



# Test expert plus

# Test expert plus basic edition

Skin Resistance Measuring

# TABLE OF CONTENTS

	Page
General Information	
About the Test expert plus/Test expert plus basic edition	5
Purpose determination/Product features	
Purpose determination	6
References/Contraindications	
Indicator References	7
Function and Operation	
Point measurement	9
Meridian status	9
Remedy test	9
Energy screening *	10
All-around Measurement with Segment Pulse-Current Provocation *	10
Regulatory test *	10
Safety and Cleaning Instructions	
Safety and security guidelines	12
Care, cleaning and disinfection	13
Safety Check/Maintenance	
Technical Safety Checks (TSC)	14
Maintenance	14
Delivery/Device Product components	
What to do when the unit arrives (initial checkout)	16
Optional product components	17-18

\* = Test expert plus - full version only

# TABLE OF CONTENTS

Device Description	
Description of front panel	19
Description of rear panel	20
Front panel symbols	21-22
Shipping carton symbols	22
Read and side panel symbols	23
Nameplate symbols	24
Program symbols	25
Meridian status symbols	26
Meridian abbreviations	26
Energy screening symbols	27
All-around Measurement and Pulse-Current Provocation symbols	28
Initial Setup	
Function and device description	31-33
Setup and battery charging	34
Function and Operation	
Device operation for resistance measurement	35
TEST amplification	35
State testing	36
Resistance measurement	36-37
Short-term storage unit	37
Meridian status *	38
Energy screening *	39
Device operation for provocation *	41
Point provocation with pulse current *	42
All-around Measurement with Segment Pulse-Current Provocation *	42-43
Footswitch function description	45
List function	46

\* = Test expert plus - full version only

# TABLE OF CONTENTS

Protocols	
Protocol - Energy screening *	48
Protocol - Measurement result & list function printout	49
Protocol - Meridian status printout *	50
Protocol - Dental measurement printout *	51
Device Setup	
Device setup settings	52-53
Service Information	
Changing the battery	56
Fuse replacement	57
Software updates	58
Self-test and error messages	58
Environmental Protection Information	
Doing our part for the environment	59
Returning used wegamed devices for disposal	59
Disposing of used wegamed devices	60
Disposing of dead batteries	60
Technical Data/EMV	
Technical data for Test expert plus/Test expert plus basic edition	61-62
Technical data for materials	63
Special precautions, advices and characteristics concerning the EMV	64-68

\* = Test expert plus - full version only

# GENERAL INFORMATION

Dear Test expert plus/Test expert plus basic edition owner,

Thank you for the trust you have shown in us by buying this device. The Test expert plus/Test expert plus basic edition is a high-grade unit for use in clinical practice, one that combines the experiences and latest insights from former VEGATEST series (and its years of proven efficacy) with state-of-the-art device technology.

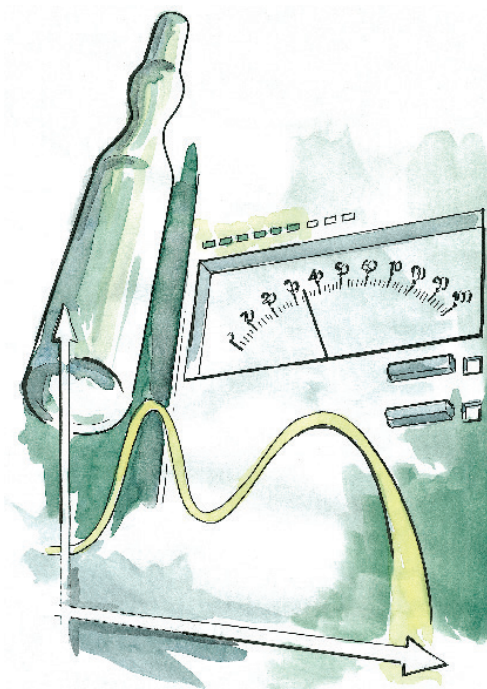
This Instruction Manual provides important user information and knowledge about the device – important prerequisites for effective and responsible use of the device. Please read this Instruction Manual carefully and completely, above all observing all safety and security guidelines.

The Test expert is manufactured in two versions - Test expert plus and Test expert plus basic edition. The Test expert plus basic edition offers a basic version (VDS-menu), point resistance measurement, SI-Card-function and the possibility of computer connection. The Test expert basic edition is able to be upgraded by the wegamed Extension Package to the full version. The Test expert plus/Test expert plus basic edition is a highly sensitive skin-resistance measurement device for functional investigational evaluation, including a provocation option (only Test expert plus - full version). Designed to search, find and measure acupuncture points on the human body, this device offers the preconditions for arriving at a homeopathic investigation (e.g. using the VEGATEST Method).

The provocation (pulse-current) module and the SI PULSER module, plus Energy Screening, Meridian Status, All-around Measurement, Pulse-Current Provocation, and element measurement – all these additional proven investigational techniques are at the user's disposal (in the Test expert plus - full version). The list function, optional printer connection, the Setup menu, conditions for program updates and other useful functions and product components are the additional extras of an advanced professional device.

As an additional convenience in patient management and monitoring the course of therapy, all patient measurements can be recorded, documented and stored in a powerful patient database using the optional WEGAMED.NET PC-Software.

We wish you great success in your work!  
Your wegamed team



# PURPOSE DETERMINATION /PRODUCT FEATURES

## Purpose determination

Test expert plus is a medical product and for bioelectrical impedance measurement of body segments in humans. Its application takes place using electrodes over the surface of the skin.

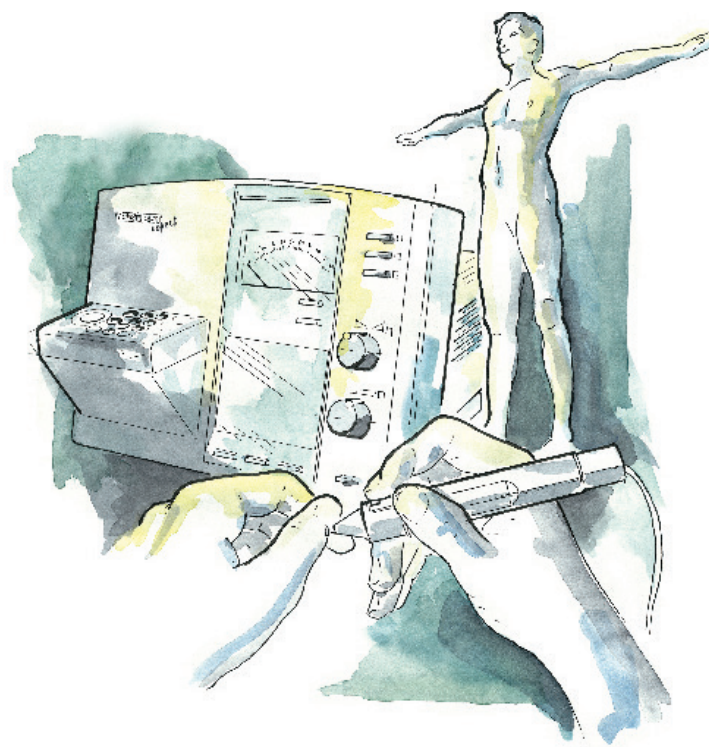
The intended purpose is recording of pathological indications, abnormalities and Norm deviations of the organism also in relation to the human body's ability to respond and regulate (overview diagnostics).

The treatment is basically for all patients older than 13 years possible, with exceptions intensive medical care patients and patients with missing extremities.

The test exper plus is used in suitable, medical conditions used rooms set up and operated comply with current requirements and electrical specifications for medical rooms.

The device may only be used by trained medical professionals

be operated by qualified personnel.  
The expected lifespan of the Test expert plus is 10 years.



The Test expert plus device complements this practical diagnosis with a diagnosis of causes through a holistic assessment of the bioenergetic functional situation of the human body, of its organs and organ systems below normal Conditions, as well as as part of the follow-up of diseases and therapies. For example in the sustainable fine-tuning of therapies and especially therapy support according to System Information Therapy (S-I-T) and electrotherapy with pulse currents. A key feature of the Test expert plus is the Impulse provocation.

Notice:  
These instructions for use describe all device functions, the product components of the basic software and the expansion software.

# REFERENCES/CONTRAINDICATIONS

## Indications/Areas of indication

- Diagnostic screening and instructions
- Health and vitality status
- Recommendations on functional status and progress of sports training
- Real-time monitoring and diagnostic recommendations for acute and chronic disease processes

## Contraindications

- Pregnancy
- Epilepsy
- Use in patients with pacemakers
- Cardiac arrhythmias and disorders
- Excitation conduction, like
  - A.V. - 2nd and 3rd degree block
  - Total right and left bundle branch block
  - Total sinoatrial block
- Heart failure characterized by dyspnea or Restricted performance of the heart due to a Impairment of ventricular filling or Blood ejection from the heart or both.
- Circulatory lability, due to abrupt fluctuations in blood pressure (labile hypertension)

## Notice:

Test expert plus is a high-performance practical device, with which the trained user can perform diagnostic and receives therapeutic advice. These tips are based based on experience. You release the user not of his responsibility for the individual examination as well as the teaching medical routine the diagnosis and treatment decision.



