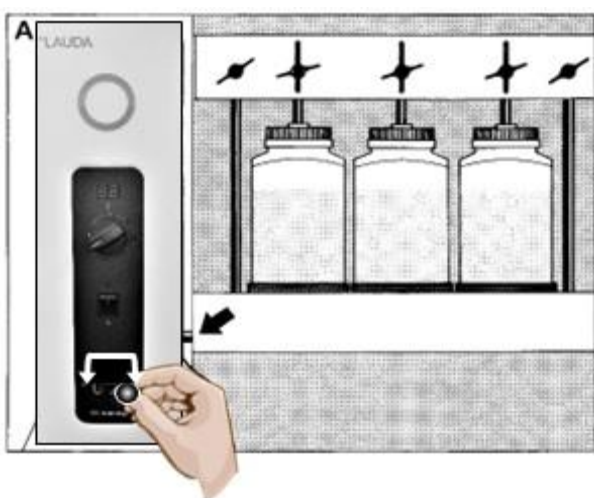


Caution:  
due to increased risk of injury never reach into the unit as long as it is still in motion.



Caution:  
by all means make sure to prevent the shaking procedure creating an explosive atmosphere during operation of the Shaking Apparatus.

### 6.1 Loading the rotating rack:



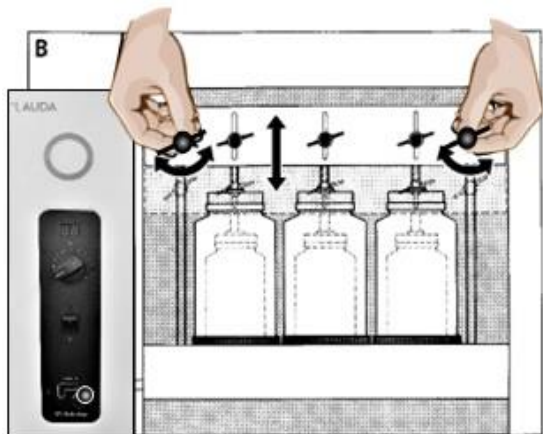
The overhead shaker is delivered with a locked rotating rack. (The locking bolt grips the hole in the rack). Lift the locking lever and slide it to the left. The rotating rack can now be rotated forwards or backwards by hand.

To equip the individual levels, lift the locking lever and slide it to the right so that the locking bolt engages in the hole on the rack (image A). The rack is now locked and can be loaded.

**Attention:**  
Please equip the four levels evenly under all circumstances!



## 6.2 Clamping the vessels



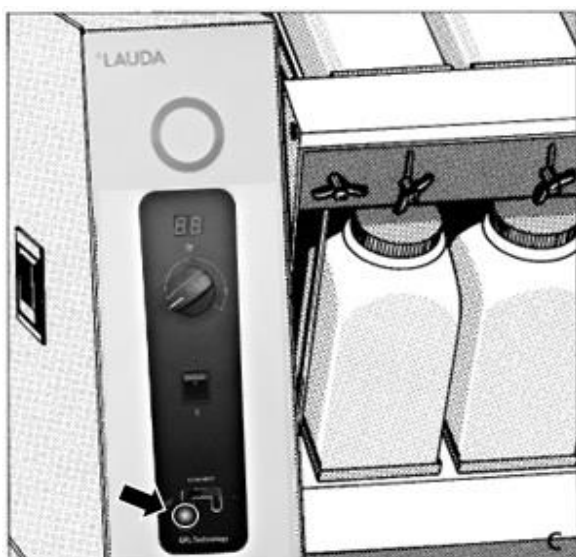
Attention:

Only vessels of the same size may be clamped on all four levels. The weight of the vessels must be the same.

Place vessels in the holders:

Loosen the two outer wing screws of the height adjustment, press down on the vessel closure and tighten again (image B). Small differences in height (up to 30 mm) can be compensated with the three middle wing screws.

