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Thank you for purchasing a Heidolph Instruments product. This item has been designed, made and inspected in compliance with DIN EN ISO 61010 for long-term and flawless operation.

SUMMARY


Important information


Advice about power cord / mains supply


Caution: mandatory action


Caution: fire- and explosion hazard


Advice about maintenance / repair

STANDARD HARDWARE & OPTIONS

	product	quantity	P/N 230/240V 50/60Hz	P/N 115V 50/60Hz
	TITRAMAX 100	1	544-11200-00	544-11200-04
or	**TITRAMAX 101**	1	544-11300-00	544-11300-04
or	**TITRAMAX 1000**	1	544-12200-00	544-12200-04
or	**VIBRAMAX 100**	1	544-21200-00	544-21200-04
or	**VIBRAMAX 110**	1	544-31200-00	544-31200-04
or	**ROTAMAX 120**	1	544-41200-00	544-41200-04
	Instruction Manual	1	01-005-002-34	01-005-002-34
	Power cord	1	14-007-003-81	14-007-003-89

Accessories

	product	P/N
	for VIBRAMAX 100 and ROTAMAX 120	
	adapter with 2 ea. clamping rollers	549-81000-00
	clamping roller (extra)	11-008-007-08
	for VIBRAMAX 110	
	adapter for 49 ea. dia. 12 test tubes	549-82000-00
	adapter for 36 ea. dia. 16 test tubes	549-83000-00

GENERAL INFORMATION

Unpack your item carefully.
Inspect for damage and report such damage or missing parts to your supplier right away.

Read your Instruction Manual carefully. Take time to save time while working with your product. Make sure that every user has read and understood the Instruction Manual.

Please store the Instruction Manual in a place easily accessible to every user.
IF ALL ELSE FAILS, READ THESE INSTRUCTIONS !

A so-called EURO-plug (DIN 49441 CEE 7/VII 10/ 16 A 250 V) is standard on all of the products.
For the Continental US they feature a US-standard plug (NEMA Pub.No.WDI.1961 ASA C 73.1 . 1961 page 8 15A 125V).

For using the item in a country with deviating outlet / plug systems, we recommend to use approved adapters or to have an electrician replace the standard plug with one suiting your needs.

As shipped, the item features a protective ground wire. When replacing the original plug, make sure to reconnect this protective ground wire in the new plug !

SAFETY INFORMATION

Please comply with all safety and accident-prevention regulations as in force for laboratory work!

Use extra care when working with flamable substances; refer to safety data sheets.

Use extra care when working in the vicinity of flammable and explosive substances. Motors are non-sparking , the item itself however is not explosion-proof.

When connecting your item with your local power supply, please make sure your item is designed for your local voltage; refer to the data plate on the item.

Please connect your unit with a protective-ground outlet only.

Turn your power switch OFF whenever the item is not used, or before disconnecting the plug.

Repair work is limited to technicians approved by Heidolph Instruments.

Your item needs a solid stand.

Lab bench needs to be of rigid design, and have an anti-skid surface coat.

Before starting the item, make sure all vessels are attached safely (must not move while shaking).

SET-UP

1. Set-up

Please locate the shaker on a stable, horizontal surface. For safety reasons, keep the area around the machine clear of other items.
Be aware of orbital movement of the shaker plate and vessel set-ups protruding over the standard table surface.

2. Electric hook-up

Use the power cord from your hardware bag and connect it with the plug connector in the item's rear panel.
The item features two-pole circuit breakers located in the item's plug connector for ease of access. For circuit breaker details refer to data plate.

3. Secure vessels on shaker plate

Use optional adapter to secure vessels on shaker plate. Adapters with clamping rollers for a variety of flasks, beakers, and test tubes are available. Microtiter plates nest on the shaker plate, no optional holders are required.
In special cases, and at low shaking speed, e.g. Petridishes may be placed on the anti-skid rubber plate that comes with your item as a standard option.

Before starting shaking, ensure vessels and the like are properly secured on the shaker plate.