Fig. 1

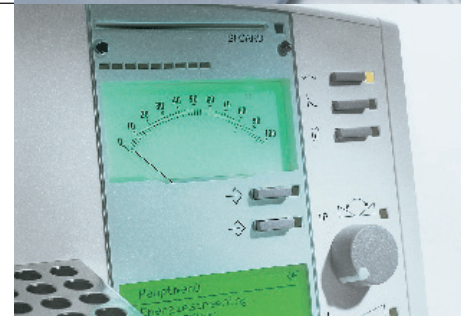


Fig. 2



Fig. 3

# REFERENCES/CONTRAINDICATIONS

## Side effects

The long-term recording and analysis of vigilance through the application of doctors and regular seminars conducted by wegamed GmbH has shown that the device works perfectly and can be classified as safe.

The following side effects can still occur:

- Increased sweating
- Inner unrest
- Light pain
- Initial worsening of symptoms
- Feeling of warmth
- Tingle
- Fatigue
- Skin redness

The above side effects can occur sporadically in individual cases. However, these usually subside on their own after a short time. There is currently no known lasting health impairment or physical damage!



Fig. 4



Fig. 5

# DIAGNOSTIC OPTIONS

Point measurement (Fig. 7)  
(Resistance measurement with pressure measuring pen)

Measurement of physical skin parameters (skin resistance, changes in skin resistance) at acupuncture points. Based on the measured values and the reaction of the skin resistance, conclusions can be drawn about the bioenergetic structure and functions of the human organism.

Meridian status (Fig. 8)  
(Resistance measurement with pressure measuring pen)

With meridian status, defined meridian points (acupuncture points) on the hands and feet are measured and recorded in a specified order. By comparing the right and left measurements, diagnostic clues and therapeutic starting points (meridian axes) can be found.

Drug test (Fig. 9)  
(Resistance measurement with pressure measuring pen)

During the resistance measurement at an acupuncture point, homeopathic information (test information) is coupled into the measuring circuit. Based on changes in measured values, the patient-medication relationship can be assessed.



Fig. 7

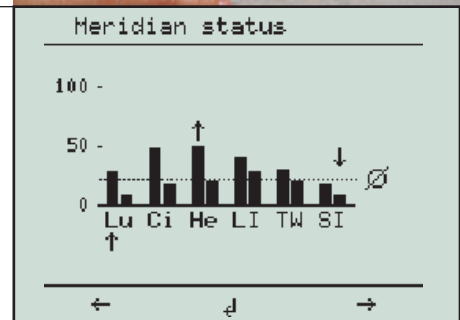


Fig. 8



Fig. 9

# DIAGNOSTIC OPTIONS

Energy screening (Fig. 10)  
(automatic segment measurement, resistance measurement with electrodes, pulse current application)

During energy screening, specified body stretches (segments) are measured before and after a minimal provocation in a defined program sequence. The measured values are displayed graphically and numerically. This measurement provides an overall overview of the patient's energetic state.

All-round measurement (Fig. 11)  
with segment pulse current provocation  
(manual segment measurement, resistance measurement with electrodes, pulse current application)

In the all-round measurement, individual parts of the body (segments) are measured using electrodes applied. The measured values allow a statement to be made about the energetic state of individual segments.

Through additional pulse current provocation, regulation capabilities and possible loads in areas of the individual measuring sections can be identified even better. Accordingly, individual segments can be provoked with 10 Hz or 13 Hz pulse current.

Regulation test (Fig. 12)  
(Resistance measurement with pressure measuring pen, pulse current application)

When measuring points, a provocation with pulse signals from the pulse current part can also be carried out during or between measurements. This serves to better differentiate the individual measurement results and shows the patient's ability to regulate energy

\*Energy expert plus - full version only

Fig. 10



Fig. 11

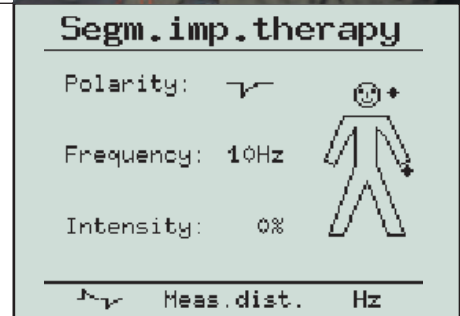
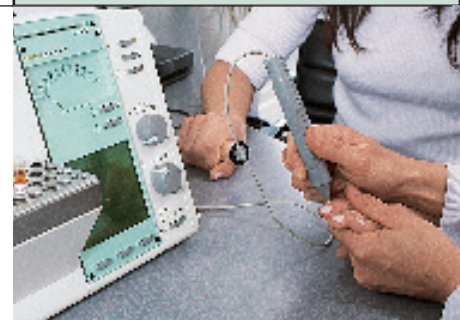


Fig. 12



# WARNING AND SAFETY INSTRUCTIONS

## Warnings and safety information

The basic requirement for responsible use of the Test expert plus is consistent consideration of these instructions for use.

Diagnostic information and treatment recommendations are based on empirical investigations and experience. They do not release the user from his responsibility for the individual examination or his diagnosis and therapy decision.

**Warning:**  
The device may only be used under the responsibility of a medical professional!

**Warning:**  
The device may only be used for the applications described in the instructions for use.

**Warning:**  
The device may only be put into operation after instruction and using the relevant accompanying literature.

**Warning:**  
This product may only be installed and put into operation in compliance with the special precautionary measures and EMC instructions as stated in the EMC chapter.

**Warning:**  
Rooms in which the device is operated must comply with the current safety requirements for medical rooms (DIN VDE 0100-710).

**Warning:**  
If the device has been exposed to moisture, it may no longer be operated and must be taken in for service.

**Caution:**  
If the device is not in use, it must be covered with the cover provided.

**Warning:**  
The device must not be operated during thunderstorms, in potentially explosive areas or in the vicinity of electromagnetic fields.

**Warning:**  
The electrodes may only be applied to uninjured and wound-free skin areas.

**Caution:**  
The device must not be operated simultaneously with high-frequency devices (falsification of the measurement results).

**Warning:**  
It may only be used on patients with product components that have been approved and disinfected for the device.

**Warning:**  
Touchable, electrically conductive housing parts, including connectors and electrodes, must not be touched at the same time as the patient. Electrically operated devices must be located outside the patient safety zone of 1.5 m around the device (EN 60601-1)

**Warning:**  
Only application-specific, approved product components and no external voltages may be connected to the device's interface and electrode cables.

**Caution:**  
Devices that are combined with the device must comply with their current standards:  
For medical devices: EN 60601-1

**Caution:**  
When transporting (shipping) the device, protection against damage must be ensured (through the original packaging or through equivalent protective measures).

**Caution:**  
If damage is suspected following a fall or impact, the device must be returned to the manufacturer for inspection.

**Warning:**  
Changes or repairs may only be carried out by the manufacturer or by persons specifically authorized by the manufacturer.

**Caution:**  
If the warnings and the instructions for use are not followed, any liability and warranty claims against the device manufacturer/supplier will be void.

# CLEANING INSTRUCTIONS

Cleaning, care and disinfection

Warning:

Before the first and every subsequent patient use, all electrodes must be disinfected as described above!

The disinfectant HS-Safesept<sup>®</sup> from Henry Schein is recommended for cleaning and disinfecting the electrodes. Tarnished contact surfaces of the electrodes can be polished using stainless steel cleaning cloths.

Housing and other product components may only be cleaned with a damp cloth or disinfected with the above-mentioned disinfectant.

A notice:

You can obtain product information about the disinfectants to be used from wegamed.

The disinfectants comply with EC Regulation 1907/2006 (REACH).

# SAFETY CHECK/MAINTENANCE

## Technical Safety Checks (TSC)

For the Test expert plus, wegame d gmbh recommends that the safety inspection be carried out every year by qualified specialist personnel (see paragraph 11 of the MPBetreibV).

maintenance

The Test expert plus is not subject to any additional maintenance requirements. Defects in wearable parts such as the battery, instrument lighting and cables must be remedied during annual safety checks or if malfunctions occur.



Fig. 16

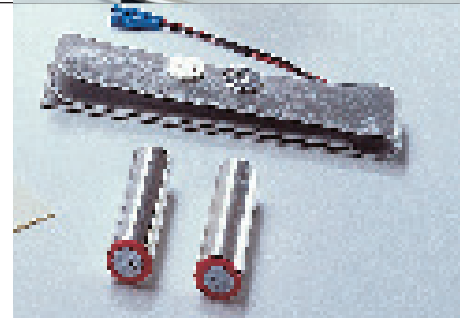


Fig. 17



Fig. 18

\* = Test expert plus - full version only

# SHIPMENT/PRODUCT COMPONENTS

## Verification of delivery

### Warning:

If damage or defects are discovered, wegamed gmbh must be notified before any further action is taken.

