



**OPHTHALMIC REVOLVING
REFRACTION STAND
OT-6020**



OPERATOR'S MANUAL





Before use or maintenance, read this manual.

This Operator's Manual contains information necessary for correct and effective operation of NIDEK ophthalmic revolving refraction stand OT-6020, and provides procedures for operation, cautions, specification, and procedures for maintenance.

The unit complies with European standards 93/42/CEE for medical devices. This manual is necessary for proper use. Especially, the safety precautions and operating procedures must be thoroughly understood prior to operation of the unit. Keep this manual handy for reference.

There are no user-serviceable parts inside the unit except fuses and relays.

Therefore, if you encounter any problems or have questions about the unit during the operation, please contact NIDEK or your authorized distributor.

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1 OT-6020's RANGE

1.1 PRESENTATION OF THE OPHTHALMIC STAND

The revolving consultation unit *OT-6020* is used to perform ophthalmic examination with the greatest efficiency and in the best possible conditions.

Numerous possibilities allow you to configure your consultation unit according to your wishes:

OT-6020 is available with manual or electric rotation, with 3 or 4 pull-out flaps, with patient chair with fixed or reclining backrest, with lighting column with projector support, with 2 models of refractor arms.

You can also arrange your work place with a full range of desks specially designed for this consultation unit.

1.2 THE VARIOUS VERSIONS



*OT-6020 with laminated wood plated table top, mass dyed, with
A small desk*

*A patient chair with adjustable backrest
3 instruments+ refractor on a pivoting arm with bend for near vision
1 refraction cabinet with a trial lenses case for 232 lenses
1 lighting column matching with the colour of the unit.*



*OT-6020 with gloss paint coated table top, with
A large desk*

*A patient chair with reclining backrest
3 instruments+ refractor on an electrically translating arm
1 drawer for trial lenses in the table top
1 lighting column in aluminium*



1.3 CLASSIFICATION

✚ Classification under the provision of 93/42/EEC (MDD)

The ophthalmic unit *OT-6020* is classified as Class I system.

✚ Form of protection against electric shock Class I

A Class I is a unit in which the protection against electric shock does not rely on basic insulation only, but which includes an additional safety precaution in such a way that means are provided for the connection of the unit to the protective (ground) conductor in the fixed wiring of the installation in a way that accessible metal parts cannot become live in the event of a failure in the basic insulation.

Use a power outlet which is equipped with a grounding terminal.

✚ Degree of protection against electric shock

The ophthalmic unit *OT-6020* is classified as a device with a Type B Applied Part.

A Type B Applied Part provides a particular degree of protection against electric shock, particularly regarding the following:

- ✚ Allowable leakage current
- ✚ Reliability of the protective earth connection (if present)

✚ Degree of protection against ingress of liquids

The ophthalmic unit *OT-6020* is classified as IP20 (in accordance with IEC 60529).



The *OT-6020* is an ordinary device, as such does not provide protection with respect to harmful effects due to the ingress of water although it is protected against access to hazardous parts with a solid matter such as a finger of 12.5 mm in diameter.

Avoid exposing water to the device.

✚ Mode of operation









Classification of the ophthalmic unit *OT-6020*: continuous operation.

2 SAFETY

The following safety precautions should always be followed. The safety word  **PRECAUTION** indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or property damage accident. Even situation indicated by  **PRECAUTION** may result in serious injury under certain conditions. Safety precautions must be strictly followed at all times.








2.1 CAUTIONS IN INSTALLATION

PRECAUTION

-  Install the ophthalmic unit in a place that will never be exposed to water. If water gets into the internal structure of the unit, electric shock or unit malfunction may result.
-  The installation location must satisfy the following environmental conditions:
 -  Place with low dust content
 -  Flat floor, without waves of more than 5 mm,
 -  Stable, level place that is free from vibration or shock
 -  Floor supporting the weight of the unit,If these environmental conditions are not satisfied, the unit could fall over, the floor could get damaged and it may result in some serious injuries.
-  Do not carry alone the ophthalmic unit. Injury, unit damage, damage of medical devices placed on the table top may result if the unit is carried by one person.
-  This unit has been tested and found to comply with the limits for medical devices to the IEC 60601-1-2. These limits are designed to provide reasonable protection against harmful interference in a typical medical installation.