3.1. TITRAMAX 100 / TITRAMAX 101 / TITRAMAX 1000

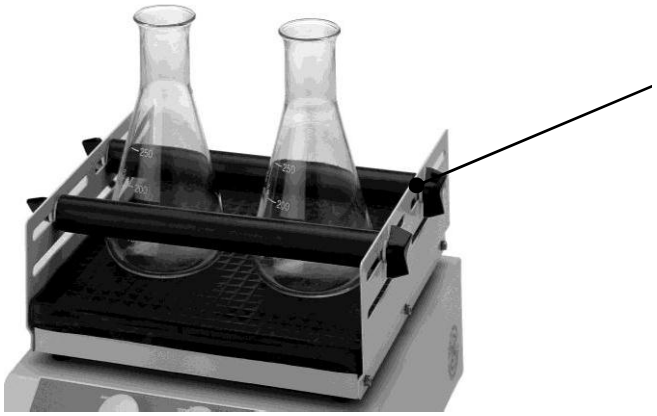
Microtiter plates are loaded in indentations in the rubber mat, shipped with your shaker as a standard option. They are positively locked in these indentations, the rubber mat itself can be replaced at ease.

3.2. VIBRAMAX 100 / ROTAMAX 120 / adapter with clamping rollers

Vessels are located on an anti-skid rubber mat, shipped with the machine. The rubber mat itself can be replaced at ease.

Vessels can be secured by an optional adapter with clamping rollers either. Standard kit includes 2 ea. clamping rollers. Extra clamping rollers can be ordered using P/N 11-008-007-08.

This adapter is installed on the shaker plate and secured with screws from your hardware bag.



adapter with clamping rollers
(P/N 549-81000-00)

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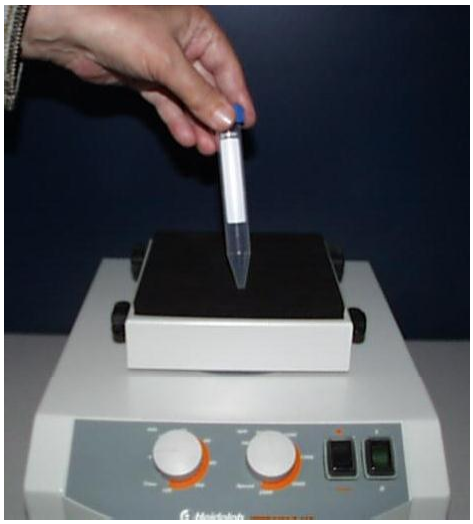
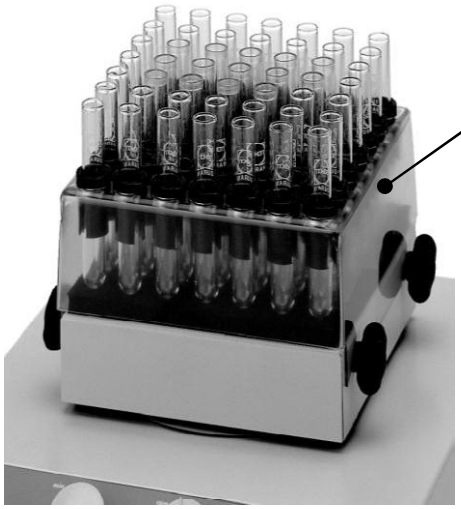
3.3. VIBRAMAX 110 / test tube adapters

Test tube are seated on the rubber mat by hand.



Several test tubes may be shaken at the same time, using the optional test tube adapters. These adapters are secured on the shaker table with wingbolts. Test tubes are plugged into "collets".



test tube adapter for 49 ea. dia. 12 test tubes, up to 80 mm long (P/N 549-82000-00) **or test tube adapter for 36 ea. dia. 16 test tubes, up to 80 mm long** (P/N 549-83000-00)

OPERATION AND CONTROLS

☞ Before connecting power cord with main outlet, make sure that:
- your item is designed for your local voltage and frequency (data plate on item).
- master switch is set to "0" and all controls are in "min." position (turn CCW completely); this way you avoid spilling fluids by too intense shaking action.

☞ Carefully close your flasks and select appropiate shaking intensity (if flasks remain open) to avoid splashes and spillage.

☞ We recommend to start with low shaking speed and gradually increase frequency to avoid accidential shaking at high speed.

