



Manual

VarioCarat (Easy or PLD)

manual as of 2015
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Subject to modifications and amendments!

Index

1 Device Specifications.....	4
2 Important information for assembly, use, maintenance and repair.....	7
2.1 Required space and connection requirements.....	7
3 Packaging.....	8
4 Scope of supply.....	9
4.1 System components of the basic equipment.....	9
4.2 Accessories (Optional).....	9
5 Appliance description	12
5.1 Basic concept.....	12
5.2 Telescopic instrument tables.....	13
5.3 Phoropter rail with Phoropter arm.....	13
5.4 Storage of small instruments.....	14
5.5 Automatic room lighting.....	14
5.6 Desk extension (optional).....	14
5.7 Patient chair (optional).....	15
5.8 Voltage-Tower (optional).....	16
5.9 Wall connection box (WAK).....	17
6 Operation and safety functions.....	18
6.1 Keyboard.....	18
6.2 Handling of the manually adjustable table.....	20
6.3 Handling of the motor-driven table.....	20
6.4 Handling of the manually adjustable phoropter rail.....	21
6.5 Handling of the motor-driven phoropter rail.....	21
6.6 Possibilities adjustment of movement	21
6.7 Safety and operation details for the chair and vario function.....	22
6.8 Operating of the unit in case of power outage or a defect of an electromotive drive	22
6.9 Handling of the motor-driven chair.....	24
6.10 Setting up the desired room light.....	24
6.11 Safety precautions.....	24
7 Maintenance, cleaning, care and disposal.....	26
8 Technical Data.....	28
9 E.G.-Declaration of Conformity.....	30

Thank you very much for your confidence which you expressed by purchasing this examination unit. With our VarioCarat you have chosen a modern fully developed product which has been produced and tested according to strict quality criteria. Continuous research and development might lead to changes in version and scope of supply. The figures in this instruction manual might therefore be slightly different in some cases. The right-hand version is displayed. The setting is mirrored accordingly in the left-hand setting. If you have any questions or need further information regarding the unit, please don't hesitate to call us or send a fax. Our service team will be glad to help you.

1 Device Specifications

Device Type: *VarioCarat* Examination Unit

Manufacturer: Block Optic Ltd.
Semerteichstr. 60
44141 Dortmund
Germany

Intended

Applications : *VarioCarat* is a universal examination unit for integration of ophthalmologic and optical devices. Depending of its use the devices can be positioned in front of the test subject. The examination unit *VarioCarat* is used for optometry and ophthalmology.

Unintended

Applications: Other applications as those described above are prohibited. Unpredictable hazard can come up during unintended use. The motor (optional) is not intended for permanent up and down movements with the vertical adjustment. After continuous operation of 1.5 minutes it must be cooled down for at least 8.5 minutes. A continuous operation of the vertical adjustment for more than 1.5 minutes can lead to a defect of the vertical adjustment. During routine operation the required cooling period is achieved automatically.

Scope of supply: *VarioCarat* can be delivered with various equipment. The actual scope of supply is listed in detail in the delivery note.

Safety Remarks :

- a) Please read the instruction manual carefully and make yourself acquainted with all functions before you start to operate the device.
- b) Don't change anything at the unit by yourself as this might impact the safety and leads to the expiry of the warranty.
- c) This unit is not intended for use in areas with risk of explosions.
- d) Do not operate the unit if you observe visible damages. Breakdowns which have impact on the safety need to be repaired immediately. In this case, please contact an authorized service technician at Block Optic
- e) Only use original accessory parts for the *VarioCarat*.

f) If the unit will not be used for a longer period, please turn off the main switch at the wall connection box. We recommend to put dust covers on the devices which are mounted on the unit.

g) Accessories which will be connected with the electric supply of the examination unit need to be proven to comply with the appropriate DIN EN or IEC specifications. Furthermore all configurations have to comply with the requirements of the system standard DIN EN 60601-1-1 (IEC 601-1-1) and its modifications. Coupling of non-medical devices (e.g. data processing devices) to a medical electronically system such as the examination unit must not lead to a safety degree for patient, user, and the environment which is beyond DIN EN 60601-1-1 (IEC 601-1-1) and its modifications. If the admissible leakage current is exceeded by the coupling, protective measures according to the system standard DIN EN 60601-1-1 (IEC 601-1-1) and its modifications need to be provided. After installation or later modifications the system must not put any risk to the patient, the user or the environment.

**Liability of
Manufacturer :**

The device has been manufactured according to the latest technical development and acknowledged technical safety directives. Block Optic considers itself responsible for any impact on safety, reliability and performance of the device only if:

- Mounting, extensions, readjustments, modifications or repairs are carried out by authorized persons,
- the electric installation of the concerned room complies with the requirements of VDE 0100-710 and
- the device is used according to the instruction manual.

**Responsibility of
User:**

The user is responsible for:

- Compliance with standards for prevention of accidents and the directives for establishment, operation and application of medical devices (Medical Device Operating Directive)
- Operation,
- Maintenance,

- Duly and safe condition of the product and
- Storage of the instruction manual and the technical appendix at the usage site.

Warranty :

The General Terms and Conditions of Block Optic are effective as the basic principle.