2.2 ELECTRICAL CONNECTION

PRECAUTION




-  Be sure to use an outlet equipped with a grounding terminal which meets the specified power requirements. If not, the unit may not deliver full performance, or malfunction or fire may result. In addition, if the outlet is not equipped with a grounding terminal, there is a fear of electrical shock or fire in the event of a power leak.
-  Securely connect the mains plug into an outlet. Insecure connection may result in fire
-  To disconnect the mains plug, hold it. If the power cord is pulled out, short circuit or electric shock may result in a case of break in the wires inside the power cord.
-  Never put heavy objects on the power cord nor catch the cord between any objects. The cover of the power cord may become worn and fire or electric shock may result.
-  If the metal core of the power cord is exposed, if the power turns on and off by shaking the power cord, if cord or plug gets so heated that one cannot hold it, it means that the power cord is damaged. Contact NIDEK or your authorized distributor to replace it immediately. Electric shock or fire may result.
-  Wipe between the prongs of the mains plug with a dry cloth occasionally. If dust settles between the prongs, the dust easily takes up moisture, and short circuit or fire may result.
-  If the ophthalmic unit will not be used for a long time, disconnect the power cord from the wall outlet. Fire may result.

2.3 RECOMMENDATIONS FOR USE

PRECAUTION

-  Do not use the unit for other than the intended purpose. NIDEK is not responsible for accidents or malfunction caused by misuse.
-  Never disassemble nor touch the inside of the unit. Electric shock or unit malfunction may result.
-  If a failure in the unit cannot be solved by fuse replacement or power switch turning on, do not touch the inside of the unit. Disconnect the power cord from the outlet and contact NIDEK or your authorized distributor.

2.4 CLEANING

-  When parts become dirty, wipe with a dry and soft cloth. For stubborn dirt, immerse the cloth in a neutral detergent, wring well, and wipe. Finally wipe with a dry and soft cloth. Never use an organic solvent such as paint thinner to wipe off the exterior. This may ruin the surface.
-  The room lamp on the top of the aluminium lightning column can be dismantled for easy cleaning operation. Before cleaning, glasses of room light must be totally cold, or injury such as burns or breakages may result.
-  Service work should be performed only by service persons authorized by NIDEK. NIDEK is not responsible for any accidents resulted from improper servicing.

2.5 LABELS

The following label is affixed to draw the operator's attention.