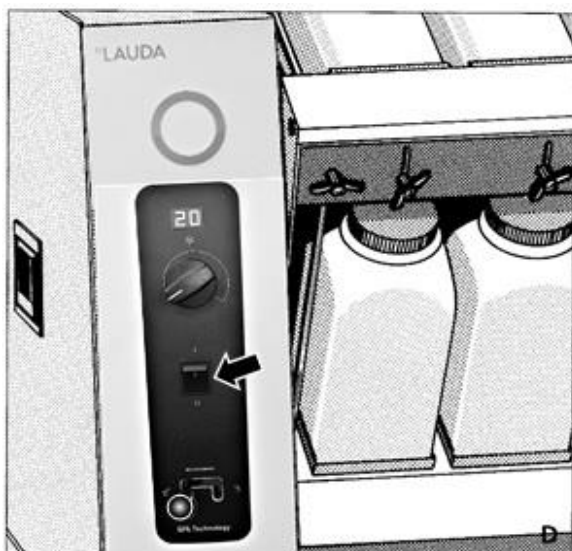
## 6.3 Operation



Attention:

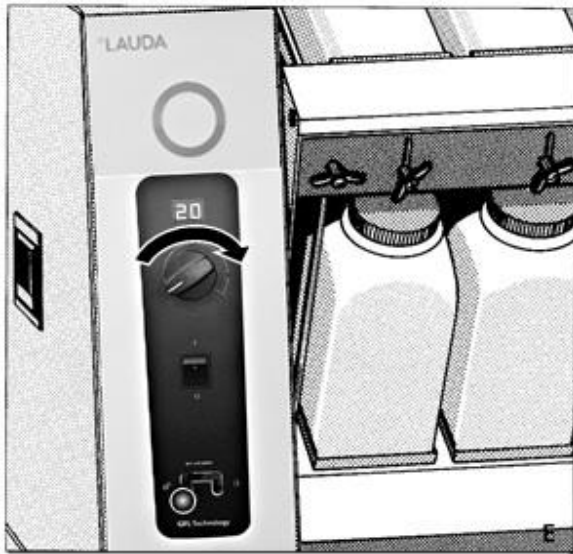
The locking lever must be in the left position (picture C).

Turn the spin speed dial fully left counterclockwise (position „0“).



Operate the main switch (picture D).

Green signal lamp in the main switch lights up.



The desired speed is to be set with the speed setting button (Figure E).  
The current speed in rpm (revolutions per minute) is shown on the digital display.



Attention:  
If the rotating rack is already in operation, the locking lever must not be actuated.

## 7 Functional description

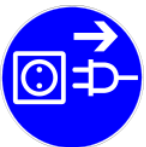
Analogue control:

The desired speed is set using a rotary control. The actual speed is shown in the digital display.



The device is driven by a geared DC motor. To protect against overloading, a slipping clutch is integrated between the motor and rotating rack. In the event of uneven loading or a blockage in the rack, the drive is automatically disengaged and restarts automatically after the blockage has been cleared.

## 8 Servicing, maintenance and clearing possible defects



Make sure that no liquids can get into cable connections or inside the electrical device. Before all cleaning and repair work, the mains plug must be pulled out and the overhead shaker must be disconnected from the mains at all poles. Repairs to the electrical system may only be carried out by a qualified electrician.

### 8.1 Exchanging the fuses



The two fuses for the shaker are located in a drawer below the device plug. To check and replace these fuses, the drawer can be pulled out after actuating the retaining levers on both sides. The fuses may only be replaced with fuses of the same construction. Information about the type of fuse used can be found on the nameplate next to the device socket and in the circuit diagram.

## 8.2 Breakdown in case of overload and mains failure

If the overhead shaker overheats due to excessive loads, the device switches off. Caution, after the drive has cooled down or after interruptions in operation due to a power failure, the device starts up again automatically. If the device is switched off as a result of a malfunction, the overhead shaker must always be switched off before the device is touched.

LAUDA Varioshake overhead shakers are made from the best materials and designed to withstand tough treatment. Nevertheless, the device may only be exposed to increased loads within reasonable limits. If necessary, the powder-coated surfaces can be cleaned with mild cleaning agents.

## 8.3 Technical support

You can call our customer service at any time for technical support relating to LAUDA Overhead Shaker.

Phone : +49 (0)9343 503-350

Fax : +49 (0)9343 503-283

Email : [service@lauda.de](mailto:service@lauda.de)

Maintenance, repairs and modifications must be carried out by a qualified electrician (section 2 (3) DGUV Regulation 3). Only original spare parts may be used. Request that the person performing the work provides written confirmation of the type and scope of the work carried out (company, date, signature).