Under no circumstances may the device be put into operation!

Before the first system installation and commissioning of the device, the following must be checked:

- Visual inspection of the device, the product components and, if necessary, the special product components for visible transport damage.
- Checking all device and product components as well as the accompanying literature for completeness (according to the delivery note).

### Test expert plus and product components

Basic device (Fig. 15):

- Test expert plus - (order no. FTES0.00010) with power cable, basic software, Instructions for use

Product components (standard scope of delivery):

- Pressure measuring stylus (Fig. 16) (Order no. FTESZ.00144)
- Black hand electrode (Fig. 17) (Order no. FZUB0.12102)
- Safety cable for hand electrode (Order no. FZUB0.12113)
- Cover (Order no. ZTESZ.21443)



Fig. 19



Fig. 20



Fig. 21

# SHIPMENT/PRODUCT COMPONENTS

Special product components (optional):

For all-round measurement, segment pulse current provocation and energy screening (Fig. 19):

Electrode set with electrode supply cable (Order No. PTESZ.00149) consisting of:

- Forehead double electrode (Order No. FDFMZ.05122)
- Red hand electrode (Order no. FZUB0.12101)
- Black hand electrode (Order no. FZUB0.12102)
- Safety cable for hand electrode (Order no. FZUB0.12113)
- Foot double electrode (Order no. FCHEZP05102)
- Electrode supply line (Order no. FTESZ.00145)

Other product components:

- Foot switch (Fig. 20) (Order no. FTESZ.00141)

Program cards to complement yours

Diagnostic options (Fig. 19):

The program cards (VDS1 and VDS/SRT) can be inserted into the side of the device to expand the number of internal ampoules from 500 to 1000 or 5000.

A notice:

- These instructions for use describe all device functions, the product components, the basic software and the expansion software.
- To start up the device, an intensive instruction and functional test is carried out at the operating site by the wegamed GmbH specialist advisor in accordance with regulations. These are part of the scope of delivery.



Fig. 23

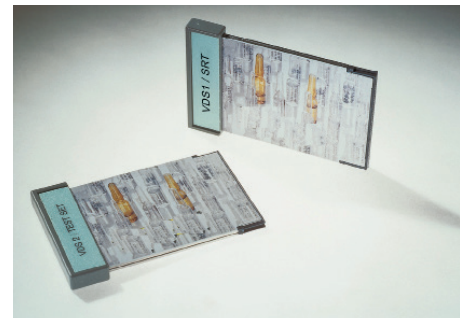


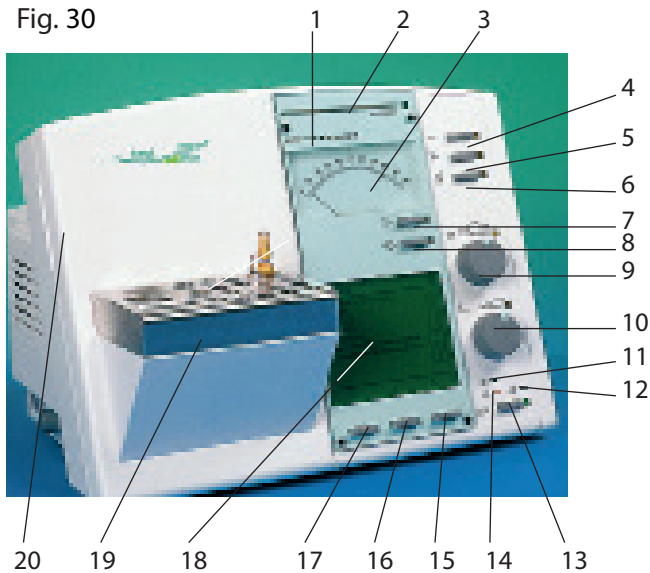
Fig. 25

\* = Test expert plus - full version only

# DEVICE DESCRIPTION

## Description of front panel

Fig. 30

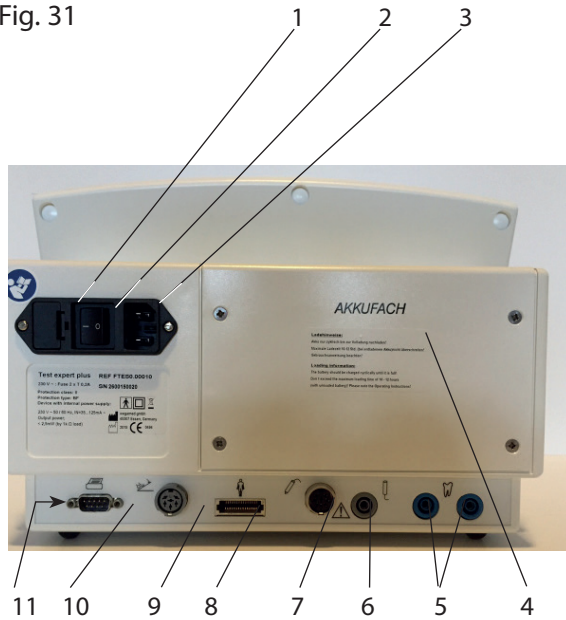


- 1 Pressure range indicator
- 2 SI CARD slot with function display
- 3 Measurement value display instrument
- 4 Range switch with display for resistance measurement
- 5 Range switch with display for provocation (pulse current)
- 6 Range switch with display for dental measurement
- 7 On/OFF switch with 'Full' display for Short-term Storage Unit 1
- 8 On/OFF switch with 'Full' display for Short-term Storage Unit 2
- 9 Test Point Adjuster (TP Adjuster) with function display
- 10 Provocation signal switch and adjuster (intensity and program parameters)
- 11 Battery charging indicator
- 12 AC power indicator
- 13 ON/OFF switch with operational status indicator
- 14 Battery charge state indicator
- 15 Program operation key (e.g. Forward, Frequency selection, etc.)
- 16 Program operation key (e.g. Confirm)
- 17 Program operation key (e.g. Back, Polarity selection, etc.)
- 18 Program menu display
- 19 Test honeycomb
- 20 Insertion slot for additional program cards  
Removing or inserting of the VDS-Cards in operation mode can lead to damages of the device, which might not be repairable!

# DEVICE DESCRIPTION

## Description of rear panel

Fig. 31



- 1 Power-line fuse
- 2 AC power switch
- 3 AC power socket
- 4 Battery compartment
- 5 Element measurement connector socket
- 6 Hand electrode connector socket
- 7 pressure/measuring stylus connector socket
- 8 Connector socket for Energy Screening, All-around Measurement and pulse-current provocation

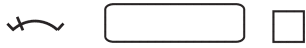
Fig. 32



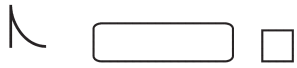
- 9 Footswitch connector socket
- 10 Serial interface for printer and PC connection
- 11 Connector socket for additional honeycomb (B2)  
Do not connect hand electrodes!
- 12 Connector socket for additional honeycomb (B1)  
Do not connect hand electrodes!
- 13 Volume control
- 14 Insertion slot for additional program cards  
Removing or inserting of the VDS-Cards in operation mode can lead to damages of the device, which might not be repairable!

# DEVICE DESCRIPTION

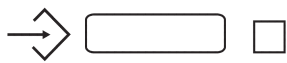
## Front panel symbols



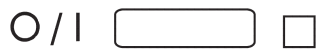
Test range switch and display  
(resistance measurement and Energy Screening)



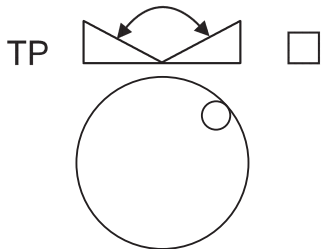
Provocation range switch and display \*  
(point provocation, All-around Measurement and pulse-current provocation)



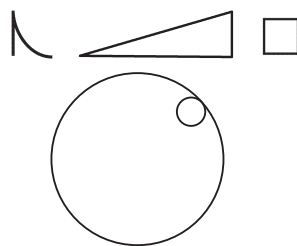
Memory On/Off switch and 'Full' display  
(storage)



Operation On/Off switch and display



Test Point Adjuster and function display  
(to increase resistance measurement sensitivity)

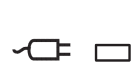



- Control for setting state testing parameters  
(e.g. percent, Biological Index, Yin/Yang, Potency\*\*)
- Intensity control and display for provocation signal
- Only Test expert plus - full version:
- Intensity control and display for provocation signal
- State testing On/Off switch
- Provocation signal On/Off switch  
for pulse-current provocation with electrodes


# DEVICE DESCRIPTION

## Front panel symbols

 Pressure range display for pressure/measuring stylus

 AC power display (AC switch on device back panel)  
LED lit = AC power on


 Battery charge indicator (AC power)  
LED lit = battery is charging  
LED unlit = battery fully charged