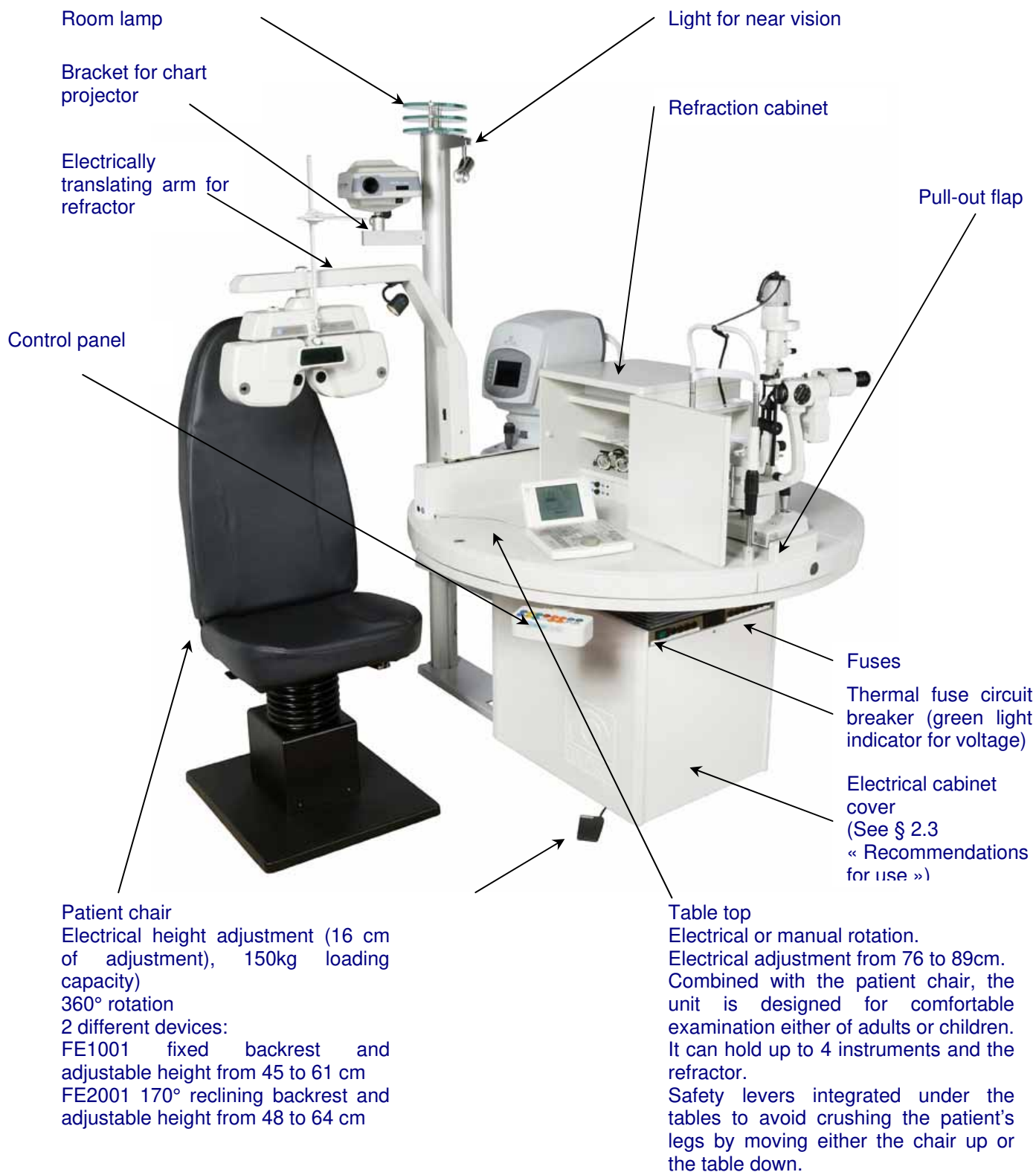


Protection against electric shock is of a type B Applied Part. (grounding connection)

Refer to the operator's manual prior to operation or maintenance.