Text Accentuation:

Important parts of the text in the instruction manual are marked by accentuations and key words. The following accentuations are used in the actual instruction manual:

Caution!

Indicates a potentially hazardous situation. Please note such precaution measures to prevent any damage from patients or objects.

Important!

Indicates important information. Please read this information to maintain the high safety and function level of the device.

Special note!

Indicates information for proper usage. Please read this information to avoid any misuse.

2 Important information for assembly, use, maintenance and repair

The examination unit *VarioCarat* should only be set up and mounted by the company Block Optic Ltd. or by authorized technicians of Block Optic!

Repair and maintenance work may only be carried out by the company Block Optic Ltd. or by trained service technicians.

Repair work practicable by yourself is described in chapter 7: Maintenance, cleaning, care and disposal.

2.1 Required space and connection requirements

The examination unit *VarioCarat* with an instrument telescopic table that can be driven into two positions, can be placed directly on the wall together with its main base, because when the telescopic table is moved back it does not exceed the outer limits. The minimum amount of desk-top space required, including the available desk is 1382 mm times 1020 mm (instrument table fully extended into the second position) (see Illustration 8.1).

If the backrest of the patient chair shall be allocated without a previous rotation, extra 600 mm of room length must be considered (1980 mm + 600 mm). Through turning the chair 180° (in an anti-clockwise direction with right-handed units) before the backrest is inclined, this extra space can be saved.

The column holding the chart projector ends 1965 mm \pm 10 mm above floor level. To install the instrument column the height of the room has to be at least 2050 mm, this must be considered mainly at rooms with slanted walls.

The examination unit with its wall-mounted terminal box unit shall be connected to the mains and the electrical installation in the surgery (e.g. room lighting, curtain control, etc.). The mains voltage must be 230 V, 50-60 Hz with a rating of at least 6.3 A (1500 VA). If other consumer circuits are connected such as room lighting, etc. the power consumption is, of course, larger.

3 Packaging

The *VarioCarat* examination unit can if necessary be supplied packaged in a special transportation box:

Dimensions (L/W/H): variable, depending on extra equipment.

Weight: variable, depending on extra equipment, min. 300 kg.

When the packaging boxes are delivered, please check for external damage and observe the enclosed freight information!

Special note!

Please ensure that you remove all component parts belonging to the unit!

To set up the examination unit you only need the tools of a service technicians. No special tools are required.

4 Scope of supply

4.1 System components of the basic equipment

The *VarioCarat* examination unit consists of a number of system components that can be combined in a useful way. The basic design unit (right-hand or left-hand version) for holding the telescopic table, phorofter rails and instrument column with or without electromotive height adjustment comprises:

- electrical equipment:
 - Transformer 230 V primary;
 - keyboard with ON/OFF switch for complete unit;
 - safety switch-off for upwards movement of the electromotive patient chair;
 - either
 - PLD main module, consisting of:
 - power control module,
 - logic control module;
 - PLD wall connection box;
 - or
 - *Easy*- main module, consisting of:
 - Dimmer module (optional),
 - power control module;
 - *Easy* wall connection box;
- Telescopic table for one, two or three instruments, either manually or motor-driven, depending on the version used;
- Electronic control set for the automatic opposite control of table and phorofter rail;
- Headrest bar for adapting various types of headrests;
- Power inlet loop for covered cabling (e.g. 230 V or video cables) to each of the locations on the telescopic table;
- Installation accessories Block-box (hex driver, screwdriver, fuses, blocking device for the telescopic table during transportation, electrical plugs for the table-top and small instruments, manual).

4.2 Accessories (Optional)

Additional to the basic design the unit *VarioCarat* can be provided with instruments and devices as well as electrical and electronic accessories, mechanical spare parts and wooden fittings.

Following instruments and devices are optional available:

1. Phoropter rail incl. cover and support lugs, either manually or motor-driven for the phoropter arm;
2. Phoropter arm, various versions, including support;
3. Instrument column including adapter fitting with a special support for the *VarioCarat* unit only.

Following electrical and electronic accessories are optional available:

1. Electronic control set for the motor-driven horizontal movement of the top part of the patient chair;
2. Automatic three- or five-channel room lighting for telescopic table, phoropter rail and the undulated tray;
3. Swan neck reading light, mounted on the phoropter arm;
4. Continuous lighting controller for all the reading lights through reading-light-module (PLD);
5. The "Lifto", an elegant reading light with a large illumination radius;
6. The modern reading light „*Tolomeo*“;
7. Undulated tray for a hand-held ophthalmologic unit with its own built-in on/off switch;
8. Undulated tray for a hand-held ophthalmologic unit with micro-switch, control over readout-potentiometer;
9. Twin charging unit, built into the unit, including support frame and dust cover;
10. Support for indirect/ head-worn Ophthalmoscope;
11. Controller-module (PLD);
12. Additional foot switch for raising and lowering the patient chair .

Following mechanical spare parts are optional available:

1. Headrest bar for adapting various types of headrests;
2. Cable tubing support for Slit Lamps ;
3. Adapter for the various reading lamps on the rectangular instrument column;

4. Various types of projector adapters;
5. Support for a proximity meter;
6. Support for the twin charging unit;
7. Tilting device for all block phoropter arms;
8. Various phoropter adapter versions, depending on the type of phoropter used,
9. Movable patient chair with wireless connection to the examination unit for the examination of patients in wheelchairs.