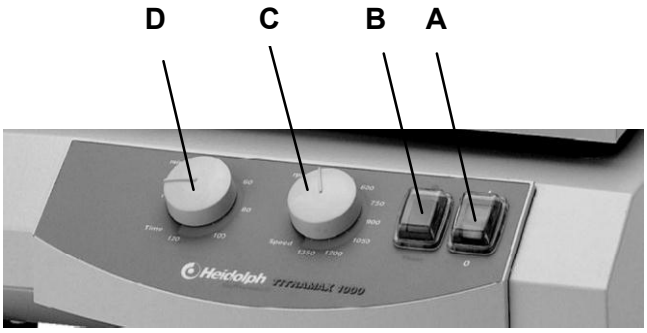
☞ On principle, one single flask should be arranged in the middle of the shaker plate, whereas more flasks should be distributed equally on the plate.

☞ At high loads (load bearing capacity of shaker plate) and high frequency of shaking, always make reference to load graph as aplicable for your item (refer to "Specifications" section).

⚠ When handling hazardous fluids, make reference to applicable safety information.

All shakers

The control panel features the following controls (from right to left):



A 2-pole master switch (lighted green)
B continuous / timer select
C speed setting knob
D timer setting knob

1. Turn item ON with master switch (A).
2. Set shaker frequency with speed setting knob (C).
3. Select continuous / timer controlled operation with selector (B) (symbol ●) or timer control (timer). In the timer mode, shaking action can be selected between 0 and 120 minutes; time elapsed, item will stop shaking, a buzzer sounds. The timer will continue running even in case of power supply failure.

☞ When using shakers inside conditioning cabinets, make reference to ambient conditions as stipulated in the "Specifications" Section.

CLEANING & SERVICING

Cleaning: wipe housing clean with a damp cloth (add some sort of mild liquid soap).

☞ **Note**
To avoid damage to the surface finish, avoid using chlorine bleach, chlorine-based detergents, abrasive substances, ammonia, rags or cleaning agents containing metal particles.

The item is maintenance-free. Repair work is limited to technicians so approved or appointed by Heidolph Instruments. Please call your local Heidolph Instruments Dealer or a Heidolph Instruments Field Representative (also refer to page 26)

DISASSEMBLY & STORAGE

Disassembly

1. Turn item OFF and disconnect main plug.
2. Remove all of the hardware arranged around the shaker to ease disassembly.
3. Unload all vessels from shaker, uninstall optional equipment.

Forward & Store

1. We recommend to store the item and its components in its original box, or a similar container that offers adequate protection against damage in transit. Tape the box securely.
2. Store the item in a dry place.

Caution
Do not jolt or shake the item during transport.

DISPOSAL

For disposal, please comply with your local or national regulations.
Split by metal, plastic, etc.
Packing material to be treated as described above (material split).

TROUBLESHOOTING

Work on electric, electronic and cryogenic components is limited to qualified personnel.

Master switch on shaker / mixer won't light
1. Check power cord
2. Check circuit breakers

Item won't shake (master switch lighted))
1. Timer run-down
2. Thermal motor circuit breaker triggered by motor overload
   Remedy:
   Wait about 20 minutes, decrease load applied on shaker plate.
3. Mechanical parts broken (humming motor noise) or electronic failure (no motor noise).

SPECIFICATIONS

all shakers

space required	245 mm x 310 mm TITRAMAX 1000 = 320 mm x 375 mm
weight	abt. 5 kg
ambient temperature	0°C to 50°C at 80% rel. humidity Approved for installation in gassing and conditioning cabinets (make reference to temperature limits)
dissipated power	15 W ROTAMAX 120 = 25 W
voltage / frequency	230/240V 50/60Hz; or 115V 50/60Hz
protective class	IP 30 TITRAMAX 1000 = IP 40
drive motor	condenser motor mit electr. control or split pole motor with thermal circuit breaker

TITRAMAX 100

shaker frequency	150 – 1350 1/min
total stroke / orbit	1.5 mm
timer	0 – 120 min timer / continuous
shaker plate	220 mm x 220 mm with anti-skid rubber plate, 4 ea. nests for microtiter plates

TITRAMAX 101

shaker frequency	150 – 1350 1/min
total stroke / orbit	3.0 mm
timer	0 – 120 min timer / continuous
shaker plate	220 mm x 220 mm with anti-skid rubber plate, 4 ea. nests for microtiter plates