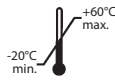
 Battery charge state indicator (AC or battery power)  
- LED green = battery fully charged  
- LED yellow = normal battery operation  
- LED flashes red/yellow = battery needs to be charged

## Shipping carton symbols

 This end up

 Fragile

 Keep dry

 Allowable storage temperature range  
(-20°C to +60°C)

# DEVICE DESCRIPTION

## Rear and side panel symbols



Serial interface connector  
(printer connection)



Footswitch connector



Connector for Energy Screening, All-around Measurement and pulse-current provocation \*



Pressure/measuring stylus connector



Hand electrode connector



Icon for Type BF devices



Icon for Protection Class II devices

\* = Test expert plus - full version only

# DEVICE DESCRIPTION

## Nameplate symbols



Conformity marking with number of the notified body (EC directive confirmation)



Protection class II device



Type BF device



Read and heed the instruction manual!



wegamed gnbh  
45307 Essen, Germany

Manufacturer



i.e. 2007

Manufacture date



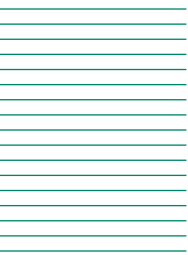
Segregated collection of electrical and electronic devices; bar below crossed-out trash can signifies: "Put into circulation" after 13 August 2005










**SN**

Device serial number

# DEVICE DESCRIPTION

## Program symbols



	Program/parameter selection (Back)
	Additional undisplayed menu items "Above"
	Program/parameter selection (Forward)
	Additional undisplayed menu items "Below"
	Confirm acceptance of selected program or parameter adjustment
	Return to previous program item
	Cursor symbol (indicates currently selected program or parameter)
	Information from the VEGA Duplex Speicher (VDS) is switched into the measurement loop
0E . 4E	Tested-out amplifier data that is switched into the measurement loop (Epiphysis)
	Designates collected VDS data (list function) Designates menu items without VDS data (note function)

# DEVICE DESCRIPTION

## Meridian status symbols

100 -



Graphic readings display on percent scale

(Example: lungs, left and right side)



Graphic readings display with maximum value designation

(Example: heart, left side)



Graphic readings display with minimum value designation

(Example: liver, right side)



Measurement point selection

(Example: stomach, left side) – Intensity control and display for provocation signal



Graphical representation of the mean value of the measured meridians for the current patient

58 SP 73

Numerical representation of a meridian status measurement\* (Example: spleen/pancreas, left side = 58%, right side = 73%)

### Meridian Abbreviations

Lu – Lung meridian

CS – Circulation/Sexuality meridian

He – Heart meridian

LI – Large Intestine meridian

TH – Triple Heater meridian

SI – Small Intestine meridian

SP – Spleen/Pancreas meridian

Li – Liver meridian

Ki – Kidney meridian

St – Stomach meridian

Gb – Gallbladder meridian

Bl – Bladder meridian

# DEVICE DESCRIPTION

Energy Screening symbols  
(automatic segment measurement)

Energy Screening Program for automatic segment measurement

Graphic Select graphical display of readings

Readings Select numerical display of readings

Start Start measurement sequence

Cancel Interrupts measurement sequence

End Return to previous program item



Icon for segment measurement with measurement segment display



Graphical readings display with measurement-segment and normal-range designation

# DEVICE DESCRIPTION

All-around Measurement and Pulse-Current Provocation symbols  
(manual segment measurement)  
Test expert plus - full version only



Select provocation signal polarity



Positive polarity



Negative polarity

0%

Provocation signal intensity setting (percent)

Hz

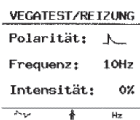
Pulse-signal frequency selection

10Hz

Selected frequency: 10Hz

13Hz

Selected frequency: 13Hz



Select manual segment measurement/provocation  
or pulse-current provocation with roller electrode



Icon for segment measurement/provocation with measurement segment display

Meas. seg.


Select next measurement/provocation segment

# INITIAL SETUP

## Function and device description

The Test expert plus/Test expert plus basic edition is a skin-resistance measuring device, optimized for measuring at acupuncture points using the VEGATEST method and other well-known testing methods. It can be operated in AC or battery power mode. Using a high-quality measurement amplifier, even minimal readings and changes can be displayed on the rapid, responsive display meter. The display meter is backlit and has a scale range of 0–100.

### For resistance measurement


() , there is a DC voltage of ca. 1.5V between the hand electrode and the measuring stylus. The maximum measurement current is less than 10µA. On the display meter, the readings are displayed as conductance (inverse of resistance):

Display 100 equals infinite conductance ( $\infty$ )

( $\hat{=}$  resistance reading 0)

Display 0 equals zero conductance (0)

( $\hat{=}$  resistance reading  $\infty$ )

Using the TP Adjuster () , the device's measurement sensitivity can be increased without changing the measuring voltage: the display range is simply extended. Activation of the TP Adjuster is signaled by an indicator light. Pressure measurements with the pressure/measuring stylus register the measurement pressure, which is then displayed in the Test expert plus/Test expert plus basic edition's pressure-range display.

The individual working measurement pressure is within the display range. Using the short-circuit switch on


the pressure/measuring stylus, the measurement loop can be short-circuited during point measurement, thus neutralizing the hand electrode and measuring tip. In addition to the visual display of readings of element and resistance measurements, a sound unit can be switched on that renders the readings as different pitches which acoustically track the visual display values.

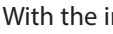


The sound unit also generates alarm and information tones (provocation module, SI PULSER, keyboard) to aid the operator. There is a volume control on the left side of the front panel to switch the sound unit on and off and regulate its volume.

For effective measurement after a test procedure, and for the remedy test, the device is equipped with an integrated test honeycomb and two short-term memory units (for individual storage of the measurement loop test and measurement data). Storage is effected by pressing the desired STORE key. Pressing the key again (or switching off the device) erases the storage unit(s). The stored data, and the data from test substances placed in the test honeycomb, are automatically switched into the measurement loop during point measurement.

It is recommended to contact the tip of the Test expert plus/Test expert plus basic edition measurement stylus on the honeycomb and on the hand electrode prior to measurements in order to check correct electrical function and conductivity.


# INITIAL SETUP



For additional diagnostic applications, the Test expert plus/Test expert plus basic edition has a pulse-current module (  ) with which preset provocation signals can be applied \*.

With the intensity control (  ), signal intensity can be adjusted in 2% increments from 0–100%. In addition, signal frequency (10Hz or 13Hz) and polarity (  = positive,  = negative) can be selected.

When the provocation range switch is on, the provocation signal is routed to the measurement stylus tip (and signaled by a flashing display light next to the provocation control) by pressing the Provocation switch on the measuring stylus. Resistance measurement, element measurement and the provocation module are switched on with their respective range switches and signaled by display lights.

Further information and selection functions are included in a backlit menu-driven display screen. For example, for point measurement, proven test details can be selected over various programs. These are then testable parallel to the display, without first putting the necessary test ampules in the test honeycomb or switching them in externally. By selecting the testing range, the test data needed for the measurements is automatically made available by Test expert plus/Test expert plus basic edition. This test data is stored in the device's internal memory (VDS = VEGA DUPLEX STORAGE).

Energy Screening \* offers yet another diagnostic option. It is selected via the resistance measurement range (  ) as an independent sequence program. This program uses electrodes to measure the conductance (resistance) of specific body segments. After a minimal provocation (with current pulses) of these segments, another measurement sequence is performed.

These results are displayed numerically and graphically on the display screen to aid in arriving at a diagnosis. Electrodes are reconnected via a multipole electrode cable. For detailed measurements of individual body regions, the All-around Measurement (manual segment measurement),  " can be selected via the provocation range switch (  )\*. Preset measurement segments can be selected singly and measured out either before or after pulse-current provocation.

If needed, single segments can also be provoked with 10Hz or 13Hz pulse current \*. Electrodes are connected as for Energy Screening. For individualized pulse-current provocation, the Test expert plus/Test expert plus basic edition also provides the option of connecting roller electrodes, with which pathological body regions can be comprehensively rolled using the provocation module's current pulses.

# INITIAL SETUP

Additional device functions are activated by a connectable footswitch that further simplifies workflow with respect to menu operation on the display screen. Instructions on device operation, functions, settings and the program menus can be found in subsequent chapters.

The device is equipped with a serial interface for printing out measurement results and other data.

Important note: All test data acquired from the test honeycomb and the external connectors B1 and B2 are always switched into the measurement and provocation current loop while the device is in operation.

Fig. 33



# INITIAL SETUP

## Setup and battery charging

The Test expert plus/Test expert plus basic edition is designed to run on both AC and battery power. For AC power, and to recharge the battery, the AC power cable is connected to the AC power socket (device off) and then plugged into a 230V wall socket. The AC power switch on the rear panel switches AC power on and off.