3 STAND'S DESCRIPTION

3.1 GENERAL VIEW



3.2 DETAILED VIEWS

Refractor arm
Manually pivoting model, with
reclining for near vision



Refraction cabinet with trial lenses
case (large set) on the door



Trial lenses case (large set) incorporated in
a drawer of the table top



Pull-out flap

Opening and closing
by a single switch

4 USE

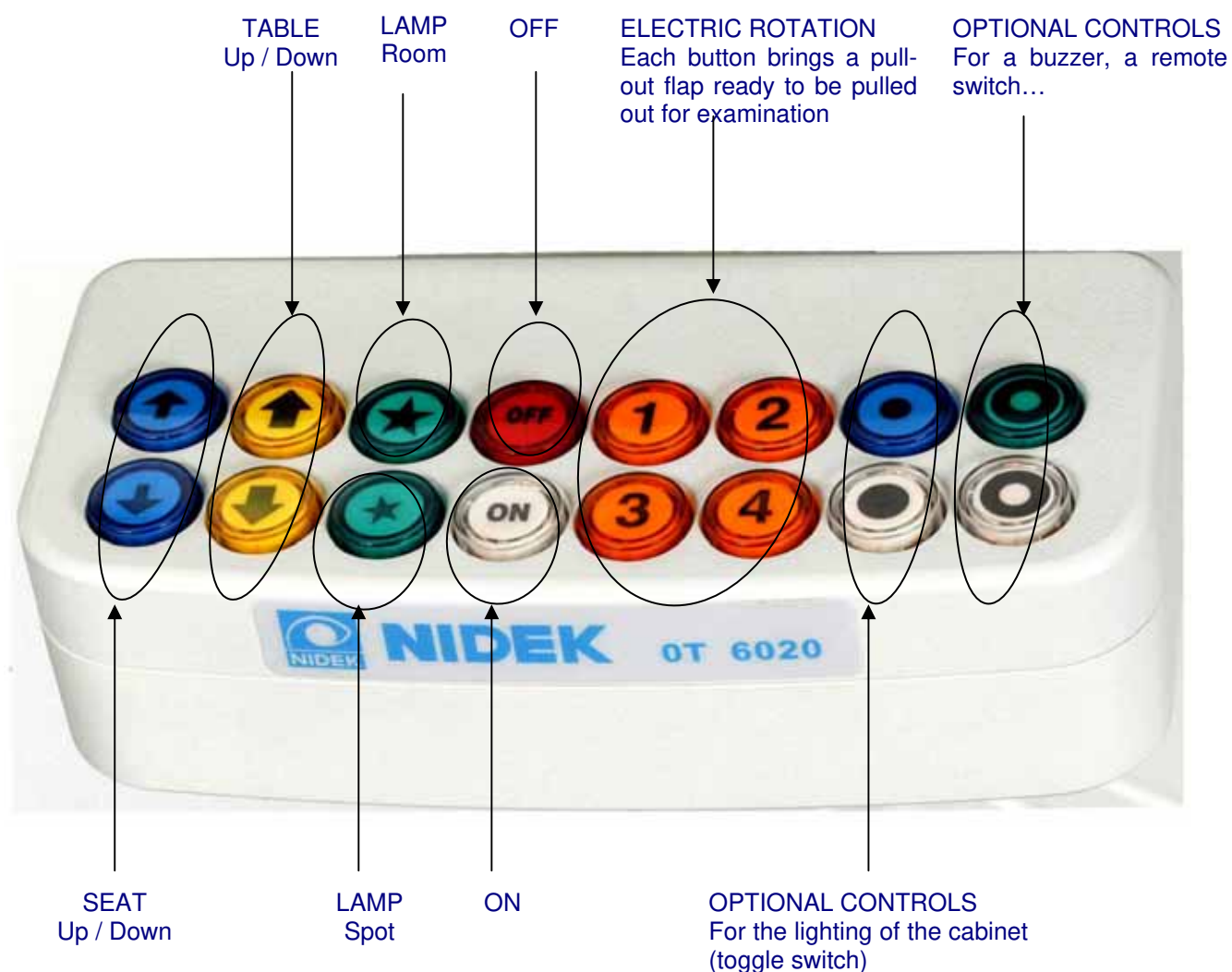
4.1 POWER ON

- The ophthalmic unit must be properly connected to a wall outlet (see § 2.2 « Electrical connection »): the green lamp of the circuit breaker is on. Then, press the circuit breaker button to position « I ».
- A press on the « ON » white button of the control panel switches the unit on, and all control buttons get illuminated. For the electric rotation model, initializing sequence of table top starts, and brings it automatically to position 1.

4.2 POWER OFF

Your ophthalmic unit shall be powered off daily. Press the « OFF » red button of the control panel (control buttons light off) and press the circuit breaker button to the position « O ». Only the green lamp of the circuit breaker remains illuminated.

4.3 USE OF THE CONTROLS

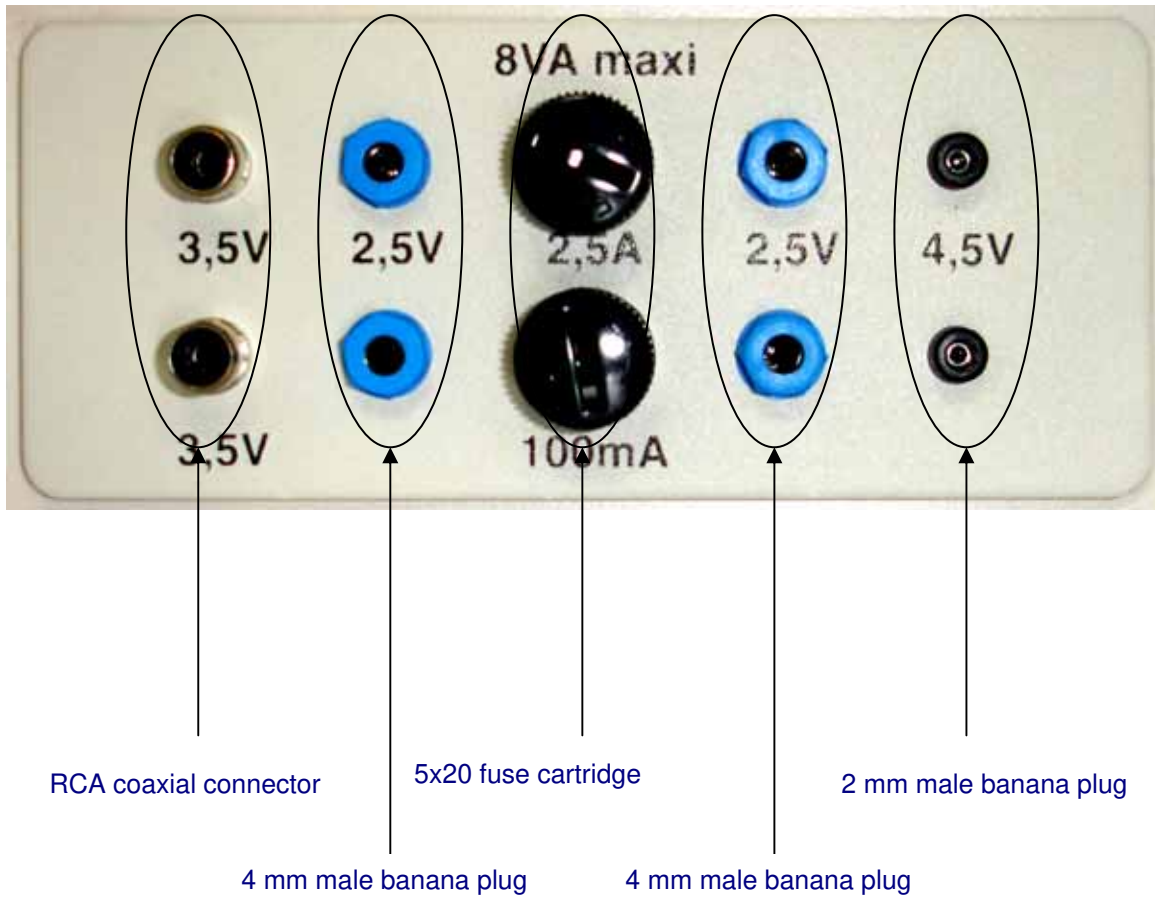


4.4 LOW VOLTAGE PANEL

Upon request, the central refraction cabinet is equipped with a low voltage panel (see below) for the use of wired appliances such as skiascopes.

PRECAUTION

Do not operate 2 or more appliances simultaneously on this panel.