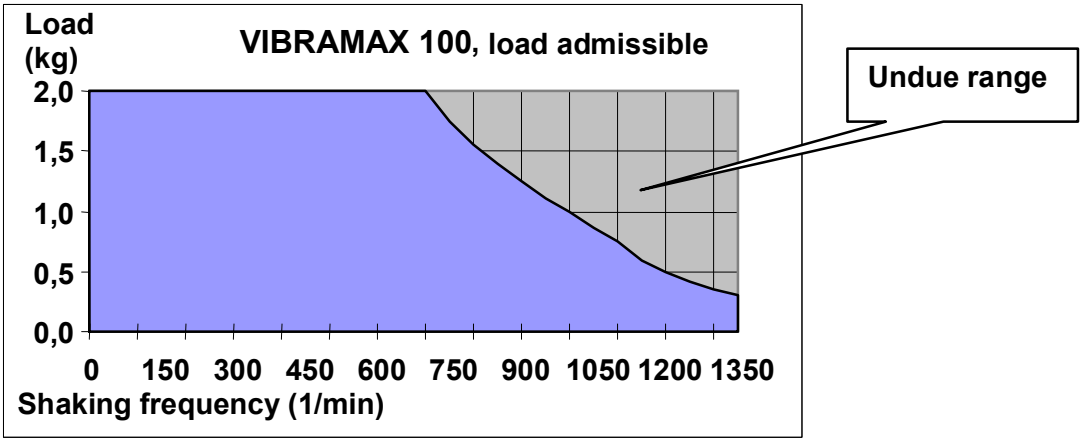
TITRAMAX 1000

shaker frequency	150 – 1350 1/min
total stroke / orbit	1.5 mm
timer	0 – 120 min timer / continuous
shaker plate	290 mm x 258 mm with anti-skid rubber plate, 6 ea. nests for microtiter plates

VIBRAMAX 100

shaker frequency	150 – 1350 1/min
total stroke / orbit	3.0 mm
load bearing capacity	static, 2 kg
timer	0 – 120 min timer / continuous
shaker plate	220 mm x 220 mm with anti-skid rubber plate, with flanged edge

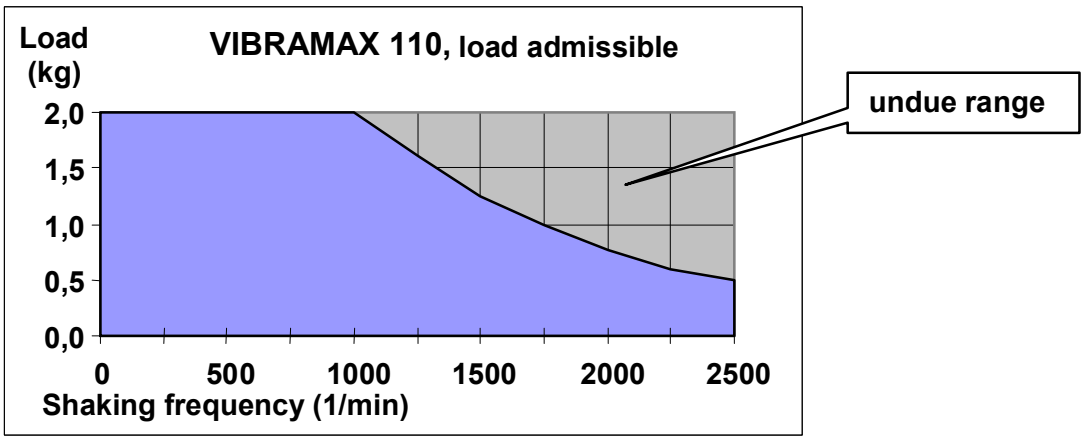
- When running at high shaking frequency, make reference to graph for decrease in load bearing capacity of shaker plate.



VIBRAMAX 110

shaker frequency	150 – 2500 1/min
total stroke / orbit	1.5 mm
load-bearing capacity	static, 2 kg
timer	0 – 120 min timer / continuous
shaker plate	145 mm x 145 mm with anti-skid, soft rubber plate