Following wooden fittings are optional available:

1. Desk section of the various styles and sizes;
2. Drawers for holding the set of test tubes, suitably fitted under the desk top;
3. Cupboards fitted under the desk in various versions.

5 Appliance description

5.1 Basic concept

The *VarioCarat* examination unit is a refraction and examination unit with a precision-controlled telescopic table for one, two instruments, either manually or motor-driven. The modular design allows it to form a workplace which can be extended with various modules.

The phoropter is attached to the phoropter arm (various designs) and is either moved manually or is motor-driven in front of the patient by means of the phoropter rail. The stable projector column serves to support the optotype projector. If necessary, a reading lamp is attached directly onto the phoropter arm or onto the projector column.

Connection and storage facilities are available for various hand-held instruments. The hand-held instruments have their place in the built-in charging unit and in the undulated tray of the small instruments module.

There is the option of fitting the unit with an automatic room lighting system. This works so that when the telescopic table is moved, when a hand-held instrument is taken from the undulated tray and/or when the phoropter rail is brought forward by the motor, the room lighting is reduced to the levels previously set. When the telescopic table is moved back, the hand-held instrument is replaced and/or the phoropter rail moves back into place, the room lighting is changed back to previously set levels.

Use of the Block patient chair means that it is also unnecessary to move a patient from the wheelchair into the patient chair, as it can easily be moved to one side, forwards or backwards (see manual for patient chair). The patient chair normally used is a Block patient chair, chairs made by other manufacturers can be attached only on consultation with the manufacturer.

All electrical functions are controlled via the keypad, placed in an ergonomically advantageous position. This is where all the operating elements for controlling the motor drives for the patient chair, telescopic table, phoropter arm and lifting mechanism for the unit are to be found, as well as the various lighting facilities, such as the reading lamp, room lighting, fixation lamps (PLD) and Maddox cross (PLD). Integrated into the keypad are the control rheostat for the lamp brightness of the table-top instruments (6 and 12 V) and the main switch for the unit. All keyboards are antibacterial coated.

The examination unit is available as a right-hand or a left-hand unit (definition of direction: from the practitioner's point of view to which direction the instrument table moves forwards, look at illustration 5.1), as well as in various colour combinations or surface coatings in veneer wood or plastic.

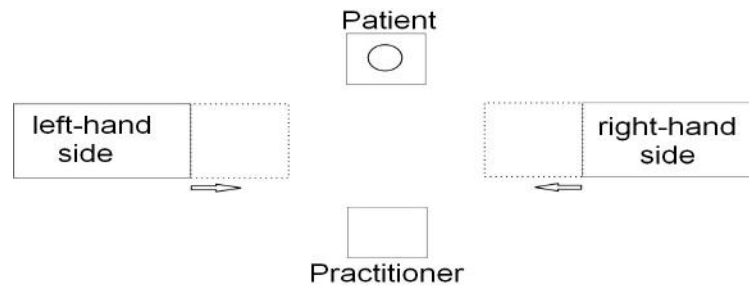


Illustration 5.1: Definition of direction

5.2 Telescopic instrument tables

The 40 cm wide telescopic instrument table is for use with ophthalmologic table-top instruments. There are designs for 1, 2 or large instruments, both manually adjustable and motor-driven, or with combinations of both drive types.

The stable precision controls used ensure a long service life even with intensive use. In the case of manually adjustable telescopic tables, precision controls manufactured by the company Schneeberger of Switzerland allow the table to be moved with minimum use of force. This means that even with a large number of patients, work without tiring is guaranteed. The easiest option for the user is of course the motor-driven table.

The working height of the telescopic table can be continuously adjusted individually to each practitioner or to a wheelchair patient via an integrated electromechanical lifting device between 760 mm (660 mm) and 960 mm.

The following telescopic instrument tables are available

- Telescopic table with Schneeberger Swiss precision control system, manually adjustable for one up to three ophthalmologic instrument, with a catch for the three possible position, automatically switching contacts, fixing device for headrest bar and safety shut-off bar.
- Telescopic table for up to three ophthalmologic instruments with precision control system, motor-driven to each of the three positions, with sliding clutch, automatically switching contacts, fixing device for headrest bar and safety shut-off bar

5.3 Phoropter rail with Phoropter arm

Various phoropter arms can be mounted on the phoropter rail of the *VarioCarat* examination unit (either driven manually or by motor). The phoropter rail is fitted on a precision guide which makes it possible to move the phoropter arm with the attached phoropter in front of the patient without great effort. All phoropter arms can be fitted with reading lamps with flexible arms for the optimum lighting of the sample text for the close reading test if required. The following designs are available:

Phoropter arm, pre-tilted:

This phoropter arm is pre-tilted. This means that the horizontal part of the phoropter arm, that is, the support bar of the phoropter, is moved approx. 10 cm forwards in relation to the vertical part of the phoropter arm. The patient must therefore bend forward to the phoropter. Without supplementary equipment the phoropter cannot be brought into a tilt suitable for reading.

Physiological phoropter arm with tilt facility:

This phoropter arm can be moved forward into a physiologically appropriate reading tilt by pressing a manual release button, thereby providing optimum conditions for a close reading test.