## 9 Disposal of old units

Within the framework of the legal guidelines, LAUDA assumes responsibility for the environmentally friendly return and disposal of all old devices that we have been supplied free of charge from our production from the year of manufacture 1995 and recycles them. Before delivery, a legally binding declaration must be made that the device is free from contamination that is harmful to health and from hazardous substances caused by use.

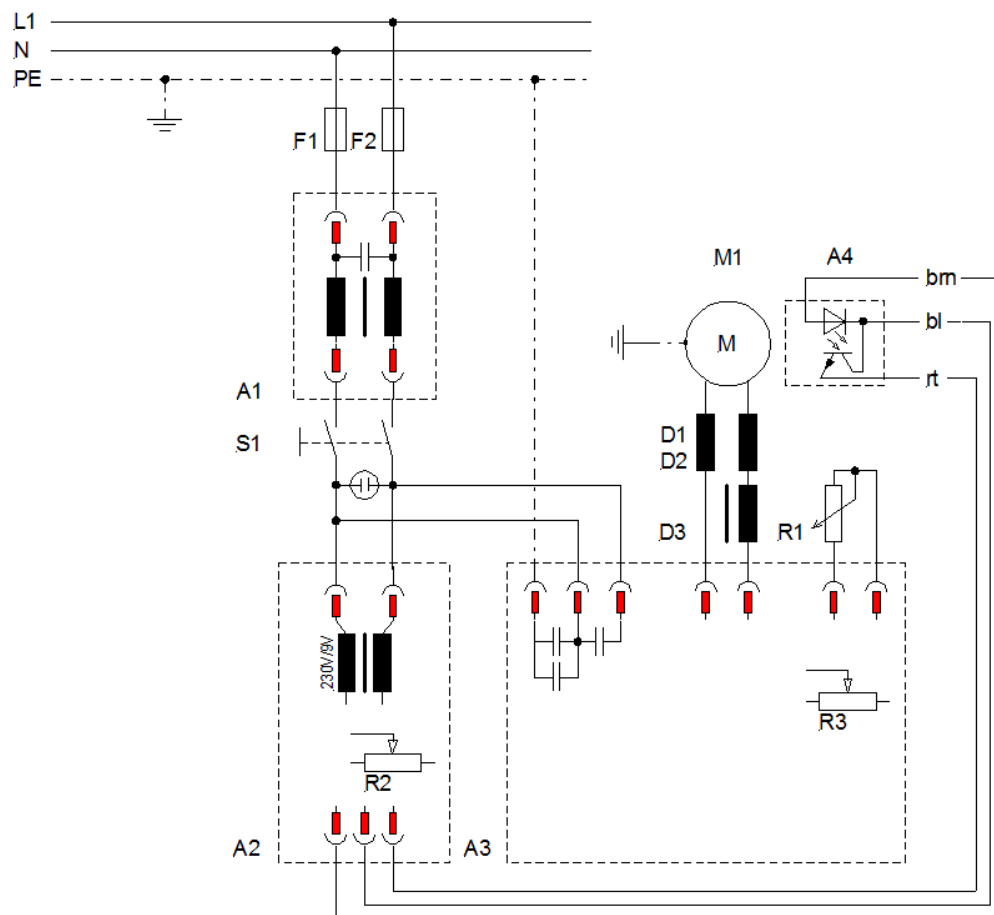
LAUDA laboratory devices are intended exclusively for commercial use and may not be disposed of via public waste disposal agencies.

## 10 Technical Data

### VS 20 OH

Exterior dimensions (W x D x H)	700 mm x 700 mm x 680 mm
Speed range	1 to 20 rpm
Speed control	Electronic, stepless
Speed display	digital
Capacity	12 vessels
Maximum vessel diameter	110 mm (round or square)
Maximum vessel height	270 mm
Clamping range	0 to 270 mm
Drive	Geared DC motor
Electrical connection	230 V, +/- 10 %, 50 / 60 Hz
Power consumption	500 mA
Environmental conditions	Indoor use only and in incubation rooms (not in potentially explosive areas)
Ambient temperature	+ 10 °C to + 50 °C
Humidity	maximum 70% relative humidity up to 31 °C, decreasing up to 50% relative humidity at 50 °C, non-condensing.
Weight, net	62 kgs