The function display “AC power operation” indicates correct connection to AC power, and the built-in battery is recharged. The battery charging indicator is extinguished when the battery is completely charged. The AC power switch can then be turned off. The “Battery charge state” indicator displays the state of the internal battery:

Green – battery fully charged

Yellow – normal battery operation

Flashing red/yellow – battery needs to be recharged

When the “Battery charge state” display blinks red/yellow, the battery should be recharged at the next available opportunity. However, an already begun test or program sequence can still be completed without interruption.

Useful tip: if the device is operated during the day in battery mode, it is a good idea to recharge it overnight. An interim refresher charge (e.g. during the lunch hour) also prolongs battery life. The battery can only be (re) charged when the device is not in operation.

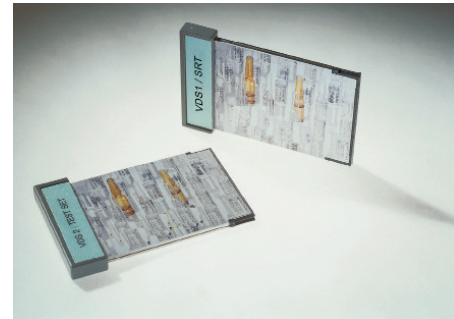


Fig. 34

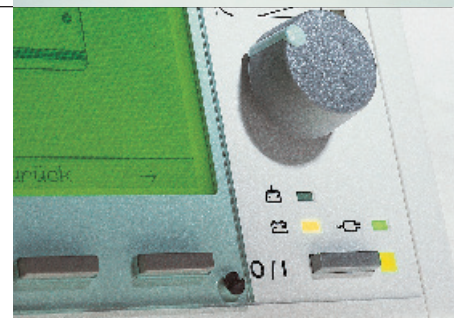


Fig. 35



Fig. 36

# FUNCTION AND OPERATION

## Device operation for resistance measurement

When the Test expert plus/Test expert plus basic edition is switched on (On/Off operation switch), the device performs a self-test and is then ready for operation once a range is selected for resistance measurement.

The Main menu appears on the display screen, showing a number of test programs (Fig. 38). The Forward (↓) and Back (↑) keys are used to select programs in the Main menu and program parameters in submenus. The cursor symbol (→) points to the currently selected program. The Confirm (↵) key is used to confirm selection of programs in the Main menu and submenus, and to switch to the next submenu.

The Confirm (↵) key also serves to return to the previous menu. The resistance measurement program menus are presented graphically as a flowchart in the Program Overview chapter.

## TEST amplification

Confirming (↵) the program VEGATESTING selects the Epiphysis Test menu. With the selectable Epiphysis amplifier data (Fig. 40) from VEGA DUPLEX STORAGE, patient testing can additionally be improved. Confirmation (↵) of this testing keeps the VDS data switched into the measurement loop for all subsequent measurements. This information is displayed on subsequent test menus, and it is preserved until Epiphysis testing is re-initiated or the device is switched off.

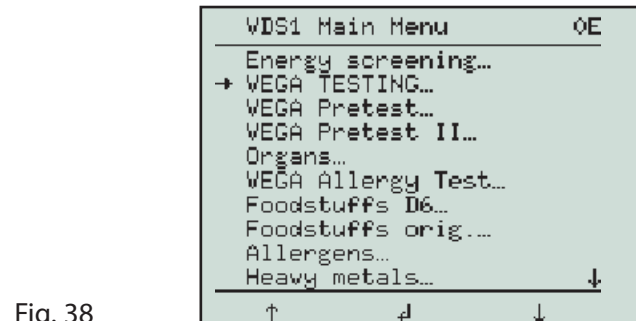


Fig. 38



Fig. 39

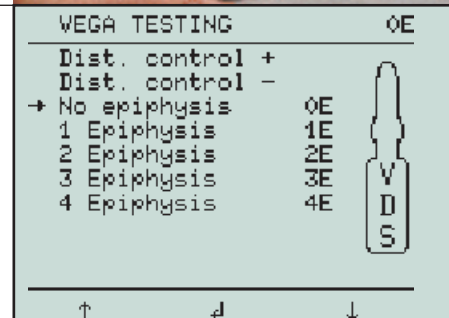





Fig. 40



Fig. 41

# FUNCTION AND OPERATION

## State testing

The  control has two functions. In the VEGATESTING program – and other programs that use switched-in data from the VEGA DUPLEX STORAGE unit ( = VDS) – pressing the  control (Fig. 42) toggles the State Testing menu (Percent: 0–100% in 10% increments; Biological Index: 0–21 in unit increments; YIN-YANG state: 0-100% in 10% increments, potency\*\*) on and off (Fig. 43). Turning the  control adjusts the value of the currently selected menu item, allowing for individualized setting to be tested out on the patient.

## Resistance measurement (point measurement)

For resistance measurement, the pressure/measuring stylus (Order No. FTESZ.00144) and the hand electrode (Order No. FZUBO.12102) are connected to the safety connector cable (Order No. FZUBO.12113) and possibly the footswitch (optional product components Order No. FTESZ.00141) to the proper sockets on the device rear panel.

The device is made operational as described on p. 31. The relevant device functions and how to perform them are described in the preceding chapter. To measure at acupuncture points, the patient holds the hand electrode. With the pressure/measuring stylus, the operator measures the skin resistance near an acupuncture point. The middle of the acupuncture point is indicated by the greatest pointer excursion (low-resistance region).



Fig. 42

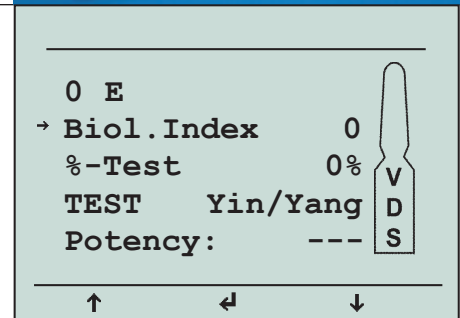


Fig. 43

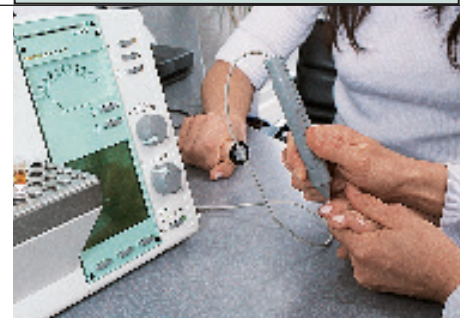


Fig. 44

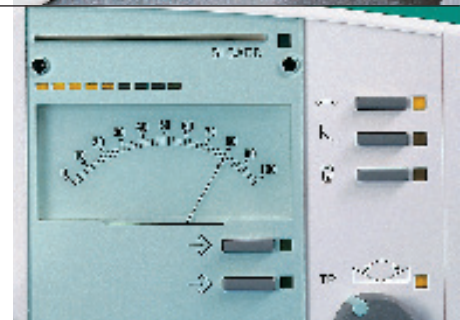



Fig. 45

# FUNCTION AND OPERATION

The Testexpert plus/Testexpert plus basic edition testing procedures (VEGATEST Method, etc.) are performed as point measurements (Fig. 46). For these applications, additional remedy honeycombs can be connected via safety connector cables (optional product component FZUB0.12113). To do a new standard value balancing when performing remedy testing, press the range switch (  ) to toggle the VEGATEST menu on and then back off again.

Note: in order to avoid erroneous results, the Test expert plus/Test expert plus basic edition should be turned off and then on again for each new patient.

## Short-term storage unit


When doing point measurements, the test and measurement information in the measurement loop can be stored in one of the two internal short-term storage units. Storage (and erasure) is performed by pressing one of the storage On/Off keys (  ). The short-term storage units have an additive function, i.e. when the second storage unit is turned on, it incorporates all the data from the first unit. The first storage unit can then be switched off and is now available for the next additive storage step.



Fig. 46

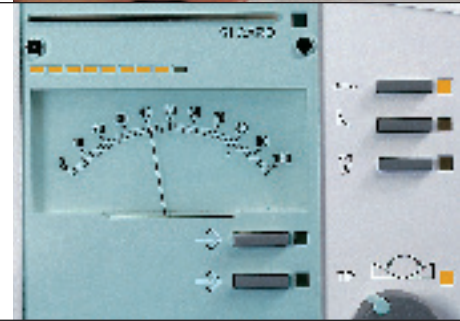


Fig. 47

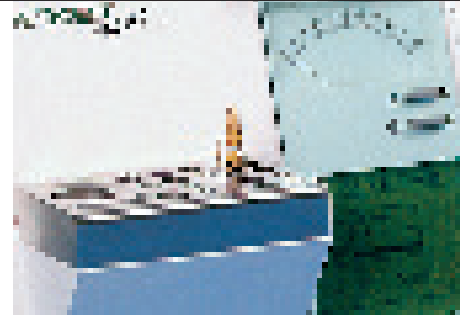


Fig. 48



Fig. 49

# FUNCTION AND OPERATION

Meridian status (point measurement)  
(Test expert plus - full version only)

Meridian status is a diagnostic procedure in which specified meridian points on the hands (Fig. 50) and feet (Fig. 51) are measured out in a predefined sequence (the acupuncture measurement and the usable product components are described in the chapter "Resistance Measurement").