5.4 Storage of small instruments

A special space is provided at the front of the unit for positioning a small instruments module. It is possible to choose between various possibilities for storage from the accessories on offer:

1. Undulated tray with micro-switch for one up to two ophthalmological hand-held instrument, with transformer, controlled via rheostat.
2. Twin charging unit built into the unit including support frame and cover screen. The charging unit is mounted securely in a special support with a cover on the front of the unit. For the plug-in power supply unit of the charging unit, a separate two-pole-and-earth socket outlet is available in the unit.
3. Close testing instruments and indirect/ head-worn ophthalmoscope: Special hook-shaped supports can be attached and power is supplied via PLD – or Easy-Electronic.

5.5 Automatic room lighting

There is the option of fitting the unit with an automatic room lighting system. This works in this manner: when the telescopic table moves forward, when a hand-held instrument is taken out of the undulated tray and when the phoropter is being driven forward by the motor, the room lighting is reduced. When the telescopic table moves back into place, the hand-held instrument is replaced and the phoropter moves back into place, the room lighting is adjusted back to previously set levels.

5.6 Desk extension (optional)

The basic *VarioCarat* unit can be connected with a desk. The desk acts as a workplace for the ophthalmologist and has drawers for storing spectacle cases, measuring spectacles and other small instruments. Various designs of cabinets which fit under the desk are available, in order to increase storage possibilities according to need. Through the connection with the basic corpus of the examination

unit the height of the desk extension adapts itself automatically to the height of the examination height.

Other forms of desk can either be chosen in accordance with the Block price list or be manufactured according to individual requirements.

5.7 Patient chair (optional)

The examination unit *VarioCarat* is best complemented by a Block patient chair. The chairs are especially developed for ophthalmologists and opticians. It meets the highest standards in fittings and operational comfort. All features can be seen in the Block chair prospects. For the examination of wheelchair patient, there is the possibility to use the optional patient chair on castors which can be moved aside. An interlock and special contacts provide a solid, wireless junction between the patient chair and the examination unit (see Illustration 5.2).



Illustration 5.2: interlock of the patient chair on castors

5.8 Voltage-Tower (optional)

The Voltage-Tower serves as a power supply for 230V instruments which will be used in combination with the refraction unit (see illustration 5.3).

It **requires a self-contained 230V power socket** and comes with a plug suited for Germany (**attention: adapter plugs may be needed and are not a part of the delivery**).

To avoid damages and malfunctions at the refraction unit it **strictly forbidden** to connect the Voltage-Tower to one of the unit power sockets.

The Tower is switched on/off at the refraction unit.

The power status is indicated on the green switch, which standard position is "1". It is lit when the refraction unit is in use.



Illustration 5.3: Voltage Tower

5.9 Wall connection box (WAK)

The wall connection box is equipped with a main switch (3-pole), all terminals (mains input is fused separately) and a 3 m long flexible cable to connect it with the unit. A longer connection cable can be supplied on request. The mains supply to the unit and the connection with the electrical consumers in the examination room which are to be controlled from the unit occur via a wall connection box.

In order to make the equipment ready for operation, the main switch on the wall-mounted connection box (remains switched on during normal operation) and the main switch on the unit keypad must be turned on.

Special note!

After switching off the *VarioCarat* by the key pad of the control panel the transformer for devices and the reading light as well as the power outlets in the support case remain activated. During prolonged absence the *VarioCarat* should therefore be switched off by the main switch on the wall connection box.

6 Operation and safety functions

All electrical functions are controlled via the keypad, placed in an ergonomically advantageous position. This is where all the operating elements for controlling the motor drives for the patient chair, telescopic table, phoropter arm and lifting mechanism for the unit are to be found, as well as the various lighting facilities, such as the reading lamp, room lighting, fixation lamps and Maddox cross. Integrated into the keypad are the control rheostat for the lamp brightness of the table-top instruments and the main switch for the unit as well as the lifting mechanism of the table. External consumers such as the curtain motor, room lighting, external reading lamps and fixation lamps can be combined with the electronic controls in the unit and are controlled via the keypad of the unit.

6.1 Keyboard

The keys are sorted by groups e.g. chair, light etc. to improve the control. The icons on the keys speak for themselves:

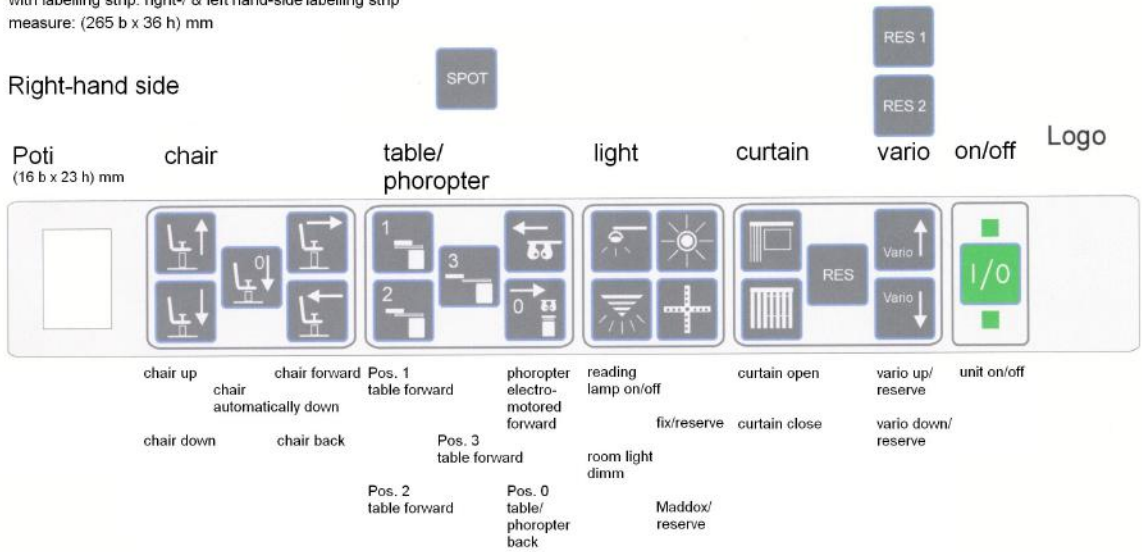
- 1 rotary potentiometer for controlling the power for extra-low voltage devices (6/ 12 V),
- 2 keys for patient chair (up/down),
- 1 key for patient chair automatically down,
- 2 keys for electromotive displacement of the patient chair upper part (forwards, backwards),
- 4 keys for electromotive table (1, 2, 3, backwards),
- 2 keys for motor-driven phoropter rail (forwards, backwards),
- 1 key for reading-lamp,
- 1 key for dimmer for room lighting with incandescent or halogen lamps,
- 1 key for Spot,
- 1 key for Maddox cross,
- 2 keys for curtain (open, close), switch or push-button function possible,
- 1 spare key, switch function with PLD, switch/ push-button with *Easy*,
- 2 keys for vario-function (up, down) and
- 1 key for unit on/off.

PLD-keypad (functions depending on unit and equipment):

Foil keyboard

with labelling strip: right-/ & left hand-side labelling strip
measure: (265 b x 38 h) mm

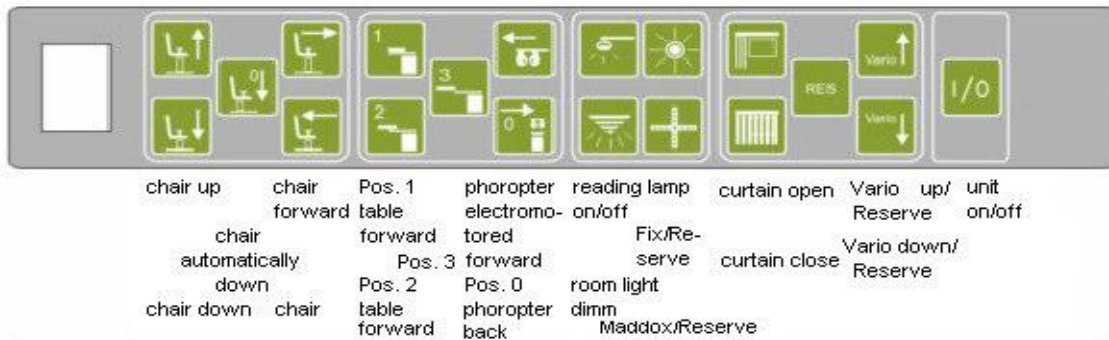
Right-hand side



Left-hand side

Illustration 6.1: keyboard "Standard without illumination"

Right-hand side



Left-hand side

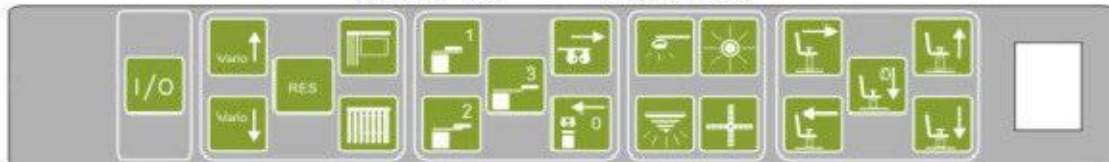


Illustration 6.2: keyboard „Night design" (blue keyboard illumination)

6.2 Handling of the manually adjustable table

Manually adjustable tables are adjusted by pulling the instrument table until the working position of the first instrument facing forwards is reached. The electronic controls of the unit stop the instrument table automatically and connect the operating voltage to the first table-top instrument. In order to change instruments between the first and second table positions, the release button (see Illustration 6.3) in the leaf of the table is pressed downwards and the top leaf of the instrument table is pushed further forwards. The mechanical catch stops the table again automatically when it reaches the second working position, and the supply voltage is switched over between the table-top instruments. Moving to the third working position is done in the same way. When the instrument table is moved back, the release button in the leaf of the table is again pressed downwards and the top leaf is moved back. When the working position for the first instrument is reached again, the solenoid clamp is released by pressing the holding button for the solenoid clamp on the main keypad, and the entire instrument table can be moved back.

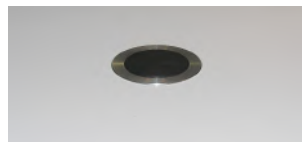


Illustration 6.3: release button

All movements of the table require only minimum use of force; the basic design concept for *VarioCarat* and the used precision controls by the company Schneeberger of Switzerland have made this success possible.