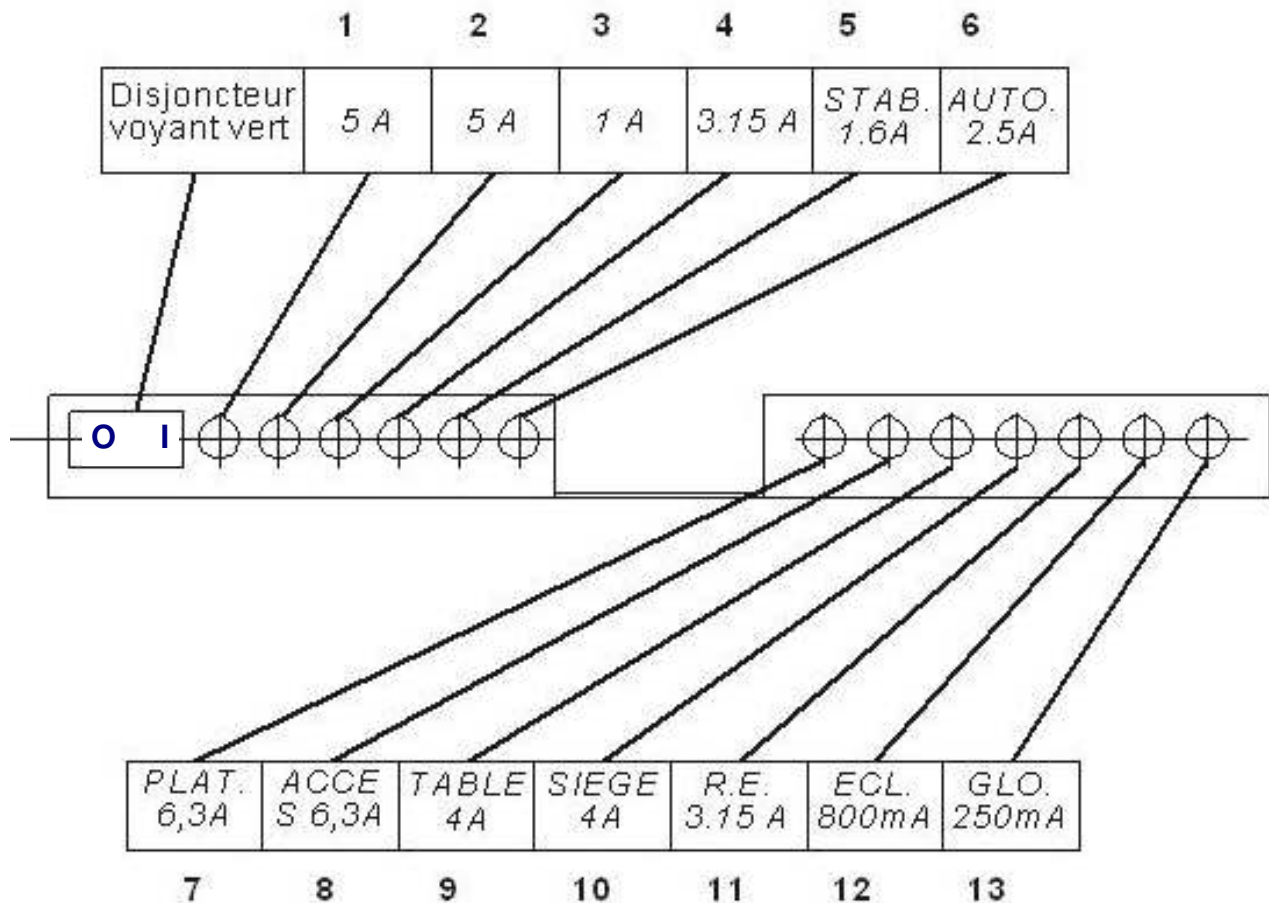


5 TROUBLESHOOTING GUIDE

In the event that the unit does not work properly, check the following table before contacting NIDEK or your authorized distributor.

If the problem cannot be solved by the suggestions below, contact NIDEK or your authorized distributor.