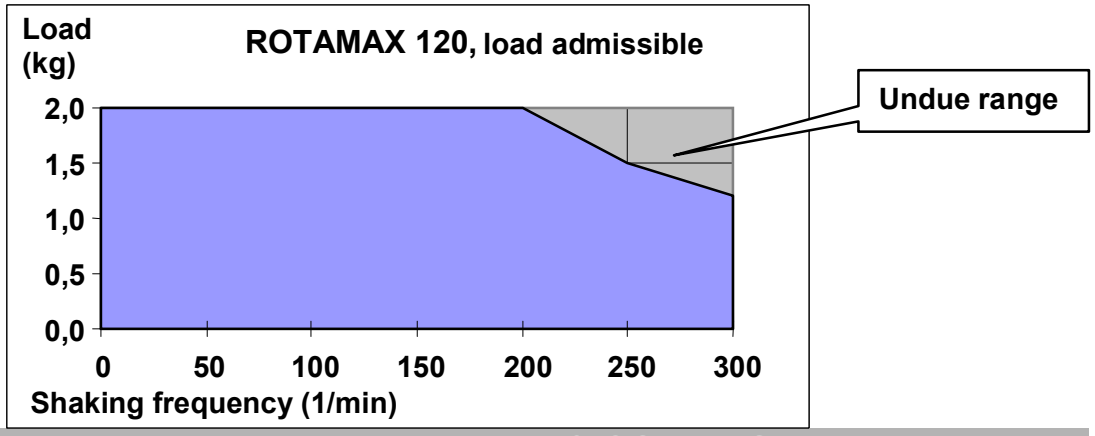
- When running at high shaking frequency, make reference to graph for decrease in load bearing capacity of shaker plate.



ROTAMAX 120

shaker frequency	20 - 300 1/min
total stroke / orbit	20 mm
load-bearing capacity	static, 2 kg
timer	0 – 120 min timer / continuous
shaker plate	220 mm x 220 mm with anti-skid rubber plate, with flanged edge

- When running at high shaking frequency, make reference to graph for decrease in load bearing capacity of shaker plate.



WARRANTY, LIABILITY & COPYRIGHT

Warranty
Heidolph Instruments warrants that the present product shall be free from defects in material (except wear parts) and workmanship for 3 years from the date shipped off the manufacturer's warehouse.
Damage in transit is excluded from this warranty.

To file for such warranty service, contact Heidolph Instruments (phone ++49-9122-9920-68) or your local Heidolph Instruments Dealer. If defects in material or workmanship are found, your item will be repaired or replaced at no charge.
Misuse, abuse, neglect or improper installation are not covered by this warranty.
Alterations to the present warranty need Heidolph Instruments' consent in writing.

Exclusion Clause
Heidolph Instruments cannot be held liable for damage from improper use or misuse. Remedy for consequential damage is excluded.

Copyright

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QUESTIONS / REPAIR WORK

If any **aspect** of installation, operation or maintenance remains unanswered in the present Manual, please contact the following address:

For repair services please call Heidolph Instruments (phone: +49 - 9122 - 9920-68) or your local, authorized Heidolph Instruments Dealer.

Note
You will receive approval for sending your defective item to the following address:

Heidolph Instruments GmbH & Co. KG
Lab Equipment Sales
Walpersdorfer Str. 12
D-91126 Schwabach / Germany
Tel.: +49 – 9122 - 9920-68
Fax: +49 – 9122 - 9920-65
E-Mail: Sales@Heidolph.de

Note
If you are based in the United States of America, please contact Heidolph US:

Heidolph Instruments, LLC
Lab Equipment Sales
2615 River Rd.
Cinnaminson, NJ 08077
Phone: 856-829-6160
Fax: 856-829-7639
E-Mail: heidolph@snip.net

Safety Information
When shipping items for repair that may have been contaminated by hazardous substances, please:

- advise exact *substance*
- take proper *protective* meason to ensure the safety of our receiving and service personnel
- *mark* the pack IAW Hazardous Materials Act

VDE
Reg.-Nr. 7141/QM/10.2001
QM-System-Audit
DIN EN ISO 9001:2000

Service Tel.: 00800-43 43 65 74
3 Jahre Garantie
3 Years Warranty
Service Tel.: (+49)-9122 992068

CE-DECLARATION OF CONFORMITY

We herewith declare that the present product complies with the following standards and harmonized documents:

EMC-guideline (89/336/EWG) **:**
EN 61326: 1997 + A1:1998 + A2:2001+ A3 2003
EN 61000-3-2: 2000
EN 61000-3-3: 1995 + 1997 + A1:2001
EN 61326: 1997 + A1:1998 + A2: 2001+ A3 2003
EN 61000-4-3:2002 +A1:2002
EN 61000-4-5:1995 +A1:2001
EN 61000-4-6:1996 +A1:2001
EN 61000-4-8: 1993
EN 61000-4-11:1994 + A1:2001

Low-voltage guideline (73/23/EWG)**:**
EN 61010-1
EN 61010-2-051