6.3 Handling of the motor-driven table

The motor drive for moving the telescopic table forward is controlled via the key group TABLE on the keypad. When the button "1" is pressed, the table moves forwards and the electronic control system reduces the speed of movement forwards automatically just before it reaches its final position. The instrument moves gently into the working position. At the same time the operating voltage is connected to the instrument.

Pressing the button "2" on the keypad moves the telescopic table into the second working position. When the button "0" is pressed, the telescopic table moves back to the starting position.

Even when the instrument table has moved forwards, the keypad is always within convenient reach. All functions continue to be easy to control.

6.4 Handling of the manually adjustable phoropter rail

The easy handling of the manual phoropter arm is realized by special slide bearings. With these you can manually move the phoropter arm forwards and backwards very easy. Use the handle of the phoropter arm to move it into the desired position. The arm will snap into a mechanical holder at both end positions (pos.0 and pos.1). Always ensure that the phoropter arm is not inclined if you push it back to pos.0. because you can damage the table instruments.(please look at 6.10. Safety precautions)

6.5 Handling of the motor-driven phoropter rail

The electromotive phoropter rail will be controlled by the keyboard (Illustration 6.4 and 6.5). Pressing the button for the phoropter arm will move it into the operation position. The type of movement depends on how the controller is programmed, chapter 6.6. Always ensure that the phoropter arm is not inclined when moving it. A safety mechanism will prevent the movement to avoid damaging the table instruments, chapter 6.7

6.6 Possibilities adjustment of movement

You have different options to move the sliding table or the phoropter arm. You can choose the type of movement at the time of the unit's installation. If you like to change it later you need a PC with Team Viewer, connected to the unit and a stable internet connection so an authorised technician can reprogram it.

Half automatic movement

The sliding table or phoropter arm moves as long as you press the button.

Automatic movement

The sliding table or phoropter arm moves directly in the selected position by one click.

Flip/Flop switchover movement

By the flip/flop movement the sliding table and the phoropter arm moves at the same time if you bring it in operating position.

6.7 Safety and operation details for the chair and vario function

For safety reasons there is a delay of about 1 sec when changing the movement direction of the chair and Vario.

If you wait less than 1 sec no movement will happen.

After using the function automatic down, the button for moving up must be pressed twice to confirm the direction change.

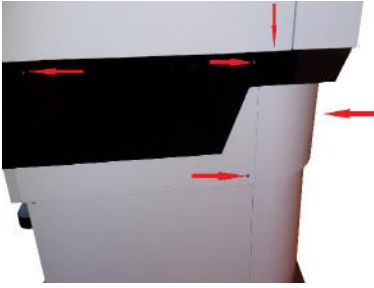



If the lens drawer is opened, a red LED next to the keyboard is turned on. While the LED is on, the Vario function is not available to avoid damages until the drawer is closed (Illustration 6.5).



Illustration 6.5: lens drawer with LED

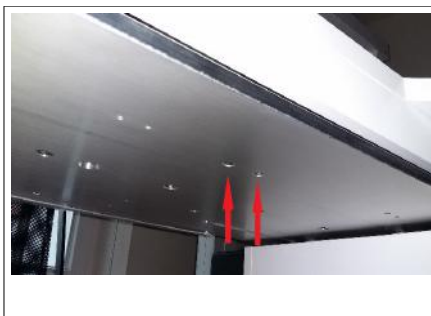
6.8 Operating of the unit in case of power outage or a defect of an electromotive drive

There is a possibility to operate the electromotive instrument table and the electromotive phoropter rail of the Block refraction- and examination unit *VarioCarat* in case of a temporary power outage, a defect of the drives or the controllers or in any other case of emergency. For this the electromotive drives have to be disconnected from the mechanical drives.

	<p>Position of the electromotive drives for the first position of the instrument table and the phoropter rail, see rear below.</p>
	<p>Back view: the electromotive drive for the first position of the instrument table is on the left side, the electromotive drive for the phoropter rail on the right. (Right-hand side <i>VarioCarat!</i>).</p>
	<p>For disconnecting the electromotive drive for the first position of the instrument table, turn the knurled wheel of the sliding clutch, as shown on the picture, as far as it will go. The instrument table can now be moved smooth-running to the first position.</p>
	<p>For disconnecting the electromotive drive of the phoropter rail, turn the knurled wheel of the sliding clutch, as shown on the picture, as far as it will go. The Phoropter rail can be moved, smooth-running, now.</p>

To cancel the disconnection of the electromotive drives from the mechanical drives, act in reverse order. For this tighten the knurled wheels of the sliding clutches. Now the unit must be switched off and on again to calibrate the controller.

Disconnecting the electromotive drive for the 2. Position of the instrument table:



Position of the adjustment screws of the electromotive drive below the drawn out instrument table

The two adjustment screws have to be unscrewed. Now the instrument table can be moved smoothly to the 2. Position.

To cancel the disconnection of the electromotive drive for the second and third Position, place the instrument table in the position, in which the screws were removed. Tighten the 2 screws. Now the unit must be switched off and on again to calibrate the controller

6.9 Handling of the motor-driven chair

To change the chair position immediately after using the automatically-down-key of the keyboard, a double pressing on the key "up" is necessary.