This measurement procedure (using 4x6 measurements: alternating between left hand, left foot, right hand, right foot) captures the meridian axis information. The readings (Fig. 53) are registered automatically when a preset minimum pressure is reached, or manually by pressing the measurement stylus switch, and presented on the display screen as a bar chart. Each acupuncture point to be measured, and the automatic switching to the next point after each stored individual measurement, is indicated visually.

For this measurement procedure, the TP Adjuster (measurement value bandspread) is not activated. The ← and → can also be used to manually select any measurement point.

Pressing the footswitch reselects the previous menu item (e.g. to correct or repeat a measurement).



Fig. 50



Fig. 51

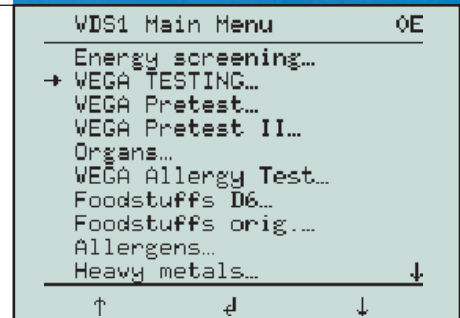


Fig. 52

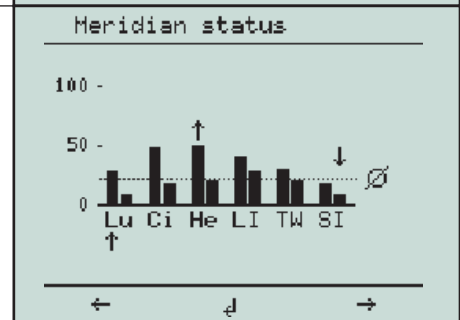


Fig. 53

# FUNCTION AND OPERATION

Energy screening (automatic segment measurement)  
(Test expert plus - full version only)

Optional product components (Order No. PTESZ.00149) are used to perform Energy Screening (Fig. 54). After connecting the electrode junction box to the device rear panel, the associated electrodes are connected. For correct connection of left and right sides, the colors on the electrode junction box must agree with the color designation on the respective electrodes: the cables marked black are for the right side of the body, the red ones for the left side. The dual forehead electrode is placed on the (seated) patient's head, who then grasps a hand electrode in each hand (noting the color markings) and places his bare feet on the surface of the dual foot electrode (Fig. 55).

The Energy Screening program is selected and run from the resistance measurement main program ( ). In this measurement, 7 segments are thoroughly measured in two measurement cycles. There is a provocation cycle using a minimal stimulus current in between the two measurement cycles. During the measurement process, readings are shown on the display meter, as well as graphically on the display screen (Fig. 56).



Fig. 54



Fig. 55

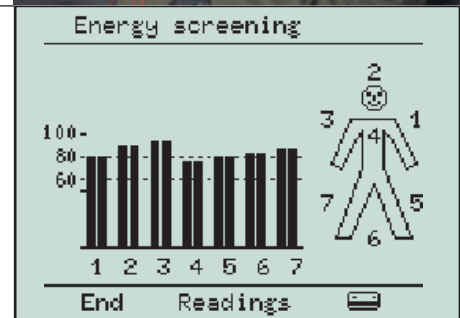


Fig. 56

# FUNCTION AND OPERATION

Device operation for provocation  
(Test expert plus - full version only)

After the Test expert plus/Test expert plus basic edition has been turned on with the On/Off Operation switch, it is ready (after the device self-test) to be used for resistance measurement. The pulse-current module is activated by pressing the provocation range switch (↵) (Fig. 61). The Point Provocation Program menu appears on the display screen (Fig. 62). The "Polarity" key switches between positive and negative polarity. The selected signal state is symbolized on the display screen (↵ = positive, ∇ = negative).

The "Frequency" key sets the provocation repetition rate in pulses/second (Hz) to one of two application-tested fixed frequencies: 10Hz and 13Hz. The selected frequency is displayed numerically.

The intensity of the current pulses can be set, using the intensity control (↵ ▽), to any value from 0% to 100% in 2% increments (Fig. 63). The selected values are visible on the display screen and remain there until the menu window is closed. Depending on which product components are connected, the (↵) key can be used to switch to All-around Measurement, segment pulse-current provocation (Fig. 64) or pulse-current provocation with roller electrodes.



Fig. 61

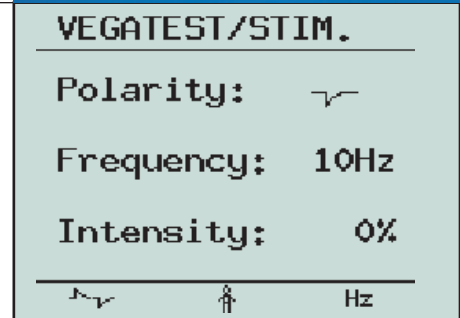


Fig. 62



Fig. 63

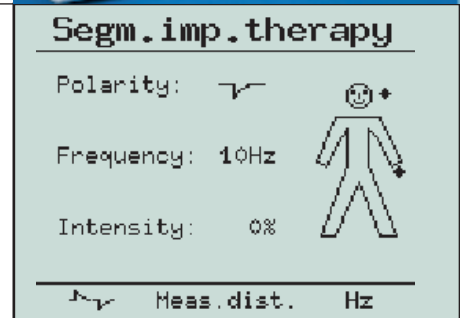



Fig. 64



# FUNCTION AND OPERATION


## Point provocation with pulse current \*

Pressing the provocation range switch (  ) (Fig. 65) switches the pulse-current module into the resistance measurement described in the previous section. This makes it possible to provoke the acupuncture points in between point measurements. Parameter selection and intensity setting is done as described in the preceding section "Device operation for provocation".

Pressing the "provocation" switch on the pressure/measuring stylus switches the current pulses to the stylus tip. The intensity is then increased gradually, up to the "tingle" threshold. The activation of the provocation signals is signaled by a flashing display light.

## All-around Measurement with Segment Pulse-Current Provocation \* (manual segment measurement)

Preparing for All-around Measurement is the same as for Energy Screening (P. 39). All-around Measurement is activated with the provocation range switch (  ) (Fig. 65) and the segment measurement switch (  ) (Fig. 66). The current measurement segment is indicated on the display screen's patient symbol, while the resistance reading is shown on the display meter. Pressing the "Measurement segment" key switches to the next of the 6 segments.

Pressing the provocation signal On/Off key (  ) (Fig. 67), allows toggling the provocation module on and off for an additional segment provocation (e.g. between two measurements).


Segment pulse-current provocation settings can only be changed when the pulse current module is active. Activation is signaled by a flashing yellow display light. For the provocation signal, positive or negative polarity, and a frequency of 10Hz or 13Hz, can be selected. The intensity is to be slowly increased with the Intensity control (  ) from 0 up to – but no more than – the "tingle" threshold. The manual pulse-current provocation setting is reset when switching to the next segment and when the provocation signal is switched off.



Fig. 65



Fig. 66



Fig. 67

# FUNCTION AND OPERATION

## Footswitch function description (optional)

To use the footswitch (Fig. 76, optional product component Order No. FTESZ.00141), connect it to the footswitch socket on the device rear panel (Fig. 77).

The functions of the Forward (↓) and Back (↑) keys can only be performed by pressing the footswitch.

In test mode (resistance measurement), all programs and/or test points of the Main menu and its submenus can be selected with the footswitch.

The footswitch is put into Forward or Back mode by a one-time pressing of the Forward (↓) or Back (↑) key (Fig. 78).

In the "State testing" submenu (Fig. 79), the settings for Biological Index, Percentage Testing, YIN-YANG Testing and Potency Testing \*\* can likewise be made via the footswitch.

In meridian status mode, pressing the footswitch reselects the previous menu item. In dental measurement mode, pressing the footswitch erases the previously measured readings.



Fig. 76



Fig. 77

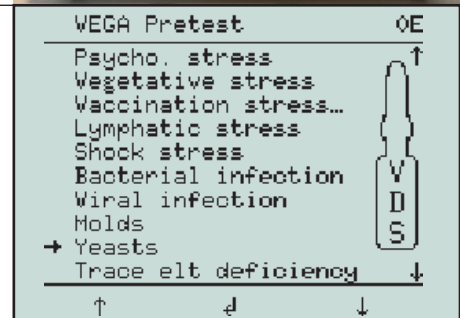


Fig. 78

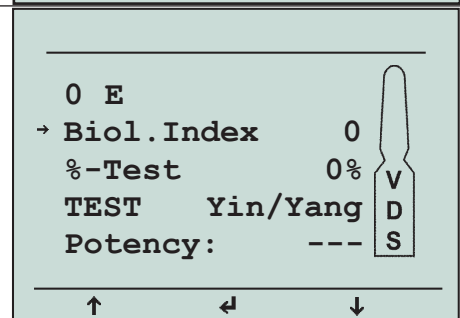


Fig. 79

\*\* = Test expert plus basic edition - version only

# FUNCTION AND OPERATION

List function (gathering test information)

When the List function is active (see Device Setup, P. 53) during testing, the responding test data can be collected by pressing the measuring stylus switch (Fig. 80).