Fuses panel



POWER ON	Suggestion
Nothing works any more: The unit does not turn on, The green lamp of the circuit breaker is off.	The power cord may not be correctly connected. Reconnect it securely. On your own electrical cabinet, check the fuse of the outlet the unit is connected to: it may be blown. If so, replace it by a new one.
The green lamp of the circuit breaker is on. The unit does not turn on. The control panel is not illuminated; the slit lamp does not light on.	The circuit breaker is not on « I » position: press it again. Replace the n° 3 fuse 1 Amps.
The green lamp of the circuit breaker is on. The unit does not turn on. The control panel can not be illuminated, but the slit lamp does light on.	Replace the n° 2 fuse 5 Amps.
SAFETY LEVERS	Suggestion
The table top moves up, but not down.	Check that nothing is operating with one of the descent safety levers under the pull-out flaps.
Patient chair moves down, but not up.	Check that nothing is operating with one of the descent safety levers under the pull-out flaps.
BRAKE (for manual rotation model only)	Suggestion
The table top can not be blocked in rotation	Check that nothing is operating the pedal. Replace the n°4 fuse 3,15A.
ELECTRIC ROTATION	Suggestion
The table top no longer revolves. But the patient chair can ascend and the table top can descend.	Check that all the pull-out flaps and the refractor arm are correctly retracted. Replace successively the fuses: R.E. 3,15A n°11 STAB. 1,6A n°5 AUTO. 2,5A n°6
The table top no longer revolves. The patient chair can not ascend (but descent is OK) and the table top can not descend (but ascent is OK).	Check that all the pull-out flaps and the refractor arm are correctly retracted. Replace the n°4 fuse 3,15A.






SLIT LAMP	Suggestion
The slit lamp (or the ophthalmometer) does not light on, but everything else is OK.	<p>Check the bulb of the device.</p> <p>Read the handbook of the device.</p> <p>Replace the n°1 fuse 5 Amps.</p>
DEVICES ON THE TABLE TOP	Suggestion
All 230V devices on the table top no longer work.	<p>Replace the n°7 PLAT fuse 6.3 Amps.</p> <p>Read the handbooks of the devices.</p>
Only 1 of the 230V devices on the table top does not work.	<p>Read the handbook of this device.</p>
REFRACTOR AND OTHER DEVICES	Suggestion
The refractor and the devices that are not on the table top (chart projector, lensmeter...) do not work.	<p>Replace the n°8 ACCES fuse 6.3 Amps.</p> <p>Check the bulbs.</p> <p>Read the handbook of the devices.</p>
PATIENT CHAIR	Suggestion
The patient chair no longer ascends or descends.	<p>Replace the n°10 SIEGE fuse 4 Amps.</p>
ELECTRIC ELEVATION OF TABLE TOP	Suggestion
The table top no longer ascends or descends.	<p>Replace the fuse n°9 TABLE 4 Amps.</p>
LIGHT	Suggestion
The 2 lamps (room and spot) do not light on.	<p>Replace the n°12 ECL fuse 800 mAmps.</p>
Only 1 lamp does not light on.	<p>Check the bulb.</p>
REFRACTION CABINET	Suggestion
The lighting (globe) no longer comes on.	<p>Replace the n°13 GLO fuse 250 mAmps.</p>
A low voltage device connected on the refraction cabinet no longer works.	<p>Check the bulb of the device.</p> <p>Replace the fuses on the low voltage panel.</p> <p>Read the handbook of the device.</p>

6 MAINTENANCE

6.1 REPLACING FUSES

Before fuse replacement, follow those precautions:





PRECAUTION

-  Turn the unit off and disconnect the power cord from the wall outlet.
-  Turn the fuse holders counter clockwise by the arrow with a screwdriver.
-  Pull out the fuse holders
-  Remove the used fuses from the fuse holders and insert new fuses into the fuse holders.
-  Turn the fuse holder clockwise with the screwdriver.

6.2 REPLACING BULBS

PRECAUTION

Before replacing some bulbs, make sure the unit is disconnected. Wait for lightings to get cold to avoid some burns.

-  Turn the unit off and disconnect the power cord from the wall outlet.
-  If aluminium column, pull up the rounded glasses without touching the bulb.
-  Remove the burnt out bulb and replace it by a new one (for the bulb's handling refer to its manufacturer recommendations).
-  Put the rounded glasses back in their place without touching the bulb.

6.3 CLEANING

When parts become dirty, wipe with a dry and soft cloth. For stubborn dirt, immerse the cloth in a neutral detergent, wring well, and wipe. Finally wipe with a dry and soft cloth.
For cleaning of devices, refer to their handbooks.

PRECAUTION

Never use an organic solvent such as paint thinner to wipe off the exterior. This may ruin the surface.

6.4 LIST OF SPARE PARTS

2 miscellaneous relays and 2 full sets of fuses are supplied with every unit.