6.10 Setting up the desired room light

For users of the *Easy-Electronic* it is generally possible to set up the desired light intensity of the room light. Therefore the particular position of the table is to obtain and to set up the desired light press subsequently the room light key. After disengaging the key, the value of the adjusted light will be saved after 3 s and each time the position is obtained, the desired light will be set up automatically.

For users of the *PLD-Electronic* you need to open the WAK, the wall connection box. At the bottom left are four binary switches to set up the desired light intensity by changing the position of the different binary coded switches (see technical appendix "Automatic Room Lightning"). When you take out a hand-held instrument of the undulated tray the adjusted light will automatically be obtained. This adjustment should be done by a service technicians.

6.11 Safety precautions

When using the telescopic table, ensure that the patient's hands are resting comfortably on the armrests of the patient chair, since there is a risk of crushing if they are near the headrest!

Caution!

Please make sure while using the telescopic table that the patient's hands rest comfortable on the armrest of the patient chair. **Crushing hazard!!**

To avoid the risk of crushing when the patient chair is being raised, there is a built-in electromechanical safety switch on the bottom side of the instrument table (see Illustration 6.6). Mechanical contact of the safety switch will stop immediate the drive system of the chair and the table through the main control.

In combination with products of other manufacturers ensure that the safety requirements are respected. The safety shut down of the hub function must always be guaranteed.

Special note!

Check the effective operation of the shut down function at regular intervals.

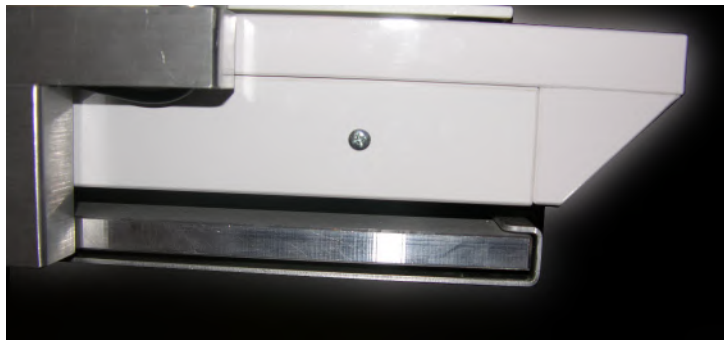


Illustration 6.6: Electromechanical safety switch

Please keep in mind that during each height adjustment, chair rotation as well as table movement the patient is not exposed to hazard. Especially when raising the chair, the seat displacement and the footrest present a source of danger. Therefore make sure that the patient's feet are always positioned on the footrest.

Caution!

Please make sure while adjusting the chair's height that the patient's feet rest comfortably on the footrest of the patient chair. **Crushing hazard!!**

To avoid a collision between the phoropter arm and the headrest, the phoropter arm with an electromotive control is provided with a safety function. If the phoropter arm is in reading inclination, neither table nor phoropter arm can be moved. In starting position a green LED is illuminated to indicate the basic position. In reading inclination the LED is off (see Illustration 6.7).



Illustration 6.7: left: Phoropter with green LED; right: Phoropter tilted, LED off

7 Maintenance, cleaning, care and disposal

For maintenance and care of the installed examination devices/ supply products please follow the directions of the concerning instruction manual.

Repair work practicable by yourself:

Before exchanging a fuse the unit must be separated from the power supply, therefore switch off both main switches (wall connection box and keyboard). Use only the prescribed fuse types and ratings. For more information, see technical appendix.

Before exchanging a bulb switch off both main switches (wall connection box and keyboard) and wait for a cool down of the lamp. Use only the original illumination element.

Maintenance and Safety Inspections (STK):

To ensure the high safety standard and high quality of the examination unit VarioCarat we recommend a regular maintenance. Please contact an authorized Block service technician.

For the examination unit VarioCarat we keep up to 10 years after the date of purchase spare parts on stock. After this period maintenance and repair work can be conducted contingently with original part.

Following maintenance should be conducted half yearly:

- Cleaning of the actuation-toothed belt, the phoropter rail and the telescopic-table rail with silicon-free lubricant (WD40), do not use any abrasive or water!

Following maintenance should be conducted yearly through authorized Block service technician:

- Inspection of the slipping clutch,
- Inspection of the sliding contact with checking of foreign particle,
- Checking the condition of every external connecting wire (Inspection for isolation damage),
- Check up of the effective operation of the shut down function,
- General check up of proper function,

Following maintenance must be conducted every 2 years by a specialist :

- STK

Depending on the usage frequency the user should do maintenance work every ½ year .

**Cleaning and greasing of the phoropter and telescop table rail.
Following specifications for the cleanser and grease are required:**

**silicon and acid free
not resinifying
no usage of abrasive or water**

Maintenance and care:

Important!

Turn off both main switches even when cleaning with a damp cloth. Leave the appliance to dry out completely before using again.

We recommend cleaning the coated surfaces with a cloth moistened (never dripping wet). Please do not use any abrasive or aggressive cleaning supplies. Make sure that no moisture gets in between the keyboard keys. Chair Cleaning: Simply clean with lukewarm water and a micro-fibre rag. Please do not use solvents, chlorides, abrasives, chemical cleaning agents or wax polishes. Please remove ink stains immediately. Do not use care agents containing oil or fat.