The listed items will be flagged with the "√" symbol. (Fig. 81)

The following additional functions are to be noted with respect to the List function:

- Each collected VDS item is flagged with "√" (Fig. 81)
- Each VDS item can be listed and transmitted to the PC-software WEGAMED.NET. (Fig. 82)
- If a menu item is "listed" without switched-in VDS data, then a blank line will be shown in the list. (Fig. 83)
- The listed and flagged VDS data are retained until the Test expert plus/Test expert plus basic edition is switched off. To avoid misdiagnoses, the device should be switched off and on again before each new patient.



Fig. 80

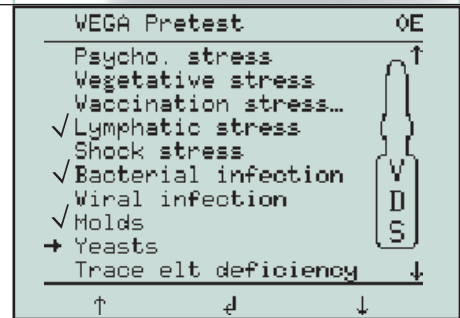


Fig. 81

# DEVICE SETUP

## Device Setup settings

The Setup menu (Fig. 89-91) is called up by pressing and holding the middle function key under the display screen while powering up the Test expert plus/Test expert plus basic edition with the On/Off operation switch.

Individual menu items can be selected with the function keys (↑ / ↓ / ←) and customized to fit one's needs.

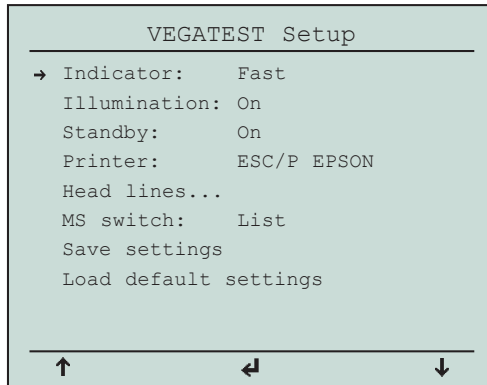


Fig. 89 (default settings)

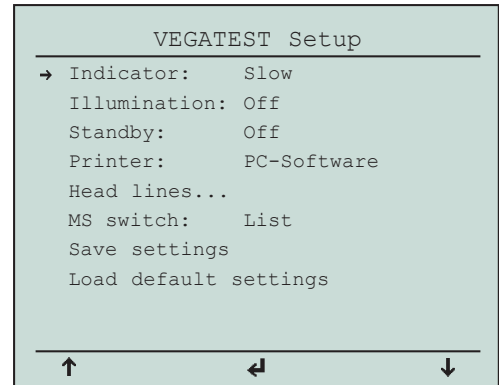


Fig. 90 (modified settings)

### Indicator:

A fast or a slow pointer excursion can be selected for the reading display meter.

### Illumination:

Illumination for the reading display meter can be switched off. This energy-saving function prolongs the battery's operational life.

### Standby:

In this energy-saving mode, the illumination of the reading display meter and the display screen is automatically switched off after 3 minutes if the device is not being used. The illumination comes back on again automatically if any device operation is performed (keypress, etc.).

This device function can be deactivated as needed.

### Head lines:

Under this menu item you can print out List function and energy screening a header text (e.g. practice name, practice address, ...) can be entered individually

# DEVICE SETUP

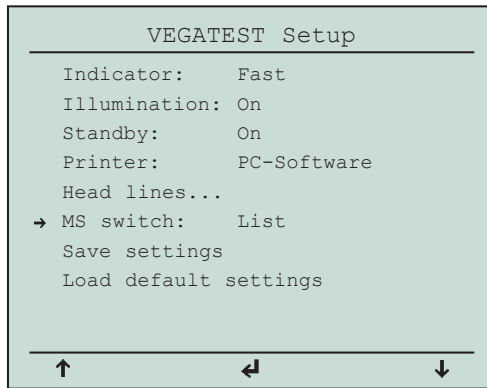


Fig. 91 (default settings)

DMG button (pressure measuring stylus button):

For resistance measurement (testing), this menu item selects the function for the switch on the pressure/measuring stylus: short-circuit or List function (collect data).

Save settings:

To preserve the modified Test expert plus/Test expert plus/basic edition Setup settings, they need to be saved by confirming this menu item.

Load default settings:

To restore the Setup default settings, confirm this menu item in the display. They need to be saved as above.

Quit Setup:

Exit the Setup menu by switching off the On/Off operation switch. Modified settings are preserved only if they were saved beforehand with the menu item "Save settings".

# SERVICE INFORMATION

## Changing the battery

The Test expert plus/Test expert plus basic edition is equipped with a maintenance-free lead-acid battery (6V//7,2 Ah). (Chapter "Technical Data" - page 62)

The battery should be changed when the minimum battery life (from full charge) becomes significantly less than 4 hours. The battery is changed as follows:

- Turn off AC power switch and On/Off operation switch
- Unplug power cord from AC power.
- Unscrew battery compartment cover on device rear panel (4 screws) and open it (Fig. 95).
- Unplug battery connector.
- Replace spent battery with a new one (Fig. 96).  
Observe proper polarity! (Fig. 97)
- Plug battery connectors onto battery. Make sure connection is secure!
- Screw cover back onto battery compartment.
- Switch on On/Off operation switch and check device operational function.
- Charge battery fully, until battery-charging indicator "☀" goes out (Fig. 98).

NOTE: spent batteries are hazardous waste, and should be disposed of accordingly!



Fig. 95



Fig. 96

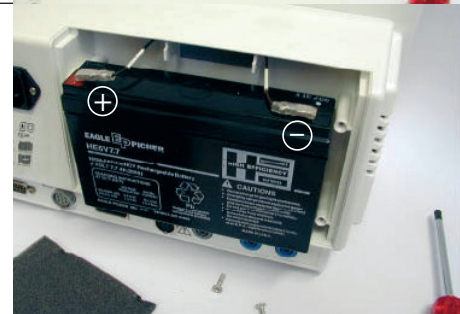


Fig. 97

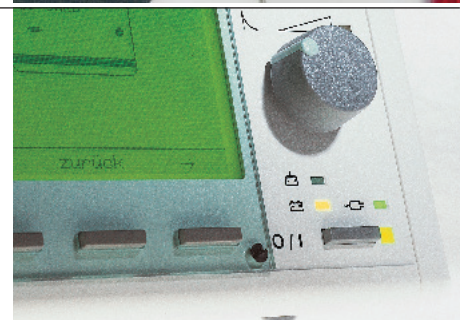


Fig. 98

# FUNCTION AND OPERATION

## Fuse replacement

### Caution:

When changing the fuse(s), pay attention to the correct fuse values (see information in the "Technical data" chapter).

If there is no operating display when the device is commissioned correctly, then the mains voltage, the mains voltage connection, the correct plug contact of the mains connection cable and, if necessary, the mains fuses should be checked.

The mains fuses are integrated in the mains socket module (Fig. 99) on the back of the device and are accessible as follows:

- Unplug the power plug on both sides!
- Press the left-side snap fastening of the fuse holder to the left with a small screwdriver and let it snap out (Fig. 100 and 101).
- Visually check or measure the fuse (replace defective fuses if necessary - Fig. 102).
- When inserting the fuse holder, it must click into place again

Fuse type: See "Technical data"



Fig. 99



Fig. 100



Fig. 101



Fig. 102

# SERVICE INFORMATION

## Software updates

The future software is updated via program cards (Fig. 103). Inserting the program card (Fig. 104) and turning on the Test expert plus/Test expert plus basic edition automatically initiates the update procedure.

## Self-test and error messages

When switched on, the Test expert plus/Test expert plus basic edition performs an automatic self-test.

In addition, the most important device functions are independently monitored during operation.

If a device malfunction is detected, an appropriate error message will be posted on the display screen (Fig. 105).

If this happens, please turn off your Test expert plus/Test expert plus basic edition and all attached devices and start over. If the error message reappears, shut the device down and contact wegamed customer service or your technical consultant.

### Caution:

If the device error message still occurs, stop device operation and contact your wegamed customer service or your specialist advisor.