## 11 Circuit diagram



A1	Radio interference suppression unit
A2	Speed display
A3	DC motor controller
A4	Forked light barrier
D1	Choke 9 $\mu$ H, 6 A
D2	Choke 9 $\mu$ H, 6 A
D3	Choke 2.5H 0.2A
F1	Fuse 500mAT
F2	Fuse 500mAT
M1	DC motor
R1	Potentiometer 1M $\Omega$
R2	Potentiometer adjustment display
R3	Potentiometer speed adjustment
S1	Main switch

## 12 Connection to the mains

LAUDA Varioshake overhead shakers are supplied with a pre-assembled main plug.  
The connection to the protective conductor connection must be ensured.

Color code of the power cord

ge/gr – yellow/green

bl – blue

sw – black

Power supply

PE (protective conductor)

N

L1

### 12.1 Electrical fuses

Type	Power	Power consumption at mains voltage *	Mains fuse (F4, F5)
VS 20 OH	0.065 kW	0.3 A at 230 V	10 A (max. 16 A)

\* see nameplate



## 14 Ordering spare parts / LAUDA Service

When ordering spare parts, please state the serial number (type plate) to avoid queries and wrong deliveries.

Your partner for maintenance and competent service support:

LAUDA Service  
Phone: +49 (0)9343 503-350  
Fax: +49 (0)9343 503-283  
Email: [service@lauda.de](mailto:service@lauda.de)

We are always at your disposal for questions and suggestions!

LAUDA DR. R. WOBSE GMBH & CO. KG  
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97922 Lauda-Königshofen  
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Internet : <http://www.lauda.de/>



## 15 Product Returns and Clearance Declaration



### Product Returns and Clearance Declaration

**Product Returns**

Would you like to return a LAUDA product you have purchased to LAUDA? For the return of goods, e.g. for repair or due to a complaint, you will need the approval of LAUDA in the form of a *Return Material Authorization (RMA)* or *processing number*. You can obtain the RMA number from our customer service department at +49 (0) 9343 503 350 or by email [service@lauda.de](mailto:service@lauda.de).

**Return address**

LAUDA DR. R. WOBSEER GMBH & CO. KG  
 Laudaplatz 1  
 97922 Lauda-Königshofen  
 Deutschland/Germany

Clearly label your shipment with the RMA number. Please also enclose this fully completed declaration.

RMA number	Product serial number
Customer/operator	Contact name
Contact email	Contact telephone
Zip code	Place
Street & house number	
Additional explanations	

**Clearance Declaration**

The customer/operator hereby confirms that the product returned under the above-mentioned RMA number has been carefully emptied and cleaned, that any connections have been sealed to the farthest possible extent, and that there are no explosive, flammable, environmentally hazardous, biohazardous, toxic, radioactive or other hazardous substances in or on the product.

Place, date	Name in block letters	Signature

Version 02 - EN





### EC DECLARATION OF CONFORMITY

**Manufacturer:** LAUDA DR. R. WOBSEER GMBH & CO. KG  
Schulze-Delitzsch-Straße 4+5, 30938 Burgwedel, Germany

We hereby declare under our sole responsibility that the machines described below

**Product Line:** Varioshake **Serial number:** from 220\_\_\_\_\_

**Types:** VS 8 O, VS 8 B, VS 8 OE, VS 8 BE,  
VS 15 O, VS 15 B, VS 15 T, VS 15 R,  
VS 20 OH, VS 30 O, VS 45 OI, VS 60 OI and VS 150 OI

comply with all relevant provisions of the EC Directives listed below due to their design and type of construction in the version brought on the market by us:

Machinery Directive	2006/42/EC
EMC Directive	2014/30/EU
RoHS Directive	2011/65/EU in connection with (EU) 2015/863

The protective objectives of the Machinery Directive with regard to electrical safety are complied with in accordance with Annex I Paragraph 1.5.1 in conformity with the Low Voltage Directive 2014/35/EU.

Applied standards:

- EN 61326-1:2013
- EN 61010-1:2010/A1:2019/AC:2019-04
- EN IEC 61010-2-010:2020

Authorized representative for the composition of the technical documentation:

Dr. Jürgen Dirscherl, Head of Research & Development

Burgwedel, 05.06.2023

Dr. Alexander Dinger,  
Head of Quality and Environmental Management

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