It is advisable to protect the unit against dust with a protective hood at the end of each working day, simply because open measuring and examining instruments are inherently sensitive to dust.

Waste disposal:

The examination unit *VarioCarat* contains devices, which cannot be disposed in domestic waste. Please authorise for this purpose a waste management enterprise.

8 Technical Data

Required Space (with Block patient chair and desk combination as suggested in the prospectus):

LxW: look at Illustration 8.1.

If the backrest on the patient chair is to be inclined, without previously turning the top part of the chair, then another 600 mm of working space in a longitudinal direction is required.

Please give attention to the required projecting distance of 5 m. A set of tilted mirrors is necessary with small rooms; order no. 30 00 0110.

Gross Weight: Unit: variable, depending on equipment, min. 280 kg
Chair: variable, depending on equipment, min. 160 kg

Mains Voltage: 230 V 50/60 Hz

Power Consumption: 1500 VA plus all the external consumers connected up, such as room lighting, etc.

Connection

Requirements: 230 V wall-mounted terminal box with provisions for connecting room lighting, curtain control, reading lights, fixation lights and Maddox cross.

Operating conditions: Temperature of the environment between +10 °C and +40 °C
Relative humidity between 30 % and 75 %
Air pressure between 700 hPa and 1060 hPa

Height adjustment of unit:

Not intended for permanent operation!

Continuous up and down movements must not exceed 1.5 minutes. Cool down device for at least 8.5 minutes.

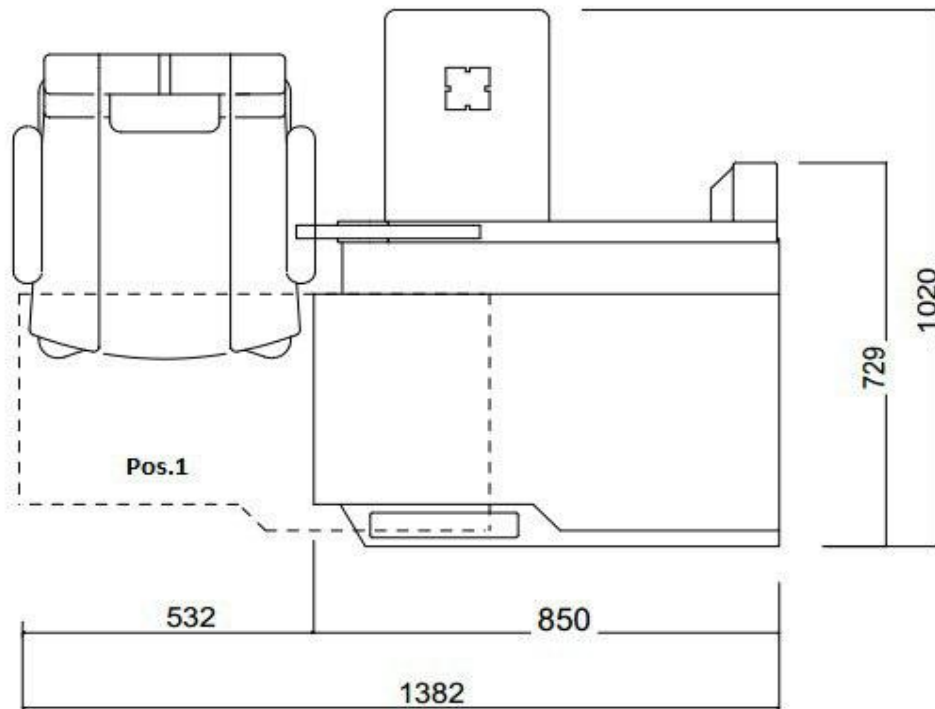


Illustration 8.1: Dimensions of the unit "VarioCarat"

9 E.G.-Declaration of Conformity

For the following named products examination units by Block Optic Ltd.

INNOVARIO[®], DUOLINE^{2010®}, VarioCarat[®], CT, IDEO, SOLO

it is confirmed that the products meet the requirements as determined by the European Community:

89/336/EWG electromagnetic compatibility,
93/42/EWG medical products.

Evaluation of the products complies with the standards listed below:

EN 60601-1:2006 Medical electrical equipment,
EN 55011 Emission of electromagnetic interference,
IEC 801 Immunity from electromagnetic interference.

This declaration in responsibility for the manufacturer:

Block Optic Ltd.
Semerteichstr. 60
44141 Dortmund
Germany

The examination units are labelled with:



Is submitted by:
J. Grawunder, Manager

Dortmund, 1. January 2016

(Place, Date)



(Legal Signature)

CERTIFICATE



ISO 9001:2015

DEKRA Certification GmbH hereby certifies that the company

Block Optic Limited

Scope of certification:

Development and production of ophthalmic and optical examination units and chairs

Certified location:

D-44141 Dortmund, Semerteichstraße 60
D-46342 Velen, Industriestraße 6

has established and maintains a quality management system according to the above mentioned standard. The conformity was adduced with audit report no. A15170393.

This certificate is valid from 2016-07-02 to 2019-07-01

Certificate registration no.: 50716344


Lothar Weimofen
DEKRA Certification GmbH Stuttgart; 2016-07-02