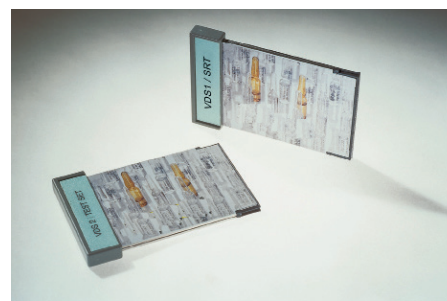


Fig. 103



Fig. 104

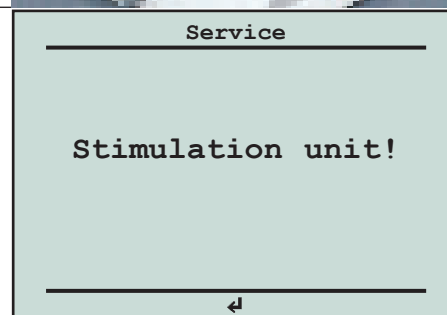


Fig. 105

# ENVIRONMENTAL PROTECTION INFORMATION

Doing our part for the environment

Protecting the natural foundations of life is one of the most urgent tasks.

When designing our products, we design our devices in such a way that:

the dismantling and recycling, in particular the reuse of our devices, their components and materials be facilitated.

Returning used wegamed devices for disposal

The symbol, the crossed out trash can with the one underneath

positioned bar (Fig. 75), attached to the device,

indicates that this product was released after August 13, 2005

was brought into circulation and not disposed of with household waste may be.

The test expert plus is available under the WEEE reg. no. DE 63978000

and must therefore not be disposed of in public collection containers. Regarding its disposal, the following applies

of the European Community the WEEE Directive 2002/96/

EC. This means that this product after its demise must be disposed of properly and recycled (Fig. 76).

For free disposal of marked wegamed old devices in Germany, please call us at the following number Phone number. 0201-185568-10 or let us call you wegamed specialist advisors or our customer service can advise you free of charge

With respect to appropriate disposal in other countries, the respective current national stipulations and regulations apply. Please contact the proper authorities to find out what these are, or get in touch with your country's wegamed representative.



Fig. 106



Fig. 107

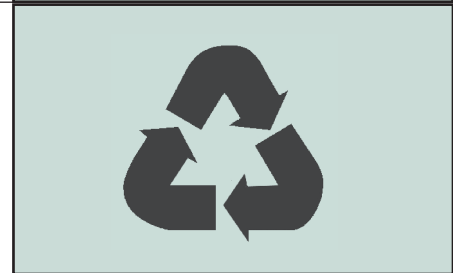


Fig. 108

# ENVIRONMENTAL PROTECTION INFORMATION

## Disposing of used videogame devices

Designated used videogame devices are disposed of by us at no charge, professionally and in an environmentally friendly manner. Through this responsible contribution to the correct and ecologically sound disposal of this product, you help protect the environment, its natural resources and the health of your fellow human beings!

## Disposing of dead batteries

The battery disposal ordinance has been in effect since 1 October 1998, according to which dead batteries must not be thrown away as household waste, but rather returned so that they can be sorted out, disposed of in an ecologically sound manner or recycled. This applies to all batteries installed in devices and delivered with them or purchased separately.

Please dispose of dead or defective batteries only at the designated collecting points in businesses or communities, or contact us about the option of returning them for disposal. Before disposing of them, make sure that batteries don't have any residual charge. In case of doubt, tape over the battery terminals or return them in a plastic bag.

# TECHNICAL DATA/EMV

Certification	Medical Product according to 93/42/EWG Declaration of conformity upon request
Technical data for Test expert plus/Test expert plus basic edition	
Product name	Test expert plus/Test expert plus
Product type module	Skin-resistance measurement device w/ pulse-current
AC power/connection	230VAC / 50Hz, $\pm 10\%$
Current consumption	$< 125 \text{ mA}$
Fuses (primary side)	2x T 0,2 A (5x20mm)
Firmware version	V6.2 Test expert plus
Battery operation: Battery type Battery life	maintenance-free lead-acid battery VRLA 6 V / 7,2 Ah > 4 hours (continuous)
Resistance measurement output data: Measurement voltage (no load) Measurement current (1 kOhm load)	$1.5 \text{ V} \pm 10\%$ $< 10 \mu\text{A} \pm 10\%$ (no load)
Provocation (pulse-current application): Output voltage (no load) Output voltage (1 kOhm load) Output current (1 kOhm load) Output frequency	$< 130 \text{ V}_{\text{ss}} \hat{=} < 11.5 \text{ V}_{\text{eff}}$ $< 15 \text{ V}_{\text{ss}} \hat{=} < 1.5 \text{ V}_{\text{eff}}$ $< 15 \text{ mA}_{\text{ss}} \hat{=} < 1.5 \text{ mA}_{\text{eff}}$ 10 Hz / 13 Hz, $\pm 0.1\%$
Device data: Degree of protection acc. IEC 60529 Protection type Protection class IP-Protection (IEC-EN-60 529) Product category per MPG guideline 93/42 EWG	IP20 BF II, device with internal power supply IP 20 IIa

# TECHNICAL DATA/EMV

Temperature range

Operation: +10°C bis + 40°C

Transportation: - 10°C bis +50°C

Storage: - 10°C bis +50°C

Humidity

Operation: 30 bis 75% RH

Transportation: 10 bis 95% RH

Storage: 10 bis 60% RH

Atmospheric pressure

Operation: 700 bis 1060 mbar

Transportation: 500 bis 1100 mbar

Storage: 500 bis 1100 mbar

Dimensions (WHD)

340 x 245 x 250mm

Weight

ca. 5.5 kg

# TECHNICAL DATA/EMV

## Appendix – Technical Data

### Materials that come into contact with body tissues:

Hand electrode

Brass, silver-plated (Ms/Ag)

Dual forehead electrode

Electrode body: ABS, silver-plated (Ag)

Electrode band: synthetic leather P3049P PERI/ P3071P PERI EN

Dual foot electrode

Copper, silver-plated (Cu/Ag)

Pressure/measuring stylus

Stylus tip 3mm: brass, silver-plated (Ms/Ag)

### Materials that do not contact body tissues:

Housing

Housing: ABS (CYCOLOY C1200HF)

# TECHNICAL DATA/EMV

Special precautionary measures, instructions and characteristics for “Electromagnetic Compatibility (EMC)” according to EN 60601-1-2:

Medical electrical devices are subject to electromagnetic compatibility (EMC) special requirements and precautions. The Test expert plus may only be installed and put into operation in accordance with the following EMC instructions.

**Warning:**

Because portable and mobile HF communication devices can influence medical electrical devices, they must not be operated in the immediate vicinity of the Test expert plus.

**Warning:**

The requirements of the applied EMC standards were checked and met with the product components listed below. The use of other product components or components that have not been tested for this product can lead to increased interference emissions

or reduced interference immunity of the device or device system.

**Warning:**

The Test expert plus must not be used directly next to or stacked with other devices. The following exceptions apply:

The manufacturer provides a description or a list of devices next to or stacked with the Test expert plus and with which this operation is permitted.

If operation close to or stacked with other equipment is required, the Test expert plus should be observed to verify its intended operation in this used arrangement.

No.	Designation of product components	Cable length	Article number
1	Test expert plus AC power cord	3,00m	GZUB0.05664
2	Pressure/measuring stylus	2,00m	FTESZ.00144
3	Safety connector cable for hand electrode (black)	2,00m	FZUB0.12113
4	Electrode junction box	2,80m	FTESZ.00145
5	Interface cable Test expert plus	max. 5,00m	HSON0.12025

## KONFORMITÄTSERKLÄRUNG DECLARATION OF CONFORMITY

Die Firma  
The company

wegamed gmbh  
Am Zehnhof 189  
D-45307 Essen

erklärt in alleiniger Verantwortung, dass das Medizingerät  
declares under our sole responsibility that the medical device

### Test expert

auf das sich diese Erklärung bezieht, folgenden Richtlinien und  
Anforderungen entspricht:

to which the declaration relates meets the following directives and  
provisions:

Das wegamed **Test expert** ist ein Medizingerät der **Klasse IIa** nach der  
**Regel 9 und 10** des **Anhangs 9** der **EG-Richtlinie 93/42/EWG**.

The wegamed **Test expert** is a medical device of MDD **class IIa** following  
**rule No. 9 and 10** of **Annex 9** of the **directive 93/42/EEC**.

Die Produkte unterliegen dem Konformitätsbewertungsverfahren  
nach der Richtlinie **93/42/EWG** gemäß **Anhang VII** in Verbindung  
mit **Anhang V**.

The products are subject to the conformity assessment procedure  
according to directive **93/42/EEC** according to **Annex VII** in conjunction with  
**Annex V**.

Diese Konformitätserklärung ist gültig bis 28. Juni 2028.

This declaration is valid until 28<sup>th</sup> of June 2028.

Benannte Stelle  
(nach § 15 MPG)

**TÜV NORD CERT GmbH**  
Große Bahnstraße 31  
22525 Hamburg

Notified Body  
(acc. to § 15 MPG)

 0044



Essen, 21. Mai 2023

Peter Möllene, CEO wegamed gmbh