7 TECHNICAL FEATURES

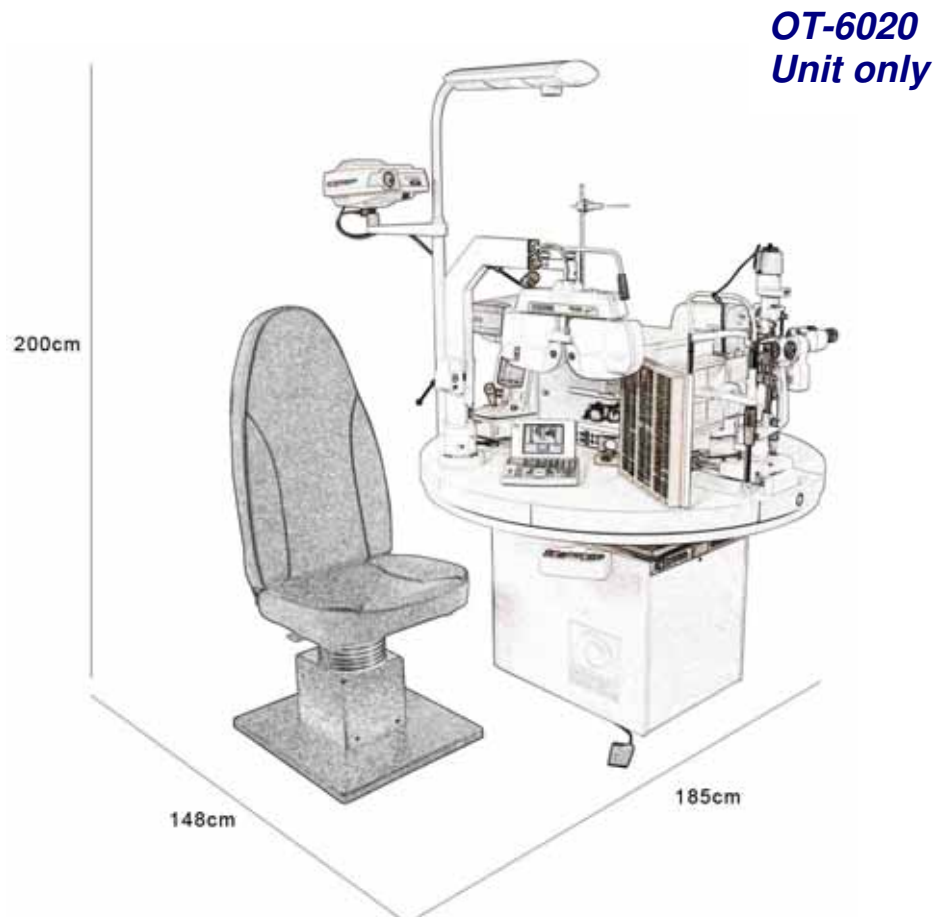
7.1 MAIN FEATURES

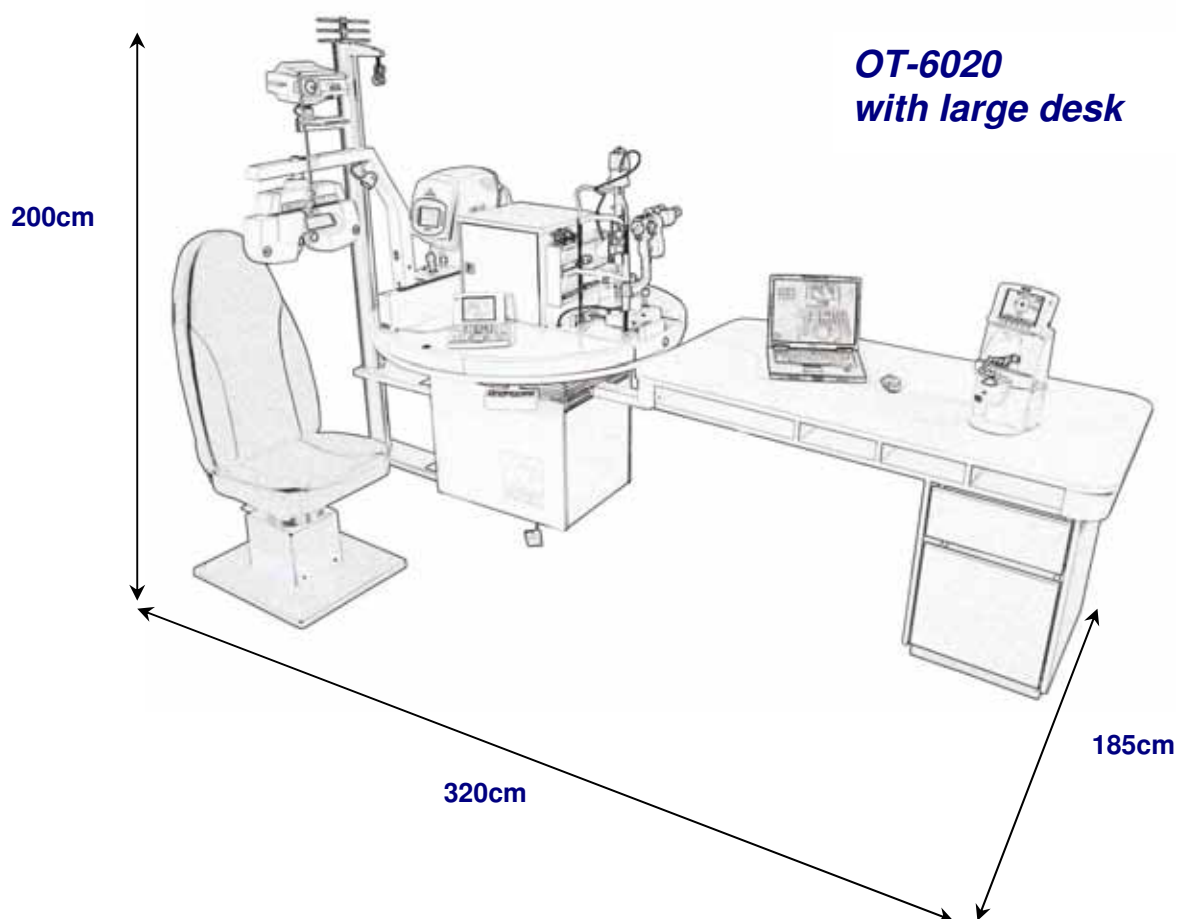
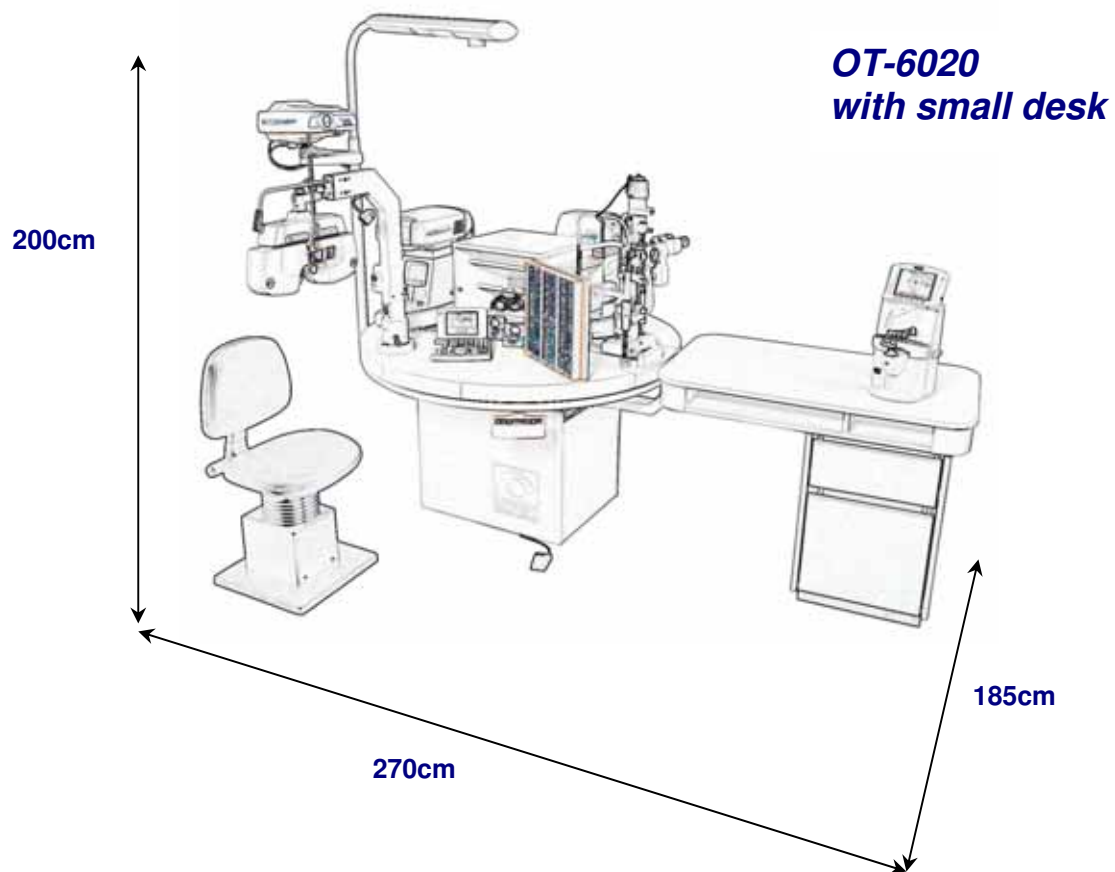
Dimensions	168 x 148 x 200 cm
Approximate net weight	250 kg (without desk and devices)
Power source	230 VAC / 50 Hz / 2300 VA Separated electric circuits with protective fuses
Table top	Electrically adjustable height (from 76 to 89 cm)
Rotation	Electrical (with gradual spurt and stop) or Manual
Instruments	3 pull-out flaps and 1 optional drawer or 4 pull-out flaps
Refractor	Fixed on an electrically translating arm or On a reclining pivoting arm
Patient chairs	Electrically adjustable height 360° rotation Maximum load 150kg FE-1001: with adjustable backrest FE-2001: with 170° reclining backrest

7.2 ELECTRIC DIAGRAM

The electric diagram is included in the unit.

7.3 DIMENSIONS







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